

APPENDIX 2BB
Cherokee Nuclear Station Geotechnical Boring Logs

This Attachment contains historic geotechnical boring logs developed as part of the Cherokee Nuclear Station Project investigation, and a list of the included borings (189 in total).

WLS COL 2.5-1

CNS Geotechnical Boring Logs Included in Appendix 2BB

B38	B70	B140P	B220	B287
B39P	B71	B141P	B221	B289
B40	B72	B142P	B222	B290
B41	B74	B143P	B223	B291
B42	B75	B144AP	B224	B292
B44	B77	B144P	B225	B293
B45	B77AP	B145P	B226	B294
B45AP	B77BP	B146P	B227	B295
B45BP	B77CP	B147P	B229	B296
B45CP	B78	B148P	B230	B297
B45D	B79	B149P	B231	B343
B45E	B80	B150P	B232	B344
B45F	B82	B151P	B233	B495
B45G	B83AP	B152P	B234	B496
B46	B83P	B153P	B235	B498
B47	B84P	B154P	B236	B505
B48	B86	B155P	B237	B506
B49	B89P	B156P	B238	B507
WLS COL 2.5-1 B50	B90P	B157P	B239	B508
B51	B91P	B158P	B240	B526
B52	B92P	B159P	B241	B527
B53	B93P	B160P	B242	B528
B54	B94P	B161P	B243	B529
B55P	B95P	B162P	B244	B530
B56	B96P	B163P	B245	B558
B57	B97P	B164P	B246	B682
B58	B98P	B165P	B247	B683
B59	B99	B166P	B248	B684
B61	B100	B167P	B249	B685
B62AP	B128P	B168P	B251	B686
B62BP	B129P	B186P	B252	B687
B62P	B130P	B187P	B253	BW44
B63P	B131P	B213	B254	BW45
B64	B132P	B214	B262	
B65P	B136AP	B215	B263	
B66	B136P	B216	B280	
B67	B137P	B217	B281	
B68	B138P	B218	B285	
B69P	B139P	B219	B286	

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME	ELEV.	REMARKS	R.Q.D.
0	Very Stiff Orange Slightly Clayey Fine To Medium Sandy Silt			597.4		
6.0	Firm Yellow Tan Very Sandy Silt			592.4	N=18	
				587.4	N=8	
				582.4	N=7	
				577.4	N=11	
22.0	Firm Tan Gray Very Silty Fine To Medium Sand			572.4	N=18	
				567.4	N=23	
34.0	Very Dense Gray and Yellow Tan Very Silty Fine To Medium Sand			562.4	N=63	
36.0	Partially Weathered Rock That Becomes Gray And Yellow Tan Very Silty To Silty Fine To Medium Sand When Sampled			557.4	N=50/3"	

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock That Becomes Gray And Yellow Tan Very Silty To Silty Fine To Medium Sand When Sampled —Quartz Fragments At 43 Ft.			557.4		
43.8	Hard Light Bluish Gray Felsic Gneiss	NX		552.4	N=50/4 In. Carbide Bit Refusal At 43.8 ft.	47
		89		547.4	43.8 Ft - 51.5 Ft: Slight Weathering. Close Joints - Low To Medium Dip-Oxide And Clay Coated:	
51.5	Moderately Hard Yellowish Gray Felsic Gneiss	82		542.4	51.5 Ft - 61.6 Ft: Severe To Moderately Severe Weathering. Very Close Joints - Low To Steep Dip	28
				537.4	Very Close Healed Joints - Many Leached - Low To Steep Dip (43.8 Ft - 137.5 Ft)	
61.6	Partially Weathered Rock	0		532.4		0
63.6	Moderately Hard To Hard Very Light Gray Felsic Gneiss	96		527.4	N=50/0 In. Top Of Continuous Rock At 68.6 Ft	50
68.8	Hard Light Bluish Gray Felsic Gneiss	98		522.4	63.6 Ft - 68.8 Ft: Moderate Weathering. Close Joints - Low To Steep Dip. 68.8 Ft - 121.5 Ft: Slight Weathering. Close Joints - Low To Steep Dip-Coated With Oxides, Epidote And Clay	74
				517.4	Steeply Dipping Pegmatite Vein (76.0 Ft - 76.5 Ft) Severe Leaching Along Joints (75.0 Ft - 76.5 Ft) Schistose Zones - 1/8 In. Thick-Low To Medium Dip (75.0 Ft)	71
80.0		99				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 84 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 4
TEST BORING RECORD

BORING NO. B-38
DATE DRILLED 7-27-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-45°
M = MED. DIP 45°-60°
S = STEEP DIP 60°-90°

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 84 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 4
TEST BORING RECORD

BORING NO. B-38
DATE DRILLED 7-27-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-45°
M = MED. DIP 45°-60°
S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
80.0	Hard Light Bluish Gray Felsic Gneiss	NX 99 512.4		71
100		507.4		55
		502.4	1/2 In. Pegmatite Vein With Surrounding Schistose Zone (96.5 Ft)	
100		497.4	Xenoliths Of Mafic Gneiss Greater Than 2 Inches (103.0 Ft - 105.0 Ft)	81
		492.4		
100		487.4	Very Close Joints - Low To Steep Dip (108.0 Ft - 109.5 Ft) Leaching Along Most Joints (111.5 Ft - 115.5 Ft)	76
		482.4	Schistose Zones - Low Dip (115.5 Ft - 116.0 Ft)	
100		477.4	Xenolith Of Schistose Mafic Gneiss (119.6 Ft - 119.9 Ft)	57
120.0				

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
120.0	Hard Light Bluish Gray Felsic Gneiss	NX		
121.5	Hard Yellowish Gray Felsic Gneiss	100	Pegmatite Stringers (121.5 - 123.0 Ft) Moderate Weathering. Very Close Joints - Low To Steep Dip	57
125.0	Hard Very Light Gray Felsic Gneiss	472.4	125.0 Ft - 137.5 Ft: Slight Weathering Close To Moderately Close Joints - Low To Medium Dip	
		467.4		
		462.4	2-Inch Zone Of Moderate Weathering (132.5 Ft)	90
137.6		457.4		
			Coring Terminated at 137.6 Ft Groundwater At 20.6 ft At Time Of Boring Groundwater At 21 ft After 24 Hours Drilling Water Loss At 94.0 ft.	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-20°

M = MED. DIP 30°-50°

S = STEEP DIP 60°-90°

Page 3 of 4
TEST BORING RECORD

BORING NO. 8-38
DATE DRILLED 7-27-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO. Page 4 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-20°

M = MED. DIP 30°-50°

S = STEEP DIP 60°-90°

Page 4 of 4
TEST BORING RECORD

BORING NO. B-38
DATE DRILLED 7-27-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0			575.4		
		N=17	570.4	Firm Red-Brown Silty Very Slightly Clayey Fine Sand	
			565.4		
		N=16	560.4	Very Stiff Dark Brown Very Micaceous Silt	
			555.4		
		N=17	550.4	Very Stiff Light Brown- Gray Micaceous Sandy Silt	
			545.4		
		N=42	540.4	Dense Tan Moderately Micaceous Silty Fine To Medium Sand	
40.0			535.4		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0			535.4		
		N=59	530.4	Very Dense Tan Moderately Micaceous Silty Fine To Medium Sand	
		N=42	525.4	Dense Tan Moderately Micaceous Silty Fine To Medium Sand	
		N=45	520.4	Hard Tan-Light Brown Slightly Micaceous Silty Fine To Coarse Sand	
54.3	Partially Weathered Rock That Becomes Tan-Brown Fine To Medium Sandy Silt When Sampled	N=50/2"	520.4		
		N=50/2"	515.4	No Recovery	
		N=50/0"	510.4	NW Casing To 64.0 Ft.	
		N=50/1"	505.4	No Recovery	
	-Silty Fine To Medium Sand Layer At 71 ft.	N=50/0"	500.4		
80.0		N=50/0"	495.4		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-20°

M = MED. DIP 20°-40°

S = STEEP DIP 40°-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-39P

DATE DRILLED 10-25-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 5 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

*Undisturbed Samples Were
Obtained From An Adjacent Boring.

Page 2 of 3

TEST BORING RECORD

BORING NO. B-39P

DATE DRILLED 10-25-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE S. & T. TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock That Becomes Tan-Brown Fine To Medium Sandy Silt When Sampled	*	495.4		
82.7	Hard To Moderately Hard To Moderately Hard Very Light Gray Felsic Gneiss	NX 98	490.4	Carbide Bit Refusal At 82.7 ft. 82.7 ft to 86.7 ft.: Moderate To Moderately Severe Weathering. Close To Very Close Joints - Low To Medium Dip. Very Close Healed And Slightly Leached Joints, Many With Epidote - Low To Steep Dip.	38
85.7	Hard To Very Hard Light Bluish Gray Felsic Gneiss	100	485.4	L	100
94.5	Coring Terminated At 94.5 ft. Groundwater At 11 ft. After 24 Hours No Drilling Water Loss		480.4	L MS S Severely Weathered Zone (86.3 to 86.7 ft.) 86.7 ft to 94.5 ft.: Slight To Very Slight Weathering. Very Close Healed And Rarely Leached Joints With Epidote And Calcite - Low To Steep Dip.	

DEPTH FT.	DESCRIPTION	CORE S. & T. TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Firm to Very Dense Orange to Gray And Tan Very Silty Fine To Coarse Sand			N=26	
			573.7		
			568.7	N=88	
10.0	Partially Weathered Rock That Becomes Tan Gray Silty Fine to Medium Sand When Sampled -Fine to Medium Sandy Silt Seams at 15 ft and 33 ft.		563.7	N=50/5-1/2 in.	
			558.7	N=50/3 in.	
			553.7	N=50/4-1/2 in.	
			548.7	N=50/5 in.	
33.8	Very Hard Light Bluish Gray Felsic Gneiss	NX 100	543.7	Carbide Bit Refusal And Top of Continuous Rock 33.8 ft Steep Dip, Healed, Leached Joints (33.8 ft - 34.9 ft)	90
40.0		100	538.7	33.8 ft - 40.0 ft: Slight Weathering.*	100

BORING AND SAMPLING MEETS ASTM D-1586 *Undisturbed Samples Where
CORE DRILLING MEETS ASTM D-2113 Obtained From An Adjacent Boring.
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-39P

DATE DRILLED 10-25-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 6 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

* Close Healed Joints-Low to Steep Dip.
Close Joints-Medium Dip.

TEST BORING RECORD

Page 1 of 2

BORING NO. B-40

DATE DRILLED 7-24-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO.	TIME PER MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Very Hard Light Bluish Gray False Gneiss	NX 100		533.7	40.0 ft - 54.5 ft: Very Slight Weathering Close Healed Joints-Medium to Steep Dip	100
				528.7		93
				523.7		
54.5	Coring Terminated at 54.5 ft Groundwater At 18.0 ft At Time Of Boring Groundwater At 19.0 ft After 24 Hours No Drilling Water Loss				Note: Rock Contains Xenoliths of Fine Grained Mafic Gneiss Up to 1/2 in. Diameter	

DEPTH FT.	DESCRIPTION	CORE NO.	TIME PER MIN.	ELEV.	REMARKS	% R.Q.D.
0	Stiff Red Slightly Clayey Sandy Silt			675.4		N=13
6.0				670.4		N=16
	Very Stiff To Stiff Red Tan Fine To Coarse Sandy Silt With Varying Amounts Of Mica			665.4		N=21
18.0				660.4		N=13
	Stiff To Very Stiff Red Tan Fine To Coarse Sandy Silt With Varying Amounts Of Mica			655.4		N=23
				650.4		N=28
				645.4		N=28
35.0	Hard Tan Gray Fine To Coarse Sandy Micaceous Silt			640.4		N=33
40.0						

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD

BORING NO. B-40
DATE DRILLED 7-26-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

Page 7 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 5
TEST BORING RECORD

BORING NO. B-41
DATE DRILLED 7-2-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
40.0	Hard Tan Gray Fine To Coarse Sandy Micaceous Silt			
		N=36		
		635.4		
		N=61		
		630.4		
		N=47		
		625.4		
		N=58		
		620.4		
		N=35		
	615.4			
	N=39			
	610.4			
78.0	Partially Weathered Rock That Becomes Tan Fine to Coarse Sandy Micaceous *			
80.0		N=50/3"	600.4	

BORING AND SAMPLING MEETS ASTM D-1586 * Silt
 CORE DRILLING MEETS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 [] UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 [] ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 5
TEST BORING RECORD

BORING NO. B-41
 DATE DRILLED 7-2-73
 JOB NO. CH 2020
 LAW ENGINEERING TESTING CO.

◀ ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.	
80.0	Partially Weathered Rock That Becomes Tan Fine to Coarse Sandy Micaceous Silt				
		N=50/2"			
		595.4			
		590.4			
92.6		Hard Very Light Gray Medium Grained Granite Pegmatite	NX	N=25/0" Carbide Bit Refusal @ 92.6 ft. Slight Weathering (92.6 - 95.5 ft).	
95.5		Moderately Hard to Hard Very Light Gray Fine to Medium Grained Felsic Gneiss	99	Very Close Healed Joints - Low to Steep Dip - Occasionally Leached (92.6 ft - 177.1 ft).	69
				Moderate Weathering (95.5 - 111.0 ft). Close Joints - Generally Clean - Low to Medium Dip (92.6 - 153.6 ft).	
			100 45		65
			575.4		
109.0		Hard Very Light Gray Fine to Medium Grained Granite Pegmatite		3 inch Soft Severely Weathered Zone at 108.0 ft	
111.0	Very Soft Yellow Gray Fine *		Severe Weathering (111.0-112.0 ft)		
112.0	Hard Very Light Gray Granite Pegmatite		Moderate Weathering (112.0-114.0 ft)	24	
114.0	Moderately Hard Very Light Gray Granite Pegmatite	87 40	Moderately Severe Weathering (114.0 ft - 115.5 ft)		
115.5	Very Soft Yellow Gray Fine Grained Felsic Gneiss		Severe Weathering (115.5-118.0 ft)		
118.0	Moderately Hard Very Light Gray Felsic Gneiss	83	Moderate Weathering (118.0 ft - 120.0 ft)	51	
120.0					

BORING AND SAMPLING MEETS ASTM D-1586 * Grained Felsic Gneiss
 CORE DRILLING MEETS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 3 of 5
TEST BORING RECORD

[] UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 [] ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

◀ ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

BORING NO. B-41
 DATE DRILLED 7-2-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME DIA MIN.	560.4 ELEV.	REMARKS	% R.Q.D.
120.0	Hard to Very Hard Very Light Felsic Gneiss	NX		Slight Weathering (120.0 ft - 134.5 ft)	51
		87	555.4		
			550.4	Top Of Continuous Rock 133.5 Ft.	
134.5	Moderately Hard Yellow Gray Felsic Gneiss	100	545.4	Moderate Weathering (134.5-137.0 ft). Steep Joints Contain Granular Material and are Leached (134.5 ft - 137.0 ft)	62
137.0	Hard Very Light Gray Felsic Gneiss		540.4	Slight Weathering (137.0 ft-142.8 ft)	
				◁ S	
142.8	Smokey to Milky Quartz Vein	100	535.4	145.0 ft - 150.6 ft; Moderate Weathering Steep Joint (s) with Severe Leaching.	34
145.0	Medium to Moderately Hard Very Light Gray to Yellow Gray Granite Pegmatite		530.4		
150.6	Moderately Hard to Hard Very Light Gray Felsic Gneiss	100	525.4	Calcareous, Micaceous Contact Zone (153.5 - 153.7 ft). ◁ M slickensided Surface At 152.7 ft ◁ L Slickensided Surface At 153.4 ft	84
153.6	Hard Medium Gray Medium Grained Mafic Gneiss		520.4	153.6 ft - 156.1 ft: Slight to Moderate Weathering. Close Veins and Joints Healed With Calcite (Low To Steep Dip).	
156.1	Moderately Hard to Hard Very Light Gray Felsic Gneiss	100		Steeply Dipping Brecciated Contact Zone With Pyrite Mineralization *	90
160.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 34 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

◁ ROCK JOINT;
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 4 of 5
TEST BORING RECORD

BORING NO. B-41
DATE DRILLED 7-2-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 9 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME DIA MIN.	520.4 ELEV.	REMARKS	% R.Q.D.
160.0	Moderately Hard to Hard Very Light Gray Felsic Gneiss	NX		Slight Weathering (156.1 ft-177.1 ft). Close Joints - Rough and Clean - Low Dip (156.0 ft - 173.7 ft). Mafic Schistose Zone with 1 inch Pegmatitic Vein (163.1 ft - 163.7 ft)	90
		100	515.4		
			510.4	◁ M	
173.7	Hard Medium Dark Gray Mafic Gneiss	100	505.4	Very Close Calcite - Healed Joints - Medium Dip (173.7 ft - 176.1 ft)	94
176.1	Hard Very Light Gray Felsic Gneiss			Close Joints - Partly Healed, and Coated with Calcite and Epidote (176.1 ft - 177.1 ft)	
177.1	Coring Terminated at 177.1 ft Groundwater at 75.0 ft After 24 Hours No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 34 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

◁ ROCK JOINT;
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 5 of 5
TEST BORING RECORD

BORING NO. B-41
DATE DRILLED 7-2-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Stiff Orange Slightly Clayey Fine To Medium Sandy Silt		654.4		
			649.4	N=15	
6.0	Very Stiff To Hard Moderately Red And Yellow Fine To Medium Sandy Silt		644.4	N=23	
			639.4	N=25	
			634.4	N=31	
			629.4	N=27	
			624.4	N=39	
32.0	Hard Yellow And Gray Tan Fine To Medium Sandy Silt Becoming Very Sandy In Places		619.4	N=78	
40.0			614.4	N=50/5"	Quartz Lens Magnified N-Values @ 39.5 ft.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Hard Yellow And Gray Tan Fine To Medium Sandy Silt		614.4		
			609.4	N=43	
			604.4	N=31	
			599.4	N=46	
58.0	Very Dense Brown Tan Silty Fine To Medium Sand		594.4	N=71	
			589.4	N=88	
66.0	Partially Weathered Rock That Becomes Gray Tan Silty Fine To Medium Sand When Sampled		584.4	N=50/4"	
			579.4	N=50/3"	
80.0			574.4	N=50/5"	

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 [] UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 [] ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 4
TEST BORING RECORD

BORING NO. B-42
 DATE DRILLED 8-29-73
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO. Page 10 of 298

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 [] UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 [] ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 4
TEST BORING RECORD

BORING NO. B-42
 DATE DRILLED 8-29-73
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	574.4 ELEV.	REMARKS	% R.Q.D.
80.0	Partially Weathered Rock That Becomes Gray Tan Silty Fine To Medium Sand When Sampled				
			569.4	N=50/2"	
			564.4	N=50/1"	
			559.4	N=50/0"	
96.4	Moderately Hard And Hard Yellow Gray To Very Light Gray Felsic Gneiss	NX 100	554.4	Carbide Bit Refusal @ 96.4 ft. 96.4 ft - 110.5 ft. Moderate And Slight Weathering. Close Joints - Low To Medium Dip. Very Close Healed Joints - Low To Steep Dip. Some Partially Leached	60
			549.4	Top Of Continuous Rock 102.5 ft.	
			544.4	Moderate Severely Weathered Zone, Possibly Brecciated (104.6 ft - 104.9 ft) Severely Leached Zone (105.5 ft - 105.7 ft.) With Relic Pyrite. Quartz Vein With Associated Brecciated Zone (107.1 ft - 107.6 ft.) Severely Leached Brecciated Zone (109.5 ft - 110.7 ft.)	93
110.5	Hard Light Bluish Gray Felsic Gneiss		539.4	110.5 ft - 154.2 ft: Slight To Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip - Calcite Filled.	
			534.4		100

BORING AND SAMPLING MEETS ASTM D-1899
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 4
TEST BORING RECORD

BORING NO. B-42
DATE DRILLED 8-29-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO. Page 11 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	534.4 ELEV.	REMARKS	% R.Q.D.
120.0	Hard Light Bluish Gray Felsic Gneiss	NX 100	529.4	Sericitic Schistose Zones, Possibly Brecciated: 124.2 ft - 124.5 ft. 125.5 ft - 125.9 ft. 127.0 ft - 127.7 ft. Medium Dip, Sericitic, Horizontally Slickensided Zone (124.5 ft.)	100
			524.4		100
			519.4		
			514.4		
			509.4	Schistose Zone, In Part Sericitic And Possibly Brecciated With Intermittent Quartz Veins (140.9 ft - 149.7 ft)	95
			504.4		95
154.2	Coring Terminated at 154.2 ft. Groundwater at 51 ft. After 24 Hours No Drilling Water Loss		499.4		

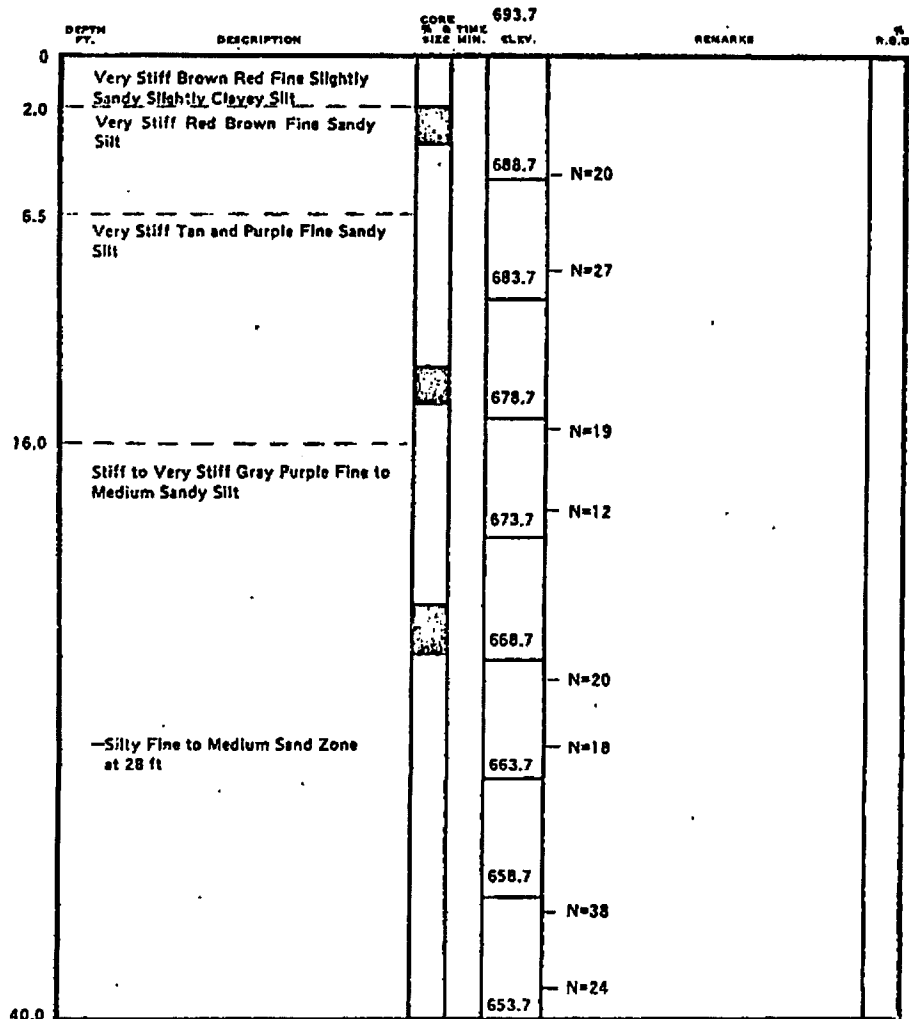
BORING AND SAMPLING MEETS ASTM D-1899
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 4 of 4
TEST BORING RECORD

BORING NO. B-42
DATE DRILLED 8-29-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

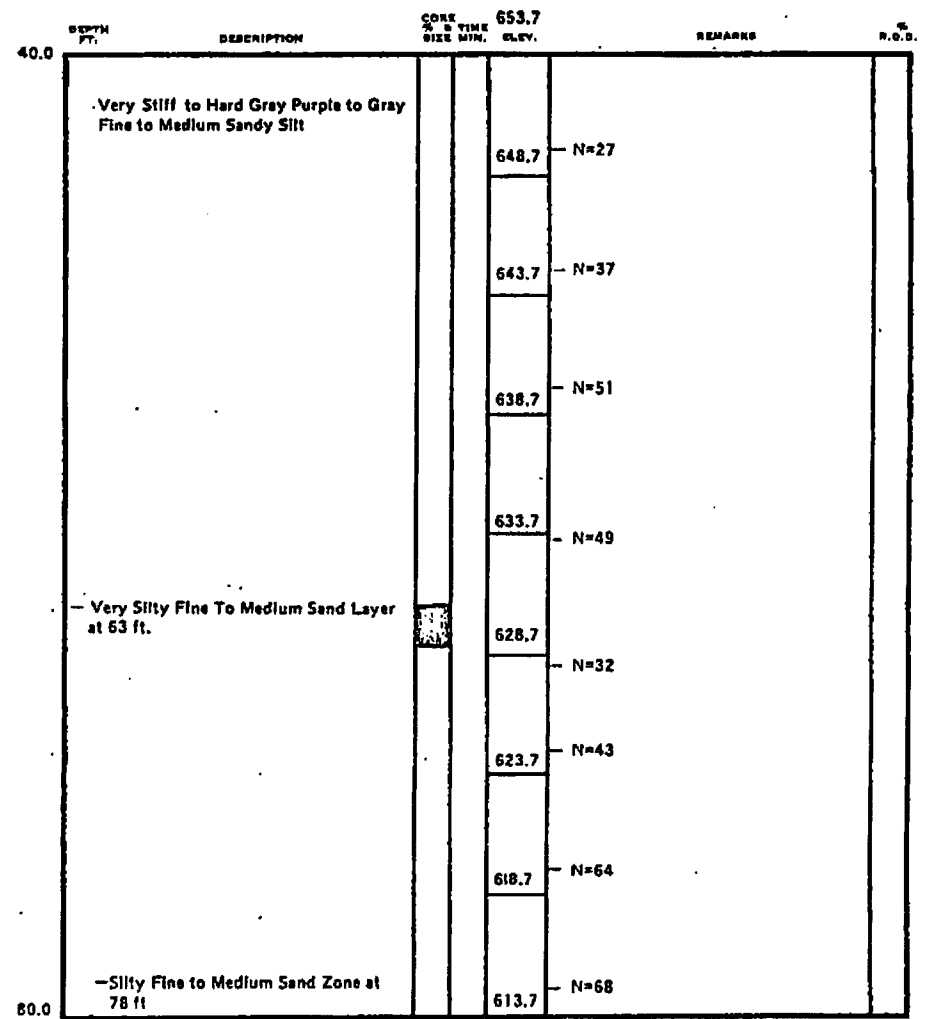
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 1 of 4
TEST BORING RECORD

BORING NO. B-44
 DATE DRILLED 7-13-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 2 of 4
TEST BORING RECORD

BORING NO. B-44
 DATE DRILLED 7-13-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Very Stiff To Hard Gray Purple To Gray Fine To Medium Sandy Silt					
81.5	Partially Weathered Rock That Becomes Purple Sandy Silt When Sampled			608.7	N=50/5 in.	
89.1	Silty Fine To Coarse Sand Layer @ 88 ft.					
90.0	Very Hard Milky to Smoky Quartz			603.7	N=50/3" Carbide Bit Refusal at 89.1 ft.	
	Very Soft Rock (Core Loss)	NX	11			0
				598.7		
				593.7		
		NX	0			0
				588.7		
107.7	Partially Weathered Rock That Becomes Tan Slightly Silty Fine to Very Coarse Sand with Quartz Fragments			583.7	Cased Past Pervious Zone: Drill Water Returned N=50/2 in.	
				578.7	N=50/4 in.	
120.0				573.7	N=50/4 in.	

BORING AND SAMPLING MEETS ASTM D-1898
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 4
TEST BORING RECORD

BORING NO. B-44
DATE DRILLED 7-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard Very Light Gray Felsic Gneiss	BX	100		Top of Continuous Rock at 120.0 ft	81
		BX	74	568.7	119.7 ft - 140.4 ft: Slight Weathering Very Close Healed Joints-Low to Steep Dip-Commonly Leached Close Joints - Low Dip, Moderately Close Joints-Medium to Steep Dip.	0
		BX	97	563.7	Zones of Moderate Weathering: 119.7 ft - 120.6 ft 122.6 ft - 123.0 ft	73
		BX	100	558.7	Leached, Steep Dipping Quartz Veins, 1/4 in. Thick (126.0 ft - 127.5 ft)	95
140.4	Coring Terminated at 140.4 ft Groundwater @ 99 ft. After 24 Hours Drilling Water Loss At 89.1 ft.			553.7	Slickensided Zone (140.4 ft)	

BORING AND SAMPLING MEETS ASTM D-1898
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 4 of 4
TEST BORING RECORD

BORING NO. B-44
DATE DRILLED 7-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	651.4 ELEV.	REMARKS	R Q.D.
0	Firm Red Tan And Brown Fine To Medium Sandy Silt				
			646.4	N=17	
				N=27	
			641.4	N=21	
			636.4		
				N=24	
			631.4	N=24	
22.5	Very Stiff To Hard Brown Fine To Medium Sandy Micaceous Silt With Quartz Lenses		626.4	N=57	
				N=25	
			621.4	N=41	
			616.4		
				N=36	
40.0			611.4		

Page 1 of 6

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

BORING NO. B-45
 DATE DRILLED 8-22-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

Page 14 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	611.4 ELEV.	REMARKS	R Q.D.
40.0	Very Stiff To Hard Brown Fine To Medium Sandy Micaceous Silt With Quartz Lenses			N=41	
43.0	Dense To Very Dense Gray, Tan And White Silty To Very Silty Fine To Medium Sand		606.4	N=41	
			601.4	N=20	
			596.4		
				N=50	
	Fine To Medium Very Sandy Silt Layer At 60 ft.		591.4	N=55	
			586.4		
				N=56	
			581.4	N=61	
72.0	Partially Weathered Rock (Biotite Gneiss) That Becomes Brown Sandy Micaceous Silt When Sampled		576.4	N=50/3"	
80.0	Hard Micaceous Silt Seam @ 80 ft.		571.4		

Page 2 of 6

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

BORING NO. B-45
 DATE DRILLED 8-22-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock (Biotite Gneiss) That Becomes Brown Very Sandy Micaceous Silt When Sampled		571.4	N=56	
			566.4	N=50/5"	
			561.4	N=50/3"	
			556.4	N=50/2"	
			551.4	N=50/1"	
			546.4	N=50/0"	
			541.4	N=50/0"	
110.1	Hard Very Light Gray Felsic Gneiss	NX 100	536.4	Carbide Bit Refusal at 110.1 ft. 110.1 ft - 120.0 ft: Slight Weathering. Close And Very Close Joints Low To Steep Dip.	62
117.0	Hard Light Bluish Gray Felsic Gneiss	67	531.4	Very Close Healed Joints - Low To Steep Dip (110.1 ft - 201.9 ft) Leached Above 164 ft.	33

Page 3 of 6

TEST BORING RECORD

BORING NO. B-45
 DATE DRILLED 8-22-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 15 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard Light Bluish Gray Felsic Gneiss		531.4		
120.5	Medium And Soft Olive Gray Mafic Gneiss	NX 67	526.4	120.0 ft - 129.5 ft: Moderate Severe To Very Severe Weathering. Very Close Joints - Low To Steep Dip.	33
129.5	Moderately Hard Light Olive Gray Becoming Hard Grayish Blue Mafic Gneiss	100	521.4	129.5 ft. - 153.5 ft.: Moderate Weathering (With Zones Of Moderately Severe Weathering. Close And Very Close Joints - Low To Steep Dip.	72
138.3	Moderately Hard White Schistose Felsic Gneiss	81	511.4	Moderately Severe And Severely Weathered Slickensided Zones, Brecciated Zones And Schistose Zones (138.3 ft - 144.5 ft.)	28
144.5	Moderately Hard Light Olive Gray *		506.4	Top Of Continuous Rock @ 145.7 ft	
145.7	Hard Grayish Blue Mafic Gneiss	96	501.4	1/4-inch, Steep Dip, Quartz Filled Joint (151.2 ft.) 153.5 - 191.5 ft.: Slight Weathering. Moderately Close To Close Joints - Low To Medium Dip - Clay Filled.	82
155.0	Hard Very Light Gray And Light Bluish Gray Felsic Gneiss	99	496.4	Curved Slickensided Surface - Medium Dip. Contact Is Offset About 1 inch (155.0 ft.).	
160.0			491.4	1/2-inch Medium To Steep Dip Quartz Vein With Brecciated Contacts (159.2 ft.) Quartz Vein Offset 1/2-inch In Mafic Gneiss Xenolith (159.7 ft.)	95

BORING AND SAMPLING MEETS ASTM D-1586 * Mafic Gneiss
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 34% ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

R.Q.D. ROCK QUALITY DESIGNATION

Page 4 of 6

TEST BORING RECORD

BORING NO. B-45
 DATE DRILLED 8-22-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	491.4 ELEV.	REMARKS	R.Q.D.
160.0	Hard Very Light Gray And Light Bluish Gray Felsic Gneiss	NX 99		Steep Dip Quartz Vein (162.1 ft to 163.3 ft.)	95
			486.4	Low Dip Schistose And Brecciated Zone (163.6 ft - 164.1 ft.)	
164.5	Hard Grayish Blue Mafic Gneiss	100			96
			481.4		
171.3	Hard And Very Hard Light Bluish Gray Felsic Gneiss		476.4	Schistose Zones: 171.3 ft - 1/4-inch, Medium Dip. 172.2 ft. - 2-inch, Medium Dip. 175.3 ft. - 3-inch, Medium Dip.	95
175.5	Hard Grayish Blue Mafic Gneiss	96			
177.1	Hard Very Light Gray And Light Bluish Gray Felsic Gneiss		471.4		
179.4	Hard Grayish Blue Mafic Gneiss				
182.9	Hard To Very Hard Light Bluish Gray Felsic Gneiss	94	466.4		86
			461.4	Steep Dip Quartz Vein (185.7 ft to 186.1 ft.)	
			456.4	L 191.5 to 201.9 ft: M Very Slight Weathering. M Moderately Close To Wide Joints - Clay And Epidote. M	100
200.0		100	451.4		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 34 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 5 of 6
TEST BORING RECORD

BORING NO. B-45
DATE DRILLED 8-22-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

Page 16 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	451.4 ELEV.	REMARKS	R.Q.D.
200.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100			100
201.9			446.4	Coring Terminated At 201.9 ft. Groundwater At 52.0 ft At Time Of Boring Groundwater At 53.0 ft After 24 Hours No Drilling Water Loss	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 34 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 6 of 6
TEST BORING RECORD

BORING NO. B-45
DATE DRILLED 8-22-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0			649.0		
			644.0		
		N=22		Felsic Gneiss Tan Gray Silty To Very Silty Fine To Medium Sand With Brown Sandy Silt Seams	
			639.0		
			634.0		
		N=48		Felsic Gneiss Tan Gray Silty To Very Silty Fine To Coarse Sand	
			629.0		
			624.0		
		N=50/6"		Felsic Gneiss Partially Weathered Rock That Becomes Tan Gray Fine Sandy Silt When Sampled	
			619.0		
			614.0		
40.0		N=26		Felsic Gneiss Tan Gray Fine To Medium Sandy Silt	
			609.0		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0			609.0		
			604.0		
		N=24		Felsic Gneiss Tan Gray Slightly Micaceous Fine To Medium Sandy Silt	
			599.0		
			594.0		
		N=33		Biotite Gneiss Tan Brown Micaceous Silt	
			589.0		
64.7			584.0	Top Of Continuous Rock at 64.7 ft. 64.7 ft - 81.5 ft: Slight Weathering. Very Close And Close Joints - Low To Medium Dip. Very Close Healed And Partly Leached Joints - Low To Steep Dip. Clay, Oxide And Some Mica Coatings.	
	Hard Pinkish Gray And Light Bluish Gray Felsic Gneiss	NX 93	579.0		77
		88	574.0		
80.0			569.0		66

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-45 AP
DATE DRILLED 9-5-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 3

TEST BORING RECORD

BORING NO. B-45AP
DATE DRILLED 9-5-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
80.0			569.0		
81.5	Hard Pinkish Gray And Light Bluish Gray Felsic Gneiss	NX 86		Mafic Gneiss Xenolite (81.0 ft)	66
	Moderately Hard And Hard Yellowish Gray And Pinkish Gray Felsic Gneiss		564.0	81.5 ft - 91.5 ft: Moderate And Moderately Severe Weathering. Very Close And Close Joints - Low To Medium Dip.	
		96	559.0	Very Close Healed Joints - Low To Steep Dip - Clay And Oxide Coatings - Partly Leached	65
91.5	Hard Light Bluish Gray Felsic Gneiss		554.0	91.5 ft - 102.3 ft: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip - Calcite Coatings.	
		100	549.0		100
			544.0		
102.3	Coring Terminated At 102.3 ft. Drilling Water Loss At 68.0 ft.				

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-45AP
DATE DRILLED 9-5-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 18 of 298

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
0			651.4		
			646.4		
			641.4	N=18 Felsic Schist Purple Pink Fine To Medium Very Sandy Silt	
			636.4		
			631.4	N=50/4" Felsic Gneiss Partially Weathered Rock That Becomes Orange Slightly Sandy Silt When Sampled	
			626.4		
			621.4	N=51 Felsic Schist Orange Slightly Sandy Silt	
			616.4		
40.0			611.4	N=69 Felsic Schist Brown Slightly Sandy Silt	

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 5

TEST BORING RECORD

BORING NO. B-45 BP
DATE DRILLED 9-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
40.0		611.4		
		606.4		
		601.4	N=41 Quartzite Dense Tan Slightly Silty Fine To Coarse Sand	
		596.4		
		591.4	N=73 No Recovery	
		586.4		
		581.4	N=45 No Recovery	
		576.4		
80.0	Partially Weathered Rock	571.4	N=50/4" Biotite Gneiss Partially Weathered Rock *	

BORING AND SAMPLING MEETS ASTM D-1586 * That Becomes Green Tan Silty Fine
CORE DRILLING MEETS ASTM D-2113 To Medium Sand When Sampled

Page 2 of 5

TEST BORING RECORD

BORING NO. B-45 BP
DATE DRILLED 9-13-73
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 19 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
80.0		571.4		
		566.4		
		561.4	N=50/3" Felsic Schist Partially Weathered Rock That Becomes Gray And Tan Slightly Sandy Silt	
		556.4		
		551.4	N=50/0 No Recovery	
		546.4	N=50/0 No Recovery	
		541.4	N=50/6" Felsic Gneiss Partially Weathered Rock That Becomes Gray And Tan Silty Fine To Medium Sand When Sampled	
		536.4	N=50/0 No Recovery	
117.5		531.4	Carbide Bit Refusal @ 117.5 ft.	
118.5	Hard Light Bluish Gray Felsic Gneiss		N 117.5 ft - 118.5 ft: Slightly Weathered.	21
120.0	Hard And Moderately Hard Pinkish Gray And Very Light Gray Felsic Gneiss		Very Close Healed Joints *	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

* Low To Steep Dip
Page 3 of 5

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION.

S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard And Moderately Hard Pinkish Gray And Very Light Gray Felsic Gneiss	NX 57	526.4	1/8 in. To 1/4 in. Quartz Vein, Steep Dip, Partly Leached (119.5 To 122.5 ft.)	21
		63	521.4	118.5 ft To 135 ft.: Moderately Weathered. Very Close Healed Joints, Low To Steep Dip, Partly Leached Close Joints, Low To Steep Dip.	22
135.0	Medium And Soft Grayish Olive Mafic Gneiss		516.4	135 ft To 150 ft.: Moderately Severe And Very Severly Weathered. Very Close Healed Joints, Low To Steep Dip, Partly Leached Close Joints - Low To Medium Dip.	
139.5	Medium And Soft Dark Yellowish Orange Felsic Gneiss With Zones Which Grade To Mafic Gneiss	64	511.4	Quartz Vein At Contact (139.5 ft.)	
145.0	Soft And Medium Grayish Olive Mafic Gneiss		506.4	Very Soft Layers Of Unknown Thickness (About 146. ft.)	5
150.0	Moderately Hard Greenish Gray Mafic Gneiss	33 100	501.4	150 ft To 158 ft.: Moderately Weathered. Very Close Healed Joints, Low To Steep Dip, Partly Leached Close Joints, Low To Steep Dip.	0 45
158.0	Hard Medium Bluish Gray Mafic Gneiss	100 100	496.4 491.4	158 ft To 160.3 ft.: Slight To Moderate Weathering. Very Close Healed Joints, Low To Steep Dip, Partly Leached Close Joints - Low To Medium Dip.	41 80

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 4 of 5
TEST BORING RECORD

BORING NO. B-458P

DATE DRILLED 9-13-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 20 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
160.0	Hard Medium Bluish Gray Mafic Gneiss	NX		Top Of Continuous Rock 160.3 ft.	
160.3	Hard Light Bluish Gray Felsic Gneiss	100	486.4	1" Thick Gray Green Fine Grained Partly Brecciated Zone Of Mafic Gneiss (163.6 ft.)	88
			481.4	160.3 ft - 191.0 ft: Slightly Weathered. Very Close Healed Joints - Low To Steep Dip, Partly Leached Above 164.4 ft.	
		90	476.4	1" Thick Quartz Vein, Steep Dip (167.1 ft.)	90
176.7	Hard Greenish Gray And Medium Dark Gray Fine Grained Mafic Gneiss		471.4	Steeply Dipping Schistose Zones: 176.7 ft. 178.0 ft. 179.0 - 180.0 ft. 181.0 - 183.5 ft.	
		100	466.4	Brecciated Zone (182.5 ft.)	94
			461.4	Abundant, Irregularly Shaped Quartz Stringers (184 - 191 ft.)	
		75		Well Healed Brecciated (?) Zone (189.5 - 190.2 ft.)	75
190.0	Hard Very Light Gray Felsic Gneiss			Medium Dip Calcite Vein (190.3 ft.)	
191.0	Coring Terminated At 191.0 ft.			Trace Of Pegmatite (191.0 ft.)	
	Drilling Water Loss At 82.0 ft.				
200.0					

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 5 of 5
TEST BORING RECORD

BORING NO. B-458P

DATE DRILLED 9-13-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 20 of 298

DEPTH PT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.O.Q.
0			652.1		
			647.1		
			642.1		
			637.1		
			632.1		
			627.1		
			622.1	N=31 Hard Tan Orange Fine To Medium Sandy Silt	
			617.1		
40.0			612.1	N=36 Hard Orange Tan Fine To Coarse Sandy Silt	

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

L = LOW DIP 0°-30°

ROCK CORE RECOVERY WATER TABLE, 1 HR.

M = MED. DIP 30°-60°

STANDARD PENETRATION LOSS OF DRILLING WATER

S = STEEP DIP 60°-90°

R.O.Q. ROCK QUALITY DESIGNATION

Page 1 of 6
TEST BORING RECORD

BORING NO. B-45CP

DATE DRILLED 9-18-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 21 of 298

DEPTH PT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.O.Q.
40.0			612.1		
			607.1		
			602.1	N=45 Hard Tan Orange Slightly Micaceous Fine Sandy Silt	
			597.1		
			592.1	N=45 Hard Tan Orange Micaceous Fine Sandy Silt	
			587.1		
			582.1	N=39 Hard Orange Tan Micaceous Fine Sandy Silt	
			577.1		
80.0			572.1	N=47 Hard Multi-Color Micaceous Fine Sandy Silt	

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

L = LOW DIP 0°-30°

ROCK CORE RECOVERY WATER TABLE, 1 HR.

M = MED. DIP 30°-60°

STANDARD PENETRATION LOSS OF DRILLING WATER

S = STEEP DIP 60°-90°

R.O.Q. ROCK QUALITY DESIGNATION

Page 2 of 6
TEST BORING RECORD

BORING NO. B-45CP

DATE DRILLED 9-18-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0			572.1		
			567.1		
			562.1	N=66 Hard Tan Brown Micaceous Fine Sandy Silt	
			557.1		
98.8	Partially Weathered Rock		552.1	N=50/4" Partially Weathered Rock That Becomes Tan Brown Fine Sandy Silt When Sampled	
			547.1		
107.9	Very Soft Yellowish Orange Mafic Gneiss	NX 60	542.1	N=50/6" Started Coring Before Refusal Was Reached	0
112.0	Medium To Very Soft Yellowish Gray Felsic Gneiss	NX 74	537.1	107.9 ft - 133.4 ft: Complete To Moderately Severe Weathering. Very Close Joints - Low To Steep Dip. Very Close Healed And Occasionally Leached Joints - Low To Steep Dip.	0
118.0	Soft To Very Soft Yellowish Orange Mafic Gneiss	NX 88	532.1		0

BORING AND SAMPLING MEETS ASTM D-1556
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 6
TEST BORING RECORD

BORING NO. B-45CP

DATE DRILLED 9-18-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 22 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Soft To Very Soft Yellowish Orange Mafic Gneiss	NX 88			0
		NX 34	527.1		0
128.4	Soft And Moderately Hard Very Light Gray Felsic Gneiss	NX 82	522.1	133.4 ft - 138.8 ft: Moderate To Slight Weathering. Close Joints - Low To Medium Dip. Very Close Healed And Leached Joints - Low To Steep Dip.	0
135.3	Moderately Hard To Hard Light Gray To Medium Light Gray Mafic Gneiss	NX 100	517.1	Leached Quartz Vein At Contact (135.3 ft.)	81
		NX 89	512.1	Top Of Continuous Rock At 138.8 ft.	83
		NX 100	507.1	Anastomosing Quartz Stringers (141.7 to 142.1 ft.) 138.8 ft - 220.1 ft: Very Slight Weathering To Fresh. Very Close Healed And Calcite Filled Joints - Low To Steep Dip.	100
		NX 100	502.1	Medium Dip Quartz, Calcite, Chlorite Stringers (148.8 ft.)	
152.4	Hard Light Bluish Gray Felsic Gneiss	NX 100	497.1	1/8 Inch Steep Dip Quartz Vein (156.0 ft.) Medium Dip Schistose Zones: 157.6 ft. 158.1 ft.	100
160.0		NX 100	492.1		100

BORING AND SAMPLING MEETS ASTM D-1556
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Soft To Very Soft Yellowish Orange Mafic Gneiss	NX 88			0
		NX 34	527.1		0
128.4	Soft And Moderately Hard Very Light Gray Felsic Gneiss	NX 82	522.1	133.4 ft - 138.8 ft: Moderate To Slight Weathering. Close Joints - Low To Medium Dip. Very Close Healed And Leached Joints - Low To Steep Dip.	0
135.3	Moderately Hard To Hard Light Gray To Medium Light Gray Mafic Gneiss	NX 100	517.1	Leached Quartz Vein At Contact (135.3 ft.)	81
		NX 89	512.1	Top Of Continuous Rock At 138.8 ft.	83
		NX 100	507.1	Anastomosing Quartz Stringers (141.7 to 142.1 ft.) 138.8 ft - 220.1 ft: Very Slight Weathering To Fresh. Very Close Healed And Calcite Filled Joints - Low To Steep Dip.	100
		NX 100	502.1	Medium Dip Quartz, Calcite, Chlorite Stringers (148.8 ft.)	
152.4	Hard Light Bluish Gray Felsic Gneiss	NX 100	497.1	1/8 Inch Steep Dip Quartz Vein (156.0 ft.) Medium Dip Schistose Zones: 157.6 ft. 158.1 ft.	100
160.0		NX 100	492.1		100

Page 4 of 6
TEST BORING RECORD

BORING NO. B-45CP

DATE DRILLED 9-18-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.	
160.0	Hard Light Bluish Gray Felsic Gneiss	NX 100	487.1	1 inch Steep Dip Quartz Vein (160.2 to 161.8 ft.)	100	
						Thin Steep Dip Schistose Zone With Calcite (162.7 to 163.5 ft.)
169.5	Hard Medium Bluish Gray Mafic Gneiss	BQ 100	482.1		100	
				477.1		
				472.1		
				467.1		L (Moderate Weathering)
	Hard To Very Hard Light Bluish Gray Felsic Gneiss	BQ 100	462.1	½ Inch Steep Dip Quartz Vein (187.8 ft.)	99	
192.2				457.1		
200.0		BQ 100	452.1		100	

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
200.0	Hard To Very Hard Medium Bluish Gray Mafic Gneiss	BQ 100	447.1	M Slickensided Surface - Medium Dip Calcite Coated (201.2 ft.)	100
				442.1	
213.2	Very Hard Light Bluish Gray Felsic Gneiss	91	437.1		91
				432.1	
220.1	Coring Terminated @ 220.1 ft No Drilling Water Loss	BQ 73		Boring Terminated in Steep Dip Quartz, Calcite Vein (219.3 to 220.1 ft.)	73

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 5 of 6
TEST BORING RECORD

BORING NO. B-45CP
DATE DRILLED 9-18-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 23 of 298

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 6 of 6
TEST BORING RECORD

BORING NO. B-45CP
DATE DRILLED 9-18-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	649.3 ELEV.	REMARKS	N = 00
0	Very Stiff Reddish Brown To Purple And Tan Fine To Coarse Very Sandy Slightly Micaceous Silt				
			644.3	N=18	
			639.3	N=24	
12.0	Dense Purple And Brown Silty Slightly Micaceous Fine To Coarse Sand Becoming Very Silty With Depth		634.3	N=39	
			629.3	N=44	
23.0	Very Dense Tannish Gray Silty Slightly Micaceous Fine To Coarse Sand		624.3	N=84/11"	
26.0	Very Stiff Light Tannish Gray Fine To Medium Sandy Micaceous Silt		619.3	N=25	
			614.3	N=23	
40.0			609.3	N=23	

Page 1 of 5

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-3119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

BORING NO. B-45D
 DATE DRILLED 12-12-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 24 of 296

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	609.3 ELEV.	REMARKS	N = 00
40.0	Very Stiff Light Tannish Gray Fine To Medium Sandy Micaceous Silt				
43.0	Firm Light Tannish Gray Very Silty Slightly Micaceous Fine To Medium Sand		604.3	N=28	
47.0	Very Stiff To Hard Light Tannish Gray Fine To Coarse Sandy Slightly Micaceous Silt		599.3	N=29	
			594.3	N=35	
57.0	Hard Dark Olive Gray Very Micaceous Silt		589.3	N=45	
			584.3	N=46	
69.1	Hard And Moderately Hard Very Light Gray And Very Light Tannish Gray Felsic Gneiss With Some Zones Of Medium Hardness	NQ 96 NQ 75 NQ 96 NQ 76	579.3	N=50/1" No Recovery Carbide Bit Refusal At 69.1 ft. Cored With NQ Wire Line - 69.1 ft to 200.0 ft. 69.1 ft to 110.4 ft.: Slight And Moderate Weathering With Some Zones Of Moderately Severe Weathering. Close To Moderately Close Joints - Low To Steep Dip.	75 75 64 58
80.0			569.3		

Page 2 of 5

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-3119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

BORING NO. B-45D
 DATE DRILLED 12-12-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	ROD
80.0	Hard And Moderately Hard Very Light Gray And Very Light Tannish Gray Felsic Gneiss With Some Zones Of Medium Hardness	NQ 76		Complete Weathering (89.5 ft to 93.5 ft and 101.6 ft to 102.7 ft.) Very Close Healed Joints - Low To Steep Dip. Close To Moderately Close Leached Joints - Generally Steep Dip To Vertical.	58
			564.3		70
		96			
89.5	Core Loss (Very Soft Felsic Gneiss)	20	559.3		0
93.5	Hard And Moderately Hard Very Light Gray Felsic Gneiss	100	554.3		80
		100			100
		100	549.3	Very Steep Dipping To Vertical Leached Quartz Filled Schistose Zone (100.4 ft to 102.1 ft.)	100
101.6	Very Soft Light Tannish Gray Felsic *	100			48
102.7	Hard And Moderately Hard Very Light Gray And Very Light Tannish Gray Felsic Gneiss	100	544.3	Top Of Continuous Rock At 103.0 ft. Steep Dipping Schistose Zone (109.7 ft to 110.4 ft.)	100
		96		110.4 ft to 126.3 ft.: Slight Weathering. Very Close Healed Joints - Low To Steep Joint Planes are Moderately To Moderately Severely Weathered And Detach Without Difficulty - Minor Leaching.	92
		100	539.3		100
110.4	Hard Very Light Gray Felsic Gneiss	100			100
		100	534.3		100
		100	529.3		100

BORING AND SAMPLING MEETS ASTM D-1888 * Gneiss
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L - LOW DIP 0-30°
M - MED. DIP 30-60°
S - STEEP DIP 60-90°

Page 3 of 5
TEST BORING RECORD

BORING NO. B-45D
DATE DRILLED 12-12-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	ROD
120.0	Hard Very Light Gray Felsic Gneiss	100		126.3 ft to 135.1 ft.: Very Severe To Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Healed And Leached Joints - Low To Steep Dip. 4" Quartz Vein (130.2 ft.) 135.1 ft. to 152.1 ft.: Slight To Moderate Weathering. Close To Moderately Close Joints - Low To Steep Dip. Very Close Healed And Leached Joints - Low To Steep Dip. Foliation Generally Medium To Steep Dipping. Moderately Severe Weathered Zone (149.1 ft to 149.8 ft.)	100
			94		524.3
126.3	Soft To Hard Light Olive Gray And Medium Light Gray Mafic Gneiss	76			47
		44	519.3		12
		100			80
		92	514.3		60
135.1	Hard Very Light Tannish Gray Felsic Gneiss	94			94
		100	509.3		100
		100			
148.4	Very Hard White And Tan Quartzite				
149.1	Medium Hard Tannish Gray Schistose *				
149.8	Very Hard White And Tan Quartzite	96	499.3		84
151.2	Hard Very Light Tannish Gray Schistose				
152.1	Very Hard Very Light Gray Felsic Gneiss				
		100	494.3	Felsic Schist At Quartzite Contacts.	100
		100	489.3		100

BORING AND SAMPLING MEETS ASTM D-1888 * Sericitic Felsic Gneiss
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L - LOW DIP 0-30°
M - MED. DIP 30-60°
S - STEEP DIP 60-90°

Page 4 of 5
TEST BORING RECORD

BORING NO. B-45D
DATE DRILLED 12-12-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R Q D
160.0	Very Hard Very Light Gray Felsic Gneiss		489.3		100
			484.3	Calcite Rich Zone (165.7 ft.)	100
169.2	Hard Medium Light Gray Mafic Gneiss		479.3	169.2 ft. to 200.0 ft. Very Slightly Weathered To Fresh With Some Slightly Weathered Zones. Very Close Healed Joints - Coated With Calcite, Quartz And Chlorite - Low To Steep Dip.	100
176.1	Hard Very Light Gray Felsic Gneiss		474.3	Traces of Pyrite Throughout Medium Dip Offset Displacing Joints About 1/4 Inch (171.7 ft.)	100
178.4	Hard Medium Light Gray Mafic Gneiss		469.3		100
180.1	Hard Light Greenish Gray Felsic Gneiss		464.3		100
182.5	Hard Medium Light Gray And Greenish Gray Mafic Gneiss		459.3		100
185.4	Very Hard Very Light Gray Felsic Gneiss		454.3		100
200.0			449.3		100

BORING AND SAMPLING MEETS ASTM D-1588 *Coring Terminated At 200.0 ft.
CORE DRILLING MEETS ASTM D-3119 Groundwater At 49.0 ft After 24 Hours
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER Drilling Water Loss
FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT. At 88.0 ft.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 5 of 5
TEST BORING RECORD
B-45D

BORING NO. B-45D
DATE DRILLED 12-12-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R Q D
0	Rotary Wash Drilled With Carbide Fishtail To 70.0 ft.		649.3	No Soil Samples Obtained	
			644.3		
			639.3		
			634.3		
			629.3		
			624.3		
			619.3		
			614.3		
40.0			609.3		

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-3119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD
B-45D1

BORING NO. B-45D1
DATE DRILLED 12-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO

		609.3			
DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 70.0 ft.				
			604.3		
			599.3		
			594.3		
			589.3		
			584.3		
			579.3	NW Casing to 70.0 ft. Cored With NQ Wire Line 70.0 ft. to 100.0 ft.	57
70.0	Medium To Moderately Hard Very Light Gray Felsic Gneiss With Some Soft And Hard Zones	NQ 100		70.0 ft. to 84.1 ft.: Moderate To Moderately Severe Weathering. Close Joints - Low To Steep Dip.	76
		NQ 84	574.3		
		NQ 100		Severely Weathered Zones (72.5 ft to 72.7 ft, 77.7 ft to 78.1 ft and 80.6 ft to 81.4 ft.)	82
			569.3		

Page 2 of 3

BORING AND SAMPLING MEETS ASTM D-1584
CORE DRILLING MEETS ASTM D-3112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-45D1
DATE DRILLED 12-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 27 of 298

		569.3			
DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Medium To Moderately Hard Very Light Gray Felsic Gneiss With Some Soft And Hard Zones	NQ 80		Very Close Poorly Healed Joints - Low To Steep Dip. Occasionally Leached.	36
		NQ 100	564.3		80
84.1	Hard To Very Hard Very Light Gray Felsic Gneiss	NQ 100		84.1 ft to 88.9 ft. Slightly Weathered. Very Close Healed Joints - Low To Steep Dip. Complete Water Loss	100
		NQ 92	559.3		80
88.9	Medium To Moderately Hard Very Light Gray And Light Tannish Gray Felsic Gneiss With Soft Zones And Some Hard Zones	NQ 56		88.9 ft to 100.0 ft.: Severe To Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Poorly Healed Joints - Low To Steep Dip. Occasionally Slightly Leached.	0
		NQ 95	554.3		48
		NQ 96			52
		NQ 100	549.3		75
100.0	Coring Terminated At 100.0 ft. Groundwater At 50 ft After 24 Hours Drilling Water Loss At 88.0 ft.				

Page 3 of 3

BORING AND SAMPLING MEETS ASTM D-1584
CORE DRILLING MEETS ASTM D-3112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-45D1
DATE DRILLED 12-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME DIA. MIN.	ELEV.	REMARKS	R.Q.D.
0	Firm Purple And Tan To Orange And Tan Very Silty Slightly Micaceous Fine To Coarse Sand		650.9		
			645.9	N=15	
			640.9	N=17	
			635.9	N=20	
18.0	Dense Orangish Gray Very Silty Slightly Micaceous Fine To Medium Sand		630.9	N=39	
23.0	Firm Orange And Tannish Gray Very Silty Slightly Micaceous Fine To Coarse Sand		625.9	N=26	
28.0	Hard Grayish Brown Fine To Medium Very Sandy Slightly Micaceous Silt		620.9	N=32	
32.0	Firm Grayish Tan Very Silty Slightly Micaceous Fine To Coarse Sand		615.9	N=23	
37.0	Very Stiff To Hard Gray And Brownish Gray Fine To Medium And Fine To Coarse Very Sandy Silt		610.9	N=26	

BORING AND SAMPLING METHODS ASTM D-1586
CORE DRILLING METHODS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N. STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 7
TEST BORING RECORD

BORING NO. B-45E
DATE DRILLED 1-14-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME DIA. MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Very Stiff To Hard Gray And Brownish Gray Fine To Medium And Fine To Coarse Very Sandy Silt		610.9		
			605.9	N=32	
			600.9	N=30	
52.0	Dense Grayish Brown To Tan And Gray Very Silty Micaceous To Slightly Micaceous Fine To Coarse Sand		595.9	N=37	
			590.9	N=41	
64.0	Very Dense Tannish Gray Silty Slightly Micaceous Fine To Coarse Sand With Small Rock Fragments		585.9	N=75	
68.0	Dense Gray Very Silty Micaceous Fine To Coarse Sand		580.9	N=48	
72.0	Hard Olive Gray Slightly Fine Sandy Very Micaceous Silt		575.9	N=35	
79.0	Partially Weathered Rock That Becomes		570.9	N=50/6"	

BORING AND SAMPLING METHODS ASTM D-1586
CORE DRILLING METHODS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N. STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 7
TEST BORING RECORD

BORING NO. B-45E
DATE DRILLED 1-14-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock That Becomes Orange And Olive Gray Fine Sandy Very Micaceous Silt					
84.1	Very Soft To Medium Tan And Very Light Gray Felsic Schist	NQ 46		565.9	N=50/1"	0
		NQ 88		560.9	NQ Wire Line - 84.1 ft to 250.1 ft. Complete Weathering (84.1 ft to 86.3 ft) 86.3 ft to 109.4 ft.: Moderately Severe To Very Severe Weathering. Very Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip. Foliation Near Vertical	0
		NQ 60		555.9	1" Quartzite Lens (95.3 ft.)	0
		NQ 16		550.9	109.4 ft to 113.6 ft.: Slightly Weathered. Very Close Healed Joints - Low To Steep Dip.	0
101.0	Moderately Hard To Very Hard Very Light Tannish Gray To White Quartzite With Soil Zones	NQ 20			Some Leached Quartz Veins Throughout.	0
		NQ 12		545.9	Quartzite Rich Zone (111.3 ft. to 112.5 ft.)	0
		NQ 16			113.6 ft. to 153.3 ft.: Moderately Weathered. Moderately Close To Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	0
109.2	Hard And Moderately Hard Medium Light Gray Mafic Gneiss With Very Hard White Quartzite Interlayers	NQ 92		540.9		80
		NQ 88		535.9	2 Inch Quartz Vein (114.2 ft.)	88
116.5	Very Hard Very Light Gray Quartzite	NQ 76			Moderately Severe Weathering (113.6 ft to 114.2 ft, 119.3 ft to 123.0 ft And 147.9 ft to 148.4 ft.)	56
117.8	Hard Medium Light Gray Mafic Gneiss	NQ 62				46
120.0				530.9		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard Medium Light Gray Mafic Gneiss	NQ 62				46
121.5	Medium To Moderately Hard Very Light Gray Felsic Gneiss	NQ 68		525.9	Slightly Weathered (149.2 ft to 150.7 ft.)	40
		NQ 96				40
126.0	Hard Very Light Gray Felsic Gneiss	NQ 88		520.9		48
		NQ 100				72
		NQ 100		515.9	Top Of Continuous Rock At 129.0 ft.	48
		NQ 92			NW Casing to 130.0 ft.	92
		NQ 100		510.9		100
		NQ 68				48
		NQ 100		505.9		92
147.4	Medium To Moderately Hard Light Olive Gray Mafic Gneiss Becoming Moderately Hard To Hard Medium Light Gray Mafic Gneiss	NQ 90		500.9		58
		NQ 86		495.9	M. Joints Terminate Against Apparent Offset (155.1 ft.)	66
157.2	Very Hard Light Bluish Gray Felsic Gneiss	NQ 100				94
158.7	Hard Medium Light Gray Mafic Gneiss			490.9		
159.5						
160.0						

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/2 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 54 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 7
TEST BORING RECORD

BORING NO. B-45E
 DATE DRILLED 1-14-74
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/2 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 54 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 4 of 7
TEST BORING RECORD

BORING NO. B-45E
 DATE DRILLED 1-14-74
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
160.0	Hard Light Gray Felsic Gneiss (Gradational Contact Zone)	NQ 100	490.9	153.3 ft to 250.1 ft. Slight To Very Slight Weathering. Very Close Healed And Filled Joints With Calcite And Quartz. Minor Chlorite and epidote - Very Few Leached - Low To Steep Dip.	100
163.8	Hard Very Light Greenish Gray Sericitic Felsic Gneiss	NQ 92	485.9	1/2 Inch Schistose Zone - Low Dip (167.1 ft.) Moderate Weathering (165.6 ft to 167.3 ft And 168.6 ft to 169.7 ft.)	100
169.7	Very Hard Light Bluish Gray Felsic Gneiss	NQ 90	480.9		98
171.5	Hard Very Light Greenish Gray Felsic Gneiss (Borderline Mafic)	NQ 100	475.9		100
173.7	Very Hard Light Bluish Gray Felsic Gneiss	NQ 100	470.9		100
		NQ 100	465.9	1/4 Inch Very Steeply Dipping Quartz Vein (182.0 ft to 183.5 ft.) Traces Of Chalcopyrite And Nematite In 1/4 Inch Steep Dip Quartz Vein (186.5 to 187.0 ft.)	100
		NQ 100	460.9		100
192.7	Hard Greenish Gray To Medium Light Gray Mafic Gneiss	NQ 100	455.9	Schistose Zone At Contact (191.7 ft.) Calcite And Muscovite In Joint Filling (192.7 ft - 194.0 ft.)	100
194.0	Very Hard Light Bluish Gray Felsic Gneiss	NQ 100	450.9		100

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 5 of 7
TEST BORING RECORD

BORING NO. B-45E
DATE DRILLED 1-14-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
200.0	Very Hard Light Bluish Gray Felsic Gneiss	NQ 100	450.9		100
206.1	Hard Medium Light Gray Mafic Gneiss	NQ 100	440.9	Medium Dip Brecciated Zone (205.5 ft to 205.9 ft.)	98
214.0	Very Hard Light Bluish Gray Felsic Gneiss	NQ 100	435.9		100
		NQ 100	430.9		100
		NQ 100	425.9		100
		NQ 100	420.9		100
		NQ 100	415.9	Steep Dip Brecciated Zone With Quartzite(?) Fragments In Actinolite, Chlorite, Quartz And Calcite (230.0 ft - 230.8 ft.)	100
236.7	Hard Medium Light Gray Mafic Gneiss	NQ 100	410.9		100

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 6 of 7
TEST BORING RECORD

BORING NO. B-45E
DATE DRILLED 1-14-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R Q D
		% SIZE MIN.	TIME ELEV.		
100.0	Hard Medium Light Gray Mafic Gneiss	NQ 100	410.9		100
243.1	Very Hard Light Bluish Gray Felsic Gneiss	NQ 100	405.9		100
250.1	Coring Terminated At 250.1 ft. Drilling Water Losses At 100.0 ft., 114.0 ft and 121.0 ft.	NQ 100	400.9		100

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3715
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 7 of 7
TEST BORING RECORD

BORING NO. B-45E
DATE DRILLED 1-14-74
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

Page 31 of 298

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R Q D
		% SIZE MIN.	TIME ELEV.		
0	Dense Tan Red Micaceous Silty Fine To Coarse Sand And Quartz Fragments		651.0		
			646.0	N=37	
7.0	Firm Tan Red Micaceous Silty Fine To Coarse Sand And Quartz Rock Fragments		641.0	N=18	
			636.0	N=21	
19.0	Dense Tan Red Micaceous Silty Fine To Coarse Sand And Quartz Fragments		631.0	N=33	No Recovery
22.0	Very Stiff Gray Tan Micaceous Fine To Medium Sandy Silt		626.0	N=29	
28.0	Hard Black And Brown Micaceous Fine To Coarse Sandy Silt		621.0	N=70	
31.0	Hard Green Brown Fine Sandy Very Micaceous Silt		616.0	N=34	
38.0	Very Dense Black And Tan Very Silty Fine To Coarse Sand With Gravel		611.0	N=73	
40.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3715
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 5
TEST BORING RECORD

BORING NO. B-45F
DATE DRILLED 12-27-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	N S.D.
40.0	Very Dense Black And Tan Very Silty Fine To Coarse Sand With Gravel				
44.0	Hard Brown Tan To Tan Micaceous Fine To Coarse Very Sandy Silt		606.0	N=45	
			601.0	N=51	
53.0	Hard Tan Slightly Micaceous Fine To Coarse Sandy Silt		596.0	N=40	
56.0	Hard Light Brown Fine Sandy Micaceous Silt		591.0	N=60	
63.0	Hard Tan To Gray Tan Micaceous Fine To Coarse Very Sandy Silt		586.0	N=43	
			581.0	N=56	
			576.0	N=65	
77.0	Partially Weathered Rock That Becomes Green Brown Fine Sandy Very Micaceous Silt When Sampled		571.0	N=50/5"	
80.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 5
TEST BORING RECORD

BORING NO. B-45F

DATE DRILLED 12-27-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	N S.D.
80.0	Partially Weathered Rock That Becomes Green Brown Fine Sandy Very Micaceous Silt When Sampled		566.0	N=50/3"	
86.5	Very Soft Olive-Gray To Tannish Olive- Gray Mafic Gneiss (Soil - Hard Fine Sandy Very Micaceous Silt)	NQ 0	561.0	NQ Wire Line - 86.5 ft to 200.0 ft. 86.5 ft to 107.6 ft.: Complete Weathering. Remnants of Quartz Veins Throughout.	0
		NQ 0	556.0	N=50/5" 107.6 ft. to 110.2 ft.: Moderately Weathered. Close Severely Weathered Joints - Low To Medium Dip. Dip Of Foliation Varies - Low To Steep Dip.	0
		64	551.0	Steeply Dipping Felsic Gneiss Zone With Some Quartzite: Slight Brecciation Along Contact With Mafic Gneiss (111.4 ft to 111.9 ft.)	0
		100	546.0	1 Inch Thick Steeply Dipping Leached Brecciated (?) Zone With Chlorite, Actinolite And Quartz (113.6 - 114.8 ft.)	0
103.0	Very Soft Grayish-Tan Felsic Gneiss (Soil - Very Dense Very Silty Fine To Coarse Sand With Quartz Pebbles)	100	541.0	Complete Water Loss	60
107.6	Moderately Hard To Hard Very Light Tannish Gray Quartzitic Felsic Gneiss	80	536.0	NW Casing to 111.5 ft. Moderately Weathered (110.2 ft. to 114.7 ft.) Very Slightly Weathered (114.7 ft to 116.5 ft.) Moderately Severe To Severely Weathered (116.5 ft to 120.6 ft.)	88
110.2	Moderately Hard To Hard Olive-Gray To Medium Light Gray Mafic Gneiss	100	531.0	110.2 ft to 120.6 ft.: Close Joints - Low To Steep Dip. Very Close Heated Joints - Low To Steep Dip.	88
116.7	Medium To Soft Olive Gray To Tannish Brown Mafic Gneiss	88			44
120.0		88		Scattered Quartz Stringers.	32

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 5
TEST BORING RECORD

BORING NO. B-45F

DATE DRILLED 12-27-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.O.Q.
120.0				531.0		
120.6	MEDIUM TO SOFT OLIVE GRAY TO MODERATELY HARD VERY LIGHT GRAY SERICITIC, QUARTZITIC FELSIC GNEISS	NQ 88			Top Of Continuous Rock At 120.6 ft	32
123.6	Very Hard Very Light Gray Quartzite With Interlayered Moderately Hard Tan And Light Gray Felsic Schist	92		528.0	Steeply Dipping Brecciated Zone At Mafic/Felsic Contact - 1 to 2 Inches Thick (120.6 ft.)	76
127.1	Moderately Hard Very Light Tannish Gray Sericitic, Quartzitic Felsic Gneiss	88		521.0	120.6 ft. to 149.2 ft.: Moderate Weathering. Moderately Close To Close Joints - Low To Steep Dip. Very Close Healed And Quartz Filled Joints - Low To Steep Dip.	80
134.8	Very Hard Very Light Gray Quartzite	96		516.0		96
136.1	Moderately Hard To Hard Very Light	96				64
137.2	Hard Very Light Tannish Gray Felsic Gneiss	100		511.0		90
139.7	Very Hard Very Light Gray Quartzite	100				100
140.1	Moderately Hard Light Olive Gray Hard Medium Light Gray Mafic Gneiss	100		506.0	Slickensided Surfaces: Low Dip, 143.2 ft. Medium Dip, 143.5 ft. Medium Dip, 144.2 ft. Medium Dip, 146.1 ft.	100
146.8	Hard To Very Hard Very Light Tannish Gray To Very Light Gray Felsic Gneiss	84		501.0	149.2 ft to 156.0 ft.: Slightly Weathered. Very Close Healed And Filled Joints - Low To Steep Dip - Many Leached.	74
		100		496.0		100
		100		491.0	156.0 ft to 200.0 ft.: Slight To Very Slight Weathering.	100

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.O.Q.
160.0	Very Hard Very Light Gray Felsic Gneiss	NQ 100		486.0	Occasional Low To Steep Dipping Thin Schistose Zones (156.0 ft to 169.7 ft.)	100
167.0	Hard Medium Light Gray Mafic Gneiss			481.0	Thin Calcite Filled Steeply Dipping Schistose Zone Cross-Cutting A Quartz, Calcite Brecciated Chlorite Zone (163.5 ft.)	100
167.6	Hard To Very Hard Very Light Gray Felsic Gneiss	100		476.0	Zone Of Mafic Gneiss (165.9 ft to 166.2 ft.) Very Close Healed Calcite And Chlorite Filled Joints - Low To Steep Dip.	100
177.9	Hard Medium Light Gray Mafic Gneiss	100		471.0	Numerous Quartz Rich Zones And Quartz Stringers (170.2 ft to 176.0 ft.)	100
178.7	Hard To Very Hard Very Light Gray Felsic Gneiss	100		466.0	Quartz Veins: Steep Dip - 199.5 ft. Low Dip - 177.4 ft. Low Dip - 183.1 ft.	96
186.4	Hard Light Olive Gray Mafic Gneiss	100		461.0	Quartz, Calcite And Chlorite At Steep Contact With Mafic Gneiss (177.9 ft.)	100
187.6	Very Hard Very Light Gray Felsic Gneiss	100		456.0	Severe Weathering (186.3 ft. to 186.4 ft.)	100
193.3	Hard Medium Light Gray Mafic Gneiss	100		451.0	Very Steep Dipping To Vertical Schistose Zone With Quartz, Calcite And Chlorite (178.7 ft. to 180.4 ft., 181.4 ft to 182.5 ft.)	100
194.9	Hard Very Light Gray Felsic Gneiss	100			Schistose Zone Of Chlorite And Quartz - Low Dip. (192.1 ft to 192.3 ft.)	100
195.7	Hard Medium Light Gray Mafic Gneiss	100				100
196.4	Very Hard Very Light Gray Felsic Gneiss	100				100
200.0				451.0		100

BORING AND SAMPLING MADE WITH D-1100 * Tannish Brown Mafic Gneiss
 CORE DRILLING MEETS ASTM D-5118 Tannish Gray Sericitic, Quartzitic
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER Felsic Gneiss
 FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-45F
 DATE DRILLED 12-27-73
 JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 84 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.Q. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MADE WITH D-1100 * Coring Terminated At 200.0 ft.
 CORE DRILLING MEETS ASTM D-5118 Drilling Water Loss At 109.0 ft.
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-45E
 DATE DRILLED 12-27-73
 JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 84 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Stiff Tan Purple Micaceous Fine To Coarse Sandy Silt		649.3		
			644.3	N=13	
8.0	Very Stiff Tan Purple Micaceous Fine To Coarse Very Sandy Silt		639.3	N=25	
12.0	Dense Black Brown Micaceous Very Silty Fine To Coarse Sand		634.3	N=37	
18.0	Dense Tan Pink Micaceous Very Silty Fine To Coarse Sand		629.3	N=36	
24.0	Hard Tan Red Micaceous Fine To Medium Very Sandy Silt		624.3	N=30	
27.0	Firm Gray Pink Micaceous Very Silty Fine To Coarse Sand		619.3	N=28	
			614.3	N=27	
38.0	Hard Pink Brown Fine Sandy Micaceous Silt		609.3	N=68	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

Page 1 of 5
TEST BORING RECORD

BORING NO. B-45G
DATE DRILLED 2-6-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Hard Pink Brown Fine Sandy Micaceous Silt		609.3		
42.0	Dense Gray Tan To Gray Micaceous Silty Fine To Coarse Sand		604.3	N=46	
			599.3	N=45	
			594.3	N=50	
			589.3	N=49	
			584.3	N=42	
			579.3	N=50/6"	
70.0	Partially Weathered Rock That Becomes Tan Gray Micaceous Silty Fine To Coarse Sand When Sampled		574.3	N=50/6"	
77.5	Very Soft Very Light Gray Felsic Gneiss (Partially Weathered Rock)	NQ 92	569.3	Carbide Bit Refusal At 77.5 ft.	
80.0					0

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 5
TEST BORING RECORD

BORING NO. B-45G
DATE DRILLED 2-6-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE TIME MIN.	ELEV. 569.3	REMARKS	R.Q.D.
10.0	Very Soft Very Light Gray Felsic Gneiss (Partially Weathered Rock)	NQ		77.5 ft to 102.4 ft.: Severe Weathering. (Partially Weathering Rock: Very Light Gray Silty Fine To Coarse Sand) Close To Very Close Healed Joints - Medium To Steep Dip. Very Close Joints - Low To Steep Dip.	0
		96			0
		92	564.3		0
		12			0
		20	559.3		0
		40			0
		68	554.3		0
		72			0
		96	549.3		0
		100			0
02.4	Very Hard White Quartz And Soil	3	544.3	102.4 ft to 115.0 ft.: Moderate To Moderately Severe Weathering. Close To Very Close Healed Joints - Medium To Steep Dip. 96% Loss (102.4 ft - 107.6 ft.)	0
		0			0
07.6	Medium Very Light Gray Felsic Gneiss	56	539.3	M	0
09.5		36			0
13.5	Moderately Hard Medium Gray Mafic Gneiss	0	534.3	115.0 to 119.8 ft.: Slight To Moderate Weathering. Close To Very Close Healed Joints - Medium To Steep Dip. Close To Very Close Joints - Low To Steep Dip.	0
		28			2
		100	529.3		100

Page 3 of 5

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-45G
DATE DRILLED 2-6-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 35 of 298

DEPTH FT.	DESCRIPTION	CORE SIZE TIME MIN.	ELEV. 529.3	REMARKS	R.Q.D.
120.0	Moderately Hard Medium Gray Mafic * Soft And Medium Very Light Gray Felsic Schist	NQ		119.8 ft to 124.8 ft.: Moderate Weathering. Very Close Healed Joints - Low To Medium Dip.	10
121.0		20			20
		40	524.3	Complete Drilling Water Loss	
124.8	Very Hard Very Light Gray White Quartzite	100		124.8 ft to 126.4 ft.: Slight Weathering. Close Healed Joints - Medium Dip. 126.4 ft to 132.7 ft.: Moderate Weathering. Very Close Healed And Slightly Leached Joints - Medium Steep Dip.	100
			50		519.3
129.0	Medium Very Light Gray Felsic Gneiss	85		Top Of Continuous Rock At 133.6 ft. 132.7 ft to 138.0 ft.: Slight To Moderate Weathering. Very Close Healed And Calcite Filled Joints.	85
132.0		100			100
134.0	Hard Medium Gray Mafic Gneiss	100	514.3	Very Severely Weathered Zone (133.2 133.4 ft.) 138.0 ft to 144.3 ft.: Moderate Weathering. Very Close Healed And Some Leached Joints - Medium To Steep Dip.	60
		100			100
138.0	Hard Very Light Gray Felsic Gneiss	50		144.3 ft to 151.0 ft.: Slight To Moderate Weathering. Very Close Healed And Chlorite Filled Joints, Rarely Leached - Low To Steep Dip.	50
		60			60
		85			85
		100			100
		40		S-Slickensided Surface 145.4 ft.	40
		100			100
144.5	Hard Medium Blue Gray Mafic Gneiss	70	504.3	S-Slickensided Surface 148.2 ft.	70
			80		
		60			60
		50			50
		100			100
		100	499.3		100
151.0	Hard Very Light Gray Felsic Gneiss	50		151.0 to 153.0 ft.: Slight To Moderate Weathering. Very Close Healed Joints - Low To Steep Dip.	50
		100			100
153.0	Moderately Hard To Hard Light Olive **	80		1/2 - 1 Inch Quartzite And Calcite Veins - Low To Medium Dip (154.5 - 155.7 ft.)	80
153.9		85			85
	Hard To Very Hard Very Light Gray Felsic Gneiss	100	494.3		100
			92	489.3	92

Page 4 of 5

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586 * Gneiss
CORE DRILLING MEETS ASTM D-5113 ** Gray Mafic Gneiss
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-45G
DATE DRILLED 2-6-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME DISE MIN.	489.3 ELEV.	REMARKS	R.Q.D.
160.0	Hard Very Light Gray Felsic Gneiss	NQ 92		153.0 ft to 193.0 ft.: Very Slight Weathering. Close Healed Joints, Some Calcite Filled - Low To Steep Dip.	92
			484.3	1/8 Inch Chlorite Vein (165.2 ft.)	100
165.0	Hard Interlayered And Interfingering Very Light Gray Felsic Gneiss And Medium Light Gray Mafic Gneiss	100		Schistose Zone With Slick Surface - Medium Dip (162.0 ft.)	100
		100	479.3		100
174.0	Hard To Very Hard Very Light Gray Felsic Gneiss	90			90
		86	474.3		86
183.4	Hard Medium Gray Mafic Gneiss	92		Mafic Gneiss (181.4 - 181.8 ft.)	86
184.4	Hard To Very Hard Very Light Gray Felsic Gneiss	92			92
		100	469.3		100
			464.3		92
			459.3		100
193.0	Coring Terminated At 193.0 ft. Groundwater At 64.8 ft After 24 Hours Drilling Water Loss At 124.0 ft.		454.3		

DEPTH FT.	DESCRIPTION	CORE % & TIME DISE MIN.	624.7 ELEV.	REMARKS	R.Q.D.
0	Very Stiff Tan Red Fine to Medlum Sandy Clayey Silt				
			619.7		
	Silty Fine To Coarse Sand Layer @ 5 ft.				N=27
7.0	Very Stiff Tan Fine Sandy Very Micaceous Silt				N=23
			614.7		N=26
			609.7		N=28
			604.7		N=37
20.0	Hard To Very Stiff Green Tan Fine Sandy Very Micaceous Silt				N=25
			599.7		
27.5	Very Stiff To Hard White And Tan Fine Sandy Silt				
			594.7		
30.0	Partially Weathered Rock				N=50/1" No Recovery Carbide Bit Refusal And Top Of Continuous Rock At 34.3 ft
			589.7		
34.3	Hard to Very Hard Very Light Gray to Light Blue Gray Felsic Gneiss	NX 100			34.3 ft - 61.0 ft: Very Slight Weathering. Very Close Healed Joints - Medium Dip. Dark Gray Inclusions (Xenoliths)
			584.7		77
40.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 5 of 5

TEST BORING RECORD

BORING NO. B-45G

DATE DRILLED 2-6-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 36 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2

TEST BORING RECORD

BORING NO. B-46

DATE DRILLED 7-13-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.		ELEV.	REMARKS	R.Q.D.		
40.0	Hard to Very Hard Very Light Gray to Light Blue Gray Felsic Gneiss	NX	100	584.7	Close Joints, Generally Smooth and Clean - Low to Medium Dip (34.4 ft - 42.0 ft)	77		
		NX						
		96	579.7			93		
			574.7					
	Coring Terminated @ 61.0 ft. Groundwater @ 39 ft After 24 Hours. Drilling Water Loss At 39.5 ft.	97		569.7	Close to Very Close Joints - Rough-Coated with Purple and Black Oxide Low to Steep Dip (50.2 ft - 53.0 ft) Moderately Severe Weathering Zones (52.2 ft - 52.5 ft) Close Joints - Calcite and Epidote Coated - Medium Dip (52.5 ft - 61.0 ft)	93		
							564.7	
61.0							559.7	

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.		ELEV.	REMARKS	R.Q.D.	
0	Very Stiff Orange Tan Silt (Slightly Clayey Near Surface)			602.8			
						597.8	N=20
6.0	Very Stiff Tan Fine to Medium Sandy Silt			592.8		N=16	
						587.8	N=25
15.0						Dense Tan Gray Silty Fine to Medium Sand	582.8
22.0	Partially Weathered Rock			577.8		N=50/0" No Recovery	
23.5						Moderately Hard to Hard Very Light Gray Felsic Gneiss	572.8
				567.8		Carbide Bit Refusal And Top of Continuous Rock at 23.5 ft Intersecting Steep Joints - One is Oxidized, the other Quartz Filled. 23.5 ft - 40.0 ft: Slight to Moderate Weathering. Very Close Healed Joints-Mostly Medium to Steep Dip. Close Joints - Mostly Low To Medium Dip-Rough, Oxidized Surfaces. Medium Hardness, Moderate Weathering Zones: 26.1 ft - 26.2 ft 29.9 ft - 30.4 ft 36.0 ft - 37.0 ft	
				567.8		65	
				567.8		67	
				562.8		83	
40.0				562.8			

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD

BORING NO. B-46
DATE DRILLED 7-13-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 37 of 298

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD

BORING NO. B-47
DATE DRILLED 7-17-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Hard to Very Hard Light Blue Gray Felsic Gneiss	NX 100	557.8	40.0 ft - 56.4 ft: Very Slight Weathering. Very Close Healed Joints-Low to Steep Dip. Close Joints-Low Dip (43.0 - 44.0 ft) S (44.0 ft - 45.0 ft)	83
				△ L, S	
				△ L, S-Moderate Weathering △ M	
				△ M. Schistose Zone	
	Coring Terminated at 56.4 ft Groundwater At 22 ft After 24 Hours No Drilling Water Loss	NX 100	542.8	547.8 △ L	91
				△ M. Slight Weathering L	
				Rock Mass Contains Inclusions, Up to 1-1/2 Inches Diameter, of Fine Grained Material, Possibly Mafic Gneiss	

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Firm Red Brown Silty Clayey Fine To: Medium Sand		606.8	N=16	
5.0					
	Very Silty Fine To Medium Sand Layer at 8 ft.		601.8	N=11	
11.0					
	Firm Gray Silty Fine To Medium Sand		596.8	N=4	
15.0					
	Moderately Hard Very Light Gray To Pinkish Gray Felsic Gneiss	NX 54	586.8	N=13	
21.6					
	Very Soft Rock (Core Loss)		581.8	Carbide Bit Refusal at 21.6 ft. 21.6 ft to 32.9 ft	7
32.9					
	Very Stiff To Hard Fine To Medium Sandy Silt To Partially Weathered Rock That Becomes Tan And Gray Very Silty *	33	576.8	Moderately Severe To Moderate Weathering	
37.9					
40.0		0	571.8	Very Close To Close Joints - Low To Steep Dip	15
				Very Close Healed Joints - Some Leached - Low To Steep Dip	0

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 1/4" ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD

BORING NO. B-47
 DATE DRILLED 7-17-73
 JOB NO. CH 2920

△ ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

Page 38 of 298

BORING AND SAMPLING MEETS ASTM D-1586 * Fine To Medium Sand When Sampled
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 1/4" ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD

BORING NO. B-48
 DATE DRILLED 7-23-73
 JOB NO. CH 2920

△ ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	571.8 ELEV.	REMARKS	% R.Q.D.
40.0	Very Stiff To Hard Fine To Medium Sandy Silt To Partially Weathered Rock That Becomes Tan And Gray Very Silty *			N=50/4" Top Of Continuous Rock And Carbide Refusal (Second) @ 42.6 ft.	
42.0	Moderately Hard Pinkish Gray Felsic Gneiss				
43.3					
	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	566.8	L Within Schistose Zone 42.9 ft To 43.3ft: Moderate Weathering Very Close Healed Joints- Partly Leached-Medium To Steep Dip	100
			561.8	43.3 ft To 67.9 ft: Slight To Very Slight Weathering Moderately Close To Wide Joints-Low Dip	100
			556.8	Very Close To Close Healed Joints - Low To Steep Dip	
			551.8		
		100	546.8	Low Dip, Thin Schistose Zones (60.5 - 61.5 ft.) Note: Rock Contains Xenoliths Of Mafic Gneiss Up To 2 in. Diameter	100
67.9	Coring Terminated @ 67.9 ft. Groundwater At 23.4 ft At Time Of Boring Groundwater At 28.0 ft After 24 Hours Drilling Water Loss At 23.0 ft.				

BORING AND SAMPLING MEETS ASTM D-1586 * Fine To Medium Sand When
CORE DRILLING MEETS ASTM D-2113 Sampled
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-48
DATE DRILLED 7-23-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 39 of 298

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	592.4 ELEV.	REMARKS	% R.Q.D.
0	Stiff Orange Slightly Clayey Fine To Medium Sandy Silt				
6.0	Firm Tan Silty Fine To Medium Sand And Stiff Tan Fine To Medium Sandy Silt		587.4	N=11	
			582.4	N=13	
			577.4	N=17	
			572.4	N=12	
			567.4	N=13	
27.0	Very Stiff Tan Fine To Medium Very Sandy Silt		562.4	N=26	
			557.4	N=30	
39.5			552.4	N=50/6"	
40.0					

BORING AND SAMPLING MEETS ASTM D-1586 * Partially Weathered Rock That Becomes
CORE DRILLING MEETS ASTM D-2113 Tan Very To Slightly Silty Fine To
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER Medium Sand When
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT. Sampled

TEST BORING RECORD

BORING NO. B-49
DATE DRILLED 7-24-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

LAW ENGINEERING TESTING CO.

Page 1 of 3

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Partially Weathered Rock That Becomes Tan Very To Slightly Silty Fine To Medium Sand When Sampled --Dense Silty Fine To Medium Sand Seam At 42 ft to 44 ft.					
				547.4	N=89	
				542.4	N=50/3"	
				537.4	N=50/3"	
56.8	Hard Yellowish Gray Felsic Gneiss	NX		532.4	Carbide Bit Refusal At 56.8 ft. 56.8 ft - 61.5 ft: Moderate Weathering. Close Joints - Low To Steep Dips. Very Close Healed Joints - Low To Medium Dip.	43
61.5	Hard To Very Hard Light Bluish Gray Felsic Gneiss			527.4	Top Of Continuous Rock At 61.2 ft Steep, 1-Inch Thick, Pegmatite Vein - Partly Leached (60.8 ft) 61.5 ft - 76.5 ft: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	100
			4.8	522.4	Xenolith Of Mafic Gneiss (61.9 ft - 62.3 ft)	100
75.0	Hard Light Bluish Gray Schistose Felsic Gneiss			517.4	76.5 ft - 82.5 ft: Very Slight Weathering. Close Healed Joints - Medium To Steep Dip	100
76.5	Very Hard Mixed Unit Of White Quartz (90%) And Light Bluish Gray Felsic Gneiss			512.4	Brecciated Zone (77.8 ft - 79.0 ft)	
80.0						

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3
TEST BORING RECORD

BORING NO. B-49

DATE DRILLED 7-24-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 40 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
80.0	Very Hard Mixed Unit Of White Quartz (90%) And Light Bluish Gray Felsic Gneiss	NX		22.2		100
82.5	Coring Terminated at 82.5 Ft Groundwater At 23.7 ft At Time Of Boring Groundwater At 22.0 ft After 24 Hours No Drilling Water Loss			507.4		

BORING AND SAMPLING MEETS ASTM D-1888

CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3
TEST BORING RECORD

BORING NO. B-49

DATE DRILLED 7-24-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
0	Firm Orange Silty Fine to Medium Sand			
		569.5	N=11	
7.0	Very Stiff Green and Orange Silt	564.5	N=18	
12.0	Stiff to Very Stiff Tan Fine to Medium Sandy Silt	559.5	N=12	
		554.5	N=15	
		549.5	N=17	
26.0	Very Stiff Gray And Tan Fine To Medium Sandy Silt	544.5	N=18	
		539.5	N=18	
37.0	Partially Weathered Rock That Becomes Tan Silty Fine to Coarse Sand When Sampled	534.5	N=50/4 in.	

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE 24 HR.
ROCK CORE RECOVERY WATER TABLE 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 2
TEST BORING RECORD

BORING NO. B-50
DATE DRILLED 7-25-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
40.0	Partially Weathered Rock That Becomes Tan Silty Fine to Coarse Sand When *		Carbide Bit Refusal And Top of Continuous Rock at 41.4 ft	
41.4	Hard to Very Hard Light Bluish Gray Felsic Gneiss	529.5	41.4 ft - 43.1 ft: Slight Weathering Close Healed Joints-Low to Steep Dip	85
		524.5	43.1 ft - 44.0 ft: Moderate Weathering. Very Close Joints-Low to Steep Dip	
		519.5	44.0 ft - 67.9 ft: Slight Weathering. Close Joints-Low to Steep Dip- Mostly with Calcite and Epidote Coating.**	92
		514.5	Steep Joint with Cross-Cutting Low Joint-Both Calcite Coated	
		509.5	Rough, Oxide and Epidote Coated Surface. Some Leaching of Healed Joints (62.0 ft - 64.5 ft).	
		504.5	Rough-Coated with Oxide, Epidote and Minor Calcite	90
67.9	Coring Terminated at 67.9 ft Groundwater At 27.5 ft At Time Of Boring Groundwater At 29 ft After 24 Hours Drilling Water Loss At 48.0 ft.		Rough with Calcite, Oxide and Epidote Note: This Rock is Generally Fine Grained, and is More Schistose in Appearance and Contains More Calcite than Coarser Grained Varieties. † Medium Dip Schistose Zone (54.4 - 55.3 ft) With Moderately Severe Weathering (54.4 ft - 54.6 ft.)	

BORING AND SAMPLING MEETS ASTM D-1588 * Sampled
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE 24 HR.
ROCK CORE RECOVERY WATER TABLE 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

** Very Close Healed Joints-Low to Steep Dip (Some Leached).
Page 2 of 2
TEST BORING RECORD

BORING NO. B-50
DATE DRILLED 7-25-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	% TIME	ELEV.	REMARKS	% R.Q.D.
0	Firm Brown Tan Slightly Silty Fine To Medium Sand			578.4		
					N=19	
5.0	Very Dense Tan Silty Fine To Very Coarse Sand With Some Quartz Fragments			573.4		
					N=55	
				568.4		
					N=59	
				563.4		
17.0	Partially Weathered Rock That Becomes Tan Gray Silty Fine To Very Coarse Sand When Sampled			558.4		
					N=50/5"	
					N=50/4"	
24.0	Hard Brown To Dark Green Fine Sandy Silt			553.4		
					N=32	
				548.4		
					N=96	
				543.4		
36.7	Hard Dark Greenish Gray Mafic Gneiss	NX			Carbide Bit Refusal And Top Of Continuous Rock At 36.7 ft	
		100		538.4		94

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	% TIME	ELEV.	REMARKS	% R.Q.D.
40.0	Partially Weathered Rock That Becomes Gray Silty Fine To Coarse Sand With Weathered Rock Fragments When Sampled			557.5		
					N=50/4"	
				552.5		
					N=50/2"	
				547.5		
					N=50/5-1/2"	
				542.5		
					N=50/1 1/2 in.	
57.0	Hard Very Light Gray Felsic Gneiss	NX			Carbide Bit Refusal And Top Of Continuous Rock 57.0 Ft.	
		88		537.5		75
62.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss				57.0 - 62.0 Ft: Slight Weathering. Close Joints - Oxide Coated Low To Medium Dip Very Close Healed Joints - Partly Leached - Low To Steep Dip.	
		96		532.5		93
					527.5	
					522.5	
					517.5	
80.0						

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD
 BORING NO. B-52
 DATE DRILLED 7-30-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD
 BORING NO. B-51
 DATE DRILLED 8-7-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

* Traces of Pegmatite (77.5 Ft - 78.2 Ft).

DEPTH FT.	DESCRIPTION	CORE NO. & VINE SIZE MIN.	517.5 ELEV.	REMARKS	% R.Q.D.
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100			
				▲ L With Calcite and Limonite	94
			512.5	▲ S With Quartz Slight to Moderate Weathering (84.5 Ft - 87.0 Ft)	
88.1	Coring Terminated at 88.1 Ft Groundwater At 38. ft After 24 Hours Drilling Water Loss At 84.3 ft.				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD
B-51

BORING NO. B-51

DATE DRILLED 8-7-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & VINE SIZE MIN.	578.4 ELEV.	REMARKS	% R.Q.D.
0	Firm Brown Tan Slightly Silty Fine To Medium Sand				
			573.4	N=19	
5.0	Very Dense Tan Silty Fine To Very Coarse Sand With Some Quartz Fragments		568.4	N=55	
			563.4	N=59	
17.0	Partially Weathered Rock That Becomes Tan Gray Silty Fine to Very Coarse Sand When Sampled		558.4	N=50/5"	
			553.4	N=50/4"	
24.0	Hard Brown To Dark Green Fine Sandy Silt		548.4	N=32	
			543.4	N=96	
36.7	Hard Dark Greenish Gray Malic Gneiss	NX 100		Carbide Bit Refusal And Top Of Continuous Rock At 36.7 ft	
40.0			538.4		94

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3

TEST BORING RECORD

BORING NO. B-52

DATE DRILLED 7-30-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE % & TIME DIAZ MIN. ELEV.	REMARKS	% R.Q.D.
40.0	Hard Dark Greenish Gray Mafic Gneiss	538.4		
		NX 100	△ L 36.7 ft - 82.0 ft Very Slight Weathering Wide Spaced Joints - Low Dip	94
		533.4	△ L Close Spaced Healed Joints Medium To Steep Dip	100
		528.4	△ L	
		523.4	△ L Calcite And Epidote Rich, Partly Schistose Interval (55.0 - 57.0 ft)	100
		518.4	△△△ F F F	
		513.4	△ L	
		508.4	1/8 in. Thick Epidotized Brecciated Zones-Low Dip: 69.4 ft. 72.0 ft.	100
		503.4	Medium Dip Slickensided Zone (76.2 ft)	100
80.0		498.4		

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3

TEST BORING RECORD

BORING NO. B-52

DATE DRILLED 7-30-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME DIAZ MIN. ELEV.	REMARKS	% R.Q.D.
80.0	Hard Dark Greenish Gray Mafic Gneiss	498.4		
		NX 100	△ L	100
82.0			△ M	
	Coring Terminated @ 82.0 ft. Groundwater @ 10 ft. After 24 Hours No Drilling Water Loss			

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-52

DATE DRILLED 7-30-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	609.5 ELEV.	REMARKS	R.Q.D.
0	Stiff Orange Tan Slightly Sandy Slightly Clayey Silt				
5.0	Firm Red And Yellow Tan Silty Fine To Medium Sand		604.5	N=15	
			599.5	N=11	
	-Firm Sandy Micaceous Silt Seam At 14.0 Ft		594.5	N=8	
17.0	Partially Weathered Rock That Becomes Tan Gray Silty Fine To Very Coarse Sand With Weathered Rock Fragments When Sampled		589.5	N=50/3 In.	
			584.5	N=50/4 In.	
	-Hard Fine To Medium Very Sandy Silt Layer At 29 ft.		579.5	N=77	
34.7	Hard Light Bluish Gray Felsic Gneiss	NX 100	574.5	N=50/1 In. Carbide Bit Refusal And Top Of Continuous Rock At 34.7 Ft. 34.7 Ft - 52.5 Ft:	89
40.0		NX 94	569.5	Slight Weathering. Close Joints - Oxide Coated - Low To Medium Dip	82

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 4
TEST BORING RECORD
 B-53

BORING NO. _____
 DATE DRILLED 8-1-73
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	569.5 ELEV.	REMARKS	R.Q.D.
40.0	Hard Light Bluish Gray Felsic Gneiss	NX 94	564.5	Close To Very Close Healed Joints - Some Leached Above 62.0 Ft - Low To Steep Dip (34.7 Ft - 139.6 Ft)	82
52.5	Moderately Hard Pinkish Gray Felsic Gneiss	93	559.5	2 In. Zone Of Moderate Weathering (51.5 Ft)	
			554.5	52.5 Ft - 60.0 Ft: Moderate Weathering. Close And Very Close Joints - Low To Steep Dip. Pegmatite Zone (56.0 Ft - 57.0 Ft)	55
60.0	Hard Medium Light Gray Felsic Gneiss	100	549.5	6 In. Zone Of Mafic Gneiss At 60.0 Ft	
64.5	Hard Medium Gray Fine Grained Mafic Gneiss		544.5	1/4 In. Pegmatite Vein (60.0 Ft - 61.0 Ft) 1/4 In. Calcite Vein (63.5 Ft - 64.5 Ft)	79
69.5	Hard Medium Light Gray Felsic Gneiss	100	539.5	Close Joints - Low Dip (60.0 Ft - 64.5 Ft) Slight To Very Slight Weathering (60.0 Ft - 139.6 Ft)	
			534.5	Close Joints - Low To Medium Dip (64.5 Ft - 76.0 Ft) 1/4 In. Quartz Vein (68.0 Ft - 68.5 Ft)	98
80.0			529.5	Distortion Of Contact And Pyrite Enrichment (69.5 Ft) Xenoliths Of Mafic Gneiss (69.5 Ft - 81.0 Ft)	100

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 4
TEST BORING RECORD
 B-53

BORING NO. _____
 DATE DRILLED 8-1-73
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	529.5 ELEV.	REMARKS	% R.Q.D.
80.0	Hard Medium Light Gray Felsic Gneiss	NX			
81.0	Hard Medium Gray Fine To Medium Grained Mafic Gneiss	100		L	100
			524.5		
		NX		L Medium Dip Schistose Zones With Calcite (87.2 Ft)	
		100			
			519.5	M	98
90.2	Hard Medium Light Gray Felsic Gneiss				
91.4	Hard Medium Gray Mafic Gneiss				
92.8	Hard Medium Light Gray Felsic Gneiss				
94.0	Hard Medium Gray Mafic Gneiss	NX		L S In Schistose Zone With Calcite	
		97			97
			514.5		
			509.5	M In Schistose Zone with Calcite	
				M Medium Dipping Calcite Veins Up To 1/2 in. Thick (100.5 Ft - 105.0 Ft)	
		NX			
		100		M Curved Surface At 105.1 ft.	100
			504.5		
			499.5	S Slickensided Surface At 108.0 ft.	
110.5	Hard Medium Light Gray Felsic Gneiss	BQ			
		100			100
			494.5		
			489.5		

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	489.5 ELEV.	REMARKS	% R.Q.D.
120.0	Hard Medium Light Gray Felsic Gneiss	BQ			100
		100			
			484.5		
				Possible Xenolith Of Mafic Gneiss (128.2 Ft - 128.4 Ft)	
			479.5		
		BQ			
		100			100
			474.5		
139.6	Coring Terminated at 139.6 Ft Groundwater At 29 ft After 24 Hours Drilling Water Loss At 43.0 ft.			Note: Rocks Are Schistose To Several Inches From Contacts, Generally In The Mafic Gneiss	

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 4
TEST BORING RECORD

BORING NO. B-53

DATE DRILLED 8-1-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 46 of 298

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 4 of 4
TEST BORING RECORD

BORING NO. B-53

DATE DRILLED 8-1-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
0	Very Stiff Red Brown Fine Sandy Micaceous Silt	621.6		
6.5	Very Stiff Orange Brown Fine Sandy Micaceous Silt	616.6 N=17		
10.0	Hard Tan Gray Fine To Coarse Sandy Silt	611.6 N=19		
16.0	Very Stiff Tan Fine Slightly Sandy Micaceous Silt	606.6 N=39		
21.5	Hard To Stiff Brown Tan Fine To Coarse Sandy Silt	601.6 N=19		
31.0	Stiff To Hard Tan Brown And Tan Gray Fine To Medium Sandy Silt With Varying Amounts Of Mica	596.6 N=34		
	Very Silty Fine To Medium Sand Layer At 33 ft.	591.6 N=9		
		586.6 N=8		
40.0		581.6 N=28		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 1 of 4
TEST BORING RECORD

BORING NO. B-54

DATE DRILLED 8-7-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
40.0	Stiff To Hard Tan Brown And Tan Gray Fine To Medium Sandy Silt With Varying Amounts Of Mica	578.6 N=27		
		571.6 N=21		
		566.6 N=26		
		561.6 N=32		
63.0	Partially Weathered Rock That Becomes Tan Gray Fine To Medium Sandy Silt When Sampled	556.6 N=50/1		
		551.6 N=50/5		
	Very Silty Fine To Medium Sand Layer At 73 ft.	546.6 N=50/2		
80.0		541.6 N=50/2		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 2 of 4
TEST BORING RECORD

BORING NO. B-54

DATE DRILLED 8-7-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	541.6 ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock That Becomes Tan Gray Fine To Medium Sandy Silt When Sampled		536.6	N=50/2 In.	
			531.6	N=50/0 In.	
			526.6	N=50/0 In.	
94.5	Medium And Moderately Hard Very Light Gray To Yellowish Gray Felsic Gneiss	NX 27	521.6	Carbide Bit Refusal At 94.5 ft. 94.5 Ft - 105.0 Ft: Moderate Weathering Close To Very Close Joints - Low To Steep Dip Very Close Healed Joints - Low To Steep Dip - Partly Leached	9
		60	516.6	105.0 Ft - 109.0 Ft: Very Severe To Moderately Severe Weathering. Close Joints - Low To Medium Dip. Close Healed Joints - Low To Steep Dip	0
105.0	Very Soft To Medium Olive Gr Felsic Gneiss		511.6	109.0 Ft - 114.5 Ft: Slight To Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Healed And Leached Joints - Low To Steep Dip.	55
109.0	Hard Light Blue Gray Felsic Gneiss	88	506.6	114.5 Ft - 118.5 Ft: Moderately Severe Weathering. Very Close Healed Joints - Medium Dip. Calcite Veins Up To 1/4 In. Thick.	70
114.5	Medium Hard Medium Gray Mafic Gneiss		501.6	Top Of Continuous Rock At 119.0 Ft	
118.5	Hard Mixed Unit Including Medium Dark Gray Fine Grained Mafic Gneiss (35%), Greenish Black Medium To Coarse Grained Mafic Gneiss	78			
120.0					

BORING AND SAMPLING MEETS ASTM D-1586 (60%) And Very Light Gray Felsic Gneiss

CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 3 of 4
TEST BORING RECORD

BORING NO. B-54

DATE DRILLED 8-7-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	501.6 ELEV.	REMARKS	R.Q.D.
120.0	Hard Mixed Unit Including Medium Dark Gray Fine Grained Mafic Gneiss (35%), Greenish Black Medium To Coarse Grained Mafic Gneiss (60%) And Very Light Gray Felsic Gneiss (5%)	NX 78	496.6	118.5 Ft - 137.7 Ft: Slight Weathering Close To Moderately Close Joints - Low To Medium Dip Close Healed Joints - Low To Steep Dip	70
126.0	Hard Very Light Gray Felsic Gneiss		491.6		
128.2	Hard Medium Dark Gray Fine Grained Mafic Gneiss		486.6		
129.5	Hard Very Light Gray Felsic Gneiss	100	481.6	137.7 Ft - 147.7 Ft: Very Slight Weathering Close Healed Joints - Many With Calcite - Low To Steep Dip	95
		100	476.6	Within 3-Inch Zone of Moderate Weathering	97
137.7	Hard Medium Dark Gray Fine Grained Mafic Gneiss				
146.8	Very Hard Very Light Gray Felsic Gneiss				
147.7	Coring Terminated at 147.7 Ft Groundwater At 37 ft After 24 Hours No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1586

CORE DRILLING MEETS ASTM D-5113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 4 of 4
TEST BORING RECORD

BORING NO. B-54

DATE DRILLED 8-7-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
			622.7		
	Drilled To 38.0 ft With Carbide Tipped Bit (No Soil Samples To 38 ft)		617.7		
			612.7		
			607.7		
			602.7		
			597.7		
			592.7		
			587.7		
48.0			582.7		N=50/5 1/2" Partially Weathered Rock That Becomes Gray Tan Silty Fine To Medium Sand When Sampled

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD

BORING NO. B-55P
DATE DRILLED 9-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
			582.7		
40.0			577.7	N=57 Gray Tan Silty Fine To Medium Sand	
			572.7	N=28 Dark Green Gray Micaceous Silt	
			567.7		
57.0	Partially Weathered Rock		562.7	N=50/5 1/2" Partially Weathered Rock That Becomes Gray Tan Silty Fine To Medium Sand When Sampled	
			557.7	N=50/1 1/2" Partially Weathered Rock That Becomes Gray Tan Silty Fine To Medium Sand When Sampled.	
			552.7	N=50/2" Partially Weathered Rock That Becomes Gray Tan Silty Fine To Medium Sand When Sampled	
			547.7		
80.0			542.7		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 3
TEST BORING RECORD

BORING NO. B-55 P
DATE DRILLED 9-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock That Becomes Gray Tan Silty Fine To Medium Sand				Carbide Bit Refusal And Top Of Continuous Rock @ 82 ft.	
82.0	Hard Light Bluish Gray Felsic Gneiss	NX			82 ft - 114.9 ft: Slightly Weathered. Very Close Healed And Partially Leached Joints, Low To Steep Dip - Many Calcite Coated.	91
		100		537.7		
				532.7		
		94		527.7	Steeply Dipping, Leached Quartz Vein Terminating In A Moderately Severely Weathered Schistose Zone (93.2 ft - 94.5 ft.)	88
				522.7		
		100		517.7		95
				512.7		
		100		507.7		89
114.9	Coring Terminated At 114.9 ft. Groundwater At 39.0 ft At Time Of Boring Groundwater At 34.0 ft After 24 Hours					

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

* When Sampled
** No Drilling Water Loss

ROCK JOINT:

L - LOW DIP 0°-30°

M - MED. DIP 30°-60°

S - STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-55 P
DATE DRILLED 9-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 50 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Hard Red Brown Fine to Medium Sandy Clayey Silt					
5.0	Very Stiff Orange Gray Slightly to Fine Sandy Micaceous Silt					
				603.9		N=35
				598.9		N=15
				593.9		N=16
				588.9		N=16
				583.9		N=22
				578.9		N=18
				573.9		N=33
40.0				568.9		N=25

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 4

TEST BORING RECORD

BORING NO. B-56
DATE DRILLED 8-16-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	568.9 ELEV.	REMARKS	% R.Q.D.
40.0	Hard Tan Fine to Medium Sandy Silt				
			563.9	N=41	
48.5	Partially Weathered Rock That Becomes Gray Micaceous Silty Fine to Medium Sand		558.9	N=50/5 1/2"	
			553.9	N=50/2"	
56.9	Hard Very Light Gray Fine to Medium Grained Felsic Gneiss	NX 96	548.9	Carbide Bit Refusal @ 56.9 ft. 56.9 ft to 74.0 ft: Slight Weathering. Close Joints - Low to Medium Dip. Very Close Healed and Partially Leached Joints - Low to Steep Dip.	57
		NX 92	543.9	Both Healed and Open Joints Have Epidote and Clay	37
			538.9		
74.0	Hard to Very Hard Light Bluish Gray Fine to Medium Grained Felsic Gneiss	NX 95	533.9	Top of Continuous Rock @ 74.0 ft. 74.0 ft to 145.5 ft: Very Slightly Weathered. Very Close Healed Joints, Some Partially Leached - Low to Steep Dip.	54
		BQ 100	528.9		95

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 4
TEST BORING RECORD

BORING NO. B-56
DATE DRILLED 8-16-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO. Page 51 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	528.9 ELEV.	REMARKS	% R.Q.D.
80.0	Hard to Very Hard Light Bluish Gray Fine to Medium Grained Felsic Gneiss	BQ 100	523.9		95
		BQ 100	518.9		
		BQ 100	513.9	Brecciated, in Part. Medium to Steep Dip With Calcite And Ferromagnesian Schistose Zone (93.8 ft.)	98
		BQ 100	508.9	S, Moderately Weathered. Quartz Veins With Sericite and Clay at Contacts (99.8 ft to 100.2ft) 1/4 Inch Quartz Vein (10h5 ft.)	
		BQ 100	503.9		
		BQ 100	498.9	2-Inch Quartz Vein - Medium Dip (109.2 ft.)	
		BQ 100	493.9	Steeply Dipping Quartz Vein (111.5 - 113.5 ft.)	100
120.0		BQ 100	488.9		100

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 4
TEST BORING RECORD

BORING NO. B-56
DATE DRILLED 8-16-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	488.9 ELEV.	REMARKS	% R.Q.D.
120.0	Hard To Very Hard Light Bluish Gray Fine To Medium Grained Felsic Gneiss	BQ			
		100			
			483.9	4 M	100
			478.9	Steep Dip Quart Vein With Pyrite Crystals Up To 1/4" Diameter at Contact (132.4 ft - 133.4 ft.)	
		473.9			
	Coring Terminated At 145.5 ft. Groundwater At 29 ft After 24 Hours. Drilling Water Loss At 76.5 ft.	BQ			
		99			
			468.9	1/2 Inch Quartz Vein, Steep Dip With Schistose Zones at Contacts (140.0 ft.)	97
			463.9	L	

BORING AND SAMPLING MEETS ASTM D-1989
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 4 of 4
TEST BORING RECORD

BORING NO. B-56
DATE DRILLED 8-16-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO. Page 52 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	582.5 ELEV.	REMARKS	% R.Q.D.
0	Very Stiff Yellow Tan Slightly Clayey Fine To Medium Sandy Silt				
			577.5	N=24	
6.0	Firm To Stiff Yellow Tan Fine Sandy Micaceous Silt				
			572.5	N=6	
			567.5	N=10	
			562.5	N=6	
	Partially Weathered Rock That Becomes Dark Green Very Silty Micaceous Fine To Medium Sand When Sampled				
			557.5	N=50/3 In.	
25.0	Hard Medium Bluish Gray Mafic Gneiss				
			552.5	N=50/5 In.	
30.5		NX		Carbide Bit Refusal And Top Of Continuous Rock At 30.5 Ft 30.5 Ft - 33.6 Ft: Slight Weathering Close Joints - Low To Steep Dip Close Healed Joints - Low To Steep Dip	47
		72			
			547.5		98
			542.5	1 M, 2 L	
40.0					

BORING AND SAMPLING MEETS ASTM D-1989
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 2
TEST BORING RECORD

BORING NO. 8-57
DATE DRILLED 8-6-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.	
40.0	Hard Medium Bluish Gray Mafic Gneiss	NX 100	542.5	33.6 Ft - 62.4 Ft Very Slight Weathering	98	
				M	Moderately Close Joints - Low To Steep Dip	
				M		
				S	Close Calcite - Healed Joints - Medium To Steep Dip	
				S		
			537.5			
			532.5	L	93	
			527.5	L		
			522.5	L	100	
62.4	Coring Terminated At 62.4 Ft Groundwater At 8.4 ft At Time Of Boring Groundwater At 4.0 ft After 24 Hours No Drilling Water Loss					

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Very Stiff Orange Slightly Clayey Fine To Medium Sandy Silt	NX 100	605.5		
				N=17	
6.0	Stiff Orange Tan Fine To Medium Sandy Silt	NX 100	595.5		
				N=11	
12.0	Loose Orange And Yellow Tan Silty Fine To Medium Sand	NX 100	590.5		
				N=7	
16.0	Partially Weathered Rock That Becomes Yellow Tan Silty Fine To Very Coarse Sand When Sampled	NX 100	585.5		
				N=50/0"	
	-Hard Gray Tan Sandy Silt Seam 23 Ft - 27 Ft	NX 100	580.5		
				N=55	
	Hard Very Light Gray Felsic Gneiss	NX 93	575.5	N=50/2 in. Carbide Bit Refusal And Top Of Continuous Rock At 31.2 Ft	
31.2					
	Hard Very Light Gray Felsic Gneiss	NX 93	570.5	Very Close Healed Joints - Low To Steep Dip - Partly Leached Above 36.0 Ft (31.2 Ft - 59.5 Ft)	
	Hard Very Light Gray Felsic Gneiss	NX 93	565.5	Slickensided Surface At 33.0 ft	
40.0	Xenolith Of Mafic Gneiss 33.0 Ft 36.0 Ft Irregular Pegmatite Vein - Some Leaching Along Contact (33.3 Ft - 34.3 Ft)				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-57
DATE DRILLED 8-6-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO. Page 53 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

*BQ 100
TEST BORING RECORD

BORING NO. B-58
DATE DRILLED 8-6-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0		BQ	565.5		
	Very Hard Light Bluish Gray Felsic Gndss	100	560.5	40.0 Ft - 59.5 Ft: Very Slight Weathering Moderately Close Joints - Oxide Coated - Low Dip	100
			555.5		
		BQ	550.5		100
		100	545.5		
59.5	Coring Terminated at 59.5 Ft Groundwater At 21.1 ft At Time Of Boring Groundwater At 23.2 ft After 24 Hours No Drilling Water Loss				

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Very Stiff Tan Brown Fine To Coarse Sandy Silty Clay		571.4	N=23	
7.0	Firm Tan Micaceous Silty Fine To Coarse Sand		566.4	N=30	
			561.4	N=50/4"	
15.5	Partially Weathered Rock That Becomes Tan Brown To Gray Tan Micaceous Silty Fine To Coarse Sand When Sampled		556.4		
20.7	Rock Fragments Encountered At 19.5 ft.			Carbide Bit Refusal And Top Of Continuous Rock At 20.7 ft.	
22.4	Interlayered Moderately Hard Light Gray Felsic Schist And Felsic Gneiss	NX		N=50/1"	
	Very Hard Light Bluish Gray Felsic Gneiss	100	551.4	20.7 ft to 38.4 ft.: Slight To Very Slight Weathering. Very Close Healed And Filled Joints With Chlorite Quartz And Calcite, Slightly Leached - Low To Steep Dip	96
			548.4	Leaching Along Healed Joints: 29.1 ft, Low Dip. 29.6 ft, Steep Dip. 30.2 ft, Medium Dip. 30.6 ft, Medium Dip.	96
		100	541.4	Quartz, Chlorite, Sericite Filled Schistose Zones: Low Dip - 21.6 ft. Medium Dip - 22.1 ft. Medium Dip - 26.9 ft. Low Dip - 27.9 to 28.3 ft. Steep Dip - 29.5 to 30.7 ft.	
38.4	Coring Terminated At 38.4 ft. Groundwater At 4.6 ft At Time Of *		536.4		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-58
DATE DRILLED 8-6-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO. Page 54 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Stabilized Groundwater At 5.1 ft. Page 1 of 1
TEST BORING RECORD

BORING NO. B-59
DATE DRILLED 4-19-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Stiff Orange Slightly Clayey Fine To Medium Sandy Silt		637.6		
5.0	Dense To Very Dense Red To Tan Gray Silty Fine To Medium Sand		632.6 N=13		
			627.6 N=29		
			622.6 N=13		
			617.6 N=65		
			612.6 N=78		
32.5	Very Stiff Gray Tan Fine To Medium Sandy Silt		607.6 N=25		
			602.6 N=50/5"	Quartz Lens @ 34.0 ft. Magnified N-Values	
40.0			597.6 N=25		

Page 1 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO. B-61
DATE DRILLED 9-4-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Very Stiff Gray Tan Fine To Medium Sandy Silt		597.6		
45.0	Firm To Dense Gray Tan Silty Fine To Medium Sand		592.6 N=27		
			587.6 N=25		
			582.6 N=50/3"	Partially Weathered Rock Ledge @ 53.5 ft.	
55.0	Hard Gray Tan Fine To Medium Sandy Silt		577.6 N=30		
			572.6 N=60		
69.0	Partially Weathered Rock That Becomes Yellow And Gray Tan Silty Fine To Coarse Sand When Sampled		567.6 N=50/4"		
			562.6 N=50/2"		
80.0			557.6 N=50/4"		

Page 2 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO. B-61
DATE DRILLED 9-4-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		% SIZE MIN.	TIME ELEV.		
80.0	Partially Weathered Rock That Becomes Yellow And Gray Tan Silty Fine To Coarse Sand When Sampled		557.6	Brown Micaceous Silt Seam @ 83 ft.	
85.5	Hard Yellow Gray And Pink Gray Felsic Gneiss	NX 100	552.6	N=50/14" Carbide Bit Refusal @ 85.5 ft. 85.5 ft - 88.0 ft: Slight To Moderate Weathering.	35
88.0	Hard Light Bluish Gray Felsic Gneiss		547.6	Very Close To Close Joints - Low To Medium Dip. Very Close Healed Joints - Low To Medium Dip. Top Of Continuous Rock @ 88.0 ft.	84
94.1	Medium To Moderately Hard Medium Dark Gray Mafic Gneiss	91	542.6	88.0 ft - 94.1 ft: Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	
96.1	Hard Light Bluish Gray Felsic Gneiss		537.6	Severely Leached Quartz Veins: 87.6 ft - 87.9 ft. 90.2 ft - 90.6 ft. Severely Leached Quartz Vein With Associated Brecciated Zone (93.8 ft - 94.1 ft.) 94.1 ft - 96.1 ft: Severe To Moderate Weathering. Very Close Healed Joints - Low To Medium Dip 0.8 ft. Core Loss	98
			532.6	96.1 ft - 118.1 ft: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip - Some With Calcite - Some Schistose.	99
			527.6		
			522.6	Slickensided Surface @ 115.0 ft.	
118.1	Coring Terminated At 118.1 ft. Groundwater At 39 ft After 24 Hours *		517.6		

BORING AND SAMPLING MEETS ASTM D-1586 * No Drilling Water Loss

Page 3 of 3

CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.0 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-61
DATE DRILLED 9-4-73
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:
L = LOW DIP 0-30°

ROCK CORE RECOVERY WATER TABLE, 1 HR.

M = MED. DIP 30-60°
S = STEEP DIP 60-90°

N = STANDARD PENETRATION LOSS OF DRILLING WATER

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

Page 56 of 298

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		% SIZE MIN.	TIME ELEV.		
0			661.5		
			656.5		
			651.5	N=12 Cream And Pink Silty Fine To Medium Sand	
			646.5		
			641.5		
			636.5		
			631.5	N=22 Pale Green And Pink Very Silty Fine To Medium Sand	
			626.5		
40.0			621.5	N=43 Tan Green Micaceous Silty Fine To Medium Sand	

BORING AND SAMPLING MEETS ASTM D-1586

Page 1 of 4

CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.0 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:
L = LOW DIP 0-30°

ROCK CORE RECOVERY WATER TABLE, 1 HR.

M = MED. DIP 30-60°
S = STEEP DIP 60-90°

N = STANDARD PENETRATION LOSS OF DRILLING WATER

BORING NO. B-62P

DATE DRILLED 9-18-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.		ELEV.	REMARKS	R.Q.D.
120.0	Hard Light Bluish Gray And Very Light Gray Felsic Gneiss	NX 100	M		Zone Of Interfingering Mafic Gneiss (120.8 - 121.8 ft.)	
				536.5	Schistose Zone (124.5 to 126.8 ft.) 124.5 ft to 134.5 ft. Slight Weathering, Very Close Healed Joints - Low To Steep Dip.	87
				531.5	Low Dip, Slightly Leached Brecciated Zone (125.3 to 125.5 ft.) Vertical Quartz Vein, Greater Than 1 Inch Thick, With Schistose And Locally Brecciated Contact Zone (125.5 to 128.3 ft.)	61
				526.5	Moderately Weathered Zone Of Interfingering Mafic Gneiss, Felsic Schist And Felsic Gneiss (130.0 to 133.4 ft.)	87
				521.5	134.5 ft to 159.0 ft.: Very Slight Weathering, Very Close Healed And Filled Joints With Calcite And Chlorite - Low To Steep Dip. Steep Dip Schistose Zones: 140.0 ft. 142.2 ft.	100
				516.5	2 Inch, Steeply Dipping Schistose Zone At Contact With Chlorite Calcite, Quartz And Muscovite (145.6 to 146.9 ft.)	
146.0	Hard Medium Gray Mafic Gneiss	NX 100	M	511.5	Steeply Dipping Quartz Vein Up To 1 Inch Thick With Chlorite At Contacts And Traces Of Pyrite (150.6 to 152.7 ft.)	100
				506.5	Irregular Calcite, Chlorite And Quartz Vein (153.3 ft.)	
159.0				501.5	Coring Terminated @ 159.0 ft.	

BORING AND SAMPLING MEETS ASTM D-1586 * Groundwater @ 55 ft. After 24 Hours
CORE DRILLING MEETS ASTM D-2113 No Drilling Water Loss
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

TEST BORING RECORD

BORING NO. B-62P
DATE DRILLED 9-18-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.		ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 28.4 ft.			665.3		
				660.3		
				655.3		
				650.3		
				645.3		
28.4				640.3	N=50/6"	Partially Weathered Rock That Becomes Pinkish Tan Fine Sandy Silt When Sampled
	Rotary Wash Drilled With Carbide Fishtail To 43.4 ft.			635.3		
				630.3	Complete Water Loss	
40.0						

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

TEST BORING RECORD

BORING NO. B-62AP
DATE DRILLED 9-24-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
0		643.9		
		638.9		
		633.9	N=19 Very Stiff; Red Brown Clayey Silt	
		628.9		
		623.9		
		618.9		
		613.9	N=27 Firm Tan Green Silty Fine To Medium Sand	
		608.9		
38.0	Partially Weathered Rock	603.9	Partially Weathered Rock That Becomes Tan Gray N=50/3 1/2" Fine To Medium Sandy *	
40.0				

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
40.0	Partially Weathered Rock:			
		598.9	N=50/1 1/2" Carbide Bit Refusal @ 47.5 ft. 47.5 ft. to 61.0 ft. Slight To Moderate Weathering. Very Close Healed And Partly Leached Joints, Low To Steep Dip. Close Joints, Low To Steep Dip (47.5 ft to 57.1 ft.)	25
47.5	Hard And Moderately Hard Yellowish Gray Felsic Gneiss	NX 68 593.9		
		NX 75 588.9		20
		NX 99 583.9	Top Of Continuous Rock At 57.2 ft. Complete Drilling Water Loss	
61.0	Very Hard Light Bluish Gray Felsic Gneiss		M Moderate Weathering @ Contact 61 ft to 87.1 ft. Very Slight Weathering. Very Close Healed Joints, Low To Steep Dip.	86
62.3	Hard Medium Dark Gray Mafic Gneiss			
		578.9		
		573.9	S. Moderate Weathering. S. Moderate Weathering. Moderate Weathering @ Contact.	91
73.6	Hard To Very Hard Light Bluish Gray Felsic Gneiss		1" Wide Quartz Vein, Medium Dip (75.5 ft.)	
		568.9		
		563.9		100
80.0				

Page 1 of 3 * Silt When Sampled

TEST BORING RECORD

BORING NO. B-63P
 DATE DRILLED 9-20-73
 JOB NO. CH 2920

ROCK JOINTS:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 58 of 298

Page 2 of 3

TEST BORING RECORD

BORING NO. B-63P
 DATE DRILLED 9-20-73
 JOB NO. CH 2920

ROCK JOINTS:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 58 of 298

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	563.9 ELEV.	REMARKS	R.O.D.
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	558.9	Mafic Gneiss Xenolith, Small (80.8 ft)	100
87.1	Coring Terminated @ 87.1 ft. Groundwater @ 44 ft After 24 Hours. No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-63P

DATE DRILLED 9-20-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	635.1 ELEV.	REMARKS	R.O.D.
0	Very Stiff Red Brown Fine To Medium Sandy Clayey Silt		630.1	N=20	
6.0	Stiff Orange Tan Fine To Medium Very Sandy Silt		625.1	N=13	
			620.1	N=16	
18.0	Firm Tan Gray Silty Fine To Medium Sand		615.1	N=24	
			610.1	N=15	
			605.1	N=67	
34.0	Partially Weathered Rock That Becomes Tan Gray Silty Fine To Medium Sand When Sampled		600.1	N=50/5"	
			595.1	N=50/3"	
40.0					

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-64

DATE DRILLED 8-14-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME REC. MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Partially Weathered Rock That Becomes		595.1		
41.0	Moderately Hard Very Light Gray To Yellow Gray Felsic Gneiss	NX	590.1	Carbide Bit Refusal At 41 ft. 41.0 ft - 50.0 ft. Moderate Weathering. Very Close Joints, Low To Steep Dip Altered To Clay Along Some Surfaces	20
		39			
			585.1	Top Of Continuous Rock 48.5 ft.	
50.0	Hard Very Light Gray To Light Bluish Gray Felsic Gneiss		580.1	50.0 ft. - 63.0 ft.: Slight Weathering. Close And Very Close Joints, Low To Medium Dip	75
		100			
			575.1	Very Close Healed Joints - Low To Steep Dip - Quartz, Clay And Epidote - Partly Leached Above 64.0 ft. (41.0 ft - 109.0 ft.)	
			570.1	Slight To Very Slight Weathering (63.0 ft - 100.0 ft.)	89
		100			
			565.1	One-Inch Thick Quartz Vein - Medium Dip (73.5 ft.)	
			560.1	Xenoliths Of Mafic Gneiss Up To 1 1/2 Inch Diameter (41.0 ft - 109.0 ft.)	
		100			
80.0			555.1		100

DEPTH FT.	DESCRIPTION	CORE NO. & TIME REC. MIN.	ELEV.	REMARKS	% R.Q.D.
80.0	Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX			
		100		Half-Inch Thick Quartz Vein - Steep Dip (82.6 ft.)	100
			550.1	L Brecciated Zone - Steep Dip - Quartz And Clay Filled. (87.0 ft.)	
			545.1	L	
			540.1	M	
			535.1	L	
		100		100.0 ft - 101.5 ft.: Slight To Moderate Weathering. Close Joints, Low To Medium Dip Some Leaching Along Healed Joints. Slight To Very Slight Weathering. (101.5 ft to 116.0 ft.)	95
			530.1	M	
			525.1	L	
109.0	Hard Medium Gray Mafic Gneiss			Very Close Healed Joints - Low To Steep Dip - Calcite And Oxides (109.0 ft to 116.0 ft.)	95
		100			
			520.1	M Manganese Oxide Coating.	
117.0	Coring Terminated At 117.0 ft. Groundwater At 38 ft After 24 Hours No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1889
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

* Tan Gray Silty
Fine To Medium Sand
When Sampled

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3

TEST BORING RECORD

BORING NO. B-64
DATE DRILLED 8-14-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 60 of 298

BORING AND SAMPLING MEETS ASTM D-1889
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3

TEST BORING RECORD

BORING NO. B-64
DATE DRILLED 8-14-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		%	ELEV.		
			606.1		
			601.1		
			596.1	N=13 Tan Gray Fine To Medium Sandy Silt	
			591.1		
			586.1		
			581.1	N=64 Tan Gray Silty Fine To Medium Sand	
			576.1		
			571.1		
38.5	Partially Weathered Rock		566.1	Partially Weathered Rock That Becomes Tan Gray Silty Fine To Medium Sand When Sampled	
40.0					

BORING AND SAMPLING MEETS ASTM D-1898
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

Page 1 of 3

TEST BORING RECORD

BORING NO. B-65P
 DATE DRILLED 9-19-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D., ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		%	ELEV.		
			566.1		
40.0	Partially Weathered Rock		561.1	N=50/2" Partially Weathered Rock That Becomes Tan Gray Silty Fine To Medium Sand When Sampled	
			556.1		
			551.1		
			546.1		
			541.1		
67.2	Hard Very Light Gray Felsic Gneiss	NX 95	536.1	Carbide Bit Refusal And Top Of Continuous Rock @ 67.2 ft. 67.2 ft. to 73.5 ft.: Slight Weathering. Very Close Healed And Occasionally Leached Joints, Low To Steep Dip.	83
73.5	Very Hard Light Bluish Gray Felsic Gneiss	NX 100	531.1	M 1 1/2 inch Steeply Dipping Leached Quartz Veins: 67.7 to 68.0 ft. 69.0 to 70.2 ft. 73.5 ft. to 107.1 ft.: Very Slight Weathering To Fresh. Very Close Healed Joints - Low To Steep Dip.	96
80.0		NX 100	526.1	Partly Leached Healed Joints (76.0 ft to 78.2 ft.)	100

BORING AND SAMPLING MEETS ASTM D-1898
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

Page 2 of 3

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

L = LOW DIP 0-30°

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D., ROCK QUALITY DESIGNATION

BORING NO. B-65P
 DATE DRILLED 9-19-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE & TIME MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Very Hard Light Bluish Gray Felsic Gneiss	NX 100	526.1		100
			521.1		
		NX 100	516.1	3 Inch Steep Dip Quartzite Lens (90.7 ft.)	100
			511.1		
		NX 100	506.1		100
			501.1		
107.1	Coring Terminated @ 107.1 ft. Groundwater @ 19 ft. After 24 Hours. No Drilling Water Loss				

Page 3 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING NO. B-65P
DATE DRILLED 9-19-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE & TIME MIN.	ELEV.	REMARKS	R.Q.D.
0	Very Stiff Orange Fine To Medium Sandy Clayey Silt		623.1		
			618.1	N=22	
6.0	Stiff Pink And Tan Fine To Medium Slightly Sandy Micaceous Silt		613.1	N=15	
			608.1	N=14	
15.0	Very Stiff Yellow Tan Slightly Sandy Micaceous Silt		603.1	N=23	
			598.1	N=24	
			593.1	N=20	
			588.1	N=23	
35.0	Hard Gray Tan Slightly Sandy Micaceous Silt		583.1		
40.0					

Page 1 of 4

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING NO. B-66
DATE DRILLED 8-22-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Hard Gray Tan Slightly Sandy Micaceous Silt			N=56	
			578.1	N=45	
48.0	Partially Weathered Rock That Becomes Green Brown Micaceous Silt To Gray Green Slightly Sandy Micaceous Silt		573.1	N=50/5"	
			568.1	N=50/1 1/2"	
			563.1	N=50/1 1/2"	
			558.1	N=50/4"	
64.5	Hard Medium Bluish Gray Mafic Gneiss	NX 100		Carbide Bit Refusal And Top Of Continuous Rock At 64.5 ft. 64.5 ft to 158.3 ft. Very Slight Weathering. Very Close Calcite Healed Joints - Low To Steep Dip.	100
			553.1		100
		NX 100			
			548.1		
		NX 100			
			543.1		100

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 4
TEST BORING RECORD

BORING NO. B-66
DATE DRILLED 8-22-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
80.0	Hard Medium Bluish Gray Mafic Gneiss	NX 100		1/4-Inch, Medium Dip Calcite Veins With Epidote: 80.1 ft. 80.8 ft.	100
			538.1	2-Inch, Medium Dip Vein Of Quartz And Epidote With Calcite (83.2 ft.) Medium Dip Veins Of Quartz, Calcite And Epidote 1/4 To 1 inch Thick: 86.9 ft. 101.5 ft. 88.0 ft. 102.3 ft. 89.6 ft. 104.0 ft. 92.3 ft. 112.2 ft. 96.2 ft.	100
		NX 100		Steeply Dipping, 1/4-Inch Thick Quartz Vein, Brecciated In Part (96.8 ft - 97.1 ft.)	
			528.1		
		NX 100			100
			523.1		
		NX 100			
			518.1		97
			513.1	Moderately Weathered Zone (107.8 ft to 108.3 ft.)	
		NX 100			
			508.1		
			503.1		98

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 4
TEST BORING RECORD

BORING NO. B-66
DATE DRILLED 8-22-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.		REMARKS	% R.Q.D.	
120.0	Hard Medium Bluish Gray Mafic Gneiss	NX 100	503.1	One-Inch Thick Vein Of Quartz And Epidote With Calcite - Medium Dip. (123.5 ft).	98	
			498.1			
		NX 100	493.1		Interfingering Of Felsic Gneiss: 132.5 ft to 134.0 ft. 134.5 ft to 135.2 ft.	99
			488.1			
139.2	Hard Very Light Gray And Light Bluish Gray Felsic Gneiss	NX 100	483.1	100		
			478.1			
		NX 100	473.1			
			468.1			
158.3	Coring Terminated At 158.3 ft. Groundwater At 39.0 ft After 24 Hours					

BORING AND SAMPLING MEETS ASTM D-1886 * No Drilling Water Loss

Page 4 of 4

TEST BORING RECORD

BORING NO. B-66

DATE DRILLED 8-22-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.		REMARKS	% R.Q.D.
0	Very Stiff Orange Fine To Medium Sandy Clayey Silt		604.4	N=16	
6.0			599.4		
	Very Stiff Yellow And Orange Red Fine To Medium Sandy Silt		594.4	N=17	
			589.4		
			584.4	N=23	
			579.4		
32.0	Very Stiff To Hard Yellow Tan Fine To Medium Sandy Silt - Very Sandy In Places		574.4	N=21	
40.0			569.4		

BORING AND SAMPLING MEETS ASTM D-1886

Page 1 of 3

TEST BORING RECORD

CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.6 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

BORING NO. B-67

DATE DRILLED 9-6-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	569.4 ELEV.	REMARKS	N R.Q.D.	
40.0	Very Stiff To Hard Yellow Tan Fine To Medium Silty Fine To Medium Sand - Very Sandy In Places				N=24	
			564.4		N=26	
			559.4		N=29	
			554.4		N=31	
			549.4		N=47	
			544.4		N=25	
			539.4		N=51	
			534.4		N=75	
79.0		Partially Weathered Rock That Becomes		529.4		N=50/4 1/2"
80.0						

BORING AND SAMPLING MEETS ASTM D-1586 * Yellow Tan Silty Fine To Medium Sand When Sampled
 CORE DRILLING MEETS ASTM D-8112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-67
 DATE DRILLED 9-6-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	529.4 ELEV.	REMARKS	N R.Q.D.		
80.0	Partially Weathered Rock That Becomes Yellow Tan Silty Fine To Medium Sand When Sampled				N=50/5"		
			524.4				
87.7	Hard Light Bluish Gray Felsic Gneiss		519.4	Carbide Bit Refusal And Top Of Continuous Rock @ 87.7 ft. 87.7 ft - 118.3 ft: Slight to Very Slight Weathering. Very Close Healed Joints - Low to Steep Dip - Calcite And Epidote Filled. Scattered Xenoliths Of Mafic Gneiss, Several Greater Than 2 Inches In Diameter Steeply Dipping Quartz Filled Brecciated Zone (94.0 ft - 95.3 ft)			
			514.4				
			509.4				
			504.4				
			499.4				
			494.4				
			489.4				
118.3		Coring Terminated At 118.3 ft. Groundwater At 40 ft After 24 Hour *					

BORING AND SAMPLING MEETS ASTM D-1586 * No Drilling Water Loss
 CORE DRILLING MEETS ASTM D-8112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

Page 3 of 3

TEST BORING RECORD

BORING NO. B-67
 DATE DRILLED 9-6-73
 JOB NO. CH 2920

BORING NO. B-67
 DATE DRILLED 9-6-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	610.9 ELEV.	REMARKS	R.Q.D.
0	Very Stiff Orange Slightly Sandy Clayey Silt				
6.0	Stiff Yellow Tan Slightly Sandy Silt		605.9	N=18	
12.0	Hard To Very STiff Gray Tan Fine To Medium Sandy Silt		600.9	N=12	
17.0	Very Stiff To Hard Gray Tan Fine To Medium Sandy Silt		595.9	N=68	
			590.9	N=25	
			585.9	N=39	
			580.9	N=84	
33.0	Partially Weathered Rock That Becomes Gray Tan Silty Fine To Medium Sand When Sampled		575.9	N=50/4"	
40.0			570.9	N=50/2"	

Page 1 of 4

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-40°

S = STEEP DIP 40°-90°

BORING NO. B-68

DATE DRILLED 8-29-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	570.9 ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock That Becomes Gray Tan Silty Fine To Medium Sand When Sampled				
			565.9	N=50/1"	
			560.9	N=50/1"	
53.6	Hard Light Bluish Gray Felsic Gneiss		555.9	N=50/3"	
			550.9		
			545.9		
			540.9		
			535.9		
			530.9		

Page 2 of 4

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-40°

S = STEEP DIP 40°-90°

BORING NO. B-68

DATE DRILLED 8-29-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Hard Light Bluish Gray Felsic Gneiss	NX	530.9		
99					
			525.9	L	96
100			520.9		97
			515.9	2-inch Wide Quartz Vein - Medium Dip (94.1 ft.)	
100			510.9		100
			505.9	Medium Dip Quartz Pegmatite With 2-inch Schistose Zone at Upper Contact (102.5 ft - 103.3 ft.)	96
99			500.9	Steeply Dipping Quartz Pegmatite (105.0 ft - 105.5 ft.)	
			495.9	1/2-inch Quartz Vein, Medium Dip (112.9 ft.)	100
120.0			490.9		

Page 3 of 4
TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING NO. B-68
DATE DRILLED 8-29-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard Light Bluish Gray Felsic Gneiss	NX	490.9		
		100			100
			485.9		
		100	480.9	Schistose Zone (130.8 ft. - 133.5 ft.) With Sericitic Phase (132.0 ft - 132.7 ft)	100
			475.9	Thin, Vertical Brecciated Zone Pegmatitic, In Part (134.5 ft - 135.5 ft)	
140.0	Coring Terminated At 140.0 ft. Groundwater At 54 ft After 24 Hours No Drilling Water Loss		470.9		

Page 4 of 4
TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING NO. B-68
DATE DRILLED 8-29-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
0		637.4		
		632.4		
		627.4	N=18 Yellowish And Red Fine Sandy Micaceous Silt	
		622.4		
		617.4	N=39 Red Brown Micaceous Fine To Coarse Sandy Silt With Partially Weathered Rock Fragments	
		612.4		
		607.4		
		602.4		
38.1	Partially Weathered Rock			
40.0		597.4	N=50/4" Partially Weathered Rock That Becomes Brown Gray Silty Fine To Coarse Sand When Sampled	

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD

BORING NO. B-69P
 DATE DRILLED 9-21-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock That Becomes Brown Gray Silty Fine To Coarse Sand When Sampled			
		592.4		
46.6	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	Carbide Bit Refusal And Top Of Continuous Rock 46.6 ft.	100
		587.4	46.6 ft - 55.4 ft. Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	92
		582.4	53.5 ft - 54.5 ft. Moderate To Severe Weathering. Very Close Joints - Low To Medium Dip. Very Close Healed Joints - Low To Steep Dip.	
		577.4	1/4-inch Pegmatite Vein - Medium Dip.	
		572.4	54.3 ft - 68.8 ft. Slight To Very Slight Weathering. Very Close Healed Joints - Medium To Steep Dip.	100
68.8	Coring Terminated at 68.8 ft. Groundwater at 35.0 ft After 24 Hours Drilling Water Loss At 49.0 ft.	567.4		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD

BORING NO. B-69P
 DATE DRILLED 9-21-73
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

631.5

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Hard Orange-Tan Slightly Clayey Fine To Coarse Sandy Silt With Some Small Quartz Fragments		626.5		
11.0	Dense To Very Dense Pinkish-Yellow Micaceous Very Silty Fine To Coarse Sand		621.5	N=80	
21.0	Firm Tan-Gray Micaceous Very Silty Fine Sand		616.5	N=39	
26.0	Very Dense Light Gray Micaceous Very Silty Fine To Medium Sand		611.5	N=52	
31.0	Very Dense Brown-Light Gray Silty Fine To Coarse Sand With Some Small Weathered Rock Fragments		606.5	N=21	
37.9	Partially Weathered Rock That Becomes Tan-Light Gray Silty Fine To Coarse *		601.5	N=84	
			596.5	N=53	
40.0			591.5	N=50/6"	

Page 1 of 3

TEST BORING RECORD

BORING NO. B-70
 DATE DRILLED 10-23-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 69 of 298

591.5

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock That Becomes Tan-Light Gray Silty Fine To Coarse Sand When Sampled		586.5	N=31 NW Casing To 45.0 ft.	
42.0	Dense Tan-Light Gray Silty Micaceous Fine To Medium Sand		581.5	N=50/4" Carbide Bit Refusal And Top Of Continuous Rock At 49.6 ft.	
46.0	Partially Weathered Rock That Becomes Tan-Light Gray Silty Micaceous Fine To Medium Sand When Sampled		576.5	49.6 ft to 60.3 ft. Moderate To Slight Weathering. Very Close To Close Healed And Slightly Leached Joints - Low To Steep Dip.	60
49.6	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 96	571.5	1 Inch Steep Dip Pegmatite Vein of Quartz And Feldspar (51.2 ft to 52.0 ft.) Felsic Schist (56.6 to 57.2 ft.) Medium Dip Pegmatite Stringer (57.6 ft.) Close And Very Close Healed Joints With Calcite And Chlorite - Low To Steep Dip (60.3 to 69.2 ft.) Slickensided Surface - Medium Dip (65.4 ft.) Very Slight Weathering (60.3 to 108.4 ft.)	94
69.2	Hard Medium Light Gray Mafic Gneiss	96	566.5	Steep Dip Contact (69.2 ft.) Medium To Soft Moderately Severely Weathered Zones: 71.9 ft to 72.1 ft. 76.8 ft to 78.1 ft. 80.7 ft to 81.0 ft. 88.3 ft to 89.3 ft.	100
			561.5	Steep Interfingering Felsic Gneiss With Schistose Contact Zone (74.8 to 75.3 ft.)	100
			556.5		82
80.0			551.5		

* 75.2 ft.

Page 2 of 3

TEST BORING RECORD

BORING NO. B-70
 DATE DRILLED 10-23-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586 * Sand When Sampled

CORE DRILLING MEETS ASTM D-2112

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-10°

M = MED. DIP 10°-40°

S = STEEP DIP 40°-90°

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-10°

M = MED. DIP 10°-40°

S = STEEP DIP 40°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
80.0	Hard Medium Light Gray Mafic Gneiss	NQ 100	546.5	Very Thin, Steep Veinlet With Quartz, Calcite, Muscovite And Chlorite (81.0 to 81.7 ft.) Very Close Calcite And Chlorite Healed And Filled Joints - Low To Steep Dip (69.2 to 89.1 ft.)	97
89.1	Hard Light Bluish Gray Felsic Schist	100	541.5	Interfingering Mafic Gneiss And Felsic Schist (87.9 to 89.1 ft.) Decreasing Grain Size And Increasing Mica Content With Depth (89.1 to 108.4 ft.) Steep Healed Joints (104.5 ft.)	88
		100	536.5		
		100	531.5		
		100	526.5		100
08.4	Coring Terminated At 108.4 ft. Groundwater At 28 ft. After 24 Hours No Drilling Water Loss		521.5		

Page 3 of 3

TEST BORING RECORD

BORING NO. B-70
DATE DRILLED 10-23-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1589
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Firm Tan Orange Fine To Medium Sandy Clayey Silt		601.5	N=6	
6.0	Firm To Stiff Tan Brown Fine To Medium Sandy Slightly Micaceous Silt		596.5	N=5	
			591.5	N=11	
17.0	Very Dense Tan Brown Silty Slightly Micaceous Fine To Coarse Sand		586.5	N=75	
23.2	Partially Weathered Rock That Becomes Tan Brown Silty Fine To Coarse Sand		581.5	N=50/3 1/2"	
			576.5	N=50/1" No Recovery	
31.5	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 100	571.5	Carbide Bit Refusal at 31.5 ft. 31.5 ft to 40.4 ft. Slight To Moderate Weathering. Close Joints - Low To Medium Dip. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	56
		NX 62			
		NX 100	566.5	Top Of Continuous Rock At 38.7 ft. Leached Irregular Quartz Vein *	35
40.0					98

(37.2 to 37.5 ft.)

Page 1 of 2

TEST BORING RECORD

BORING NO. B-71
DATE DRILLED 10-19-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1589
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	561.5	38.7 ft to 58.7 ft.: Very Slight Weathering. Close Healed And Rarely Leached Joints With Calcite And Chlorite - Low To Steep Dip.	98
			556.5		
			551.5	Very Thin, Nearly Vertical Schistose Zone With Calcite And Chlorite (50.0 to 52.2 ft.)	100
			546.5		
58.7	Coring Terminated at 58.7 ft. Groundwater at 6.0 ft. After 24 Hours No Drilling Water Loss				

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Firm Orange Tan Very Silty Fine To Medium Sand		612.9		
			607.9		
11.0	Firm Gray Tan Very Silty Fine To Medium Sand		602.9		N=12
			597.9		
17.0	Firm White Gray Slightly Micaceous Silty Fine To Medium Sand		592.9		N=67/9"
			587.9		
24.0	Partially Weathered Rock That Becomes Gray Tan Slightly Micaceous Silty Fine To Medium Sand When Sampled		582.9		N=67/9"
			577.9		
31.0	Hard Tan Gray Micaceous Fine Sandy Silt		577.9		
36.0	Hard Light Bluish Gray Felsic Gneiss	NX 100		Carbide Bit Refusal And Top Of Continuous Rock At 36.0 ft.	100
37.8	Hard To Very Hard Very Light Gray Felsic Gneiss	100			100
40.0					

BORING AND SAMPLING MEETS ASTM D-1586 * Moderately Hard To Hard Very
CORE DRILLING MEETS ASTM D-5112 Light Gray Felsic Gneiss
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 2 of 2
TEST BORING RECORD

BORING NO. B-71
DATE DRILLED 10-19-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Sheet 1 of 2
TEST BORING RECORD

BORING NO. B-72
DATE DRILLED 10-18-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100	577.9	36.0 ft - 57.3 ft.: Very Slight Weathering, Very Close Healed And Rarely Leached Joints - Low To Steep Dip. Low Dip Sericite Schist (44.9 to 45.1 ft.) Slightly Weathered Zone With Close To Very Close Low To Steep Dip M Joints (47.1 ft to 48.5 ft.)	100
		NX 100	572.9		83
		NX 97	567.9		97
			562.9		
57.3	Coring Terminated At 57.3 ft Groundwater At 22 ft After 24 Hours Drilling Water Loss At 43.0 ft.				

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 Of 2
TEST BORING RECORD

BORING NO. B-72
DATE DRILLED 10-18-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 72 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0			613.4		
			608.4		
			603.4	N=12 Stiff Pinkish-Tan Fine To Medium Sandy Micaceous Silt	
			598.4		
			593.4	N=22 Very Stiff Pinkish-Gray Fine To Medium Sandy Micaceous Silt	
			588.4		
			583.4	N=23 Very Stiff Yellow-Brown Fine To Medium Sandy Micaceous Silt	
			578.4	N=11 Stiff Yellow-Brown Fine To Medium Sandy Micaceous Silt	
			573.4	Stiff Yellow-Brown Fine To Medium Sandy Micaceous Silt	
40.0			573.4	N=14	

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD

BORING NO. B-73
DATE DRILLED 11-1-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	573.4 ELEV.	REMARKS	R.O.D.
40.0					
			568.4	N=16 Very Stiff Yellow-Brown Fine To Medium Sandy Micaceous Silt	
			563.4	N=59 Hard Light Gray Fine To Medium Sandy Micaceous Silt	
53.0	No Recovery		558.4	Carbide Bit Refusal At 53.0 ft. 53.0 ft to 78.0 ft. Cored With NQ Wire Line - No Recovery	
55.0	Partially Weathered Rock		553.4	N=50/2"	
			548.4	N=50/1" Standard Penetration At 5 foot Intervals - No Recovery	
			543.4	N=50/1"	
			538.4	N=50/1"	
78.0	Soft Light Olive Gray Mafic Gneiss	NQ 0	533.4	N=50/1" NW Casing To 80.0 ft.	0

Page 2 of 3

TEST BORING RECORD

BORING NO. B-73
 DATE DRILLED 11-1-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 73 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	533.4 ELEV.	REMARKS	R.O.D.
80.0					
80.5	Medium To Moderately Hard Dark Greenish Gray Mafic Gneiss	NQ 60		78.0 ft to 98.0 ft. Moderate To Severe Weathering. Close Joints - Low To Steep Dip. Close Healed And Slightly Leached Joints - Low To Steep Dip.	46
84.0	Soft Yellowish Gray Mafic Gneiss		528.4		68
87.0	Medium Very Light Gray Felsic Gneiss	96		Severely Leached Epidote - Rich Zone (88.8 to 89.2 ft.)	
89.1	Soft To Moderately Hard Grayish Orange To Light Olive Gray Mafic Gneiss	48	523.4		22
			518.4	98.0 ft to 113.0 ft. Moderate To Slight Weathering. Close And Very Close Healed Rarely Leached Joints With Calcite And Oxides - Low To Steep Dip.	60
98.0	Hard Grayish Green Mafic Gneiss	80	513.4	Close Joints - Low To Steep Dip (98.0 ft to 105.3 ft.)	42
			508.4	Very Severely Weathered Zone - Probable Location Of Core Loss (102.0 to 103.8 ft.)	68
			503.4		100
113.0	Coring Terminated At 113.0 ft. Groundwater At 38.0 ft At Time Of Boring No Drilling Water Loss	100	498.4		

Page 3 of 3

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.D. ROCK QUALITY DESIGNATION

Soft Light Olive Gray Mafic Gneiss

TEST BORING RECORD

BORING NO. B-73
 DATE DRILLED 11-1-73
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	627.4 ELEV.	REMARKS	% R.Q.D.
0	Stiff Orange to Tan Fine to Medium Very Sandy Silt				
			622.4	N=11	
			617.4	N=13	
			612.4	N=9	
			607.4	N=9	
			602.4	N=10	
30.0	Very Stiff Tan Fine to Medium Sandy Silt To Firm Silty Fine To Medium Sand		597.4	N=22 Carbide Bit Refusal at 35.8 ft. 35.8 ft - 39.3 ft: Moderate Weathering, Very Close Healed Joints.	
35.0	Partially Weathered Rock That Becomes*		592.4	N=50/4 in. Medium to Steep Dip, Close to Very Close Joints- Low to Steep Dip - Rough Weathered Surfaces.	
35.8	Moderately Hard Yellow Gray Felsic Gneiss	NX 97			36
39.3	Hard to Very Hard Very Light Gray **	97	587.4		87

BORING AND SAMPLING MEETS ASTM D-1886 *Tan Gray Silty Fine to Medium Sand
CORE DRILLING MEETS ASTM D-5113 When Sampled

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT. ** Felsic Gneiss

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-74
DATE DRILLED 7-3-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	587.4 ELEV.	REMARKS	% R.Q.D.
40.0	Hard to Very Hard Very Light Gray Felsic Gneiss	NX			
		97	582.4	39.3 ft - 65.4 ft: Slight Weathering, Very Close Healed Joints - Medium to Steep Dip. Top of Continuous Rock at 40.0 ft	87
		100	577.4	Steep Joint Filled with 1/8 inch Fine Grained Black Material (47.3 ft) Close Joints, Mostly Rough and Clean - Low to Medium Dip (39.3 ft - 55.0 ft)	96
		100	572.4		100
		100	567.4		100
65.4	Coring Terminated @ 65.4 ft. Groundwater @ 31 ft After 24 Hours Drilling Water Loss At 44.0 ft.		562.4		
			557.4		

BORING AND SAMPLING MEETS ASTM D-1886
CORE DRILLING MEETS ASTM D-5113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-74
DATE DRILLED 7-3-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Stiff Reddish Tan Fine To Medium Silty Silt		586.3		
			581.3	N=14	
8.0	Loose To Firm Orange Tan Very Silty Slightly Clayey Fine To Medium Sand		576.3	N=10	
			571.3	N=16	
18.0	Firm Tannish Brown Very Silty Slightly Micaceous Fine To Medium Sand		566.3	N=22	
			561.3	N=14	
			556.3		
	Fine To Medium Very Sandy Silt Layer At 31 ft.		551.3	N=21	
				N=23	
38.0	Very Dense Tannish Gray Silty Micaceous Fine To Coarse Sand		546.3		
40.0					

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO.

DATE DRILLED 10-10-73

JOB NO. CH 2920

Page 1 of 2
TEST BORING RECORD
 B-75

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Very Dense Tannish Gray Silty Micaceous Fine To Coarse Sand		546.3		
			541.3	N=61	
			536.3	N=75	
50.2	Partially Weathered Rock That Becomes Tannish Brown Silty Slightly Micaceous Fine To Coarse Sand			N=96/9"	
53.0	Hard Brownish Gray Fine Sandy Micaceous Silt		531.3	N=76/8"	
57.4	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	526.3	Carbide Bit Refusal And Top Of Continuous Rock At 57.4 ft	79
		NX 100	521.3	57.4 ft - 60.8 ft: Moderate To Slight Weathering. Very Close To Close Healed And Slightly Leached Joints - Low To Steep Dip.	100
		NX 100	516.3	60.8 ft - 76.6 ft: Slight To Very Slight Weathering. Close Healed And Calcite Filled Joints - Low To Steep Dip.	100
		NX 100	511.3	2 Inch. Medium Dip Schistose Zone (76.3 ft)	
78.6	Coring Terminated at 78.6 ft Groundwater at 11 ft After 24 Hours *				

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

* No Drilling Water Loss

Page 2 of 2
TEST BORING RECORD
 B-75

BORING NO.

DATE DRILLED 10-10-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	620.8 ELEV.	REMARKS	R.Q.D.
0	Stiff Orange Fine To Medium Sandy Clayey Silt				N=15
5.0			615.8		
	Very Stiff and Stiff Green Brown with Orange Seams Fine Sandy Micaceous Silt		610.8		N=17
			605.8		
			600.8		N=12
23.0			595.8		N=29
	Very Stiff And Stiff Green Brown With Orange Seams Fine Sandy Micaceous Silt		590.8		N=14
			585.8		N=13
40.0			580.8		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 4
TEST BORING RECORD

BORING NO. B-77

DATE DRILLED 7-24-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 76 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	580.8 ELEV.	REMARKS	R.Q.D.
40.0	Very Stiff Brown and Tan Fine Sandy Micaceous Silt				N=29
45.0			575.8		N=17
	Dense to Very Dense Green Tan to Tan Silty Fine to Medium Sand With Hard Fine To Medium Very Sandy Silt Layers		570.8		N=48
			565.8		N=35
			560.8		N=61
63.0			555.8	Partially Weathered Rock That Becomes Tan Silty Fine to Medium Sand When Sampled	N=50/2 in.
			550.8		N=50/4 in.
			545.8		N=50/4 in.
80.0			540.8	-Very Dense Seam From About 77.6 ft to 78.0 ft	N=65

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 4
TEST BORING RECORD

BORING NO. B-77

DATE DRILLED 7-24-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock That Becomes Tan Silty Fine to Medium Sand When Sampled		540.8		
			535.8	N=50/3"	
88.4	Moderately Hard Yellow Gray Medium Grained Felsic Gneiss	NX	530.8	N=50/2" Carbide Bit Refusal At 88.4 ft. Very Close Healed Joints-Some Leached- Low To Steep Dip (88.4 ft - 123.6 ft.)	42
90.5	Hard Pink Gray to Yellow Gray Medium Grained Felsic Gneiss	80	525.8	88.4 ft - 90.5 ft: Moderate Weathering. Very Close Rough Joints-Low to Steep Dip	
95.5	Hard to Very Hard Light Bluish Gray Medium Grained Felsic Gneiss	97	520.8	90.5 ft - 95.5 ft: Moderate to Slight Weathering. Close Joints-Low Dip	73
		100	515.8	Very Close Joints-Low to Steep Dip: 92.5 ft - 93.2 ft 95.0 ft - 95.5 ft	87
		94	510.8	Top of Continuous Rock at 94.3 ft 95.5 ft - 109.0 ft: Slight Weathering Close Joints-Low Dip-Oxide Coated Rough Steep Schistose Zone (98.4 ft - 99.6 ft)	85
		100	505.8	Severe Leaching (104.3 ft) Slight to Very Slight Weathering (109.0 ft - 122.6 ft) Close Joints-Low Dip-Epidote and Clay Coated (111.8 ft - 113.0 ft)	95
120.0		100	500.8		100

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 4
TEST BORING RECORD

BORING NO. B-77

DATE DRILLED 7-24-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard to Very Hard Light Bluish Gray Medium Grained Felsic Gneiss	NX 100	500.8		100
123.6	Coring Terminated at 123.6 ft Groundwater at 29 ft After 24 Hours No Drilling Water Loss		495.8		

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 4 of 4
TEST BORING RECORD

BORING NO. B-77

DATE DRILLED 7-24-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	N. R.Q.D.
0	Rotary Drilled With Fishtail Bit To 33.0 ft.				
			619.2		
			614.2		
			609.2		
			604.2		
			599.2		
			594.2		
			589.2	N=25 Very Stiff Orange Brown Fine Sandy Silt	
40.0			584.2		

Page 1 of 4

TEST BORING RECORD

BORING NO. B-77AP
 DATE DRILLED 9-28-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	N. R.Q.D.
40.0	Rotary Drilled With Fishtail Bit To 58.8 ft.				
			579.2		
			574.2		
			569.2		
			564.2	N=42 Hard Grayish Brown Fine Very Micaceous Sandy Silt	
	Rotary Drilled With Fishtail Bit To 70.9 ft.		559.2		
			554.2		
70.5	Partially Weathered Rock			N=50/1 in. Partially Weathered Rock That Becomes Very Dense Brownish Tan Silty Fine To Coarse Sand With Rock Fragments And Clayey Seam When Sampled	
	Rotary Drilled With Fishtail Bit To 85.3 ft.		549.2		
80.0			544.2		

Page 2 of 4

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

BORING NO. B-77AP
 DATE DRILLED 9-28-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock Rotary Drilled With Fishtail Bit To 85.3 ft.			544.2		
				539.2	Carbide Bit Refusal @ 85.3 ft.	
85.3	Moderately Hard Yellowish Gray Felsic Gneiss	NX 100		534.2	85.3 ft - 104.5 ft: Moderately Severe To Moderate Weathering. Very Close Joints - Low To Steep Dip. Very Close Healed And Leached Joints. - Low To Steep Dip.	73
			24	529.2	Abundant Quartz Veins Up To 1 inch Thick - Low To Steep Dip.	0
			58	524.2		12
104.5	Hard Light Bluish Gray Felsic Gneiss			519.2	Top Of Continuous Rock @ 104.5 ft.	
			100	514.2	104.5 ft - 125.8 ft. Slightly Weathered. Wide Joints - Low Dip Close Healed Joints - Low To Steep Dip - Many Calcite Coated.	100
			99	509.2	Steep Dip Quartz Veins, 1/4-inch Thick: 108.5 ft - 109.5 ft. 110.3 ft - 111.2 ft.	
120.0				504.2		97

BORING AND SAMPLING MEETS ASTM D-1886
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.O. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 3 of 4
TEST BORING RECORD

BORING NO. B-77AP

DATE DRILLED 9-28-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 79 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0		NX 99		499.2	Leaching Along Joints (121.6 ft - 122.0 ft.) Fine Grained Slightly Darker Zone, Schistose At Contacts (121.9 - 123.2 ft.)	97
125.8	Coring Terminated @ 125.8 ft. Groundwater At 32.8 ft At Time Of Boring Groundwater At 33.0 ft After 24 Hours Drilling Water Loss At 95.0 ft.					

BORING AND SAMPLING MEETS ASTM D-1886
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.O. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 4 of 4
TEST BORING RECORD

BORING NO. B-77AP

DATE DRILLED 9-28-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Rotary Drilled With Fishtail Bit To 32.9 ft		622.2		
			617.2		
			612.2		
			607.2		
			602.2		
			597.2		
			592.2		
			587.2	N=36 Hard Tan Gray Fine To Medium Sandy Silt	
40.0			582.2		

BORING AND SAMPLING MEETS ASTM D-1588
 CORE DRILLING MEETS ASTM D-8118
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINTS:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD

BORING NO. B-77BP

DATE DRILLED 10-1-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Rotary Drilled With Fishtail Bit 0 ft - 58.0 ft		582.2		
			577.2		
			572.2		
			567.2		
59.0	Partially Weathered Rock Rotary Drilled With Fishtail Bit To 75.0 ft		562.2	N=81/9.5" Partially Weathered Rock That Becomes Hard Tannish Gray Fine To Medium Sandy Silt When Sampled	
			557.2		
			552.2		
			547.2	Carbide Bit Refusal @ 75.0 ft	
75.0	Moderately Hard Very Pale Orange Felsic Gneiss	NX 100		75.0 ft - 80.5 ft: Moderate Weathering. Close Joints - Low To Medium Dip. Very Close Healed And Slightly Leached Joints - Low To Steep Dip	72
80.0		96	542.2		89

BORING AND SAMPLING MEETS ASTM D-1588
 CORE DRILLING MEETS ASTM D-8118
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINTS:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3
TEST BORING RECORD

BORING NO. B-77BP

DATE DRILLED 10-1-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0						
80.5	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 96			Top Of Continuous Rock @ 80.5 ft	
			537.2	80.5 ft - 97.1 ft: Very Slight Weathering, Very Close Healed And Filled Joints With Chlorite And Calcite - Low To Steep Dip.	89	
			532.2			
			527.2	Several Machine Breaks Along Leached Joints (97.1 ft - 107.5 ft)	91	
97.1	Hard Very Pale Orange And Light Bluish Gray Felsic Gneiss	100			97.1 ft - 107.5 ft: Slight To Moderate Weathering, Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	
			522.2			
			517.2			
107.5	Coring Terminated @ 107.5 ft No Drilling Water Loss	100				
			512.2			

BORING AND SAMPLING MEETS ASTM D-1986 *Moderately Hard Light Olive Gray Felsic Gneiss
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-77BP

DATE DRILLED 10-1-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Wash Drilled With Carbide Fishtail 0 ft - 92.0 ft.					
				614.2		
				609.2		
				604.2		
				599.2		
				594.2		
				589.2		
				584.2		
				579.2		
40.0						N=29 Tan Brown Fine To Medium Sandy Silt

BORING AND SAMPLING MEETS ASTM D-1986
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 4

TEST BORING RECORD

BORING NO. B-77CP

DATE DRILLED 10-5-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	ELEV.	REMARKS	R.Q.D.
40.0	Wash Drilled With Carbide Fishtail 0 ft - 92.0 ft				
			574.2		
			569.2		
			564.2		
59.0	Partially Weathered Rock		559.2	N=41, 50/4" Partially Weathered Rock That Becomes Brown Gray Very Micaceous Fine Sandy Silt When Sampled	
			554.2		
			549.2		
			544.2		
			539.2		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 4
TEST BORING RECORD

BORING NO. B-77CP
DATE DRILLED 10-5-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 82 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock				
			534.2		
			529.2		
92.0	Medium To Hard Medium Bluish Gray Mafic Gneiss	NX 100	524.2	Carbide Bit Refusal at 92.0 ft. 92.0 ft - 100.0 ft: Slight To Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Healed And Filled Joints With Chlorite And Calcite - Low To Steep Dip.	66
100.0	Very Soft To Medium Grayish Orange Mafic Gneiss And Soil	NX 29	519.2	Very Severe To Moderately Severe Weathering (100.0 ft - 105.5 ft.) ...	17
105.0	Medium To Hard Greenish Gray Mafic Gneiss	NX 73	514.2	105.5 ft - 111.5 ft.: Slight To Moderate Weathering. Close To Moderately Close Joints - Low To Medium Dip. Very Close Healed Joints - Low To Steep Dip.	62
			509.2	Top Of Continuous Rock At 106.5 ft.	
112.0	Hard Very Light Gray Felsic Gneiss	NX 82	504.2	111.5 ft - 121.5 ft.: Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	70
116.2	Soft To Medium Light Olive Gray Mafic Gneiss			Leaching Along Healed Joints (111.6 to 111.7 ft.) Moderately Severely Weathered Zone (116.2 to 119.0 ft.)	
119.0	Hard To Very Hard Light Bluish Gray *	100	499.2	S	94
120.0					

BORING AND SAMPLING MEETS ASTM D-1586 * Felsic Gneiss
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 4
TEST BORING RECORD

BORING NO. B-77CP
DATE DRILLED 10-5-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 83 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	499.2	121.5 ft - 136.2 ft. Very Slight Weathering. Very Close Healed Joints With Traces Of Calcite - Low To Steep Dip.	94
			494.2		
			489.2		
	Coring Terminated at 136.2 ft Slight Water Loss From 92.0 ft Throughout Coring	NX 100	484.2		100
136.2					

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Stiff and Very Stiff Tan Brown Fine to Medium Sandy Silt		611.7		
			606.7	N=7	
			601.7	N=12	
			596.7	N=12	
			591.7	N=17	
			586.7	N=15	
			581.7	N=13	
			576.7	N=16	
			571.7	N=15	
40.0					

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 4 of 4
TEST BORING RECORD
 B-77CP

BORING NO. B-77CP
 DATE DRILLED 10-5-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO. Page 83 of 298

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD
 B-78

BORING NO. B-78
 DATE DRILLED 7-19-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Stiff and Very Stiff Tan Brown Fine to Medium Sandy Silt			571.7		
44.0	Dense and Firm Tan Silty Fine to Medium Sand			566.7	N=31	
51.0	Partially Weathered Rock			561.7	N=20	
56.6	Hard Very Light to Light Gray : Felsic Gneiss	NX		556.7	N=50/3 in. Carbide Bit Refusal And Top of Continuous Rock at 56.6 ft Moderately Weathered (56.6 ft - 59.5 ft)	
		100		551.7	Slightly to Very Slightly Weathered (59.5 ft - 66.6 ft) Closely Spaced Low to Medium Dip Joints (56.6 ft - 69.9 ft).	
		8.0		546.7	56.6 ft - 74.5 ft. Very Closely Spaced, Low To Steep Dip Healed Joints. Partly Leached Inclusions Of Mafic Gneiss, Up To 2 Inches Diameter. Slightly to Moderately Weathered (66.6 ft - 69.9 ft)	98
		100		541.7	Very Slightly Weathered (69.9 ft - 86.6 ft)	98
74.5	Hard Medium Dark Gray Mafic Gneiss			536.7	Moderately to Moderately Severe Weathering Zones: 59.2 ft - 59.3 ft 67.6 ft - 67.8 ft Healed Joints and Vains of Calcite and Epidote-Low to Medium Dip (74.5 ft - 86.6 ft)	
80.0		100		531.7		100

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3
TEST BORING RECORD

BORING NO. B-78

DATE DRILLED 7-19-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	% R.Q.D.
80.0	Hard Medium Dark Gray Mafic Gneiss	NX		531.7		
		10.0		526.7		
86.6	Coring Terminated at 86.6 ft Groundwater At 28.9 ft At Time Of Boring Groundwater At 28.0 ft After 24 Hours Drilling Water Loss At 63.5 ft.			521.7		
						100

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3
TEST BORING RECORD

BORING NO. B-78

DATE DRILLED 7-19-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Hard Red Brown Fine Sandy Clayey Silt		606.3		
			601.3	N=33	
7.0	Very Stiff To Stiff Tan Dark Brown Fine To Medium Sandy Silt		596.3	N=20	
			591.3	N=25	
20.0	Stiff To Very Stiff Tan Dark Brown Fine To Medium Sandy Silt		586.3	N=13	
			681.3	N=20	
	Soft Tan Brown Fine To Coarse Sandy Silt Seam Between 29.8 ft - 32.0 ft.		576.3	N=4	
	Very Silty Fine To Medium Sand Layer At 33.0 ft.		571.3	N=20	
37.0	Stiff Tan Dark Brown Fine To Medium Sandy Silt		566.3		
40.0					

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Stiff Tan Dark Brown Fine To Medium Sandy Silt		566.3	N=14	
42.0	Very Stiff To Hard Fine Sandy Very Micaceous Silt		561.3	N=29	
			556.3	N=51	
53.3	Partially Weathered Rock That Becomes Gray Green Fine To Medium Very Sandy Silt		551.3	N=50/5"	
			546.3	N=50/3"	
	Fine To Coarse Very Sandy Silt Layer at 63 ft.		541.3	N=50/3"	
66.9	Medium And Moderately Hard Pink And Yellowish Gray Felsic Gneiss	NX 56	536.3	66.9 ft to 97.0 ft: Severe And Moderately Severe Weathering	23
		41	531.3	Very Close Joints - Low To Steep Dip	15
		90		Very Close Healed And Slightly Leached Joints - Low To Steep Dip	37
		76			0
		63	526.3		22
80.0					

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

% ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-79
 DATE DRILLED 7-31-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

% ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 5

TEST BORING RECORD

BORING NO. B-79
 DATE DRILLED 7-31-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TYPE SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Medium And Moderately Hard Pink And Yellowish Gray Felsic Gneiss	NX 63			22
		NX			
		91	521.3		47
		70	516.3		0
		68	511.3	Top of Continuous Rock At 97.0 ft	28
97.0	Hard Bluish Gray Felsic Gneiss	93	506.3	97.0 - 107.0 ft: Slight Weathering. Close Joints - Medium Dip. Close Healed Joints - Partly Leached - Low To Steep Dip.	63
		97	501.3		84
107.0	Moderately Hard Pinkish Gray Felsic Gneiss		496.3	107.0 - 112.5 ft: Moderate Weathering Very Close Joints - Low To Steep Dip	
110.5	Moderately Hard To Hard Pinkish Gray Felsic Gneiss	92		Very Close Spaced Healed Joints - Partly Leached - Low To Steep Dip	70
114.0	Hard To Very Hard Light Blue Gray Felsic Gneiss		491.3	110.5 - 114.0 ft: Slight To Moderate Weathering. Close Joints - Low To Steep Dip - Oxide Coated - Rough.	
117.5	Hard Very Light Gray Felsic Gneiss	97	486.3	Very Close Healed Joints - Low To Steep Dip.	75

Page 3 of 5

BORING AND SAMPLING MEETS ASTM D-1996
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 44 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

TEST BORING RECORD

BORING NO. B-79
DATE DRILLED 7-31-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO. Page 86 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TYPE SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard Very Light Gray Felsic Gneiss	NX			
		97	481.3	117.5 - 140.5 ft: Slight To Moderate Weathering. Close And Very Close Joints - Calcite, Oxide Or Epidote Coated - Mostly Rough - Low To Steep Dip. Very Close Healed Joints - Some Leached - Low To Steep Dip.	75
		95	476.3	Soft, Very Severely Weathered, Biotite-Rich Zone (133.7 - 134.0 ft)	57
			471.3		
		88	466.3		55
140.5	Very Soft To Medium Light Olive Gray Schistose Biotite-Rich Felsic Gneiss			140.5 - 143.7 ft: Very Severe To Moderately Severe Weathering. Close Joints - Medium To Steep Dip. Very Close Healed Joints - Steep Dip.	
143.7	Medium To Moderately Hard Very Light Gray Felsic Gneiss	87	461.3	143.7 - 148.5 ft: Moderately Severe Weathering. Very Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	0
148.5	Hard To Very Hard Light Bluish Gray Felsic Gneiss	96	456.3	148.5 - 173.0 ft: Slight To Very Slight Weathering. Very Close Healed Joints - Calcite And Epidote. Close And Moderately Close Joints - Calcite, Epidote And Clay Coating - Low To *	73
			451.3		
		98	446.3		98

Page 4 of 5

BORING AND SAMPLING MEETS ASTM D-1996
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 44 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

TEST BORING RECORD

BORING NO. B-79
DATE DRILLED 7-31-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE 445.3		REMARKS	R.Q.D.
		SIZE	ELEV.		
160.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 98			98
			441.3		
166.2	Hard Green Gray Fine Grained Mafic Gneiss	99		5	
167.1	Hard To Very Hard Light Bluish Gray Felsic Gneiss		436.3	M 1/4 In. Offset Along Calcite - Filled Joint	99
			431.3		
173.0	Hard Green Gray Fine Grained Mafic Gneiss	100		173.0 - 188.2 ft And 190.6 - 191.7 ft: Very Slight Weathering Close To Very Close Calcite Healed Joints - Low To Steep Dip	100
			426.3	Calcite-Rich Zones: 181.4 - 182.2 ft. 186.7 - 188.1 ft.	
			421.3		
		100		188.5 - 190.6 ft: Slight Weathering Very Close Healed Joints - Low To Steep Dip	100
188.5	Very Hard Light Bluish Gray Felsic Gneiss		416.3	Very Close Joints At Contact (190.6 ft)	
190.6	Hard Green Gray Fine Grained Mafic Gneiss				
191.7	Coring Terminated 191.7 ft. Groundwater @ 35 ft After 24 Hours No Drilling Water Loss				

DEPTH FT.	DESCRIPTION	CORE 604.2		REMARKS	R.Q.D.
		SIZE	ELEV.		
0	Very Stiff Orange Tan Fine To Medium Sandy Clayey Silt				
			599.2	N=20	
5.0	Loose To Firm Tan Slightly Micaceous Very Silty Fine To Medium Sand				
			594.2		
			589.2	N=10	
			584.2	N=13	
23.0	Partially Weathered Rock That Becomes Gray Tan Silty Fine to Coarse Sand When Sampled				
			579.2	N=50/5"	
			574.2	N=50/4"	
			569.2	N=50/3"	
			564.2	N=50/6"	
40.0	-Micaceous at 36.2 ft				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8153
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 5 of 5
TEST BORING RECORD

BORING NO. B-79
DATE DRILLED 7-31-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-20°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO. Page 87 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8153
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD

BORING NO. B-80
DATE DRILLED 7-19-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-20°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock That *					
41.3	Hard Very Light Gray to Bluish White Felsic Gneiss	NX	100		Carbide Bit Refusal And Top of Continuous Rock 41.3 ft	
				559.2	Slightly Weathered (41.3 ft - 42.7 ft)	63
45.0	Moderately Hard Medium Dark Gray to Greenish Gray Mafic Gneiss				Moderately Weathered (42.7 ft - 43.5 ft)	
				554.2	Close Medium Dip Joints (41.3 ft - 45 ft)	
					Slightly Weathered (43.5 ft - 45 ft)	
50.5	Very Hard Very Light Gray to Bluish White Felsic Gneiss	100			Zone of Moderate Weathering (47.9 ft - 48.3 ft)	93
				549.2	Moderately Severely Weathered (45 ft - 46.8 ft)	
					Moderately Close Low Dip Joint (45 ft - 50.5 ft)	
57.0	Hard Medium Dark Gray to Greenish Gray Mafic Gneiss				Slightly to Moderately Weathered (46.8 ft - 50.5 ft)	
				544.2	Very Slightly Weathered (50.5 ft - 66.5 ft)	96
					Very Close Low to Steep Dipping Well Healed Joints (41.3 ft - 66.5 ft)	
				539.2		
66.5	Coring Terminated at 66.5 ft Groundwater At 44 ft After 24 Hours No Drilling Water Loss				Zone of Moderate Weathering (66 ft - 66.5 ft)	
				534.2		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

*Becomes Tan Silty Fine to Medium Sand When Sampled

Page 2 of 2
TEST BORING RECORD

BORING NO. B-80
DATE DRILLED 7-19-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Stiff Red Brown Fine To Medium Sandy Clayey Silt					
				631.2		N=10
6.0	Stiff Pink And Orange To Purple Fine To Medium Sandy Silt					
				626.2		N=22 Quartz Lenses At 10.0 ft. Magnified N Value
				621.2		N=7
				616.2		N=10 Quartz Lenses At 23.0 ft. Magnified N Value
	Gray Silty Fine To Coarse Sand Layer At 22.5 ft.			611.2		N=19
27.0	Firm To Dense Purple And Brown Very Silty Fine To Medium Sand					
				606.2		N=15
				601.2		N=28
40.0				596.2		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 4
TEST BORING RECORD

BORING NO. B-82
DATE DRILLED 8-15-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
40.0	Firm To Dense Purple And Tan Very Silty Fine To Medium Sand			
		N=28		
		N=34		
		591.2		
	Fine Sandy Silt Layer At 48 ft.			
		586.2		
		N=31		
	Fine Sandy Silt Layer At 53 ft.			
		581.2		
		N=19		
57.0	Hard Tan Fine To Medium Sandy Silt			
		576.2		
		N=41		
		N=49		
		571.2		
66.0	Partially Weathered Rock That Becomes Gray Tan Fine To Medium Sandy Silt When Sampled			
		N=50/4"		
		566.2		
		N=50/2"		
		561.2		
		N=50/3"		
80.0		556.2		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 4
TEST BORING RECORD

BORING NO. B-82
DATE DRILLED 8-15-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 89, of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
80.0	Hard Gray Tan Fine To Medium Sandy Silt			
		N=35		
		551.2		
85.0	Partially Weathered Rock That Becomes Brown Very Micaceous Silt (Mafic Gneiss)			
		546.2		
		N=50/5"		
		541.2		
		N=50/5"		
95.0	Dense Brown Very Micaceous Silty Sand (Mafic Gneiss)			
		536.2		
		N=47		
101.0	Hard Medium Bluish Gray Mafic Gneiss	NX	Carbide Bit Refusal And Top Of Continuous Rock 101.0 Ft.	
102.1	Hard To Very Hard Very Light Gray Felsic Gneiss	100	101.0 ft - 148.5 ft.: Slight To Very Slight Weathering. Very Close Healed Joints With Calcite, Quartz and Oxides - Low To Steep Dip.	100
		531.2		
		526.2	1/4 Inch Vertical Offset Along Contact (110.3 ft.)	100
110.3	Hard Medium Bluish Gray Mafic Gneiss	100		100
		521.2		
		516.2		100
120.0				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 3 of 4
TEST BORING RECORD

BORING NO. B-82
DATE DRILLED 8-15-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	516.2 ELEV.	REMARKS	% R.Q.D.	
120.0	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100			100	
120.4		100		Calcite Rich Zone (122.6 ft to 124.4 ft)		
			511.2		Steeply Dipping Brecciated Zone With Calcite And Clay (124.0 ft.)	100
			506.2		◁ L	
			501.2		◁ L	100
			496.2		◁ L	100
	Xenolith or Lens Of Biotite Gneiss With Brecciated Contact Zones (141.8 ft.)					
			491.2		◁ L	100
	Very Thin Schistose Zone Of Biotite And Hornblende (144.6 ft.)					
					◁ M	
148.5	Coring Terminated At 148.5 ft.					
	Groundwater At 56 ft After 24 Hours					
	Drilling Water Loss At 129.6 ft.					

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	591.1 ELEV.	REMARKS	% R.Q.D.
0					
			586.1		
			581.1	N=14 Orange Micaceous Silt	
			576.1		
			571.1		
			566.1		
			561.1		
			556.1	N=43 Yellow Tan Silty Fine To Medium Sand	
40.0			551.1	N=48 Yellow Tan Silty Fine To Medium Sand	

BORING AND SAMPLING MEETS ASTM D-1586 * Hard Medium Bluish Gray Mafic Gneiss
 CORE DRILLING MEETS ASTM D-4119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

Page 4 of 4
TEST BORING RECORD

BORING NO. B-82
 DATE DRILLED 8-15-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-4119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

Page 1 of 4
TEST BORING RECORD

BORING NO. B-83P
 DATE DRILLED 9-11-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
			551.1		
			546.1		
			541.1	N=40 Orange And Green Micaceous Silt	
			536.1		
			531.1		
60.0	Partially Weathered Rock			N=50/3" No Recovery	
			526.1		
			521.1	N=50/1 1/2" No Recovery	
			516.1		
80.0			511.1		

Page 2 of 4

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-33P
DATE DRILLED 9-11-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 91 of 298

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
			511.1		
80.0	Hard Light Bluish Gray And Very Light Gray Felsic Gneiss	NX 64		Carbide Bit Refusal @ 80.1 ft. 80.1 ft - 84.0 ft: Slight Weathering. Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	
84.0	Moderately Hard And Hard Greenish Gray Mafic Gneiss		506.1		33
			501.1	84.0 ft - 88.2 ft: Complete Weathering. Core Loss	
			496.1	88.2 ft - 96.5 ft: Moderate Weathering. Very Close Healed And Partially Leached Joints - Low To Steep Dip.	69
96.5	Hard Light Bluish Gray Felsic Gneiss		491.1	Biotite And Quartz Crystals 96.5 ft - 101.5 ft: Slight To Moderate Weathering. Very Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip. Top Of Continuous Rock @ 101.5 ft. Large Xenolith Of Mafic Gneiss (98.7 ft.) 101.5 ft - 128.1 ft: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip	63
			486.1		
109.1	Hard Medium Bluish Gray Mafic Gneiss		481.1	Pegmatitic, Partly Leached And Partly Brecciated At Contact (109.1 ft.)	100
111.0	Hard Light Bluish Gray Felsic Gneiss		476.1	1/2-inch Quartz Vein - Medium Dip (113.2 ft)	100
			471.1	Coarse Grained Mafic Gneiss (118.6 ft - 119.0 ft.) Quartz Filled Brecciated Zone - Medium Dip (119.8 ft.)	100
120.0					

Page 3 of 4

BORING AND SAMPLING MEETS ASTM D-1586 *Partially Weathered Rock
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-83P
DATE DRILLED 9-11-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
120.0	Hard Light Bluish Gray Felsic Gneiss	NX 100	471.1	1/4-inch Thick, Steeply Dipping, Quartz Filled Zone Along Which Horizontal Joints Are Offset About 1 Inch (124.7 ft.)	100
			455.1		
128.1	Coring Terminated At 128.1 ft. Groundwater At 19.0 ft At Time Of Boring Groundwater At 16.0 ft After 24 Hours No Drilling Water Loss		461.1		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-90°

S = STEEP DIP 90°-90°

Page 4 of 4
TEST BORING RECORD

BORING NO. B-83P

DATE DRILLED 9-11-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
0	Drilled To 33.7 ft. With Carbide Tipped Bit (No Soil Samples To 33.7 ft.)		587.8		
			582.6		
			577.6		
			572.6		
			567.6		
			562.6		
			557.6		
			552.6		N=27 Gray Fine Sandy Micaceous Silt
			547.6		
40.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 4
TEST BORING RECORD

BORING NO. B-83AP

DATE DRILLED 9-18-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0			547.6		
42.0	Partially Weathered Rock				
			542.6	N=50/4" Partially Weathered Rock That Becomes Tan To Yellowish Gray Silty Fine To Medium Sand When Sampled	
			537.6		
			532.6		
			527.6		
			522.6		
			517.6		
			512.6	N=50/4 1/2"	
80.0			507.6		

BORING AND SAMPLING MEETS ASTM D-1885
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

Page 2 of 4
TEST BORING RECORD

BORING NO. B-83AP
 DATE DRILLED 9-18-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock		507.6		
			502.6		
			497.6		
92.8	Moderately Hard Yellowish Gray Felsic Gneiss			Carbide Bit Refusal @ 92.8 ft. 92.8 ft. to 102.8 ft.: Moderate Weathering. Very Close Healed And Partly Leached Joints - Low To Steep Dip. Close Joints - Low To Steep Dip.	68
		NX 100	492.6		
			487.6		
103.8	Hard Yellowish Gray To Light Bluish Gray Felsic Gneiss			Top Of Continuous Rock @ 103.8 ft. 103.8 ft. to 111.8 ft.: Slight Weathering. Very Close Healed Joints - Low To Steep Dip, Some Partly Leached. Steep Quartz Lens (104.8 ft.)	73
		NX 100	482.6		
			477.6		
111.8	Very Hard Light Bluish Gray Felsic Gneiss			111.8 ft. to 128.4 ft.: Very Slight Weathering. Very Close Healed And Calcite Filled Joints - Low To Steep Dip. Mafic Gneiss Xenolith (115.8 ft.)	100
		NX 100	472.6		
			467.6	1 Inch Thick Quartz Filled Schistose Zone (119.6 ft.)	
120.0			100		100

BORING AND SAMPLING MEETS ASTM D-1885
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

Page 3 of 4
TEST BORING RECORD

BORING NO. B-83AP
 DATE DRILLED 9-18-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
120.0	Very Hard Light Bluish Gray Felsic Gneiss	NX 100	467.6	Very Thin Schistose Zones (120.4 ft And 121 ft.) Mafic Gneiss Xenoliths (125.5 ft And 126.1 ft.)	100
			462.6		
128.4	Coring Terminated at 128.4 ft. Groundwater At 21.5 (t At Time Of Boring) No Drilling Water Loss		457.5		

BORING AND SAMPLING MEETS ASTM D-1896
CORE DRILLING MEETS ASTM D-8112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 4 of 4

TEST BORING RECORD

BORING NO. B-63AP

DATE DRILLED 9-18-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 94 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0			656.0		
			651.0		
			646.0	N=48 Pinkish Tan - Fine To Medium Slightly Micaceous Sandy Silt With Few Rock Fragments	
			641.0		
			636.0	N=53 Red Brown Fine Sandy Micaceous Silt	
			631.0		
			626.0		
			621.0		
40.0			616.0	N=53 Gray Brown Fine To Coarse Micaceous Sandy Silt	

BORING AND SAMPLING MEETS ASTM D-1896
CORE DRILLING MEETS ASTM D-8112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 1 of 5

TEST BORING RECORD

BORING NO. B-84P

DATE DRILLED 9-26-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
40.0			616.0		
			611.0		
			606.0		
51.9	Partially Weathered Rock		601.0	N=50/1/2" No Recovery	
			596.0		
			591.0		
			586.0	N=50/3/4" No Recovery	
			581.0		
80.0			576.0		

BORING AND SAMPLING MEETS ASTM D-1585
 CORE DRILLING MEETS ASTM D-3115
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.D. ROCK QUALITY DESIGNATION

Page 2 of 5
TEST BORING RECORD

BORING NO. B-84P
 DATE DRILLED 9-26-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
80.0	Partially Weathered Rock		576.0		
			571.0		
			566.0	N=50/1/2" No Recovery	
			561.0		
			556.0		
			551.0		
104.8	Hard Very Light Gray Felsic Gneiss	NX 100	546.0	Carbide Bit Refusal And Top Of Continuous Rock 104.8 ft. Very Close Healed Joints - Low To Steep Dip - Partly Leached Above 156 ft. (104.8 - 166.7 ft.)	63
			541.0	Moderate To Slight Weathering (104.8 - 153.6 ft.)	
		98	536.0	Close To Very Close Joints - Low To Medium Dip (104.8 - 107.7 ft.)	
				1/2 Inch Quartz Veins - Medium Dip: 111.0 ft. 112.1 ft. 113.8 ft. 116.0 ft.	85
120.0		98	536.0	Zone Of Moderately Severe Weathering With Very Close Low Dip Joints (116.8 - 117.5 ft.)	92

BORING AND SAMPLING MEETS ASTM D-1585
 CORE DRILLING MEETS ASTM D-3115
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.D. ROCK QUALITY DESIGNATION

Page 3 of 5
TEST BORING RECORD

BORING NO. B-84P
 DATE DRILLED 9-26-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard Very Light Gray Felsic Gneiss	NX	538.0		
98				△ L	
			531.0	△ L △ S	92
				1/4 in Quartz Vein With Locally Brecciated Contacts - Steep Dip (126.0 - 127.5 ft.)	
			526.0	△△△△△	
100				△ M	50
			521.0	△ L △ L	
			516.0	△ L	35
85			511.0		
			506.0	△△△ △ L △ L	30
				1-Inch Moderately Severe Weathered Schistose Zone (148 ft) 1/2-Inch Brecciated Zone Core Loss - Probable Soil Zone (149.6-153.0 ft.)	
			501.0	△ L	
153.0	Hard Medium Light Gray Mafic Gneiss			153.6 - 156.0 ft: Soft, Severely Weathered Zone. Very Close Joints - Low Dip	
159.2	Hard Very Light Gray Felsic Gneiss	100	496.0	Slight To Very Slight Weathering (156.0 - 166.7 ft.)	100

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
160.0	Hard Very Light Gray Felsic Gneiss	NX	496.0		
				1-Inch Thick Mafic Gneiss Layer (162.0 ft.)	
			491.0	1-Inch Thick Mafic Gneiss Layer With Brecciated Lower Contact (163.0 ft.)	100
				Schistose Zone (166.6 - 166.7 ft.)	
166.7	Coring Terminated @ 166.7'			Groundwater At 49.5 ft At Time Of Boring	
				Groundwater At 47.0 ft After 24 Hours	
				No Drilling Water Loss	

BORING AND SAMPLING MEETS ASTM D-1899
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

Page 4 of 5
TEST BORING RECORD

BORING NO. B-84P
DATE DRILLED 9-26-73
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 96 of 298

BORING AND SAMPLING MEETS ASTM D-1899
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

Page 5 of 5
TEST BORING RECORD

BORING NO. B-84P
DATE DRILLED 9-26-73
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
0	Stiff Reddish-Brown Fine Sandy Very Micaceous Silt		642.6		
			637.6	N=10	
7.0	Stiff Tannish-Brown Fine Sandy Very Micaceous Silt		632.6	N=15	
			627.6	N=15	
17.0	Stiff To Very Stiff Tannish-Gray Fine Sandy Micaceous Silt		622.6	N=14	
			617.6	N=16	
			612.6	N=22	
			607.6	N=20	
36.0	Very Dense Tannish-Gray Silty Micaceous Fine To Medium Sand		602.6	N=96	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-86
DATE DRILLED 10-23-73
JOB NO. CH 2920

LAW ENGINEERING TESTING

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
40.0	Very Dense Tannish-Gray Silty Micaceous Fine To Medium Sand		602.6		
			597.6	N=60	
46.0	Hard Tannish-Gray Fine To Medium Sandy Very Micaceous Silt		592.6	N=65	
			587.6	N=77	
58.2	Partially Weathered Rock That Becomes Tannish-Gray Fine To Medium Sandy Very Micaceous Silt When Sampled		582.6	N=50/4"	
62.0	Partially Weathered Rock That Becomes Tannish-Gray Silty Micaceous Medium To Coarse Sand When Sampled		577.6	N=50/4"	
69.6	Moderately Hard And Soft To Very Soft Very Light Gray Felsic Gneiss	NX 100	572.6	N=50/1" No Recovery Carbide Bit Refusal At 69.6 ft.	
		79	567.6	69.6 ft to 88.1 ft: Moderately Severe To Complete Weathering. Close Joints - Low To Steep Dip Very Close Leached Joints - Low To Steep Dip. Very Fractured Quartz At 81.3 ft to 85.0 ft.	46
			582.6		42
80.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

Page 2 of 3

TEST BORING RECORD

BORING NO. B-86
DATE DRILLED 10-23-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
80.0	Moderately Hard And Soft To Very Soft Very Light Gray Felsic Gneiss	NX 79	557.6	Core Barrel Jammed - Twisted Off In Hole.	42
		100	552.6		53
88.1	Coring Abandoned At 88.1 ft.				
	No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.5 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD

BORING NO. B-86
DATE DRILLED 10-23-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 98 of 298

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
0	Wash Drilled With Carbide Fishtail 0 ft - 31.1 ft		647.1		
			642.1		
			637.1		
			632.1		
			627.1		
28.9	Partially Weathered Rock		622.1	N=50/4" Partially Weathered Rock That Becomes Brown Gray Silty Fine To Coarse Sand When Sampled	
			617.1		
40.0			612.1		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.5 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD

BORING NO. B-89P
DATE DRILLED 10-4-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock		607.1		
			602.1		
51.1	Soft To Medium Very Pale Orange Felsic Gneiss	NX 41	597.1	Carbide Bit Refusal at 51.1 ft. 51.1 ft - 58.2 ft: Severe And Moderately Severe Weathering. Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip. Scattered Leached Thin Quartz Veins And Stringers. Top Of Continuous Rock At 58.2 ft.	0
		NX 86			56
58.2	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	592.1	58.2 ft - 81.5 ft Slight To Very Slight Weathering. Very Close Healed Joints, Occasionally Slightly Leached - Low To Steep Dip.	80
		NX 100	587.1		100
			582.1	1 Inch, Medium Dip, Chlorite Filled Brecciated Zone (59.0 ft.)	
		NX 100			100
			577.1		
		NX 100			100
80.0			572.1		5

Page 2 of 3
TEST BORING RECORD

BORING NO. B-89P
DATE DRILLED 10-4-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 99 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100			100
81.5				Coring Terminated At 81.5 ft. Groundwater At 48 ft After 24 Hours No Drilling Water Loss	

Page 3 of 3
TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1886
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

BORING NO. B-89P
DATE DRILLED 10-4-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1886
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	638.8 ELEV.	REMARKS	% R.Q.D.
0	Wash Drilled With Carbide Fishtail 0' - 53.1'		633.8		
			628.8		
			623.8		
			618.8		
			613.8	N=26 Tan Gray Fine To Coarse Sandy Slightly Micaceous Silt	
			608.8		
			603.8		
37.0	Partially Weathered Rock		598.8		
40.0					

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	598.8 ELEV.	REMARKS	% R.Q.D.
40.0	Partially Weathered Rock		593.8	N=50/4" Partially Weathered Rock That Becomes Tan Gray Micaceous Fine To Coarse Sandy Silt When Sampled	
			588.8		
53.1	Medium To Soft Very Light Gray Felsic Gneiss	NX 59	583.8	Carbide Bit Refusal At 53.1 ft. 53.1 ft - 76.1 ft. Moderate To Severe Weathering. Very Close Joints - Low To Steep Dip.	0
			578.8	Very Close Healed Joints - Low To Steep Dip.	
		64	573.8		0
			568.8		
		91	563.8	Severely Weathered Zone Of Mafic Gneiss (75.2 ft - 76.1 ft.)	37
76.1	Hard To Very Hard Light Bluish Gray Felsic Gneiss		558.8	M Top of Continuous Rock At 76.1 ft.	
80.0		99			88

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
[] UNDISTURBED SAMPLE WATER TABLE, 24 HR.
[] % ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD

BORING NO. B-90P
DATE DRILLED 10-2-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 100 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
[] UNDISTURBED SAMPLE WATER TABLE, 24 HR.
[] % ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD

BORING NO. B-90P
DATE DRILLED 10-2-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
80.0	Hard Light Bluish Gray Felsic Gneiss	NX 99	588.8	M Moderately Severe Weathering 76.1 ft - 87.0 ft: Slight Weathering. Very Close Healed And Partially Leached Joints - Low To Steep Dip. 87.0 ft - 98.8 ft: Very Slight Weathering. Very Close Healed Joints With Chlorite And Calcite - Low To Steep Dip. Irregular, Thin Steep Dip Quartz Veins With Iron And Copper Oxides (92.5 to 94.1 ft.)	88
			553.8		
			548.8		
			543.8		100
98.8	Coring Terminated At 98.8 Ft Groundwater At 41.5 Ft After 24 Hours No Drilling Water Loss		538.8		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3
TEST BORING RECORD

BORING NO. B-90P

DATE DRILLED 10-2-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 101 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Wash Drilled With Carbide Fishtail 0 ft - 57.9 ft		619.5		
			614.5		
			609.5		
			604.5		
			599.5		
			594.5		
			589.5		N=23 Brown Tan Micaceous Fine To Medium Sandy Silt
			584.5		
40.0			579.5		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD

BORING NO. B-91P

DATE DRILLED 9-27-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
40.0			579.5		
			574.5	N=51 Brown Orange Very Micaceous Sandy Silt	
			569.5		
54.0	Partially Weathered Rock		564.5	N=50/3" No Recovery	
57.9				Carbide Bit Refusal At 57.9 ft.	
59.2	Soft And Moderately Hard Mafic Gneiss	NX 41	559.5	57.9 ft - 63.2 ft.: Severe To Moderate Weathering. Very Close To Close Joints - Low To Steep Dip.	17
63.2	Moderately Hard Very Light Gray Felsic Gneiss				
66.0	Very Hard To Hard Very Light Gray Felsic Gneiss	NX 97	554.5	Very Close Healed And Slightly Leached Joints - Low To Steep Dip (57.9 to 76.3 ft.)	60
69.7	Hard Dark Greenish Gray Mafic Gneiss			Slight Weathering (63.2 to 69.7 ft.)	
76.3	Medium To Soft Greenish Gray Mafic Gneiss	NX 90	549.5	69.7 to 76.3 ft.: Severe To Moderate Weathering. Very Close Joints - Low To Steep Dip.	45
80.0	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	544.5		
			539.5	Top Of Continuous Rock @ 76.3 ft. Some Core Losses Occurred At Contacts Between Felsic Gneiss And Mafic Gneiss: 59.2 ft.	100

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3
TEST BORING RECORD

BORING NO. B-91P

DATE DRILLED 9-27-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
80.0					
	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	534.5		100
			529.5	76.3 ft - 103.2 ft.: Slight To Very Slight Weathering. Very Close Healed And Filled Joints With Chlorite Quartz And Calcite - Low To Steep Dip.	100
			524.5		
98.5	Hard Medium Light Gray Felsic Gneiss	NX 100	519.5	98.5 to 103.2 ft.: Felsic Gneiss Is Finer Grained And Intermediate In Composition, Some Joints Show Offsets Of Fractions Of Inches.	100
103.2	Coring Terminated At 103.2 ft Groundwater At 34 ft After 24 Hours No Drilling Water Loss		514.5		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3
TEST BORING RECORD

BORING NO. B-91P

DATE DRILLED 9-27-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	580.0 ELEV.	REMARKS	R.Q.D.
0	Augered To Obtain UD And For Seismic Up-Hole Shooting				
			615.0		
			610.0		
			605.0		
			600.0		
			595.0		
			590.0		
			585.0		
40.0			580.0		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5115
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-91 AP

DATE DRILLED 10-13-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO Page 103 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	580.0 ELEV.	REMARKS	R.Q.D.
40.0	Augered To Obtain UD And For Seismic Up-Hole Shooting				
43.0	Partially Weathered Rock		575.0		
47.0	Very Soft Rock - No Recovery	NQ D	570.0	Hard Drilling @ 47.0 ft. Attempted Recovery With Slow Drilling NQ Wire Line	0
53.0	Soft To Medium Light Olive Gray Mafic Gneiss	NQ 0	565.0	53.0 ft - 63.0 ft. Severe And Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	0
60.0	Moderately Hard Very Light Gray Felsic*		560.0		
61.0	Soft To Medium Light Olive Gray Mafic Gneiss	NQ 92		Probable Location Of Core Loss (61.0 ft - 63.0 ft.)	
63.0	Hard Medium Bluish Gray Mafic Gneiss		555.0	63.0 ft - 99.6 ft.: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	50
68.4	Soft Light Olive Gray Mafic Gneiss	NQ 88		Irregular Quartz - Calcite Vein (67.2 to 67.6 ft.) Very Severely Weathered Zone	68
70.0	Hard Light Bluish Gray Felsic Gneiss	NQ 96	550.0	Probable Location Of Core Loss (68.4 ft - 70.0 ft.)	
		NQ 100	545.0	Top Of Continuous Rock At 70.2 ft. Close Joints, Low To Steep Dip - Moderately Weathered Zone (72.0 To 74.4 ft.) Slight Core Loss At 73.0 ft.	58
80.0			540.0	Leached Quartz Vein (77.6 to 78.3 ft.)	96

BORING AND SAMPLING MEETS ASTM D-1586 & Gneiss
 CORE DRILLING MEETS ASTM D-5115
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3

TEST BORING RECORD

BORING NO. B-91 AP

DATE DRILLED 10-13-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	540.0 ELEV.	REMARKS	R.Q.D.	
80.0	Hard Light Bluish Gray Felsic Gneiss	NQ		Water Loss Throughout Coring Very Thin, Steep Chlorite - Calcite Stringer (81.9 to 82.5 ft.) Cross-Cutting Quartz - Calcite Veins (90.2 to 90.7 ft.)	100	
		100	535.0		100	
		NQ			530.0	100
		100	525.0		100	
95.6	Very Hard Light Gray Mafic Gneiss	NQ			100	
		100	520.0			
99.6	Coring Terminated At 99.6 ft. Stabilized Groundwater At 34.0 ft. Drilling Water Loss At 53.0 ft.					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 3 of 3
TEST BORING RECORD

BORING NO. B-91 AP
DATE DRILLED 10-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO. Page 104 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	616.5 ELEV.	REMARKS	R.Q.D.
0	Rotary Drilled With Fishtail Bit To 29.9 ft.			N=62 Hard Gray - Tan Slightly Micaceous Silty Fine To Medium Sand.	
			611.5		
			606.5		
			601.5		
			596.5		
			591.5		
			586.5		
			581.5		
			576.5		
40.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD

BORING NO. B-92 P
DATE DRILLED 9-26-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Rotary Drilled With Fishtail Bit To 46.6 ft.			576.5		
				571.5		
46.6	Very Hard White Milky Quartz				Carbide Bit Refusal @ 46.6 ft.	
47.2	Medium Yellowish Gray Felsic Gneiss	NX		566.5	46.6 ft. - 61.9 ft.: Severe And Moderately Severe Weathered Very Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	0
		26		561.5		
				556.5	Top Of Continuous Rock @ 61.9 ft.	
61.9	Hard Light Bluish Gray Felsic Gneiss	89		551.5	61.9 ft. - 87.1 ft.: Slightly To Very Slightly Weathered. Wide Joints - Low Dip. Very Close Healed Joints - Low To Steep Dip. Scattered Calcite Veinlets	65
		91		546.5	1-inch Thick Steeply Dipping Quartz Vein With Inclusions Of Calcite (71.9 ft. - 72.4 ft.) Steeply Dipping Schistose Zone With Calcite (72.6 ft.) Inclusions Of Mafic Gneiss (63.5 ft. - 65.5 ft.)	91
				541.5	1/4-inch Thick, Steeply Dipping Vein Of Calcite And Quartz (78.5 ft. - 80.0 ft.)	
80.0		96		536.5		94

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

Page 2 of 3
TEST BORING RECORD

BORING NO. B-92P
DATE DRILLED 9-26-73
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	% R.Q.D.
80.0	Hard Light Bluish Gray Felsic Gneiss			536.5		
81.2	Hard Medium Bluish Gray Mafic Gneiss					
82.0	Hard Very Light Gray Felsic Gneiss	NX		531.5	Schistose Zone With Epidote Enrichment (83.0 ft.)	94
		96				
87.1	Coring Terminated at 87.1 ft. Groundwater at 33 ft. After 24 Hours No Drilling Water Loss					

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

Page 3 of 3
TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-92P
DATE DRILLED 9-26-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
0		613.6		
	Rotary Drilled With Fishtail Bit To 28.4 ft	608.6		
		603.6		
		598.6		
		593.6		
		588.6		
		583.6	N=29 Very Firm Grayish Tan Slightly Micaceous Silty Fine To Coarse Sand	
		578.6		
40.0		573.6		

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-93P

DATE DRILLED 10-17-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
40.0	Rotary Drilled With Fishtail Bit To 48.4 ft			
		568.6		
45.0	Partially Weathered Rock Rotary Drilled With Fishtail Bit To 50.7 ft	563.6	N=50/2" No Recovery	
50.7	Very Hard Light Bluish Gray Felsic Gneiss	558.6	Carbide Bit Refusal And Top Of Continuous Rock At 50.7 ft	98
		553.6	50.7 ft - 103.1 ft. Slight Weathering To Fresh. Close Healed Joints Rarely Filled With Quartz And Calcite - Low To Steep Dip. Scattered Small Xenoliths Of Mafic Gneiss	91
		548.6		
		543.6		100
		538.6		100
80.0		533.6	Recovered Rock From Previous Run (73.5 ft - 75.8 ft)	100

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3

TEST BORING RECORD

BORING NO. B-93P

DATE DRILLED 10-17-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	533.6 ELEV.	REMARKS	% R.Q.D.	
80.0	Very Hard Light Bluish Gray Felsic Gneiss	NQ			100	
		100	528.6			
			100	523.6		100
			100	518.6		
	Coring Terminated At 103.1 ft Groundwater At 39.0 ft After 24 Hours No Drilling Water Loss		513.6		100	
103.1			508.6			

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	813.7 ELEV.	REMARKS	% R.Q.D.	
0	Partially Weathered Rock		608.7	N=8 Firm Red Brown And Gray Fine To Coarse Sandy Silt		
			603.7			
			598.7	N=12 Stiff Red Brown And Gray Fine To Coarse Sandy Silt		
			593.7			
			588.7	N=15 Stiff Red Brown And Gray Fine To Coarse Sandy Silt		
			583.7			
			578.7			
38.0						
40.0				573.7		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-93P
DATE DRILLED 10-17-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-93AP
DATE DRILLED 10-17-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock		573.7	N=50/5" Partially Weathered Rock That Becomes Tan Gray Silty Fine To Coarse Sand When Sampled	
			568.7		
46.0	Boring Terminated At 46.0 ft Groundwater At 39.0 ft After 24 Hours No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-93AP

DATE DRILLED 10-17-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Drilled With Fishtail Bit To 68.4 ft.		659.3		
			654.3		
			649.3		
			644.3		
			639.3		
			634.3		
			629.3		
			624.3		
40.0			619.3	N=39 Hard Pinkish Brown Fine To Medium Sandy Silt	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 4
TEST BORING RECORD

BORING NO. B-94P

DATE DRILLED 10-4-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
40.0	Rotary Drilled With Fishtail Bit To 68.4 ft	619.3		
		614.3		
		609.3		
		604.3		
		599.3		
		594.3		
68.4	Partially Weathered Rock Rotary Drilled With Fishtail Bit To 88.4 Ft	589.3	N=91/10" Very Dense Tannish Gray Slightly Micaceous Silty Fine To Medium Sand	
		584.3		
80.0		579.3		

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
80.0		579.3		
		574.3		
	Rotary Drilled With Fishtail Bit To 94.7 ft.	569.3	N=50/2" Hard Tannish Brown Slightly Micaceous Fine To Coarse Very Sandy Silt	
94.7	Hard To Moderately Hard Very Light Gray Felsic Gneiss	564.3	Carbide Bit Refusal And Top Of Continuous Rock At 94.7 ft	83
		559.3	94.7 ft - 135.0 ft.: Slight To Moderate Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	71
		554.3	Close Joints - Low To Steep Dip (94.7 to 111.5 ft.) Severely Weathered Zone (103.5 - 103.8 ft.)	77
		549.3	Moderately Close To Close Joints - Low To Steep Dip (111.5 to 135.0 ft.) Moderately Severely Weathered Zone (118.3 to 119.6 ft.)	77
		544.3		
		539.3		
118.3				59
119.6	Medium To Soft Light Olive			74
120.0				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 4
TEST BORING RECORD

BORING NO. B-94P
DATE DRILLED 10-4-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 109 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Gray Mafic Gneiss
Hard To Moderately Hard
Medium Light Gray
Mafic Gneiss

Page 3 of 4
TEST BORING RECORD

BORING NO. B-94P
DATE DRILLED 10-4-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard To Moderately Hard Medium Light Gray Mafic Gneiss	NX 95			
124.4	Medium To Very Soft Light Olive Gray Mafic Gneiss		534.3	Severely Weathered Zone (124.4 ft - 126.6 ft.) Schistose At Contact (126.6 ft.)	74
126.6	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 89	529.3	Moderately Severely Weathered Mafic Gneiss Zone (127.1 to 127.9 ft.)	82
		NX 100	524.3	135.0 to 158.0 ft.: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	100
140.0	Hard Medium Light Gray Mafic Gneiss		519.3	Slackensided Surface - Steep Dip (141.7 ft.) Filled Joints Commonly Offset By Fractions Of Inches (141.6 to 142.3 ft.)	97
142.3	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	514.3	Very Close Calcite Filled Joints: 140.0 to 142.3 ft. 150.0 to 152.3 ft.	
			509.3	2 Inch Schistose Zone (144.2 ft.) 1/2 Inch Schistose Zone (149.0 ft.)	
150.0	Hard Medium Bluish Gray Mafic Gneiss	NX 100			94
152.3	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	504.3		100
158.0	Coring Terminated At 158.0 ft Groundwater At 58.0 ft At Time Of *		499.3		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 18 ft.				
			609.1		
			604.1		
			599.1		
	Rotary Wash Drilled With Carbide Fishtail To 28 ft.		594.1	N=73 Hard Tannish Brown Silt To Medium Sandy Silt	
			589.1		
28.0	Partially Weathered Rock		584.1	N=50/1 1/2" No Recovery	
			579.1		
38.2	Moderately Hard To Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 72	574.1	Carbide Bit Refusal at 38.2 ft.	26
40.0					

BORING AND SAMPLING MEETS ASTM D-1588 * Boring
No Drilling Water Loss
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 4 of 4

TEST BORING RECORD

B-94P

BORING NO. B-94P

DATE DRILLED 10-4-73

JOB NO. CH 2920

LAW ENGINEERING TESTING

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3

TEST BORING RECORD

B-95P

BORING NO. B-95P

DATE DRILLED 10-18-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Moderately Hard To Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 72		38.2 ft to 48.6 ft.: Moderate To Slight Weathering. Close Joints - Low To Medium Dip. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	26
		NX 100	569.1		75
48.6	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	564.1	Top Of Continuous Rock At 43.5 ft. 48.6 ft. to 106.9 ft.: Very Slight Weathering. Close To Very Close Healed And Rarely Leached Joints - Low To Steep Dip. Many Machine Breaks Along Healed Joints.	94
		NX 99	559.1		99
		NX 100	554.1	Thin Nearly Vertical Quartz - Chlorite Stringer (64.0 to 65.0 ft.)	99
		NX 100	549.1	Very Fine Grained Mafic Gneiss (65.3 ft to 66.0 ft.)	100
		NX 100	544.1	Near Vertical Quartz Stringers (69.7 ft to 70.7 ft.)	100
		NX 100	539.1		100
80.0		NX 100	534.1		100

BORING AND SAMPLING MEETS ASTM D-1996
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3

TEST BORING RECORD

BORING NO. B-95P
DATE DRILLED 10-18-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		Very Thin Nearly Vertical Schistose Zone (85.9 ft to 87.5 ft.) Xenolith Of Finer Grained Felsic Gneiss (91.1 ft.)	100
		NX 100	529.1		100
		NX 100	524.1	1/2 inch Vertical Quartz Vein (93.5 ft to 97.0 ft.)	100
		NX 100	519.1		100
		NX 100	514.1	2 inch Vertical Quartz Vein With Schistose Contact Zones (100.0 to 102.6 ft.)	100
106.9	Coring Terminated At 106.9 ft. Groundwater At 34.6 ft At Time Of Boring Groundwater At 33.0 ft After 24 Hours No Drilling Water Loss		509.1		100

BORING AND SAMPLING MEETS ASTM D-1996
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3

TEST BORING RECORD

BORING NO. B-95P
DATE DRILLED 10-18-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	621.0 ELEV.	REMARKS	N.O.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 62.4 ft.				
			616.0		
			611.0		
			606.0		
			601.0		
			596.0		
			591.0	N=25 Very Stiff Orange Tan Fine Sandy Micaceous Silt	
			586.0		
40.0			581.0		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-96P

DATE DRILLED 10-17-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	581.0 ELEV.	REMARKS	N.O.D.
40.0					
			576.0		
			571.0		
			566.0	N=32 Dense Orange Brown Very Silty Fine To Medium Sand Spotted With Dark Gray Silt	
			561.0	NW Casing To 60 ft	
62.4	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 95	556.0	Carbide Bit Refusal And Top Of Continuous Rock At 62.4 ft	90
		NX 89		62.4 ft - 76.6 ft: Moderate To Slight Weathering. Close Joints - Low To Steep Dip. Close To Very Close Healed and Slightly Leached Joints - Low To Steep Dip.	62
		NX 100	551.0		70
		NX 95		Malic Xenolith (66.1 ft.)	
			546.0	76.6 ft - 113.3 ft: Very Slight Weathering. Close And Very Close Healed Joints - Low To Steep Dip.	65
		92		5 Fine Grained Xenoliths Common In Felsic Gneiss	92
		100			80
80.0		100	541.0		100

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3

TEST BORING RECORD

BORING NO. B-96P

DATE DRILLED 10-17-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
80.0	Hard To Very Hard Light Gray Light Bluish Gray Felsic Gneiss	NX 100 536.0	1/4 Inch Steep Dip Brecciated Zone With Chlorite, Actinolite And Calcite Offset At Least 2 Inch Along Cross Cutting - Medium Dip Surface (82.0 ft.)	100
90.8	Moderately Hard To Hard Light Gray To Medium Light Gray Felsic Gneiss	NX 100 531.0	Chlorite Filled Healed Joints To 83.4 ft. Slickensided Surface - Medium Dip (86.2 ft.) Nearly Vertical Chlorite Filled Brecciated Zone With Traces Of Quartz, Calcite And Muscovite (86.2 ft - 87.7 ft.)	100
92.8	Hard Medium Gray Mafic Gneiss	526.0	Quartz - Epidote Zone (88.7 ft.) 2 Inch Medium Dip Mafic Gneiss Zone (90.3 ft.) Metagraywacke (92.8 to 93.9 ft.)	100
93.9	Very Hard Medium Light Gray Felsic Gneiss			
97.3	Hard Medium Gray Mafic Gneiss	521.0		100
98.3	Very Hard Light Bluish Gray Felsic Gneiss			
		NX 100 516.0		100
		NX 97 511.0		97
		NX 100 506.0		100
113.3	Coring Terminated At 113.3 ft Groundwater At 30 ft After 24 Hours Drilling Water Loss At 65.0 ft.			

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
0	Rotary Drilled With Fishtail Bit To 28.2 ft	599.3		
		594.3		
		589.3		
		584.3		
		579.3		
28.0	Partially Weathered Rock Rotary Drilled With Fishtail Bit To 47.4 ft	574.3	N=77/11" Hard Tannish Gray Fine Sandy Micaceous Silt	
		569.3		
40.0		564.3		

BORING AND SAMPLING MEETS ASTM D-1999
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD
B-96P

BORING NO. _____
DATE DRILLED 10-17-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1999
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD

BORING NO. B-97P
DATE DRILLED 10-11-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock Rotary Drilled With Fishtail Bit To 47.4 ft.		559.3		
47.4	Hard Light Bluish Gray Felsic Gneiss	100	554.3	Carbide Bit Refusal And Top Of Continuous Rock At 47.4 ft. Steep Contact With Mafic Gneiss (47.5 ft.) Leached Irregular Quartz Stringers: 48.1 ft. 49.9 ft.	69
53.2	Moderately Hard To Hard Dark Greenish Gray To Dark Gray Mafic Gneiss	NX 100	549.3	47.4 ft - 53.2 ft.: Slight Weathering. Very Close Healed, Filled And Slightly Leached Joints With Quartz And Chlorite - Low To Steep Dip.	89
60.2	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	544.3	53.2 ft - 60.2 ft.: Schistose And Brecciated Zone Moderate To Slight Weathering. Leached Zone: 53.5 to 53.7 ft. 58.6 to 58.9 ft. Quartz Vein 55.8 ft - 58.6 ft. Steeply Dipping Contacts: 53.2 ft. 60.2 ft - 88.6 ft.	91
			539.3	Very Slight Weathering. Very Close Healed And Filled Joints With Quartz, Chlorite And Calcite - Low To Steep Dip.	
			534.3	3/4 Inch Medium Dip Quartz Vein With Schistose Contacts (65.5 ft.) Leached Zone (67.0 to 68.0 ft.)	
		NX 100	529.3		88
80.0		100	524.3		100

BORING AND SAMPLING MEETS ASTM D-1589
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3
TEST BORING RECORD
B-97P

BORING NO. B-97P

DATE DRILLED 10-11-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	519.3		100
88.6	Hard To Very Hard Light Bluish Gray Felsic Gneiss		514.3	2 Inch, Medium Dip Quartz Vein (87.8 ft.)	
	Coring Terminated At 88.6 ft				
	Groundwater At 18.0 ft At Time Of Boring				
	Groundwater At 18.0 ft After 24 Hours				
	No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1589
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD
B-97P

BORING NO. B-97P

DATE DRILLED 10-11-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE SIZE MIN. ELEV.	REMARKS	R.O.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 27.7 ft	677.8		
		672.8		
		667.8		
		662.8		
		657.8		
	Rotary Wash Drilled With Carbide Fishtail To 61.8 ft.	652.8	N#58 Hard Tannish Pink Very Slightly Micaceous Fine Sandy Silt NW Casing To 31.0 ft	
		647.8		
40.0		642.8		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO. B-98P

DATE DRILLED 10-5-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 1 of 5

TEST BORING RECORD

DEPTH FT.	DESCRIPTION	CORE SIZE MIN. ELEV.	REMARKS	R.O.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 61.8 ft.	637.8		
		632.8	NW Casing To 51.0 ft	
		627.8		
55.0	Partially Weathered Rock	622.8		
		617.8	N#50/2" No Recovery First Carbide Bit Refusal At 64.0 ft 64.0 ft - 78.1 ft: Severe Weathering. Very Close Joints - Low To Steep Dip. (Badly Broken Rock)	10
64.0	Medium To Very Soft Very Light Gray To Medium Orange Pink Sericitic Quartzite	612.8	Very Hard White Quartzite (64.0 ft - 64.7 ft.)	0
		607.8		
78.1	Partially Weathered Rock Or Soil	602.8		
80.0				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 5

TEST BORING RECORD

BORING NO. B-98P

DATE DRILLED 10-8-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
80.0	Rotary Wash Drilled With Carbide Fishtail To 103.7 ft				
			597.8		
			592.8		
			587.8		
			582.8		
103.7	Very Hard White Quartzite	BQ 26	577.8	Second Carbide Bit Refusal At 103.7 ft	0
				103.7 ft - 133.3 ft: Severe To Moderately Severe Weathering. Very Close Joints - Low To Steep Dip (Badly Broken Rock)	0
109.0	Very Soft To Medium Yellowish Gray Felsic Gneiss	BQ 20	572.8	Very Close Healed Joints, Slightly Leached Above 154.0 ft. (103.7 to 174.6 ft.)	0
			567.8		
120.0		BQ 29	562.8	BQ Casing To 120.0 ft	0

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 3 of 5
TEST BORING RECORD

BORING NO. B-98P
DATE DRILLED 10-11-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
120.0	Very Soft To Medium Yellowish Gray Felsic Gneiss	BQ 29			0
124.0	Moderately Hard White Sericitic Quartzite		557.8		
125.0	Very Soft To Medium Yellowish Gray Felsic Gneiss	BQ 44	552.8		0
133.3	Medium Light Olive Gray Mafic Gneiss		547.8	133.3 ft - 146.0 ft: Moderately Severe To Moderate Weathering. Close Joints - Low To Steep Dip.	15
135.0	Moderately Hard To Medium Very Light Gray Felsic Gneiss	BQ 43			
			542.8		
		BQ 62			38
144.8	Hard To Medium Medium Gray Mafic Gneiss		537.8	Slight To Very Slight Weathering (146.0 ft - 174.6 ft.)	63
		BQ 79			
149.0	Hard To Moderately Hard Very Light Gray Felsic Gneiss		532.8	Moderately Severely Weathered Zone (150.0 to 153.5 ft.)	
150.5	Soft To Medium Light Olive Gray Mafic Gneiss				
153.5	Hard To Very Hard Light Bluish Gray Felsic Gneiss		527.8	Top Of Continuous Rock At 153.5 ft.	100
		BQ 100			
160.0			522.8		

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 4 of 5
TEST BORING RECORD

BORING NO. B-98P
DATE DRILLED 10-11-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE 522.8		REMARKS	% R.Q.D.
		SIZE	TIME MIN. ELEV.		
160.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	BQ 100		4 M Laumontite Coated	100
164.8	Hard To Very Hard Bluish White Sericitic Quartzite	BQ 100	517.8	Calcite And Quartz - Calcite In Filled Joints And Veins Up To 1 Inch Thick - Occasionally Leached (143.0 to 174.8 ft.)	100
174.6	Coring Terminated At 174.6 ft Groundwater At 44.3 ft After 24 Hours Drilling Water Loss At 118.2 ft.		512.8	4 M Laumontite Coated	
			507.8		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-1511
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-6 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 5 of 5
TEST BORING RECORD

BORING NO. B-98P

DATE DRILLED 10-11-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE 601.1		REMARKS	% R.Q.D.
		SIZE	TIME MIN. ELEV.		
0	Hard To Very Stiff Red Brown Fine Sandy Clayey Silt				
			596.1	N=35	
			591.1	N=28	
11.5	Stiff Pinkish Brown Fine Sandy Micaceous Silt		586.1	N=14	
16.5	Stiff Tannish Gray Fine Sandy Silt		581.1	N=15	
21.5	Very Stiff Blackish Gray Very Micaceous Silt		576.1	N=16	
			571.1	N=26	
33.0	Partially Weathered Rock		566.1	N=88/9"	Partially Weathered Rock That Becomes Fine To Medium Sandy Silt When Sampled
40.0			561.1	N=50/3-1/2"	Partially Weathered Rock That Becomes Very Dense Tannish Gray Micaceous Silty Fine To Coarse Sand

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-1511
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-6 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 2
TEST BORING RECORD

BORING NO. B-99

DATE DRILLED 10-12-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	561.1 ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock			N=50/1" No Recovery	
			556.1		
				N=50/1" No Recovery	
			551.1		
				N=50/1-1/2" No Recovery	
			546.1		
56.7	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	541.1	Carbide Bit Refusal And Top Of Continuous Rock At 56.7 ft 56.7 ft - 77.7 ft. Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	100
		NX 100	536.1	Slightly Weathered Zone (57.4 ft to 57.8 ft.)	100
		NX 100	531.1		100
			526.1		
77.7	Coring Terminated At 77.7 ft Groundwater At 25 ft After 24 Hours No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2

TEST BORING RECORD

BORING NO. B-99
DATE DRILLED 10-15-73
JOB NO. CH 2920

ROCK JOINT:

L.R. LOW DIP 0-30°

M = MED. DIP 30°-60°

B = HIGH DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
0	Very Stiff Brownish Red Fine Sandy Clayey Silt	676.8	N=17	
7.0	Stiff Pinkish Red Fine Sandy Micaceous Silt With Some Quartz Fragments	671.8	N=15	
	Stiff Brownish Pink Fine Sandy Micaceous Silt	668.8	N=15	
16.5	Very Stiff Pinkish Brown And Tannish Brown Fine Sandy Very Micaceous Silt	661.8	N=19	
21.5	Very Stiff Tannish Gray And Brownish Yellow Fine To Medium Sandy Silt Becoming Very Stiff Tannish Gray Fine To Medium Sandy Micaceous Silt With Depth	656.8	N=20	
		651.8	N=22	
		646.8	N=22	
40.0		641.8	N=23	

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
40.0	Very Stiff Tannish Gray Fine To Medium Sandy Micaceous Silt		N=50/2"	
43.0	Partially Weathered Rock That Becomes Brownish Gray Silty Fine To Medium Sand When Sampled	636.8		
		631.8	N=50/1-1/2"	
		626.8	N=50/1" No Recovery Carbide Bit Refusal At 54.4 ft	
54.4	Very Hard Very Pale Orange Felsic Gneiss		54.4 ft - 68.5 ft. Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	50
56.1	Hard To Moderately Hard Very Light Gray Felsic Gneiss	621.8		
		616.8	Quartz Rich (54.4 to 56.1 ft.) Large Mafic Xenolith (66.8 ft.)	31
68.5	Hard To Very Hard Light Bluish Gray Felsic Gneiss	611.8	Top Of Continuous Rock At 67.8 ft 68.5 ft - 95.6 ft. Slight To Very Slight Weathering. Very Close To Close Healed And Rarely Leached Joints With Chlorite And Calcite - Low To Steep Dip. Scattered Small Mafic Xenoliths And Fine Grained Zones.	91
		606.8	L Close Joints - Low To Medium Dip (68.5 to 71.4 ft.) Medium Dip Quartz And Chlorite Filled Joint Offset At Least 2 Inches (72.2 ft.)	95
80.0		601.8		

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-8119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 64 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD
B-100
BORING NO. B-100
DATE DRILLED 10-12-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO. Page 119 of 298

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-8119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 64 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD
B-100
BORING NO. B-100
DATE DRILLED 10-12-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	601.8		REMARKS	% R.Q.D.		
		CORE SIZE MIN.	TIME MIN. ELEV.				
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	596.8	M Moderately Severely Weathered Zone (83.7 to 84.0 ft.)	95		
			591.8			Steep Dip Schistose Zone Up To 1 Inch Thick (92.5 to 93.1 ft.)	100
			586.8				
95.6	Coring Terminated At 95.6 ft Groundwater At 39 ft. After 24 Hours No Drilling Water Loss						

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO. B-100

DATE DRILLED 10-12-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 3 of 3

TEST BORING RECORD

DEPTH FT.	DESCRIPTION	559.4		REMARKS	% R.Q.D.		
		CORE SIZE MIN.	TIME MIN. ELEV.				
0	Partially Weathered Rock That Becomes Grayish-Tan Fine To Medium Sandy Slightly Micaceous Silt When Sampled	NX	554.4	N=50/4"	95		
			549.4			N=50/1" No Recovery	55
11.0			544.4				
17.0	Hard Very Light Gray Felsic Gneiss	74	539.4	17.0 ft to 27.5 ft.: Moderately Severe To Very Severe Weathering. Very Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip. Pegmatitic Zone (27.0 ft.)	0		
	Soft To Very Soft Light Bluish Gray And Orangish-Brown Mafic Gneiss	54	534.4				
26.0	Hard To Very Hard Very Light Gray Felsic Gneiss	67	529.4	Top Of Continuous Rock At 27.5 ft. 27.5 ft to 58.9 ft.: Very Slight Weathering. Wide Joints - Low To Steep Dip. Very Close Healed Joints - Quartz And Calcite - Low To Steep Dip. Locally Grades To Felsic Schist. Mafic Gneiss (35.4 ft - 35.9 ft.) 3-inch Quartz Vein, Low Dip (36.7 ft.)	33		
			524.4			100	
			519.4				100
38.0	Hard Medium Light Gray Mafic Gneiss	100					
40.0							

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO. B-101

DATE DRILLED 11-22-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 1 of 2

TEST BORING RECORD

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
596.3				
591.3				
586.3	N=12 Firm Orange - Tan Slightly Micaceous Silty Fine Sand			
581.3				
576.3	N=14 Firm Light Brown Very Micaceous Silty Fine To Coarse Sand With Small Rock Fragments			
571.3	N=18 Very Stiff Brown-Tan Slightly Micaceous Silty Fine To Medium Sand			
566.3				
561.3	N=21 Very Firm - Dense Light Tan Slightly Micaceous Silty Fine To Medium Sand			
556.3	NW Casing To 40.0 ft.			

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
40.0				
551.3	N=33 Dense Light Tan Slightly Micaceous Silty Fine To Medium Sand			
546.3	N=41 Dense Light Tan Slightly Micaceous Silty Fine To Medium Sand			
541.3	Extend NW Casing to 55.0 ft. N=50/2 1/2"			
536.3	N=50/2" Carbide Bit Refusal And Top Of Continuous Rock At 60.2 ft. 60.2 ft to 66.2 ft. Moderate To Slight Weathering. Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip. Leached Steep Dip Healed Joints: 61.0 ft. 62.6 ft.			83
531.3				
526.3	66.2 ft to 76.1 ft. Slight To Very Slight Weathering. Close To Very Close Healed And Rarely Calcite Filled Joints - Low To Steep Dip.			77
521.3				
76.1	Coring Terminated At 76.1 ft. No Drilling Water Loss			100

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
 [] UNDISTURBED SAMPLE [] WATER TABLE, 24 HR.
 [] ROCK CORE RECOVERY [] WATER TABLE, 1 HR.
 N = STANDARD PENETRATION [] LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD
 BORING NO. B-128P
 DATE DRILLED 10-24-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
 [] UNDISTURBED SAMPLE [] WATER TABLE, 24 HR.
 [] ROCK CORE RECOVERY [] WATER TABLE, 1 HR.
 N = STANDARD PENETRATION [] LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD
 BORING NO. B-128P
 DATE DRILLED 10-24-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0			580.8		
			575.8		
	N=5 Firm Reddish Tan Fine Sandy Clayey Silt		570.8		
			565.8		
	N=7 Firm Tannish Brown Slightly Clayey Fine Sandy Silt		560.8		
			555.8		
	N=13 Stiff Tannish Brown Fine To Medium Sandy Silt		550.8		
			545.8		
	N=16 Very Stiff Tannish Brown Fine To Medium Sandy Silt		540.8		
40.0			540.8	N=34 Hard Tannish Brown Fine To Medium Sandy Silt	

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Firm Tannish Brown Silty Fine To Medium Sand		535.8	N=28	
48.0	Hard Tannish Brown Fine To Medium Sandy Silt		530.8	N=38	
55.0	Partially Weathered Rock That Becomes Tannish Brown Slightly Micaceous Fine*		525.8	N=50/5 1/2"	
57.0	Hard Tannish Brown Slightly Micaceous Fine To Medium Sandy Silt		520.8	N=51	
62.8	Partially Weathered Rock That Becomes Tannish Brown Silty Slightly Micaceous Fine To Medium Silt When Sampled		515.8	N=50/4 1/2"	
65.5	Partially Weathered Rock That Becomes Very Dense Tannish Brown Silty Slightly Micaceous Fine To Coarse Sand When Sampled		510.8	N=50/1"	
70.5	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 95	505.8	Carbide Bit Refusal At 70.5 ft. 70.5 ft to 76.8 ft. Slight To Moderate Weathering. Close Joints - Low To Medium Dip. Very Close Healed And Rarely Leached Joints - Low To Steep Dip.	37
76.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	95	500.8	Top Of Continuous Rock At 76.8 ft.	88
80.0		100	500.8		94

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 4
TEST BORING RECORD

BORING NO. B-129P
DATE DRILLED 10-29-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586 * To Medium Sandy Silt When
CORE DRILLING MEETS ASTM D-5115 Sampled
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 4
TEST BORING RECORD

BORING NO. B-129P
DATE DRILLED 10-29-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R. Q. D.				
		NO. & TYPE SIZE MIN.	ELEV.						
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		500.8	94				
				495.8		76.8 ft. to 123.2 ft. Very Slight Weathering. Very Close Healed Joints With Calcite And Chlorite - Low To Steep Dip.			
				490.8					
100				485.8			Steep Dip Schistose Zone With Calcite, Chlorite And Quartz (78.0 ft to 79.4 ft.)		
				480.8					
100				475.8				Steep Dip Quartz Vein (97.0 ft to 97.9 ft.). Epidote In Healed Joints (96.4 to 97.9 ft.)	
				470.8					
100				465.8					1 Inch Low Dip Schistose Zone (105.7 ft.)
				460.8					
120.0					100				

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R. Q. D.
		NO. & TYPE SIZE MIN.	ELEV.		
120.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		480.8	100
123.2				455.8	
	Coring Terminated At 123.2 ft.				
	Groundwater At 9.7 ft. After 24 Hours				
	No Drilling Water Loss				

BORING AND SAMPLING TESTS ASTM D-1599
CORE DRILLING TESTS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 4

TEST BORING RECORD

BORING NO. B-129P

DATE DRILLED 10-29-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING TESTS ASTM D-1599
CORE DRILLING TESTS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 4 of 4

TEST BORING RECORD

BORING NO. B-129P

DATE DRILLED 10-29-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
0		588.2		
		583.2	N=13 Stiff Tannish-Red Fine Sandy Slightly Clayey Micaceous Silt	
		578.2		
		573.2	N=11 Stiff Tan-Brown Fine To Medium Sandy Micaceous Silt	
		568.2		
		563.2	N=16 Firm Tan-Brown Very Silty Micaceous Fine To Medium Sand	
		558.2		
		553.2	N=49 Dense Tan-Brown Very Silty Micaceous Fine To Medium Sand	
40.0		548.2		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 2
TEST BORING RECORD

BORING NO. B-130P

DATE DRILLED 11-14-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
40.0		548.2		
		543.2	N=50/3" Partially Weathered Rock That Becomes Tan-Gray Very Silty Micaceous Fine To Medium Sand When Sampled	
44.9	Partially Weathered Rock	538.2		
		533.2	N=50/0" No Recovery	
		528.2		
		523.2	N=50/0" No Recovery	
		518.2		
71.7	Moderately Hard To Hard Very Light Gray Felsic Gneiss	513.2	Carbide Bit Refusal At 71.7 ft. 71.7 ft to 79.1 ft.: Moderate Weathering. Very Close Healed Joints - Low To Steep Dip. Leaching Along Steep Dip Healed Joints	
		508.2	Irregular Quartz Vein With Muscovite (75.0 ft.)	94.
79.1	Coring Terminated At 79.1 ft. *			

BORING AND SAMPLING MEETS ASTM D-1586 Groundwater At 21 ft After 24 Hours
 CORE DRILLING MEETS ASTM D-2113 No Drilling Water Loss
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-130P

DATE DRILLED 11-14-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		SIZE	ELEV.		
			615.6		
			610.6	N=23 Very Stiff Orange-Tan Very Slightly Micaceous Fine Sandy Silt	
			605.6		
			600.6	N=17 Very Stiff Gray - Tan With Black-Brown Seams Very Micaceous Slightly Sandy Silt	
			595.6		
			590.6	N=13 Stiff - Gray - Tan With Black-Brown Seams Very Micaceous Slightly Sandy Silt	
			585.6		
33.9	Partially Weathered Rock That Becomes Dark Gray Very Micaceous Slightly*		580.6	N=50/5"	
36.0	Dense Gray-Tan Very Micaceous Silty Fine To Coarse Sand				
40.0			575.6	NW Casing To 40.0 ft. N=44	

DEPTH FT.	DESCRIPTION	CORE		REMARKS	% R.Q.D.
		SIZE	ELEV.		
			575.6		
40.0	Dense Gray-Tan Very Micaceous Silty Fine To Coarse Sand				
41.6	Hard To Soft Yellowish Gray Felsic Gneiss	NX 93		Carbide Bit Refusal At 41.6 ft. 41.6 ft to 45.7 ft.: Moderate To Severe Weathering. Close Joints - Low To Steep Dip. Very Close Healed And Rarely Leached Joints - Low To Steep Dip.	63
45.7	Hard To Very Hard Light Bluish Gray Felsic Gneiss	71	570.6		0
				45.7 ft to 55.7 ft.: Slight To Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip. Medium Dip Quartz Filled Joint (46.3 ft.)	100
55.7	Coring Terminated At 55.7 ft. Groundwater At 21.9 ft At 72 Hours No Drilling Water Loss	NX 100	565.6		
			560.6		

BORING AND SAMPLING MEETS ASTM D-1998
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

*Medium Sandy Silt When Sampled

TEST BORING RECORD

BORING NO. B-131P
DATE DRILLED 10-26-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1998
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-131P
DATE DRILLED 10-26-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0			603.9		
			598.9		
			593.9	N=11 Stiff Gray-Tan Micaceous Fine Sandy Silt	
			588.9		
			583.9	N=14 Firm Tan Micaceous Silty Fine To Coarse Sand	
			578.9		
			573.9	N=11 Firm Tan Micaceous Silty Fine To Coarse Sand	
			568.9		
			563.9	N=49 Dense Tan Slightly Silty Fine To Coarse Sand	
40.0					

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0			563.9		
			558.9		
			553.9	N=39 Dense Tan Slightly Silty Fine To Coarse Sand	
			548.9	N=85/9" Partially Weathered Rock That Becomes Tan-Gray Slightly Silty Fine To Coarse Sand With Rock Fragments When Sampled	
49.0	Moderately Hard To Hard Yellowish Gray To Very Light Gray Felsic Gneiss	NX 100	553.9	NW Casing To 50.0 ft. Carbide Bit Refusal At 49.0 ft. 49.0 ft to 61.0 ft. Moderately Severe To Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Healed And Occasionally Leached Joints - Low To Steep Dip.	94
			548.9		
			543.9	Thin, Steep Dip Schistose Zone (51.0 ft.)	79
61.0	Coring Terminated At 61.0 ft. Groundwater At 17.0 ft At 24 Hours No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD
BORING NO. B-132P
DATE DRILLED 10-26-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD
BORING NO. B-132P
DATE DRILLED 10-26-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.Q.D.
80.0				553.8		
80.7	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX	100		Carbide Bit Refusal At 80.7 ft.	
83.5	Moderately Hard To Medium Yellowish Gray Felsic Gneiss			548.8	80.7 to 96.0 ft.: Very Slight Weathering. Very Close Healed Joints With Chlorite And Calcite - Rarely Leached - Low To Steep Dip.	67
86.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss			543.8	Moderately Severe To Severely Weathered Zone - Badly Broken Rock (83.5 to 86.0 ft.)	96
				538.8	Mafic Gneiss With Medium Dip Calcite Rich Schistose Zone At Upper Contact (87.0 to 87.5 ft.)	
96.0	Coring Terminated At 96.0 ft. Groundwater At 28.0 ft At Time Of Boring Stabilized Groundwater At 30.0 ft. No Drilling Water Loss					

BORING AND SAMPLING MEETS ASTM D-1096
 CORE DRILLING MEETS ASTM D-8119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

% ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO. B-135P

DATE DRILLED 10-30-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.Q.D.
0				616.6		
				611.6	N=20 Very Stiff Brown Red Micaceous Fine To Medium Sandy Clayey Silt	
				606.6		
				601.6		
				596.6	N=28 Very Stiff Red Orange, Tan, Black, White Micaceous Fine To Medium Sandy Silt	
				591.6		
				586.6		
				581.6	N=64 Very Dense Tan Brown Micaceous Silty Fine To Coarse Sand	
40.0				576.6		

BORING AND SAMPLING MEETS ASTM D-1096
 CORE DRILLING MEETS ASTM D-8119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

% ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO. B-136AP

DATE DRILLED 2-5-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

TEST BORING RECORD

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.O.D.
40.0				
		571.6		
47.8	Partially Weathered Rock	566.6	N=50/5" No Recovery	
		561.6		
		556.6		
63.4	Hard Very Light Gray Felsic Gneiss	NX 71 551.6	N=50/5 1/2" Carbide Bit Refusal At 63.4 ft. 63.4 ft - 68.0 ft. Slight Weathering. Close To Moderately Close Joints - Low To Medium Dip. Very Close Healed Joints - Low To Steep Dip.	46
68.0	Medium To Soft Grayish Orange Felsic Gneiss	52 546.6	Numerous Leached Healed Joints (66.9 ft - 68.0 ft.) Steep Dip Quartz Vein With Muscovite (67.4 ft to 67.7 ft.) 68.0 ft to 75.1 ft.	36
74.1	Hard Very Light Gray Felsic Gneiss	98 541.6	Severe To Moderately Severe Weathering. Very Close Joints. Numerous Leached Healed Joints (74.1 ft to 75.1 ft)	27
78.2	Hard Dark Greenish Gray Mafic Gneiss	100 536.6	75.1 ft to 85.4 ft. Slight To Very Slight Weathering.	100

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.O.D.
80.0	Hard Dark Greenish Gray Mafic Gneiss	NX 100 531.6	Very Steep Dip Brecciated And Slickensided Zone With Chlorite, Quartz, Calcite And Zeolite (?) - (77.0 ft - 78.4 ft.)	100
85.4			Coring Terminated At 85.4 ft. Groundwater At 32.9 ft At Time Of Boring Stabilized Groundwater At 32.7 ft. Drilling Water Loss At 62 ft.	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-136AP
DATE DRILLED 2-5-74
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 3 of 3
TEST BORING RECORD
BORING NO. B-136AP
DATE DRILLED 2-5-74
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0			619.6		
			614.6	N=15 Stiff Red-Brown Fine To Medium Sandy Clayey Micaceous Silt	
			609.6		
			604.6	N=11 Firm Gray-Brown Very Silty Micaceous Fine To Medium Sand	
			599.8	Complete Drilling Water Loss	
			594.6	N=11 Firm Gray-Brown Very Silty Micaceous Fine To Medium Sand	
			589.6		
			584.6	N=74 Very Dense Brown-Gray Silty Slightly Micaceous Fine To Coarse Sand With Rock Fragments	
40.0			579.6		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0			579.6		
			574.6	NW Casing To 40.0 ft. N=50/5" Partially Weathered Rock That Becomes Tan-Brown Silty Fine To Coarse Sand When Sampled	
			569.6		
			564.6	N=50/0" No Recovery	
59.1	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 100	559.6	Carbide Bit Refusal At 59.1 ft. 59.1 ft to 67.9 ft.: Moderately Severe To Slight Weathering. Close Joints - Low To Medium Dip. Very Close Healed Joints, Rarely Leached - Low To Steep Dip.	60
67.9	Moderately Hard To Soft Very Light Gray And Pinkish Gray Felsic Gneiss	NX 58	554.6	1/4 inch Quartz Vein (63.3 ft.) Very Severely Weathered Zone (59.4* 67.9 ft to 75.3 ft.: Moderately Severe To Severe Weathering. Close To Very Close Joints - Low To Steep Dip. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	48
75.3	Hard Medium Light Gray Mafic Gneiss		549.6		
76.4	Hard To Very Hard Very Light Gray Felsic Gneiss		544.6	Top Of Continuous Rock At 75.3 ft. 75.3 ft to 91.8 ft.: Moderate To Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep	
80.0			539.6		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD

BORING NO. B-136P
 DATE DRILLED 11-14-73
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

* 60.3 ft.) ** Dip.
TEST BORING RECORD

BORING NO. B-136P
 DATE DRILLED 11-14-73
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	539.6 ELEV.	REMARKS	% R.Q.D.
80.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100	534.6	Leached Quartz Filled Joint (72.2 ft - 72.7 ft.) Medium To Steep Dip - Schistose Zones With Chlorite And Epidote: 81.5 ft. 85.3 ft. 91.6 ft.	99
87.8	Hard To Soft Medium Light Gray To Light Olive Gray Mafic Gneiss		529.6	Completely Weathered Zone (87.8 ft to 88.0 ft.)	
90.5	Very Hard Light Bluish Gray Felsic Gneiss	NX 99	524.6	Moderately Severely Weathered Zone (89.8 ft to 90.2 ft.) 91.8 ft to 99.5 ft.: Very Slight Weathering. Very Close Heated Joints - Low To Steep Dip.	99
99.5	Coring Terminated At 99.5 ft. Groundwater At 35.0 ft After 24 Hours Drilling Water Loss At 21.5 ft		519.6		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	627.8 ELEV.	REMARKS	% R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 65.0 ft.				
			622.8	N=12 Stiff Pinkish-Red Fine To Medium Sandy Micaceous Silt	
			617.8		
			612.8		
			607.8	N=20 Very Stiff Brownish Gray Fine Sandy Micaceous Silt	
			602.8		
			597.8		
			592.8		
40.0			587.8	N=96/8" Very Dense Gray Brown Silty Slightly Micaceous Fine To Medium Sand	

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

TEST BORING RECORD

BORING NO. B-136P
DATE DRILLED 11-14-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

TEST BORING RECORD

BORING NO. B-137P
DATE DRILLED 11-19-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	539.6 ELEV.	REMARKS	R.Q.D.
60.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100	534.6	Leached Quartz Filled Joint (72.2 ft - 72.7 ft.) Medium To Steep Dip - Schistose Zones With Chlorite And Epidote: 81.5 ft. 85.3 ft. 91.6 ft.	99
87.8	Hard To Soft Medium Light Gray To Light Olive Gray Mafic Gneiss		529.6	Completely Weathered Zone (87.8 ft to 88.0 ft.)	
90.5	Very Hard Light Bluish Gray Felsic Gneiss	NX 99	524.6	Moderately Severely Weathered Zone (89.8 ft to 90.2 ft.) 91.8 ft to 99.5 ft.: Very Slight Weathering. Very Close Heated Joints - Low To Steep Dip.	99
99.5	Coring Terminated At 99.5 ft. Groundwater At 35.0 ft After 24 Hours Drilling Water Loss At 21.5 ft		519.6		

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	627.8 ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 65.0 ft.				
			622.8	N=12 Stiff Pinkish-Red Fine To Medium Sandy Micaceous Silt	
			617.8		
			612.8		
			607.8	N=20 Very Stiff Brownish Gray Fine Sandy Micaceous Silt	
			602.8		
			597.8		
			592.8	N=96/8" Very Dense Gray Brown Silty Slightly Micaceous Fine To Medium Sand	
40.0			587.8		

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-8123
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD
BORING NO. B-136P
DATE DRILLED 11-14-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-8123
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD
BORING NO. B-137P
DATE DRILLED 11-19-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	587.8 ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 65.0 ft.		582.8		
			577.8	N=35 Dense Tan-Gray Silty Micaceous Fine To Medium Sand	
			572.8		
			567.8	NW Casing To 65.0 ft.	
64.0	Partially Weathered Rock		562.8	N=50/3" Partially Weathered Rock That Becomes Brown-Gray Silty Fine To Coarse Sand When Sampled	58
65.0	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 98	557.8	Carbide Bit Refusal At 65.0 ft. to 73.2 ft.: Slight To Moderate Weathering. Close Joints - Low To Steep Dip. Close To Very Close Healed Joints - Low To Steep Dip.	
		NX 81	552.8	Xenolith Of Mafic Gneiss (70.0 ft.)	67
80.0			547.8		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	547.8 ELEV.	REMARKS	R.Q.D.
80.0	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 86	542.8	Top Of Continuous Rock At 83.2 ft.	22
87.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	537.8	Quartz Vein (85.8 ft to 86.8 ft.) 73.2 ft to 109.2 ft.: Slight To Very Slight Weathering. Wide Joints - Medium To Steep Dip. Close Healed Joints - Low To Steep Dip.	71
		NX 100	532.8		100
			527.8		
104.4	Soft To Medium Olive Gray Mafic Gneiss	NX 100	522.8	Thin Stringers Of Zeolite And Calcite (105.5 ft to 109.2 ft.)	95
105.5	Hard Medium Gray Mafic Gneiss			Moderately Severely Weathered Zone (104.4 ft to 105.5 ft.)	
109.2	Coring Terminated At 109.2 ft. Groundwater At 40.4 ft At 24 Hours Drilling Water Loss At 86.5 ft.		517.8		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3
TEST BORING RECORD

BORING NO. B-137P

DATE DRILLED 11-19-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD

BORING NO. B-137P

DATE DRILLED 11-19-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
0	Rotary Wash Drilled With Carbide Fishtail To 36.1 ft.		607.8		
			602.8		
			597.8	N=13 Stiff Pink And Tan Fine To Medium Sandy Micaceous Silt With Some Quartz Fragments	
			592.8		
			587.8	N=24 Very Stiff Grayish-Brown Micaceous Silt	
			582.8		
			577.8	N=41 Dense Gray Silty Fine To Medium Sand	
			572.8		
36.1	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	567.8	Carbide Bit Refusal And Top Of Continuous Rock At 36.1 ft.	100

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
40.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss				
		NX 100	562.8	Complete Drilling Water Loss 36.1 ft to 58.7 ft.: Slight To Very Slight Weathering. Close Heated Joints - Low To Steep Dip.	100
		NX 100	557.8	Vertical, Chlorite Filled, Slightly Leached Joint (49.6 ft to 52.7 ft.)	100
			552.8	1/2 Inch Quartz Vein - Medium Dip (44.6 ft.)	
				Steep Dip Quartz Veins: 2 inches - 46.3 ft. 1/4 inch - 46.9 to 47.6 ft. 1/8 inch - 52.8 ft.	
58.7	Coring Terminated At 58.7 ft. Groundwater At 30.8 ft. After 24 Hours Drilling Water Loss At 43.8 ft.		547.8	Quartz - Calcite Stringers And Schistose Zones: 53.1 ft. 53.7 to 54.1 ft.	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD

BORING NO. B-138P
DATE DRILLED 12-5-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 133 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD

BORING NO. B-138P
DATE DRILLED 12-5-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
0	Rotary Wash Drilled With Carbide Fishtail To 68.8 ft.		607.6		
			602.6		
		N=18	597.6	Very Stiff Tannish-Red Micaceous Silt	
			592.6		
		N=27	587.6	Very Stiff Orangish-Tan Slightly Fine Sandy Slightly Micaceous Silt	
			582.6		
		N=36	577.6	Hard Orangish-Tan Silt	
			572.6		
40.0		N=42	567.6	Hard Orangish-Tan Slightly Fine Sandy Slightly Clayey *	

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 68.8 ft.		567.6		
			562.6		
49.5	Partially Weathered Rock	N=75/10"	557.6	Partially Weathered Rock That Becomes Tannish - Gray Fine To Medium Sandy Silt When Sampled	
			552.6		
		N=50/3"	547.6	Hard Tannish-Brown Fine Sandy Micaceous Silt	
			542.6		
68.8	Medium To Moderately Hard Tannish-Brown And Light Olive Gray Mafic Gneiss	NX 100	537.6	Carbide Bit Refusal At 68.8 ft. N=50/1" No Recovery 68.8 ft. to 73.4 ft.: Moderate Severe Weathering. Close Joints - Epidote And Zeolite Filled-Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip. Top Of Continuous Rock At 73.4 ft. Stickensided Surfaces: 69.0 ft. - Steep Dip. 70.0 ft. - Medium Dip. 70.4 ft. - Low Dip. 71.2 ft. - Medium Dip.	
73.4	Hard Medium Light Gray Mafic Gneiss		532.6		56
			527.6		
80.0		95	527.6	73.5 ft. - Low Dip.	90

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

*Silt Page 1 of 3
TEST BORING RECORD
B-139P
BORING NO. B-139P
DATE DRILLED 12-4-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0°-20°
M = MED. DIP 30°-40°
S = STEEP DIP 40°-90°

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD
B-139P
BORING NO. B-139P
DATE DRILLED 12-4-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0°-20°
M = MED. DIP 30°-40°
S = STEEP DIP 40°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.	
80.0	Hard Medium Light Gray Mafic Gneiss	NX 95		73.4 ft. to 95.1 ft., Slight To Very Slight Weathering. Close Healed Joints With Zeolite And Calcite - Low To Steep Dip. Steep Dip 1 Inch Thick Quartz Vein With Brecciated Contacts Containing Quartz, Calcite And Chlorite (86.0 ft.) Steeply Dipping Quartz Filled Brecciated Zone (87.7 ft.)	90	
			522.6			
			517.6			
		NX 100			100	
95.1	Coring Terminated At 95.1 ft. Stabilized Groundwater At 37.0 ft. No Drilling Water Loss					

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash-Drilled With Carbide Fishtail To 42.6 ft.				
			589.0		
			584.0	N=17 Firm Tannish-Gray Very Silty Fine To Medium Sand	
			579.0		
			574.0	N=23 Firm Tannish-Gray To Tan Very Silty Fine To Medium Sand	
			569.0		
			564.0	N=36 Hard Tan And Light Olive Gray Very Micaceous Silt With Rock Fragments	
			559.0		
38.4	Partially Weathered Rock				
40.0	Partially Weathered Rock				
			554.0	N=50/1 1/2"	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-139P

DATE DRILLED 12-4-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 135 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2

TEST BORING RECORD

BORING NO. B-140P

DATE DRILLED 12-10-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Hard Medium Light Gray Mafic Gneiss	NX 95	527.6	73.4 ft. to 95.1 ft.: Slight To Very Slight Weathering. Close Healed Joints With Zeolite And Calcite - Low To Steep Dip. Steep Dip 1 Inch Thick Quartz Vein With Brecciated Contacts Containing Quartz, Calcite And Chlorite (85.0 ft.) Steeply Dipping Quartz Filled Brecciated Zone (87.7 ft.)	90
			522.6		
			517.6		
		NX 100	512.6		100
95.1	Coring Terminated At 95.1 ft. Stabilized Groundwater At 37.0 ft. No Drilling Water Loss				

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash-Drilled With Carbide Fishtail To 42.6 ft.		594.0		
			589.0		
			584.0	N=17 Firm Tannish-Gray Very Silty Fine To Medium Sand	
			579.0		
			574.0	N=23 Firm Tannish-Gray To Tan Very Silty Fine To Medium Sand	
			569.0		
			564.0	N=36 Hard Tan And Light Olive Gray Very Micaceous Silt With Rock Fragments	
			559.0		
38.4	Partially Weathered Rock		554.0	Partially Weathered Rock That Becomes Tan Silty Fine To Medium Sand When Sampled	
40.0				N=50/1 1/2"	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-139P

DATE DRILLED 12-4-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 136 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2

TEST BORING RECORD

BORING NO. B-140P

DATE DRILLED 12-10-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Partially Weathered Rock		554.0		
42.6	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	549.0	Carbide Bit Refusal And Top Of Continuous Rock At 42.6 ft. Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	100
		NX 100	544.0	Numerous Schistose Zones (42.6 ft to 52.8 ft.)	
		NX 100	539.0	2 Inch Medium To Steep Dipping Partly Leached Schistose Zone With Quartz Calcite And Chlorite (47.8 ft)	100
		NX 100	534.0		100
			529.0	Steep Dip Quartz - Calcite Vein (65.8 ft to 66.4 ft.)	
66.6	Coring Terminated At 66.6 ft.		524.0		
	Groundwater At 17 ft After 24 Hours				
	No Drilling Water Loss				

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 48.0 ft.		597.8		
			592.8		
			587.8	N=15 Stiff Pink And Tan Fine To Medium Sandy Slightly Micaceous Silt	
			582.8		
			577.8	N=29 Very Stiff Tannish-Gray Fine To Medium Very Sandy Silt	
			572.8		
			567.8	N=53 Hard Yellowish-Brown Slightly Fine Sandy Very Micaceous Silt	
			562.8		
40.0			557.8	Hard Yellowish-Brown Slightly Fine Sandy Very Micaceous Silt	

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD
 BORING NO. B-140P
 DATE DRILLED 12-19-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD
 BORING NO. B-141P
 DATE DRILLED 12-7-73
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R. Q. D.
40.0	Partially Weathered Rock		554.0		
42.6	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	549.0	Carbide Bit Refusal And Top Of Continuous Rock At 42.6 ft. 42.6 ft to 66.6 ft.: Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	100
		NX 100	544.0	Numerous Schistose Zones (42.6 ft to 52.8 ft.)	
		NX 100	539.0	2 Inch Medium To Steep Dipping Partly Leached Schistose Zone With Quartz Calcite And Chlorite (47.8 ft)	100
		NX 100	534.0		100
			529.0	Steep Dip Quartz - Calcite Vein (65.8 ft to 66.4 ft.)	
66.6	Coring Terminated At 66.6 ft. Groundwater At 17 ft After 24 Hours No Drilling Water Loss		524.0		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD
BORING NO. B-140P
DATE DRILLED 12-10-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R. Q. D.
0	Rotary Wash Drilled With Carbide Fishtail To 48.0 ft.		597.8		
			592.8		
			587.8	N=15 Stiff Pink And Tan Fine To Medium Sandy Slightly Micaceous Silt	
			582.8		
			577.8	N=29 Very Stiff Tannish-Gray Fine To Medium Very Sandy Silt	
			572.8		
			567.8	N=53 Hard Yellowish-Brown Slightly Fine Sandy Very Micaceous Silt	
			562.8		
40.0			557.8	Hard Yellowish-Brown Slightly Fine Sandy Very Micaceous Silt	N=39

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD
BORING NO. B-141P
DATE DRILLED 12-7-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		ELEV.	REMARKS	% R.Q.D.
		%	TIME			
40.0	Rotary Wash Drilled With Carbide Fishtail To 48.0 ft.			552.8		
48.0	Hard To Very Hard Medium Light Gray Mafic Gneiss	NX	80	547.8	Carbide Bit Refusal At 48.0 ft.	58
54.6	Hard Medium Light Gray Mafic Gneiss	NX	82	542.8	Top Of Continuous Rock At 54.6 ft.	49
65.1	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX	100	537.8	48.0 ft to 54.6 ft. Moderate To Slight Weathering. Close Joints, Many Iron Stained - Steep Dip. Very Close Healed And Slightly Leached Joints - Low To Steep Dip	100
75.3	Coring Terminated At 75.3 ft. No Drilling Water Loss	NX	100	532.8	Soft, Severely Weathered Zone (51.5 to 52.5 ft.) 54.6 ft to 75.3 ft.: Slight To Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip. Quartz - Calcite Veins And Joint Fillings Throughout.	100
				527.8	Slickensided Surface - Medium Dip (60.2 ft.) Irregular Quartz - Calcite - Chlorite Zones (60.2 ft - 60.6 ft.) Schistose Zone With Calcite, Chlorite And Epidote At Contact (65.1 ft.) 3-Inch Medium Dip Schistose Zone (68.0 ft.)	
				522.8	Mafic Gneiss (68.2 ft to 68.8 ft.) Close, Medium Dip, Very Thin Schistose Zones (68.8 ft to 75.3 ft.)	

DEPTH FT.	DESCRIPTION	CORE		ELEV.	REMARKS	% R.Q.D.
		%	TIME			
0	Rotary Wash Drilled With Carbide Fishtail To 56.8 ft.			604.4		
				599.4	N=15 Stiff Pink And Tan Fine To Medium Sandy Silt	
				594.4		
				589.4	N=20 Very Stiff Pink And Tan Fine To Medium Sandy Silt	
				584.4		
				579.4	N=24 Very Stiff Pinkish-Gray Fine To Medium Sandy Silt	
				574.4		
40.0				569.4	N=31 Hard Tannish-Gray Fine To Medium Sandy Silt	

BORING AND SAMPLING MEETS ASTM D-1898
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2

TEST BORING RECORD

BORING NO. B-141P
DATE DRILLED 12-7-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 1 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1898
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

BORING NO. B-142P
DATE DRILLED 12-4-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		ELEV.	REMARKS	% R.Q.D.
		SIZE	TIME			
40.0	Rotary Wash Drilled With Carbide Fishtail To 48.0 ft.			552.8		
48.0	Hard To Very Hard Medium Light Gray Mafic Gneiss	NX 80		547.8	Carbide Bit Refusal At 48.0 ft.	58
54.6	Hard Medium Light Gray Mafic Gneiss	NX 82		542.8	Top Of Continuous Rock At 54.6 ft.	49
65.1	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		537.8	48.0 ft to 54.6 ft. Moderate To Slight Weathering. Close Joints, Many Iron Stained - Steep Dip. Very Close Healed And Slightly Leached Joints - Low To Steep Dip	100
				532.8	Soft, Severely Weathered Zone (51.5 to 52.5 ft.) 54.6 ft to 75.3 ft.: Slight To Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	
75.3	Coring Terminated At 75.3 ft. No Drilling Water Loss	NX 100		527.8	Quartz - Calcite Veins And Joint Fillings Throughout. Slickensided Surface - Medium Dip (60.2 ft.) Irregular Quartz - Calcite - Chlorite Zones (60.2 ft - 60.6 ft.) Schistose Zone With Calcite, Chlorite And Epidote At Contact (65.1 ft.) 3-Inch Medium Dip Schistose Zone (68.0 ft.) Mafic Gneiss (68.2 ft to 68.8 ft.) Close, Medium Dip, Very Thin Schistose Zones (68.8 ft to 75.3 ft.)	100
				522.8		

DEPTH FT.	DESCRIPTION	CORE		ELEV.	REMARKS	% R.Q.D.
		SIZE	TIME			
0	Rotary Wash Drilled With Carbide Fishtail To 56.8 ft.			604.4		
				599.4	N=15 Silt Pink And Tan Fine To Medium Sandy Silt	
				594.4		
				589.4	N=20 Very Stiff Pink And Tan Fine To Medium Sandy Silt	
				584.4		
				579.4	N=24 Very Stiff Pinkish-Gray Fine To Medium Sandy Silt	
				574.4		
40.0				569.4	N=31 Hard Tannish-Gray Fine To Medium Sandy Silt	

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-1113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR. ROCK JOINTS
ROCK CORE RECOVERY WATER TABLE, 1 HR. L = LOW DIP 0°-30°
N = STANDARD PENETRATION LOSS OF DRILLING WATER M = MED. DIP 30°-60°
N.Q.D. ROCK QUALITY DESIGNATION S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-141P
DATE DRILLED 12-7-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 140 of 298

BORING AND SAMPLING MEETS ASTM D-1888
CORE DRILLING MEETS ASTM D-1113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR. ROCK JOINTS
ROCK CORE RECOVERY WATER TABLE, 1 HR. L = LOW DIP 0°-30°
N = STANDARD PENETRATION LOSS OF DRILLING WATER M = MED. DIP 30°-60°
N.Q.D. ROCK QUALITY DESIGNATION S = STEEP DIP 60°-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-142P
DATE DRILLED 12-4-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 56.8 ft.		569.4		
			564.4		
49.4	Partially Weathered Rock		559.4	N=80/9" Partially Weathered Rock That Becomes Tannish Gray To Light Gray Very Silty Fine To Medium Sand When Sampled	
			554.4		
56.8	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		Carbide Bit Refusal And Top Of Continuous Rock At 56.8 ft. 56.8 ft to 79.0 ft.: Slight Weathering. Very Close To Close Healed And Rarely Leached Joints - Low To Steep Dip.	100
		NX 95	549.4		95
			544.4	Moderately Hard, Moderately Weathered Zone (58.3 ft to 59.3 ft.)	
			539.4	Moderately Hard, Moderately Weathered Zone (63.8 ft - 64.5 ft.) Schistose (58.0 ft to 59.2 ft.) Close Quartz And Calcite Filled Joints - Steep Dip (75.6 ft - 79.0 ft.)	100
		NX 100	534.4		100
79.0	Coring Terminated At 79.0 ft. *	NX 100	529.4		100

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Rotary Wash-Drilled With 6" Carbide Fishtail To 41.6 ft.		604.6		
			599.6	N=15 Stiff Tannish Orange Slightly Clayey Silt	
			594.6		
			589.6	N=8 Firm Yellowish-Tan Micaceous Silt	
			584.6		
			579.6	N=23 Very Stiff Yellowish-Tan Micaceous Silt	
			574.6		
			569.6	N=69 Very Dense Gray-Brown Silty Fine To Coarse Sand	
40.0			564.6		

BORING AND SAMPLING MEETS ASTM D-1586 - Stabilized Groundwater At 41.8 ft.
CORE DRILLING MEETS ASTM D-5113 No Drilling Water Loss

Page 2 of 2

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

BORING NO. B-142P

DATE DRILLED 12-4-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 141 of 298

BORING AND SAMPLING MEETS ASTM D-1586

CORE DRILLING MEETS ASTM D-5113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-143P

DATE DRILLED 12-3-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 56.8 ft.		569.4		
			564.4		
49.4	Partially Weathered Rock		559.4	N=80/9" Partially Weathered Rock That Becomes Tannish Gray To Light Gray Very Silty Fines To Medium Sand When Sampled	
			554.4		
56.8	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		Carbide Bit Refusal And Top Of Continuous Rock At 56.8 ft.	100
			549.4	56.8 ft to 79.0 ft.: Slight Weathering. Very Close To Close Healed And Rarely Leached Joints - Low To Steep Dip.	
		NX 95			95
			544.4	Moderately Hard, Moderately Weathered Zone (58.3 ft to 59.3 ft.)	
			539.4	Moderately Hard, Moderately Weathered Zone (63.8 ft - 64.5 ft.) Schistose (58.0 ft to 59.2 ft.) Close Quartz And Calcite Filled Joints - Steep Dip (75.6 ft - 79.0 ft.)	
		NX 100			100
			534.4		
		NX 100			100
79.0	Coring Terminated At 79.0 ft. *		529.4		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Rotary Wash-Drilled With 6" Carbide Fishtail To 41.6 ft.		604.6		
			599.6	N=15 Stiff Tannish Orange Slightly Clayey Silt	
			594.6		
			589.6	N=8 Firm Yellowish-Tan Micaceous Silt	
			584.6		
			579.6	N=23 Very Stiff Yellowish-Tan Micaceous Silt	
			574.6		
			569.6	N=69 Very Dense Gray-Brown Silty Fines To Coarse Sand	
40.0			564.6		

BORING AND SAMPLING MEETS ASTM D-1586 Stabilized Groundwater At 41.8 ft.
CORE DRILLING MEETS ASTM D-8113 No Drilling Water Loss

Page 2 of 2

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

BORING NO. B-142P

DATE DRILLED 12-4-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

Page 1 of 3

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

BORING NO. B-143P

DATE DRILLED 12-3-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	564.6 SIZE MIN. ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash-Drilled With 6" Carbide Fishtail To 41.6 ft.			6" Carbide Bit Refusal At 41.6 ft.	
41.6	Hard And Moderately Hard Light Gray Felsic Gneiss	NX 97	559.6	41.6 ft. to 63.5 ft.: Slight To Moderate Weathering. Close Joints - Low To Steep Dip.	71
		NX 57		Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	0
		NX 100	554.6	Severely Weathered Zone (45.2 ft - 46.1 ft.) - Core Loss	60
		NX 89	549.6	Thin, Vertical Schistose Zone With Quartz (47.0 ft - 48.7 ft.) Leached Quartz Vein (49.7 ft to 50.0 ft.) Top Of Continuous Rock At 48.5 ft.	56
			544.6		
63.5	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 88	539.6	Complete Drilling Water Loss 63.5 ft. to 84.8 ft.: Slight To Very Slight Weathering. Very Close To Close Healed Joints - Low To Steep Dip - Rarely Leached.	77
			534.6		100
		NX 100	529.6		
		NX 99	524.6	Very Thin Schistose Zones: 79.8 ft. to 80.3 ft.	99

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	524.6 SIZE MIN. ELEV.	REMARKS	R.Q.D.
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 99		1/2 Inch Quartz Vein - Medium Dip (82.7 ft.)	99
84.8			519.6		
	Coring Terminated At 84.8 ft.				
	Groundwater At 20.3 ft At 24 Hours				
	Drilling Water Loss At 62.4 ft.				

Page 2 of 3
TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

BORING NO. B-143P
DATE DRILLED 12-3-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 3 of 3
TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

BORING NO. B-143P
DATE DRILLED 12-3-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	531.0 ELEV.	REMARKS	R Q D	
80.0	Moderately Hard To Hard Light Bluish Gray And Light Gray Felsic Gneiss	NX 100		73.0 ft to 101.5 ft. Moderate Weathering. Moderately Close Joints - Low To Steep Dip. Close And Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	86	
			526.0			
			NX 100	521.0	W" Quartz Vein - Medium Dip (74.7 ft) Scattered Xenoliths Of Mafic Gneiss (73.0 ft - 86.5 ft.) Schistose Zone (85.6 ft.)	95
				516.0	Leached Quartz And Epidote Coated Schistose Zone - Steeply Dipping (88.6 ft - 89.6 ft.) Schistose Zone (93.2 ft - 95.0 ft.) Severely Leached Filled Joints: 92.1 ft. 93.5 ft to 94.8 ft. 95.5 ft.	97
			NX 98	511.0	101.5 ft to 118.2 ft. Slight To Very Slight Weathering. Close To Very Close Healed Joints - Low To Steep Dip.	98
103.3	Hard Medium Gray Mafic Gneiss		506.0	Numerous Calcite Rich Zones And Stringers (103.3 ft - 109.3 ft.) Steep Brecciated Contacts Between Mafic And Felsic Gneiss (103.3 And 109.3 ft.)		
109.3	Very Hard Light Bluish Gray Felsic Gneiss	NX 98	501.0	Pegmatitic Zone With Quartz, Calcite, Muscovite And Pyrite (106.9 ft to 107.3 ft.) Interfingering Mafic Gneiss (110.0 ft to 111.0 ft.)		
			496.0	Scattered Schistose Zones (111.0 ft. to 118.2 ft.) 1/2 Inch Quartz Vein (117.9 ft.)	98	
118.2	Coring Terminated At 118.2 ft. Groundwater At 109.9 ft. At 24 Hours *					

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	615.8 ELEV.	REMARKS	R Q D
0					
			610.8	N=20 Very Stiff Brown Red Micaceous Fine To Medium Sandy Clayey Silt	
			605.8		
			600.8		
			595.8	N=20 Very Stiff Pink Orange Micaceous Sandy Silt	
			590.8		
			585.8		
			580.8	N=23 Firm Tan Gray Micaceous Very Silty Fine To Medium Sand	
40.0			575.0		

BORING AND SAMPLING MEETS ASTM D-1586 * No Drilling Water Loss

CORE DRILLING MEETS ASTM D-4118

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-164P

DATE DRILLED 11-27-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 144 of 298

BORING AND SAMPLING MEETS ASTM D-1586

CORE DRILLING MEETS ASTM D-4118

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3

TEST BORING RECORD

BORING NO. B-144AP

DATE DRILLED 2-11-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

N = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME PER MIN.	575.0 ELEV.	REMARKS	NO.
40.0					
			570.8		
47.3	Partially Weathered Rock		565.8	N=50/5" Partially Weathered Rock That Becomes Tan Gray Micaceous Silty Fine To Coarse Sand When Sampled	
			560.8		
			555.8		
60.9	Hard Light Gray Felsic Gneiss	NX		Carbide Bit Refusal At 60.9 ft. Very Slight Weathering (60.9 ft to 62.3 ft.)	
62.3	Moderately Hard Felsic Gneiss	54	550.8		Very Close And Close Healed Joints - Low To Steep Dip (60.9 to 98.0 ft.)
66.1	Hard Light Gray Mafic Gneiss	64	545.8	62.3 ft to 66.1 ft: Moderate And Moderately Severe Weathering. Very Close To Close Joints - Low To Steep Dip.	49
			540.8	66.1 ft to 69.0 ft.: Very Slight To Moderate Weathering. Close Joints - Low To Medium Dip.	
		84		Moderately Severe To Severe Weathering (69.0 ft to 73.1 ft.)	
				Top Of Continuous Rock At 73.1 ft.	84
			535.8	Slight And Very Slight Weathering (73.1 ft to 87.9 ft.)	
80.0					

DEPTH FT.	DESCRIPTION	CORE NO. & TIME PER MIN.	535.8 ELEV.	REMARKS	NO.
80.0	Hard Light Gray Mafic Gneiss	NX 84			84
			530.8		
		93		Severe Weathering (87.9 ft to 89.4 ft.)	
			525.8	Slight And Very Slight Weathering (89.4 ft to 98.0 ft.)	87
			520.8		
		100		Epidote Healed Joints (95.1 to 95.6 ft.)	
				Very Close Joints - Moderately Severely Weathered Zone (97.3 ft to 98.0 ft.)	86
98.0	Coring Terminated At 98.0 ft.		515.8		
	Groundwater At 32.3 ft At Time Of Boring				
	Stabilized Groundwater At 31.9 ft.				
	No Drilling Water Loss				

BORING AND SAMPLING TESTS ASTM D-1088
 CORE DRILLING TESTS ASTM D-5110
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD

BORING NO. B-144AP
 DATE DRILLED 2-11-74
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING TESTS ASTM D-1088
 CORE DRILLING TESTS ASTM D-5110
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD

BORING NO. B-144AP
 DATE DRILLED 2-11-74
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE S. & D. TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 61.1 ft.		611.0		
606.0	N=21 Very Stiff Fine To Medium Sandy Micaceous Silt				
601.0					
596.0	N=23 Firm Silty Slightly Micaceous Fine To Medium Sand With Small Rock Fragments				
591.0					
586.0	N=21 Firm Yellowish-Tan Silty Slightly Micaceous Fine To Medium Sand				
581.0					
576.0	N=34 Hard Yellowish-Tan Very Micaceous Silt				
571.0					
40.0					

DEPTH FT.	DESCRIPTION	CORE S. & D. TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 61.1 ft.		571.0		
44.3	Partially Weathered Rock		566.0	N=50/4" Partially Weathered Rock That Becomes Light Olive Gray Fine Sandy Micaceous Silt	
			561.0		
			556.0	N=50/0" No Recovery	
			551.0	NW Casing To 60.0 ft., Carbide Bit Refusal At 61.1 ft. 61.1 ft to 73.0 ft.: Moderate To Very Severe Weathering. Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	0
61.1	Hard To Very Soft Tannish-Gray And Light Gray Felsic Gneiss	NX 21	546.0		
			541.0	Steeply Dipping Leached Pegmatite Vein Of Quartz And Muscovite (61.1 - 61.3 ft.)	42
73.0	Moderately Hard To Hard Light Bluish Gray And Light Gray Felsic Gneiss	NX 100	536.0	Top Of Continuous Rock At 73.0 ft.	65
			531.0		
80.0					

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD

BORING NO. B-144P
DATE DRILLED 11-27-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 146 of 298

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD

BORING NO. B-144P
DATE DRILLED 11-27-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	531.0 ELEV.	REMARKS	R.O.D.
80.0	Moderately Hard To Hard Light Bluish Gray And Light Gray Felsic Gneiss	NX 100		73.0 ft to 101.5 ft. Moderate Weathering. Moderately Close Joints - Low To Steep Dip. Close And Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	86
			526.0		
		NX 100		W" Quartz Vein - Medium Dip (74.7 ft) Scattered Xenoliths Of Mafic Gneiss (73.0 ft - 86.5 ft.) Schistose Zone (85.6 ft.)	95
			521.0		
		NX 100		Leached Quartz And Epidote Coated Schistose Zone - Steeply Dipping (88.6 ft - 89.5 ft.) Schistose Zone (93.2 ft - 95.0 ft.) Severely Leached Filled Joints: 92.1 ft. 93.5 ft to 94.8 ft. 95.5 ft.	97
			516.0		
		NX 98		101.5 ft to 118.2 ft. Slight To Very Slight Weathering. Close To Very Close Healed Joints - Low To Steep Dip.	98
			511.0		
103.3	Hard Medium Gray Mafic Gneiss		506.0	Numerous Calcite Rich Zones And Stringers (103.3 ft - 109.3 ft.) Steep Brecciated Contacts Between Mafic And Felsic Gneiss (103.3 And 109.3 ft.)	
109.3	Very Hard Light Bluish Gray Felsic Gneiss	NX 98	501.0	Pegmatitic Zone With Quartz, Calcite, Muscovite And Pyrite (106.9 ft to 107.3 ft.) Interfingering Mafic Gneiss (110.0 ft to 111.0 ft.) Scattered Schistose Zones (111.0 ft. to 118.2 ft.) 1/2 Inch Quartz Vein (117.9 ft.)	98
			496.0		
118.2	Coring Terminated At 118.2 ft. Groundwater At 19.9 ft. At 24 Hours *				

BORING AND SAMPLING MEETS ASTM D-1586 * No Drilling Water Loss

CORE DRILLING MEETS ASTM D-5118

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-144P

DATE DRILLED 11-27-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 147 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	615.8 ELEV.	REMARKS	R.O.D.
0					
			610.8	N#20 Very Stiff Brown Red Micaceous Fine To Medium Sandy Clayey Silt	
			605.8		
			600.8		
			595.8	N#20 Very Stiff Pink Orange Micaceous Sandy Silt	
			590.8		
			585.8		
			580.8	N#23 Firm Tan Gray Micaceous Very Silty Fine To Medium Sand	
40.0			575.8		

BORING AND SAMPLING MEETS ASTM D-1586

CORE DRILLING MEETS ASTM D-5118

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-144AP

DATE DRILLED 2-11-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 69.6 ft.		625.9		
			620.9	N=16 Very Stiff Tannish-Pink Fine To Medium Sandy Micaceous Silt	
			615.9		
			610.9	N=20 Very Stiff Pinkish-Tan Fine To Medium Sandy Micaceous Silt	
			605.9		
			600.9	N=21 Very Stiff Tan Fine To Medium Sandy Micaceous Silt	
			595.9		
			590.9	N=21 Very Stiff Tan Fine To Medium Sandy Micaceous Silt	
40.0			585.9		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 69.6 ft.		585.9		
			580.9	N=25 Very Stiff Tan Fine To Medium Sandy Micaceous Silt	
			575.9		
			570.9	N=50 Hard Tannish-Gray Fine To Medium Sandy Micaceous Silt	
			565.9		
61.0	Partially Weathered Rock		560.9	N=50/0" No Recovery	
			555.9	NW Casing To 69.0 ft; Carbide Bit Refusal At 69.6 ft	
69.6	Hard Medium Light Gray Mafic Gneiss	NX 91	550.9	L Slight Weathering (69.6 ft to 76.4 ft.) Close To Very Close Heated Joints - Low To Steep Dip (69.6 to 118.9 ft.) Vertical Joints (76.4 ft to 78.5 ft.) Moderately Severe Weathering (76.4 ft to 80.0 ft.)	67
			545.9		
76.4	Medium Tannish Gray Mafic Gneiss				
80.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD

BORING NO. B-145P
DATE DRILLED 11-26-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD

BORING NO. B-145P
DATE DRILLED 11-26-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	545.9		REMARKS	R.Q.D.
			CLEV.	ELEV.		
80.0	Soft To Very Soft Light Olive Gray To Olive Gray Mafic Gneiss	NX 69			Very Severe Weathering (80.0 ft - 82.5 ft.) Slight Weathering (82.5 ft - 83.5 ft.) Moderately Severe Weathering (83.5 ft - 85.5 ft.) Very Severe Weathering - Probable Location Of Core Loss (85.5 ft - 90.6 ft.) Slight To Very Slight Weathering (90.6 ft to 92.5 ft.) Moderate To Moderately Severe Weathering (92.5 ft to 96.1 ft.) Very Severe Weathering (97.0 ft. - 97.5 ft.) Close To Moderately Close Quartz-Calcite Filled Joints And Stringers (95.6 to 118.9 ft.) Top Of Continuous Rock At 97.5 ft. 97.5 ft to 118.9 ft.: Slight To Very Slight Weathering. Joints Indeterminant Above 97.5 ft.	6
			540.9			
			535.9			
90.6	Hard Medium Light Gray Mafic Gneiss	NX 87				46
92.5	Medium To Soft Yellowish Gray To Very Light Gray Felsic Gneiss		530.9			
95.0	Hard Medium Light Gray Mafic Gneiss	NX 100				100
			525.9			
			520.9			
			515.9			
		NX 100				100
			510.9			
118.9	Coring Terminated At 118.9 ft. *		505.9			

BORING AND SAMPLING MEETS ASTM D-1586 * Groundwater At 38.1 ft At 24 Hours
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-145P

DATE DRILLED 11-26-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	619.8		REMARKS	R.Q.D.
			CLEV.	ELEV.		
0	Rotary Wash Drilled With Carbide Fishtail To 62.0 ft.					
				614.8		
				609.8	N=24 Very Stiff Tan-Brown Micaceous Silt	
				604.8		
				599.8	N=22 Very Stiff Tan Fine To Medium Sandy Micaceous Silt	
				594.8		
				589.8	N=29 Very Stiff Tan Fine To Medium Sandy Very Slightly Clayey Micaceous Silt	
				584.8		
40.0				579.8	Dense Tan Very Silty Micaceous Fine To Medium Sand N=33	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-146P

DATE DRILLED 11-26-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Soft To Very Soft Light Olive Gray To Olive Gray Mafic Gneiss	NX 69	545.9	Very Severe Weathering (80.0 ft - 82.5 ft.) Slight Weathering (82.5 ft - 83.5 ft.) Moderately Severe Weathering (83.5 ft - 85.5 ft.) Very Severe Weathering - Probable Location Of Core Loss (85.5 ft - 90.6 ft.) Slight To Very Slight Weathering (90.6 ft to 92.5 ft.) Moderate To Moderately Severe Weathering (92.5 ft to 96.1 ft.) Very Severe Weathering (97.0 ft. - 97.5 ft.) Close To Moderately Close Quartz-Calcite Filled Joints And Stringers (95.6 to 118.9 ft.) Top Of Continuous Rock At 97.5 ft. 97.5 ft to 118.9 ft.: Slight To Very Slight Weathering. Joints Indeterminant Above 97.5 ft.	6
90.6	Hard Medium Light Gray Mafic Gneiss	NX 87	540.9		46
92.5	Medium To Soft Yellowish Gray To Very Light Gray Felsic Gneiss		535.9		
95.0	Hard Medium Light Gray Mafic Gneiss	NX 100	530.9		100
			525.9		
		NX 100	520.9		100
			515.9		
		NX 100	510.9		100
118.9	Coring Terminated At 118.9 ft. *		505.9		

BORING AND SAMPLING MEETS ASTM D-1588 * Groundwater At 38.1 ft At 24 Hours
CORE DRILLING MEETS ASTM D-2113 Drilling Water Loss At 79.7 ft.
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 3 of 3

TEST BORING RECORD

BORING NO. B-145P
DATE DRILLED 11-26-73
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 62.0 ft.		619.8		
			614.8		
			609.8	N=24 Very Stiff Tan-Brown Micaceous Silt	
			604.8		
			599.8	N=22 Very Stiff Tan Fine To Medium Sandy Micaceous Silt	
			594.8		
			589.8	N=29 Very Stiff Tan Fine To Medium Sandy Very Slightly Clayey Micaceous Silt	
			584.8		
40.0			579.8	Dense Tan Very Silty Micaceous Fine To Medium Sand N=33	

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 3

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-146P
DATE DRILLED 11-26-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	579.8 ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 62.0 ft.		574.8		
47.0	Partially Weathered Rock		569.8	N=50/6" Partially Weathered Rock That Becomes Tan Silty Micaceous Fine To Coarse Sand When Sampled	
			564.8		
			559.8	N=50/2" Dense Tan Silty Micaceous Fine To Coarse Sand	
62.0	Moderately Hard To Medium Light Gray Felsic Gneiss	NQ 70	554.8	Carbide Bit Refusal At 62.0 ft. N W Casing To 67.0 ft. Cored To 104.0 ft With NQ Wire Line. 62.0 ft to 84.7 ft.: Moderately Severe To Severe Weathering. Close To Very Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	50
		NQ 67	549.8		14
		NQ 51	544.8		0
80.0			539.8		

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	539.8 ELEV.	REMARKS	R.Q.D.
80.0	Very Soft To Medium Very Light Gray Felsic Gneiss	NQ 51			0
84.7	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NQ 96	534.8	Top Of Continuous Rock At 84.7 ft. 84.7 ft to 104.0 ft.: Slight To Very Slight Weathering. Very Close To Close Healed Joints - Low To Steep Dip. Scattered Very Thin Schistose Zones With Calcite.	96
			529.8		
			524.8	1/2 Inch, Vertical Quartz Vein (85.0 ft.)	
		NQ 100	519.8	1 Inch, Steep Dip Leached Quartz Vein (93.9 ft.)	100
104.0	Coring Terminated At 104.0 ft. Stabilized Groundwater At 29.6 ft. Drilling Water Loss At 87.0 ft.		514.8		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD

BORING NO. B-146P
DATE DRILLED 11-26-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-45°
S = STEEP DIP 45°-90°

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD

BORING NO. B-146P
DATE DRILLED 11-26-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-45°
S = STEEP DIP 45°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 57.0 ft.		618.3		
			613.3	N=34 Hard Red-Brown Fine To Medium Sandy Slightly Micaceous Silt With Small Quartz Fragments	
			608.3	N=23 Very Stiff Tannish-Brown And Light Gray Fine To Medium Sandy Micaceous Silt	
			603.3		
			598.3	N=28 Firm Tannish Brown And Light Gray Very Silty Micaceous Fine To Medium Sand	
			593.3		
			588.3	N=35 Hard Tannish-Gray Fine To Medium Sandy Very Micaceous Silt	
			583.3		
38.8	Partially Weathered Rock		578.3	N=50/6" Partially Weathered Rock That Becomes Tannish Gray Fine To Medium Sandy Very Micaceous *	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-147P

DATE DRILLED 11-30-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 1 of 2

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock		578.3		
			573.3		
			568.3	N=50/0" No Recovery	
			563.3		
57.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	558.3	Carbide Bit Refusal And Top Of Continuous Rock At 57.0 ft. 57.0 ft to 78.0 ft.: Very Slight Weathering. Close Healed Joints - Low To Steep Dip.	100
		NX 100	553.3	Close Leached Joints - Medium To Steep Dip (57.0 ft. to 58.2 ft.)	100
		NX 100	548.3	Leached Steep Dip Quartz Veinlet (71.8 ft.)	100
			543.3		
77.0	Hard Medium Light Gray Mafic Gneiss			Numerous Calcite Zones And Veinlets (77.0 ft. to 78.0 ft.)	
78.0	Coring Terminated At 78.0 ft. Stabilized Groundwater At 18.3 ft. *				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-147P

DATE DRILLED 11-30-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 115.0 ft.	673.4		
668.4	N=11 Stiff Brown Slightly Clayey Slightly Micaceous Silt			
663.4				
658.4	N=25 Very Stiff Tan And Pink Fine To Medium Sandy Micaceous Silt			
653.4				
648.4	N=34 Hard Tan And Pink Fine To Medium Sandy Micaceous Silt With Some Rock Fragments			
643.4				
638.4	N=32 Hard Reddish Brown Fine Sandy Micaceous Silt With Some Small Rock Fragments			
633.4				

Page 1 of 4

TEST BORING RECORD

BORING NO. B-148P

DATE DRILLED 11-22-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

15' ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 115.0 ft.	633.4		
628.4	N=73/11" Hard Tan-Brown Fine Sandy Slightly Micaceous Silt With Small Rock Fragments			
623.4				
618.4				
613.4	N=45 Dense Tannish - Light Gray Very Silty Micaceous Fine To Medium Sand			
608.4				
603.4				
598.4	N=60 Very Dense Tannish - Light Gray Very Silty Micaceous Fine To Medium Sand			
593.4				

Page 2 of 4

TEST BORING RECORD

BORING NO. B-148P

DATE DRILLED 11-22-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

15' ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
80.0		593.4		
		588.4		
89.0	Partially Weathered Rock	583.4	N=50/5" Partially Weathered Rock That Becomes Tannish Light-Gray Silty Micaceous Fine To Coarse Sand	
		578.4		
		573.4		
		568.4	N=50/0" No Recovery	
		563.4		
115.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss.	NX 100 NX 100	Carbide Bit Refusal At 115.0 ft. Top Of Continuous Rock At 115.2 ft.	100
120.0		553.4		71

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
120.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 98	115.0 ft to 152.2 ft. Slight To Very Slight Weathering. Close To Very Close Healed Joints - Rarely Leached - Low To Steep Dip.	77
		NX 100	Low Dip Quartz Vein (125.4 ft.) Steep Dip Quartz Vein With Leached Contacts (128.7 ft.)	95
		NX 99	Moderately Hard, Moderately Weathered Zone (142.2 ft - 142.7 ft.)	73
		NX 99	Near Vertical Quartz Stringer (151.8 ft.)	91
152.2	Coring Terminated At 152.2 ft. Groundwater At 73.0 ft on 11-26-73 No Drilling Water Loss			

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 4
TEST BORING RECORD

BORING NO. 8-148P

DATE DRILLED 11-22-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 154 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 4 of 4
TEST BORING RECORD

BORING NO. 8-148P

DATE DRILLED 11-22-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH PT.	DESCRIPTION	602.8		REMARKS	R.Q.D.
		CORE % & TIME SIZE MIN.	ELEV.		
0	Rotary Wash-Drilled With Carbide Fishtail To 41.1 Ft				
			597.6		
			592.6	N=11 Stiff Pink Tan Micaceous Fine To Medium Sandy Silt	
			587.6		
			582.6	N=18 Firm Gray Tan Slightly Micaceous Very Silty Fine To Medium Sand	
			577.6		
			572.6	N=32 Dense Gray Tan Micaceous Very Silty Fine to Medium Sand	
			567.6		
38.7	Partially Weathered Rock		562.6	Partially Weathered Rock That Becomes Gray Tan Slightly Micaceous Silty Fine To Coarse Sand With Rock Fragments When Sampled	
40.0					

DEPTH PT.	DESCRIPTION	562.6		REMARKS	R.Q.D.
		CORE % & TIME SIZE MIN.	ELEV.		
40.0					
41.1	Partially Weathered Rock			Carbide Bit Refusal At 41.1 ft	
	Moderately Hard Light Gray To Pale Yellowish Orange Felsic Gneiss	NX 51	557.6	41.1 ft - 43.6 ft: Moderate Weathering. Very Close Healed Joints - Low To Steep Dip. Close To Very Close Joints - Low To Steep Dip. Severely Weathered Zone (43.6 ft - 48.9 ft.) Top Of Continuous Rock At 48.9 ft	31
48.9	Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	100	552.6	48.9 ft - 49.6 ft: Moderate Weathering. Very Close Healed Joints - Low To Steep Dip. Close Joints - Medium Dip. 49.6 ft - 67.8 ft: Slight To Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	97
			547.6		
			542.6	Several Leached Healed Joints (50.1 ft.) Xenolith Of Mafic Gneiss (60.2 ft.)	100
		100	537.6		
67.7	Hole Terminated At 67.7 Ft Groundwater At 26.0 ft After 24 Hours No Drilling Water Loss		532.6		

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD

BORING NO. B-149P
DATE DRILLED 1-2-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 155 of 298

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD

BORING NO. B-149P
DATE DRILLED 1-2-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 37.8 ft.				
		602.1			
		597.1		N=12 Stiff Pinkish Tan Fine To Medium Sandy Silt	
		592.1			
		587.1		N=18 Firm Tan Very Silty Fine To Medium Sand With Rock Fragments	
		582.1			
28.5	Partially Weathered Rock	577.1		N=50/2" Partially Weathered Rock That Becomes Gray Silty Fine To Coarse Sand When Sampled	
		572.1			
37.8	Moderately Hard Very Light Gray Felsic Gneiss	NX 100		Carbide Bit Refusal At 37.8 ft.	87
39.5				Top Of Continuous Rock At 39.5 ft.	
40.0		567.1			

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		37.8 ft to 39.5 ft.: Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip. Very Soft, Severely Weathered Zone (39.0 to 39.3 ft.)	87
		NX 100	562.1		100
		NX 100	557.1	39.5 ft to 65.5 ft.: Slight Weathering To Fresh. Close To Very Close Healed Joints - Low To Steep Dip.	100
		NX 100	552.1	Slight Leaching Along Steep Healed Joints (42.4 ft to 43.0 ft.) 1/2 Inch Quartz Vein (48.0 ft.)	
		NX 100	547.1	Schistose Zone, Medium Dip, With Calcite, Quartz And Chlorite (58.7 ft.)	100
			542.1	Quartz Veins: Steep Dip - 62.2 ft. Medium Dip - 65.5 ft.	
65.5	Coring Terminated At 65.5 ft. Groundwater At 28.4 ft. At 24 Hours No Drilling Water Loss			Large Mafic Xenoliths: 43.8 ft. 49.0 ft. 50.3 ft.	

BORING AND SAMPLING MEETS ASTM D-1999

CORE DRILLING MEETS ASTM D-2112

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

* Hard To Very Hard Light Bluish Gray Felsic Gneiss

ROCK JOINT: L=LOW DIP 0-30°

M=MED. DIP 30-60°

S=STEEP DIP 60-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-150P

DATE DRILLED 12-11-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1999

CORE DRILLING MEETS ASTM D-2112

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2

TEST BORING RECORD

BORING NO. B-150P

DATE DRILLED 12-11-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	NO.
	Rotary Wash Drilled With Carbide Fishtail To 86.8 ft.	631.9		
		626.9		
		621.9	N=13 Stiff Pink And Tan Fine Sandy Slightly Micaceous Silt	
		616.9		
		611.9	N=15 Stiff Tannish Gray Fine Sandy Slightly Micaceous Silt	
		606.9		
		601.9	N=17 Very Stiff Tannish Gray Fine To Medium Sandy Silt With Rock Fragments	
		596.9		
40.0		591.9		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 84 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD

BORING NO. B-151P
DATE DRILLED 12-19-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	NO.
	Rotary Wash Drilled With Carbide Fishtail To 86.8 ft.	591.9		
		586.9		
		581.9	N=34 Dense Tannish Gray Very Silty Slightly Micaceous Fine To Medium Sand With Rock Fragments	
		576.9		
		571.9	N=46 Dense Gray Silty Slightly Micaceous Fine Sand	
59.1	Partially Weathered Rock	566.9		
		561.9	N=50/3" Partially Weathered Rock That Becomes Silty Slightly Micaceous Fine To Medium Sand When Sampled	
		556.9		
		551.9	N=50/3" Very Dense Brownish Gray Silty Slightly Micaceous Fine To Coarse Sand	
		551.9	N=50/1" No Recovery	
80.0		551.9		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 84 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD

BORING NO. B-151P
DATE DRILLED 12-19-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	ROD
80.0	Partially Weathered Rock			551.9		
				546.9		
86.8	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		541.9	Carbide-Bit Refusal And Top Of Continuous Rock At 86.8 ft. 86.8 ft to 108.8 ft.: Slight To Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip. Occasional Small Mafic Xenoliths	100
		96		536.9	Moderately Weathered Zone (88.9 ft. to 89.9 ft.)	71
				531.9		100
				526.9		100
108.8	Coring Terminated At 108.8 ft. Groundwater At 51.5 ft After 24 Hours No Drilling Water Loss				Slickensided Surface - Steep Dip - Chlorite Coated (107.4 ft.)	

BORING AND SAMPLING MEETS ASTM D-1586

CORE DRILLING MEETS ASTM D-5115

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-151P

DATE DRILLED 12-19-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 158 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	ROD
0	Rotary Wash Drilled With Carbide Fishtail To 47.9 ft.			601.8		
				596.8		
				591.8	N=17 Very Stiff Tannish Orange Slightly Fine Sandy Micaceous Silty Micaceous Silt	
				586.8		
				581.8	N=32 Dense Tan And Light Gray Silty Micaceous Fine Sand	
				576.8		
				571.8	N=83 Hard Tan And Light Gray Slightly Fine Sandy Micaceous Silt With Partially Weathered Rock Fragments	
				566.8		
39.1				561.8	Partially Weathered Rock That Becomes Grayish Tan Very Silty Slightly Micaceous Fine To Medium Sand When *	
40.0	Partially Weathered Rock					

BORING AND SAMPLING MEETS ASTM D-1586

CORE DRILLING MEETS ASTM D-5115

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

*Sampled

Page 1 of 3

TEST BORING RECORD

BORING NO. B-152P

DATE DRILLED 1-29-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	551.9 ELEV.	REMARKS	R.O.D.
80.0	Partially Weathered Rock				
86.8	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100 96 100 100	546.9 541.9 536.9 531.9 526.9	Carbide-Bit Refusal And Top Of Continuous Rock At 86.8 ft. 86.8 ft to 108.8 ft. Slight To Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip. Occasional Small Mafic Xenoliths Moderately Weathered Zone (88.9 ft. to 89.9 ft.) Slickensided Surface - Steep Dip - Chlorite Coated (107.4 ft.)	100 71 100 100
108.8	Coring Terminated At 108.8 ft. Groundwater At 51.5 ft After 24 Hours No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD

BORING NO. B-151P
DATE DRILLED 12-19-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-20°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	601.8 ELEV.	REMARKS	R.O.D.
0	Rotary Wash Drilled With Carbide Fishtail To 47.9 ft.				
			596.8		
			591.8	N=17 Very Stiff Tannish Orange Slightly Fine Sandy Micaceous Micaceous Silt	
			586.8		
			581.8	N=32 Dense Tan And Light Gray Silty Micaceous Fine Sand	
			576.8		
			571.8	N=83 Hard Tan And Light Gray Slightly Fine Sandy Micaceous Silt With Partially Weathered Rock Fragments	
			566.8		
39.1 40.0	Partially Weathered Rock		561.8	Partially Weathered Rock That Becomes Grayish Tan Very Silty Slightly Micaceous Fine To N=50/3" Medium Sand When *	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

*Sampled
Page 1 of 3
TEST BORING RECORD

BORING NO. B-152P
DATE DRILLED 1-29-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-20°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.O.Q.
40.0	Partially Weathered Rock			
		556.8		
47.9	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 88 551.8	Carbide Bit Refusal At 47.9 ft. 47.9 ft to 71.5 ft.: Moderate Weathering. Close To Very Close Healed And Filled Joints - Low To Steep Dip. Close To Very Close Joints - Low To Steep Dip.	56
		546.0	Very Severely Weathered Zones: 50 ft to 51.0 ft (.4 ft Core Loss) 55 ft to 65.8 ft (9.8 ft Core Loss)	29
		541.8		
		536.8		30
		531.8	Leached Vertical Quartz Vein (68.1 ft to 69.5 ft.) Vertical Schistose Zones: 69.5 ft to 70.4 ft. 71.9 ft to 74.9 ft. (Filled With Quartz, Calcite And Pyrite) 77.5 ft to 78.1 ft.	58
71.5	Hard To Very Hard Light Bluish Gray Felsic Gneiss	77 526.8	L Top Of Continuous Rock At 71.5 ft. 71.5 ft to 90.9 ft.: Slight To Very Slight Weathering. Close To Very Close Healed And Rarely Filled Joints - Low To Steep Dip.	100
		521.8		100

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	R.O.Q.
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		100
		516.8		100
88.5	Hard Medium Gray Mafic Gneiss	100 511.8	Very Close Quartz And Calcite Filled Joints - Low To Steep Dip (88.5 - 90.9 ft.)	
90.9	Coring Terminated At 90.9 ft. Groundwater At 26.5 ft At Time Of Boring	506.8		

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD

BORING NO. B-152P
DATE DRILLED 1-29-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO

Page 160 of 298

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3

TEST BORING RECORD

BORING NO. B-152P
DATE DRILLED 1-29-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO

		616.7			
DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 65.4 ft.				
			611.7		
			606.7	N=14 Stiff Tan Gray Fine To Medium Sandy Silt	
			601.7		
			596.7	N=29 Very Stiff Tan Gray Slightly Micaceous Fine To Medium Sandy Silt	
			591.7		
			586.7	N=21 Very Stiff Tan Brown Slightly Micaceous Fine To Medium Sandy Silt With Occasional Rock Fragments	
			581.7		
40.0			576.7	N=50 Hard Tan Slightly Micaceous Fine To Medium Sandy Silt	

Page 1 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-5119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING NO. B-153P
DATE DRILLED 12-27-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO

		576.7			
DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 65.4 ft.				
			571.7		
48.9	Partially Weathered Rock		566.7	N=50/1" No Recovery	
			561.7		
			556.7	N=50/3" Partially Weathered Rock That Becomes Gray Tan Silty Fine To Coarse Sand With Rock Fragments	
			551.7	Carbide Bit Refusal And Top Of Continuous Rock At 65.4 ft. 65.4 ft - 76.1 ft.: Slight To Moderate Weathering. Very Close Spaced Healed Joints - Low To Sleep Dip.	90
65.4	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100	546.7	Very Close To Close Joints - Low To Medium Dip (67.2 ft - 70.2 ft.) (71.8 ft - 72.8 ft.)	84
		100	541.7	Several Slightly Leached Joints (74.8 ft to 76.5 ft.)	
				M L 76.1 - 88.7 ft.: Very Slight Weathering. Very Close To Close Healed Joints - Low To Sleep Dip.	
80.0		100	536.7		100

Page 2 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-5119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING NO. B-153P
DATE DRILLED 12-27-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	536.7 ELEV.	REMARKS	R.O.D.
80.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100			100
			531.7	Quartz Vein (81.0 ft - 82.1 ft.) 1/4 Inch, Steep Dip - Quartz Vein (88.1 ft.)	
88.7	Coring Terminated At 88.7 ft. Groundwater At 38.5 ft After 24 Hours No Drilling Water Loss		528.7		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	594.2 ELEV.	REMARKS	R.O.D.
0	Rotary Wash-Drilled With Carbide Fishtail To 43.7 ft				
			589.2		
			584.2	N=13 Firm Tanish Gray Silty Slightly Micaceous Fine To Medium Sand	
			579.2		
			574.2	N=30 Firm Tannish Gray Silty Slightly Micaceous Fine To Medium Sand	
			569.2		
			564.2	N=69 Very Dense Tanish Gray Silty Slightly Micaceous Fine To Coarse Sand	
			559.2		
38.5	Partially Weathered Rock			Partially Weathered Rock That Becomes Gray Silty Slightly Micaceous Fine To Coarse Sand When *	
40.0	Partially Weathered Rock		554.2		

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 3 of 3
TEST BORING RECORD

BORING NO. B-153P
DATE DRILLED 12-27-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

* Sampled Page 1 of 2
TEST BORING RECORD

BORING NO. B-154P
DATE DRILLED 12-17-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	536.7 ELEV.	REMARKS	N S.O.D.
80.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100			100
			531.7	Quartz Vein (81.0 ft - 82.1 ft.) 1/8 Inch, Steep Dip - Quartz Vein (88.1 ft.)	
88.7	Coring Terminated At 88.7 ft. Groundwater At 38.5 ft After 24 Hours No Drilling Water Loss		528.7		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	594.2 ELEV.	REMARKS	N S.O.D.
0	Rotary Wash-Drilled With Carbide Fishtail To 43.7 ft				
			589.2		
			584.2	N=13 Firm Tanish Gray Silty Slightly Micaceous Fine To Medium Sand	
			579.2		
			574.2	N=30 Firm Tannish Gray Silty Slightly Micaceous Fine To Medium Sand	
			569.2		
			564.2	N=69 Very Dense Tanish Gray Silty Slightly Micaceous Fine To Coarse Sand	
			559.2		
38.5	Partially Weathered Rock			Partially Weathered Rock That Becomes Gray Silty Slightly Micaceous Fine To Coarse Sand When *	
40.0	Partially Weathered Rock		554.2		

BORING AND SAMPLING MEETS ASTM D-1588
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-153P
 DATE DRILLED 12-27-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1588
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

* Sampled Page 1 of 2
 TEST BORING RECORD

BORING NO. B-154P
 DATE DRILLED 12-17-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE	TIME MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock			554.2		
43.7	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX	100	549.2	Carbide Bit Refusal And Top Of Continuous Rock At 43.7 ft	92
				544.2	43.7 ft - 67.7 ft: Slight To Very Slight Weathering. Close To Very Close Healed Joints - Low To Steep Dip. Scattered Small Xenoliths Of Mafic Gneiss.	
				539.2	Xenolith Of Mafic Gneiss (47.6 ft.) Leached Quartz Vein (50.7 ft.) Vertical Quartz Vein Up To 1/2 Inch Thick (54.9 ft - 57.5 ft.) Mafic Gneiss Zone (60.9 ft. - 61.6 ft.).	100
				534.2	(Irregular Vertical Quartz Vein Up To 2 inches Thick (64.8 ft - 65.8 ft.))	100
				529.2		100
67.7	Coring Terminated At 67.7 ft Groundwater At 20.9 ft After 24 Hours No Drilling Water Loss			524.2		

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-154P
DATE DRILLED 12-17-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE	TIME MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash-Drilled With Carbide Fishtail To 39.2 Ft			601.4		
				596.4		
				591.4	N#25 Firm Tan Pink Very Slightly Micaceous Silty Fine To Coarse Sand With Rock Fragments	
				586.4		
				581.4	N#14 Firm Tan Brown Slightly Micaceous Very Silty Fine To Medium Sand	
				576.4		
				571.4	N#16 Very Stiff Brown Micaceous Fine Sandy Silt	
				566.4		
				561.4	N#50/3" No Recovery	
39.2	Moderately Hard To Hard Very Light			561.4	Carbide Bit Refusal At 39.2 ft	100

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 2
TEST BORING RECORD

BORING NO. B-155P
DATE DRILLED 1-2-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock				
43.7	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	549.2	Carbide Bit Refusal And Top Of Continuous Rock At 43.7 ft	92
			544.2	43.7 ft - 67.7 ft: Slight To Very Slight Weathering. Close To Very Close Healed Joints - Low To Steep Dip. Scattered Small Xenoliths Of Mafic Gneiss.	
		100	539.2	Xenolith Of Mafic Gneiss (47.6 ft.) Leached Quartz Vein (50.7 ft.) Vertical Quartz Vein Up To 1/2 Inch Thick (54.9 ft - 57.5 ft.) Mafic Gneiss Zone (60.9 ft. - 61.6 ft.)	100
		100	534.2	Irregular Vertical Quartz Vein Up To 2 Inches Thick (64.8 ft - 65.8 ft.)	100
		100	529.2		100
67.7	Coring Terminated At 67.7 ft Groundwater At 20.9 ft After 24 Hours No Drilling Water Loss		524.2		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-154P

DATE DRILLED 12-17-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash-Drilled With Carbide Fishtail To 39.2 Ft				
			596.4		
			591.4	N=25 Firm Tan Pink Very Slightly Micaceous Silty Fine To Coarse Sand With Rock Fragments	
			586.4		
			581.4	N=14 Firm Tan Brown Slightly Micaceous Very Silty Fine To Medium Sand	
			576.4		
			571.4	N=16 Very Stiff Brown Micaceous Fine Sandy Silt	
			566.4		
			561.4	N=50/3" No Recovery	
39.2	Moderately Hard To Hard Very Light	100	561.4	Carbide Bit Refusal At 39.2 ft	100

BORING AND SAMPLING MEETS ASTM D-1586 * Gray Felsic Gneiss
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-155P

DATE DRILLED 1-2-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
40.0	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 100		Top Of Continuous Rock At 41.4 ft	50
		100	556.4	39.2 ft - 46.2 ft.: Moderate Weathering. Close To Very Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	81
46.2	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	100	551.4	46.2 ft - 61.1 ft.: Very Slight Weathering To Fresh Close Chlorite And Calcite Healed Joints - Medium To Steep Dip. Occasional Mafic Gneiss Xenoliths And Very Thin Schistose Zones.	100
		100	546.4	Moderately Weathered Zone (48.6 ft - 49.2 ft.) Moderately Weathered	100
		100	541.4	1/4 Inch Quartz Vein Along Medium - Steep Dip - Slickensided Surface (55.7 ft.)	
61.1	Coring Terminated At 61.1 ft				

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N. STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-155P
DATE DRILLED 1-2-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
0	Rotary Wash Drilled With Carbide Fishtail To 58.0 ft.				
			609.6		
			604.6	N=13 Firm Pinkish-Tan Very Silty Slightly Micaceous Fine To Medium Sand	
			599.6		
			594.6	N=21 Firm Tannish Gray Very Silty Micaceous Fine To Medium Sand	
			589.6		
29.5	Partially Weathered Rock		584.6	N=50/3" Partially Weathered Rock That Becomes Tannish Gray Slightly Silty Slightly Micaceous Fine To Coarse Sand When Sampled	
			579.6		
40.0			574.6	N=50/1 1/2" No Recovery	

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N. STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD

BORING NO. B-156P
DATE DRILLED 1-8-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R Q D
60.0	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 100		Top Of Continuous Rock At 41.4 ft	50
		100	556.4	39.2 ft - 46.2 ft.: Moderate Weathering. Close To Very Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	81
46.2	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	100	551.4	46.2 ft - 61.1 ft.: Very Slight Weathering To Fresh Close Chlorite And Calcite Healed Joints - Medium To Steep Dip. Occasional Mafic Gneiss Xenoliths And Very Thin Schistose Zones.	100
			546.4	Moderately Weathered Zone (48.6 ft - 49.2 ft.) Moderately Weathered	
		100	541.4	1/4 Inch Quartz Vein Along Medium - Steep Dip - Slickensided Surface (55.7 ft.)	100
61.1	Coring Terminated At 61.1 ft				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N. STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD

BORING NO. B-155P
DATE DRILLED 1-2-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R Q D
0	Rotary Wash Drilled With Carbide Fishtail To 58.0 ft.				
			609.6		
			604.6	N=13 Firm Pinkish-Tan Very Silty Slightly Micaceous Fine To Medium Sand	
			599.6		
			594.6	N=21 Firm Tannish Gray Very Silty Micaceous Fine To Medium Sand	
			589.6		
29.5	Partially Weathered Rock		584.6	N=50/3" Partially Weathered Rock That Becomes Tannish Gray Slightly Silty Slightly Micaceous Fine To Coarse Sand When Sampled	
			579.6		
40.0			574.6	N=50/1 1/2" No Recovery	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N. STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD

BORING NO. B-156P
DATE DRILLED 1-8-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock		574.6		
			569.6		
			564.6	N=50/2" Very Dense Tannish Gray Very Silty Slightly Micaceous Fine To Coarse Sand	
			559.6		
58.0	Hard Very Light Gray Felsic Gneiss	NX	554.6	Carbide Bit Refusal At 58.0 ft.	
60.4	Core Loss (Soil Zone)	50			39
63.1	Hard To Very Hard Very Light Gray Felsic Gneiss		549.6	Top Of Continuous Rock At 63.1 ft 58.0 ft to 60.4 ft.: Moderate Weathering. Very Close Healed Joints - Low To Steep Dip.	100
		100	544.5	60.4 ft to 63.1 ft. Core Loss	
			539.5	63.1 ft to 83.9 ft.: Slight To Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	97
		100	534.6	Slickensided Surface - Steep Dip - Chlorite Coated (68.0 ft.) Very Close Slightly Leached Joints - Low To Steep Dip (68.0 ft to 68.8 ft and 72.3 ft to 74.2 ft.)	100

Page 2 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-3112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 44 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N. STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-156P
DATE DRILLED 1-8-73
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

Page 168 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100	534.6		
83.9	Coring Terminated At 83.9 ft. Groundwater At 27.2 ft After 24 Hours No Drilling Water Loss		529.5	Very Soft Completely Weathered Zone (74.2 ft to 74.5 ft.) Vertical Healed Joint Offset 1/4 Inch Along Medium Dip Healed Joint (82.8 ft.) Thin Schistose Zones Below 74.0 ft. Small Mafic Xenoliths Scattered Throughout	98

Page 3 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-3112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 44 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N. STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-156P
DATE DRILLED 1-8-74
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
	Rotary Wash-Drilled With Carbide Fishtail To 57.2 ft.		612.4		
			607.4		
			602.4	N=10 Loose Tan Very Silty Fine To Medium Sand	
			597.4		
			592.4	N=16 Very Stiff Tannish Gray Fine To Coarse Sandy Slightly Micaceous Silt	
			587.4		
			582.4	N=22 Firm Gray Very Silty Micaceous Fine To Medium Sand	
			577.4		
39.1	Partially Weathered Rock		572.4	N=50/1" No Recovery	
40.0					

Page 1 of 3

TEST BORING RECORD

BORING NO. B-157P

DATE DRILLED 1-16-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
	Partially Weathered Rock		572.4		
			567.4		
			562.4	N=77/8" Very Dense Tannish Gray Very Silty Micaceous Fine To Coarse Sand	
			557.4		
57.2	Hard Very Light Gray Felsic Gneiss	NX 95	552.4	Carbide Bit Refusal And Top Of Continuous Rock At 57.2 ft. 57.2 ft to 63.7 ft. Slight To Moderate Weathering. Close To Moderately Close Joints - Medium To Steep Dip. Very Close Healed Joints - Low to Steep Dip.	75
63.7	Very Hard Light Bluish Gray Felsic Gneiss	NX 100	547.4	63.7 ft to 83.3 ft. Very Slight Weathering To Fresh. Very Close Healed Joints - Low To Steep Dip.	100
		NX 100	542.4	Very Steep Dipping Brecciated Zone With Calcite, Chlorite And Quartz Filling (64.7 ft to 67.8 ft.) Very Steep Dipping Quartz Calcite Vein With Schistose Contact Zone (67.4 ft to 68.8 ft) Very Steep Dipping Quartz Vein (71.0 - 72.0 ft.) Very Steep Dipping Pegmatite Zone With Quartz, Calcite, Pink Orthoclase And Abundant Chlorite (72.6 ft to 73.8 ft.)	100
			537.4		
		NX 100	532.4		100
80.0					

Page 2 of 3

TEST BORING RECORD

BORING NO. B-157P

DATE DRILLED 1-16-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.C.D.
80.0	Very Hard Light Bluish Gray Felsic Gneiss	NX 100	532.4		100
83.3	Coring Terminated At 83.3 ft. No Drilling Water Loss		527.4		

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-3115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-157P
DATE DRILLED 1-16-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.C.D.
0	Rotary Wash Drilled With Carbide Fishtail To 25.6 ft.		599.1		
9.1	Partially Weathered Rock		589.1	N=88/11" Very Dense Tannish Gray Slightly Silty Fine To Medium Sand	
			584.1		
			579.1	N=50/3" Partially Weathered Rock That Becomes Tannish Gray Micaceous Silt	
			574.1		
25.6	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 87		Carbide Bit Refusal At 25.6 ft. Complete Water Loss 25.6 ft to 34.9 ft.: Slight To Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Healed And Occasionally Leached Joints - Low to Steep Dip.	67
		NX 100	569.1		87
34.9	Very Soft To Moderately Hard Medium Light Gray Mafic Gneiss	NX 66	564.1	Completely Weathered Zone 34.9 ft to 37.2 ft.	55
37.2	Hard Medium Light Gray Mafic Gneiss	NX 100		Top Of Continuous Rock At 37.2 ft.	
40.0			559.1		100

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-3115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-158P
DATE DRILLED 12-13-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.		REMARKS	R.Q.D.
			532.4		
80.0	Very Hard Light Bluish Gray Felsic Gneiss	NX	100		100
83.3	Coring Terminated At 83.3 ft. No Drilling Water Loss		527.4		

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD

BORING NO. B-157P
DATE DRILLED 1-16-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.		REMARKS	R.Q.D.
			599.1		
0	Rotary Wash Drilled With Carbide Fishtail To 25.6 ft.				
			594.1		
9.1	Partially Weathered Rock		589.1	N=88/11" Very Dense Tannish Gray Slightly Silty Fine To Medium Sand	
			584.1		
			579.1	N=50/5" Partially Weathered Rock That Becomes Tannish Gray Micaceous Silt	
			574.1		
25.6	Hard To Very Hard Very Light Gray Felsic Gneiss	NX	87	Carbide Bit Refusal At 25.6 ft. Complete Water Loss 25.6 ft to 34.9 ft.: Slight To Moderate Weathering, Close Joints - Low To Steep Dip. Very Close Healed And Occasionally Leached Joints - Low To Steep Dip.	67
		NX	100		87
34.9	Very Soft To Moderately Hard Medium Light Gray Mafic Gneiss	NX	66	Completely Weathered Zone 34.9 ft to 37.2 ft.	
37.2	Hard Medium Light Gray Mafic Gneiss	NX	100	Top Of Continuous Rock At 37.2 ft.	55
40.0			559.1		100

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD

BORING NO. B-158P
DATE DRILLED 12-13-73
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	559.1 ELEV.	REMARKS	% R.Q.D.
40.0	Hard Medium Light Gray Mafic Gneiss	NX 100		37.2 ft to 58.9 ft. Slight To Very Slight Weathering Close Calcite Coated Joints - Filled Joints And Veins - Low To Steep Dip.	100
			554.1	1 Inch Steep Dipping Calcite Vein (45.8 ft.) 1/4 Offset Of Calcite Vein Along Low - Medium Dip Joint (50.2 ft.)	
		NX 100	549.1	2 Inch Severely Weathered Zone (51.1 ft.) Severely Weathered Zone (52.8 ft. to 53.5 ft.)	75
56.3	Moderately Hard Medium Light Gray Mafic Gneiss		544.1	Severely To Very Severely Weathered Zone (54.2 ft to 56.3 ft.)	
58.9	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	539.1	58.9 ft to 67.1 ft.: Slight To Very Slight Weathering. Very Close To Close Calcite Healed And Rarely Coated Joints - Low To Steep Dip.	100
			534.1	Moderately Weathered Zone (57.5 ft to 58.2 ft.) 1 1/2 Inch Steep Dip Quartz Calcite Veins: 56.6 ft 58.0 ft.	
67.1	Coring Terminated At 67.1 ft. Drilling Water Loss At 26.5 ft.			Steep Dip Schistose Zone With Quartz, Calcite And Chlorite At Contact (58.9 ft.) Steep Dip, Chlorite Filled Brecciated Zone With Inclusions Of Quartz And Calcite (66.0 to 67.1 ft.)	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N. STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-158P

DATE DRILLED 12-13-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	612.4 ELEV.	REMARKS	% R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 41.7 ft.				
			607.4		
			602.4	N=42 Hard Reddish-Orange Slightly Fine Sandy Very Clayey - Slightly Micaceous Silt	
			597.4		
			592.4	N=22 Very Stiff Tannish-Brown Slightly Fine Sandy Micaceous Silt	
			587.4		
			582.4	N=25 Very Stiff Tannish-Gray Fine Sandy Micaceous Silt	
			577.4		
38.5	Partially Weathered Rock		572.4	N=50/2" Partially Weathered Rock That Becomes Tannish - Gray Fine To Coarse Sandy Micaceous Silt With	
40.0				Small Rock Fragments When Sampled	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N. STANDARD PENETRATION LOSS OF DRILLING WATER

Page 1 of 2

TEST BORING RECORD

BORING NO. B-159P

DATE DRILLED 12-12-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	572.4 ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock				
41.7	Very Hard Light Bluish Gray Felsic Gneiss	NX 100	567.4	JM Carbide Bit Refusal And Top Of Continuous Rock At 41.7 ft. 41.7 ft. to 68.1 ft.: Very Slight Weathering. Close To Very Close Healed Joints - Low To Steep Dip. Occasional Slight Leaching Along Healed Joints (41.7 ft to 54.9 ft.) Irregular Quartz Veins With Chlorite Zones: Slightly Leached - 43.5 ft. Leached - 43.7 ft. to 43.9 ft.	93
		77	562.4	Intact - 45.3 to 45.9 ft. Leached - 47.3 ft. Intact - 49.0 ft. Broken - 50.6 ft. Leached - 51.3 ft.	73
		100	557.4	Very Thin Quartz Veins: Low Dip - 57.8 ft. Medium Dip - 58.9 ft. Medium Dip - 90.1 ft.	100
		100	552.4	1/2 Inch Steep Dip Schistose Zone (60.8 to 61.3 ft.) 1 Inch Steep Dip Quartz Vein (63.9 to 65.4 ft.) Medium Dip Irregular Quartz, Calcite Vein (66.4 ft.)	100
61.3	Hard Medium Light Gray Mafic Gneiss		547.4		
58.1	Coring Terminated At 68.1 ft. Groundwater At 20.4 ft At Time Of Boring Groundwater At 18.4 ft At 24 Hours No Drilling Water Loss		542.4		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-159P
DATE DRILLED 12-12-73
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	603.3 ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash-Drilled With Carbide Fishtail To 65.9 ft				
			598.3		
			593.3	N=8 Firm Red Orange Clayey Silt	
			588.3		
			583.3	N=9 Stiff Orange Tan Fine Sandy Slightly Micaceous Silt	
			578.3		
			573.3	N=8 Firm Orange Tan Fine Sandy Silt	
			568.3		
40.0			563.3		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD

BORING NO. B-160P
DATE DRILLED 1-7-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	563.3 ELEV.	REMARKS	R.O.Q.
40.0	Rotary Wash-Drilled With Carbide Fish-tail To 65.9 ft.			N=35 Hard Brown And Gray Fine Sandy Micaceous Silt	
			558.3		
49.9	Partially Weathered Rock		553.3	N=77/11" Partially Weathered Rock That Becomes Tan Fine Sandy Slightly Micaceous Silt With Seams Of Gray Silty Fine To Coarse Sand When Sampled	
			548.3		
			543.3	N=84/8" Hard Tan And Gray Fine Sandy Very Micaceous Silt	
			538.3		
65.9	Hard To Moderately Hard Medium Light Gray Mafic Gneiss	NX 91		Carbide Bit Refusal And Top Of Continuous Rock At 65.9 ft	70
67.9	Hard To Very Hard Medium Light Gray Mafic Gneiss	100	533.3	65.9 ft - 67.9 ft: Moderate Weathering. Close Joints - Low To Medium Dip. Very Close Healed Joints - Low To Steep Dip.	
			528.3	67.9 ft - 86.4 ft: Very Slight Weathering. Close Calcite Coated And Filled Healed Joints - Low To Steep Dip	00
			523.3	Slicksided Surface With Calcite And Chlorite Coating - Low Dip (77.0 ft.)	100

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER.

R.O.Q. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3

TEST BORING RECORD

BORING NO. B-160P

DATE DRILLED 1-7-73

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 174 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	523.3 ELEV.	REMARKS	R.O.Q.
80.0	Very Hard Light Gray Mafic Gneiss	NX 100		Incompletely Filled Joint With Crystalline Calcite, Chlorite, Pyrite And Quartz (79.8 ft.) Fine Grained Appearance (67.9 ft - 77.5 ft.) Coarse Grained Appearance (77.5 ft. - 85.4 ft.)	100
86.4	Coring Terminated At 86.4 ft Groundwater At 21.1 ft After 24 Hours No Drilling Water Loss		518.3		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER,
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.Q. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-160P

DATE DRILLED 1-7-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 112.4 ft.				
			620.6		
		N#38	615.6	Hard Brown Gray Fine To Medium Sandy Micaceous Silt	
			610.6		
		N#31	605.6	Hard Tan Gray Fine To Medium Sandy Micaceous Silt	
			600.6		
		N#38	595.6	Hard Tan Gray Slightly Micaceous Fine To Medium Sandy Silt	
			590.6		
40.0		N#37	585.6	Hard Tan Gray Slightly Micaceous Fine To Medium * *Very Sandy Silt	

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 112.4 ft.				
			580.6		
		N#35	575.6	Hard Tan Gray Slightly Micaceous Fine To Medium Very Sandy Silt	
			570.6		
59.1	Partially Weathered Rock	N#50/5"	565.6	Partially Weathered Rock That Becomes Tan Gray Slightly Micaceous Silty Fine To Coarse Sand When Sampled	
			560.6		
		N#50/3"	555.6	Partially Weathered Rock That Becomes Tan Gray Micaceous Very Silty Fine To Coarse Sand With Rock Fragments	
			550.6		
80.0		N#50/3"	545.6	Partially Weathered Rock That Becomes Tan Brown Micaceous Very Silty Fine To Coarse Sand When * *Sampled	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-161P
DATE DRILLED 1-17-74
JOB NO. CH 2920

Page 1 of 5
TEST BORING RECORD

LAW ENGINEERING TESTING CO

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-161P
DATE DRILLED 1-17-74
JOB NO. CH 2920

Page 2 of 5
TEST BORING RECORD

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.O.D.
80.0	Partially Weathered Rock			540.6		
				535.6	N=50/2" Partially Weathered Rock That Become Tan Gray Slightly Micaceous Fine To Coarse Sand When Sampled	
				530.6		
				525.6	N=50/0" No Recovery	
				520.6		
				515.6	N=50/0" No Recovery	
112.4	Hard To Moderately Hard Very Light Gray To Light Gray Felsic Gneiss	NX 39		510.6	Carbide Bit Refusal At 112.4 ft. 112.4 ft - 125.1 ft.: Moderately Severe Weathering. Close To Very Close Healed Joints Low To Steep Dip. Close To Very Close Joints - Low To Steep Dip.	9
				505.6		30

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	SIZE MIN.	ELEV.	REMARKS	R.O.D.
120.0	Hard To Moderately Hard Very Light Gray To Light Gray Felsic Gneiss	NX 63		500.6	125.1 ft - 134.4 ft.: Moderate Weathering. Close Healed Joints - Low To Steep Dip. Close And Very Close Joints - Low To Steep Dip.	30
125.1	Hard Very Light Gray To Light Gray Felsic Gneiss	100		495.6	Very Severely Weathered Zone (132.5 ft to 135.6 ft) Probable Core Loss	52
				490.6		47
134.3	Moderately Hard Medium Gray Mafic Gneiss	69		485.6	134.4 ft - 158.0 ft.: Moderate Weathering. Close To Very Close Healed And Leached Joints - Low To Steep Dip. Close To Very Close Joints - Low To Steep Dip.	69
136.6	Moderately Hard To Hard Very Light To Light Gray Felsic Gneiss	89		480.6	1 Inch, Steep Dip Quartz Vein (141.1 ft - 141.5 ft.) Steep Dip Brecciated(?) Zone (143.0 ft - 143.4 ft.)	
				475.6		13
				470.6		0
158.0	Moderately Hard Green Gray To Dark Green Gray Mafic Gneiss	88		465.6	N=50/0" Rapid Fall Of Rods Attempted Split Spoon Sample At 158.0 ft. - No Recovery	66

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.D. ROCK QUALITY DESIGNATION

Page 3 of 5
TEST BORING RECORD

BORING NO. B-161P
 DATE DRILLED 1-17-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO Page 176 of 298

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.D. ROCK QUALITY DESIGNATION

Page 4 of 5
TEST BORING RECORD

BORING NO. B-161P
 DATE DRILLED 1-17-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.Q.D.
160.0	Moderately Hard Green Gray To Dark Green Gray Mafic Gneiss	NX	88	465.6	158.0 ft to 179.2 ft.: Slight To Moderate Weathering. Close To Very Close Healed Joints - Low To Steep Dip.	66
			69	460.6	Close To Very Close Joints - Low To Steep Dip (165.1 ft - 169.5 ft.)	
167.7	Hard Very Light Gray To Light Gray Felsic Gneiss		34	455.6		52
				450.6	Top Of Continuous Rock At 177.8 ft.	12
179.2	Hard Medium Bluish Gray Mafic Gneiss		100	445.6	179.2 ft to 196.8 ft.: Slight Weathering. Close To Very Close Healed And Quartz And Calcite Filled Joints - Medium To Steep Dip.	100
				440.6	1 Inch Steep Dip Anastomosing Quartz Vein (183.0 - 184.0 ft.)	
				435.6	Quartz Rich Zone (191.0 ft - 192.0 ft.)	100
				430.6		
196.8	Coring Terminated At 196.8 ft. Groundwater At 40.0 ft After 24 Hours No Drilling Water Loss					

Page 5 of 5

BORING AND SAMPLING MEETS ASTM D-1588
 CORE DRILLING MEETS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

TEST BORING RECORD

BORING NO. B-161P
 DATE DRILLED 1-17-74
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO. Page 177 of 298

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fishtail To 97.8 ft.					
				629.6		
				624.6	N=11 Firm Tan And Pink Silty Fine To Coarse Sand	
				619.6		
				614.6	N=16 Firm Grayish - Pink Silty Fine To Coarse Sand	
				609.6		
				604.6	N=18 Firm Pinkish - Tan Silty Fine To Medium Sand	
				599.6		
40.0				594.6	N=18 Firm Grayish Tan Very Silty Slightly Micaceous Fine To Medium Sand	

BORING AND SAMPLING MEETS ASTM D-1588
 CORE DRILLING MEETS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 4

TEST BORING RECORD

BORING NO. B-162P
 DATE DRILLED 1-22-74
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	594.6 ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 97.8 ft.				
			589.6		
			584.6	N=24 Firm Brownish-Gray Silty Fine To Medium Sand	
			579.6		
			574.6	N=81 Very Dense Gray Silty Micaceous Fine To Medium Sand	
			569.6		
			564.6	N=25 Firm Grayish Tan Silty Slightly Micaceous Fine To Coarse Sand	
			559.6		
			554.6	Very Dense Light Gray Silty Fine To Coarse Sand N=74/11"	
80.0					

BORING AND SAMPLING MEETS ASTM D-1896
CORE DRILLING MEETS ASTM D-2119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N. STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 4

TEST BORING RECORD

BORING NO. B-162P
DATE DRILLED 1-22-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 178 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	554.6 ELEV.	REMARKS	R.Q.D.
80.0	Rotary Wash Drilled With Carbide Fishtail To 97.8 ft.				
			549.6		
85.0	Partially Weathered Rock		544.6	N=50/2 1/2" No Recovery	
			539.6		
97.8	Moderately Hard Very Light Gray Felsic Gneiss		534.6	Carbide Bit Refusal At 97.8 ft. 97.8 ft to 104.5 ft.: Moderate Weathering. Close To Very Close Healed And Occasionally Leached Joints - Low To Steep Dip.	
100.0	Very Soft To Medium Greenish Gray Mafic Gneiss	NX 44		Severely Weathered Zones: 100.0 ft to 103.5 ft. S 113.3 ft to 113.7 ft. M 118.2 ft to 118.6 ft. (Mafic Gneiss) M	35
104.5	Hard To Very Hard Very Light Gray Felsic Gneiss	100	529.6	Joints Indeterminant - Badly Broken Rock (113.0 to 117.9 ft.) M	52
		77	524.6	104.5 to 120.7 ft.: Slight Weathering. Very Close Healed And Rarely Leached Joints - Low To Steep Dip. M	50
		77			
			519.6		
		80			0
			514.6		
120.0		92			50

BORING AND SAMPLING MEETS ASTM D-1896
CORE DRILLING MEETS ASTM D-2119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N. STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 4

TEST BORING RECORD

BORING NO. B-162P
DATE DRILLED 1-22-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % 2 TIME SIZE MIN. ELEV.	REMARKS	R.O.D.
120.0		514.6		
120.7	Hard To Very Hard Very Light Gray			
	Coring Abandoned At 120.7 ft.			
	Rig Moved To B-162AP			
	Stabilized Groundwater At 8.0 ft.	509.6		
	No Drilling Water Loss			

BORING AND SAMPLING MEETS ASTM D-1988 * Felsic Gneiss

CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30-60°

R.O.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60-90°

TEST BORING RECORD

BORING NO. B-162P

DATE DRILLED 1-22-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % 2 TIME SIZE MIN. ELEV.	REMARKS	R.O.D.
0		634.6		
	0 ft to 98.3 ft - No Samples Taken			
		549.6		
		544.6		
		539.6		
98.3	Hard Very Light Gray Felsic Gneiss	534.6	Carbide Bit Refusal At 98.3 ft. 98.3 ft to 150.0 ft. Moderate To Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	19
		529.6	Probable Location Of 5.3 ft Core Loss - Traces Of Moderate Severely Weathered Mafic Gneiss (100.3 to 105.6 ft.)	45
		524.6		67
		519.6		71
				58
119.9		514.6		27
120.0				

BORING AND SAMPLING MEETS ASTM D-1988 * Moderately Hard Gray Green

CORE DRILLING MEETS ASTM D-8113 Mafic Gneiss
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30-60°

R.O.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60-90°

TEST BORING RECORD

BORING NO. B-162AP

DATE DRILLED 2-19-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME RISE MIN.	544.4 ELEV.	REMARKS	100
0	Rotary Wash Drilled With Carbide Fishtail To 27.9 ft. -Fill From 0 to 4.0 ft.				
			579.4	Fill To 4.0 ft.	
			574.4	N=34 Dense Tannish Orange Very Silty Clayey Fine To Coarse Sand With Rock Fragments	
			569.4		
			564.4	N=28 Very Firm Tannish Gray Silty Slightly Micaceous Fine To Medium Sand	
			559.4		
27.9	Hard Very Light Gray Felsic Gneiss	NX 100		Carbide Bit Refusal And Top Of Continuous Rock At 27.9 ft.	100
29.7	Hard To Very Hard Light Bluish Gray Felsic Gneiss		554.4	27.9 ft to 29.7 ft.: Moderate Weathering, Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	100
			549.4	29.7 ft to 48.2 ft.: Very Slight Weathering, Very Close Healed Joints - Low To Steep Dip.	100
40.0			544.4		100

DEPTH FT.	DESCRIPTION	CORE NO. & TIME RISE MIN.	544.4 ELEV.	REMARKS	100
40.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		Very Steep Schistose Zones Filled With Quartz, Chlorite And Calcite: Up To 1 Inch Thick - 32.8 to 34.7 ft. ¼ Inch Thick - 43.6 to 45.6 ft.	100
48.2	Coring Terminated At 48.2 ft. Groundwater At 11.1 ft On 1-7-74 No Drilling Water Loss		539.4		
			534.4		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-163P
DATE DRILLED 1-4-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO

Page 180 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-163P
DATE DRILLED 1-4-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	N
0	Rotary Wash-Drilled With Carbide Fishtail To 40.7 ft.		594.2		
			589.2		
		N=27	584.2	Firm Brown Gray Very Silty Fine To Coarse Sand	
			579.2		
		N=19	574.2	Very Stiff Tan Gray Micaceous Fine To Medium Sandy Silt	
			569.2		
		N=55	564.2	Hard Tan Fine To Medium Sandy Silt	
			559.2		
38.6	Partially Weathered Rock		554.2	N=50/1 1/2" No Recovery	
40.0					

Page 1 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

BORING NO. B-164P
 DATE DRILLED 1-3-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	N
40.0	Partially Weathered Rock		554.2		
40.7	Moderately Hard To Medium Very Light Gray Felsic Gneiss			Carbide Bit Refusal At 40.7 ft.	
43.9	Hard To Very Hard Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	549.2	Top Of Continuous Rock At 43.9 ft. M 40.7 ft to 43.9 ft.: Moderate Weathering, Close Joints - Low To Steep Dip, Very Close Healed Joints - Low To Steep Dip.	71
			544.2		
		100	539.2	43.9 ft to 66.0 ft.: Slight To Very Slight Weathering, Very Close Healed Joints, Rarely Quartz or Calcite Filled, Low To Steep Dip.	100
			534.2	Mafic Xenoliths: 44.2 ft. 48.2 ft. 50.1 ft. Lesched Vertical Quartz Lens Up To 1 1/2 Inches Thick (58.4 ft to 59.6 ft.)	100
		100	529.2		100
66.0	Coring Terminated At 66.0 ft. Groundwater At 21.9 ft After 24 Hours No Drilling Water Loss				

Page 2 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

BORING NO. B-164P
 DATE DRILLED 1-2-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	578.2		REMARKS	R.Q.D.
		CORE % & TIME SIZE MIN.	ELEV.		
0	Rotary Wash Drilled With Carbide Fishtail To 27.1 ft.		573.2		
			568.2	N=13 Firm Tan Gray Micaceous Very Silty Fine To Coarse Sand	
11.0	Partially Weathered Rock		563.2		
			558.2	N=50/1" No Recovery	
			553.2		
27.1	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 96	548.2	Carbide Bit Refusal And Top Of Continuous Rock At 27.1 ft. 27.1 ft to 49.9 ft: Slight To Very Slight Weathering. Very Closed Healed Joints - Low To Steep Dip.	84
			543.2	Slight Leaching Along Healed Joints (27.1 to 43.0 ft.) Moderately Weathered Zone (27.1 ft to 28.3 ft.)	100
40.0		100	538.2		

Page 1 of 2

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-165P

DATE DRILLED 4-19-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	538.2		REMARKS	R.Q.D.
		CORE % & TIME SIZE MIN.	ELEV.		
40.0	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	533.2	Leached, Medium Dip, Schistose Zone (40.3 ft.)	
			528.2	Mafic Gneiss (47.4 ft to 47.7 ft.)	100
49.9	Coring Terminated At 49.9 ft. Groundwater At 6.3 ft. At Time Of Boring				

Page 2 of 2

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-165P

DATE DRILLED 4-19-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
	Rotary Wash Drilled With Carbide Fishtail To 50.5 ft.		609.8		
			604.8		
		N=14	599.8	Tan Pink Slightly Clayey Fine To Medium Sandy Silt With Quartz Rock Fragments	
			594.8		
		N=23	589.8	No Recovery	
			584.8		
		N=30	579.8	Tan Gray With Black Seams Slightly Micaceous Fine To Medium Sandy Silt	
			574.8		
37.7	Partially Weathered Rock		569.8	Partially Weathered Rock That Becomes Gray Tan Silty Fine To Medium Sand When Sampled	
40.0					

Page 1 of 2

TEST BORING RECORD

BORING NO. B-166P
 DATE DRILLED 1-30-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1998
 CORE DRILLING MEETS ASTM D-5112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Partially Weathered Rock		569.8		
			564.8		
			559.8	N=50/1" No Recovery	
50.5	Hard Very Light Gray Felsic Gneiss	NX 82	554.8	Carbide Bit Refusal And Top Of Continuous Rock At 50.5 ft. 50.5 ft - 59.1 ft.: Moderate To Slight Weathering. Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip - Rarely Leached.	64
			549.8	Core Loss (57.0 ft to 58.3 ft.) - Soil Remnants - Silty Fine To Coarse Sand	
59.1	Very Hard Light Bluish Gray Felsic Gneiss	100	544.8	59.1 ft to 80.4 ft.: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip. Small Mafic Xenoliths Throughout.	91
		100	539.8		100
			534.8	Low Dip Schistose Zone (71.6 ft.)	
		100	529.8		100
80.4					

Page 2 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1998 • Coring Terminated At 80.4 ft.
 CORE DRILLING MEETS ASTM D-5112 Groundwater At 35.0 ft At 24 Hours
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER No Drilling Water
 FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT. LOSS
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

BORING NO. B-166P
 DATE DRILLED 1-30-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	606.6		REMARKS	R.O.D.
		CORE NO. & TIME SIZE MIN.	ELEV.		
0	Rotary Wash Drilled With Carbide Fishtail To 78.5 ft.				
			601.6		
		N=22	596.6	Firm Brownish Pink Slightly Micaceous Very Silty Fine To Medium Sand	
			591.6		
		N=23	586.6	Very Stiff Orange And Gray Slightly Micaceous Fine To Medium Sandy Silt	
			581.6		
		N=19	576.6	Firm Tan And Tannish Pink Slightly Micaceous Very Silty Fine To Medium Sand	
			571.6		
40.0		N=18	566.6	Firm Grayish Tan Slightly Micaceous Very Silty Fine To Medium Sand	

DEPTH FT.	DESCRIPTION	566.6		REMARKS	R.O.D.
		CORE NO. & TIME SIZE MIN.	ELEV.		
40.0	Rotary Wash Drilled With Carbide Fishtail To 78.5 ft.				
			561.6		
		N=24	556.6	Very Stiff Tannish Gray Micaceous Slightly Fine Sandy Silt	
				NW Casing To 50.0 ft.	
			551.6		
58.6	Partially Weathered Rock	N=82/10"	548.6	Partially Weathered Rock That Becomes Grayish Tan Slightly Micaceous Silty Fine To Coarse Sand When Sampled	
			541.6		
		N=50/4 1/2"	538.6	Very Dense Grayish Tan Slightly Micaceous Silty Fine To Coarse Sand	
			531.6		
78.5	Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	526.6	N=50/2 1/2" No Recovery Carbide Bit Refusal And Top Of S Continuous Rock At 78.5 ft.	96
80.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 64 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD

BORING NO. B-167P
DATE DRILLED 1-23-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO. Page 184 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 64 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD

BORING NO. B-167P
DATE DRILLED 1-23-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100		521.6	78.5 ft to 84.8 ft.: Slight Weathering. Very Close Healed Joints - Medium To Steep Dip.	95
				516.8	84.8 ft to 97.4 ft.: Very Slight Weathering. Very Close Healed Joints - Medium To Steep Dip.	100
				511.6	Mafic Gneiss Zone With Very Close Leached Healed Joints (87.4 ft to 87.6 ft.) 2 Inch Schistose Zone With Quartz And Chlorite - Steep Dip (91.0 ft.) Slitkensisided Surfaces - Medium Dip: 89.3 ft. 92.8 ft.	100
97.4				506.6	Coring Terminated At 97.4 ft. Groundwater At 31.2 ft After 24 Hours Drilling Water Loss At 80.0 ft.	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3

TEST BORING RECORD

BORING NO. B-167P
DATE DRILLED 1-23-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO. Page 185 of 298

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.Q.D.
0	Rotary Wash Drilled With Carbide Fish Tail To 91.9 ft.			586.8		
				581.8	N=15 Stiff Tan Red Micaceous Fine To Medium Sandy Silt	
				576.8		
				571.8	N=10 Loose Green And Tan Red Micaceous Very Silty Fine To Medium Sand With Small Quartz Fragments	
				566.8		
				561.8	N=14 No Recovery N=16 Firm Gray Tan Micaceous Very Silty Fine To Medium Sand	
				556.8		
				551.8	N=21 Firm Gray Tan Slightly Micaceous Silty Fine To Coarse Sand	
40.0						

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 4

TEST BORING RECORD

BORING NO. B-168P
DATE DRILLED 1-18-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Rotary Wash Drilled With Carbide Fishtail To 91.9 ft.		546.8		
			541.8	N=35 Dense Gray Tan Slightly Micaceous Silty Fine To Coarse Sand	
			536.8		
58.0	Partially Weathered Rock		531.8	N=50/3" Partially Weathered Rock That Becomes Gray Tan Micaceous Silty Fine To Coarse Sand When Sampled	
			526.8		
			521.8	N=50/4" Partially Weathered Rock That Becomes Gray Tan Slightly Micaceous Silty Fine To Coarse Sand When Sampled	
			516.8		
			511.8	N=50/3" No Recovery	
80.0					

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock		506.8		
			501.8	N=50/4" No Recovery	
91.9	Hard Very Light Tannish Gray Felsic Gneiss	NX 100	496.8	Carbide Bit Refusal At 91.9 ft. 91.9 ft to 101.3 ft.: Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip. Some Leaching Along Healed Joints.	81
97.9	Hard Medium Light Gray Mafic Gneiss		491.8		
98.5	Hard To Moderately Hard Very Light Tannish Gray Felsic Gneiss			Slightly Weathered Zones (97.9 ft - 98.5 ft.). Severe To Complete Weathering (101.3 ft to 107.8 ft.) 107.8 ft. to 126.5 ft.: Moderate Weathering. Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip. Some Leaching Along Healed Joints.	22
101.3	Soft Dark Greenish Gray Mafic Gneiss				
102.3	Core Loss Silt Traces - Grayish Tan Very Silty Slightly Micaceous Fine To Coarse Sand	44	486.8		
107.8	Moderately Hard To Hard Very Light Tannish Gray To Very Light Gray Felsic Gneiss	89	481.8		39
			476.8		46
			471.8		30
120.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 4
TEST BORING RECORD

BORING NO. B-168P
DATE DRILLED 1-18-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 4
TEST BORING RECORD

BORING NO. B-168P
DATE DRILLED 1-18-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.		ELEV.	REMARKS	R. Q. D.
		NX	61			
120.0	Moderately Hard To Hard Very Light Tannish Gray To Very Light Gray Felsic Gneiss			566.8		30
126.5	Medium To Hard Brown And Light Greenish Gray Mafic Gneiss With Some Soil Zones	83		561.8	Severe To Moderate Weathering (126.5 ft to 127.2 ft.) 127.2 ft to 127.8 ft.: Slight Weathering. Very Close Calcite Coated Joints - Low To Steep Dip.	45
133.0	Hard And Moderately Hard Very Light Pinkish Gray Felsic Gneiss	100		556.8	127.8 ft. to 131.6 ft. Moderate And Complete Weathering. Very Close Leached Joints - Low To Steep Dip.	63
137.5	Very Hard White Milky Quartz				131.6 ft. to 132.7 ft.: Slight Weathering Very Close Calcite Coated Joints Low To Steep Dip.	100
138.1	Hard Light Bluish Gray Felsic Gneiss	100		551.8	Moderately Severe Weathering At Mafic/Felsic Contact (133.0 ft.) Top Of Continuous Rock At 131.6 ft.	96
		100		546.8	131.6 ft. to 143.1 ft.: Slight Weathering. Very Close Epidote Healed Joints - Low To Steep Dip. Slight Leaching Along Filled Joints.	100
		100		541.8	Moderately Severely Weathered Zone (135.3 ft to 136.2 ft.)	
		100		536.8	143.1 ft to 157.7 ft.: Very Slight Weathering. Very Close Epidote Healed Joints - Low To Steep Dip.	100
157.7	Coring Terminated At 157.7 ft. No Drilling Water Loss					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 4 of 4
TEST BORING RECORD

BORING NO. B-168P
DATE DRILLED 1-18-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO Page 187 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.		ELEV.	REMARKS	R. Q. D.
0	Stiff Tan Red To Tan Gray Fine Sandy Micaceous Silt			607.4		
				602.4		N=12
				597.4		N=12
15.0	Very Stiff Gray Tan Fine Sandy Micaceous Silt			592.4		N=21
20.0	Stiff Brown Tan To Orange Tan Fine Sandy Micaceous Silt			587.4		N=12
				582.4		N=14
30.0	Very Stiff Orange Tan To Tan Brown Fine Sandy Micaceous Silt			577.4		N=17
40.0				572.4		N=20

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2
TEST BORING RECORD

BORING NO. B-170P
DATE DRILLED 2-21-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Hard To Hard Very Light Gray To Light Gray Felsic Gneiss	NX 100	505.1		100
48.2	Coring Terminated At 48.2 ft. Groundwater At 23.3 ft At Time Of Boring Stabilized Groundwater At 21.6 ft. No Drilling Water Loss		500.1		

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Drilled To Refusal - 17.8 ft.		587.4		
			582.4		
			577.4		
17.8	Very Hard Light Bluish Gray Felsic Gneiss	NX 95	572.4	Carbide Bit Refusal And Top Of Continuous Rock At 17.8 ft. 17.8 ft to 38.4 ft.: Slight To Very Slight Weathering. Close Healed Joints - Low To Steep Dip.	85
		100	567.4	Steep Dip Pegmatite Vein With Quartz And Orthoclase (17.8 to 18.4 ft.)	
		100	562.4	Steep Dip, Parallel, Quartz And Chlorite Veins With Intergrown Contact Zone (27.7 to 29.0 ft.)	95
		100	557.4	Steep Dip Quartz Veins: 29.5 to 30.3 ft. 31.2 to 31.6 ft.	
			552.4	Steep Dip - Slickensided Surface: 32.0 ft. 33.0 ft.	
38.4	Coring Terminated At 38.4 ft. Groundwater At 11.0 ft At Time Of *			Leached Pegmatite Vein Of Quartz And Muscovite (34.5 ft.)	92

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-185
DATE DRILLED 2-5-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-5115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

*Boring Stabilized Groundwater At 11.9 ft. No Drilling Water Loss

BORING NO. B-186P
DATE DRILLED 2-13-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	597.7 ELEV.	REMARKS	R.O.D.
0	Drilled To Carbide Refusal At 40.0 ft.				
			592.7		
			587.7		
			582.7		
			577.7		
			572.7		
			567.7		
			562.7		
40.0			557.7		

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	557.7 ELEV.	REMARKS	R.O.D.
40.0	Medium Dark Greenish Gray Mafic Gneiss	NX 91		Top Of Continuous Rock At 40.9 ft.	73
40.9	Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss		552.7	40.0 ft to 59.4 ft. Very Slight Weathering. Close Healed Joints - Low To Steep Dip.	100
		100		Quartz Veins - Steep Dip - 43.0 ft to 43.5 ft. 48.9 ft to 49.5 ft. 56.0 ft to 56.5 ft.	100
		100	547.7	Slightly Leached Quartz - Epidote Vein (41.6 ft.)	100
		100	542.7	1 Inch, Steep Dip Schistose Zone With Epidote, Chlorite And Calcite (50.8 - 51.5 ft.)	100
59.4	Coring Terminated At 59.4 ft.		537.7	Core Losses At 40.7 ft to 41.0 ft. With Moderate Weathering At 40.0 ft to 40.7 ft.	
	Groundwater At 10.8 ft At Time Of Boring				
	Stabilized Groundwater At 12.3 ft.				
	No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 2
TEST BORING RECORD

BORING NO. B-187P
DATE DRILLED 2-15-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 189 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-187P
DATE DRILLED 2-15-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

585.2

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	LOG
40.0	Moderately Hard To Soft Very Light Gray Sericitic Felsic Gneiss	NX 100		Top Of Continuous Rock At 42.2 ft. 38.4 to 52.4 ft.	49
42.2	Very Hard Light Bluish Gray Sericitic Felsic Gneiss		580.2	Slight To Very Slight Weathering. Very Close Healed Joints With Chlorite And Calcite - Low To Steep Dip.	
		100		Close Joints - Low To Medium Dip (38.4 ft to 42.1 ft.) Moderately Severely To Severely Weathered Zones: 38.9 ft to 39.4 ft. 40.4 ft to 42.2 ft.	100
			575.2		
52.4	Coring Terminated At 52.4 ft.		570.2		
	Groundwater At 37.2 ft At Time Of Boring				
	Stabilized Groundwater At 36.2 ft.				
	No Drilling Water Loss				

605.3

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	LOG
0	Firm Tan Pink Micaceous Fine To Medium Very Sandy Silt		600.3		N=6
7.5	Stiff Pink Brown Micaceous Fine To Coarse Very Sandy Silt With Rock Fragments		595.3		N=9
14.0	Very Stiff Gray Micaceous Fine To Coarse Very Sandy Silt		590.3		N=17
19.0	Firm Gray Micaceous Very Silty Fine To Coarse Sand		585.3		N=13
			580.3		N=15
			575.3		N=15
			570.3		N=30
39.0	Partially Weathered Rock - No Recovery		565.3		N=50/31
40.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD

BORING NO. B-212
DATE DRILLED 4-17-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD

BORING NO. B-213
DATE DRILLED 3-28-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
40.0	Partially Weathered Rock		565.3		
			560.3	N=50/1" No Recovery	
			555.3	N=50/1" No Recovery	
			550.3	N=50/2" No Recovery	
			545.3	N=50/0" No Recovery	
62.7	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	540.3	Carbide Bit Refusal And Top Of Continuous Rock At 62.7 ft. 62.7 ft to 81.7 ft.: Slight To Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip. ◀M Quartz Lens (65.7 to 66.0 ft.) Moderately Severely Weathered Zone Of Mafic (Schistose) Gneiss (66.4 - 66.6 ft.) 1/2 Inch Medium Dip Leached Quartz Vein (69.6 ft.) 1/4 Inch Steep Dip Leached Quartz Vein (71.6 to 72.0 ft.) ◀L 1/4 Inch Steep Dip Quartz Vein With Schistose Contacts (76.4 to 78.8 ft.) Badly Broken Rock (80.9 to 81.7 ft)	100
		100	535.3		96
		100	530.3		100
		100	525.3		100

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		NO. & TIME SIZE MIN.	ELEV.		
80.0	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	525.3		100
81.7	Coring Terminated At 81.7 ft. Groundwater At 49.2 At Time Of Boring Stabilized Groundwater At 25.3 ft. No Drilling Water Loss				

BOHING AND SAMPLING MEETS ASTM D-1556
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD

BORING NO. B-213
DATE DRILLED 3-28-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

Page 191 of 298

BOHING AND SAMPLING MEETS ASTM D-1556
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD

BORING NO. B-213
DATE DRILLED 3-28-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Very Stiff Red Fine To Coarse Sandy Very Silty Clay		588.5		
6.0	Firm Tan Brown Micaceous Silty Fine To Coarse Sand		578.5	N=22	
13.2	Partially Weathered Rock		573.5	N=28 N=50/6"	
18.2	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 78 100 30 0 100 100	568.5 563.5 558.5 553.5 548.5	Carbide Bit Refusal At 18.2 ft. 18.2 ft to 48.9 ft.: Slight To Very Slight Weathering. Very Close Healed And Occasionally Leached Joints - Low To Steep Dip. Scattered Small Mafic Xenoliths Soil Zone (24.6 ft to 26.6 ft.) Top Of Continuous Rock At 26.0 ft.	31 100 0 0 100 100
40.0		100	548.5		100

Page 1. of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-214
DATE DRILLED 4-3-74
JOB NO. CH 2920

LAW ENGINEERING TESTING

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	543.5		100
48.9	Coring Terminated At 48.9 ft. Groundwater At 8.0 ft At Time Of Boring Stabilized Groundwater At 6.9 ft. No Drilling Water Loss	100	538.5		100

Page 2 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-214
DATE DRILLED 4-3-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE		ELEV.	REMARKS	% R.O.D.
		NO.	TIME SIZE MIN.			
0	Drilled To Refusal At 32.4 ft.			590.8		
				585.8		
				580.8		
				575.8		
				570.8		
				565.8		
				560.8		
32.4	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100		555.8	Carbide Bit Refusal And Top Of Continuous Rock At 32.4 ft. 32.4 ft. to 52.8 ft.: Slight To Very Slight Weathering. Very Close Healed And Rarely Leached Joints - Low To Steep Dip.	100
		100			Scattered Small Mafic Xenoliths Quartz Vein (32.4 ft to 32.6 ft.) Close Joints, - Low To Steep Dip *	92
		100				89
40.0		98		550.8		86

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-6118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-216

DATE DRILLED 4-2-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO

Page 1 of 2

DEPTH FT.	DESCRIPTION	CORE		ELEV.	REMARKS	% R.O.D.
		NO.	TIME SIZE MIN.			
40.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 98		550.8		86
				545.8		91
				540.8		100
52.8	Coring Terminated At 52.8 ft. Groundwater At 23.8 ft At Time Of Boring Stabilized Groundwater At 15.3 ft. No Drilling Water Loss			535.8	Very Thin Quartz-Chlorite Filled Brecciated Zone - Steep Dip (50.6 ft.)	

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-6118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-216

DATE DRILLED 4-2-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO

Page 2 of 2

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Partially Weathered Rock That Becomes Brown Red Fine To Medium Sandy Very Silty Clay		590.0		
			585.0	N=50/6"	
7.0	Partially Weathered Rock That Becomes Tan Gray To Gray Brown Micaceous Silty Fine To Coarse Sand With Rock Fragments When Sampled		580.0	N=50/3"	
			575.0	N=50/6"	
17.2	Moderately Hard Very Light Gray Felsic Gneiss			Carbide Bit Refusal At 17.2 ft. Very Close Healed Joints With Chlorite And Calcite - Low To Steep Dip (17.2 to 18.9 ft.)	
18.9	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	570.0	17.2 to 18.9 ft.: Moderate Weathering. Badly Broken Rock. Top Of Continuous Rock At 18.9 ft.	75
			565.0	Very Slight Weathering (18.9 to 38.4 ft.)	100
			560.0	Quartz And Quartzite With Stringers Of Biotite (33.5 to 35.7 ft) Slight Leaching (33.6 to 34.0 ft.)	
			555.0		100
38.4	Coring Terminated At 38.4 ft. Stabilized Groundwater At 9.7 ft. *		550.0		

Page 1 of 1

TEST BORING RECORD

BORING NO. B-217
 DATE DRILLED 4-3-74
 JOB NO. CH 2920

BORING AND SAMPLING MEETS ASTM D-1586 * No Drilling Water Loss

CORE DRILLING MEETS ASTM D-1519
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO. Page 195 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Drilled To Carbide Refusal At 90.5 ft.		625.2		
			620.2		
90.5	Moderately Hard To Medium Light Olive Gray Mafic Gneiss		535.2	Carbide Bit Refusal At 90.5 ft. 90.5 ft to 96.9 ft.: Moderate To Moderately Severe Weathering. Very Close To Close Joints - Low To Steep Dip.	0
96.9	Hard To Very Hard Medium Light Gray Mafic Gneiss	NX 47	530.2	Top Of Continuous Rock At 98.0 ft. 96.9 ft to 118.5 ft.: Slight To Very Slight Weathering. Very Close To Close Healed And Chlorite, Quartz And Calcite Filled Joints - Low To Steep Dip	31
		69	525.2	Leached Zone With Limonite Residue (99.7 ft to 100.4 ft.)	95
		98	520.2	Slicksided Surface - Steep Dip (113.8 ft.)	99
		99	515.2		
		100	510.2		100
118.5	Coring Terminated At 118.5 ft. *		505.2		

Page 1 of 1

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586 * Groundwater At 43.4 ft At Time Of Boring

CORE DRILLING MEETS ASTM D-1519 Stabilized Groundwater 17.8 ft.

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO. B-218

DATE DRILLED 3-26-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		SIZE MIN.	TIME ELEV.		
0	Drilled To Refusal At 28.1 ft.		598.6		
			593.6		
			588.6		
			583.6		
			578.6		
			573.6		
28.1	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 93	568.6	Carbide Bit Refusal And Top Of Continuous Rock At 28.1 ft. 28.1 ft to 47.8 ft: L Slight To Very Slight Weathering. Very Close Healed, Filled And Slightly Leached Joints - Low To Steep Dip. Scattered Small Fine Grained And Malic Xenoliths. Leached Quartz - Chlorite Stringers (28.1 to 29.4 ft.) Vertical Brecciated Zone (34.9 ft.) Moderately Weathered Zone With Very Close Low Dip Joints (34.8 ft to 35.2 ft.)	70
		99	563.6		90
40.0		95	558.6		95

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		SIZE MIN.	TIME ELEV.		
40.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 95			95
		100	553.6		100
47.8	Coring Terminated At 47.8 ft. Groundwater At 22.1 ft At Time Of Boring Stabilized Groundwater At 11.7 ft. No Drilling Water Loss		548.6		

Page 1 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO. B-219

DATE DRILLED 4-1-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 196 of 298

Page 2 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

BORING NO. B-219

DATE DRILLED 4-1-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.O.D.
0	Very Stiff Brown Red Micaceous Fine To Coarse Sandy Very Silty Clay			
		596.1	N=21	
12.0	Firm And Stiff Brown Tan Fine Sandy Micaceous Silt			
		591.1	N=17	
		586.1	N=10	
		581.1	N=5	
25.0	Very Dense To Dense Tan Gray Micaceous Silty Fine To Coarse Sand			
		576.1	N=8	
		571.1	N=68	
		566.1	N=31	
36.0	Firm Green Tan Micaceous Very Silty Fine To Coarse Sand			
40.0		561.1	N=24	

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.O.D.
40.0	Firm Green Tan Micaceous Very Silty Fine To Coarse Sand			
		556.1	N=24 No Recovery	
		551.1	N=41 No Recovery	
53.5	Partially Weathered Rock That Becomes Green Tan Micaceous Fine To Medium Sandy Silt To Very Silty Fine To Coarse Sand When Sampled			
		546.1	N=50/6"	
		541.1	N=50/2 1/2"	
61.1	Hard Medium Gray Mafic Gneiss			
64.0	Hard Light Gray Felsic Gneiss			
		536.1		100
		531.1		100
		526.1		100
80.1		521.1		100

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 1 of 2

TEST BORING RECORD
 B-220

BORING NO. B-220
 DATE DRILLED 4-2-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO

BORING AND SAMPLING MEETS ASTM D-1586 Coring Terminated At 80.1 ft.
 CORE DRILLING MEETS ASTM D-3113 Groundwater At 9.5 ft At Time Of Boring
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER Stabilized Ground- TEST BORING RECORD
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT. water At 17.4 ft.
 No Drilling Water Loss

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 2 of 2

TEST BORING RECORD
 B-220

BORING NO. B-220
 DATE DRILLED 4-2-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	ELEV.	REMARKS	R.O.D.
0	Drilled To Refusal At 19.7 ft.		605.8		
			600.8		
			595.8		
			590.6		
			585.8		
19.7	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 92	580.8	Carbide Bit Refusal And Top Of Continuous Rock At 19.7 ft. Close Joints - Low To Steep Dip (19.7 ft to 28.0 ft.) Complete Drilling Water Loss	71
			575.8	19.7 ft to 47.9 ft.: Slight To Very Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip. Moderately Weathered Zones: 20.7 ft to 21.4 ft. 37.0 to 37.6 ft.	82
		90	570.8	Very Soft, Severely Weathered Zone Probable Location Of 0.8 ft Loss (34.8 ft to 36.1 ft.)	
			565.8	1 1/2 Inch Medium Dip, Quartz Filled And Leached Schistose Zone (37.1 ft)	93
40.0		100			

DEPTH FT.	DESCRIPTION	CORE NO. & TIME	ELEV.	REMARKS	R.O.D.
40.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100	565.8		91
			560.8		
47.9	Coring Terminated At 47.9 ft. Groundwater At 25.3 ft At Time Of Boring Stabilized Groundwater At 28.2 ft. Drilling Water Loss At 23.0 ft.		555.8	Moderately Weathered Zone (47.0 to 47.6 ft.)	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-221

DATE DRILLED 4-5-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8119
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

Page 2 of 2

TEST BORING RECORD

BORING NO. B-221

DATE DRILLED 4-5-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
0	Stiff Orange Tan Micaceous Clayey Fine To Coarse Very Sandy Silt			
		578.3	N=12	
7.0	Loose Tan Gray Micaceous Very Silty Fine To Coarse Sand			
		573.3	N=7	
10.5	Stiff Tan Gray Micaceous Fine To Coarse Very Sandy Silt			
		568.3	N=12	
16.0	Dense Brown Gray Micaceous Silty Fine To Coarse Sand			
		563.3	N=32	
22.0	Partially Weathered Rock That Becomes Brown Gray Micaceous Silty Fine To Coarse Sand When Sampled		N=50/6"	
		558.3		
27.0	Partially Weathered Rock That Becomes*		N=50/4"	
28.2	Hard To Very Hard Very Light Gray Felsic Gneiss		Carbide Bit Refusal And Top Of Continuous Rock At 28.2 ft. 28.2 ft to 47.7 ft.: Very Slight Weathering. Very Close To Close Healed Joints With Calcite - Low To Steep Dip. Steep Dip, Irregular Schistose Quartz- Calcite Vein, Slightly Leached (29.1 to 29.8 ft.) Fine Grained Xenolith (36.0 ft.) Schistose Zones: Medium Dip - 30.5 to 30.9 ft. Medium Dip - 34.5 to 34.7 ft. Steep Dip - 38.1 to 38.6 ft.	100
		553.3		
		548.3		
40.0		543.3		100

BORING AND SAMPLING MEETS ASTM D-1586 * Green Gray Micaceous Silty Fine To
Coarse Sand With Rock Fragments

Page 1 of 2

TEST BORING RECORD

Penetration is the number of blows of 140 lb. hammer
falling 30 in. required to drive 1-4 in. i.d. sampler 1 ft.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60-90°

BORING NO. B-222

DATE DRILLED 4-8-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO

Page 199 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
40.0	Hard To Very Hard Very Light Gray Felsic Gneiss			
		NX 100		100
		538.3		
47.7	Coring Terminated At 47.7 ft. Groundwater At 5.5 ft At Time Of Boring Stabilized Groundwater At 6.6 ft. No Drilling Water Loss		Slickensided Surface - Medium Dip (40.3 ft.) Mafic Gneiss With Medium Dip Upper Contact (47.5 to 47.7 ft.)	
		533.3		

BORING AND SAMPLING MEETS ASTM D-1586

Page 2 of 2

TEST BORING RECORD

Penetration is the number of blows of 140 lb. hammer
falling 30 in. required to drive 1-4 in. i.d. sampler 1 ft.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60-90°

BORING NO. B-222

DATE DRILLED 4-8-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	650.0 ELEV.	REMARKS	R.O.D.
0	Drilled To Refusal At 68.9 ft.				
			645.0		
			600.0		
			595.0		
			590.0		
			585.0		
68.9	Moderately Hard Very Light Gray Felsic Gneiss	NX 85	580.0	Carbide Bit Refusal At 68.9 ft. 68.9 ft to 74.3 ft: Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	37
74.3	Hard To Very Hard Very Light Gray Felsic Gneiss		575.0	1/4 Inch, Steep Dip Brecciated Zone (71.2 ft.) Top Of Continuous Rock At 74.3 ft.	
				Very Soft, Very Severely Weathered Zone - 1.0 ft. Core Loss (72.6 to 74.3 ft.)	
80.0		100	570.0		100

36.1

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	570.0 ELEV.	REMARKS	R.O.D.
80.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100		74.3 ft to 96.9 ft: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	100
			565.0	3 Inch, Steeply Dipping Biotite Rich, Leached Zone With Chlorite At Upper Contact (78.5 ft.)	
			560.0		
		100	555.0		100
96.9	Coring Terminated At 96.9 ft. Groundwater At 30.5 ft At Time Of Boring Stabilized Groundwater At 36.1 ft. No Drilling Water Loss				

Page 1 of 2

TEST BORING RECORD

BORING NO. B-223
DATE DRILLED 3-26-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO Page 200 of 298

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT.
L = LOW DIP 0°-30°
M = MED DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT.
L = LOW DIP 0°-30°
M = MED DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-223
DATE DRILLED 3-26-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE % & TYPE SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Drilled To Refusal At 54.1 ft.		624.6		
			619.6		
			574.6		
54.1	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	569.6	Carbide Bit Refusal And Top Of Continuous Rock At 54.1 ft. 54.1 ft to 73.5 ft.: Slight To Very Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	100
		84	564.6		84
		100	559.6	Scattered Small Fine Grained Xenoliths - Core Loss (60.9 ft to 61.4 ft.)	100
		100	554.6		100
73.5	Coring Terminated At 73.5 ft. Groundwater At 33.6 ft At Time Of Boring Hole Caved At 16.5 ft Before Taking 24 Hour Water Reading Drilling Water Loss At 69.4 ft.		549.6		

BORING AND SAMPLING MEETS ASTM D-1864
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 1

TEST BORING RECORD

BORING NO. B-224

DATE DRILLED 3-22-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO. Page 201 of 298

DEPTH FT.	DESCRIPTION	CORE % & TYPE SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Drilled To Carbide Bit Refusal At 46.0 ft.		610.9		
			605.9		
			600.9		
			595.9		
			590.9		
			585.9		
			580.9		
			575.9		
40.0			570.9		

BORING AND SAMPLING MEETS ASTM D-1864
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-225

DATE DRILLED 3-26-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	ELEV.
		%	TIME DIP MIN.		
40.0	Drilled To Carbide Bit Refusal At 46.0 ft.				570.9
46.0	Medium Dark Greenish Gray Mafic Gneiss	NX	86	Carbide Bit Refusal At 46.0 ft. 46.0 ft to 50.0 ft.: Moderate Weathering. Close Joints - Low To Medium Dip. Very Close Healed Joints - Low To Medium Dip.	565.0
50.0	Hard Dark Greenish Gray Mafic Gneiss			Top Of Continuous Rock At 51.1 ft. 50.0 ft to 73.3 ft.:	560.9
54.8	Hard Very Light Green Felsic Gneiss		87	L Slight To Very Slight Weathering.	555.9
58.1	Hard To Very Hard Medium Light Gray Felsic Gneiss		85	M Very Close Healed And Filled Joints With Chlorite, Quartz And Calcite - Low To Steep Dip.	550.9
				1 1/2 Inch Medium Dip Schistose Zone With Quartz And Calcite (52.5 ft.) Moderately Weathered Zones - Probable Location Of Core Loss: 50.2 ft to 51.8 ft. 55.2 ft to 55.6 ft. 66.8 ft to 68.0 ft.	545.9
				Felsic Gneiss Is Finer Grained And More Intermediate In Composition (58.1 to 73.3 ft.)	540.9
			100	1/2 Inch Medium Dip Quartz Vein (69.5 ft.)	535.9
73.3	Coring Terminated At 73.3 ft. Groundwater Not Measured At Time Of Boring Groundwater 30.2 ft At 24 Hours No Drilling Water Loss				
80.0					

SOILING AND SAMPLING MEETS ASTM D-1588
 CORE DRILLING MEETS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/8 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-225,
 DATE DRILLED 3-26-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	ELEV.
		%	TIME DIP MIN.		
0	Drilled To Carbide Bit Refusal At 47.6 ft.				610.0
					605.0
					600.0
					595.0
					590.0
					585.0
					580.0
					575.0
40.0					570.0

SOILING AND SAMPLING MEETS ASTM D-1588
 CORE DRILLING MEETS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-1/8 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 1 of 2
TEST BORING RECORD

BORING NO. B-225,
 DATE DRILLED 4-2-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
10.0	Drilled To Carbide Bit Refusal At 47.6 ft.		570.0		
37.6	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 84	560.0	Carbide Bit Refusal At 47.6 ft. 47.6 ft to 67.6 ft. Slight To Very Slight Weathering. Very Close Healed Joints - Slightly Leached - Low To Steep Dip. Top Of Continuous Rock At 49.3 ft. Moderately Weathered Zones - Very Close Joints: 47.6 to 49.5 ft. 53.2 to 53.6 ft.	75
		98	555.0	M	95
			550.0	L	
		100	545.0	Epidote Along Healed Joints (61.0 to 61.6 ft.)	100
37.6	Coring Terminated At 67.6 ft. Groundwater At 31.9 ft At Time Of Boring Stabilized Groundwater At. 29.5 ft. No Drilling Water Loss		540.0		

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1988
 CORE DRILLING MEETS ASTM D-8119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

BORING NO. B-226
 DATE DRILLED 4-2-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
0	Drilled To Auger Refusal At 36.6 ft.		612.0		
			607.0		
			602.0		
			597.0		
			592.0		
			587.0		
			582.0		
			577.0		
36.6	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	572.0	Carbide Bit Refusal And Top Of Continuous Rock At 36.6 ft.	100
40.0			572.0		

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1988
 CORE DRILLING MEETS ASTM D-8119
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

BORING NO. B-227
 DATE DRILLED 4-3-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	572.0	36.6 ft to 58.7 ft.: Very Slight Weathering. Close Healed Joints - Low To Steep Dip. Scattered Xenoliths Of Mafic Gneiss. Quartz Veins: ¼ Inch - Steep Dip - 37.2 ft. ¼ Inch - Steep Dip, Schistose Zone - 39.9 ft. 1 Inch - Steep Dip, Slightly Leached - 45.5 ft. to 45.9 ft. ¼ Inch - Steep Dip - 53.7 to 54.5 ft.	100
			567.0		100
			562.0		100
			557.0		100
7.7	Coring Terminated At 57.7 ft.				100
	Groundwater At 9.9 ft At Time Of Boring				
	Hole Caved At 29.1 ft Before Taking 24 Hour Water Reading				
	No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED DIP 30-60°
S = STEEP DIP 60-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-227
DATE DRILLED 4-3-76
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 204 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.		
0	Drilled To Refusal At 90.3 ft.		646.5		100		
			561.5		100		
90.3		Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100		556.5	Carbide Bit Refusal And Top Of Continuous Rock At 90.3 ft. 90.3 ft to 112.2 ft.: Slight To Very Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip. Close And Very Close Joints - Low To Medium Dip. ¼ Inch Leached Steep Dip. Quartz Veins: 103.3 to 104.6 ft. 105.7 to 106.2 ft. Slightly Leached, Medium Dip, Mafic Schistose Zone (107.3 to 107.8 ft.)	83
					551.5		100
			546.5	100			
			541.5	100			
112.2	Coring Terminated At 112.2				90		
	Groundwater At 55.6 ft At Time Of Boring						
	Hole Caved At 55.0 ft Before Taking 24 Hour Water Reading						
	No Drilling Water Loss						

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 1
TEST BORING RECORD

BORING NO. B-229
DATE DRILLED 3-22-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		SIZE MIN.	% & TIME ELEV.		
0	Drilled To Carbide refusal At 54.6 ft.		655.2		
			650.2		
			645.2		
			640.2		
			635.2		
			630.2		
			625.2		
			620.2		
40.0			615.2		

Page 1 of 3

BORING AND SAMPLING MEETS ASTM D-1555
 CORE DRILLING MEETS ASTM D-5112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

TEST BORING RECORD

BORING NO. B-229
 DATE DRILLED 3-21-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		SIZE MIN.	% & TIME ELEV.		
40.0	Drilled To Carbide Refusal At 54.6 ft.		615.2		
			610.2		
			605.2		
54.6	Moderately Hard Very Light Gray Felsic Gneiss		600.2	Carbide Bit Refusal At 54.6 ft. 54.6 ft to 58.2 ft. Moderate Weathering. Close Joints - Low To Steep Dip.	95
58.2	Very Hard Light Bluish Gray Felsic Gneiss	NX 100	595.2	Very Close Healed Joints - Low To Steep Dip (54.6 ft to 69.0 ft.) Very Slight Weathering (58.2 ft to 64.2 ft.)	
64.2	Very Soft Very Light Gray And Yellowish Gray Felsic Gneiss	61	590.2	Severe Weathering - 3.9 ft Core Loss (64.2 ft to 69.0 ft.)	52
69.0	Drilled To Carbide Refusal At 82.5 ft.		585.2	Terminated Coring And Resumed Carbide Drilling At 69.0 ft.	
			580.2		
80.0			575.2		

Page 2 of 3

BORING AND SAMPLING MEETS ASTM D-1555
 CORE DRILLING MEETS ASTM D-5112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

TEST BORING RECORD

BORING NO. B-229
 DATE DRILLED 3-21-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	575.2 ELEV.	REMARKS	% R.Q.D.
80.0	Drilled To Carbide Refusal At 82.5 ft.				
82.5	Moderately Hard To Very Soft Very Light Gray Felsic Gneiss		570.2	Carbide Bit Refusal At 82.5 ft. Moderately Severe To Severely Weathered Zone (82.5 to 84.9 ft.) Top Of Continuous Rock At 84.9 ft.	75
84.9	Very Hard Light Bluish Gray Felsic Gneiss	NX 88	565.2	82.5 ft to 102.7 ft.: Very Slight Weathering. Very Close To Close Healed Joints - Occasionally Quartz - Calcite Filled - Low To Steep Dip.	
			560.2	Q L	100
			555.2		
			550.2		100
102.7	Coring Terminated At 102.7 ft. Groundwater At 19.7 ft At Time Of Boring Stabilized Groundwater At 58.4 ft. No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3

TEST BORING RECORD

BORING NO. B-229
DATE DRILLED 3-21-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	655.2 ELEV.	REMARKS	% R.Q.D.
0	Drilled To Refusal At 54.1 ft.				
			650.2		
			605.2		
54.1	Hard Very Light Gray Felsic Gneiss	NX 96	600.2	Carbide Bit Refusal At 54.1 ft. 54.1 ft to 65.7 ft.: Very Close To Close Joints, Low To Steep Dip. Very Close To Close Healed Joints - Low To Steep Dip.	70
57.4	Medium To Soft Very Light Gray Felsic Gneiss	100	595.2	Slight Weathering (54.1 to 57.4 ft.) Moderately Severe Weathering (57.4 to 60.5 ft.) Slight Weathering (60.5 to 63.2 ft.) Very Severe Weathering (63.2 to 65.7 ft.)	100
60.5	Hard Very Light Gray Felsic Gneiss	66	590.2		56
63.2	Medium To Soft Light Gray Felsic Gneiss		590.2		
65.7				N=50/1" No Recovery	
66.2	Medium To Soft Light Gray Felsic Gneiss		585.2	66.2 ft to 79.5 ft.: Moderately Severe To Very Severe Weathering. Very Close To Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	0
			580.2	Note: Used C3 Mud Barrel For Sample Recovery (66.2 ft to 84.8 ft.)	0
			575.2		0
79.5					
80.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2

TEST BORING RECORD

BORING NO. B-229A
DATE DRILLED 3-28-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE # & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
80.0	Hard To Moderately Hard Very Light Gray Felsic Gneiss	NX 89	79.5 ft to 84.6 ft.: Slight To Moderate Weathering. Close Joints - Low Dip. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	64
84.6	Hard To Very Hard Light Bluish Gray Felsic Gneiss	100	84.6 to 88.4 ft.: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	100
88.4	Coring Terminated At 88.4 ft. Groundwater At 46.6 ft At Time Of Boring Stabilized Groundwater At 56.8 ft. No Drilling Water Loss	570.2 565.2	Small Fine Grained Xenolith (85.2ft) Abnormally Frequent Schistose Surface Along Healed Joints (54.1 to 88.4 ft.)	

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT,
L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-229A

DATE DRILLED 3-28-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE # & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
0	Drilled To Refusal At 68.3 ft.			
		637.9		
		592.9		
		587.9		
		582.9		
		577.9	Very Close To Close Joints, Low To Medium Dip (68.3 ft to 75.6 ft.)	
68.3	Moderately Hard To Hard Medium Light Gray Mafic Gneiss	NX 100	Carbide Bit Refusal And Top Of Continuous Rock At 68.3 ft. 68.3 ft to 88.0 ft.: Slight To Very Slight Weathering. Very Close To Close Healed And Calcite And Chlorite Filled Joints, Low To Steep Dip.	64
		567.9	Moderately Weathered Zones With Close Low To Medium Dip Joints: 58.6 ft to 69.1 ft. 70.1 ft to 70.3 ft. At 72.6 ft. 75.4 ft to 75.6 ft.	55
		562.9		88
80.0				100

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT,
L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-230

DATE DRILLED 2-22-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
88.0	Moderately Hard To Hard Medium Light Gray Mafic Gneiss	NX 100	562.9		
			557.9	Slickensided Surface - Steep Dip (84.3 ft.)	100
88.0	Coring Terminated At 88.0 ft. Groundwater At 48.0 ft At Time Of Boring Stabilized Groundwater At 44.2 ft. No Drilling Water Loss		552.9		

BOHRING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 2 of 2

TEST BORING RECORD

BORING NO. B-230
DATE DRILLED 3-22-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED DIP 30°-60°
S = STEEP DIP 60°-90°

Page 208 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
0	Very Stiff Tan Red Micaceous Fine To Coarse Sandy Clayey Silt		634.9		
			629.9	N=16	
6.0	Stiff Tan Red Micaceous Fine To Coarse Sandy Silt		624.9	N=12	
12.0	Firm Tan Purple To Tan Gray Micaceous Silty Fine To Medium Sand		619.9	N=20	
			614.9	N=20	
			609.9	N=13	
			604.9	N=23	
33.0	Partially Weathered Rock That Becomes Brown Gray Micaceous Silty Fine To Medium Sand When Sampled		599.9	N=50/3W*	
37.0	Dense Brown Gray Micaceous Silty Fine To Coarse Sand				
39.0	Hard Green Gray Fine Sandy Micaceous *		594.9	N=40	
40.0					

BOHRING AND SAMPLING MEETS ASTM D-1585 * Silt
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 2

TEST BORING RECORD

BORING NO. B-231
DATE DRILLED 3-29-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED DIP 30°-60°
S = STEEP DIP 60°-90°

Page 209 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
40.0	Hard Green Gray Fine Sandy Micaceous Silt				
			589.9	N=55	
47.0	Partially Weathered Rock That Becomes Gray Fine Sandy Micaceous Silt When Sampled		584.9	N=50/6"	
53.3	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 98	579.9	Carbide Bit Refusal At 53.3 ft. 53.3 to 72.5 ft. Very Close Healed Joints - Low To Steep Dip. Scattered Small Xenoliths Of Mafic And Fine Grained Felsic Gneiss.	37
56.9	Hard To Very Hard Light Bluish Gray Felsic Gneiss		574.9	53.3 to 56.9 ft.: M Moderate Weathering. L Close Joints - Low To Medium Dip.	
		100	569.9	Top Of Continuous Rock At 56.9 ft. Slight To Very Slight Weathering (56.9 to 72.5 ft.)	97
			564.9	Complete Drilling Water Loss L	100
72.5	Coring Terminated At 72.5 ft. Groundwater At 43.8 ft At Time Of Boring Stabilized Groundwater At 44.9 ft. Drilling Water Loss At 70.0 ft.				

Page 2 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-231
DATE DRILLED 3-29-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO

Page 209 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
0	Drilled To Refusal At 42.7 ft.				
			623.2		
			618.2		
			613.2		
			608.2		
			603.2		
			598.2		
			593.2		
40.0			588.2		

Page 1 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-232
DATE DRILLED 3-28-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0.0	Drilled To Refusal At 42.7 ft.		588.2		
2.7	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 88	583.2	Carbide Bit Refusal At 42.7 ft. 42.7 ft to 47.4 ft.: Moderate Weathering. Very Close To Close Joints - Low To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	22
			578.2	M Very Soft Very Severely Weathered Zone - Probable Location Of 0.6 ft Core Loss (47.6 to 47.3 ft.)	
			573.2	L 47.4 ft to 67.3 ft.: Slight To Very Slight Weathering.	97
		99	568.2	M Very Close To Close Healed Joints, Low To Steep Dip. Scattered Small Xenoliths Of Mafic Gneiss	
			563.2	L Slight Leaching Along Healed Joints: 53.2 ft to 57.5 ft. 62.5 ft to 62.8 ft.	100
7.3	Coring Terminated At 67.3 ft. Groundwater At 32.2 ft At Time Of Boring Stabilized Groundwater At 36.4 ft. No Drilling Water Loss	100			

BOHRING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-232
DATE DRILLED 3-28-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 210 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Drilled To Refusal At 58.5 ft.		617.4		
			612.4		
			607.4		
			602.4		
			597.4		
			592.4		
			587.4		
			582.4		
40.0			577.4		

BOHRING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-233
DATE DRILLED 3-28-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.		REMARKS	R.Q.D.
3.0	Drilled To Refusal At 58.5 ft.		572.4		
			567.4		
			562.4		
8.5	Hard Medium Light Gray Mafic Gneiss	NX 92	557.4	Carbide Bit Refusal At 58.5 ft. 58.5 ft to 82.0 ft. Moderate To Slight Weathering. Close And Very Close Joints - Low To Steep Dip. Very Close To Close Healed And Slightly Leached Joints - Low To Steep Dip. Badly Broken Rock.	38
1.6	Hard Light Gray Felsic Gneiss				
4.2	Hard To Medium Dark Gray Mafic Gneiss		552.4		40
5.4	Hard Light Gray Felsic Gneiss	73			40
		80	547.4		40
1.5	Hard Medium Light Gray Mafic Gneiss	100	542.4		33
		0			0
8.9	Hard To Very Hard Very Light Gray *	100	537.4	Top Of Continuous Rock At 76.4 ft. Silckensided Surface - Steep Dip - Oxide Coated (77.8 ft.)	56

Page 2 of 3

TEST BORING RECORD

BORING NO. B-233
DATE DRILLED 3-28-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.		REMARKS	R.Q.D.
80.0	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100		Epidote Coated Healed Joints (80.5 - 81.0 ft.) 82.0 ft to 96.9 ft. Slight To Very Slight Weathering. Very Close Healed And Calcite And Chlorite Filled Joints - Low To Steep Dip.	56
		92	532.4		92
88.3	Hard Medium Gray Mafic Gneiss		527.4		
		100	522.4	Silckensided Surface - Medium Dip - Rough (84.0 ft.)	100
96.9	Coring Terminated At 96.9 ft. Groundwater Not Measured At Time Of Boring Stabilized Groundwater At 34.9 ft. No Drilling Water Loss				

Page 3 of 3

TEST BORING RECORD

BORING NO. B-233
DATE DRILLED 3-28-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
0	Drilled To Carbide Refusal At 45.4 ft.			
45.4	Hard To Very Hard Light Gray Felsic Gneiss	618.2 NX 76 568.2 91 563.2 100 31 558.2 100 553.2	Carbide Bit Refusal And Top Of Continuous Rock At 45.4 ft. 45.4 ft to 67.2 ft.: Slight To Very Slight Weathering. Very Close Healed Joints With Calcite, Slightly Leached - Low To Steep Dip. Steep Dip Quartz And Chlorite Filled Joints: 53.3 ft. 55.2 ft. 60.8 ft. Moderately Weathered Zone (58.4 ft to 60.2 ft.) Moderately Severely Weathered Zone Badly Broken Rock (63.9 ft to 64.1 ft.) Quartz And Chlorite Filled Joints And Very Thin Schistose Zones - Medium To Steep Dip (64.3 to 66.3 ft.)	69 91 100 31 97
37.2	Coring Terminated At 67.2 ft. No Groundwater Measurement Was Taken At Time Of Boring Hole Caved At 11.9 ft Before Taking 24 Hour Water Reading No Drilling Water Loss			

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

Page 1 of 1

TEST BORING RECORD

BORING NO. D-234
DATE DRILLED 4-5-74
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

Page 212 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.	REMARKS	R.Q.D.
0	Drilled To Carbide Refusal At 40.1 ft.			
40.0		617.0 612.0 607.0 602.0 597.0 592.0 587.0 582.0 577.0		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

Page 1 of 2

TEST BORING RECORD

BORING NO. B-235
DATE DRILLED 4-4-74
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
40.0 40.1	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 100	572.0	M Carbide Bit Refusal And Top Of Continuous Rock At 40.1 ft. L 40.1 to 62.6 ft.: M Very Slight Weathering. Very Close Healed Joints With Chlorite And Calcite - Low To Steep Dip. Few Small Fine Grained Xenoliths.	94
			567.0	1/2 Inch, Leached, Vertical Quartz Filled Schistose Zone (45.0 to 47.0 ft.)	100
			562.0	1/2 Inch, Medium Dip Brecciated Zone (47.7 ft.)	
			557.0	1/2 Inch, Medium Dip, Chlorite Filled Brecciated Zone (60.3 ft.)	100
62.6	Coring Terminated At 62.6 ft. Groundwater At 48.3 ft At Time Of Boring Stabilized Groundwater At 37.7 ft. No Drilling Water Loss		552.0		

BORING AND SAMPLING MEETS ASTM D-1585 * Drilled To Carbide Refusal At 40.1 ft.
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

BORING NO. B-235

DATE DRILLED 4-4-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 2 of 2

TEST BORING RECORD

Page 213 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
0	Drilled To Refusal At 42.2 ft.				
42.2 43.2	Moderately Hard Very Light Gray Felsic			Carbide Bit Refusal At 42.2 ft. 42.2 ft to 43.2 ft.: Slight To Moderate Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	26.8
	Soft To Medium Very Pale Orange Felsic Gneiss	NX 20	578.2	Moderately Severe To Severe Weathering (43.2 to 50.6 ft.) Second Carbide Bit Refusal At 51.3 ft.	0
			573.2	51.3 ft to 74.3 ft.: Moderate To Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	
50.6 51.3	Redrilled To Second Refusal				
	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 95	568.2	Moderately To Moderately Severely Weathered Zones - Probable Locations Of Core Loss: 54.5 ft to 54.6 ft. 55.5 ft to 55.7 ft. 58.1 ft to 58.5 ft. 60.9 ft to 61.3 ft. 68.5 ft to 71.7 ft.	79
			563.2	Quartz Vein - Locally Leached (61.3 to 62.2 ft.)	
			558.2	1 In. Thick, Steep Dip, Quartz And Chlorite Filled, Leached Brecciated Zone (68.9 to 69.9 ft.)	0
			553.2	Nearly Vertical Brecciated Zone, 1 Inch Thick Filled With Quartz, Chlorite, Calcite And Manganese Oxide; has drag folds indicating normal component; oblique Stick-ensided Surface On Manganese Oxide (71.8 to 74.0 ft.)	25
			548.2	Shear Zone May Extend From 68.5 to 74.5 ft. Top Of Continuous Rock At 71.3 ft.	
74.3	Very Hard Light Bluish Gray Felsic Gneiss	94	543.2	74.3 ft to 91.3 ft.: L Very Slight Weathering. Close And Very Close Healed Joints - Low To Steep Dip. 1/2 Inch Vertical Brecciated Zone Filled With Calcite And Manganese*	92

BORING AND SAMPLING MEETS ASTM D-1585 * Gneiss
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

* Oxide (76.4 to 77.0 ft.)
 Sericite Rich (78.0 to 80.5 ft.)

Page 1 of 2

TEST BORING RECORD

BORING NO. B-236

DATE DRILLED 4-9-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	% TIME	ELEV.	REMARKS	R.O.Q.
80.0	Very Hard Light Bluish Gray Felsic Gneiss	NX 90		543.2		92
				538.2	L	
		NX 100			Steep Quartz Stringer (89.0 ft to 89.9 ft.)	100
				533.2		
91.3	Coring Terminated At 91.3 ft. Groundwater At 28.6 ft At Time Of Boring Stabilized Groundwater At 26.8 ft. No Drilling Water Loss			528.2		

Page 2 of 2

TEST BORING RECORD

BORING NO. B-236
 DATE DRILLED 4-9-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1584
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.Q. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

Page 214 of 298

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	% TIME	ELEV.	REMARKS	R.O.Q.
0	Drilled To Carbide Bit Refusal At 60.1 ft.			620.8		
				615.8		
				570.8		
				565.8		
60.1	Hard To Very Hard Medium Light Gray Mafic Gneiss	NX 100		560.8	Carbide Bit Refusal And Top Of Continuous Rock At 60.1 ft. 60.1 ft to 79.9 ft.: Very Slight Weathering. Very Close Healed And Filled Joints With Chlorite And L Calcite - Medium To Steep Dip. Slightly Leached Zone With Traces Of Epidote (67.1 to 67.5 ft.)	100
				555.8	M	
				550.8		
		100		545.8		100
				540.8		
79.9		100				100

BORING AND SAMPLING MEETS ASTM D-1584
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.Q. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

* Coring Terminated At 79.9 ft.
 Groundwater At 42.0 ft At Time Of Boring
 Stabilized Groundwater At 40.8 ft.

TEST BORING RECORD

BORING NO. B-237
 DATE DRILLED 4-3-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 1 of 1

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
0	Hard Brown Red Fine To Coarse Sandy Very Clayey Silt With Rock Fragments				
			648.5	N=52	
8.0	Very Stiff To Hard Tan Pink Micaceous Fine To Coarse Very Sandy Silt		643.5	N=15	
			638.5	N=23	
			633.5	N=27	
			628.5	N=31	
27.0	Hard Brown Fine To Medium Sandy Micaceous Silt		623.5	N=64	
31.0	Very Dense Pink Gray Micaceous Very Silty Fine To Coarse Sand		618.5	N=53	
39.0					
40.0	Hard Tan Gray Fine To Coarse Sandy *		613.5	N=50	

SOILING AND SAMPLING METHODS ASTM D-1586 * Micaceous Silt
 CORE DRILLING METHODS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-238

DATE DRILLED 3-27-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 215 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
40.0	Hard Tan Gray Fine To Coarse Sandy *				
40.4	Hard To Very Hard Very Light Gray Felsic Gneiss				
			608.5	NX 98	77
			603.5		98
			598.5		
			593.5		
			588.5		100
63.8	Coring Terminated At 63.8 ft. Groundwater At 47.4 ft At Time Of Boring Stabilized Groundwater At 51.3 ft. Drilling Water Loss At 44.5 ft.				

SOILING AND SAMPLING METHODS ASTM D-1586 * Micaceous Silt
 CORE DRILLING METHODS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.O.D. ROCK QUALITY DESIGNATION

613.5

Page 2 of 2

TEST BORING RECORD

BORING NO. B-238

DATE DRILLED 3-27-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.		REMARKS	R.Q.D.	
0	Hard Tan Red Micaceous Fine Sandy Clayey Silt		633.2	N=33		
7.5			628.2	N=21		
14.0		No Sample Recovery		623.2		N=33
17.0		Very Stiff Tan Gray Fine Sandy Micaceous Silt		618.2		N=26
21.0				613.2		N=43
26.0		Partially Weathered Rock That Becomes Micaceous Very Silty Fine To Coarse Sand When Sampled		608.2		N=50/4"
37.2				603.2		N=50/1" Carbide Bt Refusal And Top Of Continuous Rock At 37.2 ft.
40.0	Hard Very Light Gray Felsic Gneiss	NX 100	598.2	L Slight To Very Slight Weathering L (37.2 to 57.1 ft.)	92	

BOILING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 2
TEST BORING RECORD

BORING NO. B-239
DATE DRILLED 3-27-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN. ELEV.		REMARKS	R.Q.D.
40.0	Hard Very Light Gray Felsic Gneiss	NX 100	593.2	L Very Close Heated And Slightly Leached Joints - Low To Steep Dip (37.2 ft to 49.3 ft.) L Very Close Joints - Moderately To Moderately Severely Weathered Zones: 39.8 to 40.1 ft. 41.1 to 41.5 ft. 49.3 to 49.9 ft.	92
49.3			588.2	L Very Close Heated And Calcite Filled Joints - Low To Steep Dip (49.3 ft to 57.1 ft.)	
57.1	Hard Medium Gray Mafic Gneiss	100	583.2	L	93
	Coring Terminated At 57.1 ft. Groundwater At 38.6 ft At Time Of Boring Stabilized Groundwater At 39.1 ft. Drilling Water Loss At 37.2 ft.				

BOILING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-239
DATE DRILLED 3-27-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
0	Very Stiff Tan Red Fine To Coarse Sandy Silty Clay				
			611.7	N=25	
7.0	Firm Tan Pink Micaceous Very Silty Fine To Coarse Sand				
			606.7	N=20	
			601.7	N=23	
			596.7	N=24	
			591.7	N=27	
27.0	Very Stiff Tan Red Micaceous Fine To Coarse Sandy Silt				
			586.7	N=25	
			581.7	N=23	
37.0	Firm Tan Red Micaceous Very Silty Fine To Coarse Sand				
40.0			576.7	N=27	

Page 1 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
 [] UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 [] ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.D. ROCK QUALITY DESIGNATION

BORING NO. B-240
 DATE DRILLED 4-8-74
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CC.

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.O.D.
40.0	Firm Tan Red Micaceous Very Silty *				
41.0	Firm To Very Dense Yellow Tan Micaceous Silty Fine To Coarse Sand				
			571.7	N=27	
			566.7	N=36	
			561.7	N=51	
			556.7	N=50/3"	
58.8	Partially Weathered Rock That Becomes Yellow Tan Micaceous Silty Fine To Coarse Sand When Sampled				
			551.7		
65.5	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100		N=50/0" No Recovery Carbide Bit Refusal And Top Of Continuous Rock At 65.5 ft. 65.5 ft to 83.8 ft. Slight To Very Slight Weathering. Very Close Healed Joints With Chlorite And Calcite - Low To Steep Dip. Medium Moderately To Moderately Severely Weathered Zones: 70.5 ft. to 70.9 ft. 77.0 ft. to 77.4 ft. Slight Leaching Along Healed Joints (65.5 to 77.7 ft.)	100
		100	546.7		
			541.7		92
		100	536.7		100
80.0	* Fine To Coarse Sand				

Page 2 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586 * Fine To Coarse Sand
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
 [] UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 [] ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.O.D. ROCK QUALITY DESIGNATION

BORING NO. B-240
 DATE DRILLED 4-8-74
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CC.

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

536.7

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
80.0	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100			100
83.8	Coring Terminated At 83.8 ft. Groundwater At 39.5 ft At Time Of Boring Stabilized Groundwater At 38.9 ft. No Drilling Water Loss		531.7		

Page 3 of 3

TEST BORING RECORD

BORING NO. B-240
DATE DRILLED 4-8-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CC.

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.O. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

624.8

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Very Stiff Tan Red Fine Sandy Silty Clay				
5.0	Stiff And Very Stiff Brown Tan Fine Sandy To Very Sandy Micaceous Silt		619.8	N=16	
			614.8	N=13	
			609.8	N=10	
			604.8	N=12	
			599.8	N=19	
			594.8	N=10	
			589.8	N=15	
37.0	Hard Tan Brown Fine Sandy Micaceous Silt				
40.0			584.8	N=71	

Page 1 of 2

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.O. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0-30°
M = MED. DIP 30-60°
S = STEEP DIP 60-90°

BORING NO. B-241
DATE DRILLED 3-27-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CC.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	584.8 ELEV.	REMARKS	% R.Q.D.
40.0	Hard Tan Brown Fine Sandy Micaceous Silt				
42.0	Partially Weathered Rock That Becomes Tan Brown And Gray Micaceous Fine To Coarse Sandy Silt With Rock Fragments When Sampled		579.8	N=50/6"	
49.0	Hard To Very Hard Medium Light Gray Mafic Gneiss		574.8	N=50/2" Carbide Bit Refusal At 49.0 ft.	
54.6	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 99	569.8	Top Of Continuous Rock At 53.9 ft. 49.0 ft to 72.3 ft. Slight To Very Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip. Soft, Moderately Severely Weathered Zone (51.3 ft to 53.9 ft.)	80
			564.8		
		100	559.8		100
			554.8		
		100			100
72.3	Coring Terminated At 72.3 ft. Groundwater At 21.0 ft At Time Of Boring Stabilized Groundwater At 22.8 ft. No Drilling Water Loss				

BOILING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-241

DATE DRILLED 2-27-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	612.7 ELEV.	REMARKS	% R.Q.D.
0	Very Stiff Tan Pink Micaceous Fine To Coarse Sandy Silt				
			607.7	N=25	
			602.7	N=26	
12.0	Firm Gray Tan Micaceous Very Silty Fine To Coarse Sand		597.7	N=18	
			592.7	N=16	
			587.7	N=17	
28.3	Dense To Very Dense Gray To Tan Micaceous Very Silty Fine To Coarse Sand		582.7	N=32	
			577.7	N=33	
	Rock Fragments Encountered At 38.3 ft.				
40.0			572.7	N=67	

BOILING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD

BORING NO. B-242

DATE DRILLED 4-2-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.		REMARKS	R. Q. D.
40.0	Dense To Very Dense Gray To Tan Micaceous Very Silty Fine To Coarse Sand				
		567.7	N=53		
		562.7	N=63		
52.0	Partially Weathered Rock That Becomes Gray Tan Slightly Micaceous Slightly Silty To Silty Fine To Coarse Sand When Sampled				
		557.7	N=50/1"		
		552.7	N=50/0" No Recovery		
		547.7	N=50/3" Carbide Bit Refusal At 65.4 ft. 65.4 ft to 92.0 ft.		
65.4	Medium To Moderately Hard Very Light Gray Felsic Gneiss	NX 100		Moderate To Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip. Very Close And Close Joints - Low To Steep Dip. Slight Leaching. Moderately Severely Weathered Zones: 73.0 ft to 74.5 ft. 78.9 ft to 79.1 ft.	72
		100	542.7		51
		100	537.7		35
80.0		46	532.7		36

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 3
TEST BORING RECORD

BORING NO. B-242
DATE DRILLED 4-2-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO. Page 220 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.		REMARKS	R. Q. D.
80.0	Medium To Moderately Hard Very Light Gray Felsic Gneiss				
		NX 46	527.7	Moderately Severely Weathered Zone - Probable Location of Core Loss (83.6 ft to 91.5 ft.)	36
			522.7		
92.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss			Top Of Continuous Rock At 92.0 ft. 92.0 ft to 109.2 ft. Very Slight Weathering. Very Close To Close Healed And Filled Joints With Calcite And Chlorite - Low To Steep Dip.	71
		84	517.7		
		100	512.7		100
		100	507.7		
109.2	Coring Terminated At 109.2 ft. Groundwater At 22.0 ft At Time Of Boring Stabilized Groundwater At 18.6 ft. No Drilling Water Loss	100	502.7		100

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 3 of 3
TEST BORING RECORD

BORING NO. B-242
DATE DRILLED 4-2-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	618.6		REMARKS	R.Q.D.	
		CORE % & TIME SIZE MIN.	ELEV.			
0	Very Stiff Tan Pink Micaceous Fine To Coarse Sandy Silt					
		613.6	N=17			
		608.6	N=20			
12.0		Firm To Dense Tan-Pink To Tan Micaceous Very Silty Fine To Coarse Sand	603.6	N=25		
			598.6	N=24		
26.0	Firm To Dense Tan Pink To Tan Micaceous Very Silty Fine To Coarse Sand	593.6	N=40			
		588.6	N=27			
		583.6	N=28			
40.0		578.6	N=33			

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 4

TEST BORING RECORD

BORING NO. B-243
 DATE DRILLED 4-3-74
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°
 LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	578.6		REMARKS	R.Q.D.
		CORE % & TIME SIZE MIN.	ELEV.		
40.0	Firm To Dense Tan Pink To Tan Micaceous Very Silty Fine To Coarse Sand				
		573.6	N=42		
47.0	Hard Tan Brown Fine Sandy Micaceous Silt				
		568.6	N=68		
52.0	Very Dense Tan Brown Micaceous Very Silty Fine To Coarse Sand				
		563.6	N=62		
59.5	Partially Weathered Rock That Becomes Tan Gray Fine Sandy Micaceous Silt When Sampled				
		558.6	N=50/4"		
		553.6	N=50/1" No Recovery		
68.0	Partially Weathered Rock That Becomes Gray Brown Micaceous Very Silty Fine To Coarse Sand When Sampled				
		548.6	N=50/2"		
73.3	Partially Weathered Rock				
		543.6	N=50/0" No Recovery		
80.0		538.6	N=50/0" No Recovery		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 4

TEST BORING RECORD

BORING NO. B-243
 DATE DRILLED 4-3-74
 JOB NO. CH 2920

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°
 LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock			538.6		
				533.6	N=50/0" No Recovery	
				528.6	N=50/0" No Recovery	
				523.6	N=50/0" No Recovery	
97.3	Hard To Very Hard Very Light Gray Felsic Gneiss	NX 95		518.6	Carbide Bit Refusal And Top Of Continuous Rock At 97.3 ft. 97.3 ft to 134.0 ft. Slight Weathering. Very Close Healed, Calcite, Chlorite And Quartz Filled And Slightly Leached Joints - Low To Steep Dip.	65
		100		513.6	Closely To Very Closely Joints, Moderately To Moderately Severely Weathered Zones: 115.1 ft to 116.4 ft. 117.0 ft to 117.2 ft. 117.9 ft to 119.0 ft. 123.3 ft to 123.8 ft. 124.1 ft to 129.0 ft. 130.0 ft to 130.8 ft.	94
		97		508.6	Badly Broken Rock: 97.3 to 103.7 ft. 115.3 to 116.4 ft.	88
				503.6	Quartz Vein (102.8 to 103.6 ft.)	
17.0	Medium Grayish Yellow Green Mafic Gneiss	100				63
19.0	Hard Light Bluish Gray Mafic Gneiss			498.6		
20.0						

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 3 of 4
TEST BORING RECORD

BORING NO. B-243

DATE DRILLED 4-3-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME	ELEV.	REMARKS	R.Q.D.
120.0	Hard Light Bluish Gray Mafic Gneiss	NX 100				63
124.1	Medium Light Olive Gray Mafic Gneiss	100		493.6		31
130.8	Hard To Very Hard Very Light Gray Felsic Gneiss	100		488.6	Schistose And Brecciated Contact Zone - Steep Dip. (129.9 to 130.8 ft.)	86
134.0	Coring Terminated At 134.0 ft. Groundwater At 39.1 ft At Time Of Boring Hole Caved At 30.2 ft Before Taking 24 Hour Water Reading No Drilling Water Loss			483.6		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-8113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 4 of 4
TEST BORING RECORD

BORING NO. B-243

DATE DRILLED 4-3-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	599.9		REMARKS	R.Q.D.	
		CORE S. & FINE SIZE MIN.	ELEV.			
0	Stiff Tan Red Micaceous Fine To Coarse Sandy Silt		594.9			
				N=10		
			589.9			
				N=11		
11.0		Firm Red Tan To Yellow Tan Micaceous Very Silty Fine To Coarse Sand And Very Stiff Micaceous Fine To Coarse Very Sandy Silt		584.9		
					N=14	
				579.9		
					N=19	
				574.9		
					N=14	
			569.9			
				N=18		
		564.9				
			N=24			
40.0		559.9				

DEPTH FT.	DESCRIPTION	559.9		REMARKS	R.Q.D.
		CORE S. & FINE SIZE MIN.	ELEV.		
40.0	Firm Red Tan To Yellow Tan Micaceous Very Silty Fine To Coarse *				
41.7				N=35	
	No Recovery		554.9		
45.0	Dense Tan Gray Micaceous Very Silty Fine To Coarse Sand			N=43	
			549.9		
			544.9		N=35
	No Recovery			N=60	
57.6	Partially Weathered Rock		539.9		
				N=50/1"	
			534.9		N=50/1" No Recovery
			529.9		N=50/2" No Recovery
		524.9		N=50/1" No Recovery	
80.0		519.9			

Page 1 of 4

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM G-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-244
DATE DRILLED 4-12-74
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR. ROCK JOINT:
ROCK CORE RECOVERY WATER TABLE, 1 HR. L = LOW DIP 0°-30°
N = STANDARD PENETRATION LOSS OF DRILLING WATER M = MED. DIP 30°-60°
R.Q.D. ROCK QUALITY DESIGNATION S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 2 of 4

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586 * Sand And Vary Stiff Micaceous
CORE DRILLING MEETS ASTM G-5113 Fine To Coarse Very Sandy Silt
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-244
DATE DRILLED 4-12-74
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR. ROCK JOINT:
ROCK CORE RECOVERY WATER TABLE, 1 HR. L = LOW DIP 0°-30°
N = STANDARD PENETRATION LOSS OF DRILLING WATER M = MED. DIP 30°-60°
R.Q.D. ROCK QUALITY DESIGNATION S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.Q.
80.0	Partially Weathered Rock				
				N=50/0" No Recovery	
			514.9		
				N=50/0" No Recovery	
			509.9		
				N=50/0" No Recovery	
			504.9		
				N=50/0" No Recovery	
			499.9		
				N=50/0" No Recovery	
			494.9		
				N=50/0" No Recovery	
109.2	Hard Medium Gray Mafic Gneiss	NX 100	489.9	Carbide Bit Refusal And Top Of Continuous Rock At 109.2 ft. 109.2 ft to 129.0 ft. Very Slight Weathering. Close And Very Close Healed And Filled Joints With Calcite And Chlorite - Medium To Steep Dip.	100
115.8	Very Hard Light Bluish Gray Felsic Gneiss		484.9	Slickensided Surface - Medium Dip (111.0 ft.) Very Thin Steep Dip Schistose Zone With Quartz, Epidote (?) And Calcite (115.5 ft.)	
118.8	Hard Medium Gray Mafic Gneiss		479.9		

Page 3 of 4

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1589
CORE DRILLING MEETS ASTM D-1113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.Q. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-244
DATE DRILLED 4-12-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 224 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.Q.
120.0	Hard Medium Gray Mafic Gneiss				
122.4	Very Hard Light Bluish Gray Felsic Gneiss				
123.9	Hard Medium Gray Mafic Gneiss		474.9		
		NX 100			100
129.0	Coring Terminated At 129.0 ft.		469.9		
	Groundwater At 34.6 ft At Time Of Boring				
	Stabilized Groundwater At 36.4 ft.				
	No Drilling Water Loss				
				All Contacts Are Steeply Dipping: 115.8 ft. 118.8 ft. 122.4 ft. 123.3 ft. 1/2 Inch Schistose Zone At Contact (122.4 ft.) Interfingering Of Felsic And Mafic Gneiss (123.0 to 123.7 ft.) 1/2 Inch Fine Grained Brecciated Zone With Actinolite, Chlorite And Calcite (127.0 ft.)	

Page 4 of 4

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1589
CORE DRILLING MEETS ASTM D-1113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
N = STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.Q. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-244
DATE DRILLED 4-12-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

		593.6			
DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Very Stiff Brown Red Fine Sandy Micaceous Very Silty Clay				
			588.6	N=21	
6.0	Very Stiff To Stiff Brown And Red Fine Sandy Very Micaceous Silt		583.6	N=28	
			578.6	N=15	
16.0	Very Stiff Brown Tan Fine To Medium Sandy Micaceous Silt		573.6	N=16	
			568.6	N=20	
			563.6	N=20	
			558.6	N=21	
40.0			553.6		

Page 1 of 3

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT.

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-245

DATE DRILLED 4-10-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

		593.6			
DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Very Stiff Brown Tan Fine To Medium Sandy Micaceous Silt			N=25	
42.0	Hard Brown Tan To Tan Brown Fine To Medium Sandy Micaceous Silt		548.6	N=67	
			543.6	N=82	
53.5	Partially Weathered Rock That Becomes Brown Tan Micaceous Silty Fine To Coarse Sand When Sampled		538.6	N=50/3"	
			533.6	N=50/5"	
			528.6	N=50/1" No Recovery	
67.0	Partially Weathered Rock That Becomes Tan Brown Micaceous Fine To Medium Sandy Silt When Sampled		523.6	N=50/4"	
73.5	Partially Weathered Rock		518.6	N=50/2" No Recovery	
			513.6	N=50/0" No Recovery	
80.0					

Page 2 of 3

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT.

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-245

DATE DRILLED 4-10-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock				
			508.6	N=50/0" No Recovery	
88.1	Moderately Hard To Medium Very Light Gray Felsic Gneiss		503.6	Carbide Bit Refusal At 88.1 ft. 88.1 to 90.3 ft.: Moderate Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	15
90.3	Soft To Very Soft Moderate Yellowish Brown Mafic Gneiss	NX 95			
94.6	Hard Light Bluish Gray Mafic Gneiss		498.6	Severs To Very Severe Weathering (90.3 to 94.6 ft.)	
96.3	Very Hard Light Bluish Gray Felsic Gneiss			Top Of Continuous Rock At 94.6 ft. 94.6 ft to 114.0 ft.: Very Slight Weathering. Very Close Healed And Filled Joints With Calcite Chlorite And Epidote (?) - Low To Steep Dip.	
98.1	Hard To Very Hard Light Bluish Gray Mafic Gneiss	100	493.6		100
			488.6	Near Vertical Schistose Zone Up To 1/2 Inch Thick With Calcite And Chlorite And Pockets Of Quartz And Pyrite: 96.3 to 97.4 ft. 102.0 to 103.1 ft.	
		100	483.6	2 Inch, Medium Dip Brecciated Zone With Calcite And Epidote Filling (106.7 ft.) 1/4 Inch, Medium Dip Brecciated Zone With Calcite And Epidote (107.1 ft.)	100
114.0	Coring Terminated At 114.0 ft.		478.6	Note: Rock Classified As Mafic Gneiss Is Intermediate In Composition And Locally May Grade To Felsic	
	Groundwater At 20.6 ft At Time Of Boring Stabilized Groundwater At 24.2 ft. No Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-245

DATE DRILLED 4-10-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Firm Red Brown Fine To Medium Sandy Micaceous Clayey Silt				
			579.6	N=7	
7.0	Loose Brown Gray Micaceous Silty Fine To Medium Sand		574.6	N=9	
			569.6	N=37	
14.6	Dense To Firm Gray Brown To Tan Gray Micaceous Silty Fine To Coarse Sand		564.6	N=29	
20.0	Firm To Dense To Firm Gray Brown To Tan Gray Micaceous Silty Fine To Coarse Sand		559.6	N=38	
28.0	Partially Weathered Rock		554.6	N=50/1" No Recovery	
34.7	Hard To Moderately Hard Very Light Gray Felsic Gneiss	NX 96	549.6	N=50/1" Carbide Bit Refusal At 34.7 ft.	
			544.6	34.7 ft to 39.7 ft.: Slight Weathering. Very Close Healed And Slightly Leached Joints - *	96
39.7					

BORING AND SAMPLING MEETS ASTM D-1588 * Coring Terminated At 39.7 ft. * Low To Steep Dip.

CORE DRILLING MEETS ASTM D-2113 Groundwater At 6.0 ft At Time Of Boring
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER Stabilized Ground-
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT. water At 5.9 ft. No Drilling Water Loss

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

BORING NO. B-246

DATE DRILLED 4-10-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0			605.6		
0	Very Stiff Brown Red Micaceous Fine To Coarse Sandy Silty Clay				
			600.6	N=17	
6.0	Loose To Firm Tan Orange To Brown Gray Micaceous Very Silty Fine To Coarse Sand				
			595.6	N=8	
			590.6	N=11	
15.0	Firm To Loose Tan Orange To Brown Gray Micaceous Very Silty Fine To Coarse Sand				
			585.6	N=12	
			580.6	N=8	
26.0	Stiff Red Tan Micaceous Fine To Coarse Sandy Clayey Silt				
			575.6	N=14	
30.0	Stiff To Very Stiff Green Brown Fine To Medium Sandy Micaceous Silt				
			570.6	N=11	
			565.6	N=24	
40.0					

Page 1 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8118
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

BORING NO. B-247

DATE DRILLED 4-10-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0			565.6		
40.0	Stiff To Very Stiff Green Brown Fine To Medium Sandy Micaceous Silt				
			560.6	N=17	
			555.6	N=29	
			550.6	N=27	
56.0	Hard Gray Brown Fine To Coarse Sandy Micaceous Silt				
			545.6	N=69	
63.8	Partially Weathered Rock That Becomes Gray Brown Fine To Coarse Sandy Micaceous Silt When Sampled				
			540.6	N=50/3 1/2"	
66.0	Partially Weathered Rock That Becomes Tan Brown And Gray Micaceous Fine To Medium Sandy Silt When Sampled				
			535.6	N=50/5"	
72.8	Partially Weathered Rock - No Recovery				
			530.6	N=50/1 1/2"	
			525.6	N=50/1"	
80.0					

Page 2 of 3

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-8118
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-1/2 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

BORING NO. B-247

DATE DRILLED 4-10-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock - No Recovery			N=50/0"	
			520.6		
				N=50/0"	
89.0	Hard Very Light Gray Felsic Gneiss	NX 100	515.6	Carbide Bit Refusal At 89.0 ft. 89.0 ft to 95.9 ft.: Moderate To Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep (Predominantly Medium) Dip.	100
		100	510.6		100
95.9	Coring Terminated At 95.9 ft. Groundwater At 11.1 ft. At Time Of Boring Stabilized Groundwater At 20.7 ft. No Drilling Water Loss		505.6		

Page 3 of 3

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-247
DATE DRILLED 4-10-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Very Stiff Brown Red Fine To Coarse Sandy Very Silty Clay				
			579.6	N=25	
7.0	Stiff Tan Pink Fine To Medium Sandy Micaceous Silt		574.6		
				N=14	
13.0	Loose To Very Dense Tan Gray Micaceous Silty Fine To Coarse Sand		569.6	N=9	
			564.6	N=12	
			559.6	N=20	
			554.6	N=24	
			549.6	N=33	
40.0			544.6		

Page 1 of 2

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-248
DATE DRILLED 4-11-74
JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

S = STEEP DIP 60-90°

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Loose To Very Dense Tan Gray Micaceous Silty Fine To Coarse Sand		544.6	N=47	
			539.6	N=58	
			534.6	N=64	
52.0	Partially Weathered Rock That Becomes Gray Tan Micaceous Silty Fine To Coarse Sand When Sampled		529.6	N=50/2"	
57.0	Hard Green Tan Fine Sandy Micaceous Silt		524.6	N=56	
63.8	Hard To Very Hard Light Gray Felsic Gneiss	NX 100	519.6	Carbide Bit Refusal At 63.8 ft. 63.8 ft to 69.7 ft. Slight To Very Slight Weathering. Very Close Healed Joints With Chlorite And Calcite, Rarely Leached - Low To Steep Dip.	86
69.7	Coring Terminated At 69.7 ft. Groundwater At 12.0 ft At Time Of Boring Stabilized Groundwater At 16.6 ft. No Drilling Water Loss		514.6	Badly Broken Rock (63.8 to 65.0 ft)	

BOHRING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-248
DATE DRILLED 4-11-74
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Very Stiff Tan Red Fine To Coarse Sandy Micaceous Silt		588.3	N=19	
9.0	Stiff Tan Brown Fine Sandy Micaceous Silt		578.3	N=10	
14.5	Very Stiff To Hard Tan Gray To Green Fine To Coarse Sandy Micaceous Silt		573.3	N=16	
			568.3	N=16	
			563.3	N=26	
			558.3	N=45	
			553.3	N=32	
39.0	Very Stiff To Hard Green To Tan *		548.3		
40.0					

BOHRING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-5113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

*Brown Fine To Medium Sandy
Micaceous Silt
Page 1 of 2
TEST BORING RECORD

BORING NO. B-249
DATE DRILLED 4-10-74
JOB NO. CH 2920
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.	
40.0	Very Stiff To Hard Green To Tan Brown Fine To Medium Sandy Micaceous Silt		548.3	N=28		
			543.3			
				538.3	N=23	
				533.3	N=36	
				528.3	N=39	
59.0	Partially Weathered Rock		528.3	N=50/1" No Recovery		
64.9	Hard To Moderately Hard Very Light Gray Felsic Gneiss	NX 73	523.3	Carbide Bit Refusal At 64.9 ft. 64.9 ft to 71.3 ft: Moderate To Slight Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	73	
		100	518.3		93	
71.3	Coring Terminated At 71.3 ft. Groundwater At 19.4 ft At Time Of Boring Hole Caved At 13.8 ft Before Taking 24 Hour Water Reading No Drilling Water Loss					

BORING AND SAMPLING MEETS ASTM D-1585
CORE DRILLING MEETS ASTM D-8115
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-249

DATE DRILLED 4-10-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO

Page 230 of 298

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Drilled To Refusal At 40.0 ft.		671.0		
			666.0		
			661.0		
			656.0		
			651.0		
			646.0		
			641.0		
			636.0		
			631.0		
40.0		Carbide Bit Refusal At 40.0 ft.			

BORING AND SAMPLING MEETS ASTM D-1585

CORE DRILLING MEETS ASTM D-8115

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 1 of 2

TEST BORING RECORD

BORING NO. B-250

DATE DRILLED 3-20-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
40.0	Medium And Moderately Hard Dark Gray And White Quartzite	NX 14			0
51.0	Coring Terminated At 51.0 ft. No Drilling Water Loss	3			0

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

Page 2 of 2
TEST BORING RECORD

BORING NO. B-250A
DATE DRILLED 3-19-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

Page 231 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.O.D.
0	Drilled To Refusal At 42.5 ft.		621.9	Angle Hole Drilled At 70°, N 74W	
42.5	Very Hard Light Bluish Gray Felsic Gneiss	NX 100	576.9	Carbide Bit Refusal And Top Of Continuous Rock At 42.5 ft.	95
		NX 98	571.9	42.5 to 153.1 ft.: Very Slight Weathering, Very Close Healed And Filled Joints With Calcite, Chlorite And Sericite - Low To Steep Dip.	93
		NX 100	566.9	Moderately To Slightly Weathered Zone (44.2 to 45.0 ft.)	100
		NX 88	556.9	Soil Zone - Core Loss (68.1 to 69.2 ft.)	87
		NX 97	551.9	Moderately To Moderately Severely Weathered Low Dip Schistose Zone (69.2 to 69.5 ft.)	94
		NX 98	546.9	2 Inch Thick, Medium Dip, Leached Schistose Zone Of Sericite, Chlorite And Quartz (69.6 to 70.0 ft.)	98
80.0		NX 98	541.9	Steep Quartz Stringer (78.7 to 79.3 ft.)	

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.O.D. ROCK QUALITY DESIGNATION

Page 1 of 3
TEST BORING RECORD

BORING NO. B-251
DATE DRILLED 4-30-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	541.9 ELEV.	REMARKS	% R.Q.D.				
80.0	Very Hard Light Bluish Gray Felsic Gneiss	NX 98	536.9	Calcite - Epidote Filling In Healed Joints (84.5 to 85.0 ft.)	98				
	Medium Dip Quartz, Calcite Enriched Zone (110.2 to 110.9 ft.)	NX 100	526.9		100				
	Steep Dip, Quartz, Calcite Stringers And Healed Joints (115.5 to 119.4 ft.)	NX 100	521.9		97				
		NX 100	516.9		100				
		NX 100	511.9		100				
		NX 100	508.9		100				
120.0			501.9						

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 3
TEST BORING RECORD

BORING NO. B-251
DATE DRILLED 4-30-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	501.9 ELEV.	REMARKS	% R.Q.D.				
120.0	Very Hard Light Bluish Gray Felsic Gneiss	NX 100	496.9		100				
	Fine Grained Xenolith (128.1 ft.) Steep, Thin Calcite Vein, Slightly Schistose (128.5 to 129.2 ft.) Mafic Gneiss Xenolith (130.6 to 130.8 ft.) 1 inch Thick, Medium Dip Schistose Zone Filled With Calcite And Sericite (131.6 to 132.0 ft.)	NX 100	491.9		100				
	Steep Quartz - Sericite Stringers (148.8 to 149.5 ft.) Low Dip Schistose Zone Filled With Calcite, Chlorite And Sericite (150.7 to 150.9 ft.)	NX 100	486.9		100				
		NX 100	481.9		98				
		NX 100	476.9		100				
		NX 100	471.9		100				
153.1	Coring Terminated At 153.1 ft. Drilling Water Loss At 46.0 ft And 61.5 ft.		466.9						

BORING AND SAMPLING MEETS ASTM D-1588
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1/4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3
TEST BORING RECORD

BORING NO. B-251
DATE DRILLED 4-30-74
JOB NO. CH 2920

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	DEPTH FT.
0	Drilled To Refusal At 46.1 ft.			Angle Hole Drilled At 65°, N70W	
46.1	Hard Very Light Gray Felsic Gneiss	NX 99	577.7	Carbide Bit Refusal And Top Of Continuous Rock At 46.1 ft. Slight Weathering (46.1 to 52.4 ft.) Thin, Low Dip Schistose Zone (47.6 ft.)	89
52.4	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	567.7	Very Close Healed And Slightly Leached Joints (46.1 to 55.0 ft.) Moderately Weathered Zone (49.1 to 49.9 ft.) Low To Medium Dip Quartzite Lenses: 55.9 ft. 56.1 ft. 57.1 to 57.3 ft.	100
			562.7	Very Slight Weathering (52.4 to 93.1 ft.) Steep Dip Healed Joints Filled With Calcite And Sericite: 61.2 to 61.6 ft. 63.4 to 63.7 ft.	
		NX 96	557.7	Irregular Pegmatitic Zone Of Quartz, Chlorite And Feldspar (66.5 ft.) Medium To Soft Severely Weathered Zone - Probable Location Of 0.4 ft Core Loss (69.4 to 70.2 ft.) Moderately Weathered Zone (71.0 to 71.8 ft.)	90
			552.7		
			547.7	1 inch Thick, Medium Dip Leached Schistose Zone (71.1 to 71.3 ft.)	
		NX 100	542.7	¾ inch Thick Medium Dip Calcite Rich Schistose Zone (78.3 ft.)	98
80.0					

BORING AND SAMPLING MEETS ASTM D-1558
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 64 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 1 of 2
TEST BORING RECORD

BORING NO. B-252
 DATE DRILLED 5-1-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	DEPTH FT.
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100	537.7	Severely Weathered	98
			532.7	Scattered Slightly Leached Quartz Stringers And Filled Joints (83.5 to 86.0 ft.)	100
93.1	Coring Terminated At 93.1 ft. Drilling Water Loss At 69.0 ft.		527.7		

BORING AND SAMPLING MEETS ASTM D-1558
 CORE DRILLING MEETS ASTM D-8113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 64 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 2 of 2
TEST BORING RECORD

BORING NO. B-252
 DATE DRILLED 5-1-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Drilled To Refusal At 46.9 ft.		622.6	Angle Hole Drilled At 69°, S40E	
			577.6		
46.9	Moderately Hard Very Light Gray Felsic Gneiss	NX 100		Carbide Bit Refusal At 46.9 ft. Top Of Continuous Rock At 47.2 ft. Badly Broken Vein Quartz (46.9 to 47.2 ft.) 1/2 Inch. Steep Dip Leached Quartz Lens (49.5 to 50.3 ft.) 46.9 to 76.6 ft.: Slight To Moderate Weathering. Very Close Healed And Slightly Leached Joints - Low To Steep Dip.	71
		NX 99	572.6		
			567.6		
		NX 92		Moderately To Moderately Severely Weathered Zones: 48.0 to 49.0 ft. 49.5 to 50.0 ft. 53.8 to 54.2 ft. 54.7 to 55.0 ft. 57.4 to 58.0 ft. 62.0 to 63.1 ft. 63.9 to 64.2 ft. 68.0 to 68.4 ft. 75.4 to 75.9 ft.	66
			562.6		
		NX 98		Thin Leached Quartz Stringer (60.0 ft.) Fine Grained Xenoliths: 64.8 ft. 65.4 ft.	75
			557.6		
			552.6		
		NX 62		Variable Thickness Vertical Leached Quartz Vein With Surrounding Moderately To Moderately Severely Weathered Schistose Zone (70.3 to 74.1 ft.) Vertical Brecciated Zone Up To 2 Inches Thick Filled With Quartz, Feldspar, Chlorite And Calcite.	43
		NX 100	547.6		
76.6	Hard To Very Hard Light Bluish Gray Felsic Gneiss				95
10.0			542.6		

BORING AND SAMPLING MEETS ASTM D-1586

COAP DRILLING MEETS ASTM D-2112

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT. BUT DRAG NOT EVIDENT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Note: This Appears To Correlate With The Shear Zone In B-236, But Drag Not Evident.

TEST BORING RECORD

BORING NO. B-253

DATE DRILLED 5-3-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 2

(76.6 to 81.8 ft.)

Page 234 of 298

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Hard To Very Hard Light Bluish Gray Felsic Gneiss	NX 100		Medium To Steep Dip Slightly Schistose Zone (83.2 to 84.5 ft.) 76.6 to 93.4 ft.: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip.	95
			537.6		
		NX 100			100
			532.6		
93.4	Coring Terminated At 93.4 ft. No Drilling Water Loss				
			527.6		

BORING AND SAMPLING MEETS ASTM D-1586

COAP DRILLING MEETS ASTM D-2112

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

Page 2 of 2

TEST BORING RECORD

BORING NO. B-253

DATE DRILLED 5-3-74

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Drilled To Refusal At 43.1 ft.			Angle Hole Drilled At 70°, N85E	
43.1	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100	577.1	Carbide Bit Refusal And Top Of Continuous Rock At 43.1 ft.	91
		NX 91	572.1	43.1 to 65.2 ft.: Slight To Very Slight Weathering. Very Close Healed And Slightly Leached Joints - Low to Steep Dip. Probable Location Of 0.8 ft. Core Loss (47.6 to 48.4 ft.)	83
		NX 100	567.1		97
		NX 100	562.1		
		NX 100	557.1	Badly Broken Rock (62.9 to 63.7 ft.) Medium To Moderately Weathered Zone (64.6 to 65.2 ft.) 1 Inch Thick, Very Steep, Schistose Zone, Slightly Brecciated (66.3 to 67.0 ft.) 65.2 to 100.8 ft.: Very Slight Weathering. Very Close Healed Joints - Low To Steep Dip. Vertical Quartz - Calcite Stringer (75.7 to 79.3 ft.) 1 Inch Thick Quartz Filled Brecciated Zone, Nearly Vertical But Curving With Sericite, Calcite And Chlorite (77.2 to 79.5 ft.)	100
		NX 100	547.1		
		NX 100	542.1		94

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Hard To Very Hard Very Light Gray To Light Bluish Gray Felsic Gneiss	NX 100		Rock Is Schistose And Dip Is Highly Variable (77.0 to 87.5 ft.) Leached Steep Quartz Stringer (81.0 ft.) 1 Inch Brecciated Zone Dipping 40° With Reverse Drag (86.0 ft.) 1 Inch Brecciated Zone Dipping 70° With Minor Normal Drag (86.2 to 86.7 ft.) Quartzite Lens (90.3 to 90.6 ft.) ½ Inch Brecciated Zone Dipping 40° (90.6 to 90.8 ft.) Fine Grained Felsic Gneiss (92.3 to 92.7 ft.) Irregular Quartz Pegmatite Vein Up To 1 Inch Thick (96.0 to 96.4 ft.) Fine Grained Xenoliths: 97.7 to 98.0 ft. 99.2 to 99.8 ft.	
		NX 100	537.1		
		NX 100	532.1		
		NX 100	527.1		
		NX 100	522.1		
100.8	Coring Terminated At 100.8 ft. Drilling Water Loss At 44.8 ft.				

Page 1 of 2

TEST BORING RECORD

BORING NO. B-254
 DATE DRILLED 5-7-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

Page 2 of 2

TEST BORING RECORD

BORING NO. B-254
 DATE DRILLED 5-7-74
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1899
 CORE DRILLING MEETS ASTM D-5115
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

BORING AND SAMPLING MEETS ASTM D-1899
 CORE DRILLING MEETS ASTM D-5115
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT
PROJECT X81B

SOIL TEST BORING FIELD REPORT

INSPECTOR C. H. McMAHAN
JOB NO. X81B
JOB NAME GEFFNEY Charakas
DATE: 8/6/74

STARTING TIME 2:30 8/7/74
GROUND SURFACE ELEV. 581.89
HRS. DRILLING 25 HRS. MOVING _____
WEATHER CLOUDLY DRILLER V. COLVEN BORING NO. PIT # 9

SAMPLING			SCALE	UD	SOIL CLASSIFICATION AND REMARKS	
1ST'	2ND'	3RD'				
			0		8/6/74 MOVED DRILL ON HOLE AND SETUP	
4.5'	RUN	100% REC			8/7/74 STARTED AT 7:00 (DRILL BROKE DOWN, NEEDED WELDER TO CUT PIECE FROM ROOM)	
4.5'	REC				CORING RATE FOR FIRST RUN WAS 35 MIN 3000 LBS PRE.	
	RQD = .64				SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE	
					END RUN 4.5 WITH SLIGHTLY WEATHERED SEAM	
			5		8/8/74 VERTICAL JOINTS @ 12'-1.5'-1.8'-2.1'	
					CORING RATE	
					100% WATER LOSS AT 4.6 (4000 LBS PRE)	4:05
9.9	RUN	95% REC			SLIGHT/VERY SLIGHTLY WEATHERED	3:00
9.4	REC				HARD/VERY HARD GRANITE W/ SLIGHTLY	3:10
	RQD = .70				WEATHERED SEAMS (VERY SOFT SEAM FROM 10.5'-11.1'	
			10		STEEL FALL .6 (IN 2 SEC) VERTICAL JOINT @	5:30
					7.2'-9.2'	7:00
					END RUN 14.4	6:05
9.9	RUN	100% REC			FRESH/VERY SLIGHTLY WEATHERED	
9.9	REC				HARD/VERY HARD GRANITE	
	RQD = .99				W/ SLIGHTLY WEATHERED SEAM	
			20			
					CORE RATE	
					4000 LBS PRE	6:45
			25		END RUN 24.3'	
10.0'	RUN	100% REC			FRESH/VERY SLIGHTLY WEATHERED	
10.0'	REC				HARD/VERY HARD GRANITE	
	RQD = 1.00					
			30			
					MINI SEC	
					5000 LBS PRE CORE RATE	
						18 20
						19 30
						20 05
			35		END RUN 34.3'	
			40			

+ STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE

BORING TERMINATED:	<u>99.65</u>	METHOD OF ADVANCING BORING	DEPTH
BORING REFUSAL:	<u>0</u>	POWER AUGER	<u>NA</u> TO
WATER TOB DEPTH		HAND CHOP: W/MUD: W/WATER	<u>NA</u> TO
WATER 24 HR: DEPTH		ROTARY DRILL: W/MUD: W/WATER	<u>NA</u> TO
WATER LOSSES	<u>100%</u>	DIAMOND CORE	<u>0.0</u> TO <u>99.65</u>
CASING SIZE	<u>None</u>		
LENGTH	<u>0</u>		

DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT
PROJECT X81B

SOIL TEST BORING FIELD REPORT

INSPECTOR C.H. McMAHAN

STARTING TIME 2:30

JOB NO. X81B

GROUND SURFACE ELEV. 581.89

JOB NAME GANNETT Charoban

HRS. DRILLING 25 HRS. MOVING

DATE: 8/8/74 WEATHER CLOUDLY

DRILLER J. QUIENS BORING NO. NY HOLE BIT 09

SAMPLING				SCALE	UD	SOIL CLASSIFICATION AND REMARKS
1ST	2ND	3RD	4TH			
				40		
10.0'	RUN	100%	REC			FRESH / VERY SLIGHTLY WEATHERED HARD / VERY HARD GRANITE CORE RATE MIN / SEC 6:55
10.0'	REL					8/9/74 NO FOOTAGE DUE TO RAIN 7:05
						END RUN 44.3'
				45		8/10/74 STARTED DRILL AT 7:30 WATER TABLE 2.1'
9.95	RUN	100%	REC			FRESH / VERY SLIGHTLY WEATHERED HARD / VERY HARD GRANITE CORE RATE 4000 LBS PRE 7:05
9.95	REC					VERTICAL JOINT @ 47.2' - 47.5' (CHANGED FROM D-3 CORE BARREL TO NXM CORE BARREL DUE TO SHORTAGE OF D-3 BITS) 7:30
						END RUN 54.25'
10.1	RUN	100%	REC			FRESH / VERY SLIGHTLY WEATHERED HARD / VERY HARD GRANITE CORE RATE 4000 LBS PRE 6:50
10.1	REL					7:10
						END RUN 64.35
5.3	RUN	100%	REC			FRESH / VERY SLIGHTLY WEATHERED HARD / VERY HARD GRANITE CORE RATE 8:30
5.3	REL					8:10
						END RUN 69.65
10.0	RUN	100%	REC			FRESH / VERY SLIGHTLY WEATHERED HARD / VERY HARD GRANITE CORE RATE 8:30
10.0	REL					8:10
						END RUN 79.65

+ STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE

BORING TERMINATED: <u>99.65</u>	METHOD OF ADVANCING BORING	DEPTH
BORING REFUSAL: <u>0</u>	POWER AUGER <u>NA</u>	TO
WATER TOB DEPTH	HAND CHOP: W/MUD: W/WATER <u>NA</u>	TO
WATER 24 HR: DEPTH	ROTARY DRILL: W/MUD: W/WATER <u>NA</u>	TO
WATER LOSSES	DIAMOND CORE	<u>0.0</u> TO <u>99.65</u>
CASING SIZE <u>NONE</u> LENGTH <u>0</u>		

DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT
PROJECT X 81 B

SOIL TEST BORING FIELD REPORT

INSPECTOR C. H. McMAHAN
JOB NO. X 81 B
JOB NAME GAFFNEY Checkee
DATE: 8/10/74 WEATHER CLEAR

STARTING TIME 2:30
GROUND SURFACE ELEV. 581.89
HRS. DRILLING 25 HRS. MOVING N/A
DRILLER J. OWEN S BORING NO. BIT 307

SAMPLING				SCALE	UD	SOIL CLASSIFICATION AND REMARKS
1ST	2ND	3RD	N			
				80		
5.0	RUN	100	REC			FRESH / VERY SLIGHTLY
5.0	REC					HARD / VERY HARD GRANITE
ROD = 100						
				85		END RUN 84.65
						8/13/74 STARTED DRILL AT 10:30
				90		
10.0	RUN	100	REC			FRESH / VERY SLIGHTLY WEATHERED
10.0	REC					HARD / VERY HARD GRANITE
ROD = 100						
				95		END RUN 94.65
5.0	RUN	100	REC			FRESH / VERY SLIGHTLY WEATHERED
5.0	REC					HARD / VERY HARD GRANITE (CORE RATE
ROD = 100						7:00
				100		END RUN 99.65
						6:45
						HOLE TERMINATED
						8/13/74
				105		
				110		
				115		
				120		

+ STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE

BORING TERMINATED: <u>99.65</u>	METHOD OF ADVANCING BORING	DEPTH
BORING REFUSAL: <u>0</u>	POWER AUGER <u>NA</u>	TO
WATER TOB DEPTH	HAND CHOP: W/MUD: W/WATER <u>NA</u>	TO
WATER 24 HR: DEPTH	ROTARY DRILL: W/MUD : W/WATER <u>NA</u>	TO
WATER LOSSES <u>100%</u>	DIAMOND CORE	<u>0.0</u> TO <u>99.65</u>
CASING SIZE <u>100/16</u> LENGTH <u>0</u>		

DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT
APPLICATION FOR INDIVIDUAL WAGE ADJUSTMENT

(1) Name _____ (2) Present Classification _____

(3) Date of Birth _____ (4) Date Hired _____

(5) Date Entered Present Class. _____ (6) Date Last Merit Increase _____

(7) Present Rate _____ (8) Rate & Classification Recommended _____

(9) Reason wage adjustment requested (be specific): 2.5% + 2.5% = 5% RA

Signed: _____ Date: _____
(Foreman)

(10) General Foreman's Comment and Approval: 100% + 10% = 110%

Initials: W. M. G. J. Date: _____
(Gen Foreman)

(11) Superintendent's Comment and Approval: _____

Initials: _____ Date: _____
(Superintendent)

Approved: (12) Engr. in Chg. _____ (13) Projects Mgr. _____

Instructions

Upon request, Resident Cashier will fill out Items 1, 2, 3, 4, 5, 6, and 7.

Foreman should fill out (8) and (9) and give to General Foreman, who fills out (10) and submits to Superintendent. Form will not be prepared until Item (13) has been completed.

An application for individual wage adjustment requires a Foreman's recommendation and the approval of the General Foreman, Superintendent, Engineer in Charge, Projects Manager, and Construction Manager before it becomes effective. Consequently, an employee should not be notified of a wage adjustment until it has received full approval.

DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT
PROJECT X81B

SOIL TEST BORING FIELD REPORT

INSPECTOR C.H.M. MAHAJ

STARTING TIME 7:30

JOB NO. X81B

GROUND SURFACE ELEV. 580.79

JOB NAME CHEORKEE

HRS. DRILLING _____ HRS. MOVING _____

DATE: 8/16/74 WEATHER CLEAR

DRILLER J. JAMES BORING NO. B-263

SAMPLING				SCALE	UD	SOIL CLASSIFICATION AND REMARKS
1ST'	ENDS'	3RD'				
2.6	RUN 100.5	REC		0		SLIGHT/VERY SLIGHTLY WEATHERED
2.6	REC 1.00	R2D				HARD/VERY HARD GRANITE END RUN 2.6'
2.5	RUN 100.5	REC				SLIGHT/VERY SLIGHTLY WEATHERED
2.5	REC 1.00	R2D				HARD/VERY HARD GRANITE
2.3	RUN 100.5	REC		5		SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE
2.3	REC 1.00	R2D				END RUN 8.1' (100% WATER LOSS) VERTICAL BREAK @ 5.5'-7.0'
2.7	RUN 74.5	REC				SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE
2.7	REC 7.4	R2D				END RUN 10.1'
2.3	RUN 100.5	REC		10		SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE
2.3	REC 1.00	R2D				END RUN 12.4'
2.4	RUN 100.5	REC				SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE
2.4	REC 1.00	R2D				END RUN 14.6'
1.9	RUN 100.5	REC		15		START DRILL AT 7:30 (8-26-74) (400' P.D. 8-31-74) (400' HOLE) STARTED DRILL AT 7:30 (8-26-74)
1.9	REC 1.00	R2D				SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE STARTED DRILL AT 7:30 (8-26-74)
4.6	RUN 100.5	REC				SLIGHT/VERY SLIGHTLY WEATHERED
4.6	REC 1.00	R2D		20		HARD/VERY HARD GRANITE END RUN 21.3' 8-26-74 STARTED DRILL AT 11:00
1.4	RUN 100.5	REC				SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE
1.4	REC 1.00	R2D				END RUN 22.7'
4.4	RUN 100.5	REC		25		SLIGHT/VERY SLIGHTLY WEATHERED
4.4	REC 1.00	R2D				HARD/VERY HARD GRANITE END RUN 27.1' 8-27-74 STARTED DRILL AT 7:30
2.0	RUN 100.5	REC				SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD
2.0	REC 1.00	R2D				END RUN 29.1' GRANITE
1.8	RUN 100.5	REC		30		SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY
1.8	REC 1.00	R2D				HARD GRANITE END RUN 30.9' 8-28-74 (STARTED) DRILL AT 7:30
5.1	RUN 100.5	REC		35		SLIGHT/VERY SLIGHTLY HARD/VERY HARD
5.1	REC 1.00	R2D				GRANITE END RUN 36.0'
1.8	RUN 100.5	REC				SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE
1.8	REC 1.00	R2D				END RUN 37.9'
4.0						9-21-74 STARTED DRILL AT 7:30
4.0				40		

+ STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE

BORING TERMINATED: 59.7

BORING REFUSAL: _____

WATER TOB DEPTH _____

WATER 24 HR. DEPTH _____

WATER LOSSES _____

CASING SIZE _____ LENGTH _____

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER	TO
HAND CHOP: W/MUD: W/WATER	TO
ROTARY DRILL: W/MUD: W/WATER	TO
DIAMOND CORE	2.0 TO 59.7

DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT
PROJECT X 81B

SOIL TEST BORING FIELD REPORT

INSPECTOR C H McMAHAN

STARTING TIME 7:30

JOB NO. X 81B

GROUND SURFACE ELEV. 500.79

JOB NAME GATHELY Cherokee

HRS. DRILLING _____ HRS. MOVING _____

DATE: 8-29-74 WEATHER CLEAR

DRILLER JACK PARTON BORING NO. B-263

SAMPLING				SCALE	UD	SOIL CLASSIFICATION AND REMARKS	
1ST	2ND	3RD	N				
4.0	RUN	100%	REC	40	EX	SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE	
4.1	REC	1.00	RBD				
1.8	RUN	100%	REC	42.8	↓	SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE	
1.8	REC	1.00	RBD				
5.05	RUN	100%	REC	45		SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE	
5.05	REC	1.00	RBD				
2.0	RUN	100%	REC	50	↓	SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE	
2.0	REC	1.00	RBD				
1.45	RUN	100%	REC	52.7	↓	SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE	
1.45	REC	1.00	RBD				
1.65	RUN	100%	REC	53.5	↓	SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE	
1.65	REC	1.00	RBD				
1.6	RUN	100%	REC	55	↓	SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE	
1.6	REC	1.00	RBD				
2.55	RUN	100%	RUN	57.8	↓	SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE	
2.55	REC	1.00	REC				
1.8	RUN	90%	REC	59.7	↓	SLIGHT/VERY SLIGHTLY WEATHERED HARD/VERY HARD GRANITE	
1.6	REC	1.00	RBD				
						HOLE TERMINATED 59.7'	
						LOG ON OVER CORING HOLE AT Cherokee NUCLEAR	
						6" Hole with Sections of EX hole for Test.	
						TEST PIT # 9	

+ STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE

BORING TERMINATED:	<u>59.7</u>	METHOD OF ADVANCING BORING	DEPTH
BORING REFUSAL:		POWER AUGER	TO
WATER TOB DEPTH		HAND CHOP: W/MUD: W/WATER	TO
WATER 24 HR. DEPTH		ROTARY DRILL: W/MUD: W/WATER	TO
WATER LOSSES		DIAMOND CORE	0.0 TO <u>59.7</u>
CASING SIZE	LENGTH		

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	637.2 ELEV.	REMARKS	% R.Q.D.
0	Firm Pink, Gray And Tan Slightly Micaceous Very Silty Fine To Medium Sand		632.2	N=14	
			627.2	N=21	
15.0	Very Stiff To Hard Purple, Brown, Orange And Tan Micaceous Fine To Medium Sandy Silt		622.2	N=38	
			617.2	N=28	
			612.2	N=23	
			607.2	N=29	
			602.2	N=38	
38.0	Firm Tan, Purple, Gray, Orange And Black Micaceous Silty Fine To*		597.2		
40.0					

BORING AND SAMPLING MEETS ASTM D-1586 *Medium Sand
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 3

TEST BORING RECORD

BORING NO. B-280

DATE DRILLED 1-15-76

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

% ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

597.2

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Firm Tan, Purple, Gray, Orange And Black Micaceous Silty Fine To Medium Sand		592.2	N=26	
				N=28	
			587.2	N=23	
			582.2		
56.0	Partially Weathered Rock That Becomes Black And Gray Silty Fine To Coarse Sand When Sampled.		577.2	N=50/4 1/2"	
62.0	Firm To Dense Tan Brown, And Gray Micaceous Silty Fine To Coarse Sand		572.2	N=36	
			567.2	N=24 No Recovery	
				N=50/4"	
71.0	Partially Weathered Rock That Becomes Brown And Gray Micaceous Silty Fine To Coarse Sand When Sampled		562.2	N=50/1" No Recovery	
76.2	Hard Medium Gray Felsic Gneiss	NX 95		Carbide Bit Refusal At 76.2 ft.	
80.0				557.2	

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 2 of 3

TEST BORING RECORD

BORING NO. B-280
 DATE DRILLED 1-15-76
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Hard Medium Gray Felsic Gneiss	NX	557.2	Slight To Very Slight Weathering (76.2 to 89.8 ft.)	98
		100	552.2		
89.8	Coring Terminated At 89.8 ft. No Drilling Water Loss Groundwater At 66.1 ft But Boring Caved At 66.9 ft After 24-Hours		547.2		



BORING AND SAMPLING MEETS ASTM D-1588
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 3 of 3

TEST BORING RECORD

 UNDISTURBED SAMPLE  WATER TABLE, 24 HR.

 ROCK JOINT:

 ROCK CORE RECOVERY  WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION  LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

BORING NO. B-280

DATE DRILLED 1-15-76

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

CORE NO. 605.3
 % @ TIME SIZE MIN. ELEV.

DEPTH FT.	DESCRIPTION	CORE NO.	% @ TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Firm Red Brown Micaceous Silty Fine To Coarse Sand - With Rock Fragments			600.3		
					N=16	
8.0	Very Stiff Light Brown Red Micaceous Fine To Medium Sandy Silt			595.3		
					N=26	
13.0	Hard Red Brown Micaceous Fine Sandy Silt			590.3		
					N=44	
18.0	Very Stiff Red Brown Micaceous Silt			585.3		
					N=24	
25.0	Firm Tan Gray Micaceous Silty Fine To Coarse Sand			580.3		
					N=20	
30.0	Very Stiff Brown Gray Micaceous Fine Sandy Silt			575.3		
					N=20	
33.0	Very Stiff Brown Gray Micaceous Silt			570.3		
					N=28	
38.0	Very Stiff Brown Gray Micaceous Fine To Medium Sandy Silt			565.3		
40.0						

BORING AND SAMPLING MEETS ASTM D-1988
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 3

TEST BORING RECORD

BORING NO. B-281
 DATE DRILLED 1-21-76
 JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0-30°

N - STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

565.3

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R Q D
40.0	Very Stiff Brown Gray Micaceous Fine To Medium Sandy Silt			N=16	
40.0	Dense Tan Brown Gray Micaceous Silty Fine To Medium Sand		560.3	N=35	
49.2	Partially Weathered Rock That Becomes Tan Black Gray Micaceous Silty Fine To Medium Sand When Sampled		555.3	N=50/3½"	
53.0	Partially Weathered Rock		550.3	N=50/2" No Recovery	
			545.3		
			540.3	N=50/2½" No Recovery	
			535.3		
			530.3		
80.0			525.3		

BORING AND SAMPLING MEETS ASTM D-1886
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-1/4 IN. I.D. SAMPLER 1 FT.

Page 2 of 3

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE. 24 HR.
 ROCK CORE RECOVERY WATER TABLE. 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

BORING NO. B-281
 DATE DRILLED 1-21-76
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock That Becomes Tan Black Gray Micaceous Silty Fine To Medium Sand When Sampled				
84.6	Medium Blue Gray To Light Gray Felsic Gneiss	NX 100	520.3	Carbide Bit Refusal At 84.6 ft. 84.6 to 90.1 ft.: Moderately Severe Weathering. Some Leaching.	91
90.1	Moderately Hard To Hard Blue Gray To Light Gray Felsic Gneiss	98	515.3 510.3	Slight Weathering (90.1 to 98.7 ft.)	87
98.7	Coring Terminated At 98.7 ft. No Water Losses Groundwater At 35.7 ft After 24 Hours		505.3		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 3 of 3

TEST BORING RECORD

BORING NO. B-281

DATE DRILLED 1-21-76

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	597.2 ELEV.	REMARKS	R.Q.D.
0	Stiff Brown Red Micaceous Fine To Coarse Sandy Clayey Silt				
4.5	Dense Gray Tan Micaceous Silty Fine To Coarse Sand		592.2	N=13	
9.5	Loose Brown Gray Micaceous Very Silty Fine To Coarse Sand		587.2	N=37	
17.7	Partially Weathered Rock That Becomes Brown Tan Gray Micaceous Silty Fine To Coarse Sand When Sampled		582.2	N=31	
27.3	Moderately Hard To Hard Blue Gray To Light Gray Felsic Gneiss	NX 81	577.2	N=9	
32.9	Hard Bluish Gray To Dark Gray Mafic Gneiss	99	572.2	N=50/6"	
36.6	Hard Bluish Gray To Medium Gray Felsic Gneiss		567.2	N=50/3 1/2"	
39.5			562.2		
			557.2		
				Carbide Bit Refusal At 27.3 ft.	
				100% Moderately Severe To Slight Weathering (27.3 to 29.7 ft)	38
				Moderate To Very Slight Weathering (29.7 to 39.5 ft.)	98
				Completely Weathered Zone (35.0 ft.)	

BORING AND SAMPLING MEETS ASTM D-1986 *Coring Terminated At 39.5 ft.
 CORE DRILLING MEETS ASTM D-813 100% Drilling Water Loss At 29.2 ft.±
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER Caved And Wet At
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT. 17.5 ft After 24 Hours

Page 1 of 1

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

BORING NO. B-285

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

DATE DRILLED 1-28-76

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

JOB NO. CH 2920

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Firm Orange Gray And Brown Micaceous Fine To Medium Sandy Silt				
				N=8	
				N=8	
14.0	Stiff Gray Brown And Tan Micaceous Fine To Medium Very Sandy Silt			N=15	
				N=14	
				N=12	
28.0	Very Stiff Brown And Gray Micaceous Fine To Medium Sandy Silt			N=20	
				N=38	
33.0	Hard Tan And Gray Micaceous Fine To Medium Sandy Silt				
40.0					

BORING AND SAMPLING MEETS ASTM D-1986
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 4

TEST BORING RECORD

BORING NO. B-287
 DATE DRILLED 7-22-75
 JOB NO. CH 2929

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N = STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Hard Tan And Gray Micaceous Fine To Medium Sandy Silt			N=39	
42.	Partially Weathered Rock That Becomes Brown And Gray Micaceous Silty Fine To Coarse Sand When Sampled			N=50/5"	
				N=50/3" No Recovery	
53.0	Hard Brown Olive And Tan Micaceous Silt And Fine Very Slightly Sandy Silt			N=33 No Recovery	
				N=59	
				N=46	
68.0	Partially Weathered Rock That Becomes Gray And Tan Micaceous Silty Fine To Coarse Sand When Sampled			N=50/3½"	
				N=93	
78.0	Hard Dark Gray Orange Tan And Olive Micaceous Silt				
80.0					

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
[30] % ROCK CORE RECOVERY WATER TABLE, 1 HR.
N STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-287
DATE DRILLED 7-22-75
JOB NO. CH 2920

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE SIZE & TIME MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Hard Dark Gray Orange Tan Olive Micaceous Silt			N=51	
				N=75	
88.0 35 5	Partially Weathered Rock That Becomes Dark Gray And Brown Micaceous Silt When Sampled			N=50/4½"	
93.0	Wash Drilled To Refusal With No Sampling				
106.0	Hard Light Gray Felsic Gneiss	NX 43		Carbide Bit Refusal At 106.0 ft. Slight Weathering (106.0 to 110.6 ft.) Soil Zone (110.6 to 111.0 ft.)	0
110.6	Moderately Hard Light Gray Felsic Gneiss	58		Moderately Weathered (111.0 to 113.2 ft.)	0
113.2	Hard Light Gray And Light Bluish Gray Felsic Gneiss	100		Top Of Continuous Rock 113.2 ft. Total Water Loss Slightly Weathered (113.2 to 125.7 ft.)	83
120.0					

Page 3 of 4

TEST BORING RECORD

BORING NO. B-287
DATE DRILLED 7-22-75
JOB NO. CH 2920

LAW ENGINEERING TESTING CO

BORING AND SAMPLING MEETS ASTM D-1886
CORE DRILLING MEETS ASTM D-8118
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
120.0	Hard Light Gray And Light Bluish Gray Felsic Gneiss	NX 96		Total Water Loss From 120.0 to 125.7 ft.) Rock Badly Broken (121.4 to 122.2 ft.) 1/8" To 1/4" Solution Cavities Closely Spaced Entire Length Of Core	55
125.7	Coring Terminated At 125.7 ft. Drilling Water Loss				

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-287
 DATE DRILLED 7-22-75
 JOB NO. CH 2920

LAW ENGINEERING TESTING CC

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

CORE NO. & TIME 579.8
 SIZE MIN. ELEV.

R.Q.D.

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Firm Brownish Gray Slightly Clayey Silty Fine To Medium Sand		574.8	N=12	
8.0	Firm Light Gray And Yellowish Gray Silty Fine To Medium Sand		569.8	N=17	
14.0	Partially Weathered Rock That Becomes Brownish Gray Silty Fine To Medium Sand When Sampled		564.8	N=50/4"	
17.5	Moderately Hard To Medium Very Light Gray Felsic Gneiss	NX 67	559.8	Carbide Bit Refusal At 17.5 ft. 17.5 to 47.2 ft.: Moderate And Slight Weathering. Very Close To Close Joints, Most Stained Black - Mostly Medium To Steep Dip. Very Close Healed Joints - Low To Steep Dip.	26
		15	554.8	Soft Drilling Zone (18.5 to 19.2 ft.)	8
		66	549.8	Soft Drilling Zone - Core Loss: 20.9 to 25.3 ft. 29.0 to 29.8 ft.	28
		92	544.8	Soft Olive Gray Mafic Gneiss (25.3 to 25.8 ft.)	36
		100		Badly Broken Rock (30.5 to 31.5 ft.)	
		97	539.8	Soft, Severely Weathered Zone (33.3 to 33.6 ft.)	35
40.0					76

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

TEST BORING RECORD

BORING NO. B-289
 DATE DRILLED 6-27-75
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO

CORE 539.8
% & TIME ELEV.
SIZE MIN.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R Q D
40.0	Moderately Hard To Medium Very Light Gray Felsic Gneiss	NX 97	534.8		76
47.2	Coring Terminated At 47.2 ft. No Drilling Water Loss				

Page 2 of 2

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-289
DATE DRILLED 6-27-75
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
ROCK CORE RECOVERY WATER TABLE, 1 HR.
STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		SIZE MIN.	ELEV.		
0	Very Stiff Tan And Gray Fine To Medium Sandy Silty Clay		579.3		
			574.3	N=16	
10.2	Firm Dark Brown Very Micaceous Silt		569.3	N=7	
			564.3	N=50/3"	
15.7	Partially Weathered Rock That Becomes Gray Slightly Micaceous Slightly Silty Fine To Coarse Sand When Sampled		559.3	N=50/3" No Recovery Carbide Bit Refusal At 20.4 ft.	
20.4	Moderately Hard To Hard Light Gray	NX 25		20.4 to 24.8 ft.: Moderate To Slight Weathering Medium Very Close To Close Joints	.4
24.0	Hard Medium Light Gray	100	554.3	24.8 to 34.6 ft.: Slight Weathering Xenolith At 29.2 ft.	2.7
		100	549.3	▲ M	
				▲ M	
				▲ L	100
34.8	Coring Terminated At 34.8 ft. Complete Water Loss At 21.0 ft.		544.3	▲▲▲ SMT	

BORING AND SAMPLING MEETS ASTM D-1888
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 1

TEST BORING RECORD

BORING NO. B-290
 DATE DRILLED 6-30-75
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

▲ ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Very Stiff Reddish Brown Slightly Sandy Clayey Silt		607.5		
			602.5	N=16	
7.0	Stiff To Very Stiff Light Gray Light Brown And Reddish Orange Fine To Medium Very Sandy Silt		597.5	N=9	
			592.5	N=13	
			587.5	N=19	
			582.5		
26.5	Partially Weathered Rock That Becomes Light Gray And Brown Very Silty Fine *			N=50/6"	
28.5	Dense Light Gray And Brown Silty Fine To Medium Sand		577.5	N=42	
33.0	Partially Weathered Rock		572.5	N=50/0" Carbide Bit Refusal At 35.7 ft.	
35.7	Moderately Hard To Hard Very Light Gray Felsic Gneiss	NX 100		35.7 to 47.9 ft.: Slight To Very Slight Weathering Very Close Healed Joints - Low To Steep Dip.	80
40.0			567.5		

BORING AND SAMPLING MEETS ASTM D-1586 To Coarse Sand When Sampled
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 2

TEST BORING RECORD

 UNDISTURBED SAMPLE  WATER TABLE, 24 HR.

 ROCK JOINT:

 50% ROCK CORE RECOVERY  WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION  LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

Page 256 of 298

S = STEEP DIP 60°-90°

BORING NO. B-291
 DATE DRILLED 6-25-75

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

567.5

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Hard To Very Hard Bluish White Felsic Gneiss	NX 89	562.5	Moderately Weathered Zone (37.7 to 38.1 ft.) Leaching Along Healed Joints (35.7 to 40.0 ft.)	89
47.9	Coring Terminated At 47.9 ft. Stabilized Groundwater At 27.0 ft. No Drilling Water Loss		557.5		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

30% ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-291

DATE DRILLED 6-25-75

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

597.4

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Stiff Reddish Brown Micaceous Clayey Silt		592.4	N=13	
9.0	Stiff Light Gray And Tan Slightly Clayey Fine To Medium Sandy Silt With Thin Layers Of Micaceous Clayey Silt		587.4	N=10	
13.0	Firm To Dense Light Gray To Tan Silty Fine To Medium Sand		582.4	N=16 No Recovery	
			577.4	N=37	
			572.4	N=37	
30.5	Partially Weathered Rock That Becomes Light Gray And Tan Silty Fine To *		567.4	N=50/3"	
32.6	Hard To Very Hard Bluish White Felsic Gneiss	NX 100	562.4	Carbide Bit Refusal And Probable Top Of Continuous Rock At 32.6 ft.	100
	Medium Sand	100	557.4	32.6 to 44.9 ft.: Very Slight Weathering To Fresh Close And Very Close Chlorite Healed Joints - Mostly Steep Dip Scattered Xenoliths Of Mafic Gneiss Up To 1 Inch Diameter.	100
40.0					

BORING AND SAMPLING MEETS ASTM D-1886 * Medium Sand When Sampled
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 % ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°

TEST BORING RECORD

BORING NO. B-292
 DATE DRILLED 6-26-75
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Hard To Very Hard Bluish White Felsic Gneiss	100	557.4	Mafic Gneiss (34.8 to 35.0 ft.)	100
44.9	Coring Terminated At 44.9 ft. Stabilized Groundwater At 20.0 ft. No Drilling Water Loss Stabilized Groundwater At 20.0 ft.		552.4		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

% ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-292

DATE DRILLED 6-26-75

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE		REMARKS	R.Q.D.
		SIZE	TIME MIN. ELEV.		
0	Stiff Brown Purple Micaceous Fine To Medium Sandy Silt		611.4		
			606.4	N=13	
8.0	Stiff To Very Stiff Purple Brown Micaceous Fine Sandy Silt		601.4	N=16	
			596.4	N=13	
			591.4	N=13	
23.0	Stiff Green Tan Micaceous Fine Sandy Silt		586.4	N=12	
27.0	Stiff Green Tan Micaceous Fine To Medium Sandy Silt		581.4	N=13	
33.0	Stiff Green Tan Micaceous Fine Sandy Silt		576.4	N=14	
38.0	Very Stiff Gray Tan Micaceous Fine To Medium Sandy Silt		571.4	N=17	
40.0					

BORING AND SAMPLING NEEDS ASTM D-1586
 CORE DRILLING NEEDS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-3 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE. 24 HR.
 ROCK CORE RECOVERY WATER TABLE. 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-293
 DATE DRILLED 7-19-73
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

571.4

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	TIME MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Very Stiff Gray Tan Micaceous Fine To Medium Sandy Silt					
43.0	Very Stiff Tan Micaceous Fine To Medium Sandy Silt			566.4	N=24	
48.0	Very Stiff Gray Brown Micaceous Fine To Medium Sandy Silt			561.4	N=18	
53.0	Dense Gray Brown Micaceous Very Silty Fine To Coarse Sand			556.4	N=44	
58.0	Dense Gray Tan Micaceous Silty Fine To Coarse Sand			551.4	N=33	
62.0	Partially Weathered Rock That Becomes Tan Gray Micaceous Fine To Coarse Sand When Sampled			546.4	N=50/4 1/2"	
				541.4	N=50/1 1/2"	
71.0	Partially Weathered Rock That Becomes Brown Tan Micaceous Fine To Medium Sandy Silt When Sampled			536.4	N=50/5"	
76.2	Medium To Hard Light Gray Felsic Gneiss	NX	86		Carbide Bit Refusal At 76.2 ft. Severe To Slight Weathering	0
80.0				531.4		

Page 2 of 3

BORING AND SAMPLING MEETS ASTM D-1686
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE. 24 HR.
 ROCK CORE RECOVERY WATER TABLE. 1 HR.
 STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 H = STEEP DIP 60-90°

BORING NO. B-293
 DATE DRILLED 7-19-76
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

531.4

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
80.0	Medium To Hard Light Gray Felsic*	NX 86		Complete To Severe Weathering (81.0 to 83.1 ft.)	0
81.0	Very Soft To Medium Brown Gray Felsic Gneiss				
83.1	Soft To Hard Light Gray Felsic Gneiss	59	526.4	Complete To Moderate Weathering (83.1 to 89.5 ft.)	16
				Blue Gray Vein (83.4 to 83.7 ft.)	
89.5	Moderately Hard To Hard Blue Gray Felsic Gneiss		96	521.4	
			516.4		
99.4	Coring Terminated At 99.4 ft. No Drilling Water Loss		511.4		

BORING AND SAMPLING MEETS ASTM D-1586. *Gneiss
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-6 IN. I.D. SAMPLER FT.
 [] UNDISTURBED SAMPLE WATER TABLE. 24 HR.
 [] ROCK CORE RECOVERY WATER TABLE. 1 HR.
 N STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

Page 3 of 3

TEST BORING RECORD

BORING NO. B-293
 DATE DRILLED 7-19-76
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

606.9

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Soft Orange Tan Slightly Micaceous Slightly Clayey Fine To Coarse Sandy Silt With Rock Fragments (Quartz) And Organic Matter			N=4	
			601.9		
5.0	Stiff Pink Tan Micaceous Fine Sandy Silt			N=10	
7.0	Firm Gray Tan Pink To Gray Tan Micaceous Very Silty Fine To Coarse Sand			N=13	
			596.9		
				N=14	
			591.9		
				N=18	
			586.9		
				N=15	
			581.9		
				N=13	
			576.9		
				N=13	
			571.9		
				N=9	
40.0			566.9		

Page 1 of 2

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-294
 DATE DRILLED 2-23-76
 JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR. ◀ ROCK JOINT:
 ROCK CORE RECOVERY WATER TABLE, 1 HR. L = LOW DIP 0°-30°
 STANDARD PENETRATION LOSS OF DRILLING WATER M = MED. DIP 30°-60°
 R.Q.D. ROCK QUALITY DESIGNATION S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE NO. & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Firm Gray Tan Pink To Gray Tan Micaceous Very Silty Fine To Coarse Sand		566.9	N=13	
			561.9		
			556.9	N=37 Blow Count Magnified By Weathered Rock Fragments	
			551.9	N=15	
				N=24	
58.0	Very Dense Gray Tan Silty Micaceous Fine To Coarse Sand		546.9	N=56	
62.0	Partially Weathered Rock That Becomes Gray Tan Silty Micaceous Fine To Coarse Sand When Sampled		541.9	N=50/1/2"	
65.7	Hard To Very Hard Medium Light Gray Felsic Gneiss	NX 88 50	536.9	Carbide Bit Refusal At 65.7 ft. Very Slight Weathering (65.7 to 68.0 ft.) 1/4 Inch Quartz Zone - Steeply Dipping	59 0
		100*		Fresh (68.0 to 74.5 ft)	100
72.0	Very Hard Medium Dark Gray And Dark Green Gray Mafic Gneiss (Amphibolite)		531.9		
74.5	Coring Terminated At 74.5 ft. Boring Caved At 23.0 ft After 24 Hours				

BORING AND SAMPLING MEETS ASTM D-1586 *Actual Run To 77.9 ft - Core Left In Hole From 74.5 to 77.9 ft.

CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER

FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

 UNDISTURBED SAMPLE  WATER TABLE. 24 HR.

 ROCK CORE RECOVERY  WATER TABLE. 1 HR.

N - STANDARD PENETRATION  LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

 ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-294

DATE DRILLED 2-23-76

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Firm Tan Orange Micaceous Clayey Very Silty Fine To Coarse Sand		601.6		
4.0	Firm To Loose Pink Orange Tan To Gray Tan Micaceous Very Silty Fine To Coarse Sand		596.6	N=16	
				N=11	
				N=12	
			591.6	N=12	
				N=11	
			586.6	N=10	
				N=9	
			581.6	N=10	
				N=10	
			576.6	N=9	
				N=25	
			571.6		
34.0	Firm To Gray Tan Micaceous Very Silty Fine To Coarse Sand		566.6		
39.0	Partially Weathered Rock That Becomes*		561.6		
40.0					

BORING AND SAMPLING MEETS ASTM D-1888 *Gray Tan Micaceous Slightly Silty
 CORE DRILLING MEETS ASTM D-2113 Fine To Coarse Sand When Sampled
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 2

TEST BORING RECORD

BORING NO. B-295
 DATE DRILLED 2-24-76
 JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

561.6

DEPTH FT.	DESCRIPTION	CORE SIZE MIN.	% & TIME	ELEV.	REMARKS	% R.Q.D.
40.0	Partially Weathered Rock That Becomes Gray Tan Micaceous Slightly Silty Fine To Coarse Sand When Sampled				N=50/5"	
				556.6	N=50/4"	
48.9	Hard To Very Hard Medium Light Gray Felsic Gneiss	100		551.6	Carbide Bit Refusal At 48.9 ft. Fresh With Moderately Weathered Zones (48.9 to 52.5 ft.)	72
				546.6	Fresh (52.5 to 59.6 ft.)	
			82*			
59.6	Coring Terminated At 59.6 ft. No Drilling Water Loss Boring Caved To 21.6 ft After 24 Hours			541.6		78*

BORING AND SAMPLING MEETS ASTM D-1886
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

*Core Left In Hole From About 58.7 to 59.6 ft - 100% Rec.
 And 95% RQD From 54.6 to 58.7 ft.

Page 2 of 2

TEST BORING RECORD

B-295

BORING NO.
 DATE DRILLED 2-24-76
 JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

◀ ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION ◀ LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	589.5 ELEV.	REMARKS	R.Q.D.	
0	Firm Red Brown And Red Tan Micaceous Clayey Very Silty Fine To Coarse Sand With Quartz Fragments			N=15		
			584.5	N=23		
				579.5	N=17	
					N=15	
14.0		Loose Gray Tan Micaceous Very Silty Fine To Coarse Sand		574.5	N=7	
				569.5	N=9	
				564.5	N=10	
28.0	Firm To Dense Gray Tan Micaceous Silty Fine To Coarse Sand			559.5	N=16	
				554.5	N=23	
40.0			549.5	Weathered Quartz Seam At 40.0ft		

BORING AND SAMPLING MEETS ASTM D-1586

CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER

FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. B-296

DATE DRILLED 2-25-76

JOB NO. CH 2020

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	549.5 ELEV.	REMARKS	% R.Q.D.
40.0	Firm To Dense Gray Tan Micaceous Silty Fine To Coarse Sand			N=47	
			544.5	N=45	
47.5	Partially Weathered Rock That Becomes Gray Tan Micaceous Silty Fine To Coarse Sand When Sampled		539.5	N=50/4½"	
51.5	Hard Medium Light Tan Gray Felsic Gneiss	NX 100	534.5	Carbide Bit Refusal At 51.5 ft. Very Slight Weathering With Moderately Severely Weathered Zones (51.5 to 60.6 ft.)	56
		98		◀ Slight	25
60.6	Hard To Very Hard Medium Light Gray Felsic Gneiss	100	529.5	Fresh (60.6 to 69.8 ft.)	
			524.5		99
69.8	Coring Terminated At 69.8 ft. Drilling Water Loss Boring Caved At 14.8 ft After 24 Hours		519.5		

BORING AND SAMPLING MEETS ASTM D-1886
 CORE DRILLING MEETS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MOD. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 2

TEST BORING RECORD

BORING NO. B-296

DATE DRILLED 2-25-76

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

589.8

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Firm Red Brown Micaceous Clayey Very Silty Fine To Coarse Sand				
4.0	Firm To Loose Tan Orange To Tan Pink Micaceous Very Silty Fine To Coarse Sand		584.8	N=26	
				N=13	
			579.8	N=11	
				N=7	
			574.8	N=7	
				N=8	
			569.8	N=8	
0	Stiff Olive Brown Micaceous Fine Sandy Silt		564.8	N=9	
				N=13	
			559.8	N=13	
35.0	Stiff Tan Micaceous Fine To Medium Sandy Silt		554.8	N=14	
37.0	Firm Brown Gray To Tan Gray Micaceous Very Silty Fine To Coarse Sand		549.8	N=15	

BORING AND SAMPLING MEETS ASTM D-1988

CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE. 24 HR.

ROCK CORE RECOVERY WATER TABLE. 1 HR.

N = STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 3

TEST BORING RECORD

BORING NO. B-297

DATE DRILLED 2-26-76

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	549.8 ELEV.	REMARKS	% R.Q.D.
40.0	Firm Brown Gray To Tan Gray Micaceous Very Silty Fine To Coarse Sand			N=17	
			544.8	N=17 Quartz Seam At 45 ft.	
			539.8	N=18	
52.5	Very Dense Gray Tan Micaceous Very Silty Fine To Coarse Sand				
			534.8	N=68	
58.0	Very Stiff To Hard Tan Micaceous Fine Sandy Silt				
			529.8	N=20	
			524.8	N=74 Hard Layer 64.0 to 66.0 ft.	
			519.8	N=18	
72.0	Very Dense Olive Tan Micaceous Very Silty Fine To Coarse Sand				
			514.8	N=65	
79.0	Partially Weathered Rock That *				
80.0			509.8	N=50/5"	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

*Becomes Olive Tan Micaceous Very Silty
Fine To Coarse Sand When Sampled

TEST BORING RECORD

BORING NO. B-297
DATE DRILLED 2-26-76
JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE. 24 HR.
ROCK CORE RECOVERY WATER TABLE. 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER
R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

509.8

DEPTH FT.	DESCRIPTION	CORE SIZE	TIME MIN.	ELEV.	REMARKS	R.Q.D.
80.0	Partially Weathered Rock That Becomes Olive Tan Micaceous Very Silty Fine To Coarse Sand When Sampled			504.8	N=50/4"	
90.0	Hard To Very Hard Medium Dark Gray Mafic Gneiss	100		499.8	N=50/1" No Recovery Carbide Bit Refusal At 90.0 ft. Slight Weathering (90.0 to 91.8 ft.)	53
				494.8	Fresh (91.8 to 103.0 ft.)	
		100			Quartz Seam At 92.9 ft.	100
					489.8	
3.0	Coring Terminated At 103.0 ft. No Drilling Water Loss Boring Caved And Dry To 17.6 ft After 24 Hours			484.8		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 3 of 3

TEST BORING RECORD

BORING NO. B-297
 DATE DRILLED 2-26-76
 JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0			676.3		
	Wash Drilled To 69.4 ft.		671.3		
			626.3		
			621.3		
			616.3		
			611.3		
69.4	Boring Terminated At 69.4 ft. Caved And Dry At 62.4 ft After 24 Hours		606.3	Carbide Bit Refusal At 69.4 ft.	

BORING AND SAMPLING MEETS ASTM D-1886
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

% ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 272 of 298

Page 1 of 1

TEST BORING RECORD

BORING NO. B-343

DATE DRILLED 7-13-76

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

674.1







DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Wash Drilled To 16.9 ft.		669.1		
			664.1		
			659.1		
16.9	Boring Terminated At 16.9 ft. Caved And Dry At 14.3 ft After 24 Hours		654.1	Carbide Bit Refusal At 16.9 ft.	

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

Page 1 of 1

TEST BORING RECORD

BORING NO. B-344
 DATE DRILLED 7-13-76
 JOB NO. CH 2920

 UNDISTURBED SAMPLE  WATER TABLE, 24 HR.  ROCK JOINT:
 % ROCK CORE RECOVERY  WATER TABLE, 1 HR. L = LOW DIP 0°-30°
 N = STANDARD PENETRATION  LOSS OF DRILLING WATER M = MED. DIP 30°-60°
 R.Q.D. ROCK QUALITY DESIGNATION S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R Q.D.
0	Very Stiff Red Brown Micaceous Fine To Medium Sandy Clayey Silt		589.6	N=18	
4.0			584.6	N=17	
	Stiff To Very Stiff Tan Pink Gray Micaceous Fine And Fine To Coarse Sandy Silt		579.6	N=15	
			574.6	N=11	
				N=13	
			569.6	N=13	
				N=11	
			564.6	N=11	
				N=15	
			559.6	N=17	
			554.6	N=11	
				N=11	
40.0			549.6	N=11	

BORING AND SAMPLING MEETS ASTM D-1586

CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 274 of 298

Page 1 of 2

TEST BORING RECORD

BORING NO. B-505

DATE DRILLED 6-29-77

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	R.Q.D.
40.0	Stiff To Very Stiff Tan Pink Gray Micaceous Fine And Fine To Coarse Sandy Silt		549.6		
			544.6	N=17	
			539.6	N=25	
50.5	Partially Weathered Rock That Becomes Tan Gray Micaceous Silty Fine To Medium Sand When Sampled			N=50/3"	
53.2				N=50/3" Auger Refusal At 53.2 ft.	
	Boring Terminated At 53.2 ft. Groundwater At 27.7 ft At Time Of Boring		534.6		

BORING AND SAMPLING MEETS ASTM D-1586

CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 2 of 2

TEST BORING RECORD

BORING NO. B-505

DATE DRILLED 6-29-77

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK JOINT:

% ROCK CORE RECOVERY WATER TABLE, 1 HR.

L = LOW DIP 0°-30°

STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Firm Brown Micaceous Fine To Coarse Sandy Silt		590.7	N=6	
4.0	Firm Gray Brown Micaceous Very Silty Fine To Medium Sand		585.7	N=12	
7.0	Very Stiff To Hard Tan Gray Fine To Medium Sandy Silt		580.7	N=16	
				N=17	
			575.7	N=35	
			570.7	N=26	
25.0	Partially Weathered Rock That Becomes Brown Gray Micaceous Silty Fine To Medium Sand When Sampled		565.7	N=50/3"	
			560.7	N=50/5"	
35.3	Boring Terminated At 35.3 ft. No Groundwater Encountered		555.7	N=50/3"	

BORING AND SAMPLING MEETS ASTM D-1886
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 1

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 % ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

BORING NO. B-506
 DATE DRILLED 6-30-77
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.	
0	Stiff Tan Brown Gray Micaceous Fine To Medium Sandy Silt		592.4			
			587.4			
					N=14	
					N=13	
				582.4		
	Very Stiff To Hard Gray Micaceous Fine To Medium Sandy Silt			N=12		
					N=15	
				577.4		
19.0	Very Stiff To Hard Gray Micaceous Fine To Medium Sandy Silt			N=24		
					N=42	
				572.4		
	Dense Tan Brown Micaceous Silty Fine To Coarse Sand			N=44		
				567.4		
29.0	Dense Tan Brown Micaceous Silty Fine To Coarse Sand			N=44		
				562.4		
34.0	Partially Weathered Rock That Becomes Tan Brown Micaceous Silty Fine To Coarse Sand When Sampled			N=50/5"		
				557.4		
37.0	Boring Terminated At 37.0 ft. No Groundwater Encountered			N=50/0 Auger Refusal At 37.0 ft.		
				552.4		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 1

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 % ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

◀ ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

BORING NO. B-507
 DATE DRILLED 6-30-77
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

590.6

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Stiff To Very Stiff Tan Gray Micaceous Fine To Medium Sandy Silt				
			585.6	N=17	
			580.6	N=12	
				N=15	
			575.6	N=20	
				N=19	
			570.6	N=19	
				N=20	
			565.6	N=20	
				N=50/4"	
30.0	Partially Weathered Rock That Becomes Gray Tan Micaceous Silty Fine To Medium Sand When Sampled		560.6	N=50/4"	
34.0	Partially Weathered Rock That *			N=50/1"	
35.1	Boring Terminated At 35.1 ft. No Groundwater Encountered		555.6	N=50/1"	

BORING AND SAMPLING MEETS ASTM D-1586 *Becomes Light Gray Brown Micaceous Silty Fine To Coarse Sand
 CORE DRILLING MEETS ASTM D-2113 With Rock Fragments When
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER Sampled
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-508

DATE DRILLED 7-11-77

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE. 24 HR.

ROCK JOINT:

% ROCK CORE RECOVERY WATER TABLE. 1 HR.

L = LOW DIP 0°-30°

N = STANDARD PENETRATION LOSS OF DRILLING WATER

M = MED. DIP 30°-60°

R.Q.D. ROCK QUALITY DESIGNATION

S = STEEP DIP 60°-90°

DEPTH FT.	DESCRIPTION	CORE NO.	TIME MIN.	ELEV.	REMARKS	% R.Q.D.
0	Stiff To Very Stiff Olive Brown Micaceous Silt			590.3		
				585.3	N=10	
					N=11	
				580.3	N=13	
					N=10	
				575.3	N=18	
20.0	Partially Weathered Rock That Becomes Olive Micaceous Fine Sandy Silt With Rock Fragments When Sampled			570.3	N=50/4"	
25.6	Boring Terminated At 25.6 ft.			565.3	N=50/5" Auger Refusal At 25.6 ft.	

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 % ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0-30°

M = MED. DIP 30-60°

H = HIGH DIP 60-90°

Page 1 of 1

TEST BORING RECORD

BORING NO. B-526

DATE DRILLED 7-12-77

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	590.9 ELEV.	REMARKS	% R.Q.D.
0	Stiff Yellow Tan Micaceous Fine Slightly Sandy Silt		585.9	N=11	
9.0	Stiff Olive Micaceous Silt		580.9	N=12	
12.0	Partially Weathered Rock That Becomes Tan Gray Micaceous Silty Fine To Medium Sand When Sampled		575.9	N=50/5"	
15.0	Very Dense Tan Gray Micaceous Silty Fine To Coarse Sand			N=57	
18.1	Boring Terminated At 18.1 ft. Groundwater At 15.4 ft At Time Of Boring		570.9	N=50/1" Auger Refusal At 18.1 ft.	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 1 of 1

TEST BORING RECORD

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
% ROCK CORE RECOVERY WATER TABLE, 1 HR.

ROCK JOINT:

BORING NO. B-527

DATE DRILLED 7-12-77

JOB NO. CH 2920

N - STANDARD PENETRATION LOSS OF DRILLING WATER

L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
H = HIGH DIP 60°-90°

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Very Stiff Olive Micaceous Fine Sandy Silt		590.5		
			585.5	N=20	
			580.5	N=23	
			575.5	N=19	
21.0	Partially Weathered Rock That Becomes Tan Brown Micaceous Fine To Medium Sandy Silt When Sampled		570.5	N=50/6"	
24.0	Partially Weathered Rock That *		565.5	N=50/2"	
25.2	Boring Terminated At 25.2 ft. Groundwater At 15.8 ft At Time Of Boring				

BORING AND SAMPLING MEETS ASTM D-1586 *Becomes Gray Micaceous Silty Fine To Coarse Sand When Sampled
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-528
 DATE DRILLED 7-13-77
 JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 % ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 H = HIGH DIP 60°-90°

R.Q.D. ROCK QUALITY DESIGNATION

Page 28 of 298

589.5

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Firm Tan Yellow Gray Micaceous Very Silty Fine To Medium Sand		584.5	N=11	
				N=11	
10.0	Dense Tan Micaceous Silty Fine To Medium Sand		579.5	N=50	
15.0	Partially Weathered Rock That Becomes Gray Tan Micaceous Very Silty Fine To Medium Sand When *		574.5	N=50/5"	
18.0	Boring Terminated At 18.0 ft. Groundwater At 16.0 ft At Time Of Boring		569.5	Auger Refusal At 18.0 ft.	

BORING AND SAMPLING MEETS ASTM D-1586 *Sampled
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

% ROCK CORE RECOVERY WATER TABLE, 1 HR.

STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

DEEP DIP 60°-90°

TEST BORING RECORD

BORING NO. B-529

DATE DRILLED 7-12-77

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Stiff Tan Red Fine To Medium Sandy Clayey Silt			N=14	
4.0	Stiff To Very Stiff Tan Brown Gray Micaceous Fine To Medium Sandy Silt		599.8	N=12	
			594.8	N=19	
			589.8	N=10	
				N=9	
			584.8	N=13	
				N=25	
25.0	Dense Tan Brown Micaceous Silty Fine To Medium Sand		579.8	N=40	
30.0	Partially Weathered Rock That Becomes Tan Brown Micaceous *		574.8	N=50/4"	
32.0	Boring Terminated At 32.0 ft. Groundwater At 29.0 ft After 24 Hours		569.8		

BORING AND SAMPLING MEETS ASTM D-1586 *Silty Fine To Coarse Sand When Sampled
 CORE DRILLING MEETS ASTM D-2112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-530
 DATE DRILLED 7-13-77
 JOB NO. CH 2920

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 50% ROCK CORE RECOVERY WATER TABLE, 1 HR.
 N - STANDARD PENETRATION LOSS OF DRILLING WATER

ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

LAW ENGINEERING TESTING CO.

R.Q.D. ROCK QUALITY DESIGNATION

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	590.1 ELEV.	REMARKS	% R.Q.D.
0	Stiff to Very Stiff Rust Gray Micaceous Fine Sandy Silt		585.1	N=21	
			580.1	N=15	
14.0	Very Stiff Gray Tan Micaceous Fine to Medium Very Sandy Silt		575.1	N=23	
19.0	Partially Weathered Rock That Becomes Gray Tan Micaceous Silty Fine to Medium Sand When Sampled		570.1	N=50/4"	
22.5	Boring Terminated at 22.5 Ft. No Drill Water Loss Groundwater at 16.5 Ft. After 24 Hour No Drill Water Loss		565.1	Carbide Bit Refusal at 22.5 Ft.	

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 1

TEST BORING RECORD

BORING NO. B-558

DATE DRILLED 11-10-77

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

FT.	DESCRIPTION	SIZE MIN.	ELKY.	REMARKS	R Q D
0	Fill Concrete		542		
5			537		
6.9'	Moderately Hard, Light Gray Felsic Gneiss	NX 85		6.9' to 11.5' moderately severe moderate weathering	6.0
10			532	9.2', open joint, steep dip, quartz-mica coated, Mn-stained	
11.9'	Hard to Very Hard, Light Gray Felsic Gneiss	NX 92		11.5', quartz vein with open vugs 11.9' to 18.4', open joints, closely spaced, medium to steep dips, coated with quartz-mica	62
15			527	11.5' to 38.0', slight to very slight weathering	18
20			522	20.1' } quartz veins with open 21.0' } vugs	
25		NX 100		18.4' to 38.0' open joints, steep dip, wide spacing, quart-chlorite coated	81
30			517		28
30			512		
35		NX 100			98
35			507		
40	Coring Terminated at 38.0'				38

BORING AND SAMPLING METHODS ASTM D-1586
CORE DRILLING METHODS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.
 30% ROCK CORE RECOVERY WATER TABLE, 1 HR.
N - STANDARD PENETRATION LOSS OF DRILLING WATER

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

BORING NO. B-682
DATE DRILLED 4/4/79
JOB NO. Cherokee



TEST BORING RECORD


B.F. 2

DEPTH FT.	DESCRIPTION	SIZE MIN.	ELKV.	REMARKS	R Q D
0	Fill Concrete		542		
5			537		
8.3'	Moderately Hard, Light Gray Felsic Gneiss	NX 91	532	8.3' to 17.3', moderately weathered 8.3' to 22.0', joints, medium to steep dip, closely spaced, some open, quartz-chlorite coated.	41
15		NX 96	527	17.3' to 33.7', very slight weathering to unweathered	61
17.3'	Hard to Very Hard, Light Gray Felsic Gneiss		522	22.0' to 35.7', joints, steep dips, moderately close spacing, quartz-chlorite-mica coated, closed.	76
20		NX 97	517		
25			512		
30		NX 100	512	33.7' to 35.7', unweathered. 34.8', calcite vein, steep dip	100
33.7'	Hard to Very Hard, Dark Gray Mafic Gneiss		507		
35	Coring Terminated at 35.7'				
40					

BORING AND SAMPLING MEETS ASTM D-1886
CORE DRILLING MEETS ASTM D-2112
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

 UNDISTURBED SAMPLE  WATER TABLE, 24 HR.

 ROCK CORE RECOVERY  WATER TABLE, 1 HR.

N - STANDARD PENETRATION  LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

502

Page 1 of 1

TEST BORING RECORD

BORING NO. B-683

DATE DRILLED 3-30-79

JOB NO. Cherokee

◀ ROCK JOINT:

L = LOW DIP 0°-30°



M = MED. DIP 30°-60°



S = STEEP DIP 60°-90°

B-183

FT.	DESCRIPTION	SIZE MIN.	ELEV.	REMARKS	R.Q.D.
0	Fill Concrete		542		
5			537		
8.0'	Moderately Hard, Light Gray Felsic Gneiss	NX 53		8.0' to 11.0', moderate weathering	8.0
11.0'	Hard to Very Hard, Light Gray Felsic Gneiss	NX 99	532	8.0' to 11.0', joints, medium dip, close spacing, open 11.0' to 37.8', very slight weathering to unweathered	11
15		NX 95	527	11.0' to 30.3', joints, medium to steep dips, moderately close to close spacing, most closed, quartz-mica-chlorite coated.	89
20			522	17.8' to 18.8', shear-breccia zone, anostomosing planes of chlorite surround sub-angular fragments of felsic gneiss, veins of K-feldspar cut across zone, moderately weathered near top of zone	18
25			517	24.3' } 1/4" to 1/2" thick quartz 25.6' } veins	28
30.3'	Very Hard, Dark Gray Mafic Gneiss	NX 100	512	30.0', quartz pod 30.3' to 37.8', joints, medium to steep dips, closed, generally coated by calcite but some quartz is present	100
35			507		
37.8'	Coring Terminated at 37.8'				37
40			502		


BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

 UNDISTURBED SAMPLE  WATER TABLE, 24 HR.

 ROCK CORE RECOVERY  WATER TABLE, 1 HR.

N - STANDARD PENETRATION  LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

 ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 1

TEST BORING RECORD

BORING NO. B-684

DATE DRILLED 3-29-79

JOB NO. Cherokee

B-684

FT.	DESCRIPTION	SIZE	MIN. ELEV.	REMARKS	R.Q.D.
70			522.8		
	Carbide Refusal at 73.9'				
75	Moderately Hard, Dark Gray Mafic Gneiss	NX 22	517.8	73.9' to 81.3', moderately severe weathering	73
					0
80	81.3'		512.8	81.3' to 92.0', slight weathering	80
	Moderately Hard to Hard, Light Gray Felsic Gneiss	NX 49		82.7', open joint, steep dip, quartz-chlorite coated	
85			507.8		24
90		NX 24			89
	92.0'		502.8		0
95	Hard to Very Hard, Light Gray Felsic Gneiss	NX 99		92.0' to 99.3', unweathered	88
			497.8		
				97.0', open joint, steep dip, quartz-chlorite coated	
100	Coring Terminated at 99.3'		492.8	Joints have wide spacing.	99
105			487.8		
110					







482.8

Page 1 of 1

BORING AND SAMPLING MEETS ASTM D-1886
 CORE DRILLING MEETS ASTM D-2112
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD

BORING NO. B-685
 DATE DRILLED 4-10-79
 JOB NO. Cherokee

 UNDISTURBED SAMPLE  WATER TABLE, 24 HR.
 ROCK CORE RECOVERY  WATER TABLE, 1 HR.
 N - STANDARD PENETRATION  LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION
 ROCK JOINT:
 L = LOW DIP 0-30°
 M = MED. DIP 30-60°
 S = STEEP DIP 60-90°






B-685

FT.	DESCRIPTION	SIZE MIN.	ELKV.	REMARKS	R.Q.D.
40			553.4		
45	Carbide Refusal at 45.1'				
	Hard to Very Hard, Light Gray Felsic Gneiss	NX 80	548.4	45.1' to 49.0', moderate to very slight weathering	45
				45.4', joint, steep dip, Mn-coated	41
50		NX 74		48.8', quartz vein with Mn-staining, medium dip	49
			543.4	49.0' to 68.8', unweathered, joints, medium to steep dips, moderately close, healed by quartz-mica-chlorite, possible calcite	34
55		NX 89	538.4		52
				54.1' } joints, steep dips, open, coated by quartz-mica	
60				54.2' }	
				61.4' }	59
				62.4' }	
			533.4	64.1' }	
		NX 100			97
65			528.4		
70	Coring Terminated at 68.8'				68
			523.4		
75			518.4		
80			513.4		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

TEST BORING RECORD






BORING NO. B-686
DATE DRILLED 4-6-79
JOB NO. Cherokee

 UNDISTURBED SAMPLE  WATER TABLE, 24 HR.  ROCK JOINT:
|30| % ROCK CORE RECOVERY  WATER TABLE, 1 HR. L = LOW DIP 0°-30°
N = STANDARD PENETRATION  LOSS OF DRILLING WATER M = MED. DIP 30°-60°
R.Q.D. ROCK QUALITY DESIGNATION S = STEEP DIP 60°-90°

B-686

FT.	DESCRIPTION	SIZE MIN.	ELEV.	REMARKS	R Q D
20			556.8		
23.1'	Carbide Refusal at 23.1'				23
25	Moderately Hard, Light Gray Felsic Gneiss	NX 90	551.8	23.1' to 26.1', moderate to slight weathering	42
26.1'				26.1' to 49.4', slight weathering to unweathered	
30		NX 43	546.8	23.1' to 49.4', joints, medium to steep dips, close to very close spacing, some open, majority mineralized with combinations of quartz, chlorite, mica and calcite, some Mn-staining near surface.	26
35			541.8		
37.5'	Hard, Dark Gray Mafic Gneiss				37
40	38.5'	NX 87	536.8		56
45	Hard to Very Hard, Light Gray Felsic Gneiss				42
46.7'		NX 98	531.8	46.7', shear zone, anastomosing steeply dipping planes, healed by quartz-chlorite slickensides on planes oriented oblique to axis of core	95
50	Coring Terminated at 49.4'		526.8		49
55			521.8		
60			516.8		

BORING AND SAMPLING MEETS ASTM D-1886
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

 UNDISTURBED SAMPLE  WATER TABLE, 24 HR.
 30% ROCK CORE RECOVERY  WATER TABLE, 1 HR.
N - STANDARD PENETRATION  LOSS OF DRILLING WATER

ROCK JOINT:
L = LOW DIP 0°-30°
M = MED. DIP 30°-60°
S = STEEP DIP 60°-90°

Page 1 of 1
TEST BORING RECORD
BORING NO. B-687
DATE DRILLED 4-9-79
JOB NO. Cherokee

R.Q.D. ROCK QUALITY DESIGNATION

B-687

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	589.6 ELEV.	REMARKS	% R.Q.D.
0	Wash Drilled Without Sampling		584.6		
			579.6		
			574.6		
			569.6		
			564.6		
			559.6		
			554.6		
40.0			549.6		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 [] UNDISTURBED SAMPLE [] WATER TABLE, 24 HR.
 [30] % ROCK CORE RECOVERY [] WATER TABLE, 1 HR.
 N - STANDARD PENETRATION [] LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION



◀ ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 1 of 3
TEST BORING RECORD
 BORING NO. BW-44
 DATE DRILLED 10-26-77
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN. ELEV.	REMARKS	% R.Q.D.
40.0	Wash Drilled Without Sampling	549.6		
		544.6		
		539.6		
		534.6		
		529.6		
		524.6		
		519.6		
		514.6		
80.0		509.6		

BORING AND SAMPLING MEETS ASTM D-1886
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

 UNDISTURBED SAMPLE  WATER TABLE, 24 HR.

 30% ROCK CORE RECOVERY  WATER TABLE, 1 HR.

N - STANDARD PENETRATION  LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

 ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 2 of 3

TEST BORING RECORD

BORING NO. BW-44

DATE DRILLED 10-26-77

JOB NO. CH 2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	509.6 ELEV.	REMARKS	% R.Q.D.
80.0	Wash Drilled Without Sampling		504.6		
90.0	Boring Terminated at 90.0 Ft. Installed Observation Well to 90.0 Ft.		499.6		

BORING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.
 [] UNDISTURBED SAMPLE [] WATER TABLE, 24 HR.
 [30] % ROCK CORE RECOVERY [] WATER TABLE, 1 HR.
 N - STANDARD PENETRATION [] LOSS OF DRILLING WATER
 R.Q.D. ROCK QUALITY DESIGNATION

◀ ROCK JOINT:
 L = LOW DIP 0°-30°
 M = MED. DIP 30°-60°
 S = STEEP DIP 60°-90°

Page 3 of 3
TEST BORING RECORD
 BORING NO. BW-44
 DATE DRILLED 10-26-77
 JOB NO. CH 2920
 LAW ENGINEERING TESTING CO.

DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT
PROJECT Overlook

SOIL TEST BORING FIELD REPORT

JOB NO. 7-81-B STARTING TIME _____
 JOB NAME Overlook GROUND SURFACE ELEV. 582.58
 DATE 10-26-77 WEATHER Clear Warm HRS. DRILLING _____ HRS. MOVING _____
 INSPECTOR Ellenbusch BORING NO. BW-44

SAMPLING			SCALE	UD	SOIL CLASSIFICATION AND REMARKS
1ST 6"	2ND 6"	3RD 6"			
			80		Drilled in soil 0.0'-90.0' ↓ Terminated SET PVC TO BOTTOM OF HOLE
			85		
			90		
			95		
			100		
			105		
			110		
			115		
			120		
			125		

+ STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES

BORING TERMINATED <u>90.0'</u>	METHOD OF ADVANCING BORING	DEPTH
BORING REFUSAL _____	POWER AUGER	TO
WATER TOB DEPTH _____	HAND CHOP: W/MUD: W/WATER	TO
WATER 24 HR: DEPTH _____	ROTARY DRILL: W/MUD: W/WATER	<u>00'</u> TO <u>90.0'</u>
WATER LOSSES <u>None</u>	DIAMOND CORE	- TO -
CASING SIZE <u>1 1/2"</u> LENGTH <u>60.0'</u>		

APPROVED BY _____ DATE _____
 QUALITY ASSURANCE

DEPTH FT.	DESCRIPTION	CORE % & TIME SIZE MIN.	ELEV.	REMARKS	% R.Q.D.
0	Partially Weathered Rock		579.0		
			569.0		
14.4	Hard to Very Hard Gray Felsic Gneiss	NX 77	564.0	Carbide Bit Refusal at 14.4 Ft.	38
		NX 57	559.0	14.4 to 79.4 Ft. Moderate Weathering to Fresh Soft Zone at 18.5 Ft. Closely Jointed (15.7 to 27.0 Ft.)	28
		NX 100	554.0		64
			549.0		
31.1	Very Hard Dark Gray Mafic Gneiss	NX 96	544.0		83
			539.0		

BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE WATER TABLE, 24 HR.

30% ROCK CORE RECOVERY WATER TABLE, 1 HR.

N - STANDARD PENETRATION LOSS OF DRILLING WATER

R.Q.D. ROCK QUALITY DESIGNATION

ROCK JOINT:

L = LOW DIP 0°-30°

M = MED. DIP 30°-60°

S = STEEP DIP 60°-90°

Page 1 of 2

TEST BORING RECORD

BORING NO. BW-45

DATE DRILLED 10-24-77

JOB NO. CH2920

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	CORE SIZE	% & TIME MIN.	ELEV.	REMARKS	% R.Q.D.
40.0	Very Hard Dark Gray Mafic Gneiss	NX 100		539.0		
43.4	Very Hard Gray Felsic Gneiss			534.0		86
				529.0		
		NX 98		524.0		63
				519.0	Mafic Gneiss (60.2 to 60.9 Ft.)	
63.1	Very Hard Dark Gray Mafic Gneiss	NX 100		514.0		93
				509.0		
		NX 100		504.0		94
75.3	Very Hard Gray Felsic Gneiss	NX 100				97
79.4	Coring Terminated at 79.4 Ft.*			499.0		

BORING AND SAMPLING MEETS ASTM D-1886 *Installed Observation Well at 79.4 Ft.
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1-4 IN. I.D. SAMPLER 1 FT.

Page 2 of 2

TEST BORING RECORD

BORING NO. BW-45
 DATE DRILLED 10-14-77
 JOB NO. CH 2920

10-24-77

UNDISTURBED SAMPLE WATER TABLE. 24 HR. ◀ ROCK JOINT:
 30% ROCK CORE RECOVERY WATER TABLE. 1 HR. L = LOW DIP 0-30°
 N - STANDARD PENETRATION ▶ LOSS OF DRILLING WATER M = MED. DIP 30-60°
 R.Q.D. ROCK QUALITY DESIGNATION S = STEEP DIP 60-90°

LAW ENGINEERING TESTING CO.

DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT
PROJECT Cherokee

SOIL TEST BORING FIELD REPORT

JOB NO. X81-B
JOB NAME Cherokee
DATE 10-24/77
WEATHER Cloudy Warm
INSPECTOR Ellenburg
STARTING TIME
GROUND SURFACE ELEV. 579.02
HRS. DRILLING
HRS. MOVING
BORING NO. Bw-45

SAMPLING			SCALE	UD	SOIL CLASSIFICATION AND REMARKS
1ST 6"	2ND 6"	3RD 6"			
			0		
			5		
			10		Weather Material
			14.4'		CARBIDE REFUSAL
1.3' RUN	1.0' REC.	77%	15.7'		Grey Moderately/Slight Weather. Moderately Hard Felvic Gneiss
4.6' RUN	1.3' REC.		20.3'		14.7' Very Close Joint
2.6' REC.	38% ROD		22.9'		Grey Moderately/Slight Weather. Moderately Hard Felvic Gneiss (Rest is Closely Jointed)
57% REC.			25.5'		END RUN
8.7' RUN	5.6' ROD		34.1'		Grey - 20.3'-23.0' Moderately Weather. Moderately Hard Felvic Gneiss Closely Jointed
8.7' REC.	64% ROD		42.8'		Grey - 23.0'-25.4' Very Slight Weather. Hard Felvic Gneiss
100% REC.			45.4'		Grey - 25.4'-27.0' Moderately/Slight Moderately/Hard Felvic Gneiss (Closely Jointed)
			48.0'		Grey - 27.0'-29.0' Very Slight Weather. Hard Felvic Gneiss (28.0' Very Close Joint)
			29.0'		END RUN
9.5' RUN	8.2' ROD		37.7'		Grey 29.0'-31.0' Very Slight/Fresh Weather. Felvic Gneiss
9.5' REC.	83% ROD		47.2'		29.2' Very Close Joint
9.6% REC.			56.8'		30.8' " " (Vertical)
			66.4'		Grey/BLACK 31.0'-38.9' Fresh Weather Very Hard Matrix Gneiss
			76.0'		32.9' Very Close Joint
			85.6'		END RUN
9.7' RUN	100% REC.		95.3'		Grey/BLACK 38.9'-43.4' Fresh Weather Very Hard Matrix Gneiss
9.7' REC.	8.3' ROD		104.0'		42.8' Very Close Joint

+ STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES

BORING TERMINATED	79.4'	METHOD OF ADVANCING BORING	DEPTH
BORING REFUSAL	14.4'	POWER AUGER	TO
WATER TOB DEPTH		HAND CHOP: W/MUD: W/WATER	TO
WATER 24 HR: DEPTH		ROTARY DRILL: W/MUD: W/WATER	00 TO 14.4'
WATER LOSSES	None	DIAMOND CORE	14.4 TO 79.4'
CASING SIZE	ALD		
LENGTH	15.4'		

APPROVED BY _____ DATE _____
QUALITY ASSURANCE

DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT
PROJECT Cherokee

SOIL TEST BORING FIELD REPORT

JOB NO. 281-E

STARTING TIME _____

GROUND SURFACE ELEV. 579.02

JOB NAME Cherokee

HRS. DRILLING _____

HRS. MOVING _____

DATE 10-25/77

WEATHER cloudy Wind

INSPECTOR F. Wagner

BORING NO. BW-45

SAMPLING			SCALE	UD	SOIL CLASSIFICATION AND REMARKS
1ST 6"	2ND 6"	3RD 6"			
			40		43.4' - 48.6' Grey Fresh Weath. Very Hard Folio Gneiss
					43.9' Very Close Joint
					44.4' " " "
					45.4' " " "
			45		45.1' - 46.5' Closely Jointed
48.6'					→ END RUN
8.5'	RUN	6A' RQD			Grey Fresh Weath. Very Hard Folio Gneiss
8.3'	Rec.	63% RQD	50		49.6' Very Close Joint
9.8'	Rec.				Low RQD due to the fact 20' was left in the hole because of lifter - (Rock was broken in small pieces)
			55		
57.1'					→ END RUN
8.1'	RUN	7.5' RQD			Grey Fresh Weath. Very Hard Folio Gneiss
8.1'	Rec.	93% RQD	60		58.4' Very Close Joint (Vertical)
100%	Rec.				(60.2' - 60.9' - Mafic Gneiss Seam)
					61.8' Very Close Joint
					63.1' Grey/Black Fresh Weath. Very Hard Mafic Gneiss
					65.2'
65.2'					→ END RUN
7.8'	RUN	7.3' RQD	65		Grey/Black Fresh Weath. Very Hard Mafic Gneiss
7.8'	Rec.	74% RQD			67.9' Very close Joint (Vertical)
100%	Rec.				
			70		
73.0'					→ END RUN
6.4'	RUN	6.2' RQD	75		73.0' - 75.3' Grey/Black Fresh Weath. Very Hard Mafic Gneiss
6.4'	Rec.	97% RQD			75.3' - 79.4' Grey Fresh Weath. Very Hard Folio Gneiss
100%	Rec.				
79.4'					→ Terminated
			80		10-25/77
					Set PVC to Bottom of Hole

+ STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES

BORING TERMINATED	79.4'	METHOD OF ADVANCING BORING	DEPTH
BORING REFUSAL	14.4'	POWER AUGER	TO
WATER TOB DEPTH		HAND CHOP: W/MUD: W/WATER	TO
WATER 24 HR: DEPTH		ROTARY DRILL: W/MUD: W/WATER	0.0 TO 14.4'
WATER LOSSES	None	DIAMOND CORE	14.4 TO 79.4'
CASING SIZE	NW		
LENGTH	13.4'		

APPROVED BY _____ DATE _____
QUALITY ASSURANCE