

## WSES-FSAR-UNIT-3

### APPENDIX 2.5A

#### LABORATORY TESTING

##### 2.5A GENERAL SAMPLE HANDLING

All undisturbed in situ samples were transported horizontally in specially constructed wooden shipping crates and cushioned against sudden movements. All samples including undisturbed samples, jar samples, and bulk samples were transported from the field by special van to the laboratories of Law Engineering Testing Company in Marietta, Georgia and Eustis Engineering Company of New Orleans, Louisiana. Class A backfill material reconstituted for testing was sent to Woodward Clyde Consultants in Clifton, New Jersey.

In the laboratory undisturbed samples were removed from their wooden shipping crates and placed horizontally in racks for storage. Each sample assigned for laboratory tests was cut into six in. long sections with a band saw and then extruded from its protective tube. During the cutting and extrusion process, the laboratory's project engineer or a designated staff engineer inspected the samples to confirm that they were representative of the appropriate stratum. Various tests were run on selected specimens to determine the engineering parameters of the subsurface materials (i.e. classification, strength, consolidation and dynamic tests). General descriptions of the individual tests and test procedures within the various test categories are included in subsequent subsections.

##### 2.5A.1 CLASSIFICATION TESTS

###### a) Grain Size Distribution Tests

Grain size tests were performed on representative specimens using the wet preparation method of soil samples as described in ASTM D 2217. Materials consisting primarily of sand and silt were passed through a set of nested sieves as described in ASTM D 422.

Soils containing significant amounts of fine-grained material were first passed through nested sieves and washed on the No. 200 sieve. Hydrometer analyses were performed on particles finer than the No. 200 sieve as described in ASTM D 422. The particles were suspended in distilled water containing five grams per liter (gpl) deflocculent and the grain size distribution computed from the time rate of settlement of the different size particles.

###### b) Atterberg Limits Tests

Atterberg limits tests were performed on selected specimens to determine plasticity characteristics. The wet preparation method of soil specimen was used for all plasticity tests as described in ASTM D 2217. The liquid limit (LL) was determined by the one point method in accordance with ASTM D 423. The plastic limit (PL) was determined in accordance with ASTM D 424.

###### c) Moisture Content Tests

## WSES-FSAR-UNIT-3

Moisture content determinations were made on representative undisturbed tube and carton samples and jar samples in accordance with ASTM D 2216. Moisture content and unit weight determinations of undisturbed samples were made on trimmed specimens ready for testing. The trimmed specimen was weighed and measured prior to testing and oven dried to constant weight upon test completion.

### d) Specific Gravity

Specific gravity tests were performed in accordance with ASTM D 854 on selected undisturbed specimens subjected to consolidation testing.

## 2.5A.2 STRENGTH TESTS

### a) Unconfined Compression Tests

Unconfined compression tests were performed on representative Recent and Pleistocene material specimens at their natural moisture content. Controlled strain tests were performed as described in ASTM D 2166 on 1.4 in., two in., and four in. diameter specimens. Unconfined compression tests were also performed on test specimens cut horizontally from the sample as well as vertically.

### b) Triaxial Shear Tests

The strength parameters of the various strata were obtained by triaxial shear tests on representative undisturbed tube samples. Specimen preparation for triaxial shear testing was performed as described in ASTM D 2850.

Specimens were back-pressure saturated prior to testing by applying a differential pressure of two psi across the specimen as the chamber pressure and back pressure were increased slowly so that the specimen could adjust to each pressure increment. The pressure was increased about five psi every 30 minutes or longer.

Upon reaching a chamber pressure of 40 psi, the degree of saturation was checked by measuring Skempton's "B" value. If the pore pressure increase was less than the chamber pressure increase, the sample was again subjected to increasing chamber and back pressures at two psi differential until saturation was accomplished.

Saturated specimens were then consolidated to confining pressures within the range of existing and anticipated stress levels. Consolidation of the sample was measured and the specimen was allowed to drain until 100 percent consolidation was accomplished.

#### 1) Unconsolidated Undrained Triaxial Tests

Unconsolidated undrained triaxial shear tests were performed on representative undisturbed specimens of Recent and Pleistocene materials. Testing was done in accordance with ASTM D 2850. The test specimen was encased in a rubber membrane and placed in the load cell. Immediate application of confining pressure and vertical load followed with drainage prohibited.

## WSES-FSAR-UNIT-3

### 2) Consolidated Undrained Triaxial Tests

Consolidated undrained triaxial tests were performed on selected specimens of Recent material and Pleistocene clay material. Specimen preparation was performed as described in Subsection 2.5A.2.b. Test specimens were encased in a rubber membrane and placed in the load cell. The specimen was allowed to fully consolidate under the cell confining pressure. With consolidation complete, the specimen was sheared with drainage prohibited. Tests where pore water pressure measurements were made were sheared at a controlled strain rate allowing the equalization of pore water pressure throughout the specimen.

### 3) Consolidated Drained Triaxial Tests

Two series of isotropically consolidated drained triaxial tests were performed on the Class A backfill material. One series of tests was loaded along an active stress path where the vertical stress was held constant while the horizontal stress was decreased. The second series was loaded along a passive stress path where the vertical stress was held constant while the horizontal stress was increased.

All consolidated drained tests were performed on reconstituted test specimens. The specimens (two in. diameter by four in. height) were compacted in eight layers. To obtain a uniform density, the bottom layer had to be slightly undercompacted since compaction of each succeeding layer densified the sand in the layer below it. This is defined as percent undercompaction,  $U_n$ . The U value in each layer is linearly varied from the bottom to top layer with the bottom (first) layer having the maximum  $U_n$  value. The U value selected, in this case, for the first layer was two percent. After the specimens were saturated by back pressuring and the use of CO<sub>2</sub> at an effective stress of five psi, they were consolidated in increments to the required effective consolidation stress. This stress was applied one day prior to loading to failure. Loading to failure was done at rates slow enough to assure complete drainage of the test specimen.

### c) Direct Shear Tests

Unconsolidated undrained (quick) direct shear tests were performed on several specimens taken from undisturbed Recent and Pleistocene material tube samples. The trimmed specimen was placed in the testing frame and a normal load was applied. These loads were typical of in situ stress conditions encountered in the field. Before allowing the specimen in to consolidate under the normal load it was sheared horizontally producing undrained strength results similar to the unconsolidated undrained triaxial test results.

## 2.5A.3 CONSOLIDATION TESTS

Consolidation tests were performed on representative undisturbed specimens. The test procedure was generally in accordance with ASTM D 2435. The specimens were first trimmed to approximately 2-1/2 in. in diameter and one in. in height and placed in a stainless steel ring coated on the inside with a low friction material. The specimen was then weighed in

### WSES-FSAR-UNIT-3

the ring, and porous stones were placed at both ends of the ring and fitted with a rubber membrane to prevent moisture loss. Vertical loads were then applied to the specimen and increased incrementally at a load increment ratio of one. The resulting deformation of the soil was measured with a micrometer dial gage. Each load was left on the specimen until completion of 100 percent primary consolidation.

Each specimen was rebounded from a stress equal to or slightly greater than the effective overburden pressure. After rebounding to a load typically one ksf or two ksf the loads were increased in the same manner as initially applied until an assigned pressure exceeding the anticipated future soil pressure was reached. The specimen was then incrementally unloaded as during the rebound sequence, back to the original seating load on the specimen.

#### 2.5A.4 ELASTIC PROPERTIES

##### a) Shear Modulus and Damping

Laboratory determinations of elastic soil properties were made by performing load controlled cyclic triaxial tests. Specimens were selected for cyclic triaxial shear tests being representative of the soil strata at the site. These specimens were trimmed into cylinders 1.4 in. or two in. in diameter and encased in rubber membranes. Each specimen was then placed in a compression chamber and confined by pressure equivalent to the effective overburden pressure. The specimens were consolidated at this pressure until volume change ceased or 100 percent consolidation had been achieved. After consolidation, the specimens and chamber were placed in an MTS closed loop control system equipped with a Baldwin-Lima Hamilton load cell. This system was equipped to establish load as a direct primary control parameter. In this manner, a cyclic deviator stress was applied to each specimen. With each application of cyclic deviator stress, recordings of load and deformation with respect to time were made. On each specimen tested, several ranges of cyclic deviator stress were applied with corresponding recordings of load and deformation. Hysteresis loops were plotted from the recorded data and shear strain were calculated therefrom. Utilizing this data, the shear modulus was calculated for each application of cyclic deviator stress to each specimen. The shear modulus was calculated for each specimen for varying shear strain levels.

##### b) Poisson's Ratio Determination

Two specimens were selected for determination of Poisson's ratio. Each specimen was trimmed to 1.4 in. in diameter, and encased in a rubber membrane. The sample was then placed in a triaxial cell and consolidated under an all-around air pressure equivalent to the effective overburden pressure. The triaxial chamber utilized in this test was equipped with a lateral strain measuring device. This device consisted of three small feeler arms fixed to the base of the cell and bearing against the specimen. These arms were spring-loaded but the spring force was small enough so that lateral strain of the specimen was not hindered by their presence. Each arm was equipped with a strain gauge which output lateral movement of the specimen in terms of strains in the feeler arms. Small increments of deviator stress were applied with measurements of the resulting axial and lateral strain. Poisson's ratio was calculated for each specimen as the ratio of change in lateral strain to change in axial strain.

## WSES-FSAR-UNIT-3

### 2.5A.5 LIQUEFACTION TESTS

Refer to Subsection 2.5.4.8 for a description of strain controlled cyclic triaxial test procedures for determining liquefaction potential.

### 2.5A.6 SUMMARY OF TEST RESULTS

A summary of test results is presented in Tables 2.5A-1 to 2.5A-4.

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 1 of 56)

LABORATORY TEST SUMMARY TABLE

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Atterberg Limits		
				Dry	Wet	LL	PL	PI
				<u>BORING 1</u>				
4	14.4	Medium stiff gray silty clay w/decayed roots	29.1	92.5	119.4	45	23	22
7	29.5	Loose gray clayey silt	38.3	82.6	114.2	37	28	9
10	44.5	Soft gray clay w/sand lenses	50.6	70.5	106.2	64	24	40
19	72.5	Stiff tan and gray clay w/silt lenses	39.1	82.6	114.9	60	28	32
<u>BORING 8</u>								
8	24.5	Soft gray clay w/silty clay layers	39.0	80.2	111.5	58	20	38
11	39.5	Medium stiff gray clay w/silt and fine sand lenses	57.6	65.9	103.9	65	21	44
26	88.0	Stiff brown and gray clay w/silt lenses	39.3	82.1	114.4	71	26	45

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 2 of 56)

BORING 12

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)	
				Dry	Wet		
2	5.5	Loose gray clayey silt	35.0	86.0	116.1	$\phi=0$	C=200 *
4	11.5	Loose gray clayey silt	30.1	92.0	119.7	$\phi=0$	C=260 *
5	14.5	Soft gray clay w/silt pockets	39.1	81.0	112.7		760
6	19.5	Loose gray clayey silt	35.1	85.0	114.8	$\phi=2$	C=110 *
8	29.5	Loose gray clayey silt	36.7	84.2	115.1	$\phi=2$	C=160 *
10	39.5	Loose gray clayey silt	37.8	83.0	114.4	$\phi=3$	C=160 *
11	44.5	Medium stiff gray clay w/silty clay and clayey silt layers	47.4	73.9	108.9		1225
13	54.5	Medium stiff greenish-gray clay w/silt pockets	30.1	92.8	120.8		1980
22	77.5	Stiff tan and gray fissured clay w/concretions	38.3	82.0	113.4		3635

BORING 17

3	8.5	Soft gray clay w/silty clay and silty sand layers	40.3	81.2	113.9		540
7	24.5	Medium stiff gray and tan clay	54.1	68.6	105.7		1055
10	39.5	Medium stiff gray clay w/sand pockets and shell fragments	48.1	72.9	108.0		1050
17	63.0	Loose tan sandy silt w/silty clay layer	28.1	94.6	121.2		-

BORING 18

4	11.5	Soft gray silty clay	37.4	85.1	116.9		670
5	14.5	Soft gray clay w/trace of organic matter	48.9	71.8	106.9		860
6	19.5	Stiff gray and tan clay	(LL = 49%)		PL = 24%		PI = 25%)
7	24.5	Medium stiff gray and tan clay	44.0	78.4	112.9		1260

## WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 3 of 56)

BORING 18 (Cont'd)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
10	39.5	Medium stiff gray clay with silt lenses	49.6	71.7	107.3	1430
11	44.5	Medium stiff gray clay with silt lenses	(LL = 53%)		PL = 21%	PI = 32%)
12	49.5	Medium stiff gray clay with silt lenses	45.7	75.7	110.3	1250
13	54.5	Very stiff greenish-gray and tan silty clay	25.0	101.8	127.5	4780
16	62.5	Very stiff greenish-gray and tan silty clay	(LL = 82%)		PL = 24%	PI = 58%)
20	72.5	Stiff tan and gray clay w/ fissures & silt	(LL = 97%)		PL = 30%	PI = 67%)
24	84.5	Stiff tan and gray silty clay	26.7	99.8	126.4	2705
28	99.5	Stiff gray and tan clay w/sand layer	35.2	88.7	119.9	2990
32	114.5	Stiff gray clay w/silt lenses	(LL = 58%)		PL = 23%	PI = 35%)
35	124.0	Medium stiff gray silty clay w/sand pockets and shell fragments	30.6	92.3	120.5	1140
39	137.5	Very stiff greenish-gray clay w/silt pockets and concretions	27.4	98.1	125.0	4780
41	144.5	Stiff greenish-gray silty clay w/sand layer	(LL = 46%)		PL = 18%	PL = 28%)
44	154.5	Stiff gray silty clay w/trace of organic matter	29.3	96.4	124.6	3410
49	177.5	Very stiff greenish-gray clay w/shell fragments	(LL = 38%)		PL = 25%	PI = 13%)
51	184.5	Stiff greenish-gray and tan clay w/silt lenses	37.0	86.0	118.0	2930
54	194.5	Medium stiff gray sandy clay	(LL = 34%)		PL = 21%	PI = 13%)



WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 4 of 56)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
				55	197.5	

BORING 19

17	63.0	Loose tan sandy silt w/clay layers	29.9	95.0	123.4	-
----	------	------------------------------------	------	------	-------	---

BORING 21

17	63.0	Loose tan sandy silt w/clay lenses	31.5	93.5	123.0	
----	------	------------------------------------	------	------	-------	--

BORING 25

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Unconsolidated Undrained Triaxial Shear Tests						
					Density (lb/cu ft.)		Degree Saturation	Confined Compressive Strength (lb/sq. ft.)	Shear Strength (lb/sq. ft.)	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
					Dry	Wet					
1	20	22.5	Medium stiff gray & tan clay with silty clay & sandy silt layers	32.1	88.1	116.3	95	1125	$\phi=1$ C=545*	9.5	1.0
2	20	22.5	Medium stiff gray & tan clay with silty clay & sandy silt layers	35.6	85.6	116.1	100	1225		13.8	3.0
1	28	39.5	Stiff gray & tan clay w/trace of silty & decayed roots	47.9	73.6	108.9	100	1180	$\phi=2$ C=520*	3.1	1.0
2	28	39.5	Stiff gray & tan clay w/trace of silt & decayed roots	49.9	72.7	109.0	100	1265		7.1	2.0
1	32	59.5	Soft gray clay w/sand lenses & pockets	42.4	78.6	111.9	100	880	$\phi=0$ C=445*	7.1	1.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 5 of 56)

BORING 25 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	Unconsolidated Undrained Triaxial Shear Tests			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Strength (lb/sq. ft.)	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
2	32	59.5	Soft gray clay w/sand lenses & pockets	40.8	76.4	107.6	92	905		6.3	2.0
1	34	69.5	Medium stiff gray clay w/sand lenses	45.6	76.6	111.5	100	1095	$\phi=0$ C=575*	9.2	0.5
2	34	69.5	Medium stiff gray clay w/sand lenses	39.5	82.4	114.9	100	720		4.1	1.0
3	34	69.5	Unable to Test Specimen No. 3								
1	36	78.0	Very stiff tan & gray clay w/silt pockets	21.9	106.3	129.6	100	4880	$\phi=0$ c=2520*	6.1	1.0
2	36	78.0	Very stiff tan & gray clay w/silt pockets	22.9	103.9	127.7	100	4450		9.2	3.0
1	40	87.5	Very stiff brown & gray clay w/silt lenses	35.7	85.3	115.8	100	5600	$\phi=0$ c=2750*		
2	40	87.5	Very stiff brown & gray clay w/fissures	37.3	84.4	115.9	100	5285		2.0	1.0
3	42	92.5	Very stiff brown & gray clay w/fissures	47.1	76.2	112.1	100	2690		4.1	3.0

BORING 26

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)
				Dry	Wet	
3	5.5	Medium stiff gray & tan silty clay w/sandy silt lenses	31.3	90.4	118.7	1135
5	11.5	Medium stiff gray & tan clay w/sandy silt pockets & trace of organic matter	45.0	77.2	111.9	1205

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 6 of 56)

BORING 26 (Cont'd)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
10	34.5	Soft gray clay w/sandy silt lenses & pocket	39.3	80.5	112.1	610
13	48.0	Very stiff tan & gray silty clay	18.4	111.6	132.1	$\phi=0$ $c=2520^{**}$
15	53.0	Very stiff tan & gray clay	30.9	92.8	121.5	4520

BORING 26 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	Unconsolidated Undrained Triaxial Shear Tests			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Strength (lb/sq. ft.)	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	19	63.0	Stiff tan & gray clay w/silty fine sand lenses	36.2	86.6	117.9	100	3310	$\phi=1$ $c=1570^*$	5.1	1.0
2	19	63.0	Stiff tan & gray caly w/silty fine san lenses	36.7	85.6	117.0	100	3355		4.1	3.0

BORING 27

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
2	2.5	Soft gray silty clay	32.4	90.4	119.7	785
4	8.5	Soft gray silty clay	31.7	91.4	120.4	915
8	24.5	Soft gray clay w/clayey silt layeres & trace of organic matter	41.0	80.4	113.4	650
10	31.5	Soft gray clay w/sandy silt layers	38.0	83.3	115.0	945

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 7 of 56)

BORING 27 (Cont'd)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
11	34.5	Loose gray clayey sand w/shell fragments	42.3	88.7	126.2	$\phi=3$ $c=100^*$
12	39.5	Medium stiff gray clay w/sand pockets & shell fragments	52.2	70.2	106.8	1535
14	48.0	Very stiff gray & tan clay w/silt pockets	20.5	109.6	132.0	6160
16	53.0	Very stiff tan & gray fissured clay	28.7	94.9	122.1	$\phi=8$ $c=2880^{**}$
20	63.0	Very stiff tan & gray clay w/silt lenses	32.6	90.0	119.3	5750

BORING 27 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	Unconsolidated Undrained Triaxial Shear Tests			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Strength (lb/sq. ft.)	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	25	78.0	Medium compact tan clayey silt with sandy silt lenses	21.2	96.8	117.3	78	2490	$\phi=17.5C=330^*$	3.1	1.0
2	25	78.0	Medium compact tan clayey silt with sandy silt lenses	19.1	96.0	114.3	68	6135		3.3	3.0

BORING 28

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
3	8.5	Soft gray silty clay with clayey silt pockets	29.6	91.4	118.5	835
5	14.5	Soft tan & gray Clay with clayey silt layer	34.4	87.9	117.5	970
7	24.5	Soft tan & gray clay w/silt pockets	36.6	84.4	115.2	965

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 8 of 56)

BORING 28 (Cont'd)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
11	44.5	Soft gray & clay w/sand pockets & shell fragments	43.5	77.4	111.1	840
13	54.5	Medium stiff gray clay w/silt pockets	47.4	74.0	109.1	1355
15	63.0	Very stiff tan & gray silty clay concretions	19.7	108.4	129.8	$\phi=7$ C=3170*
17	68.0	Stiff tan & gray clay with concretions	34.4	88.6	119.1	3035

BORING 29

4	11.5	Soft gray clay w/silt pockets	40.6	77.8	109.4	515
6	19.5	Medium stiff greenish-gray & tan clay	41.0	81.7	115.2	1805
11	44.5	Medium stiff gray clay w/sand pockets & shell fragments	49.7	71.3	106.7	1135
14	57.5	Stiff tan & gray fissured clay w/silt lenses & concretions	31.9	91.4	120.6	2955
20	72.5	Stiff tan & gray fissured clay	37.3	84.1	115.5	3635
34	119.5	Stiff gray clay w/silt lenses	44.6	77.0	111.3	2515

BORING 29 (Cont'd)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Atterberg Limits		
				Dry	Wet	LL	PL	PI
16	62.5	Stiff tan & gray clay w/silt lenses	28.7	93.8	120.72	64	19	45
22	77.5	Very stiff tan & gray clay w/fissure	38.1	83.3	115.0	85	26	59
31	109.5	Stiff gray clay w/trace of sand	44.9	76.9	111.4	73	25	48
40	139.5	Soft gray sandy clay	29.2	93.9	121.3	32	20	12

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 9 of 56)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
<u>BORING 30</u>						
2	5.5	Medium stiff tan & gray clay w/silt pockets	31.7	89.6	118.0	1950
4	11.5	Soft gray flocculated clay w/roots	51.6	69.6	105.5	750
24	83.0	Stiff tan & gray clay with silt lenses	37.4	85.3	117.2	3095
<u>BORING 31</u>						
6	14.5	Soft gray silty clay	31.7	91.4	120.4	810
8	24.5	Soft gray clay w/sandy silt lenses	35.0	88.5	119.5	855
13	49.5	Soft gray clay w/silty sand pockets	51.5	70.9	107.4	995
17	63.0	Medium stiff reddish-brown & gray clay w/sandy silt layers	35.1	86.0	116.1	1390
33	114.5	Stiff gray clay	39.5	82.8	115.5	3520
<u>BORING 35</u>						
3	5.5	Soft brown silty clay with clayey silt layers	32.6	90.4	119.9	700
4	8.5	Very soft gray silty clay w/sandy silt layers	34.4	87.6	117.7	440
7	19.5	Medium stiff gray clay with sandy silt lenses	34.3	88.5	118.9	1280
13	44.5	Soft gray clay w/sandy silt lenses	47.1	74.9	110.2	665
<u>BORING 36</u>						
2	5.5	Stiff tan & gray silty clay w/clayey silt layers	27.5	92.3	117.7	2255
5	19.5	Stiff gray clay w/silt lenses	32.4	88.0	116.5	2000
9	39.5	Medium stiff gray clay w/sand pockets & shell fragments	57.1	66.4	104.3	1655
11	49.5	Soft gray clay w/sand pockets	45.0	76.6	111.1	980

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 10 of 56)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
<u>BORING 37</u>						
3	8.5	Soft gray silty clay	38.6	82.7	114.6	715
5	14.5	Medium stiff gray & tan clay w/trace of silt	35.9	85.9	116.7	1550
6	19.5	Medium stiff gray & tan clay w'trace of silt	(LL = 74%		PL = 25%	PI = 49%)
<u>BORING 38</u>						
5	14.5	Medium stiff gray clay with silt pockets	35.8	85.3	115.8	1350
6	19.5	Medium stiff gray clay w/fissures	(LL = 87%		PL = 22%	PI = 65%)
10	39.5	Medium stiff gray clay w/silt pockets & shell fragments	48.5	73.8	109.6	1195
11	44.5	Medium stiff gray clay W/Silt pockets & shell fragments	(LL = 55%		PL = 20%	PI = 35%)
14	57.5	Extremely stiff greenish-gray & tan clay w/silt pockets	19.6	111.8	133.7	9310
16	62.5	Extremely stiff greenish-gray & tan clay w/silt pockets	(LL = 68%		PL = 22%	PI = 46%)
20	72.5	Stiff tan & gray fissured clay w/concretions	40.0	82.1	114.9	3085
22	77.5	Stiff tan & gray fissured clay w/concretions	(LL = 94%		PL = 21%	PI = 73%)
<u>BORING 39</u>						
2	5.5	Medium stiff tan & gray silty clay w/clayey silt layers	35.4	84.8	114.8	1660
10	34.5	Soft gray clay w/many shells	30.6	Sample disturbed by shells.		
18	63.0	Loose tan sandy silt w/clay layers	26.7	98.0	124.2	-

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 11 of 56)

BORING 41

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
14	58.0	Very stiff gray & tan clay	22.6	104.0	127.5	6640
16	63.0	Stiff tan & gray fissured clay	B 36.1	88.6	120.6	$\phi=13$ C=575*
			A 36.5		89.2	121.8
20	73.0	Stiff tan & gray clay	34.5	90.6	121.9	3200
34	124.5	Medium stiff gray clay w/shells	41.2	79.8	112.7	1835
37	134.5	Medium stiff gray clay w/silty clay layers	32.9	89.2	118.5	1465
			(LL = 31%)	PL = 27%		PI = 4%
49	184.5	Very stiff gray & tan clay with silt lenses	33.2	90.0	119.9	4530
55	204.5	Stiff gray clay w/silt lenses	37.2	85.8	117.7	3015
72	264.5	Stiff gray clay w/silt lenses	38.0	84.6	116.7	3405

Depth (ft.)	Unified Soil Classification	Water Content (Percent)	Atterberg Limits			Dry Density (lb/cu ft.)	Unconfined Compressive Strength (lb/sq ft.)
			LL	PL	PI		
12	CH	48.7	61	24	37	70.4	-
45	CH	51.5	61	21	40	73.2	1000
68	CH	36.0	66	24	42	85.7	-
79	CH	43.0	102	31	71	76.7	3900
84.5	CL	27.3	29	22	7	91.5	-
115	CH	41.7	71	25	46	79.1	-
115	CH	42.8	67	24	43	78.2	-
139	ML	27.6	41	36	5	95.8	2200
154.5	ML	32.0	26	26	0	88.7	-
195	CL	30.4	36	20	16	92.3	4000
224.5	CH	42.3	111	28	83	78.0	-
294.5	CH	34.7	68	25	43	86.6	-



WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 12 of 56)

BORING 42

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
14	58.0	Very stiff greenish-gray & tan clay w/concretions	24.2	103.7	128.8	4130
15	68.0	Stiff tan & gray fissured clay	B 40.2	82.0	115.0	φ=12 C=575*
		Stiff tan & gray fissured clay	A 41.0	84.3	118.9	
24	84.5	Very stiff tan & gray clay	35.2	87.0	117.6	4345
34	118.0	Medium stiff gray clay w/silt lenses	45.2	76.5	111.1	1635
42	144.5	Very stiff greenish-gray clay w/silt lenses	34.6	88.6	119.3	4040
57	194.5	Very stiff greenish-gray tan clay	33.8	90.2	120.7	4430
64	218.0	Very stiff gray & tan clay	40.0	82.3	115.2	5120
83	284.5	Very stiff gray clay w/shell fragments	32.1	92.8	122.6	5845

Depth (ft.)	Unified Soil Classification	Water Content (Percent)	Atterberg Limits			Dry Density (lb/cu ft.)	Unconfined Compressive Strength (lb/sq ft.)
			LL	PL	PI		
9	CL	36.3	37	21	16	84.8	1600
25	CH	50.6	102	29	73	72.7	1400
50	CH	49.8	77	23	54	69.1	-
63	CL	22.9	27	21	6	-	-
73	CH	43.0	89	29	60	78.3	-
79	CH	42.3	90	26	64	79.0	4700
89	CH	38.3	94	27	67	84.1	3000
115	CH	52.3	74	25	49	70.5	1600
124.5	CH	63.4	111	37	74	-	-
135	ML	30.1	-	-	-	91.5	1800
168	CH	23.5	58	22	36	101.5	-
185	CH	39.2	72	27	45	82.7	3700
244.5	CL	33.6	43	21	22	88.0	-
314.5	CL	30.8	42	21	21	92.2	-

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 13 of 56)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
<u>BORING 43</u>						
16	52.5	Stiff tan & gray clay with concretions	34.2	89.1	119.6	2815
20	72.5	Stiff to very stiff tan & gray fissured clay, concretions & silt lenses	39.1	(LL = 67% PL = 23%)		PI = 44%
24	84.5	Stiff tan & gray fissured clay w/concretion	42.6	79.6	113.5	2460
31	117.5	Stiff gray clay w/silt lenses	29.4	(LL = 90% PL = 26%)		PI = 64%
39	114.5	Very stiff greenish-gray clay w/silt pockets	28.8	28.8	96.9	124.8
<u>BORING 44</u>						
24	79.5	Stiff tan & gray silty clay	30.7	92.6	121.0	3345
31	114.5	Stiff gray clay w/silt lenses	39.1	83.2	115.7	2340
60	214.5	Very stiff greenish-gray clay w/silt pockets & trace of organic matter	32.4	(LL = 71% PL = 25%)		PI = 46%
61	217.5	Very stiff greenish-gray clay w/silt pockets & trace of organic matter	32.5	(LL = 92% PL = 27%)		PI = 65%
63	224.5	Very stiff greenish-gray clay with trace of organic matter	46.9	(LL = 99% PL = 33%)		PI = 66%
64	227.5	Very stiff greenish-gray clay with trace of organic matter	39.8	(LL = 76% PL = 25%)		PI = 51%
<u>BORING 45</u>						
3	8.5	Soft tan & gray silty clay	33.7	89.0	119.0	915
8	29.5	Very loose gray sandy silt w/clay & clayey silt layers	Sample disturbed.			
12	44.5	Soft gray clay w/sand lenses	52.7	69.2	105.7	950
<u>BORING 46</u>						
5	14.5	Soft gray silty clay	31.2	92.1	120.9	830
11	36.5	Medium stiff gray clay with sand lenses	45.0	76.3	110.6	1005

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 14 of 56)

BORING 46 (Cont'd)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
14	49.5	Medium stiff gray clay w/silt lenses	52.2	70.0	106.5	1155
18	62.5	Loose tan sandy silt w/clay lenses	28.0	96.5	123.5	-
22	74.5	Very stiff tan & gray clay	38.1	83.3	115.7	4105
23	78.0	Very stiff tan & gray clay	42.2	(LL = 83% PL = 20%)		PI = 63%

BORING 51

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
4	11.0	Medium stiff gray clay w/roots	42.9	75.1	107.4	1630	74	27	47
5	14.0	Soft gray clay w/silt pockets & trace of organic matter	34.4	83.7	112.5	620	59	21	38
8	29.0	Medium stiff gray clay w/silt lenses	42.6	73.4	104.7	1085	86	26	60
9	34.0	Stiff gray clay with silt lenses	50.9	69.5	104.9	2275	82	23	59
12	49.0	Stiff gray clay with silt pockets	43.2	77.8	111.4	2310	68	21	47
16	69.0	Stiff tan & gray fissured clay with silt lenses	33.5	89.2	119.1	2940	87	31	56
17	74.0	Stiff tan & gray fissured clay	38.0	82.3	113.6	$\phi=7$ C=1740*+	78	30	48
18	79.0	Very stiff tan & gray slightly fissured clay	39.5	81.7	114.0	6680++	96	29	67
19	84.0	Stiff tan & gray fissured clay	32.7	88.3	127.2	2030+++	60	20	40

BORING 52

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Atterberg Limits		
				Dry	Wet	LL	PL	PI
29	63.0	Medium compact tan sandy silt w/clay layers	-	-	-	24	21	3

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 15 of 56)

BORING 52 (Cont'd)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)		Density (lb/cu ft.)		Atterberg Limits		
				Dry	Wet	LL	PL	PI	
45	109.0	Stiff gray clay	43.1	78.6	112.5	75	23	52	
51	124.0	Stiff gray & brown clay w/organic matter	69.0	58.2	98.4	138	46	92	
61	149.0	Very stiff gray & tan clay w/fine sand lenses	29.8	93.7	121.6	61	20	41	
72	179.0	Very stiff gray & tan clay w/fine sand lenses	28.8	94.1	121.2	60	25	35	

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)		Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Percent Strain @ Failure
				Dry	Wet			
46	109.5	Stiff gray clay w/silt lenses	45.6	77.1	112.3	3325	10	
48	114.5	Stiff gray clay w/silt lenses	43.0	79.2	113.3	1615	4	
						(LL = 61%	PL = 24% PI = 37%	
50	119.5	Stiff gray clay	38.2	84.1	116.2	2260	8	
52	124.5	Medium stiff gray clay w/lenses of organic matter & trace of sand & shells	63.8	61.0	99.9	1485	5	
54	129.0	Medium compact gray sandy silt w/silty clay layers	31.6	90.3	118.8	φ=7 C=230*	7	
56	134.5	Medium stiff gray silty clay w/sandy silt layers	30.5	93.2	121.6	1020	8	
						(LL = 34%	PL = 22% PI = 12%)	
58	139.5	Medium stiff gray silty clay w/sandy silt layers	31.1	90.3	118.4	1240	7	
60	144.5	Very stiff gray clay	31.3	91.2	119.7	4030	3	
62	149.5	Very stiff gray & tan clay w/silt lenses & concretions	30.7	92.2	120.5	5690	5	
64	154.5	Stiff gray & tan clay	32.3	90.3	119.5	3300	8	
						(LL = 67%	PL = 29% PI = 38%)	
65	159.5	Stiff gray & tan clay	25.2	99.8	124.9	5000	17	

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 16 of 56)

BORING 52 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Percent Strain @ Failure		
				Dry	Wet		LL	PL	PI
67	164.5	Stiff gray & tan clay	25.3	99.3	124.4	5515	69%	19%	50%
69	169.0	Very stiff greenish-gray & tan silty clay (crumbly)	28.5	95.3	122.5	φ=11 C=1150*			
71	174.5	Stiff gray & brown clay w/sand pockets	28.0	95.4	122.1	4310	56%	21%	35%
73	179.5	Very stiff gray & brown clay w/sand pockets	28.8	96.4	122.2	4495			
75	184.5	Very stiff gray & brown clay w/sand pockets & trace of shells	32.9	89.4	118.8	4505			
77	189.5	Very stiff gray & tan clay	37.4	83.9	115.3	6395	69%	25%	44%
79	194.5	Stiff gray clay w/silt lenses	37.6	84.9	116.8	2360			
81	199.5	Stiff gray clay w/thin sand layers	31.2	88.5	116.1	2910	61%	23%	38%

BORING 53

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
18	74.0	Stiff tan & gray highly fissured clay	38.3	92.9	114.7	1985++	83	25	58
19	79.0	Stiff gray & tan silty clay with clayey silt layers & decayed shells	30.7	91.8	120.0	2305++	41	19	22
20	84.0	Medium stiff tan & gray highly fissured clay w/concretions	36.0	84.6	115.1	1985+++	83	27	56
21	89.0	Stiff gray & tan highly fissured clay w/sand layers	33.5	86.4	115.3	1270+++	70	50	20

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 17 of 56)

BORING 54

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Percent Strain @ Failure
				Dry	Wet		
30	64.5	Medium compact sandy silt w/clay layers				(LL = 37%)	PL = 16% PI = 21%)
47	114.5	Stiff gray clay w/sand lenses	36.2	85.3	116.2	2940	10
49	119.5	Stiff gray clay w/sand lenses	42.1	79.7	113.3	2520 (LL = 71%)	7 PL = 26% PI = 45%)
51	124.5	Stiff dark gray clay w/lenses of organic matter & roots	65.6	59.7	98.9	3585	5
58	144.0	Very stiff greenish-gray & tan clay w/sand pockets (crumbly)	33.7	88.5	118.3	$\phi=9$ C=890*	2
61	149.5	Stiff greenish-gray & tan clay w/silt lenses & pockets	29.5	94.4	122.2	$\phi=0$ C=2260*	10
63	154.5	Stiff gray & tan clay w/silt pockets	30.1	91.6	119.2	2550* (LL = 62%)	5 PL = 23% PI = 39%)
64	159.5	Medium stiff gray silty clay w/silty sand layers	30.5	92.4	120.6	$\phi=10$ C=200*	11
67	164.5	Very stiff gray & tan clay w/trace of silts	23.0	103.4	127.2	6825 (LL = 61%)	14 PL = 18% PI = 43%)
69	169.5	Stiff gray & tan clay w/silty clay layers	27.8	95.1	121.5	2475	3
71	174.5	Very stiff tan & gray fissured clay w/decayed shells	30.5	90.4	118.0	$\phi=9$ C=935* (LL = 77%)	7 PL = 26% PI = 51%)
72	179.5	Very stiff tan & gray clay w/fine sand lenses & pockets	27.2	95.0	120.8	6380	4
75	184.5	Very stiff gray & tan fissured clay w/sand lenses	39.7	82.3	115.0	$\phi=5$ C=1800* (LL = 72%)	5 PL = 28% PI = 44%)
77	189.5	Very stiff gray & tan clay w/sand lenses	37.6	84.1	115.7	4205	2.5
79	194.5	Very stiff gray & tan clay w/sand lenses	34.6	86.3	116.2	5990 (LL = 57%)	6 PL = 22% PI = 35%)
81	199.5	Stiff gray clay w/sand pockets & trace shells	32.8	89.8	119.3	3440	12

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 18 of 56)

BORING 54 (Cont'd)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Atterberg Limits		
				Dry	Wet	LL	PL	PI
46	114.0	Stiff gray clay	43.5	77.8	116.6	70	25	45
50	124.0	Stiff gray & brown clay w/organic matter	74.6	54.3	94.8	139	46	93
60	149.0	Very stiff tan & gray fissured clay	40.6	79.3	111.5	90	30	60
73	179.5	Stiff tan & gray clay w/sand lenses	29.4	91.7	118.7	83	32	51

BORING 55

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
3	5	Soft tan & gray silty clay	30.8	92.8	121.4	905V+
3	5	Soft tan & gray silty clay	31.3	91.9	120.7	910H+
8	10.5	Soft gray clay	48.5	71.6	106.3	785V+
				(LL = 62%	PL = 24%	PI = 38%)
8	10.5	Soft gray clay	40.2	79.7	111.7	1040H+
11	14.0	Medium stiff gray clay	38.3	80.4	111.2	890v+
11	14.0	Medium stiff gray clay	39.9	80.4	112.5	1150H+
15	19.5	Medium stiff gray & tan clay	36.7	84.8	115.9	1315V+
				(LL = 52%	PL = 23%	PI = 29%)
15	19.5	Medium stiff gray & tan clay	44.0	77.6	111.7	1115H+
16	23.5	Medium stiff gray & tan clay	48.1	72.6	107.5	1090v+
16	23.5	Medium stiff gray & tan clay	45.5	75.3	109.6	1040H+
20	28.5	Soft gray silty clay	39.3	79.5	110.8	465V+
				(LL = 34%	PL = 27%	PI = 7%)
20	28.5	Soft gray silty clay	32.5	90.0		
29	39.5	Soft to medium stiff gray clay w/sand pockets	44.6	73.1	105.7	770H+

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 19 of 56)

BORING 55 (Cont'd)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
29	39.5	Soft to medium stiff gray clay w/sand pockets	48.2	72.8	107.9	1020H+
31	46.0	Soft to medium stiff gray clay w/sand pockets	62.5	63.0	102.3	1365V+
31	46.0	Soft to medium stiff gray clay w/sand pockets	66.0	60.7	100.7	1235H+
35	49.5	Soft to medium stiff gray clay w/sand pockets	49.8	71.0	106.3	990V+
35	49.5	Soft to medium stiff gray clay w/sand pockets	47.8	73.0	107.9	1115H+
39	54.5	Very stiff greenish-gray & tan clay w/sand pockets	25.1	100.9	126.2	4030V+
39	54.5	Very stiff greenish-gray & tan clay w/sand pockets	23.4	104.0	128.3	4190H+
42	59.5	Very stiff tan & gray clay	26.6	98.9	125.2	4955V+
42	59.5	Stiff tan & gray clay w/silt pockets	32.8	89.1	118.3	4220H+
43	64.5	Loose tan silty fine sand w/clay lenses	22.7	92.6	113.6	--
47	68.5	Very stiff tan & gray clay w/sandy silt lenses	30.3	92.7	120.8	4610V+
47	68.5	Very stiff tan & gray clay w/sandy silt lenses	37.8	79.4	119.4	6120H+
51	73.5	Stiff tan & gray slightly fissured clay	41.7	79.7	112.9	3455V+
51	73.5	Stiff tan & gray slightly fissured clay	39.9	80.8	113.0	2795H+
55	78.5	Stiff tan & gray slightly fissured clay	41.0	80.9	114.1	3555V+
55	78.5	Stiff tan & gray slightly fissured clay	41.4	78.0	110.2	5645H+
58	83.5	Medium stiff tan & gray clay w/many silt lenses	29.9	93.8	121.8	1845V+



WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 20 of 56)

BORING 55 (Cont'd.)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
58	83.5	Medium stiff tan & gray clay w/many silt lenses	34.7	85.1	114.6	1225H+
63	88.5	Stiff tan & gray slightly fissured clay	39.6	82.1	114.6	3890V+
63	88.5	Stiff tan & gray slightly fissured clay	37.1	83.8	114.9	6885H+
66	93.0	Very soft tan & gray clay w/many sand layers	29.3	90.6	117.1	405V+
66	93.0	Stiff tan & gray clay w/few sand pockets	34.8	86.2	116.2	2520H+
72	113.0	Medium stiff gray clay with sand pockets	47.6	74.5	109.7	1885V+
72	113.0	Medium stiff gray clay with sand pockets	38.9	81.7	113.5	3960H+
77	118.0	Medium stiff gray fissured clay w/sand lenses	47.8	74.8	110.6	1510V+
77	118.0	Stiff gray clay w/silt pockets	50.4	71.4	107.4	3500H+
82	123.0	Soft gray clay w/sand lenses & shell fragments	28.8	94.8	122.1	920V+
82	123.0	Soft gray clay w/sand lenses & shell fragments	42.7	77.8	111.0	2710H+
92	133.0	Soft gray silty clay	32.0	91.6	120.9	920V+
92	133.0	Medium stiff gray clay with thick silty clay layers	31.9	90.5	119.4	1440H+
93	133.5	Soft gray silty clay with silty sand layers	25.9	93.4	117.6	600V+
93	133.5	Medium stiff gray silty clay	31.4	91.1	119.7	1090H+
98	139.0	Soft gray silty clay with sandy silt layers	31.3	90.1	118.3	545V+
98	139.0	Medium stiff gray clay with clayey silt layers	28.7	94.5	121.6	1385H+
100	142.5	Medium stiff gray clay with clayey silt layers	28.0	97.5	124.8	1185V+
100	142.5	Medium stiff gray clay with clayey silt layers	29.3	91.4	118.2	1255H+

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 21 of 56)

BORING 55 (Cont'd)

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq ft.)
				Dry	Wet	
103	144.0	Stiff gray clay w/clayey silt layers	30.8	91.9	120.2	2025V+
103	144.0	Soft greenish-gray fissured clay	37.1	81.0	111.1	765H+

Sample No.	Depth (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
41	58.5	Stiff greenish-gray & tan clay w/shell fragments & silt pockets	24.6	100.0	124.6	5870	65	19	46
48	69.5	Very stiff tan & gray clay w/sandy silt lenses	34.2	87.5	117.4	3650	-	-	-
56	79.0	Very stiff tan & gray clay w/sandy silt lenses	41.4	80.0	113.1	3810	95	28	67
65	89.5	Very stiff tan & gray clay w/sandy silt lenses	35.0	85.6	115.6	2740	-	-	-
71	112.5	Very stiff tan & gray clay w/sandy silt lenses	45.7	75.5	110.0	2535	84	26	58
80	119.5	Very stiff tan & gray clay w/sandy silt lenses	41.2	80.0	112.9	2665	-	-	-
84*	124.0	Soft gray silty clay w/wood & many shells	47.4	----	----	----	58	26	32
85	124.5	Stiff gray clay w/organic matter & shell fragments	42.1	76.3	108.4	2385	87	27	60
86	127.5	Stiff gray clay with decayed wood	62.8	61.2	99.8	3345	120	41	79
87	128.0	Very stiff dark gray clay w/organic matter & decayed wood	69.2	56.9	96.3	5290	133	58	75
88	128.5	Very stiff dark gray clay w/organic matter & decayed wood	----	----	91.1	3345	153	60	93
91	132.5	Medium stiff gray silty clay	32.4	89.4	118.4	1195	34	21	13
94	134.0	Medium stiff gray silty clay w/sand pockets	30.0	93.4	121.4	1245	27	24	3

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 22 of 56)

BORING 55 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
97	138.5	Medium stiff gray clay w/sand lenses & pockets	33.6	88.6	118.4	1510	37	23	14
99	139.5	Medium stiff gray sandy clay	29.3	94.1	121.7	1360	31	23	8
108	149.5	Very stiff greenish-gray clay	29.3	93.6	121.0	4810	65	26	39
117	164.5	Very stiff greenish-gray clay	25.6	99.1	124.5	8815	-	-	-
124	173.0	Very stiff greenish-gray clay	33.1	87.6	116.6	4335	69	21	48
132	183.0	Very stiff greenish-gray clay	27.4	93.9	119.6	3860	-	-	-
141	192.0	Medium stiff gray sandy clay w/sand pockets	29.4	96.4	124.7	1060	30	22	8
151	199.0	Stiff to very stiff gray clay w/sand pockets	34.6	86.8	116.8	4800	-	-	-

BORING 56

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
30	64.5	Medium compact tan clayey silt w/sand lenses	25.4	----	----	----	26	24	2
44	105.0	Stiff gray clay w/silt lenses	41.7	79.7	112.9	3970	69	24	45
46	109.0	Stiff gray clay w/silt lenses	42.5	78.2	114.3	3795			
47	109.5	Stiff gray clay w/silt lenses	46.3	75.7	110.7	----	81	25	56
48	114.0	Stiff gray clay w/silt lenses	45.3	75.5	108.3	2345	87	26	61
50	119.0	Stiff gray clay w/silt lenses	37.1	84.4	115.7	2135			
52	124.0	Extremely stiff dark gray & tan clay w/trace of silt	49.5	70.1	104.9	11345	124	47	77
53	124.5	Extremely stiff dark gray & tan clay w/trace of silt	73.8	55.2	95.9	----	136	38	98
54	129.0	Stiff gray & brown clay w/trace of organic matter & silt	53.4	67.0	102.8	3450			

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 23 of 56)

BORING 56 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water	Density		Unconfined	Atterberg		
			Content (Percent)	(lb/cu ft.)		Compressive Strength (lb/sq. ft.)	Limits		
				Dry	Wet		LL	PL	PI
56	134.0	Medium stiff gray silty clay w/sandy silt lenses	30.7	91.5	119.6	1850	37	25	12
58	139.0	Medium stiff gray silty clay w/sandy silt lenses	29.9	93.4	121.3	1550			
60	144.0	Stiff gray clay w/sandy silt lenses & pockets	28.0	93.2	119.3	2475	38	22	16
62	149.0	Stiff gray clay	28.0	95.7	122.5	---	60	28	32
63	149.5	Very stiff gray clay with trace of silt	26.5	97.8	123.7	6755			
65	154.5	Medium stiff gray & tan clay w/trace of silt	36.5	84.6	115.5	1765	74	27	47
66*	159.0	Loose gray clayey silt w/sand layers	---	---	---	---			
67*	159.5	Loose gray clayey silt w/sand layers	---	---	---	---			
68	164.0	Soft gray silty clay w/sand lenses	31.6	92.6	121.9	880	32	26	6
70	169.0	Stiff gray silty clay w/sand lenses	26.7	95.7	121.3	2295			
72	174.0	Very stiff gray & tan clay w/trace of silt	29.6	94.3	121.0	6490	58	24	34
74	179.0	Very stiff gray & tan clay w/trace of silt	26.8	97.1	123.1	4910			
75	179.5	Very stiff gray & tan clay w/trace of silt	28.8	95.1	122.5	---	57	25	32
76	184.0	Very stiff gray & tan clay w/trace of silt	32.3	89.4	118.3	6570	63	23	40
78	189.0	Very stiff gray clay with trace of silt	39.2	81.7	113.7	4890			
80	194.0	Very stiff gray clay with trace of silt	29.6	93.2	120.8	4160	50	20	30
83	199.5	Very stiff gray clay with trace of silt	34.7	87.1	117.3	4160			

\*Sample dried out.

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 24 of 56)

<u>BORING 58</u>									
Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
47	114.5	Stiff gray clay w/silt lenses	42.8	78.2	111.7	3195	83	23	60
48	119.0	Stiff gray clay w/silt lenses	38.5	82.6	114.4	2565	63	22	41
50	124.0	Very stiff gray & brown clay trace organic matter	66.0	60.0	99.6	4630			
52	129.0	Stiff gray clay silt lenses	38.4	82.8	114.6	3195	63	23	40
57	143.0	Stiff gray clay silt lenses	31.6	91.1	119.9	3649	-	-	-
59	149.0	Siff gray & tan clay w/silt lenses	33.0	89.5	119.0	3755	69	24	45
61	154.5	Medium stiff gray silty clay w/fine sand layers	33.2	90.0	119.9	1470			
65	169.0	Stiff greenish-gray clay w/sand lenses	24.9	99.2	123.9	2850	42	19	23
67	174.0	Very stiff greenish-gray & tan clay w/sandy silt lenses & pockets	31.9	90.3	119.1	4385	-	-	-
69	179.0	Stiff greenish-gray & tan clay w/silt lenses	34.2	87.5	117.4	3400	74	24	50
71	184.0	Very stiff greenish-gray & tan clay w/trace of silt & fissures	33.3	88.8	118.4	7340	-	-	-
73	189.0	Very stiff greenish-gray & tan clay w/trace of silt & fissures	34.5	86.9	116.9	5030	64	26	38
75	194.0	Stiff gray clay silt lenses	39.0	82.6	114.8	2500			
77	199.0	Stiff gray clay silt lenses	37.9	83.5	115.1	3875	67	27	40

<u>BORING 59</u>									
Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
3	5.0- 6.0	Soft tan & gray silty clay	38.3	80.1	110.8	805+++			
			37.4	79.4	109.1	525R+++			
7	9.0- 10.0	Soft gray clay w/sandy silt pockets & trace of roots	44.6	75.1	108.7	585++			
			43.6	74.0	106.3	260R++			
12	14.0- 15.0	Medium stiff gray silty clay	28.3	93.4	119.9	1430+++	38	23	15
			30.8	89.5	117.1	390R+++			

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 25 of 56)

BORING 59 (Cont')

Sample No.	Depth. (ft.)	Classification	Water	Density		Unconfined	Atterberg		
			Content (Percent)	Dry (lb/cu ft.)	Wet (lb/cu ft.)	Compressive Strength (lb/sq. ft.)	LL	PL	PI
16	19.0- 20.0	Medium stiff gray & tan fissured clay	52.0	70.4	107.1	1150++			
			46.1	72.1	105.3	1325R++			
20	24.0- 25.0	Soft tan & gray silty clay w/clayey silt layers	32.6	87.9	116.6	685++	29	25	4
			32.8	86.6	115.0	120R++			
21	25.0- 27.0	Medium stiff tan & gray silty clay w/sandy silt layers	32.5	88.2	116.9	1495+++	30	26	4
			28.2	89.8	115.1	175R+++			
26	36.0- 37.0	Soft gray clay w/sand lenses	45.7	75.1	109.4	2160	54	21	33
31	42.0- 43.0	Soft gray clay w/silt lenses	45.3	73.3	106.5	635++			
			43.9	74.0	106.6	145R++			
38	50.0- 51.0	Medium stiff gray clay w/silt lenses & trace of shells	44.1	76.3	109.9	1385+++	59	21	38
			45.2	74.5	108.2	450R+++			
41	53.0- 54.0	Medium stiff gray clay w/silt pockets	27.0	95.5	121.3	1885++			
43	55.0- 56.0	Stiff greenish-gray & tan silty clay	21.1	106.4	128.9	3310+++	58	17	41
51	63.0- 64.0	Soft tan & gray silty clay w/clayey silt layers	238.7	94.1	121.1	915+++			
55	69.0- 70.0	Very stiff tan & gray fissured clay	37.9	83.1	114.6	2895+++	100	24	76
61	75.0- 76.0	Stiff tan & gray fissured clay with concretions	44.8	77.1	111.7	2050++			
64	78.0- 84.0	Medium stiff tan & gray silty clay w/clayey silt layers	31.3	92.2	121.1	1655++			
69	83.0- 84.0	Medium stiff tan & gray silty clay w/clayey silt layers	31.5	--	--	--	68	22	46
70	84.0- 85.0	Very stiff tan & gray fissured clay	37.9	84.4	116.4	1855+++	81	22	59
74	91.0- 92.0	Loose tan sand w/clay layers	30.6	90.2	117.8	490+++			
80	111.0- 112.0	Stiff gray clay w/silt lenses	41.6	79.1	112.0	2605+++	71	23	48
85	117.0- 118.0	Medium stiff gray clay	47.3	74.0	109.0	1985+++			
92	124.0- 125.0	Stiff gray clay w/wood & shells	59.6	62.8	100.2	2565+++	131	38	93

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 26 of 56)

BORING 59 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
101	142.0- 143.0	Very soft gray sandy clay	30.8	90.6	118.5	330+++			
106	149.0- 150.0	Very stiff greenish-gray & tan fissured clay	38.4	84.5	116.9	1890+++			
110	154.0- 155.0	Stiff greenish-gray fissured clay	34.7	87.7	118.1	3555+++	71	27	44
116	167.0- 168.0	Stiff greenish-gray fissured clay	25.9	99.7	125.5	3295++			
127	179.0- 180.0	Stiff greenish-gray fissured clay	32.6	88.7	117.6	2075++			
133	186.0- 187.0	Stiff greenish-gray fissured clay	35.2	87.1	117.8	1755+++	63	21	42
141	194.0- 195.0	Medium stiff gray silty clay w/trace of sand	28.9	92.0	118.6	1195++			
59	73.0	Stiff tan & gray very fissured clay	43.3	76.0	108.7	2135+			
56	70.0	Very stiff tan & gray fissured clay w/many silt lenses	36.0	86.3	117.4	5675+++			
59	73.0	Stiff tan & gray very fissured clay	39.1	81.2	112.9	725			
57	71.0	Very stiff tan & gray fissured clay	34.7	87.3	117.7	5095++			
86	118.0	Stiff gray fissured clay	49.8	76.8	115.0	4075+			
86	118.0	Stiff gray fissured clay w/few very fine sand lenses	50.3	72.2	108.5	3655+++			
88	120.0	Stiff gray fissured clay w/few small shells	44.7	77.1	111.6	2895			
84	116.0	Stiff gray fissured clay w/fine sand lenses	47.0	74.8	110.0	2450++			
52	66.0	Medium stiff tan & gray fissured clay w/silt lenses	35.9	84.6	115.0	1185V			
52	66.0	Medium stiff tan & gray fissured clay w/silt lenses	35.7	85.0	115.3	1280H			
54	68.0	Stiff tan & gray fissured clay w/silt lenses	35.4	86.5	117.1	2745V			
54	68.0	Stiff tan & gray fissured clay w/silt lenses	38.0	81.1	111.9	3360H			

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 27 of 56)

BORING 59 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
60	74.0	Stiff tan & gray fissured clay	38.2	82.1	113.5	2355V			
60	74.0	Stiff tan & gray fissured clay	40.2	78.4	109.9	1660H			
63	77.0	Stiff tan & gray fissured clay w/sand pockets & shell fragments	32.1	90.2	119.2	3775V			
63	77.0	Stiff tan & gray fissured clay w/sand pockets & shell fragments	32.9	88.4	117.5	4250H			
65	79.0	Medium stiff tan & gray silty clay w/sandy silt lenses	28.7	93.8	120.7	1355V			
65	79.0	Medium stiff tan & gray silty clay w/sandy silt lenses	28.9	93.9	121.0	1050H			
71	86.0	Stiff tan & gray fissured clay	45.0	75.2	109.4	1990V			
71	86.0	Stiff tan & gray fissured clay	54.9	69.6	107.6	2590H			
73	89.0	Stiff tan & gray clay w/sand pockets	28.6	88.9	114.3	1365V			
73	89.0	Stiff tan & gray clay w/sand pockets	37.0	82.6	113.2	1595H			
81	112.0	Stiff gray clay w/sand lenses	49.2	73.5	109.7	2940V			
81	112.0	Stiff gray clay w/sand lenses	48.5	73.1	108.6	3430H			
83	114.0	Stiff gray clay w/silt lenses	42.8	78.5	112.1	2200V			
83	114.0	Stiff gray clay w/silt lenses	42.6	78.0	111.2	3030H			
86	118.0	Stiff gray clay	39.6	81.3	113.9	3475V			
86	118.0	Stiff gray clay	39.8	81.3	113.7	3160H			
89	121.0	Medium stiff gray clay w/sand lenses	41.2	80.9	114.2	1740V			
89	121.0	Medium stiff gray clay w/sand lenses	37.7	83.3	114.7	1620H			
90	122.0	Medium stiff gray clay w/sand layers & shells	33.3	89.3	119.0	835V			
90	122.0	Medium stiff gray clay w/sand layers & shells	45.1	75.1	109.0	1390H			



WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 28 of 56)

BORING 59 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
91	123.0	Medium stiff gray & brown clay w/organic matter, decayed wood & shells	52.7	68.7	104.9	1980V			
91	123.0	Medium stiff gray & brown clay w/organic matter, decayed wood & shells	57.3	65.4	102.9	1805H			
100	139.0	Medium stiff gray silty clay	33.1	89.9	119.7	1775V			
100	139.0	Medium stiff gray silty clay	32.6	89.1	118.1	1710H			
102	143.0	Medium stiff gray clay with sandy silt lenses, pockets & trace of organic matter	31.8	90.0	118.6	1985V			
102	143.0	Medium stiff gray clay with sandy silt lenses, pockets & trace of organic matter	30.9	90.3	118.2	1635H			
12	14.0	Soft gray clay	28.3	--	--	--	38	23	15
21	25.0	Soft to medium stiff tan & gray silty clay w/sand pockets	32.5	--	--	--	30	26	4
38	50.0	Medium stiff gray clay w/sand lenses	44.1	--	--	--	50	21	38
42	54.0	Medium stiff gray & tan clay w/silt lenses	24.5	98.9	123.1	1875++	52	16	36
43	55.0	Very stiff tan & gray silty clay	21.1	--	--	--	58	17	41
45	57.0	Very stiff greenish-gray & tan silty clay	20.3	108.3	130.4	4520+++	46	16	30
50	62.0	Medium stiff gray & tan fissured clay w/silt pockets & concretions	30.1	91.7	119.3	1880++	56	18	38
53	67.0	Stiff tan & gray fissured clay with sandy silt lenses	34.9	85.8	115.7	φ-2 C=920*+	71	21	50
55	69.0	Stiff tan & gray fissured clay with sandy silt lenses	37.9	--	--	--	100	24	76
58	72.0	Stiff tan & gray fissured clay with sandy silt lenses	35.1	85.3	115.2	3075++	76	26	50
62	76.0	Medium stiff tan & gray fissured clay w/concretions	40.1	81.0	113.5	1310++	92	18	64

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 29 of 56)

BORING 59 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
67	81.0	Medium stiff tan & gray fissured clay w/concretions	27.6	92.3	117.8	1855++	56	17	39
70	84.0	Very stiff tan & gray silty clay	37.9	--	--	--	81	22	59
72	88.0	Medium stiff tan & gray silty clay w/sand pockets	36.3	85.3	116.2	1475++	47	21	26
80	111.0	Stiff gray clay w/silt lenses	41.6	--	--	--	71	23	48
82	113.0	Stiff gray clay silt lenses	45.1	76.3	110.8	3270++	76	27	49
87	119.0	Stiff gray clay silt lenses	38.7	82.0	113.7	3000++	65	21	44
92	124.0	Stiff gray clay w/shells	59.6	--	--	--	131	38	93
93	126.0	Dark gray silty clay w/roots	54.6	--	--	--	85	30	55
94	127.0	Dark gray silty clay w/roots	44.1	77.0	110.9	3585	69	23	46
99	138.0	Stiff gray silty clay w/sand pockets	32.6	89.9	119.2	$\phi=0$ C=1080*+	39	24	15
108	152.0	Stiff gray fissured clay	32.2	89.2	117.9	2940+++	68	24	44
110	154.0	Very stiff tan & gray clay	35.2	--	--	--	63	21	42
115	166.0	Very stiff greenish-gray clay	25.0	100.2	125.2	5575+++	54	17	37
122	174.0	Very stiff greenish-gray clay	27.8	95.4	122.0	5515++	57	24	33
132	184.0	Very stiff tan & gray clay	34.2	87.6	117.5	5185++	65	22	43
133	186.0	Very stiff tan & gray clay	35.2	--	--	--	63	21	42
136	189.0	Very stiff gray clay w/sandy silt lenses	37.9	84.7	116.8	4235++	65	24	41

BORING 60

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
43	104.5	Stiff gray clay w/silt lenses	41.0	81.0	114.2	3075	65	26	39
45	109.5	Stiff gray clay w/fissures	44.3	77.1	111.3	1900	77	25	52
47	114.5	Stiff gray clay w/fissures	46.0	75.9	110.8	1875	73	23	50
49	119.5	Medium stiff gray silty clay many shell fragments	34.7	84.3	113.6	975			

## WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 30 of 56)

BORING 60 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
51	124.5	Medium stiff gray silty clay with sand lenses & trace of shells	26.1	99.2	125.1	1675	32	24	8
53	129.5	Very stiff gray silty clay w/sand pockets	29.6	93.9	121.7	4195			
55	134.5	Medium stiff gray silty clay w/sand layers	32.8	90.3	119.9	1730	34	23	11
57	139.5	Medium stiff gray silty clay w/sand lenses	33.0	88.7	118.0	1450			
59	144.5	Stiff gray clay silt lenses	32.1	90.3	119.3	2785	40	23	17
61	149.5	Very stiff gray clay	32.4	90.2	119.4	5125			
63	154.5	Soft gray silty clay w/sand lenses & pockets	17.3	105.1	123.4	825	28	20	8
65	159.5	Stiff gray silty clay	26.6	95.7	121.2	2115			
67	164.5	Very stiff greenish-gray & tan silty clay	26.4	97.5	123.2	6450	63	22	41
69	169.5	Stiff greenish-gray silty clay w/sand pockets	27.4	97.2	123.8	2655			
71	174.5	Very stiff gray & tan clay w/silt pockets	28.4	95.7	122.9	4625	548	27	31
73	179.5	Very stiff gray & tan clay w/silt pockets	26.2	94.3	119.0	5375			
75	184.5	Stiff gray & tan clay w/silt lenses & pockets	28.3	93.0	119.3	3090	64	25	39
77	189.5	Very stiff gray clay	37.9	84.5	116.5	4025			
79	194.5	Stiff gray clay trace of silt	32.8	89.8	119.3	3805	52	24	28
81	199.5	Stiff gray clay trace of silt	31.7	89.5	117.9	3305			

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 31 of 56)

Sample No.	Depth. (ft.)	Classification	BORING 61						
			Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
15	54.0	Medium stiff gray & tan silty clay	24.6	99.4	123.9	1125++	44	18	26
16	59.0	Very stiff tan & gray clay w/silt pockets	28.4	95.6	122.8	4595++	46	21	25
18	69.0	Stiff tan & gray clay w/silt lenses	36.9	84.1	115.1	3370++	92	29	63
19	74.0	Very stiff tan & gray clay w/silt lenses	31.7	87.6	115.4	4350++	71	26	45
20	79.0	Stiff tan & gray clay w/trace of shells	37.8	83.4	115.0	3990++	88	28	60
21	84.0	Stiff tan & gray slightly fissured clay	34.6	88.2	118.7	3110++	71	26	45
22	87.0	Very stiff gray & tan clay w/sandy silt lenses	32.0	88.0	116.2	4260++	74	27	47
<u>BORING 62</u>									
13	54.0	Stiff gray & tan silty clay (crumbly)	21.5	103.6	125.8	2505++	48	16	32
14	59.0	Stiff tan & gray silty clay w/sand pockets & concretions	20.2	106.4	127.9	3830++	50	19	31
15	64.0	Stiff tan & gray highly fissured clay w/silt lenses	31.2	90.6	118.9	2895+++	64	21	43
16	69.0	Stiff tan & gray highly fissured clay w/silt lenses	31.6	89.1	117.3	2605++	58	24	34
17	74.0	Stiff tan & gray highly fissured clay w/silt lenses	42.7	78.2	116.1	2795++	95	31	64
19	84.0	Stiff tan & gray fissured clay	32.6	88.1	116.8	3400+++	82	25	57
20	88.0	Soft gray & tan clay w/sand pockets	40.6	80.5	113.2	1770+	66	21	45
<u>BORING 63</u>									
43	109.0	Stiff gray clay	46.1	75.5	110.3	--	79	23	56
44	109.5	Stiff gray clay w/sand pockets	47.3	75.3	110.9	2050	75	27	48
45	114.0	Stiff gray clay w/sand pockets	48.4	74.6	110.7	3735			
47	119.0	Stiff gray clay w/sand pockets	48.0	72.3	107.0	3705	78	28	50

## WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 32 of 56)

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
49	124.0	Stiff gray clay w/sand pockets	36.6	84.9	116.0	3680			
50	124.5	Medium stiff gray clay w/silt lenses	38.1	84.5	116.7	--	55	19	36
51	129.0	Stiff gray clay	38.5	83.1	115.1	3550	64	26	38
56	144.0	Very stiff gray clay w/silt pocket & shell fragments	29.6	91.4	118.5	4450			
58	149.0	Stiff gray clay silt pockets	31.6	91.8	120.8	3745	58	26	32
59	149.5	Stifcfc gray clay silt pockets	26.6	96.2	121.8	--	62	25	37
60	154.0	Loose gray clayey silt w/clay lenses	30.1	93.4	121.5	$\phi=15$ C=140*			
67	174.0	Very stiff gray & tan fissured clay silt lenses	26.2	96.7	122.0	$\phi=5$ C=2205*	51	24	27
69	179.0	Very stiff gray & tan clay	30.5	90.9	118.6	4100			
71	184.0	Very stiff gray & tan clay	35.3	84.4	114.2	--	78	26	52
72	184.5	Stiff gray & tan clay w/silt lenses and shells	29.3	90.2	116.6	2410	55	23	32
73	189.0	Medium stiff gray clay w/sand lenses & pockets	27.5	95.7	122.0	1730			
75	194.0	Very stiff gray clay w/trace of sand	35.1	86.6	177.0	6535	57	24	33
77	199.0	Stiff gray clay silt lenses	35.9	85.5	166.2	3310			
<u>BORING 64</u>									
60	74.0	Very stiff tan & gray clay w/sand lenses	41.7	--	--	--	80	24	56
<u>BORING 65</u>									
43	104.5	Stiff gray clay w/silt lenses	38.3	83.3	115.2	2005			
44	109.0	Stiff gray clay w/silt lenses	42.8	78.1	111.5	--	81	24	57
45	109.5	Medium stiff gray clay w/silt lenses	43.2	77.7	111.3	1920	75	25	50

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 33 of 56)

BORING 65 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
47	114.5	Stiff gray clay silt lenses	36.0	85.9	116.8	2905			
49	119.5	Stiff gray clay sand lenses	42.1	79.0	122.6	2320	71	22	49
50	124.0	Stiff gray clay sand lenses	44.2	78.4	113.1	--	117	43	74
51	124.5	Medium stiff brown & gray clay w/trace of organic matter & shells	59.0	66.1	105.1	1565			
53	129.5	Medium stiff gray silty clay w/sandy silt layers	28.4	94.3	121.1	1265		Nonplastic	
55	134.5	Loose gray sandy silt w/clay lenses	30.2	93.0	121.0	$\phi=3$ C=300*			
57	139.5	Medium stiff gray clay w/sand lenses	31.0	90.0	117.9	1620	34	22	12
59	144.5	Stiff gray clay w/sand lenses	31.8	90.0	118.6	2170			
61	149.5	Stiff gray clay with fissures	40.8	80.2	112.9	3405	80	28	52
62	154.5	Stiff gray clay with fissures	45.6	74.9	109.1	3110			
64	159.0	Medium stiff gray silty clay w/sandy silt layers	30.0	93.0	120.9	1295	27	24	3
66	164.0	Loose gray clayey silt w/clay lenses	30.0	93.4	121.4	$\phi=8$ C=120*			
68	169.0	Very stiff tan & gray clay w/trace of silt	23.5	103.2	127.5	7300	58	25	33
70	174.0	Very stiff tan & gray clay w/sandy silt pockets & shells	29.3	93.9	121.4	3210			
72	179.0	Very stiff tan & gray clay w/sandy silt pockets & shells	29.4	94.0	121.6	3870	53	21	32
73	179.5	Very stiff tan & gray clay w/sandy silt pockets & shells	27.0	94.3	119.8	--	56	22	34
74	184.0	Stiff gray tan clay w/trace of silt & fissures	36.3	85.0	115.9	2935			
76	189.0	Stiff gray & tan clay w/trace of silt & fissures	39.1	82.3	114.5	3745	70	22	48

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 34 of 56)

BORING 65 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water Content (Percent)	Density (lb/cu ft.)		Unconfined Compressive Strength (lb/sq. ft.)	Atterberg Limits		
				Dry	Wet		LL	PL	PI
78	194.0	Very stiff gray clay w/trace of sand & shells	34.0	88.3	118.3	4780			
80	199.0	Stiff gray clay with sandy silt pockets & shells	29.2	93.1	120.3	2705	43	18	25

BORING 66

15	59.0	Stiff greenish-gray & tan silty clay	20.9	105.6	127.7	3125++	55	17	38
17	69.0	Stiff tan & gray slightly fissured clay	39.1	80.4	119.9	3900++	96	30	66
18	74.0	Very stiff tan & gray clay	39.5	81.4	113.5	4290++			
19	79.0	Stiff gray & tan clay w/silt pockets & concretions	29.0	93.6	120.7	3270+++	37	19	18
20	84.0	Very stiff tan & gray clay w/silt lenses & concretions	28.6	94.1	121.0	5300++	90	18	72
21	87.5	Stiff gray & tan clay w/silt lenses	34.2	86.2	115.7	3585++	74	23	51

BORING 67

45	109.0	Stiff gray clay	42.6	78.4	111.8	--	75	22	53
46	109.5	Stiff gray clay w/silt lenses	36.3	85.2	116.4	3820			
48	114.5	Stiff gray clay w/fissures	40.8	79.0	111.2	1935	65	24	41
49	119.0	Medium stiff gray clay w/organic matter & shells	62.1	60.0	97.2	1765			
50	119.5	Medium stiff gray clay w/organic matter & shells	77.1	52.9	93.7	--	117	43	74
52	124.5	Stiff gray clay trace of silt	38.3	82.1	113.4	2830	59	24	35
55	139.0	Stiff gray clay trace of silt	32.8	89.4	118.7	2840			
57	144.0	Very stiff greenish-gray clay w/silt pockets	27.9	95.2	121.7	5850	69	23	46
59	149.0	Medium stiff tan & gray clay	32.6	89.6	118.8	--	59	24	35

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 35 of 56)

BORING 67 (Cont'd)

Sample No.	Depth. (ft.)	Classification	Water	Density		Unconfined	Atterberg		
			Content (Percent)	(lb/cu ft.)		Compressive Strength (lb/sq. ft.)	LL	PL	PI
				Dry	Wet				
60	149.5	Very stiff greenish-gray clay w/fissures	31.0	92.6	121.3	3310			
62	154.5	Very stiff tan & gray clay	30.6	90.0	117.5	4880			
64	159.0	Very stiff gray silty clay w/sandy silt layers	29.8	92.4	119.9	5500			
65	164.0	Stiff gray silty clay	28.4	96.5	123.9	2650		Nonplastic	
66	164.5	Stiff gray silty clay w/clayey silt layers	27.8	95.6	122.2	2965			
68	169.5	Stiff gray silty clay w/sandy silt layers	29.4	92.3	119.4	2315			
70	174.5	Very stiff gray & tan clay w/trace of silt & concretions	32.8	88.8	117.9	4175	71	24	47
71	179.0	Very stiff gray & tan clay w/trace of silt & concretions	37.2	85.0	116.6	--	75	24	51
72	179.5	Very stiff gray & tan clay w/fissures	32.3	89.4	118.3	3155			
74	184.5	Very stiff gray & tan clay w/fissures	36.8	84.7	115.9	3545	68	24	44
76	189.5	Stiff gray silty clay w/sand lenses & pockets	27.1	--	--	--			
78	194.5	Very stiff gray clay w/trace of silt	33.7	87.9	117.5	4645	56	20	36
80	199.5	Very stiff gray clay w/trace of sand & shells	27.6	96.2	122.8	4290			

BORING 68

15	59.0	Stiff tan & gray fissured clay	33.8	89.7	120.0	2680++	70	27	43
16	64.0	Medium stiff tan & gray fissured clay w/silt lenses	34.6	88.0	118.4	$\phi=10$ C=290*+	65	27	38
17	69.0	Stiff tan & gray fissured clay w/silt lenses	37.4	84.4	117.0	$\phi=7$ C=1740*+	80	25	55
18	74.0	Stiff tan & gray fissured clay	33.8	86.1	115.2	3775++	89	30	59
19	79.0	Stiff tan & gray fissured clay	39.9	81.7	114.3	$\phi=7$ C=550*+	56	21	35
20	84.0	Stiff tan & gray fissured clay	36.8	84.8	116.0	$\phi=3$ C=1930*+	95	25	70



WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 36 of 56)

Test No.	Sample No.	Depth (ft.)	Classification	BORING 69							
				Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	Shear Strength (lb/sq. ft.)	Unconsolidated Undrained Triaxial Shear Tests		
					Dry	Wet			Shear Values	Confining Pressure (Tons/sq. ft.)	
1	8	9.0	Soft gray silty clay	38.6	80.6	111.7	95	490	$\phi=8$ C=505**	0.0	
2	8	9.0	Soft gray silty clay	35.2	84.4	114.1	96	635		0.5	
3	8	9.0	Soft gray silty clay	35.8	84.2	114.3	96	805		1.0	
4	8	9.0	Soft gray silty clay	37.1	82.4	113.0	99	995		2.0	
1	14	15.0	Soft gray clay w/roots	37.7	81.5	112.2	95	835	$\phi=6$ C=505**	0.5	
2	14	15.0	Soft gray clay w/roots	42.3	78.2	111.3	99	475		0.5	
3	14	15.0	Soft gray clay w/roots	43.2	77.6	111.1	99	518		1.0	
4	14	15.0	Soft gray clay w/roots	43.7	76.1	109.4	97	850		2.0	
1	17	18.0	Medium stiff gray & tan silty clay	(LL=40% PL=21% PI=19%)							
1	25	26.0	Stiff tan & gray clay	40.4	78.2	109.8	94	1253	$\phi=8$ C=1080**	0.5	
2	25	26.0	Stiff tan & gray clay	41.5	77.5	109.7	95	1440		1.0	
3	25	26.0	Stiff tan & gray clay	42.9	76.1	108.7	95	1685		2.0	
1	37	39.0	Soft gray clay w/silty sand lenses & shell fragments	56.0	66.3	103.4	98	547	$\phi=4$ C=460**	0.5	
2	37	39.0	Soft gray clay w/silty sand lenses & shell fragments	56.3	66.4	103.8	99	605		1.0	
3	37	39.0	Soft gray clay w/silty sand lenses & shell fragments	60.3	63.6	102.0	99	619		2.0	
1	49	51.0	Medium stiff gray clay	65.3	60.9	100.6	100	690	$\phi=0$ C=690**	0.5	
2	49	51.0	Medium stiff gray clay	66.1	60.4	100.3	100	690		1.0	
3	49	51.0	Medium stiff gray clay	67.7	59.9	100.5	100	690		2.0	
1	55	57.0	Stiff tan & gray clay w/trace of silt	25.7	101.8	128.0	100	1180	$\phi=7$ C=1110**	0.5	
2	55	57.0	Stiff tan & gray clay w/trace of silt	24.7	100.3	125.1	97	1310		1.0	
3	55	57.0	Stiff tan & gray clay w/trace of silt	24.1	101.6	126.1	98	1785		3.0	
1	58	60.0	Very stiff tan & gray silty clay	19.1	107.9	128.5	91	1930	$\phi=2$ C=1900*	0.5	
2	58	60.0	Very stiff tan & gray silty clay	21.2	105.8	128.2	96	1945		1.0	
3	58	60.0	Very stiff tan & gray silty clay	21.4	105.5	128.1	96	2115		3.0	

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 37 of 56)

BORING 69 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu. ft.)		Degree Saturation	Unconsolidated Undrained Triaxial Shear Tests		
					Dry	Wet		Shear Strength (lb/sq. ft.)	Shear Values	Confining Pressure (Tons/sq. ft.)
1	61	63.0	Medium stiff tan & gray fissured clay	30.3	92.5	120.5	99	1008	$\phi=7$ C=865**	0.5
2	61	63.0	Medium stiff tan & gray fissured clay	29.5	92.3	119.5	96	920		0.5
3	61	63.0	Medium stiff tan & gray fissured clay	35.5	85.7	116.0	98	1008		1.0
4	61	63.0	Medium stiff tan & gray fissured clay	28.7	93.9	120.8	97	1210		1.0
5	61	63.0	Medium stiff tan & gray fissured clay	28.9	93.1	120.0	96	1870		3.0
6	61	63.0	Medium stiff tan & gray fissured clay	31.7	89.8	118.3	97	1310		3.0
1	75	77.0	Very stiff tan & gray fissured clay	41.2	80.6	113.8	100	2361	$\phi=0$ C=2175**	0.5
2	75	77.0	Very stiff tan & gray fissured clay	40.6	81.2	114.2	100	2175		1.0
3	75	77.0	Very stiff tan & gray fissured clay	43.2	78.5	112.4	100	2175		3.0
1	78	80.0	Stiff tan & gray fissured clay w/shell fragments	41.4	80.1	113.3	100	1585	$\phi=1$ C=1740**	0.5
2	78	80.0	Stiff tan & gray fissured clay w/shell fragments	41.2	80.1	113.1	100	1800		1.0
3	78	80.0	Stiff tan & gray fissured clay w/shell fragments	40.5	81.0	113.8	100	1642		3.0
4	78	80.0	Stiff tan & gray fissured clay w/shell fragments	38.6	83.4	115.6	100	2045		3.0
1	83	85.0	Stiff tan & gray clay with sandy silt pockets & concretions (Crumbly)	28.8	93.3	120.2	96	1570	$\phi=5$ C=1440**	0.5
2	83	85.0	Stiff tan & gray clay with sandy silt pockets & concretions (Crumbly)	33.3	87.6	116.8	97	1455		1.0
3	83	85.0	Stiff tan & gray clay with sandy silt pockets & concretions (Crumbly)	32.1	89.5	118.2	98	1612		1.0
4	83	85.0	Stiff tan & gray clay with sandy silt pockets & concretions (Crumbly)	35.2	85.5	115.6	97	1945		3.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 38 of 56)

BORING 69 (Cont'd)

Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	Unconfined Compressive Strength (lb/sq. ft.)
				Dry	Wet		
8	*	*					
14	15.0	Soft gray clay	42.4	77.7	110.6	97	907
25	26.0	Medium stiff gray clay	44.2	76.6	110.4	99	1065
37	39.0	Medium stiff gray clay w/silty sand lenses & shell fragments	51.6	69.7	105.7	97	1325
49	51.0	Stiff gray clay	53.5	69.7	107.0	100	1512
55	57.0	Stiff gray clay w/trace of silt	24.3	100.8	125.3	97	3456
58	60.0	Very stiff tan & gray silty clay	19.5	110.5	132.0	100	4838

Unconsolidated Undrained Triaxial Shear Tests

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
					Dry	Wet					
1	7	8.0	Soft gray & tan silty clay	35.5	84.0	113.8	96	1008	$\phi=2$ C=317*	13.0	0.0
2	7	8.0	Soft gray & tan silty clay	36.8	82.6	113.0	97	720		5.0	0.5
3	7	8.0	Soft gray & tan silty clay	38.0	80.7	111.4	96	777		5.0	1.0
4	7	8.0	Soft gray & tan silty clay	35.3	85.0	115.0	98	921		9.0	2.0
1	13	14.0	Soft gray silty clay	45.5	74.7	108.7	100	576	$\phi=0$ C=300*	5.5	0.0
2	13	14.0	Soft gray silty clay	35.9	85.3	115.6	100	446		9.0	0.5
3	13	14.0	Soft gray silty clay	36.5	85.7	117.0	100	619		18.0	1.0
4	13	14.0	Soft gray silty clay	35.3	85.6	115.8	99	547		15.5	2.0
5	13	14.0	Soft gray silty clay	47.4	73.6	108.5	100	749		11.3	2.0
1	26	27.0	Medium stiff gray & tan clay w/many fissures	50.7	69.9	105.3	97	1220	$\phi=0$ C=735*	3.1	0.0
2	26	27.0	Medium stiff gray & tan clay w/many fissures	49.9	71.3	106.9	100	1250		4.1	0.5
3	26	27.0	Medium stiff gray & tan clay w/many fissures	51.2	70.3	106.3	99	935		2.5	1.0
4	26	27.0	Medium stiff gray & tan clay w/many fissures	49.6	71.2	106.5	98	1125		2.5	1.0
5	26	27.0	Medium stiff gray & tan clay w/many fissures	48.5	72.0	107.0	98	1525		8.1	2.0
1	38	40.0	Medium stiff gray clay w/sand lenses & pockets	52.9	67.1	102.5	95	965	$\phi=2$ C=417*	6.1	0.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 39 of 56)

BORING 69 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu. ft.)		Degree Saturation	Confined Compressive Strength (lb/sq. ft.)	Unconsolidated Undrained Triaxial Shear Tests		
					Dry	Wet			Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
2	38	40.0	Medium stiff gray clay w/sand lenses & pockets	56.0	67.1	104.7	100	965		7.1	0.5
3	38	40.0	Medium stiff gray clay w/sand lenses & pockets	59.2	65.3	104.0	100	1080		6.1	1.0
4	38	40.0	Medium stiff gray clay w/sand lenses & pockets	54.3	67.7	104.7	98	1035		6.1	2.0
1	48	50.0	Medium stiff gray clay w/sand pockets	60.6	63.8	102.5	99	1730	$\phi=0$ C=619	8.1	0.0
2	48	50.0	Medium stiff gray clay w/sand pockets	54.7	65.8	106.0	100	1250		8.1	0.5
3	48	50.0	Medium stiff gray clay w/sand pockets	57.4	66.4	104.5	100	1250		9.2	1.0
4	48	50.0	Medium stiff gray clay w/sand pockets	61.9	63.8	103.3	100	1225		5.1	2.0
5	48	50.0	Medium stiff gray clay w/sand pockets	56.7	67.1	105.3	100	1135		6.1	2.0
1	54	56.0	Medium stiff gray clay w/silt pockets	29.6	93.4	121.0	99	1810		11.2	0.0
2	54	56.0	Medium stiff gray clay w/silt pockets	28.8	96.7	124.5	100	1110	$\phi=4$ C=490*	8.1	0.5
3	54	56.0	Medium stiff gray clay w/silt pockets	27.2	96.4	122.6	98	1355		13.2	1.0
4	54	56.0	Medium stiff gray clay w/silt pockets	27.4	96.1	122.4	98	1210		11.2	3.0
5	54	56.0	Medium stiff gray clay w/silt pockets	28.9	97.4	125.5	100	1800		9.2	3.0
1	57	59.0	Stiff greenish-gray & tan clay (Crumbly)	20.7	104.2	125.6	90	2820	$\phi=12$ C=720*	3.1	0.0
2	57	59.0	Stiff greenish-gray & tan clay (Crumbly)	20.1	102.6	123.2	84	2060		7.1	0.5
3	57	59.0	Stiff greenish-gray & tan clay (Crumbly)	21.2	102.8	124.6	89	2750		9.2	1.0
4	57	59.0	Stiff greenish-gray & tan clay (Crumbly)	20.9	102.3	123.6	87	4350		7.1	3.0
1	62	64.0	Medium stiff gray & tan clay with silt pockets	30.6	92.3	120.5	100	2450	$\phi=1$ C=907*	10.2	0.0
2	62	64.0	Medium stiff gray & tan clay with silt pockets	30.2	92.5	120.4	100	1125		5.1	0.5
3	62	64.0	Medium stiff gray & tan clay with silt pockets	28.7	95.7	123.2	100	2215		5.1	0.5

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 40 of 56)

BORING 69 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu. ft.)		Degree Saturation	Confined Compressive Strength (lb/sq. ft.)	Unconsolidated Undrained Triaxial Shear Tests		
					Dry	Wet			Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
4	62	64.0	Medium stiff gray & tan clay with silt pockets	28.3	95.7	122.8	100	1960		6.1	1.0
5	62	64.0	Medium stiff gray & tan clay with silt pockets	30.2	93.0	121.1	100	2090		8.1	3.0
1	70	72.0	Stiff gray & tan clay w/silt lenses & slickensides	31.4	90.7	119.2	98	1700	$\phi=0$ C=1510*	6.1	3.0
2	70	72.0	Stiff gray & tan clay w/silt lenses & slickensides	38.4	82.1	113.6	100	3155		5.1	0.5
3	70	72.0	Stiff gray & tan clay w/silt lenses & slickensides	39.4	82.4	114.9	100	2925		6.1	1.0
4	70	72.0	Stiff gray & tan clay w/silt lenses & slickensides	34.9	86.2	116.3	100	1640		5.1	1.0
5	70	72.0	Stiff gray & tan clay w/silt lenses & slickensides	35.5	86.2	116.8	100	1800		4.1	3.0
6	70	72.0	Stiff gray & tan clay w/silt lenses & slickensides	35.6	84.6	114.7	97	1395		7.1	3.0
1	74	76.0	Stiff tan & gray clay with slickensides	41.7	81.0	114.8	100	4810	$\phi=0$ C=1340*	5.1	0.0
2	74	76.0	Stiff tan & gray clay with slickensides	38.3	83.9	116.0	100	3945		5.1	0.5
3	74	76.0	Stiff tan & gray clay with slickensides	38.9	82.4	114.5	100	2650		3.1	1.0
4	74	76.0	Stiff tan & gray clay with slickensides	39.7	82.3	115.0	100	2535		3.0	1.0
5	74	76.0	Stiff tan & gray clay with slickensides	40.7	80.7	113.6	100	2750		7.1	3.0
6	74	76.0	Stiff tan & gray clay with slickensides	38.6	82.0	113.7	100	1525		2.5	3.0
1	77	79.0	Stiff brown & gray fissured clay	40.6	81.5	114.6	100	2620	$\phi=12$ C=662*	8.1	0.0
2	77	79.0	Stiff brown & gray fissured clay	46.9	75.5	110.9	100	1800		3.0	0.5
3	77	79.0	Stiff brown & gray fissured clay	42.1	79.9	113.5	100	2015		2.5	0.5
4	77	79.0	Stiff brown & gray fissured clay	43.9	78.1	112.4	100	2880		2.0	1.0
5	77	79.0	Stiff brown & gray fissured clay	38.7	83.7	116.1	100	2215		3.1	1.0
6	77	79.0	Stiff brown & gray fissured clay	42.67	79.0	112.7	100	4610		4.1	3.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 41 of 56)

BORING 69 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu. ft.)		Degree Saturation	Confined Compressive Strength (lb/sq. ft.)	<u>Unconsolidated Undrained Triaxial Shear Tests</u>		
					Dry	Wet			Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	81	83.0	Stiff gray & tan clay w/silt pockets	28.3	95.4	122.4	100	2390	$\phi=0$ C=1150*	10.2	0.0
2	81	83.0	Stiff gray & tan clay w/silt pockets	28.7	95.6	123.0	100	2190		9.1	0.5
3	81	83.0	Stiff gray & tan clay w/silt pockets	27.8	96.3	123.1	100	2320		7.1	1.0
4	81	83.0	Stiff gray & tan clay w/silt pockets	29.6	93.7	121.4	100	3310		15.3	3.0
1	88	92.0	Stiff gray & tan clay	33.7	88.7	118.6	100	2220	$\phi=1$ C=850*	8.1	0.0
2	88	92.0	Stiff gray & tan clay	40.4	81.4	114.2	100	2100		3.1	0.5
3	88	92.0	Stiff gray & tan clay	41.8	80.0	113.4	100	1670		3.1	1.0
4	88	92.0	Stiff gray & tan clay	43.9	78.1	112.4	100	1370		1.5	1.0
5	88	92.0	Stiff gray & tan clay	40.9	80.5	113.4	100	1395		1.5	3.0
6	88	92.0	Stiff gray & tan clay	44.0	77.4	111.4	100	1900		5.1	3.0
1	Com- posite	96.0 115.0	Very dense gray silty sand with trace of clay	19.8	105.9	126.9	90	3125	$\phi=31$ C=316*	5.0	0.5
2	Com- posite	96.0 115.0	Very dense gray silty sand with trace of clay	20.8	104.2	125.8	91	5933		6.2	1.0
3	Com- posite	96.0 115.0	Very dense gray silty sand with trace of clay	20.3	104.3	125.5	90	13464		6.2	3.0
<u>BORING 70</u>											
1	8	8.0	Loose gray clayey silt w/silty clay layers	28.3	93.1	119.4	94	1282	$\phi=4$ C=435*	10.0	0.0
2	8	8.0	Loose gray clayey silt w/silty clay layers	27.5	92.7	118.2	90	1008		10.0	0.5
3	8	8.0	Loose gray clayey silt w/silty clay layers	27.9	90.9	116.3	87	9654		9.0	1.0
4	8	8.0	Loose gray clayey silt w/silty clay layers	28.2	91.4	117.2	90	1498		10.0	2.0
1	11	11.0	Tan & gray clayey silt	(LL = 32% PL = 25% PI = 7%)							
1	12	12.0	Tan & gray clayey silt	(LL = 56% PL = 26% PI = 30%)							
1	17	17.0	Soft gray silty clay	34.1	86.5	116.0	97	605	$\phi=0$ C=315*	20.0	0.0
2	17	17.0	Soft gray silty clay	32.1	91.0	120.2	100	403		8.2	0.5
3	17	17.0	Soft gray silty clay	32.3	89.9	118.9	99	560		12.2	1.0
4	17	17.0	Soft gray silty clay	34.8	86.3	116.3	99	720		17.3	2.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 42 of 56)

BORING 70 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	18	18.0	Soft gray silty clay	42.5	76.1	118.4	94	865	φ=0 C=430*	7.1	0.0
2	18	18.0	Soft gray silty clay	37.0	82.4	112.9	97	650		15.3	0.5
3	18	18.0	Soft gray silty clay	36.7	82.6	112.9	97	820		8.2	1.0
4	18	18.0	Soft gray silty clay	37.1	81.7	112.0	96	535		8.1	2.0
5	18	18.0	Soft gray silty clay	26.7	98.4	124.7	100	1065		4.1	2.0
1	20	20.0	Medium stiff gray clay	(LL = 66% PL = 18% PI = 48%)							
1	24	24.0	Soft gray silty clay w/clayey silt layers	34.3	87.2	117.1	100	1065	φ=0 C=530*	10.2	0.0
2	24	24.0	Soft gray silty clay w/clayey silt layers	33.8	88.7	118.6	100	605		11.2	0.5
3	24	24.0	Soft gray silty clay w/clayey silt layers	33.2	88.1	117.3	98	720		7.1	1.0
4	24	24.0	SOft gray silty clay w/clayey silt layers	33.4	87.2	116.3	98	706		10.2	2.0
5	24	24.0	Soft gray silty clay w/clayey silt layers	33.2	88.1	117.3	98	1152		18.3	2.0
1	31	31.0	Medium stiff gray & tan fissured clay	51.0	70.0	105.8	98	1730	φ=0 C=705*	5.1	0.0
2	31	31.0	Medium stiff gray & tan fissured clay	52.9	68.9	105.3	98	1008		4.1	0.5
3	31	31.0	Medium stiff gray & tan fissured clay	51.7	70.2	106.5	100	1280		8.1	1.0
4	31	31.0	Medium stiff gray & tan fissured clay	50.7	70.6	106.4	100	1470		5.1	2.0
1	40	41.0	Medium stiff gray & tan fissured clay	(LL = 26% PL = 23% PI = 3%)							
1	41	42.0	Very soft gray clay w/many sand lenses	41.6	78.7	111.4	98	660	φ=0 C=173*	5.2	0.0
2	41	42.0	Very soft gray clay w/many sand lenses	32.8	89.0	118.1	99	290		10.2	0.5
3	41	42.0	Very soft gray clay w/many sand lenses	32.5	88.0	116.6	96	290		6.1	1.0
4	41	42.0	Very soft gray clay w/many sand lenses	32.4	89.3	118.2	99	390		3.1	2.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 43 of 56)

BORING 70 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	45	46.0	Medium stiff gray clay w/many sand lenses & trace shells	36.4	83.8	114.3	98	1150	$\phi=0$ C=560*	10.2	0.0
2	45	46.0	Medium stiff gray clay w/many sand lenses & trace shells	38.6	82.4	114.2	100	765		8.1	0.5
3	45	46.0	Medium stiff gray clay w/many sand lenses & trace shells	35.4	85.3	115.8	98	1135		8.1	1.0
4	45	46.0	Medium stiff gray clay w/many sand lenses & trace shells	38.2	83.7	115.7	100	1560		9.2	2.0
1	47	48.0	Very loose gray clay sand with trace of shells	31.6	89.8	118.2	96	547	$\phi=3$ C=145*	12.2	0.0
2	47	48.0	Very loose gray clay sand with trace of shells	32.9	89.9	119.5	99	390		14.2	0.5
3	47	48.0	Very loose gray clay sand with trace of shells	31.3	91.3	119.9	99	490		10.2	1.0
4	47	48.0	Very loose gray clay sand with trace of shells	31.8	91.1	120.0	100	635		15.3	2.0
1	52	53.0	Medium stiff gray clay w/sand lenses & pockets	51.9	69.1	105.9	98	1380	$\phi=0$ C=675*	11.2	0.0
2	52	53.0	Medium stiff gray clay w/sand lenses & pockets	42.1	77.2	109.7	96	1020		9.2	0.5
3	52	53.0	Medium stiff gray clay w/sand lenses & pockets	47.5	73.2	108.0	99	1370		7.1	1.0
4	52	53.0	Medium stiff gray clay w/sand lenses & pockets	45.8	76.3	111.2	100	1035		8.1	2.0
5	52	53.0	Medium stiff gray clay w/sand lenses & pockets	54.7	68.8	106.8	100	1065		7.1	2.0
1	56	57.0	Medium stiff gray clay w/sand lenses, pockets & trace of shells	42.6	77.7	110.8	98	1670	$\phi=0$ C=720*	9.2	0.0
2	56	57.0	Medium stiff gray clay w/sand lenses, pockets & trace of shells	41.9	79.0	112.1	99	1440		8.1	0.5
3	56	57.0	Medium stiff gray clay w/sand lenses, pockets & trace of shells	40.7	80.0	112.6	100	1410		8.1	1.0



WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 44 of 56)

BORING 70 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
4	56	57.0	Medium stiff gray clay w/sand lenses, pockets & trace of shells	42.4	78.4	111.6	99	1240		5.1	1.0
5	56	57.0	Medium stiff gray clay w/sand lenses, pockets & trace of shells	40.2	79.1	110.9	96	805		6.1	2.0
6	56	57.0	Medium stiff gray clay w/sand lenses, pockets & trace of shells	41.5	79.4	112.4	99	1470		9.2	2.0
1	62	63.0	Stiff-greenish-gray & tan clay w/trace of silt	21.8	106.1	129.2	100	5585	$\phi=6$ C=1540	18.3	0.0
2	62	63.0	Stiff greenish-gray & tan clay w/trace of silt	21.6	107.8	131.0	100	3700		8.1	0.5
3	62	63.0	Stiff greenish-gray & tan clay w/trace of silt	22.5	105.7	129.5	100	1845		7.1	1.0
4	62	63.0	Stiff greenish-gray & tan clay w/trace of silt	20.9	108.9	131.7	100	4145		13.1	1.0
5	62	63.0	Stiff greenish-gray & tan clay w/trace of silt	21.2	107.3	130.0	100	4765		15.3	3.0
1	74	77.0	Stiff gray & tan clay w/silt pockets	36.0	84.9	115.5	100	2810	$\phi=4$ C=1455*	6.1	0.0
2	74	77.0	Stiff gray & tan clay w/silt pockets	42.9	80.1	114.5	100	3255		6.1	0.5
3	74	77.0	Stiff gray & tan clay w/silt pockets	43.9	78.8	113.4	100	4840		5.1	1.0
4	74	77.0	Stiff gray & tan clay w/silt pockets	44.1	77.1	111.1	100	3960		4.1	3.0
5	74	77.0	Stiff gray & tan clay w/silt pockets	42.0	79.0	112.2	100	2450		4.1	3.0
1	80	83.0	Stiff brown & gray clay w/fissures	44.0	78.2	112.6	100	3355	$\phi=0$ C=1685*	5.1	0.0
2	80	83.0	Stiff brown & gray clay w/fissures	47.0	74.6	110.3	100	4250		4.1	0.5
3	80	83.0	Stiff brown & gray clay w/fissures	46.9	76.0	111.6	100	3425		4.1	1.0
4	80	83.0	Stiff brown & gray clay w/fissures	47.2	74.5	109.7	100	2820		4.1	1.0
5	80	83.0	Stiff brown & gray clay w/fissures	47.3	74.0	109.0	100	2405		5.1	3.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 45 of 56)

BORING 70 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	85	88.0	Medium stiff gray & tan clay w/clayey silt layers	30.0	93.7	121.8	100	2130	$\phi=4$ C=430*	6.1	0.0
2	85	88.0	Medium stiff gray & tan clay w/clayey silt layers	30.4	91.4	119.2	97	1080		3.1	0.5
3	85	88.0	Medium stiff gray & tan clay w/clayey silt layers	29.6	91.9	119.1	97	1255		4.1	1.0
4	85	88.0	Medium stiff gray & tan clay w/clayey silt layers	29.9	92.8	120.5	98	1180		9.2	3.0
5	85	88.0	Medium stiff gray & tan clay w/clayey silt layer	29.5	94.6	122.5	100	1655		4.1	3.0
1	90	93.0	Stiff brown & gray fissured & clay	43.3	79.1	113.4	100	2965	$\phi=0$ C=1440*	4.1	0.0
2	90		Stiff brown & gray fissured & clay	41.1	81.1	114.4	100	1870		2.0	0.5
3	90	93.0	Stiff brown & gray fissured & clay	42.0	79.3	112.6	100	2205		3.1	0.5
4	90	93.0	Stiff brown & gray fissured & clay	42.6	78.7	111.8	100	2705		4.1	1.0
5	90	93.0	Stiff brown & gray fissured & clay	40.8	81.3	114.4	100	3140		7.1	3.0
1	94	97.0	Stiff tan & gray clay w/sand pockets	29.4	93.2	120.6	98	2030	$\phi=0$ C=1010*	6.1	0.0
2	94	97.0	Stiff tan & gray clay w/sand pockets	37.8	84.8	116.9	100	1915		8.1	0.5
3	94	97.0	Stiff tan & gray clay w/sand pockets	35.9	85.6	116.3	100	2075		7.1	1.0
4	94	97.0	Stiff tan & gray clay w/sand pockets	36.8	85.0	116.3	100	2030		5.1	3.0

BORING 71

1	5	6.0	Stiff brown & gray silty clay w/sandy silt layers & lenses	22.2	96.2	117.6	79	2360	$\phi=6$ C=1310*	4.1	0.0
2	5	6.0	Stiff brown & gray silty clay w/sandy silt layers & lenses	24.2	98.1	121.8	91	3025		5.1	0.5
3	5	6.0	Stiff brown & gray silty clay w/sandy silt layers & lenses	21.8	97.7	119.0	81	4145		11.2	1.0
4	5	6.0	Stiff brown & gray silty clay w/sandy silt layers & lenses	23.3	95.0	117.1	81	3745		6.1	2.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 46 of 56)

BORING 71 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	7	8.0	Medium stiff tan & gray clay w/silt lenses & pockets	30.5	90.7	118.4	95	2130	$\phi=4$ C=995*	14.2	0.0
2	7	8.0	Medium stiff tan & gray clay w/silt lenses & pockets	30.3	91.3	119.0	96	1830		9.2	0.5
3	7	8.0	Medium stiff tan & gray clay w/silt lenses & pockets	22.8	97.9	120.2	82	2795		8.1	1.0
4	7	8.0	Medium stiff tan & gray clay w/silt lenses & pockets	22.5	97.4	119.3	83	2705		6.1	2.0
1	9	10.0	Medium stiff tan & gray silty clay w/clayey silt layers	24.9	96.6	120.6	90	2420	$\phi=4$ C=1020*	6.1	0.0
2	9	10.0	Medium stiff tan & gray silty clay w/clayey silt layers	23.5	97.9	120.9	88	2045		5.0	0.5
3	9	10.0	Medium stiff tan & gray silty clay w/clayey silt layers	27.1	95.1	120.8	94	1930		11.0	1.0
4	9	10.0	Medium stiff tan & gray silty clay w/clayey silt layers	25.6	95.9	119.5	97	3040		6.0	2.0
1	9R	10.0	Remolded	24.2	96.0	119.2	88	2015	$\phi=7$ C=750*	8.0	0.5
2	9R	10.0	Remolded	25.6	95.5	119.9	90	2215		20.0	1.0
3	9R	10.0	Remolded	24.5	95.9	119.4	87	2910		16.1	2.0
1	14	15.0	Soft tan & gray clay w/silt lenses	38.8	81.7	113.4	100	1600	$\phi=0$ C=805*	11.2	0.0
2	14	15.0	Soft tan & gray clay w/silt lenses	33.6	89.0	118.9	100	1610		10.2	0.5
3	14	15.0	Soft tan & gray clay w/silt lenses	33.6	88.2	117.8	100	1325		6.1	1.0
4	14	15.0	Soft tan & gray clay w/silt lenses	34.0	87.7	117.5	100	1610		9.2	2.0
1	19	20.0	Very soft tan & gray silty clay w/clayer silt layers & trace of sand	30.1	91.7	119.3	96	905	$\phi=0$ C=415*	12.2	0.0
2	19	20.0	Very soft tan & gray silty clay w/clayer silt layers & trace of sand	34.3	85.7	115.1	96	750		8.1	0.5
3	19	20.0	Very soft tan & gray silty clay w/clayer silt layers & trace of sand	33.3	86.7	115.5	96	490		9.2	1.0
4	19	20.0	Very soft tan & gray silty clay w/clayer silt layers & trace of sand	34.4	85.3	114.7	96	835		10.2	2.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 47 of 56)

BORING 71 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>				
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)	
1	19R	20.0	Remolded	32.7	85.4	113.3	91	185	φ=0 C=45*	8.0	0.5	
	19R	20.0	Remolded	32.7	86.0	113.8	92	86		5.0	1.0	
3	19R	20.0	Remolded	33.0	85.2	113.8	92	130		10.0	2.0	
1	23	24.0	Soft tan & gray silty clay w/clayer silt layers & trace of sand	29.2	93.9	121.3	99	1125	φ=0 C=290*	8.0	0.0	
2	23	24.0	Soft tan & gray silty clay w/clayer silt layers & trace of sand	29.4	92.4	119.6	97	520		6.1	0.5	
3	23	24.0	Soft tan & gray silty clay w/clayer silt layers & trace of sand	31.1	91.2	119.6	99	430		75.0	1.0	
4	23	24.0	Soft tan & gray silty clay w/clayer silt layers & trace of sand	29.0	95.7	123.4	100	530		9.2	2.0	
1	28	29.0	Soft gray clay with fissures	46.0	76.2	111.3	100	1410	φ=0 C=590*	9.2	0.0	
2	28	29.0	Soft gray clay with fissures	41.5	78.1	110.6	97	805		6.0	0.5	
3	28	29.0	Soft gray clay with fissures	41.1	78.3	110.5	96	1210		9.2	0.5	
4	28	29.0	Soft gray clay with fissures	44.3	75.4	108.8	97	920		8.0	1.0	
5	28	29.0	Soft gray clay with fissures	40.8	77.5	109.1	100	1210		10.0	2.0	
1	28R	29.0	Remolded	39.6	78.0	108.9	92	1095	φ=0 C=455*	17.0	0.5	
2	28R	29.0	Remolded	39.7	75.4	105.3	87	705		3.0	1.0	
3	28R	29.0	Remolded	40.9	76.5	107.7	91	920		8.0	2.0	
1	33	34.0	Soft gray silty clay w/clayer silt layers	33.2	88.5	117.9	99	1080	φ=0 C=460*	17.3	0.0	
2	33	34.0	Soft gray silty clay w/clayer silt layers	34.4	87.0	116.9	100	1020		13.2	0.5	
3	33	34.0	Soft gray silty clay w/clayer silt layers	34.8	87.5	118.0	100	720		10.2	1.0	
4	33	34.0	Soft gray silty clay w/clayer silt layers	33.5	87.6	116.9	99	775		8.1	2.0	
1	39	40.0	Medium stiff tan & gray clay w/few roots	43.1	77.4	110.8	98	1640	φ=0 C=820*	5.1	0.0	
2	39	40.0	Medium stiff tan & gray clay w/few roots	33.4	83.2	111.0	89	1730		7.0	0.5	
3	39	40.0	Medium stiff tan & gray clay w/few roots	40.5	78.5	110.3	95	1555		5.0	1.0	

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 48 of 56)

BORING 71 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
4	39	40.0	Medium stiff tan & gray clay w/few roots	42.7	77.1	110.0	97	1600		6.0	2.0
1	39R	40.0	Remolded	40.0	78.8	110.3	95	1730	$\phi=0$ C=890*	11.0	0.5
2	39R	40.0	Remolded	37.9	80.0	110.3	95	1845		5.0	1.0
3	39R	40.0	Remolded	40.7	77.0	108.3	93	1540		8.0	2.0
1	43	44.0	Medium stiff gray clay w/trace of organic matter & slickensides	60.8	63.8	102.6	100	1555	$\phi=0$ C=805*	5.1	0.0
2	43	44.0	Medium stiff gray clay w/trace of organic matter & slickensides	57.0	66.0	103.0	99	1295		4.1	0.5
3	43	44.0	Medium stiff gray clay w/trace of organic matter & slickensides	60.0	64.0	102.4	98	1610		7.1	1.0
4	43	44.0	Medium stiff gray clay w/trace of organic matter & slickensides	57.8	66.9	105.5	98	1585		5.1	2.0
1	47	48.0	Medium stiff gray silty clay w/clayey silt layers	34.7	86.8	116.9	100	2405	$\phi=0$ C=905*	11.2	0.0
2	47	48.0	Medium stiff gray silty clay w/clayey silt layers	32.9	86.3	114.8	94	1080		7.0	0.5
3	47	48.0	Medium stiff gray silty clay w/clayey silt layers	34.1	86.9	116.5	97	1885		9.0	1.0
4	47	48.0	Medium stiff gray silty clay w/clayey silt layers	32.8	85.9	114.1	93	1180		9.0	2.0
5	47	48.0	Medium stiff gray silty clay w/clayey silt layers	33.3	88.2	117.9	99	3170		15.3	2.0
1	47R	48.0	Remolded	33.6	84.5	112.9	92	230	$\phi=0$ C=110*	10.0	0.5
2	47R	48.0	Remolded	30.8	87.8	114.8	90	215		8.0	1.0
3	47R	48.0	Remolded	32.3	84.5	111.7	88	86		1.5	2.0
1	54	55.0	Soft gray clay with silty sand lenses, pockets & shell fragments	51.6	70.5	106.8	100	1195	$\phi=0$ C=315*	15.3	0.0
2	54	55.0	Soft gray clay with silty sand lenses, pockets & shell fragments	37.9	80.8	111.4	96	660		4.0	0.5
3	54	55.0	Soft gray clay with silty sand lenses, pockets & shell fragments	43.6	75.7	108.7	96	560		4.0	1.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 49 of 56)

BORING 71 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
4	54	55.0	Soft gray clay with silty sand lenses, pockets & shell fragments	41.0	77.3	109.0	94	750		6.0	2.0
	60	61.0	Medium stiff gray clay w/fine sand lenses, pockets & trace of shells	41.2	80.0	113.9	100	1240	$\phi=0$ C=590*	8.1	0.0
2	60	61.0	Medium stiff gray clay w/fine sand lenses, pockets & trace of shells	47.8	72.9	107.7	98	1180		7.0	0.5
3	60	61.0	Medium stiff gray clay w/fine sand lenses, pockets & trace of shells	47.7	72.9	107.6	99	880		7.0	1.0
4	60	61.0	Medium stiff gray clay w/fine sand lenses, pockets & trace of shells	46.2	73.0	106.7	96	1020		9.0	2.0
1	60R	61.0	Remolded	40.5	74.6	104.8	87	315	$\phi=0$ C=115*	7.0	0.5
2	60R	61.0	Remolded	42.9	73.5	105.0	90	245		4.0	1.0
3	60R	61.0	Remolded	44.5	72.2	104.3	91	86		5.0	2.0
1	65	66.0	Medium stiff gray clay w/sand pockets	39.4	81.4	113.5	100	1730	$\phi=0$ C=505*	12.2	0.0
2	65	66.0	Medium stiff gray clay w/sand pockets	41.2	79.3	112.0	98	920		6.1	0.5
3	65	66.0	Medium stiff gray clay w/sand pockets	40.0	81.2	113.7	100	1180		9.2	1.0
4	65	66.0	Medium stiff gray clay w/sand pockets	43.3	76.7	109.9	98	1010		6.1	2.0
1	70	71.0	Very stiff tan & gray clay w/fine sand lenses	19.7	108.7	130.1	96	5500	$\phi=0$ C=2450*	9.2	0.0
2	70	71.0	Very stiff tan & gray clay w/fine sand lenses	20.0	109.1	130.9	100	4895		8.1	0.5
3	70	71.0	Very stiff tan & gray clay w/fine sand lenses	19.7	109.2	130.7	98	4375		7.1	1.0
4	70	71.0	Very stiff tan & gray clay w/fine sand lenses	20.3	106.8	128.5	95	2865		11.2	3.0
5	70	71.0	Very stiff tan & gray clay w/fine sand lenses	21.4	106.1	128.8	98	4925		10.2	3.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 50 of 56)

BORING 71 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	Confined Compressive Strength (lb/sq. ft.)	<u>Unconsolidated Undrained Triaxial Shear Tests</u>		
					Dry	Wet			Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	76	77.0	Very stiff tan & gray clay with concretions	29.3	93.2	120.5	98	3655	$\phi=0$ C=1785*	13.2	0.0
2	76	77.0	Very stiff tan & gray clay with concretions	27.4	98.4	125.3	100	2330		5.1	0.5
3	76	77.0	Very stiff tan & gray clay with concretions	26.1	99.7	125.7	100	3540		9.2	1.0
4	76	77.0	Very stiff tan & gray clay with concretions	26.0	97.1	122.3	96	2565		8.1	3.0
	76	77.0	Very stiff tan & gray clay with concretions	23.0	104.5	128.5	100	3530		5.1	3.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 51 of 56)

BORING 71 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	79	80.0	Medium stiff tan & gray clay w/clayey silt layers & concretions	27.5	97.9	124.8	100	1355	$\phi=0$ C=790*	16.3	0.0
2	79	80.0	Medium stiff tan & gray clay w/clayey silt layers & concretions	26.5	99.2	125.4	100	1785		11.2	0.5
3	79	80.0	Medium stiff tan & gray clay w/clayey silt layers & concretions	26.7	98.7	125.1	100	1095		10.2	1.0
4	79	80.0	Medium stiff tan & gray clay w/clayey silt layers & concretions	25.4	100.0	125.4	100	2000		10.2	3.0
1	84	85.0	Very stiff tan & gray fissured clay w/silt lenses	34.1	86.9	116.5	97	4390	$\phi=0$ C=2130*	7.1	0.0
2	84	85.0	Very stiff tan & gray fissured clay w/silt lenses	34.0	88.6	118.7	100	4205		6.1	0.5
3	84	85.0	Very stiff tan & gray fissured clay w/silt lenses	34.4	87.8	118.0	100	4235		6.1	1.0
4	84	85.0	Very stiff tan & gray fissured clay w/silt lenses	34.1	87.5	117.3	100	4480		6.1	3.0
1	89	91.0	Very stiff tan & gray fissured clay w/few concretions	42.4	78.8	112.1	100	4665	$\phi=0$ C=2305	4.1	0.0
2	89	91.0	Very stiff tan & gray fissured clay w/few concretions	40.6	81.2	114.9	100	4955		5.1	0.5
3	89	91.0	Very stiff tan & gray fissured clay w/few concretions	40.5	80.3	112.8	99	4105		4.1	1.0
4	89	91.0	Very stiff tan & gray fissured clay w/few concretions	39.1	81.9	113.9	100	5010		5.1	3.0
1	100	102.0	Stiff gray & tan fissured clay	47.7	74.3	109.7	100	3700	$\phi=0$ C=1815*	6.1	0.0
2	100	102.0	Stiff gray & tan fissured clay	46.4	75.6	110.7	100	3415		4.1	0.5
3	100	102.0	Stiff gray & tan fissured clay	47.1	74.8	110.0	100	3630		4.1	1.0
4	100	102.0	Stiff gray & tan fissured clay	44.1	76.9	108.8	100	2420		2.5	1.0
5	100	102.0	Stiff gray & tan fissured clay	38.5	82.0	113.6	100	4220		5.1	3.0



WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 52 of 56)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	Unconsolidated Undrained Triaxial Shear Tests			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	3	5.0	Soft tan & gray silty clay with clayey silt pockets	31.5	86.4	113.6	90	720	$\phi=0$ C=260*	8.1	0.0
2	3	5.0	Soft tan & gray silty clay with clayey silt pockets	30.0	87.5	113.8	88	460		8.1	0.5
3	3	5.0	Soft tan & gray silty clay with clayey silt pockets	29.7	88.3	114.5	88	560		7.1	1.0
4	3	5.0	Soft tan & gray silty clay with clayey silt pockets	34.2	83.5	112.1	91	405		14.2	2.0
1	15	17.0	Medium stiff tan & gray clay w/silt pockets	32.3	89.3	118.1	98	1815	$\phi=0$ C=820*	18.3	0.0
2	15	17.0	Medium stiff tan & gray clay w/silt pockets	31.6	91.6	120.8	100	1640		14.2	0.5
3	15	17.0	Medium stiff tan & gray clay w/silt pockets	35.5	85.0	115.1	98	1295		13.2	1.0
4	15	17.0	Medium stiff tan & gray clay w/silt pockets	34.5	87.2	117.3	100	1555		11.2	2.0
1	20	22.0	Loose tan & gray clayey silt with trace of fine sand	31.7	91.5	120.5	100	1615	$\phi=0$ C=430*	9.2	0.0
2	20	22.0	Loose tan & gray clayey silt with trace of fine sand	31.4	90.9	119.4	98	1685		10.2	0.5
3	20	22.0	Loose tan & gray clayey silt with trace of fine sand	31.3	92.0	120.8	100	1485		10.2	1.0
4	20	22.0	Loose tan & gray clayey silt with trace of fine sand	29.9	921.2	119.8	98	2965		12.2	1.0
5	20	22.0	Loose tan & gray clayey silt with trace of fine sand	30.7	91.4	119.5	97	3355		15.3	2.0
1	38	41.0	Medium stiff gray clay w/few partings	42.9	78.1	111.6	100	1870	$\phi=0$ C=905*	6.1	0.0
2	38	41.0	Medium stiff gray clay w/few partings	39.4	82.3	114.7	100	2245		8.1	0.5
3	38	41.0	Medium stiff gray clay w/few partings	41.6	79.6	112.7	100	1815		6.1	1.0
4	38	41.0	Medium stiff gray clay w/few partings	41.3	79.1	111.8	98	1700		5.1	2.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 53 of 56)

BORING 72 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	43	46.0	Medium stiff gray clay w/clayey silt lenses & layers	41.4	79.3	112.1	99	1600	$\phi=0$ C=690*	11.2	0.0
2	43	46.0	Medium stiff gray clay w/clayey silt lenses & layers	42.4	78.6	111.9	99	1255		6.1	0.5
3	43	46.0	Medium stiff gray clay w/clayey silt lenses & layers	41.4	79.2	112.0	99	1440		8.1	1.0
4	43	46.0	Medium stiff gray clay w/clayey silt lenses & layers	44.9	76.5	110.8	100	1165		6.1	2.0
1	50	53.0	Medium stiff gray clay w/sand lenses & shell fragments	37.0	81.8	112.1	95	1255	$\phi=0$ C=605*	8.1	0.0
2	50	53.0	Medium stiff gray clay w/sand lenses & shell fragments	39.1	81.2	112.9	100	1210		9.1	0.5
3	50	53.0	Medium stiff gray clay w/sand lenses & shell fragments	37.2	82.6	113.3	98	1370		9.1	1.0
4	50	53.0	Medium stiff gray clay w/sand lenses & shell fragments	38.0	81.4	112.3	97	1265		7.1	2.0
1	53	56.0	Medium stiff gray clay w/sand lenses & shells	38.2	82.7	114.3	100	1380	$\phi=0$ C=690*	8.1	0.0
2	53	56.0	Medium stiff gray clay w/sand lenses & shells	33.2	87.1	116.0	98	995		7.1	0.5
3	53	56.0	Medium stiff gray clay w/sand lenses & shells	41.3	78.6	111.1	97	1050		7.1	0.5
4	53	56.0	Medium stiff gray clay w/sand lenses & shells	40.8	78.7	110.8	96	1020		9.2	1.0
5	53	56.0	Medium stiff gray clay w/sand lenses & shells	38.1	80.8	111.6	97	1265		6.0	1.0
6	53	56.0	Medium stiff gray clay w/sand lenses & shells	31.4	89.6	117.7	96	1615		7.1	2.0
1	56	59.0	Soft gray clay with many clayey sand lenses, pockets & shell fragments	35.9	85.4	116.1	100	820	$\phi=0$ C=405*	8.1	0.0
2	56	59.0	Soft gray clay with many clayey sand lenses, pockets & shell fragments	37.8	82.6	113.8	99	790		8.1	0.5
3	56	59.0	Soft gray clay with many clayey sand lenses, pockets & shell fragments	36.4	85.1	116.1	100	1095		8.1	1.0
4	56	59.0	Soft gray clay with many clayey sand lenses, pockets & shell fragments	38.2	82.5	114.0	199	965		12.2	2.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 54 of 56)

BORING 72 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	<u>Unconsolidated Undrained Triaxial Shear Tests</u>			
					Dry	Wet		Confined Compressive Strength (lb/sq. ft.)	Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	62	65.0	Medium stiff gray clay w/sand pockets & trace of shells	55.1	68.0	105.4	100	1830	$\phi=0$ C=865*	10.2	0.0
2	62	65.0	Medium stiff gray clay w/sand pockets & trace of shells	54.5	68.6	105.9	100	1755		8.0	0.5
3	62	65.0	Medium stiff gray clay w/sand pockets & trace of shells	55.6	67.6	105.2	100	1685		10.2	1.0
4	62	65.0	Medium stiff gray clay w/sand pockets & trace of shells	55.0	67.5	104.6	99	1700		8.1	2.0
1	66	69.0	Medium stiff gray clay w/sand pockets & decayed shells	37.6	79.6	109.5	89	1470	$\phi=0$ C=835*	6.1	0.0
2	66	69.0	Medium stiff gray clay w/sand pockets & decayed shells	44.7	76.2	110.3	99	1670		8.1	0.5
3	66	69.0	Medium stiff gray clay w/sand pockets & decayed shells	46.3	74.6	109.1	100	1555		7.1	1.0
4	66	69.0	Medium stiff gray clay w/sand pockets & decayed shells	45.9	74.7	109.0	99	1900		8.1	2.0
1	71	74.0	Stiff tan & gray clay w/ concretions & fissures	22.4	103.5	126.7	97	3860	$\phi=0$ C=1870*	9.2	0.0
2	71	74.0	Stiff tan & gray clay w/ concretions & fissures	21.2	106.6	129.2	97	3655		6.1	0.5
3	71	74.0	Stiff tan & gray clay w/ concretions & fissures	21.6	105.4	128.2	98	3715		6.1	1.0
4	71	74.0	Stiff tan & gray clay w/ concretions & fissures	21.8	104.8	127.6	96	3815		7.1	3.0
1	74	77.0	Stiff tan & gray clay w/ concretions & fissures	29.1	94.2	121.6	100	3530	$\phi=0$ c=1730*	7.1	0.0
1	74	77.0	Stiff tan & gray clay w/ concretions & fissures	30.1	93.2	121.3	100	3760		5.1	0.5
3	74	77.0	Stiff tan & gray clay w/ concretions & fissures	27.1	95.2	121.0	95	3530		8.1	1.0
4	74	77.0	Stiff tan & gray clay w/ concretions & fissures	25.1	96.7	121.6	91	4375		5.1	3.0
1	80	85.0	Stiff tan & gray fissured clay w/silt lenses	37.0	84.5	115.8	100	3685	$\phi=0$ C=1885*	10.0	0.0
2	80	85.0	Stiff tan & gray fissured clay w/silt lenses	32.6	90.6	120.1	100	3225		7.1	0.5
3	80	85.0	Stiff tan & gray fissured clay w/silt lenses	35.7	84.8	115.1	98	3385		6.0	0.5

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 55 of 56)

BORING 72 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	Confined Compressive Strength (lb/sq. ft.)	<u>Unconsolidated Undrained Triaxial Shear Tests</u>		
					Dry	Wet			Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
4	80	85.0	Stiff tan & gray fissured clay w/silt lenses	36.5	85.2	116.3	100	3830		9.0	1.0
5	80	85.0	Stiff tan & gray fissured clay w/silt lenses	37.1	85.0	116.5	100	3630		7.0	3.0
1	84	89.0	Stiff tan & gray fissured clay	42.6	78.7	112.2	100	1730	φ=0 C=1440*	3.0	0.0
2	84	89.0	Stiff tan & gray fissured clay	40.7	79.8	112.3	98	3760		6.0	0.0
3	84	89.0	Stiff tan & gray fissured clay	39.4	82.0	114.3	100	3065		5.0	0.5
4	84	89.0	Stiff tan & gray fissured clay	40.5	80.4	113.0	100	2665		5.0	1.0
5	84	89.0	Stiff tan & gray fissured clay	39.3	81.8	113.9	100	3540		6.0	3.0
1	90	95.0	Stiff tan & gray fissured clay with silt pockets & decayed shells	36.2	84.0	114.4	98	3340	φ=0 C=1845*	2.5	0.0
2	90	95.0	Stiff tan & gray fissured clay with silt pockets & decayed shells	33.1	87.3	116.2	97	3685		2.5	0.0
3	90	95.0	Stiff tan & gray fissured clay with silt pockets & decayed shells	34.2	86.3	115.8	98	3960		3.0	0.5
4	90	95.0	Stiff tan & gray fissured clay with silt pockets & decayed shells	43.3	74.4	106.6	92	3370		2.0	1.0
5	90	95.0	Stiff tan & gray fissured clay with silt pockets & decayed shells	35.2	85.5	115.6	98	3800		3.0	1.0
6	90	95.0	Stiff tan & gray fissured clay with silt pockets & decayed shells	39.3	81.0	112.8	100	4235		3.0	3.0
1	94	99.0	Stiff tan & gray fissured clay	27.8	96.6	123.5	100	3960	φ=0 C=1975*	2.5	0.0
2	94	99.0	Stiff tan & gray fissured clay	36.2	84.6	115.2	100	3400		4.0	0.5
3	94	99.0	Stiff tan & gray fissured clay	29.9	91.5	118.8	96	3860		4.0	1.0
4	94	99.0	Stiff tan & gray fissured clay	29.5	90.0	116.6	91	4375		5.0	3.0

WSES-FSAR-UNIT-3

TABLE 2.5A-1 (Sheet 56 of 56)

BORING 72 (Cont'd)

Test No.	Sample No.	Depth (ft.)	Classification	Natural Water Content Percent	Density (lb/cu ft.)		Degree Saturation	Confined Compressive Strength (lb/sq. ft.)	<u>Unconsolidated Undrained Triaxial Shear Tests</u>		
					Dry	Wet			Shear Values	Strain in Percent at Maximum Stress	Confining Pressure (Tons/sq. ft.)
1	101	106.0	Stiff tan & gray clay w/sandy clay layers & pockets	33.8	86.3	115.5	97	2345	$\phi=0$ C=1165*	8.0	0.0
2	101	106.0	Stiff tan & gray clay w/sandy clay layers & pockets	31.4	89.3	117.3	96	2275		7.0	0.5
3	101	106.0	Stiff tan & gray clay w/sandy clay layers & pockets	32.8	88.0	116.9	97	2330		7.0	1.0
4	101	106.0	Stiff tan & gray clay w/sandy clay layers & pockets	31.9	88.5	116.7	96	2650		9.0	3.0

WSES-FSAR-UNIT-3

TABLE 2.5A-2

SUMMARY OF LABORATORY PERMEABILITY TESTS

<u>Boring No.</u>	<u>Sample No.</u>	<u>Depth ft.</u>	<u>Classification</u>	<u>Water Content Before Test (Percent)</u>	<u>Water Content Percent After Test</u>	<u>Dry Density (pcf)</u>	<u>Coefficient of Permeability Cms./Second</u>
18	9	30.0	Loose gray silty fine sand w/trace of organic matter	30.4	32.1	89.4	$6.0 \times 10^{-5}$
30	27	89.5	Tan & gray silty sand	23.8	23.0	98.7	$2.1 \times 10^{-5}$
35	10	33.0	Tan & gray silty sand	24.5	24.1	93.8	$4.6 \times 10^{-5}$
51	23	98.5	Tan & gray silty fine sand	22.6	-	99.8	$0.41 \times 10^{-5}$
53	7	28.0	Loose gray sandy silt	32.5	-	91.2	$3.6 \times 10^{-5}$
59	77	98.5	Loose tan & gray silty fine sand	23.9	-	101.0	$2.9 \times 10^{-5}$
61	25	98.5	Loose tan & gray silty fine sand w/trace of clay	22.1	-	100.5	$0.43 \times 10^{-5}$

WSES-FSAR-UNIT-3

TABLE 2.5A-3

COEFFICIENT OF PERMEABILITY COMPUTED  
FROM CONSOLIDATION DATA

BORING 51

<u>Sample No.</u>	<u>Depth (ft.)</u>	<u>Load (Tons/sq. ft.)</u>	<u>Coefficient of Permeability Cms./Second x 10<sup>-8</sup></u>
16	69.0	3.2	0.11
Vertical		6.4	0.08
		12.8	0.05
		25.6	0.02
		27.0	0.008

BORING 59

21	25.0	1.6	137.6
Horizontal		3.2	97.0
		6.4	120.4
		12.8	23.1
		20.0	18.2
22	26.0	1.6	109.3
Vertical		3.2	152.7
		6.4	38.4
		12.8	30.9
		20.0	8.3
38	50.0	1.6	2.0
Horizontal		3.2	0.8
		6.4	0.5
		12.8	0.2
38	50.0	0.8	2.4
Vertical		1.6	3.2
		3.2	0.5
		6.4	0.7
		12.8	0.2

WSES-FSAR-UNIT-3

TABLE 2.5A-4

SUMMARY OF ORGANIC CONTENT DATA

<u>BORING 44</u>			
Sample No.	Depth (ft.)	Classification	Organic Content (Percent)
60	214.5	Very still greenish-gray clay w/silt pockets & some organic matter	4.70
61	217.5	Very stiff greenish-gray clay w/silt pockets & some organic matter	5.05
63	224.5	Very stiff gray clay w/some organic matter	6.63
64	227.5	Very stiff gray clay w/some organic matter	4.70
<u>BORING 52</u>			
51	124.0	Stiff gray clay w/roots, organic matter & sand layers	10.30
<u>BORING 55</u>			
84	124.0	Medium stiff gray clay w/shell fragments & organic clay layers	8.12
85	124.5	Stiff gray clay w/organic matter	6.61
86	127.5	Stiff gray clay w/roots & organic matter	3.22
87	128.0	Stiff gray organic clay w/roots	15.83
89	129.0	Stiff gray organic clay w/roots	10.75
<u>BORING 56</u>			
53	124.5	Stiff dark gray clay w/organic matter	11.10
<u>BORING 67</u>			
50	119.5	Stiff gray clay w/shell lenses & organic matter	6.90



WSES-FSAR-UNIT-3

TABLE 2.5A

NOTES ON TABLES

$\phi$	=	Angle of internal friction in degrees.
C	=	Cohesion in pounds per square foot.
LL	=	Liquid Limit in percent.
PL	=	Plastic Limit in percent.
PI	=	Plasticity Index in percent.

\*Indicates quick triaxial shear test (Unconsolidated Undrained).

\*\*Indicates quick direct shear test (Unconsolidated Undrained).

+	=	Indicates 1.4 in. diameter test specimen.
++	=	Indicates four in. diameter test specimen.
+++	=	Indicates two in. diameter test specimen.
V	=	Indicates unconfined compression test in the vertical direction.
H	=	Indicates unconfined compression test in the horizontal direction.
R	=	Indicates remolded test specimen.