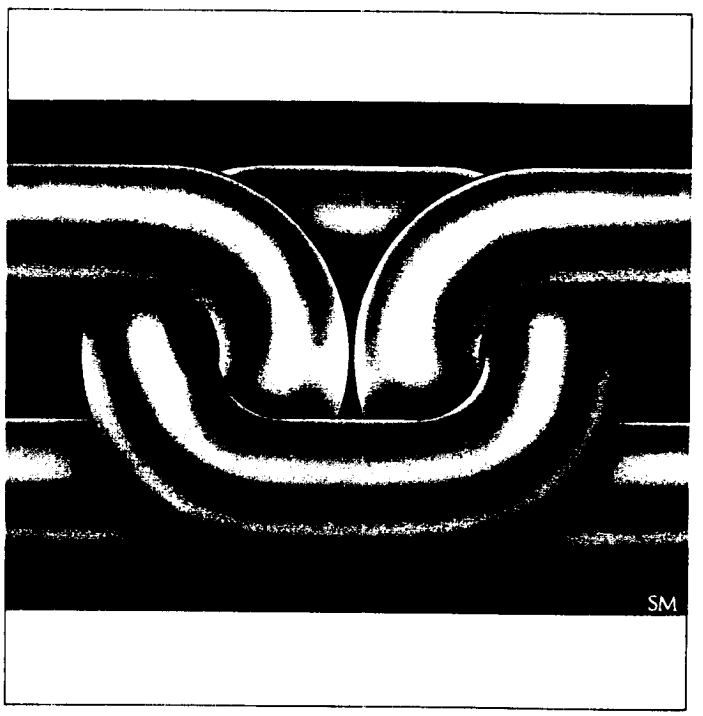
United Energy Services Corporation

TASK ASSIGNMENT No. TV-FH-SL-001-045
G/C WORK ORDER No. 07-9826-053
TVA TAO No. GP-493-398629
KINGSTON FOSSIL PLANT
DREDGE CELLS/CLOSURE
SOIL INVESTIGATION

VOLUME I of II

SL Report 015-672-142A



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Singleton Laboratories

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September 29, 1994

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PREPARED FOR:
Gilbert/Commonwealth, Inc.
633 Chestnut Street-Suite 400
chattanooga, TN 37450-0400
As Requested By: D. Erali

SINGLETON LABORATORIES
1413 Topside Road
Louisville, Tennessee 37777
615-970-2299

Table of Contents

INTRODUCTION

Singleton Laboratories has completed a requested soil investigation for the subject project. This investigation was conducted in general accordance with Singleton Proposal No. 94-232 dated May 2, 1994. The purpose of the investigation was to assess subsurface soil conditions, to determine physical and engineering properties of both undisturbed and borrow soils, and to establish elevations of bedrock. The investigation included both sub-surface exploration and laboratory testing of soil. The following report presents the activities and results of the investigation.

FIELD INVESTIGATION

The field investigation was completed between July 26 and August 19, 1994. A total of 914 linear feet was drilled and sampled at the specified twenty-two (22) locations including 9 split-spoon, 9 undisturbed, and 4 auger borings. A total of 109 split-spoon samples, 30 undisturbed tube samples, and 8 bag samples was completed in this investigation. A CME-550 ATV drill equipped with 6-1/4-in. and 3-3/8-in. hollow stem augers, 3-in. shelby tube samplers, 2-in. split-spoon samplers, and AW rods were used in drilling, sampling, and testing in this investigation. Dry methods of soil sampling were used and procedures conformed to American Society for Testing and Materials (ASTM) Standards D 1452, D 1586, D 1587, and D 2488.

For each split-spoon boring, Standard Penetration Tests (SPT) were performed and SPT samples were taken at 5-ft intervals to the specified depth. SPT tests were performed in accordance with ASTM D 1586 in which a standard 1.4-in. id and 2-in. od split-spoon sampler is driven into the soil with a 140-lb hammer that free falls 30-in. The standard penetration resistance of soil is defined as the number of blows required to drive the final foot. For each boring, field logs showing depths of sampling, and visual classification are enclosed in Appendix B.

Nine (9) split-spoon borings designated as SS-1 through 10 excluding 7, and nine (9) undisturbed borings designated as US-1 through 9 were drilled in the dike areas around Dredge Cells 1, 2, and 3. A total of eight (8) bag samples was obtained at four locations inside the Dredge Cell 2. A boring location plan is enclosed. Refusal was encountered at all split-spoon borings, and depths of refusal ranged from 39 to 92-ft. SPT N values ranged from 0 to 90, indicating soil consistencies varying from very soft to hard. Generally, overburden soils at Borings SS-1 through 6 consisted of a gray fly ash only.

Residual soils were encountered at depths of 55, 70, and 75-ft at Borings SS-8, 9, and 10, respectively. The 20 to 25-ft thick residual soils were composed of two soil types; a mottled brown, tan, and gray silty clay in the upper layer, and a gray and tan silty sand with gravel in the lower layer.

Ground water was encountered at all borings at depths ranging from 5-ft 8-in. to 29-ft during the time of boring. For Boring SS-10, no ground water reading was taken because the hole collapsed immediately after completion of the boring. However, ground water fluctuations due to seasonal and weather changes should be expected. All the borings were backfilled with natural soils.

LABORATORY TESTING

All split-spoon samples obtained were visually classified and tested for moisture content in accordance with ASTM D 2216, while Atterberg limits, grain-size analysis, and specific gravity tests were performed on representative SPT soil samples in accordance with ASTM D 4318, and D 422, and D 854, respectively. Test results are shown in the field logs. Individual test data sheets are enclosed in Appendix C.

All twenty-five (25) undisturbed soil samples obtained from the dike areas were tested for moisture content, classification, grain-size, Atterberg limits, specific gravity, and unit weight in accordance with ASTM D 2216, D 2488, D 422, D 4318, D 854, and SLP-2, respectively. Unconsolidated-undrained triaxial (Q) and consolidated-undrained triaxial (R) with pore water pressure measurements were performed on five (5) selected undisturbed soil samples in accordance with ASTM D 4767 and D 5084, respectively. Test results are also summarized in Table 1. Individual test data sheets are enclosed in Appendix D. Under Q test conditions, angles of internal friction ranged from zero (with 1.85 tsf cohesion) to 37.4 degrees, and cohesions varied from zero to 1.85 tsf. Under R test conditions, apparent angles of internal friction and cohesions ranged from 4.4 to 35.8 degrees and from 0.32 to 3.65 tsf, respectively, and effective angles of internal friction and cohesions varied from 9.2 to 37.5 degrees and from zero to 2.91 tsf, respectively.

All bulk soil samples obtained from the Dredge Cell 2 were visually classified as a gray silty sand (fly ash) and tested for moisture content on representative samples. Natural moisture contents ranged from 34.5 to 39.9 percent with an average of 37.6 percent. Two (2) soil classes were identified from all the bulk samples. Compaction tests were performed in accordance with ASTM D 698 Method A. Optimum moisture contents and maximum dry densities were determined to be 25.4

percent and 79.8 pcf, respectively for soil Class I, and 24.5 percent and 79.9 pcf, respectively for soil Class II. As indicated from the test results, Soil Classes I and II are very similar. A family of compaction curves was established for each soil class and the compaction curves are enclosed. For each soil class, classification tests including grain-size analysis, specific gravity, and Atterberg Limits were performed. Test results are summarized in Table 2 and also shown in the attached compaction curves. Individual test data sheets and compaction curves are enclosed in Appendix E.

Unconsolidated-undrained triaxial (Q) and consolidated-undrained triaxial (R) with pore water pressure measurements tests were performed on the soil samples remolded to the optimum moisture content with 95 and 100 percent maximum dry density. Test results are also summarized in Table 2. Individual test data sheets are also enclosed in Appendix E. Under Q test conditions, angles of internal friction ranged from 23.7 to 24.0 degrees and cohesions varied from 1.04 to 1.10 tsf. Under R test conditions, apparent angles of internal friction and cohesions ranged from 17.9 to 17.9 degrees and from 0.19 to 0.21 tsf, respectively, and effective angles of internal friction and cohesions varied from 28.3 to 38.3 degrees and from 0.06 to 0.27 tsf, respectively.

SUMMARY

Twenty-two (22) soil borings consisting of a total 914 linear feet of drilling including 109 SPT testing and samples, 30 undisturbed tube samples, 8 bag samples were completed at the dikes and dredge cell areas. Laboratory testing including moisture content, classification, grain-size, specific gravity, Atterberg Limits, compaction, unconsolidated-undrained triaxial (Q), and consolidated-undrained triaxial (R) with pore water pressure measurements was performed in accordance with appropriate ASTM methods on both undisturbed and remolded soil samples.

Based on this limited soil investigation including field exploration and laboratory testing conducted for this project, the following recommendations are made. If sub-surface conditions encountered during construction vary from those reported, Singleton Laboratories should be consulted immediately.

1. The predominant overburden soil in the dike area was a fly ash classified as a brown and gray silty sand. However, residual soils were encountered at depths ranging from 55 to 75-ft at Borings SS-8, 9, and 10. Two types of in-situ soil were identified as a mottled brown, tan, and gray silty clay in the

upper layer, and a gray and tan silty sand with gravel in the lower layer. The standard penetration testing showed the soil consistencies ranging from soft to hard. The soils have low to medium shear strengths. Refusal was encountered at depths ranging from 39 to 92-ft.

2. In the borrow area (dredge cells), two soil classes were identified. The soils were generally classified as a gray silty sand (fly ash). Test results indicate the two soil types are similar. Optimum moisture contents ranged from 24.5 to 25.4 percent, and maximum dry densities varied from 79.8 to 79.9 pcf. At the molding conditions of optimum moisture content and 95 to 100 percent maximum dry density, the soils exhibit medium to high shear strength.

Table 1

KINGSTON FOSSIL PLANT
SUMMARY OF LABORATORY TEST DATA
UNDISTURBED SAMPLES

Boring	Sample	Depth	Soil Symbol	Nat Moist		Sp G	Grain-Size Analysis					Atterberg Limit		Dry Density	Void Ratio	Triaxial Q Undisturbed		Saturated Triaxial R Apparent		Saturated Triaxial R Effective	
							Gravel	Sand	Silt	Clay	D_{10}	Liquid Limit	Plastic Index			ϕ	c	ϕ	c	ϕ	c
		ft		%	% Sat		%	%	%	%	mm	%	%	pcf		deg	tsf	deg	tsf	deg	tsf
US-1	1	8.0-10.0	CL	19.3	98.1	2.60	0	18	47	35	--	30	9	107.3	0.511						
US-1	2	22.0-24.0	CL	28.8	100.0	2.53	0	15	58	27	--	27	7	94.2	0.679	12.7	0.00	6.1	0.69	22.6	0.40
US-2	1	13.0-15.0	CL	64.2	100.0	2.66	4	17	28	51	--	43	20	72.6	1.288						
US-3	1	15.0-17.0	ML	34.5	93.5	2.32	0	2	70	28	--	NP	NP	77.9	0.855						
US-3	2	33.0-35.0	CL	22.8	88.4	2.63	6	30	18	46	--	41	18	97.8	0.676						
US-4	1	8.0-10.0	CL-ML	17.8	82.1	2.59	0	28	48	24	--	23	6	103.6	0.561						
US-4	2	22.0-24.0	SM	19.9	100.0	2.57	0	63	27	10	.0046	NP	NP	106.8	0.498						
US-4	3	24.0-28.0	SM	11.5	72.8	2.66	0	72	17	11	.0046	NP	NP	116.9	0.418						
US-4	4	30.0-32.0	ML	20.6	95.6	2.66	0	50	34	16	--	NP	NP	105.6	0.573						
US-5	1	13.0-15.0	MH/CH	25.2	100.0	2.69	14	12	22	52	--	58	27	101.0	0.661						
US-6	1	13.0-15.0	ML	22.3	84.6	2.21	6	37	42	15	--	NP	NP	87.1	0.582						
US-6	2	15.0-17.0	ML	26.3	86.8	2.22	0	38	50	12	--	NP	NP	82.8	0.673	0.0	1.85	4.4	3.65	9.2	2.91
US-6	3	30.0-32.0	ML	25.8	86.4	2.30	0	1	75	24	--	NP	NP	84.9	0.687						
US-7	1	5.0-7.0	ML	42.0	100.0	2.25	0	4	68	28	--	NP	NP	74.4	0.884						
US-7	2	7.0-9.0	ML	34.5	98.6	2.28	0	2	71	27	--	NP	NP	79.1	0.798						
US-7	3	9.0-11.0	ML	33.2	81.6	2.31	0	4	96	0	--	NP	NP	81.6	0.767						
US-7	4	11.0-13.0	ML	35.2	100.0	2.22	0	2	72	26	--	NP	NP	79.9	0.731						
US-8	1	8.0-10.0	ML	14.1	82.9	2.29	7	35	37	21	--	NP	NP	94.4	0.512						
US-8	2	40.0-42.0	ML	21.3	89.8	2.29	0	3	69	28	--	NP	NP	92.8	0.544						
US-8	3	42.0-44.0	ML	24.9	80.1	2.62	0	10	72	18	--	NP	NP	90.0	0.816						
US-8	4	58.0-60.0	ML	13.6	82.9	2.72	0	42	40	18	--	NP	NP	117.4	0.445	11.0	1.16	14.7	1.24	29.6	0.60
US-8	5	71.0-73.0	SM	18.6	100.0	2.64	0	50	36	14	--	NP	NP	112.9	0.460						
US-9	1	20.0-22.0	ML	19.7	81.5	2.39	0	5	73	22	--	NP	NP	84.6	0.766						
US-9	2	32.0-34.0	ML	30.3	100.0	2.37	0	23	59	18	--	NP	NP	90.7	0.633	37.4	0.00	15.9	0.95	29.1	0.49
US-9	3	45.0-47.0	ML	31.2	81.4	2.27	0	5	69	26	--	NP	NP	75.7	0.871						
US-9	4	57.0-59.0	ML	29.7	85.2	2.56	0	5	67	28	--	NP	NP	85.2	0.873	22.3	1.30	35.8	0.32	37.5	0.00
US-9	5	78.0-80.0	SM	17.2	93.4	2.71	0	58	24	18	.0027	NP	NP	112.8	0.500						
US-9	6	85.0-87.0	SM	22.0	96.2	2.67	0	72	20	8	.0082	NP	NP	103.5	0.611						

Table 2

KINGSTON FOSSIL PLANT
SUMMARY OF LABORATORY TEST DATA
BORROW SOIL

	Soil Symbol	Specific Gravity	Grain-Size Analysis					Atterberg Limit		Max Density	Optimum Moisture	Triaxial Q Undisturbed		Saturated Triaxial R Apparent		Saturated Triaxial R Effective	
			Gravel	Sand	Silt	Clay	D_{10}	Liquid Limit	Plastic Index			ϕ	c	ϕ	c	ϕ	c
			%	%	%	%	mm	%	%	pcf	%						
CLASS I	ML	2.25	Ø	6	67	27	--	NP	NP	79.8	25.4						
CLASS II	ML	2.26	Ø	15	66	19	--	NP	NP	79.9	24.5						
CLASS I & II												23.7	1.Ø4	17.9	Ø.19	28.3	Ø.27
												Remolded at optimum moisture and at 95% maximum unit weight.					
CLASS I & II												24.Ø	1.1Ø	17.9	Ø.21	38.3	Ø.Ø8
												Remolded at optimum moisture and at 100% maximum unit weight.					

TASK ASSIGNMENT No. TV-FH-SL001-045
G/C WORK ORDER No. 07-9822-026 AND TVA TAO No. GP-493-398629
KINGSTON FOSSIL PLANT - DREDGE CELLS/CLOSURE
SOIL INVESTIGATION

Singleton Laboratories Report 015-672-142A

APPENDIX A

PROPOSAL

Singleton Laboratories

The Critical Link.®

June 21, 1994

Gilbert Commonwealth, Inc.
Route 10 & Pheasant Road
Reading, Pennsylvania 19607

Attn: Mr. David R. Erali

Re: TVA KINGSTON FOSSIL PLANT - DREDGE CELLS/CLOSURE PERMIT SUBSURFACE INVESTIGATIONS - PROPOSAL No. 94-309

Dear Mr. Erali:

Singleton Laboratories Division of United Energy Services Corporation (Singleton) is pleased to submit this proposal to Gilbert Commonwealth to provide geotechnical investigation services for the TVA Kingston Fossil Plant Project.

Our understanding of the project requirements, after discussion with Mr. Lynn Petty of TVA on this unsolicited proposal, is to perform subsurface exploration and laboratory testing of split-spoon, undisturbed, and bulk samples. Details of the subsurface investigation for the Dredge Cells Area are enclosed. Singleton will provide qualified test personnel and test equipment to complete the investigations. Also Singleton will perform the required survey work.

SCOPE OF SERVICES

Singleton agrees to perform all work outlined by TVA for the Dredge Cells Area as shown in the attached request. The scope of work of the investigation is briefly described as follows:

1. Field Exploration

   Mobilize field personnel and equipment to perform approximately 10 split-spoon borings to top of rock (average 90-ft estimated) at 5-ft intervals of SPT sampling; approximately ten (10) undisturbed borings at locations assigned by TVA to obtain approximately twenty-five (25) Shelby tube samples; and approximately five (5) bag

A Division of United Energy Services Corporation
[illegible] Tyndale Road • Louisville, Tennessee [illegible]
Telephone [illegible] Telefax [illegible]

samples from identified locations within the pond for laboratory testing. Ground water will be measured if encountered 1-hr and 24-hr after completion of boring. All borings will be backfilled with natural soils and survey of all borings investigated will be performed after completion of investigation.

2. Survey

Perform survey to determine locations and elevations of all borings investigated based on data of existing piezometers after completion of the investigation.

3. Laboratory Testing

Laboratory testing will be performed in accordance with standardized procedures as specified in the request for geotechnical investigation. Specific testing to be performed for each type of sample is summarized in the following tabulations.

SPT Samples (180 each)

Moisture	180 each
Classification	18 each
Atterberg Limit	18 each
Grain Size	18 each
Specific Gravity	18 each

Shelby Tubes (25 each)

Moisture	25 each
Classification	25 each
Atterberg Limit	25 each
Grain Size	25 each
Specific Gravity	25 each
Unit Weight	25 each
Unconsolidated-undrained triaxial (Q) test	5 each
Consolidated-undrained triaxial (R) test	5 each
Tube Extractions	25 each

Bag Samples (5 each)

Moisture	5 each
Classification	5 each
Atterberg Limit	5 each
Specific Gravity	5 each
Compaction	5 each
Unconsolidated-undrained triaxial (Q) test	3 each
Consolidated-undrained triaxial (R) test	3 each

4. Final Report

A final report will be prepared to include a brief review of general subsurface soil conditions; a detailed description of field exploration and laboratory test procedures used in this investigation; computerized field logs; boring location plan; soil profiles; tabulations of SPT and undisturbed sample test data, and a family of compaction curves.

PERSONNEL AND SCHEDULE

Singleton Laboratories could commence the testing program after receiving written authorization. Mr. Yung Chung will be designated as the Project Manager and, as such, will be responsible for coordinating the Singleton effort on the execution of this test program. Completion of this scope of work is anticipated to take 8 weeks from the date of authorization to proceed. Interim test data will be submitted as available, with earliest lab results expected in early to mid-August, 1994.

COMPENSATION

The lump sum charge to perform this testing project and to submit a final test report will be **$45,870.00** including **$21,000.00** for the subsurface exploration and **$24,870.00** for the laboratory and final report for the Dredge Cells Area investigation. All approved out-of-scope work will be billed in accordance with our existing contract on a time and materials basis. If additional costs are anticipated due to unforeseen difficulties of drilling or work scope changes, such costs will be incurred only after written mutual agreement between authorized representatives of Singleton and Gilbert Commonwealth, Inc..

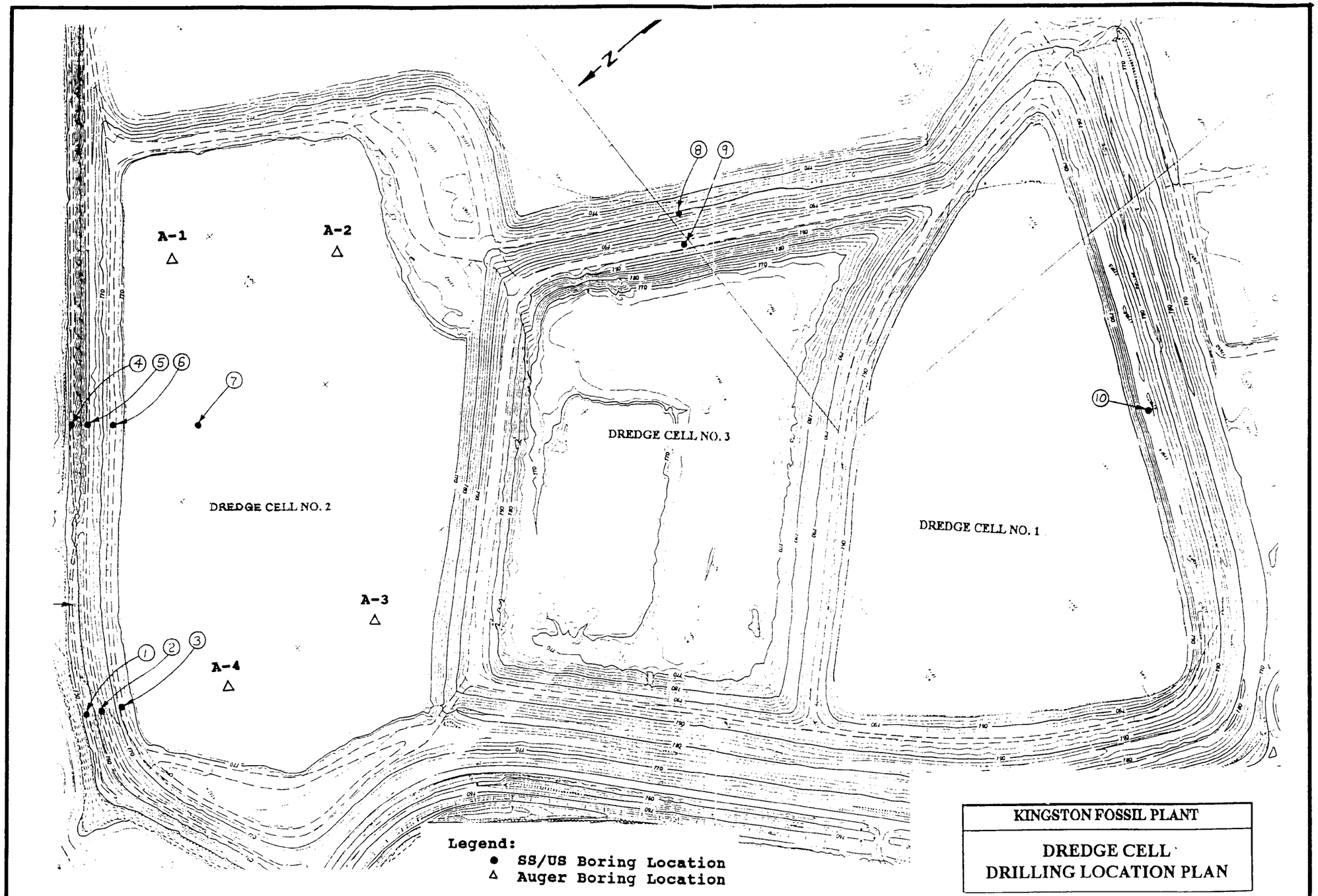
TVA KINGSTON FOSSIL PLANT - DREDGE CELLS/CLOSURE PERMIT - SUBSURFACE INVESTIGATIONS - SINGLETON LABORATORIES PROPOSAL No. 94-309

TERMS AND CONDITIONS

Terms and conditions applicable to Singleton's services hereunder are as set forth in Contract No. TV-FH-SL-001. We welcome this opportunity to be of service to TVA and would welcome the receipt of your authorization to proceed. We trust that the scope of work as proposed accurately represents the project requirements. Should you have any questions, please call Mr. Yung Chung or the undersigned at (615) 970-2299. This proposal is valid for sixty (60) days from the date of the proposal.

Sincerely,

J. F. Best, P.E.
Division Manager



KINGSTON FOSSIL PLANT

DREDGE CELL
DRILLING LOCATION PLAN

TASK ASSIGNMENT No. TV-FH-SL001-045
G/C WORK ORDER No. 07-9822-026 AND TVA TAO No. GP-493-398629
KINGSTON FOSSIL PLANT - DREDGE CELLS/CLOSURE
SOIL INVESTIGATION

Singleton Laboratories Report 015-672-142A

APPENDIX B

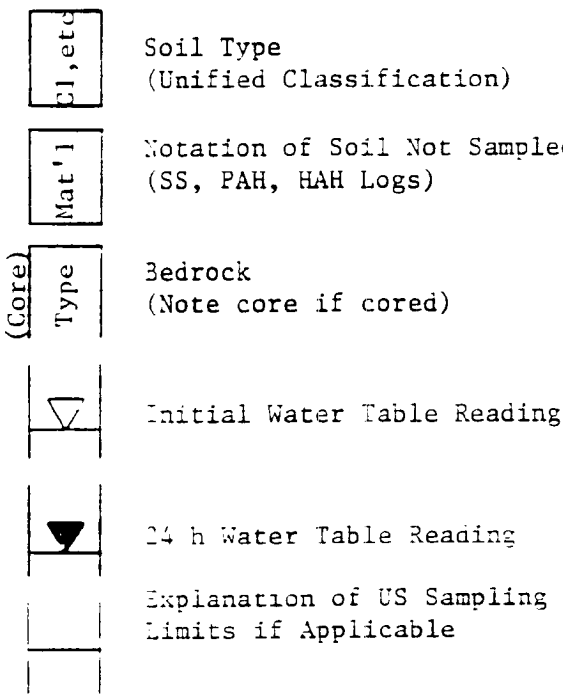
FIELD LOGS

SINGLETON LABORATORIES

SOIL PROFILE LEGEND AND SYMBOLS

Depth 1"=5'	El	SPT (N)	Log*	W	LL	PI	Gr	Description or Test Results
Boring Depth and Scale	Elevation	Blows Per Foot (SS Boring)	Lab Soil Type	Moisture Content	Liquid Limit	Plasticity Index	Soil Group Number	

Legend



Boring Symbols

SS - 2-in. od Split Spoon Boring

SPT - Standard Penetration Test Blows Per Foot With 2-in. Split Spoon

CPT - Cone Penetration Test

US - Undisturbed Sample Boring

PAH - Power Auger Hole

HAH - Hand Auger Hole

TP - Test Pit or Trench

V - Vane Shear

P - Piezometer

Under Description or Test Results		
Test	Engineering Test Results	
Q, R, $\bar{R}$, S	Friction Angle (degrees)	Cohesion (tsf)
UC	Unconfined Compressive Strength (tsf)	Sensitivity Ratio
C	Compression Index	Preconsolidation Pressure (tsf)
k	Coefficient of Permeability (cm/sec)	

Example:

Q 12.0 0.62 R 19.6 0.21 S 34.0 0
UC 4.0 2.6 C 0.72 2.0 k 5.6

Soil Test Symbols

Q - Unconsolidated-Undrained Triaxial Compression

R - Consolidated-Undrained Triaxial Compression (Saturated)

$\bar{R}$ - Effective Consolidated-Undrained Triaxial Compression

R nat - Consolidated-Undrained Triaxial Compression (Natural Moisture)

S - Consolidated-Drained Direct Shear

UC - Unconfined Compression

C - Consolidation

k - Permeability

FLA

SINGLETON LABORATORIES

FIELD LOG ABBREVIATIONS

Typical Name	Abbreviation
Sandy gravel	sd gv
Silty gravel	si gv
Clayey gravel	cl gv
Sand	sd
Silty sand	si sd
Clayey sand	cl sd
Sandy silt	sd si
Clayey silt	cl si
Fat silt	ft si
Sandy clay	sd cl
Silty clay	si cl
Medium clay	md cl
Fat clay	ft cl
Cobble	cob
Blouder	bldr
Riprap	rr
Topsoil	ts

Name Modifiers	
Clean	cln
Coarse	crs
Dirty	dty
Fine	fn
Organic	org
Poorly graded	pgd
Well graded	wgd
Degraded	degd

Gravel Shape	
Angular	ang
Platy	plty
Round/Rounded	rd
Subangular	sb ang
Subrounded	sb rd

Lithology and Mineralogy	Abbreviation
Bedrock	br
Chert	cht
Dolomite	dol
Limestone	ls
Manganese	mn
Micaceous	mic
Pyrite	py
Quartz	qtz
Sandstone	ss
Shale	sh
Bentonite	bent
Hematite	hem

Color	
Black	blk
Blue	blu
Brown	brn
Cream	crm
Dark	dk
Gray	gy
Green	grn
Light	lt
Maroon	mrn
Mottled	mott
Olive	olv
Pink	pk
Purple	pur
Red	r
Rust	rst
Tan	tn
White	wht
Yellow	yel

Structure	Abbreviation
Blocky	blky
Fissured	fis
Homogeneous	homo
Laminated	lam
Saprolitic	sapr
Shaly	shly
Slickensided	slsid
Stratified	strat

Consistency	Abbreviation
Dense	dns
Firm	f
Hard	hd
Loose	lse
Soft	s
Stiff	stf
Very Stiff	v stf

Origin	
Alluvial	all
Colluvial	coll
Loess	lss
Residual	resd

Moisture	
Dry	d
Moist	mst
V Moist	v mst
Wet	w

General Modifiers

Alternate/Alternating	alt	Layers	lyrs
Angle	∠	Low	l
Augering	augg	Material	mtl
Bottom Ash	ba	Medium	md
Coal	col	Mud	mud
Contaminated	cont	Original	orig
Dip	dp	Partings	prtgs
Disturbed	dstrb	Plastic	plstc
Debris	dbr	River	rvr
Discontinued	disc	Roots	rts
Drive	dr	Rough	rou
Dust	dst	Slow	sl
Elevation	el	Small	sm
Feet	ft	Spoil	sp
Fill	fl	Terraced	ter
Fiber	fbr	Thick	thk
Fly Ash	fa	Thin	thn
High/highly	h	Trace	tr
Horizontal	hor	Variable	var
Hydraulic	hyd	Vegetation	veg
Inch	in	Vertical	vert
Inclusion	inc	Weathered	wth
Incomplete Recovery	IR	With	w/
Interface	infa	Wood	wd

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: US-1 STATION: RANGE: SURFACE EL: 752.0

DATE DRILLED: 8/8/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
	750							
5								
	745							TN SI CL, MST, F
10								
	740							
15								
	735							
20								
	730							LT BRN SI CL MIX w/TS, S, MST
25								
	725							
30								
	720							NO RECOVERY
35								DISCONTINUED AT 34.0'

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

SHEET 1 OF 1

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: US-2 STATION: RANGE: SURFACE EL: 764.0

DATE DRILLED: 8/9/94 PREPARED BY: mhd CHECKED BY: TA

DEPTH ft.	EL.	SPT (N)	* LOG	N	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
5	760							
10	755							
15	750							R-BRN SI CL, MST, H
								DISCONTINUED AT 15.0'
20	745							
25	740							
30	735							
35	730							

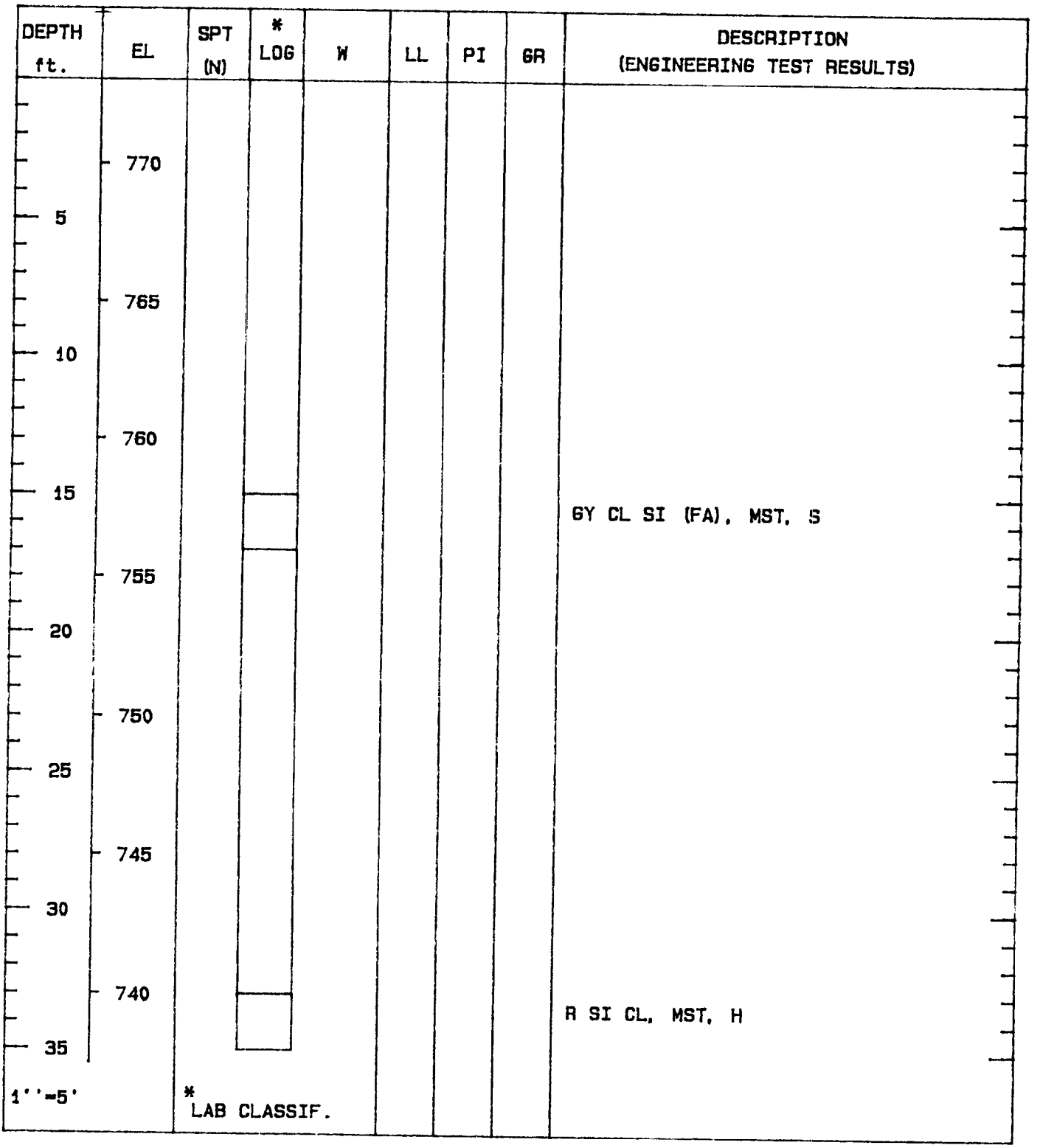
1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

PROJECT: KINGSTON FP
FEATURE: DREDGE CELLS
BORING: US-3 STATION:
RANGE:
SURFACE EL: 773.0
DATE DRILLED: 8/11/94
PREPARED BY: mhd
CHECKED BY: TAL



SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: US-3 STATION: RANGE: SURFACE EL: 773.0

DATE DRILLED: 8/11/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
								NO RECOVERY
	735							NO RECOVERY
40								DISCONTINUED AT 39.0'
								WATER LEVEL, 1-HR = 25'
	730							
45								
	725							
50								
	720							
55								
	715							
60								
	710							
65								
	705							
70								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

SHEET 1 OF 1

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: US-4 STATION: RANGE: SURFACE EL: 752.0

DATE DRILLED: 8/12/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
0	750							
5	745							BRN SI CL, MST, F
10	740							
15	735							
20	730							TN SI SD, MST, S
25	725							TN SI SD, MST, S
30	720							TN & GY SI SD, MST, S
35								DISCONTINUED AT 32.0'

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

SHEET 1 OF 1

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: US-5 STATION: RANGE: SURFACE EL: 764.0

DATE DRILLED: 8/11/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
5	760							
10	755							
15	750							R SI CL MIX w/10% CHT, MST, H
								DISCONTINUED AT 15.0'
20	745							
25	740							
30	735							
35	730							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

SHEET 1 OF 1

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: US-6 STATION: RANGE: SURFACE EL: 773.0

DATE DRILLED: 8/15/94 PREPARED BY: mhd CHECKED BY: TAC

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
5	770							
10	765							
15	760							GY SI SD (FA)
20	755							GY SI SD (FA)
25	750							
30	745							
35	740							GY SI SD (FA)
								DISCONTINUED AT 32.0'

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

PROJECT: KINGSTON FP
FEATURE: DREDGE CELLS
BORING: US-7 STATION:
RANGE:
SURFACE EL: 769.9
DATE DRILLED: 8/19/94
PREPARED BY: mhd
CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
5	765							GY SI SD (FA)
								GY SI SD (FA)
10	760							GY SI SD (FA)
								GY SI SD (FA)
								DISCONTINUED AT 13.0'
15	755							
20	750							
25	745							
30	740							
35	735							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: US-8 STATION: RANGE: SURFACE EL: 782.0

DATE DRILLED: 8/16/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
	780							
5								
	775							
								GY SI SD (FA)
10								
	770							
15								
	765							
20								
	760							
25								NO RECOVERY
	755							
30								NO RECOVERY
	750							
35								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: US-8 STATION: RANGE: SURFACE EL: 782.0

DATE DRILLED: 8/16/94 PREPARED BY: mhd CHECKED BY: TA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
								NO RECOVERY
	745							
40								GY SI SD (FA)
	740							GY SI SD (FA)
45								
	735							
50								
	730							
55								
	725							
								GY & TN SI CL, MST, F
60								
	720							
65								
	715							
70								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: US-8 STATION: RANGE: SURFACE EL: 782.0
DATE DRILLED: 8/16/94 PREPARED BY: mhd CHECKED BY: TA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
	710							GY SI CL, MST, S
								DISCONTINUED AT 73.0'
75	705							
80	700							
85	695							
90	690							
95	685							
100	680							
105								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: US-9 STATION: RANGE: SURFACE EL: 795.0
DATE DRILLED: 8/15/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
	795							
5	790							
10	785							
15	780							
20	775							GY SI SD (FA)
25	770							
30	765							GY SI SD (FA)
35	760							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

PROJECT: KINGSTON FP
FEATURE: DREDGE CELLS
BORING: US-9 STATION:
RANGE:
SURFACE EL: 795.0
DATE DRILLED: 8/15/94
PREPARED BY: mhd
CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
	760							
40	755							
45	750							GY SI SD (FA)
50	745							
55	740							GY SI SD (FA)
60	735							
65	730							
70	725							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: UNDISTURBED

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: US-9 STATION: RANGE: SURFACE EL: 795.0
DATE DRILLED: 8/15/94 PREPARED BY: mhd CHECKED BY: TA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	DESCRIPTION (ENGINEERING TEST RESULTS)
	725							
75	720							
								GY SI CL, V MST, S
80	715							
85	710							GY SI SD, V MST, S
								NO RECOVERY; REFUSAL
90	705							DISCONTINUED AT 90.0'
95	700							
100	695							
105	690							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: SS-1 STATION: RANGE: SURFACE EL: 752.0
DATE DRILLED: 7/28/94 PREPARED BY: mhd CHECKED BY: JA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
	750							
5			CL	12.4	31	12	5	TN & GY SI CL, D
	745							
10			CL	19.2	26	8	9	LT BRN SI CL w/TR GY TS, MST
	740							
15			CL	17.0	26	8	6	BRN SI CL, D
	735							
20			CL	27.1	26	8	9	BRN & GY SI CL, V MST
	730							
25			CL	24.1	26	8	9	BRN & GY SI CL, V MST
	725							
30			SM	19.5	NP	NP	10	GY SI SC TR GV, MST (FA)
	720							
35								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP — FEATURE: DREDGE CELLS

BORING: SS-1 — STATION: — RANGE: — SURFACE EL: 752.0

DATE DRILLED: 7/28/94 — PREPARED BY: mhd — CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
			SM	27.6	NP	NP	10	GY SI SD, V MST (FA)
	715							
40								REFUSAL
								GROUND WATER LEVEL = 8'9"
	710							
45								
	705							
50								
	700							
55								
	695							
60								
	690							
65								
	685							
70								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: SS-2 STATION: RANGE: SURFACE EL: 764.0

DATE DRILLED: 7/27/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
	760							
5		14	MH-CH	21.9	59	28	2	BRN SI CL w/GV, TR TS, D
	755							
10		10	MH-CH	22.8	59	28	2	R-BRN SI CL, TR GV, D
	750							
15		8	MH-CH	28.0	59	28	2	R-BRN SI CL, TR GV, MST
	745							
20		13	SM	25.6	NP	NP	10	GY SI SD w/TR GV (FA), V MST
	740							
25		-	SM	19.0	NP	NP	10	GY SI SD w/GV (FA), W
	735							
30		-	SM	28.1	NP	NP	3	BRN SD WI CL (FA), W
	730							
35								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP
BORING: SS-2 STATION:
DATE DRILLED: 7/27/94

FEATURE: DREDGE CELLS
RANGE:
PREPARED BY: mhd

SURFACE EL: 764.0
CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
		-	CL	33.6	26	8	9	BRN SI CL w/GY SI (FA), V MST
40	725	3	CL	20.1	26	8	9	ORNG & GY SI CL, V MST
45	720	28	ML	14.0	NP	NP	8	GY SD mix w/PKTS GY CL, MST
50	715	50+	ML	15.8	NP	NP	8	GY SD mix w/PKTS GY CL, MST
55	710							REFUSAL
								GROUND WATER LEVEL = 5'8"
60	705							
65	700							
70	695							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: SS-3 STATION: RANGE: SURFACE EL: 773.0

DATE DRILLED: 7/28/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
	770							
5		25	ML	23.3	NP	NP	12	GY CL SI (FA), MST
	765							
10		5	SM	23.0	NP	NP	10	GY SD CL, TR GV (FA), V MST
	760							
15		4	SM	28.6	NP	NP	10	GY SD CL, TR GV (FA), V MST
	755							
20		1	SM	28.6	NP	NP	10	GY SD SI CL, TR GV (FA), W
	750							
25		2	SM	27.1	NP	NP	10	GY SD SI CL, TR GV (FA), W
	745							
30		1	SM	27.0	NP	NP	10	GY SD SI CL, TR GV (FA), W
	740							
35								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: SS-3 STATION: RANGE: SURFACE EL: 773.0
DATE DRILLED: 7/28/94 PREPARED BY: mhd CHECKED BY: JAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
		2	ML	28.8	NP	NP	12	GY SD SI CL, TR GV (FA), W
	735							
40		2	SM	22.0	NP	NP	10	GY SD SI CL, TR GV (FA), W
	730							
45		-	ML	33.9	NP	NP	12	GY CL SI, TR GV (FA), W
	725							
50		-	ML	15.7	NP	NP	8	GY CL SI w/GV (FA), V MST
	720							
55		50+	ML	5.8	NP	NP	12	GY CL SI, TR GV
	715							REFUSAL
60								GROUND WATER LEVEL = 9'8"
	710							
65								
	705							
70								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP
BORING: SS-4 STATION:
DATE DRILLED: 7/26/94

FEATURE: DREDGE CELLS
RANGE:
PREPARED BY: mhd

SURFACE EL: 752.0
CHECKED BY: TA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
	750							
5		10	CL	14.2	26	8	6	LT BRN SI CL w/TS, D
	745							
10		3	CL-ML	23.8	26	4	1	BRN & GY SI CL w/TS, MST
	740							
15		8	CL	22.3	31	12	5	TN & GY SI CL (FA), V MST
	735							
20		4	SM	20.9	NP	NP	3	TN SI SD, MST
	730							
25		-	SM	34.8	NP	NP	3	TN SI SD, MST
	725							
30		7	SM	21.4	NP	NP	3	TN SI SD, MST
	720							
35								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP
FEATURE: DREDGE CELLS
BORING: SS-4 STATION:
RANGE:
SURFACE EL: 752.0
DATE DRILLED: 7/26/94
PREPARED BY: mhd
CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
	715	36	SM	20.4	NP	NP	3	TN SI SD, MST
40								REFUSAL
								GROUND WATER LEVEL = 9'0"
	710							
45								
	705							
50								
	700							
55								
	695							
60								
	690							
65								
	685							
70								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: SS-5 STATION: RANGE: SURFACE EL: 764.0
DATE DRILLED: 7/27/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
5	760	18	MH-CH	19.6	59	28	2	R-BRN SI CL w/TR CTH, D
10	755	14	MH-CH	24.2	59	28	2	BRN SI CL w/GV, D
15	750	54	CL-ML	23.5	26	4	1	BRN SI CL w/PKTS GY CL SI, TR CHT, MST
20	745	20	SM	24.3	NP	NP	10	GY SI SD, TR GV (FA), MST
25	740	3	CL	20.9	26	8	6	LT BRN SD SI CL, TR GV, V MST
30	735	14	CL	23.6	31	12	5	TN & GY SI CL, V MST
35	730							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: SS-5 STATION: RANGE: SURFACE EL: 764.0

DATE DRILLED: 7/27/94 PREPARED BY: mhd CHECKED BY: ~~TAC~~

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
		16	ML	21.5	NP	NP	7	BRN SI CL w/GY FA, V MST
	725							
40		2	SM	24.2	NP	NP	3	ORNG CL SD, V MST
	720							
45		2	CL	21.9	26	8	9	TN CL SI w/PKTS GY FA, V MST
	715							
50		30	SC/SM	10.8	NP	NP	4	LT BRN SI SD w/GV, V MST
	710							
55		50+	ML	13.9	NP	NP	12	BRN & GY CL SI, FA, MST
								REFUSAL
								GROUND WATER LEVEL = 20'
	705							
60								
	700							
65								
	695							
70								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: SS-6 STATION: RANGE: SURFACE EL: 773.0
DATE DRILLED: 8/1/94 PREPARED BY: mhd CHECKED BY: TAC

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
	770							
5		24	ML	25.2	NP	NP	12	GY SI (FA), MST
	765							
10		5	SM	19.7	NP	NP	10	GY SI (FA), MST
	760							
15		2	SM	28.8	NP	NP	11	GY SI SD (FA), MST
	755							
20		-	ML	25.8	NP	NP	12	GY SI (FA), MST
	750							
25		3	ML	23.3	NP	NP	8	BRN SI CL w/GY FA, TR GV, V MST
	745							
30		1	ML	32.7	NP	NP	12	GY SI (FA), W
	740							
35								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: SS-6 STATION: RANGE: SURFACE EL: 773.0

DATE DRILLED: 8/1/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
		9	CL	19.6	26	8	9	BRN CL SI mix w/FA
	735							
40		12	SM	19.4	NP	NP	3	BRN SI SD, V MST
	730							
45		1	SM	29.3	NP	NP	3	BRN SI SD, V MST
	725							
50		3	SM	21.8	NP	NP	3	BRN SD CL, V MST
	720							
55		6	ML	22.3	NP	NP	8	GY SI SD w/FA, MST
	715							
60		50+	ML	9.9	NP	NP	12	GY SI, FA, MST
	710							REFUSAL
65								GROUND WATER LEVEL = 16' 7"
	705							
70								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP
FEATURE: DREDGE CELLS
BORING: SS-8 STATION: RANGE: SURFACE EL: 782.0
DATE DRILLED: 8/2/94 PREPARED BY: mhd CHECKED BY: TA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
	780							
5		50+	SM	17.6	NP	NP	10	GY SI (FA), TR GV, D
	775							
10		50+	SM	18.4	NP	NP	10	GY SI (FA), TR GV, D
	770							
15		50+	SM	21.9	NP	NP	10	GY SI (FA), TR GV, D
	765							
20		8	SM	43.9	NP	NP	11	GY SI SD (FA), MST
	760							
25		15	SM	17.9	NP	NP	10	GY SI SD W/GV (FA), MST
	755							
30		-	ML	31.7	NP	NP	12	GY SI (FA), W
	750							
35								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: SS-8 STATION: RANGE: SURFACE EL: 782.0
DATE DRILLED: 8/2/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
		-	ML	24.4	NP	NP	12	GY SI (FA), MST
	745							
40		3	ML	23.8	NP	NP	12	GY SI (FA), MST
	740							
45		9	ML	31.2	NP	NP	12	GY SI (FA), MST
	735							
50		4	ML	22.3	NP	NP	8	GY CL SI w/LUMPS TN SI CL, MST
	730							
55		13	ML	18.2	NP	NP	7	MOTT BRN/TN/GY SI CL, MST
	725							
60		13	ML	18.6	NP	NP	7	MOTT BRN/TN/GY SI CL, MST
	720							
65		4	SC/ SM	27.7	NP	NP	4	TN SI SD, W
	715							
70								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: SS-8 STATION: RANGE: SURFACE EL: 782.0

DATE DRILLED: 8/2/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
		5	SM	24.9	NP	NP	10	GY SD SI (FA), W
	710							
75		7	SC/ SM	22.7	NP	NP	4	TN SI SD, V MST
	705							
								REFUSAL
80								GROUND WATER LEVEL = 11' 3"
	700							
85								
	695							
90								
	690							
95								
	685							
100								
	680							
105								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: SS-9 STATION: RANGE: SURFACE EL: 795.0
DATE DRILLED: 8/2/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
	795							
5	790	20	ML	17.8	NP	NP	12	GY SI (FA), MST
10	785	50+	ML	19.5	NP	NP	12	GY SI (FA), MST
15	780	44	ML	20.1	NP	NP	12	GY SI (FA), MST
20	775	46	ML	18.3	NP	NP	12	GY SI (FA), MST
25	770	6	ML	30.2	NP	NP	12	GY SI (FA), MST
30	765	5	ML	35.2	NP	NP	12	GY SI (FA), W
35	760							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: SS-9 STATION: RANGE: SURFACE EL: 795.0
DATE DRILLED: 8/2/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
	760	2	ML	17.3	NP	NP	12	GY SI (FA), W
40	755	1	ML	31.0	NP	NP	12	GY SI (FA), W
45	750	-	ML	23.0	NP	NP	12	GY SI (FA), D
50	745	-	ML	31.7	NP	NP	12	GY SI (FA), TR GV, W
55	740	5	ML	30.0	NP	NP	12	GY SI (FA), TR GV, W
60	735	6	ML	32.6	NP	NP	12	GY SI (FA), TR GV, W
65	730	-	ML	26.9	NP	NP	8	BRN SI CL W/GY SI (FA), MST
70	725							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS
BORING: SS-9 STATION: RANGE: SURFACE EL: 795.0
DATE DRILLED: 8/2/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL 725	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
		13	CL	19.2	26	8	9	BRN, TN & GY SI CL, TR CL, MST
75	720	19	CL	19.5	26	8	6	ORNG-BRN SI CL, MST
80	715	4	SM	20.5	NP	NP	10	GY SD SI, W
85	710	19	SC/SM	23.1	NP	NP	4	TN SI SD
90	705	8	SC/SM	23.1	NP	NP	4	GY SI SD
95	700							REFUSAL GROUND WATER LEVEL = 29'
100	695							
105	690							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: SS-10 STATION: RANGE: SURFACE EL: 797.5

DATE DRILLED: 8/8/94 PREPARED BY: mhd CHECKED BY: TA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
	795							
5		50+	ML	17.3	NP	NP	12	GY SI (FA), MST
	790							
10		26	ML	24.7	NP	NP	12	GY SI (FA), MST
	785							
15		25	ML	15.0	NP	NP	12	GY SD SI, TR GV, MST
	780							
20		5	ML	22.1	NP	NP	12	GY SI (FA), MST
	775							
25		4	ML	27.4	NP	NP	12	GY SI (FA), MST
	770							
30		14	ML	29.1	NP	NP	12	GY SI (FA), MST
	765							
35								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP
BORING: SS-10 STATION:
DATE DRILLED: 8/8/94

FEATURE: DREDGE CELLS
RANGE:
PREPARED BY: mhd

SURFACE EL: 797.5
CHECKED BY: TA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
		18	SM	31.2	NP	NP	11	GY SD SI (FA) w/GV, W
	760							
40		9	ML	31.4	NP	NP	12	GY SI (FA), V MST
	755							
45		-	ML	27.0	NP	NP	12	GY SD SI w/GV (FA), V MST
	750							
50		-	ML	27.2	NP	NP	12	GY SD SI w/GV (FA), V MST
	745							
55		6	SM	30.7	NP	NP	11	GY PGD SI SD (FA), V MST
	740							
60		9	SM	16.4	NP	NP	11	GY PGD SI SD (FA), V MST
	735							
65		25	SM	19.4	NP	NP	11	CRS PGD SI SD w/GV (FA)
	730							
70								

1''=5'

* LAB CLASSIF.

701 FOR
720 S.C.

SINGLETON LABORATORIES

SOIL PROFILE: SPLIT-SPOON

PROJECT: KINGSTON FP — FEATURE: DREDGE CELLS

BORING: SS-10 — STATION: — RANGE: — SURFACE EL: 797.5

DATE DRILLED: 8/8/94 — PREPARED BY: mhd — CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
		39	ML	19.0	NP	NP	8	BRN SI CL w/PKTS GY SI (FA), V MST
	725							
75		17	CL	19.2	26	8	9	BRN & GY SI CL, V MST
	720							
80		18	CL	16.9	26	8	6	ORNG-BRN SD SI CL, MST
	715							
85		16	ML	18.9	NP	NP	8	GY SI SD, MST
	710							
90		50+	ML	3.7	NP	NP	8	GY SI SD w/GV
	705							
95								
	700							REFUSAL
								GROUND WATER LEVEL =
100								
	695							
105								

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE:

SHEET 1 OF 1

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: A-1 STATION: RANGE: SURFACE EL: 768.9

DATE DRILLED: 9/17/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
			ML	38.9	NP	NP	1	GY SI SD (FA)
5	765							DISCONTINUED AT 5'
10	760							
15	755							
20	750							
25	745							
30	740							
35	735							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE:

SHEET 1 OF 1

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: A-2 STATION: RANGE: SURFACE EL: 768.9

DATE DRILLED: 9/17/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
			ML	34.5	NP	NP	1	GY SI SD, FA
5	765							DISCONTINUED AT 5'
10	760							
15	755							
20	750							
25	745							
30	740							
35	735							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE:

SHEET 1 OF 1

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: A-3 STATION: RANGE: SURFACE EL: 768.9

DATE DRILLED: 9/17/94 PREPARED BY: mhd CHECKED BY: TAL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
			ML	39.9	NP	NP	2	GY SI SD, FA
5	765							DISCONTINUED AT 5'
10	760							
15	755							
20	750							
25	745							
30	740							
35	735							

1''=5'

* LAB CLASSIF.

SINGLETON LABORATORIES

SOIL PROFILE:

SHEET 1 OF 1

PROJECT: KINGSTON FP FEATURE: DREDGE CELLS

BORING: A-4 STATION: RANGE: SURFACE EL: 768.9

DATE DRILLED: 9/17/94 PREPARED BY: mhd CHECKED BY: TA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	GR	FIELD DESCRIPTION
			ML	37.1	NP	NP	2	GY SI SD, FA
	765							
5								DISCONTINUED AT 5'
	760							
10								
	755							
15								
	750							
20								
	745							
25								
	740							
30								
	735							
35								

1''=5'

* LAB CLASSIF.

TASK ASSIGNMENT No. TV-FH-SL001-045
G/C WORK ORDER No. 07-9822-026 AND TVA TAO No. GP-493-398629
KINGSTON FOSSIL PLANT - DREDGE CELLS/CLOSURE
SOIL INVESTIGATION

Singleton Laboratories Report 015-672-142A

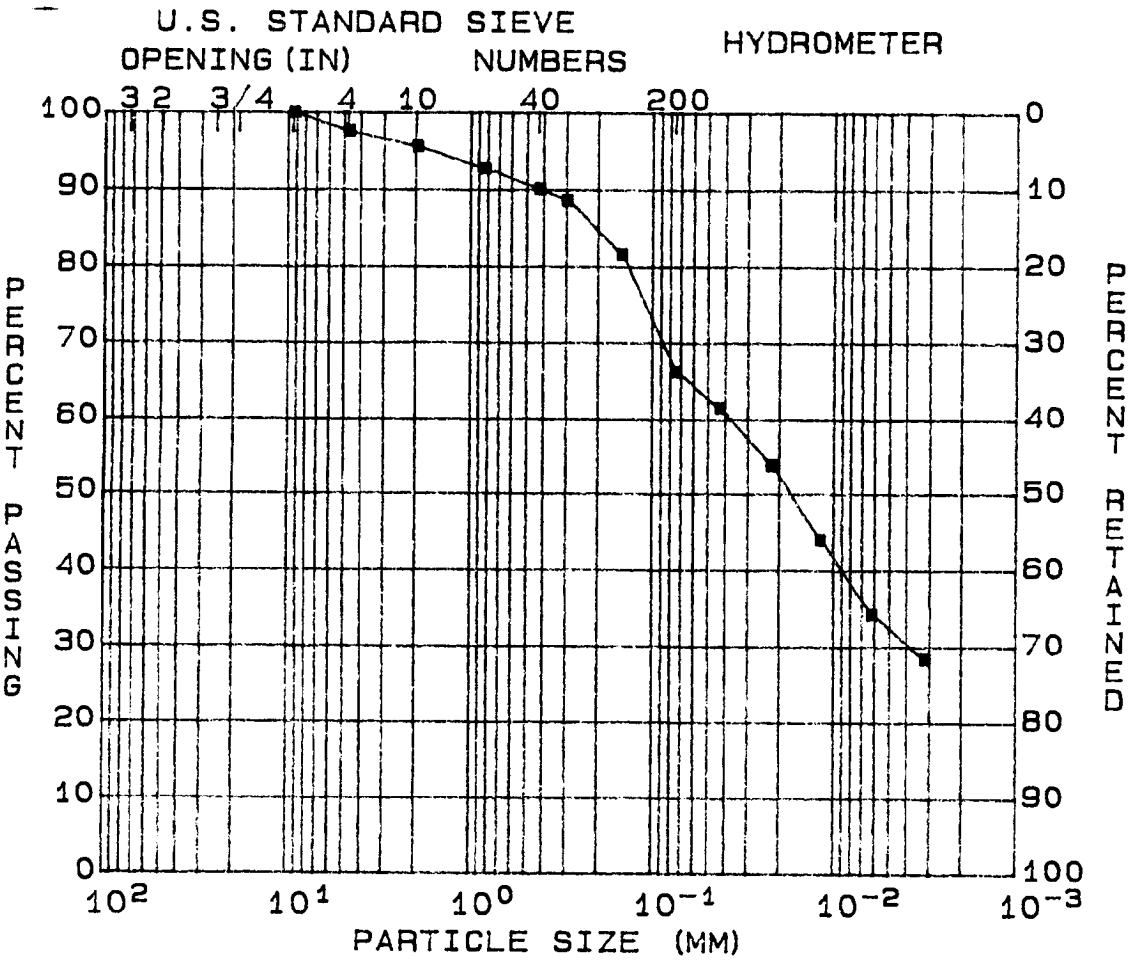
APPENDIX C

LABORATORY TEST DATA FOR ALL SPLIT-SPOON SAMPLES

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 1
DATE : 09-29-94



GRAVEL (%)	= 2	D10 (MM)	= --
SAND (%)	= 32	D30 (MM)	= --
SILT (%)	= 34	D60 (MM)	= --
CLAY (%)	= 32	COEF UNIF	= --

SOIL SYMBOL	= CL-ML	L.L. (%)	= 26	DENSITY (pcf)	= --
MOISTURE (%)	=	P.I. (%)	= 4	SATURATION (%)	= --
SP. GR.	= 2.65			VOID RATIO	= --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 1
Part :

FILE : 100
TESTED BY : AEL
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.646
Flask No. = 35.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =710.23

Moisture Determination
Dry Wt.+Tare(gm)= 370.10
Tare Wt(gm) = 68.30

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 122.90
Tare Wt(gm) = 39.70
Dry Wt.+Tare(gm)= 121.50
Moisture(%) = 1.71

Liquid Limit
Blows = 27.00
Wet Wt.(gm) = 16.40
Dry Wt.(gm) = 13.83
Tare Wt.(gm) = 3.73
Liquid Limit(%) = 25.68
Plasticity Index= 4.40

Plastic Limit
Wet Wt.(gm) = 21.35
Dry Wt.(gm) = 18.33
Tare Wt.(gm) = 4.14
Plastic Limit(%)= 21.28

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 301.8

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	5.1	98.3	4.7500
NO.10	11.4	96.2	2.0000
NO.20	1.5	93.3	0.8500
NO.40	2.9	90.5	0.4250
NO.50	3.7	89.0	0.3000
NO.100	7.3	81.9	0.1500
NO.200	15.2	66.5	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.16

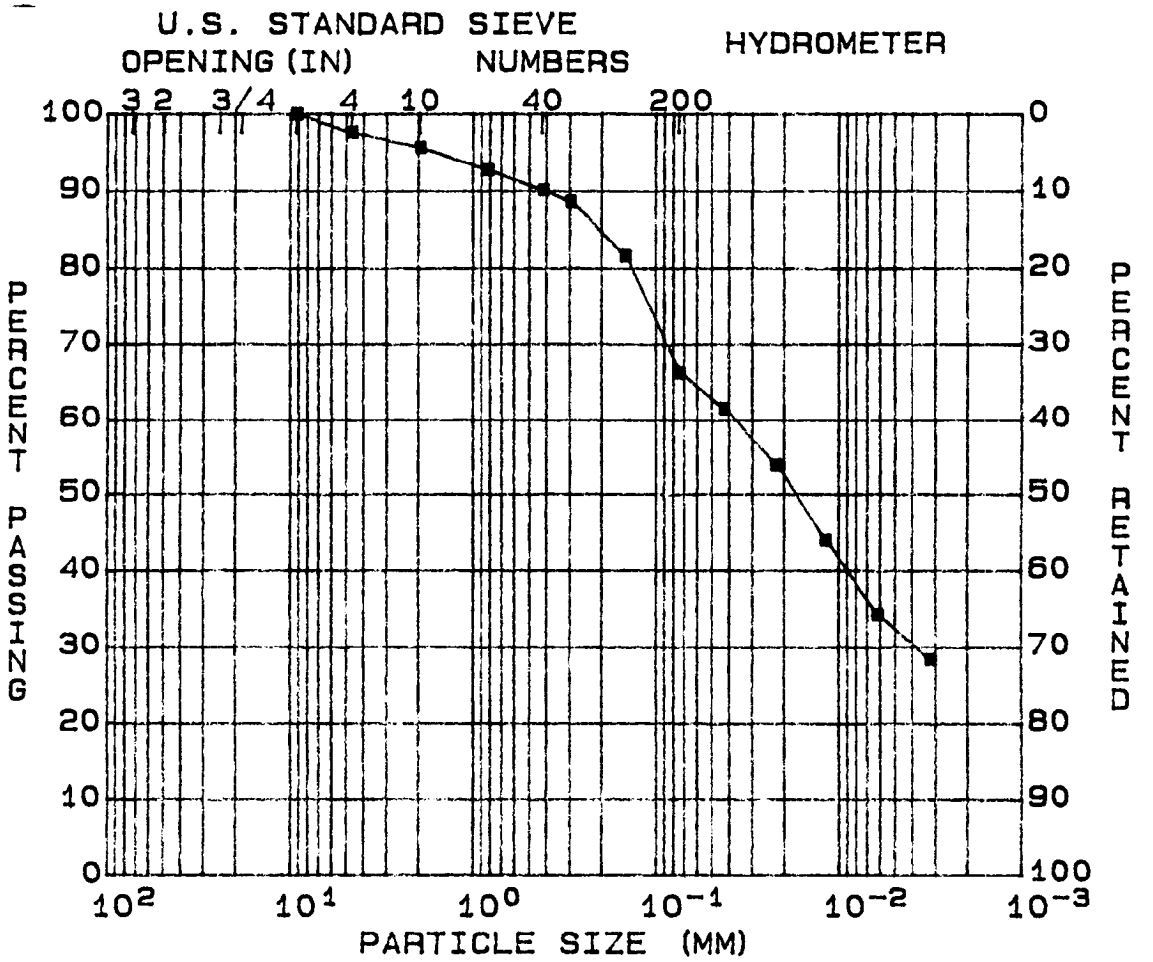
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	38.0	6.5	61.7	0.0428
4 min.	20.3	34.0	6.5	53.9	0.0221
15 min.	20.3	29.0	6.5	44.1	0.0118
1 hour	20.3	24.0	6.5	34.3	0.0061
4 hours	20.3	21.0	6.5	28.4	0.0031

Soil Symbol= CL-ML (Inorganic sandy clayey silt)
Gravel(%)= 2 Sand(%)=32 Silt(%)= 34 Clay(%)= 32

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 1
DATE : 09-29-94



GRAVEL (%)	= 2	D10 (MM)	= --
SAND (%)	= 32	D30 (MM)	= --
SILT (%)	= 34	D60 (MM)	= --
CLAY (%)	= 32	COEF UNIF	= --

SOIL SYMBOL	= CL-ML	L.L. (%)	= 25	DENSITY (pcf)	= --
MOISTURE (%)	=	P.I. (%)	= 4	SATURATION (%)	= --
SP. GR.	= 2.65			VOID RATIO	= --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 1
Part :

FILE : 1
TESTED BY : AEL
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.646
Flask No. = 35.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =710.23

Moisture Determination
Dry Wt.+Tare(gm)= 370.10
Tare Wt(gm) = 68.30

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 122.90
Tare Wt(gm) = 39.70
Dry Wt.+Tare(gm)= 121.50
Moisture(%) = 1.71

Liquid Limit
Blows = 27.00
Wet Wt.(gm) = 17.00
Dry Wt.(gm) = 14.37
Tare Wt.(gm) = 3.90
Liquid Limit(%) = 25.35
Plasticity Index= 4.07

Plastic Limit
Wet Wt.(gm) = 21.35
Dry Wt.(gm) = 18.33
Tare Wt.(gm) = 4.14
Plastic Limit(%)= 21.28

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 301.8

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	5.1	98.3	4.7500
NO.10	11.4	96.2	2.0000
NO.20	1.5	93.3	0.8500
NO.40	2.9	90.5	0.4250
NO.50	3.7	89.0	0.3000
NO.100	7.3	81.9	0.1500
NO.200	15.2	66.5	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.16

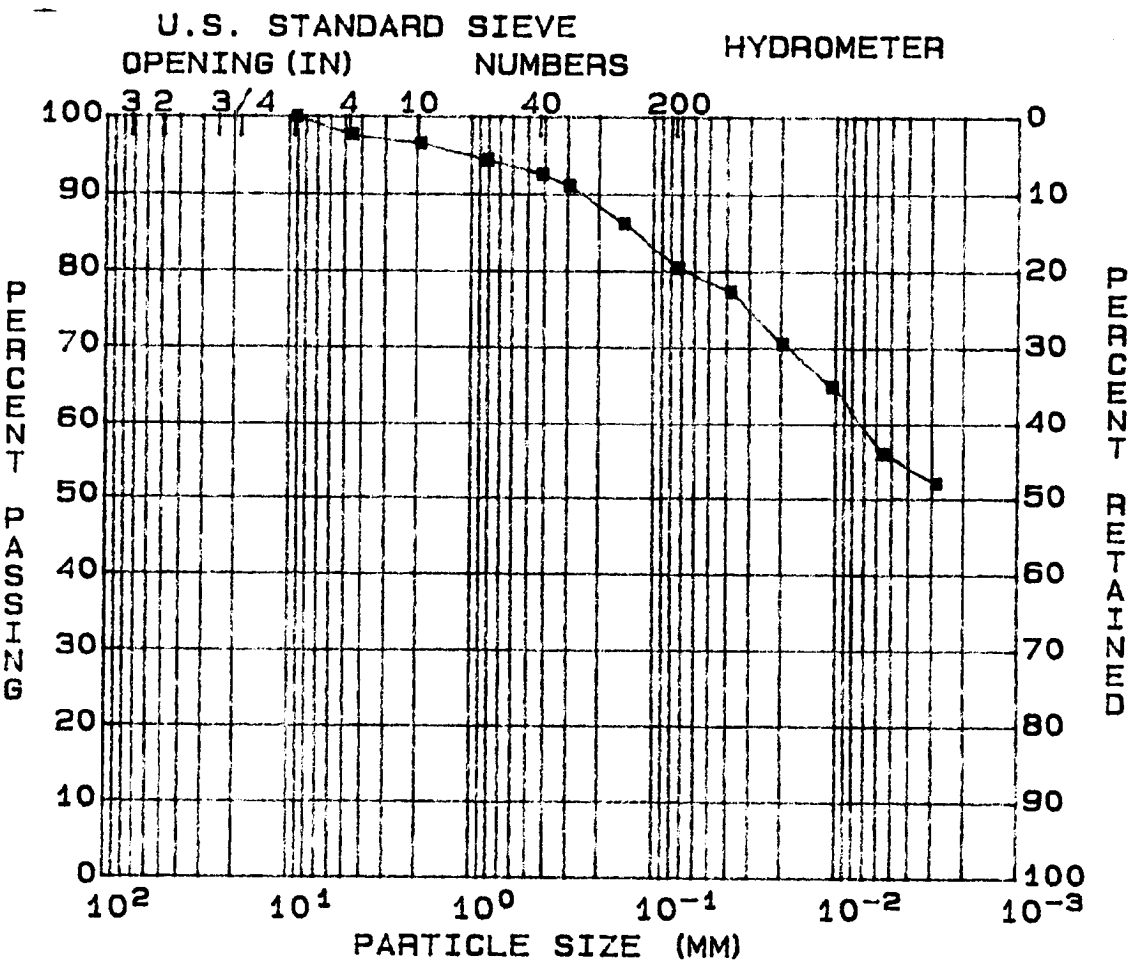
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	38.0	6.5	61.7	0.0428
4 min.	20.3	34.0	6.5	53.9	0.0221
15 min.	20.3	29.0	6.5	44.1	0.0118
1 hour	20.3	24.0	6.5	34.3	0.0061
4 hours	20.3	21.0	6.5	28.4	0.0031

Soil Symbol= CL-ML (Inorganic sandy clayey silt)
Gravel(%)= 2 Sand(%)=32 Silt(%)= 34 Clay(%)= 32

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 2
DATE : 09-29-94



GRAVEL (%)	= 1	D10 (MM)	= --
SAND (%)	= 18	D30 (MM)	= --
SILT (%)	= 25	D60 (MM)	= --
CLAY (%)	= 56	COEF UNIF	= --

SOIL SYMBOL	= MH/CH	L.L. (%)	= 59	DENSITY (pcf)	= --
MOISTURE (%)	=	P.I. (%)	= 28	SATURATION (%)	= --
SP. GR.	= 2.73			VOID RATIO	= --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 2
Part :

FILE : 2
TESTED BY : AEL
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.731
Flask No. = 26.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =708.73

Moisture Determination
Dry Wt.+Tare(gm)= 380.60
Tare Wt(gm) = 68.80

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 155.30
Tare Wt(gm) = 40.40
Dry Wt.+Tare(gm)= 152.30
Moisture(%) = 2.68

Liquid Limit
Blows = 25.00
Wet Wt.(gm) = 15.60
Dry Wt.(gm) = 11.33
Tare Wt.(gm) = 4.10
Liquid Limit(%) = 59.06
Plasticity Index= 27.97

Plastic Limit
Wet Wt.(gm) = 18.15
Dry Wt.(gm) = 14.73
Tare Wt.(gm) = 3.73
Plastic Limit(%)= 31.09

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 311.8

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	4.6	98.5	4.7500
NO.10	8.3	97.3	2.0000
NO.20	1.1	95.1	0.8500
NO.40	2.1	93.1	0.4250
NO.50	2.9	91.5	0.3000
NO.100	5.4	86.5	0.1500
NO.200	8.3	80.7	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 48.69

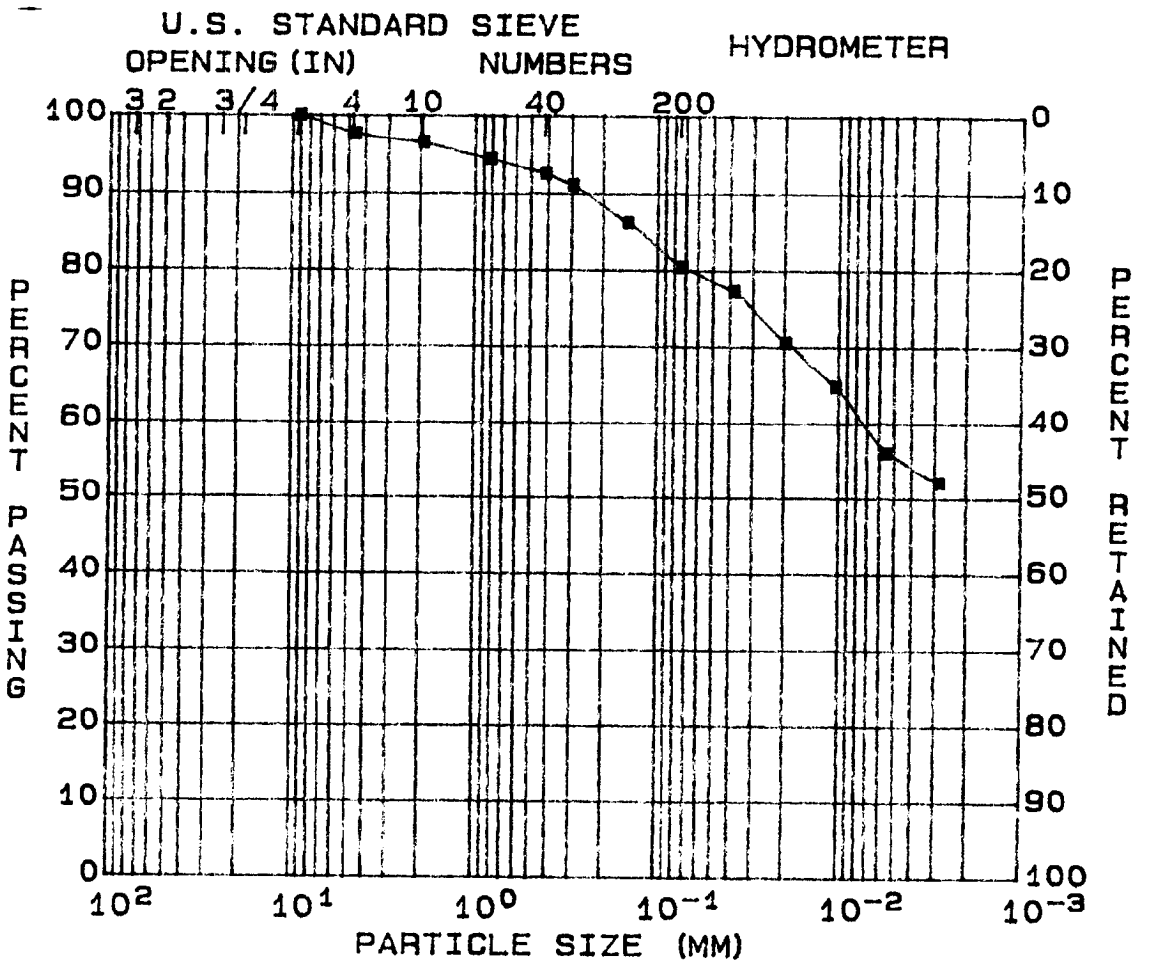
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	46.0	6.5	77.6	0.0389
4 min.	20.3	42.5	6.5	70.7	0.0201
15 min.	20.3	39.6	6.5	65.0	0.0106
1 hour	20.3	35.0	6.5	56.0	0.0055
4 hours	20.3	33.0	6.5	52.0	0.0028

Soil Symbol= MH/CH (Inorganic clayey silt of high plasticity)
Gravel(%)= 1 Sand(%)=18 Silt(%)= 25 Clay(%)= 56

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 2
DATE : 09-29-94



GRAVEL (%)	= 1	D10 (MM)	= --
SAND (%)	= 18	D30 (MM)	= --
SILT (%)	= 25	D60 (MM)	= --
CLAY (%)	= 56	COEF UNIF	= --

SOIL SYMBOL	= MH/CH	L.L. (%)	= 59	DENSITY (pcf)	= --
MOISTURE (%)	=	P.I. (%)	= 27	SATURATION (%)	= --
SP. GR.	= 2.73			VOID RATIO	= --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 2
Part :

FILE : 3
TESTED BY : AEL
Computed By: MHD
Checked By : TAL
Report Date: 09-29-94

Specific Gravity = 2.731
Flask No. = 26.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =708.73

Moisture Determination
Dry Wt.+Tare(gm)= 380.60
Tare Wt(gm) = 68.80

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 155.30
Tare Wt(gm) = 40.40
Dry Wt.+Tare(gm)= 152.30
Moisture(%) = 2.68

Liquid Limit
Blows = 25.00
Wet Wt.(gm) = 13.60
Dry Wt.(gm) = 10.03
Tare Wt.(gm) = 3.93
Liquid Limit(%) = 58.52
Plasticity Index= 27.43

Plastic Limit
Wet Wt.(gm) = 18.15
Dry Wt.(gm) = 14.73
Tare Wt.(gm) = 3.73
Plastic Limit(%)= 31.09

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 311.8

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	4.6	98.5	4.7500
NO.10	8.3	97.3	2.0000
NO.20	1.1	95.1	0.8500
NO.40	2.1	93.1	0.4250
NO.50	2.9	91.5	0.3000
NO.100	5.4	86.5	0.1500
NO.200	8.3	80.7	0.0750

Air Dry Weight(gm)= 50.00 Corrected Weight(gm)= 48.69

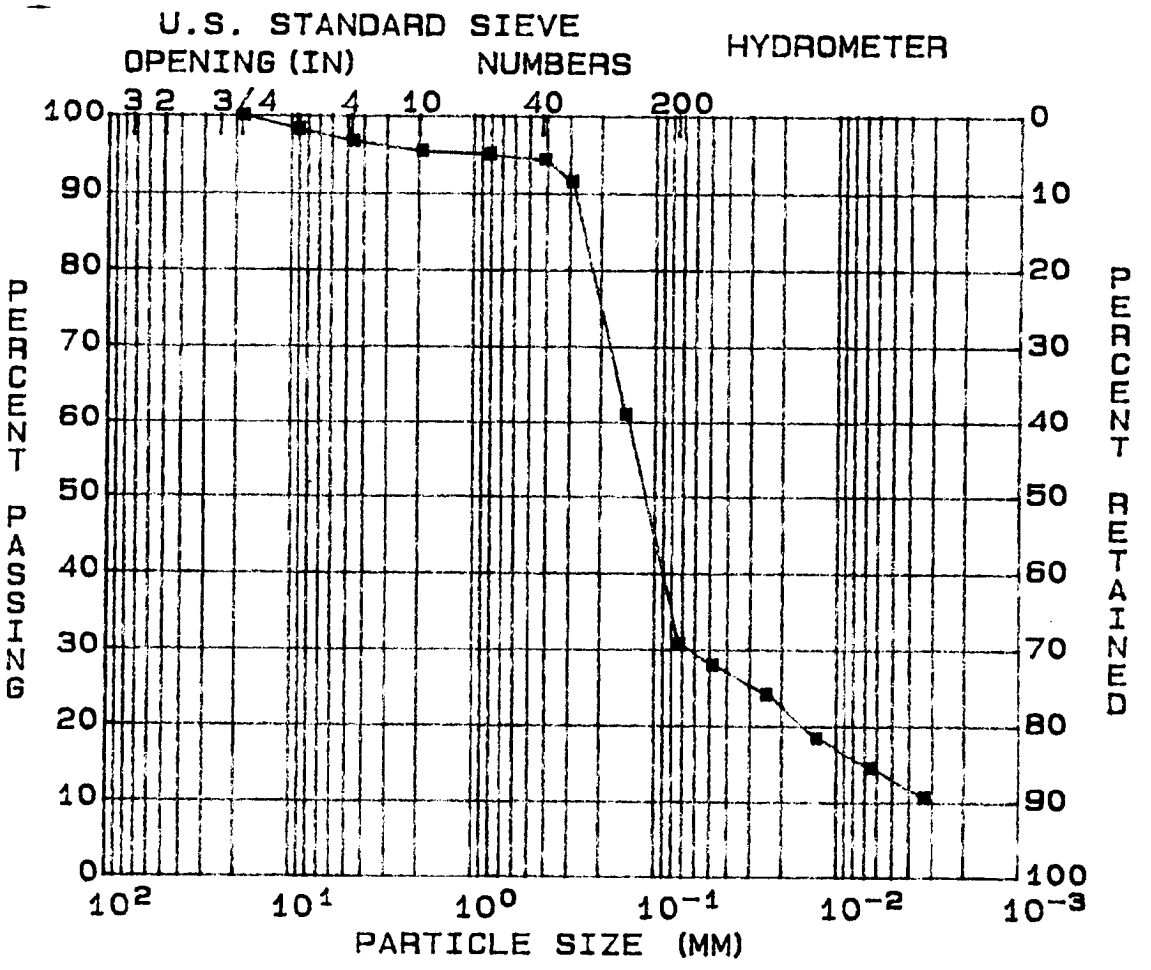
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	46.0	6.5	77.6	0.0389
4 min.	20.3	42.5	6.5	70.7	0.0201
15 min.	20.3	39.6	6.5	65.0	0.0106
1 hour	20.3	35.0	6.5	56.0	0.0055
4 hours	20.3	33.0	6.5	52.0	0.0028

Soil Symbol= MH/CH (Inorganic clayey silt of high plasticity)
Gravel(%)= 1 Sand(%)=18 Silt(%)= 25 Clay(%)= 56

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 3
DATE : 09-29-94



GRAVEL (%)	= 3	D10 (MM)	= 0.0029
SAND (%)	= 66	D30 (MM)	= 0.0648
SILT (%)	= 18	D60 (MM)	= 0.1456
CLAY (%)	= 13	COEF UNIF	=49.4

SOIL SYMBOL= SM	L.L. (%)	= NP	DENSITY (pcf) = --
MOISTURE (%) =	P.I. (%)	= NP	SATURATION (%) = --
SP. GR. = 2.64			VOID RATIO = --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10
El. :
Sample: Gr 3
Part :
FILE : 4
TESTED BY : AEL
Computed By: MHD
Checked By : TA
Report Date: 09-29-94

Specific Gravity = 2.641
Flask No. = 19.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =712.08
Moisture Determination
Dry Wt.+Tare(gm)= 598.60
Tare Wt(gm) = 108.20
Hygroscopic Moisture
Wet Wt.+Tare(gm)= 142.50
Tare Wt(gm) = 39.70
Dry Wt.+Tare(gm)= 141.70
Moisture(%) = 0.78
Non-Plastic Soil
Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 490.4

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	6.1	98.8	9.5300
NO.4	13.6	97.2	4.7500
NO.10	20.0	95.9	2.0000
NO.20	0.2	95.5	0.8500
NO.40	0.6	94.8	0.4250
NO.50	2.1	91.9	0.3000
NO.100	17.9	61.3	0.1500
NO.200	33.6	31.0	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.61

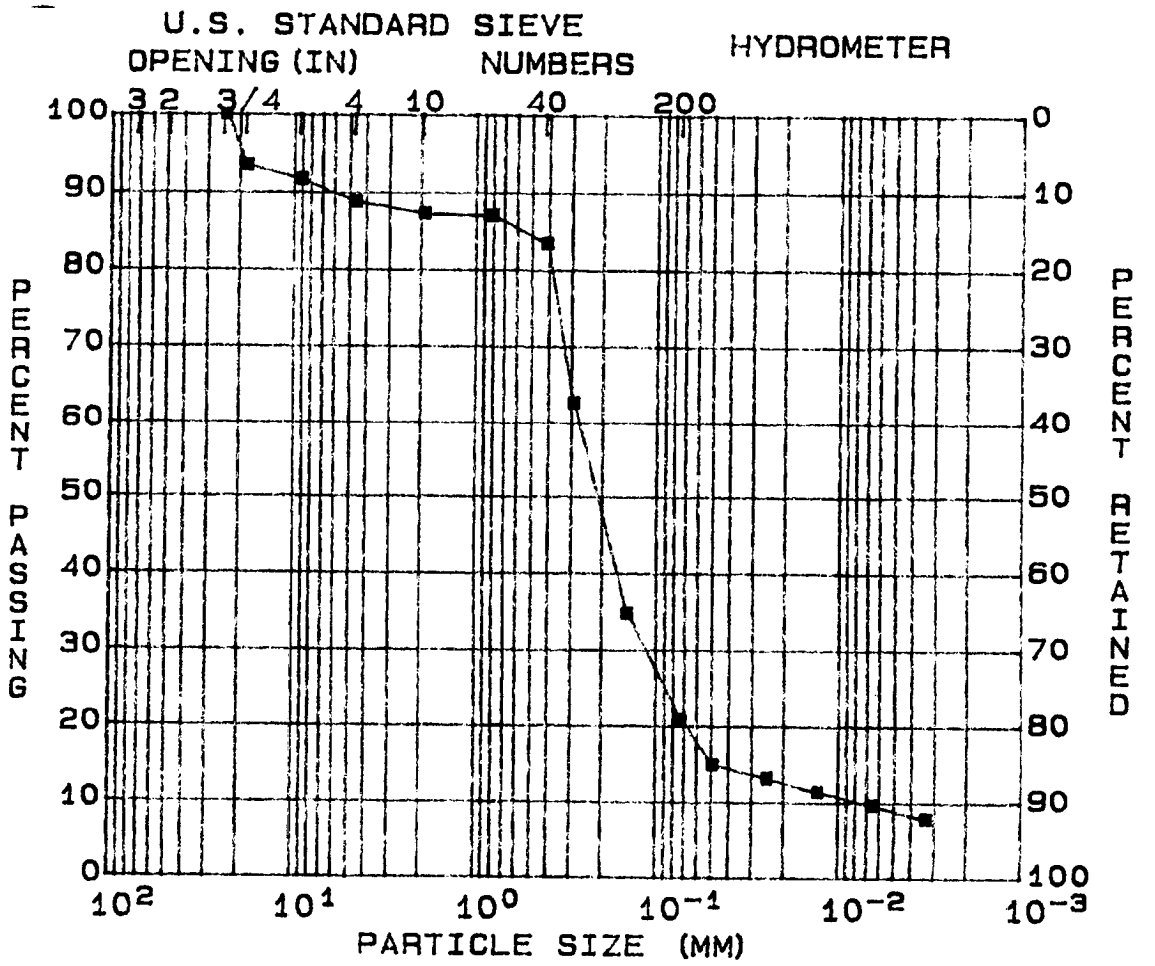
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	21.0	6.5	28.1	0.0485
4 min.	20.3	19.0	6.5	24.2	0.0246
15 min.	20.3	16.0	6.5	18.4	0.0129
1 hour	20.3	14.0	6.5	14.5	0.0065
4 hours	20.3	12.0	6.5	10.7	0.0033

Soil Symbol= SM (Silty sand)
D10(mm) =0.0029 D30(mm)= 0.0648 D60(mm)= 0.1456
Gravel(%)= 3 Sand(%)=66 Silt(%)= 18 Clay(%)= 13

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 4
DATE : 09-29-94



GRAVEL (%)	= 11	D10 (MM)	= 0.0076
SAND (%)	= 68	D30 (MM)	= 0.1176
SILT (%)	= 12	D60 (MM)	= 0.2804
CLAY (%)	= 9	COEF UNIF	=37.1

SOIL SYMBOL	= SC/SM	L.L. (%)	= NP	DENSITY (pcf)	= --
MOISTURE (%)	=	P.I. (%)	= NP	SATURATION (%)	= --
SP. GR.	= 2.66			VOID RATIO	= --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 4
Part :

FILE : 5
TESTED BY : AEL
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.657
Flask No. = 36.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =710.75

Moisture Determination
Dry Wt.+Tare(gm)= 569.70
Tare Wt(gm) = 105.40

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 121.90
Tare Wt(gm) = 40.10
Dry Wt.+Tare(gm)= 121.70
Moisture(%) = 0.25

Liquid Limit
Blows = 25.00
Wet Wt.(gm) = 13.60
Dry Wt.(gm) = 10.03
Tare Wt.(gm) = 3.93
Liquid Limit(%) = 58.52
Plasticity Index= 27.43

Plastic Limit
Wet Wt.(gm) = 18.15
Dry Wt.(gm) = 14.73
Tare Wt.(gm) = 3.73
Plastic Limit(%)= 31.09

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 464.3

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	27.7	94.0	19.0500
3/8 in.	36.3	92.2	9.5300
NO.4	49.9	89.3	4.7500
NO.10	57.3	87.7	2.0000
NO.20	0.2	87.3	0.8500
NO.40	2.3	83.6	0.4250
NO.50	14.2	62.7	0.3000
NO.100	30.0	34.9	0.1500
NO.200	38.0	20.9	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.88

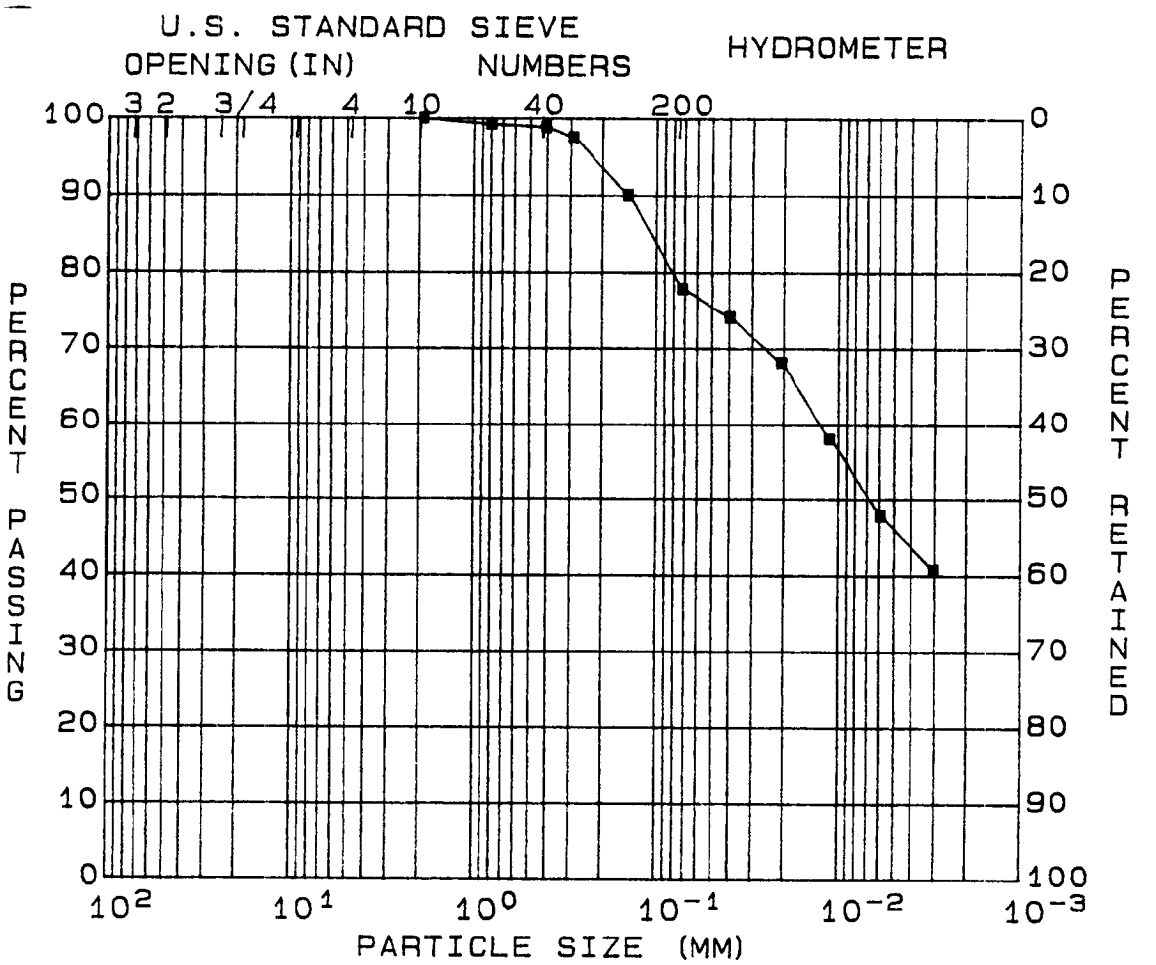
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	15.0	6.5	14.9	0.0501
4 min.	20.3	14.0	6.5	13.2	0.0252
15 min.	20.3	13.0	6.5	11.4	0.0131
1 hour	20.3	12.0	6.5	9.7	0.0066
4 hours	20.3	11.0	6.5	7.9	0.0033

Soil Symbol= SC/SM (Silty/clayey sand)
D10(mm) =0.0076 D30(mm)= 0.1176 D60(mm)= 0.2804
Gravel(%)=11 Sand(%)=68 Silt(%)= 12 Clay(%)= 9

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 5
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 22	D30 (MM)	= --
SILT (%)	= 32	D60 (MM)	= --
CLAY (%)	= 46	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%) = 31	DENSITY (pcf) = --
MOISTURE (%)	=	P.I. (%) = 12	SATURATION (%) = --
SP. GR.	= 2.66		VOID RATIO = --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 5
Part :

FILE : 6
TESTED BY : AEL
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.662
Flask No. = 34.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =709.80

Moisture Determination
Dry Wt.+Tare(gm)= 548.60
Tare Wt(gm) = 104.10

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 118.80
Tare Wt(gm) = 40.50
Dry Wt.+Tare(gm)= 117.10
Moisture(%) = 2.22

Liquid Limit
Blows = 24.00
Wet Wt.(gm) = 18.50
Dry Wt.(gm) = 15.05
Tare Wt.(gm) = 4.00
Liquid Limit(%) = 31.07
Plasticity Index= 12.08

Plastic Limit
Wet Wt.(gm) = 18.00
Dry Wt.(gm) = 15.75
Tare Wt.(gm) = 3.90
Plastic Limit(%)= 18.99

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 444.5

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.1	99.8	0.8500
NO.40	0.3	99.4	0.4250
NO.50	1.0	98.0	0.3000
NO.100	4.7	90.4	0.1500
NO.200	10.7	78.1	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 48.91

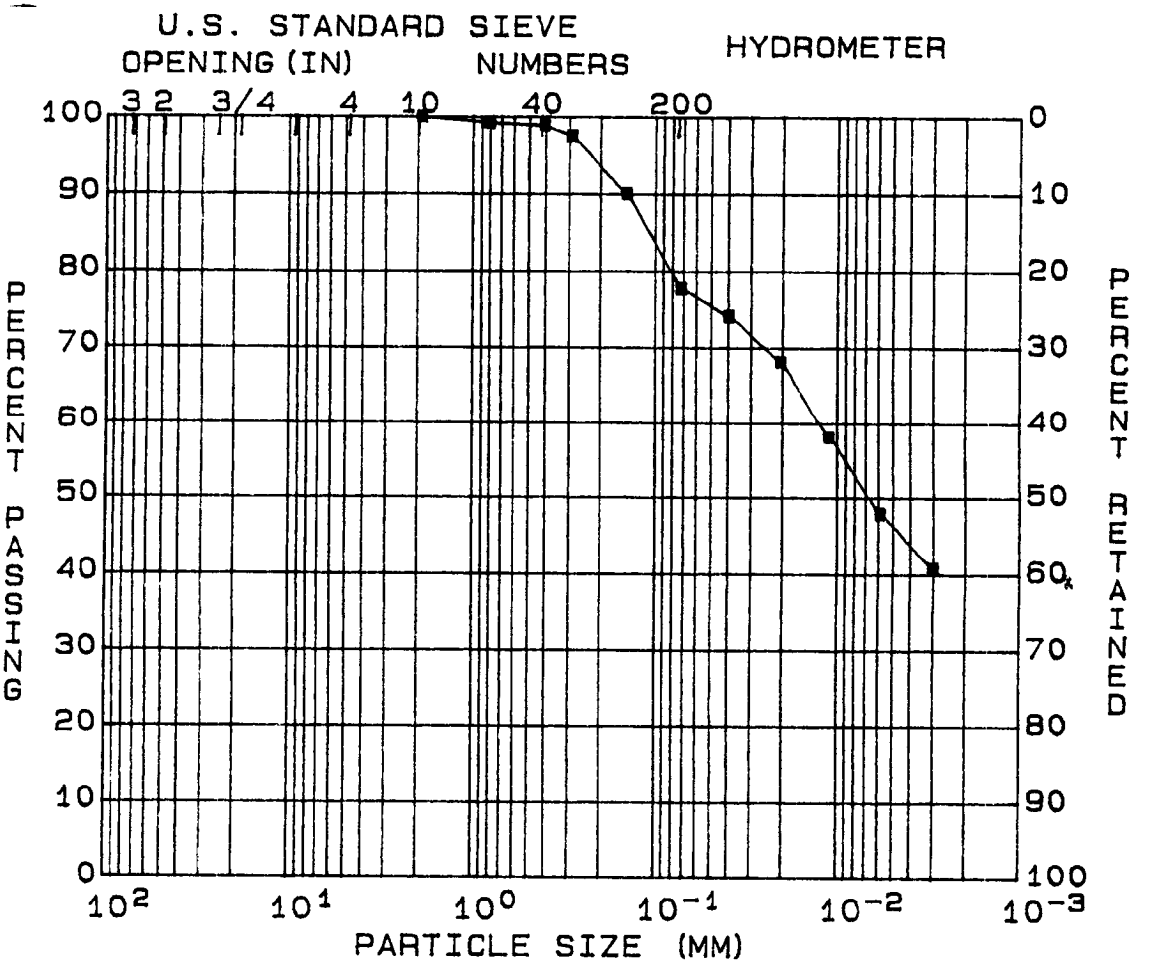
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	43.0	6.5	74.4	0.0408
4 min.	20.3	40.0	6.5	68.3	0.0209
15 min.	20.3	35.0	6.5	58.1	0.0113
1 hour	20.3	30.0	6.5	47.9	0.0059
4 hours	20.3	26.5	6.5	40.8	0.0030

Soil Symbol= CL (Inorganic sandy clay of medium plasticity)
Gravel(%)= 0 Sand(%)=22 Silt(%)= 32 Clay(%)= 46

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 5
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 22	D30 (MM)	= --
SILT (%)	= 32	D60 (MM)	= --
CLAY (%)	= 46	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%)	= 30	DENSITY (pcf)	= --
MOISTURE (%)	=	P.I. (%)	= 11	SATURATION (%)	= --
SP. GR.	= 2.66			VOID RATIO	= --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 5
Part :

FILE : 7
TESTED BY : AEL
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.662
Flask No. = 34.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =709.80

Moisture Determination
Dry Wt.+Tare(gm)= 548.60
Tare Wt(gm) = 104.10

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 118.80
Tare Wt(gm) = 40.50
Dry Wt.+Tare(gm)= 117.10
Moisture(%) = 2.22

Liquid Limit
Blows = 24.00
Wet Wt.(gm) = 17.10
Dry Wt.(gm) = 13.98
Tare Wt.(gm) = 3.93
Liquid Limit(%) = 30.89
Plasticity Index= 11.91

Plastic Limit
Wet Wt.(gm) = 18.00
Dry Wt.(gm) = 15.75
Tare Wt.(gm) = 3.90
Plastic Limit(%)= 18.99

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 444.5

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.1	99.8	0.8500
NO.40	0.3	99.4	0.4250
NO.50	1.0	98.0	0.3000
NO.100	4.7	90.4	0.1500
NO.200	10.7	78.1	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 48.91

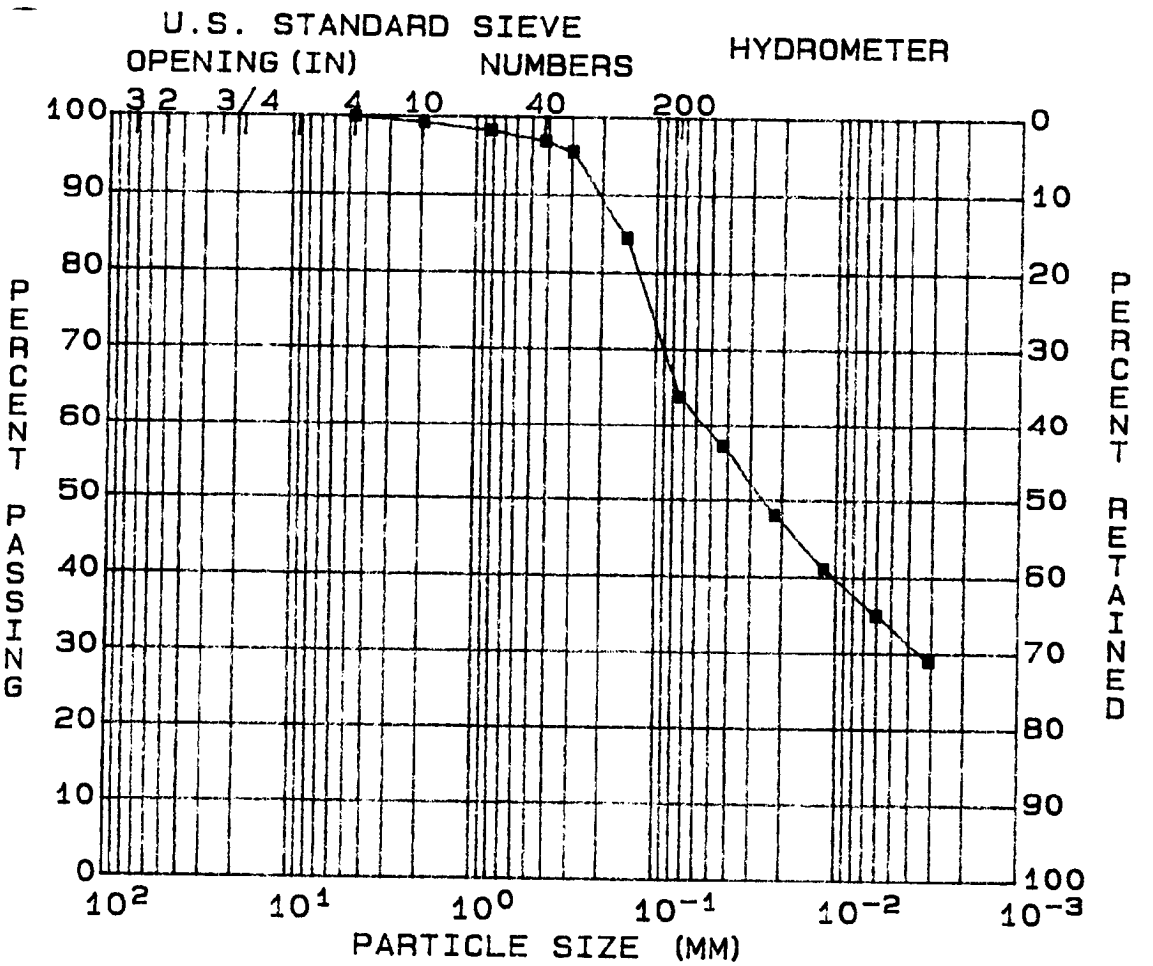
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	43.0	6.5	74.4	0.0408
4 min.	20.3	40.0	6.5	68.3	0.0209
15 min.	20.3	35.0	6.5	58.1	0.0113
1 hour	20.3	30.0	6.5	47.9	0.0059
4 hours	20.3	26.5	6.5	40.8	0.0030

Soil Symbol= CL (Inorganic sandy clay of medium plasticity)
Gravel(%)= 0 Sand(%)=22 Silt(%)= 32 Clay(%)= 46

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 6
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 36	D30 (MM)	= --
SILT (%)	= 30	D60 (MM)	= --
CLAY (%)	= 34	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%) = 26	DENSITY (pcf) = --
MOISTURE (%)	=	P.I. (%) = 8	SATURATION (%) = --
SP. GR.	= 2.71		VOID RATIO = --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 6
Part :

FILE : 8
TESTED BY : AEL
Computed By:MHD
Checked By : TA
Report Date:09-29-94

Specific Gravity = 2.706
Flask No. = 24.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =707.32

Moisture Determination
Dry Wt.+Tare(gm)= 520.80
Tare Wt(gm) = 95.10

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 116.00
Tare Wt(gm) = 39.80
Dry Wt.+Tare(gm)= 114.60
Moisture(%) = 1.87

Liquid Limit
Blows = 25.00
Wet Wt.(gm) = 20.70
Dry Wt.(gm) = 17.20
Tare Wt.(gm) = 3.70
Liquid Limit(%) = 25.93
Plasticity Index= 8.10

Plastic Limit
Wet Wt.(gm) = 20.23
Dry Wt.(gm) = 17.75
Tare Wt.(gm) = 3.84
Plastic Limit(%)= 17.83

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 425.7

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	2.1	99.5	2.0000
NO.20	0.5	98.5	0.8500
NO.40	1.2	97.1	0.4250
NO.50	1.9	95.7	0.3000
NO.100	7.4	84.5	0.1500
NO.200	17.6	63.8	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.08

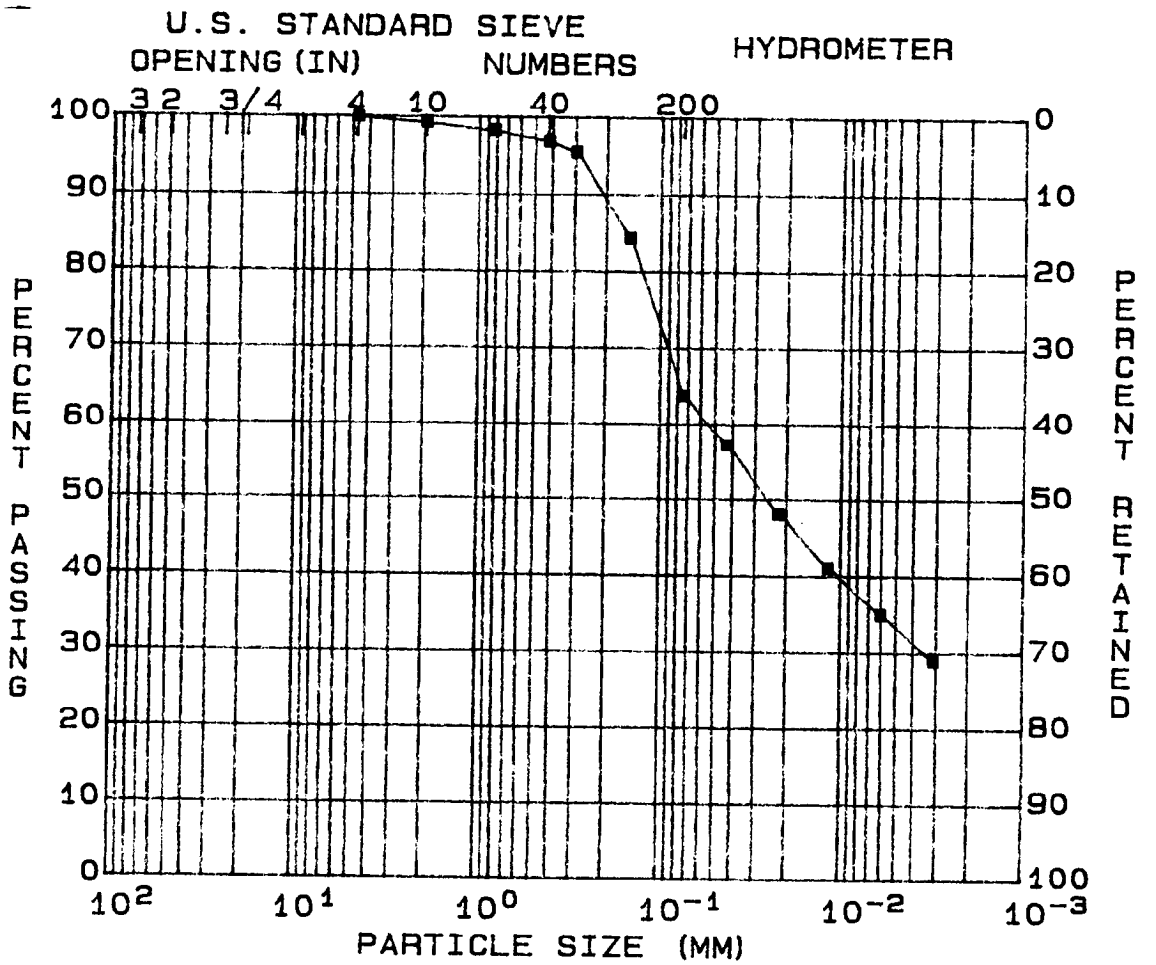
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	35.0	6.5	57.1	0.0431
4 min.	20.3	30.5	6.5	48.1	0.0223
15 min.	20.3	27.0	6.5	41.0	0.0118
1 hour	20.3	24.0	6.5	35.0	0.0060
4 hours	20.3	21.0	6.5	29.0	0.0031

Soil Symbol= CL (Inorganic sandy clay of low plasticity)
Gravel(%)= 0 Sand(%)=36 Silt(%)= 30 Clay(%)= 34

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 6
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 36	D30 (MM)	= --
SILT (%)	= 30	D60 (MM)	= --
CLAY (%)	= 34	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%) = 26	DENSITY (pcf) = --
MOISTURE (%)	=	P.I. (%) = 8	SATURATION (%) = --
SP. GR.	= 2.71		VOID RATIO = --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 6
Part :

FILE : 9
TESTED BY : AEL
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.706
Flask No. = 24.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =707.32

Moisture Determination
Dry Wt.+Tare(gm)= 520.80
Tare Wt(gm) = 95.10

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 116.00
Tare Wt(gm) = 39.80
Dry Wt.+Tare(gm)= 114.60
Moisture(%) = 1.87

Liquid Limit
Blows = 25.00
Wet Wt.(gm) = 17.50
Dry Wt.(gm) = 14.70
Tare Wt.(gm) = 3.80
Liquid Limit(%) = 25.69
Plasticity Index= 7.86

Plastic Limit
Wet Wt.(gm) = 20.23
Dry Wt.(gm) = 17.75
Tare Wt.(gm) = 3.84
Plastic Limit(%)= 17.83

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 425.7

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	2.1	99.5	2.0000
NO.20	0.5	98.5	0.8500
NO.40	1.2	97.1	0.4250
NO.50	1.9	95.7	0.3000
NO.100	7.4	84.5	0.1500
NO.200	17.6	63.8	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.08

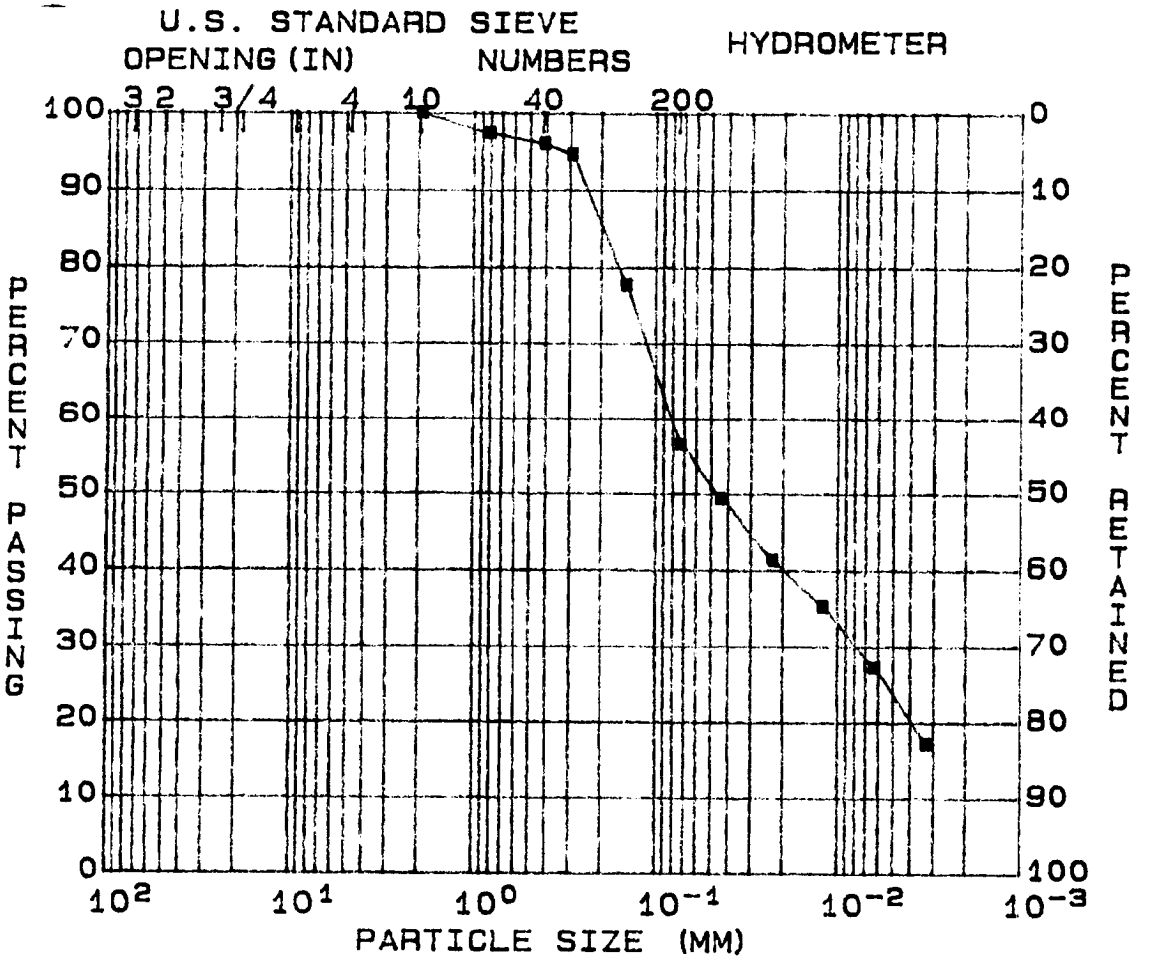
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	35.0	6.5	57.1	0.0431
4 min.	20.3	30.5	6.5	48.1	0.0223
15 min.	20.3	27.0	6.5	41.0	0.0118
1 hour	20.3	24.0	6.5	35.0	0.0060
4 hours	20.3	21.0	6.5	29.0	0.0031

Soil Symbol= CL (Inorganic sandy clay of low plasticity)
Gravel(%)= 0 Sand(%)=36 Silt(%)= 30 Clay(%)= 34

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 7
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 43	D30 (MM)	= --
SILT (%)	= 33	D60 (MM)	= --
CLAY (%)	= 24	COEF UNIF	= --

SOIL SYMBOL	= ML	L.L. (%)	= NP	DENSITY (pcf)	= --
MOISTURE (%)	=	P.I. (%)	= NP	SATURATION (%)	= --
SP. GR.	= 2.65			VOID RATIO	= --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 7
Part :

FILE : 10
TESTED BY : AEL
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.655
Flask No. = 31.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =709.80

Moisture Determination
Dry Wt.+Tare(gm)= 460.50
Tare Wt(gm) = 104.30

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 143.80
Tare Wt(gm) = 39.90
Dry Wt.+Tare(gm)= 142.20
Moisture(%) = 1.56

Non-Plastic Soil

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 356.2

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.9	98.2	0.8500
NO.40	1.6	96.7	0.4250
NO.50	2.3	95.3	0.3000
NO.100	10.7	78.3	0.1500
NO.200	21.2	56.9	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.23

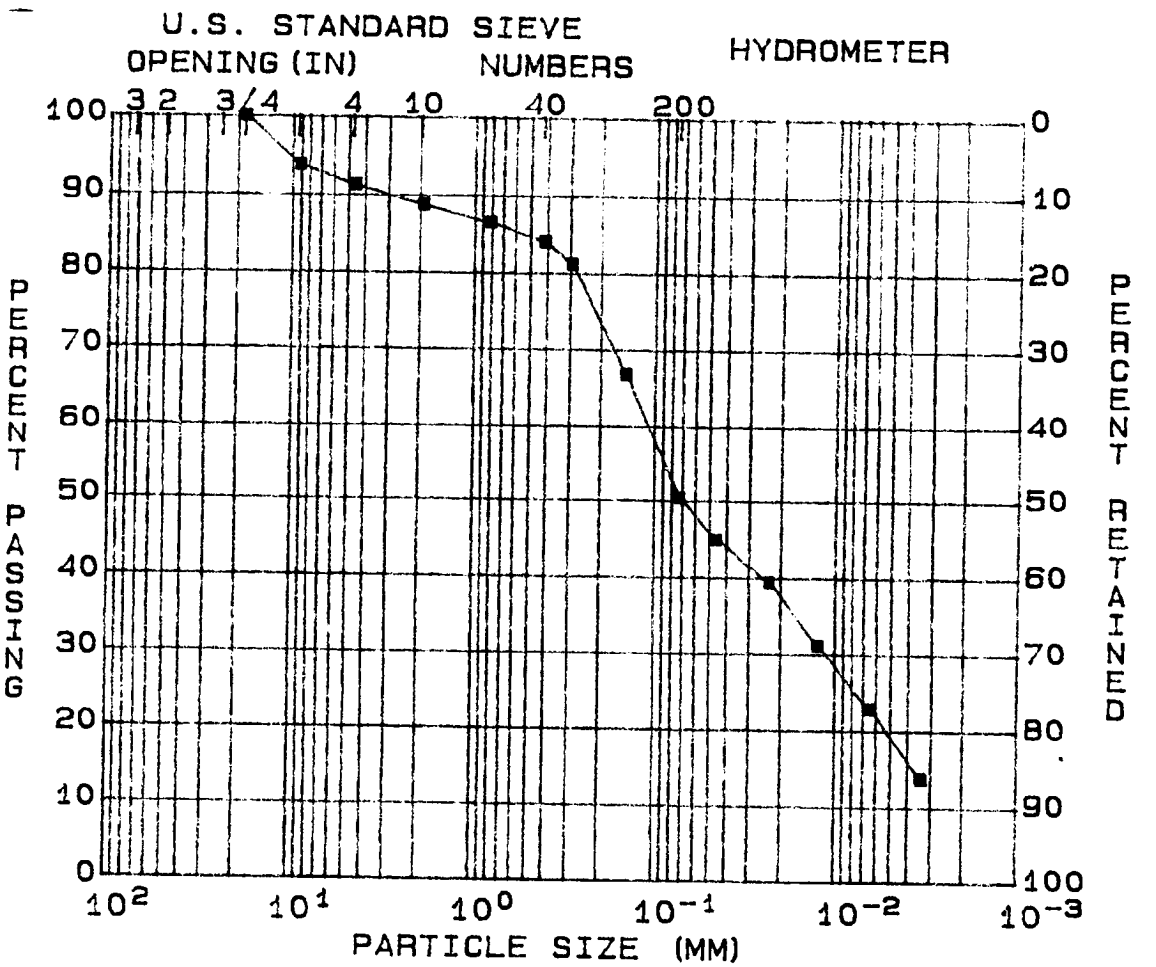
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	31.0	6.5	49.7	0.0451
4 min.	20.3	27.0	6.5	41.6	0.0232
15 min.	20.3	24.0	6.5	35.5	0.0122
1 hour	20.3	20.0	6.5	27.4	0.0063
4 hours	20.3	15.0	6.5	17.2	0.0032

Soil Symbol= ML (Inorganic sandy silt of low plasticity)
Gravel(%)= 0 Sand(%)=43 Silt(%)= 33 Clay(%)= 24

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 8
DATE : 09-29-94



GRAVEL (%)	= 8	D10 (MM)	= --
SAND (%)	= 41	D30 (MM)	= --
SILT (%)	= 31	D60 (MM)	= --
CLAY (%)	= 20	COEF UNIF	= --

SOIL SYMBOL	= ML	L.L. (%)	= NP	DENSITY (pcf)	= --
MOISTURE (%)	=	P.I. (%)	= NP	SATURATION (%)	= --
SP. GR.	= 2.56			VOID RATIO	= --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 8
Part :

FILE : 11
TESTED BY : AEL
Computed By: MHD
Checked By : TH
Report Date: 09-29-94

Specific Gravity = 2.559
Flask No. = 28.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =700.30

Moisture Determination
Dry Wt.+Tare(gm)= 651.00
Tare Wt(gm) = 107.60

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 146.00
Tare Wt(gm) = 38.10
Dry Wt.+Tare(gm)= 145.00
Moisture(%) = 0.94

Non-Plastic Soil

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 543.4

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	29.8	94.5	9.5300
NO.4	44.0	91.9	4.7500
NO.10	58.2	89.3	2.0000
NO.20	1.3	86.9	0.8500
NO.40	2.7	84.4	0.4250
NO.50	4.3	81.5	0.3000
NO.100	12.3	67.1	0.1500
NO.200	21.4	50.7	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.54

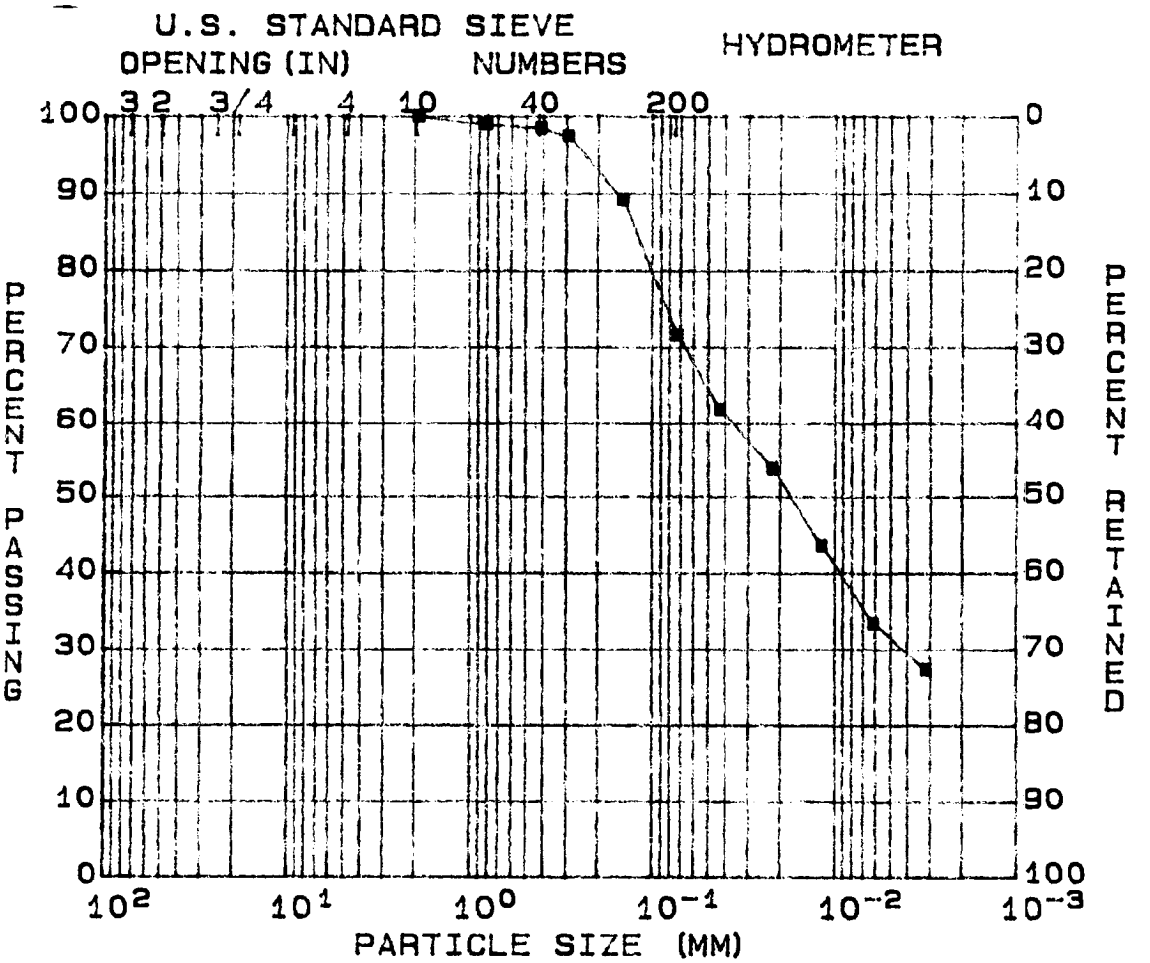
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	31.0	6.5	45.1	0.0465
4 min.	20.3	28.0	6.5	39.6	0.0237
15 min.	20.3	23.5	6.5	31.3	0.0126
1 hour	20.3	19.0	6.5	23.0	0.0065
4 hours	20.3	14.0	6.5	13.8	0.0034

Soil Symbol= ML (Inorganic sandy silt of low plasticity)
Gravel(%)= 8 Sand(%)=41 Silt(%)= 31 Clay(%)= 20

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 9
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= ---
SAND (%)	= 28	D30 (MM)	= ---
SILT (%)	= 40	D60 (MM)	= ---
CLAY (%)	= 32	COEF UNIF	= ---

SOIL SYMBOL	= CL	L.L. (%)	= 26	DENSITY (pcf)	= ---
MOISTURE (%)	=	P.I. (%)	= 8	SATURATION (%)	= ---
SP. GR.	= 2.64			VOID RATIO	= ---

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 9
Part :

FILE : 12
TESTED BY : AEL
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.641
Flask No. = 17.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =705.32

Moisture Determination
Dry Wt.+Tare(gm)= 586.30
Tare Wt(gm) = 96.50

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 140.80
Tare Wt(gm) = 39.20
Dry Wt.+Tare(gm)= 139.20
Moisture(%) = 1.60

Liquid Limit
Blows = 24.00
Wet Wt.(gm) = 18.90
Dry Wt.(gm) = 15.80
Tare Wt.(gm) = 4.00
Liquid Limit(%) = 26.14
Plasticity Index= 8.12

Plastic Limit
Wet Wt.(gm) = 20.14
Dry Wt.(gm) = 17.68
Tare Wt.(gm) = 4.03
Plastic Limit(%)= 18.02

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 489.8

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.1	99.8	0.8500
NO.40	0.4	99.2	0.4250
NO.50	1.0	98.0	0.3000
NO.100	5.1	89.6	0.1500
NO.200	13.8	72.0	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.21

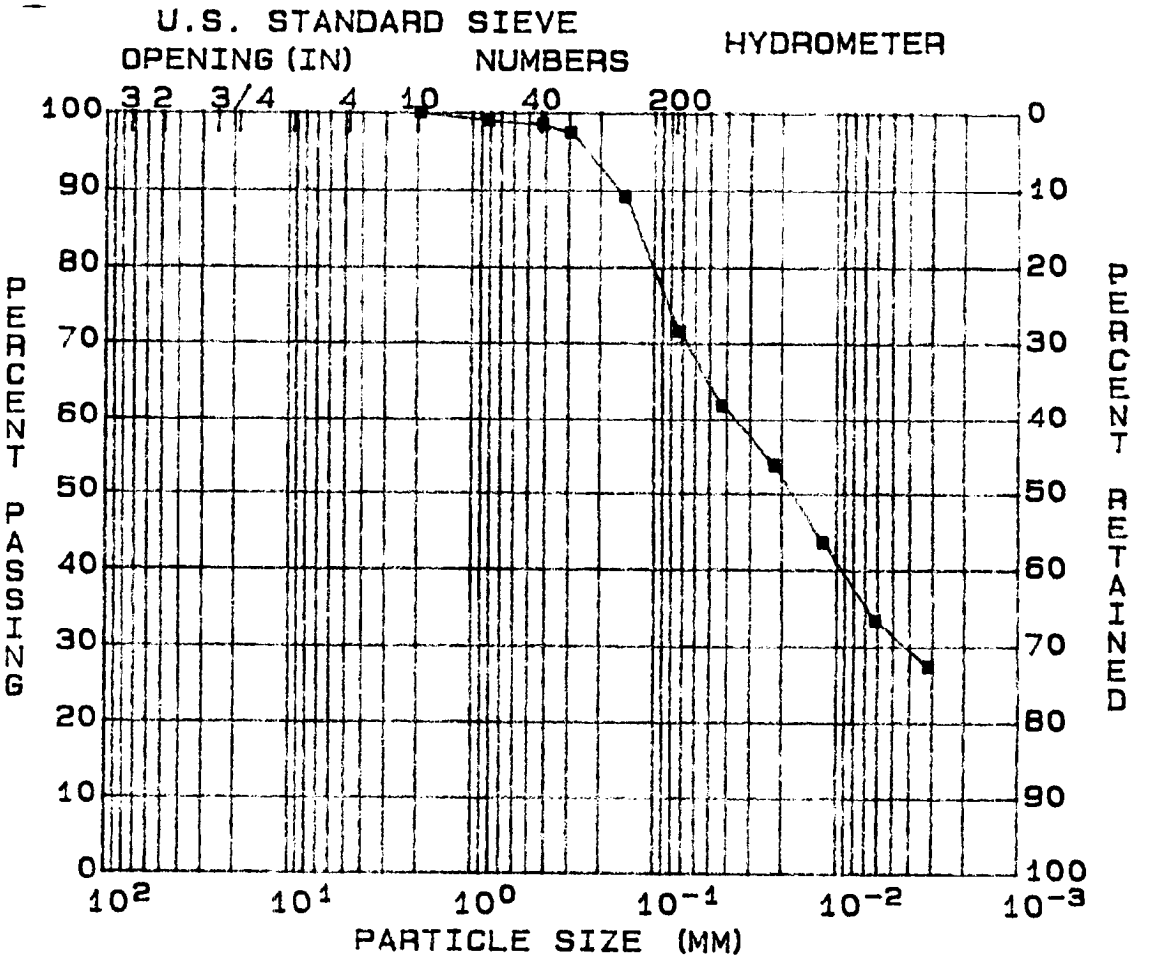
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	37.0	6.5	62.1	0.0432
4 min.	20.3	33.0	6.5	54.0	0.0223
15 min.	20.3	28.0	6.5	43.8	0.0119
1 hour	20.3	23.0	6.5	33.6	0.0062
4 hours	20.3	20.0	6.5	27.5	0.0032

Soil Symbol= CL (Inorganic sandy clay of low plasticity)
Gravel(%)= 0 Sand(%)=28 Silt(%)= 40 Clay(%)= 32

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 9
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= ---
SAND (%)	= 28	D30 (MM)	= ---
SILT (%)	= 40	D60 (MM)	= ---
CLAY (%)	= 32	COEF UNIF	= ---

SOIL SYMBOL	= CL	L.L. (%)	= 26	DENSITY (pcf)	= ---
MOISTURE (%)	=	P.I. (%)	= 8	SATURATION (%)	= ---
SP. GR.	= 2.64			VOID RATIO	= ---

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 9
Part :

FILE : 13
TESTED BY : AEL
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.641
Flask No. = 17.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =705.32

Moisture Determination
Dry Wt.+Tare(gm)= 586.30
Tare Wt(gm) = 96.50

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 140.80
Tare Wt(gm) = 39.20
Dry Wt.+Tare(gm)= 139.20
Moisture(%) = 1.60

Liquid Limit
Blows = 24.00
Wet Wt.(gm) = 20.00
Dry Wt.(gm) = 16.68
Tare Wt.(gm) = 3.90
Liquid Limit(%) = 25.85
Plasticity Index= 7.83

Plastic Limit
Wet Wt.(gm) = 20.14
Dry Wt.(gm) = 17.68
Tare Wt.(gm) = 4.03
Plastic Limit(%)= 18.02

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 489.8

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.1	99.8	0.8500
NO.40	0.4	99.2	0.4250
NO.50	1.0	98.0	0.3000
NO.100	5.1	89.6	0.1500
NO.200	13.8	72.0	0.0750

Air Dry Weight(gm)= 50.00 Corrected Weight(gm)= 49.21

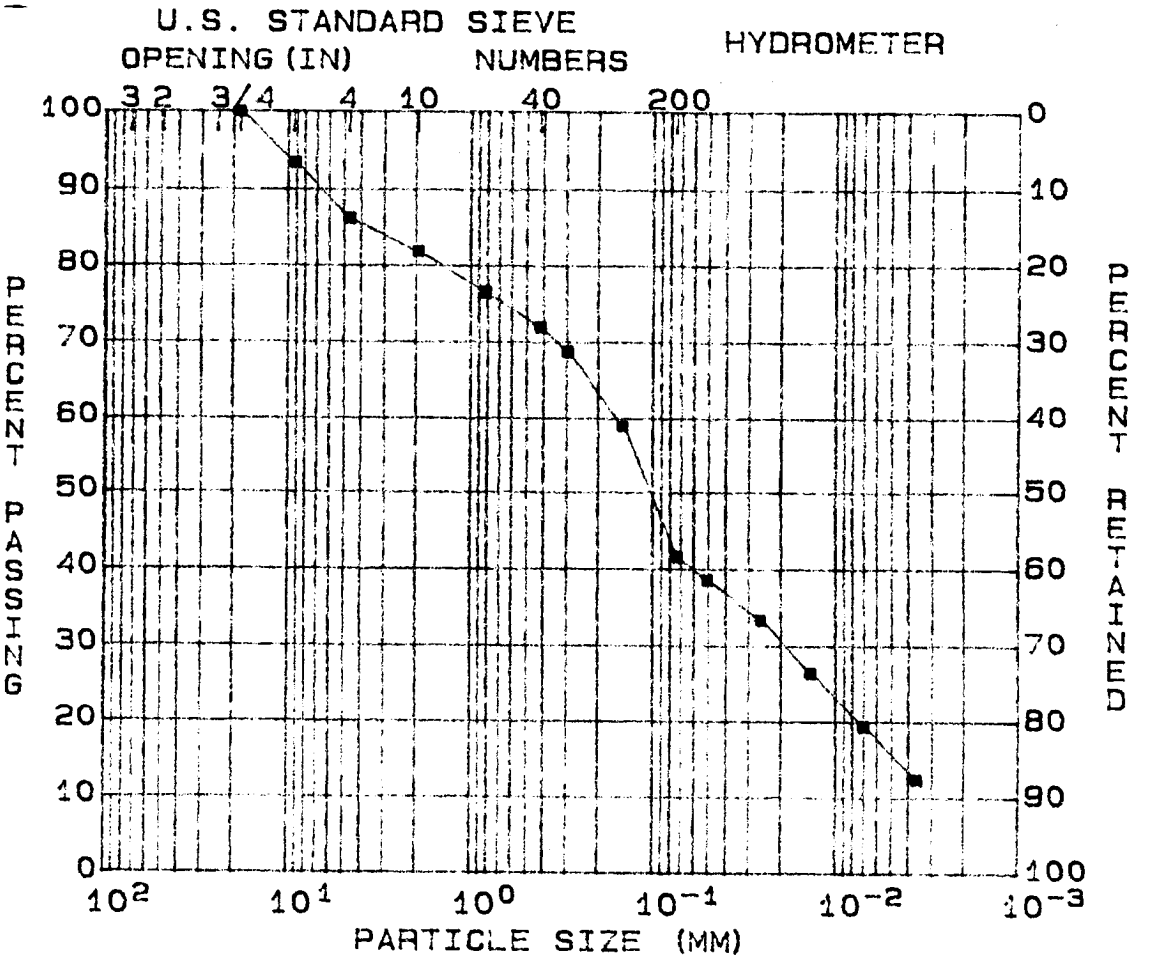
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.3	37.0	6.5	62.1	0.0432
4 min.	20.3	33.0	6.5	54.0	0.0223
15 min.	20.3	28.0	6.5	43.8	0.0119
1 hour	20.3	23.0	6.5	33.6	0.0062
4 hours	20.3	20.0	6.5	27.5	0.0032

Soil Symbol= CL (Inorganic sandy clay of low plasticity)
Gravel(%)= 0 Sand(%)=28 Silt(%)= 40 Clay(%)= 32

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 10
DATE : 09-29-94



GRAVEL (%)	= 13	D10 (MM)	= 0.0029
SAND (%)	= 45	D30 (MM)	= 0.0185
SILT (%)	= 26	D60 (MM)	= 0.1552
CLAY (%)	= 16	COEF UNIF	=54.2

SOIL SYMBOL=	SM	L.L. (%)	= NP	DENSITY (pcf)	= ---
MOISTURE (%) =		P.I. (%)	= NP	SATURATION (%)	= ---
SP. GR.	= 2.40			VOID RATIO	= ---

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 10
Part :

FILE : 14
TESTED BY : AEL
Computed By:MHD
Checked By : JAL
Report Date:09-29-94

Specific Gravity = 2.397
Flask No. = 27.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =708.97

Moisture Determination
Dry Wt.+Tare(gm)= 660.10
Tare Wt(gm) = 97.80

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 146.70
Tare Wt(gm) = 39.50
Dry Wt.+Tare(gm)= 146.10
Moisture(%) = 0.56

Non-Plastic Soil

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 562.3

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	31.7	94.4	9.5300
NO.4	72.5	87.1	4.7500
NO.10	96.5	82.8	2.0000
NO.20	3.3	77.3	0.8500
NO.40	6.1	72.7	0.4250
NO.50	8.0	69.5	0.3000
NO.100	14.0	59.5	0.1500
NO.200	24.4	42.2	0.0750

Air Dry Weight(gm)= 50.00 Corrected Weight(gm)= 49.72

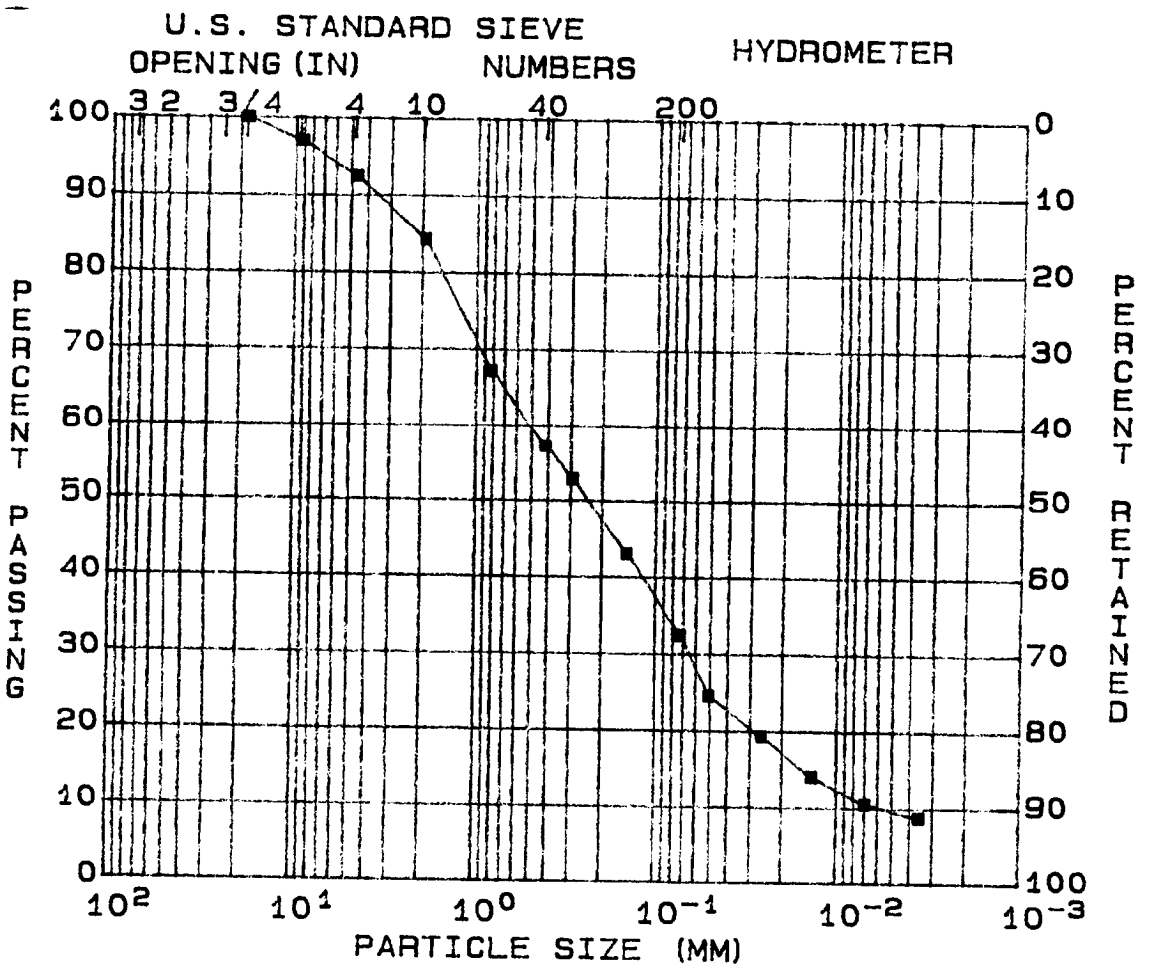
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	19.7	27.0	5.0	39.2	0.0509
4 min.	19.7	24.0	5.0	33.8	0.0260
15 min.	19.7	20.0	5.0	26.7	0.0138
1 hour	19.7	16.0	5.0	19.6	0.0071
4 hours	19.8	12.0	5.0	12.5	0.0036

Soil Symbol= SM (Silty sand)
D10(mm) =0.0029 D30(mm)= 0.0185 D60(mm)= 0.1552
Gravel(%)=13 Sand(%)=45 Silt(%)= 26 Clay(%)= 16

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 11
DATE : 09-29-94



GRAVEL (%)	= 7	D10 (MM)	= 0.0056
SAND (%)	= 61	D30 (MM)	= 0.0662
SILT (%)	= 23	D60 (MM)	= 0.5022
CLAY (%)	= 9	COEF UNIF	= 90.5

SOIL SYMBOL= SM	L.L. (%) = NP	DENSITY (pcf) = --
MOISTURE (%) =	P.I. (%) = NP	SATURATION (%) = --
SP. GR. = 2.51		VOID RATIO = --

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 11
Part :

FILE : 15
TESTED BY : AEL
Computed By:MHD
Checked By : TA
Report Date:09-29-94

Specific Gravity = 2.509
Flask No. = 5.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =702.97

Moisture Determination
Dry Wt.+Tare(gm)= 527.50
Tare Wt(gm) = 96.50

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 167.20
Tare Wt(gm) = 38.10
Dry Wt.+Tare(gm)= 166.80
Moisture(%) = 0.31

Non-Plastic Soil

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 431

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	9.0	97.9	9.5300
NO.4	29.2	93.2	4.7500
NO.10	64.7	85.0	2.0000
NO.20	10.1	67.8	0.8500
NO.40	16.1	57.5	0.4250
NO.50	18.7	53.1	0.3000
NO.100	24.4	43.4	0.1500
NO.200	30.7	32.6	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.85

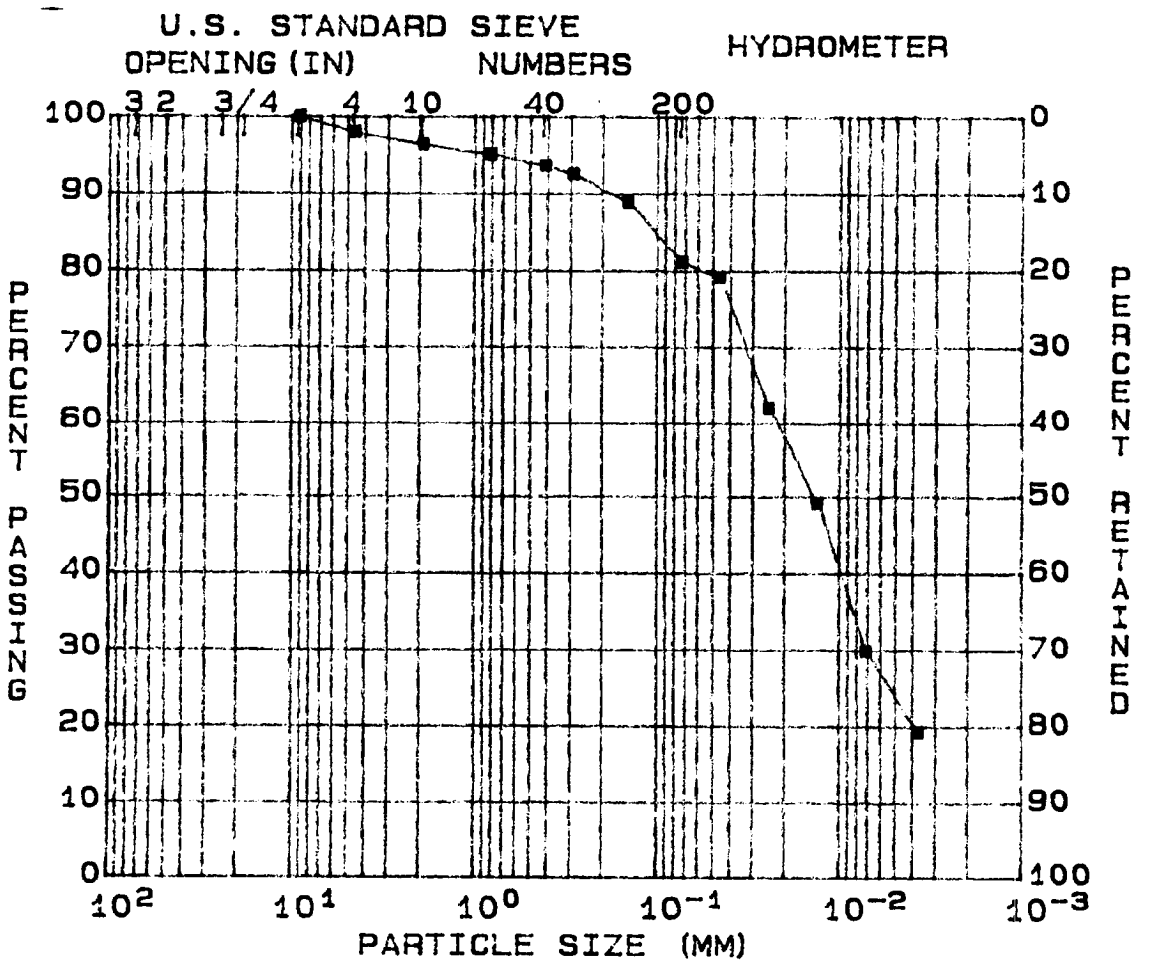
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	19.7	19.0	5.0	24.7	0.0516
4 min.	19.7	16.0	5.0	19.4	0.0263
15 min.	19.7	13.0	5.0	14.1	0.0138
1 hour	19.7	11.0	5.0	10.6	0.0070
4 hours	19.8	10.0	5.0	8.8	0.0035

Soil Symbol= SM (Silty sand)
D10(mm) =0.0056 D30(mm)= 0.0662 D60(mm)= 0.5022
Gravel(%)= 7 Sand(%)=61 Silt(%)= 23 Clay(%)= 9

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART :

BORING: SS-1 thru SS-10
EL. :
SAMPLE: Gr 12
DATE : 09-29-94



GRAVEL (%)	= 1	D10 (MM)	= ---
SAND (%)	= 17	D30 (MM)	= ---
SILT (%)	= 57	D60 (MM)	= ---
CLAY (%)	= 25	COEF UNIF	= ---

SOIL SYMBOL= ML	L.L. (%) = NP	DENSITY (pcf) = ---
MOISTURE (%) =	P.I. (%) = NP	SATURATION (%) = ---
SP. GR. = 2.31		VOID RATIO = ---

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : SS-1 thru SS-10

El. :
Sample: Gr 12
Part :

FILE : 16
TESTED BY : AEL
Computed By: MHD
Checked By : TAL
Report Date: 09-29-94

Specific Gravity = 2.310
Flask No. = 30.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.40
Total Wt.(gm) =694.88

Moisture Determination
Dry Wt.+Tare(gm)= 616.60
Tare Wt(gm) = 97.40

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 152.90
Tare Wt(gm) = 39.10
Dry Wt.+Tare(gm)= 152.20
Moisture(%) = 0.62

Non-Plastic Soil

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 519.2

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	6.1	98.8	4.7500
NO.10	14.8	97.1	2.0000
NO.20	0.7	95.8	0.8500
NO.40	1.5	94.2	0.4250
NO.50	2.1	93.0	0.3000
NO.100	4.0	89.3	0.1500
NO.200	8.0	81.5	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.69

Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	19.7	42.0	5.0	79.4	0.0467
4 min.	19.7	34.0	5.0	62.2	0.0249
15 min.	19.7	28.0	5.0	49.4	0.0135
1 hour	19.7	19.0	5.0	30.0	0.0072
4 hours	19.7	14.0	5.0	19.3	0.0037

Soil Symbol= ML (Inorganic silt of low plasticity)
Gravel(%)= 1 Sand(%)=17 Silt(%)= 57 Clay(%)= 25

TASK ASSIGNMENT No. TV-FH-SL001-045
G/C WORK ORDER No. 07-9822-026 AND TVA TAO No. GP-493-398629
KINGSTON FOSSIL PLANT - DREDGE CELLS/CLOSURE
SOIL INVESTIGATION

Singleton Laboratories Report 015-672-142A

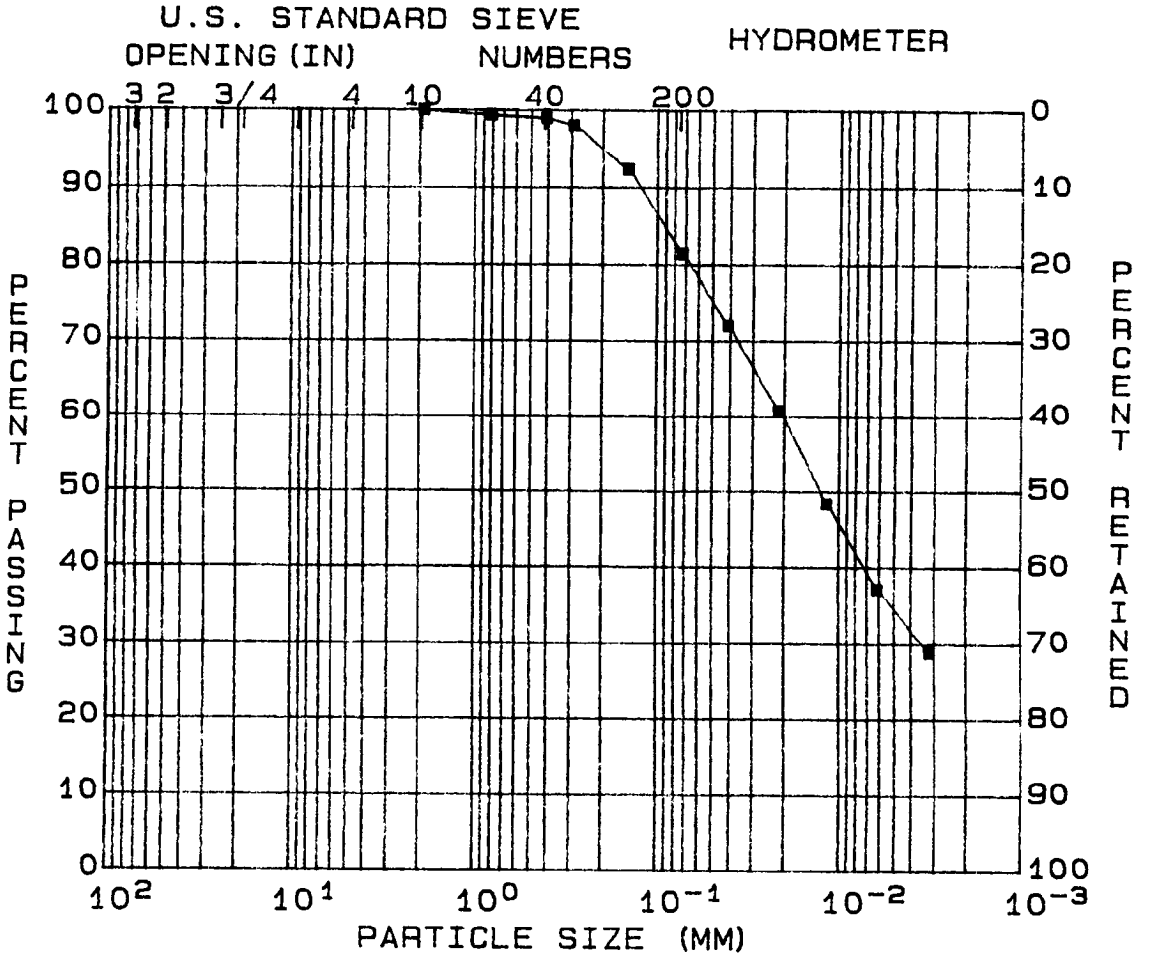
APPENDIX D

LABORATORY TEST DATA FOR ALL UNDISTURBED SOIL SAMPLES

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 3

BORING: US-1
EL. : 8'-10'
SAMPLE: 1
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 18	D30 (MM)	= --
SILT (%)	= 47	D60 (MM)	= --
CLAY (%)	= 35	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%)	= 30	DENSITY (pcf)	= 107.3
MOISTURE (%)	= 19.3	P.I. (%)	= 9	SATURATION (%)	= 98.05
SP. GR.	= 2.60			VOID RATIO	= 0.511

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 8'-10'
Sample: 1
Part : 3

FILE : 30
TESTED BY : REG
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.598
Flask No. = 5.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.20
Total Wt.(gm) =703.68

Chunk Density
Wet Wt.+Tare(gm)= 166.1
Dry Wt.+Tare(gm)= 145.5
Tare Wt(gm) = 38.6
Moisture(%) = 19.3
Void Ratio =0.511
Sample Wt.(gm) = 834.5
Sa.+ Wt.(air) = 880.7
SA.+ PA. Wt(Water) = 422.0
Density(pcf) =107.3
Saturation(%) = 98.05

Moisture Determination
Dry Wt.+Tare(gm)= 304.90
Tare Wt(gm) = 106.40

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 59.10
Tare Wt(gm) = 37.70
Dry Wt.+Tare(gm)= 58.70
Moisture(%) = 1.90

Liquid Limit
Blows = 27.00
Wet Wt.(gm) = 18.10
Dry Wt.(gm) = 14.87
Tare Wt.(gm) = 4.00
Liquid Limit(%) = 29.99
Plasticity Index= 8.64

Plastic Limit
Wet Wt.(gm) = 17.72
Dry Wt.(gm) = 15.31
Tare Wt.(gm) = 4.02
Plastic Limit(%)= 21.35

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 198.5

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.1	99.8	0.8500
NO.40	0.3	99.4	0.4250
NO.50	0.8	98.4	0.3000
NO.100	3.6	92.7	0.1500
NO.200	9.0	81.7	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.07

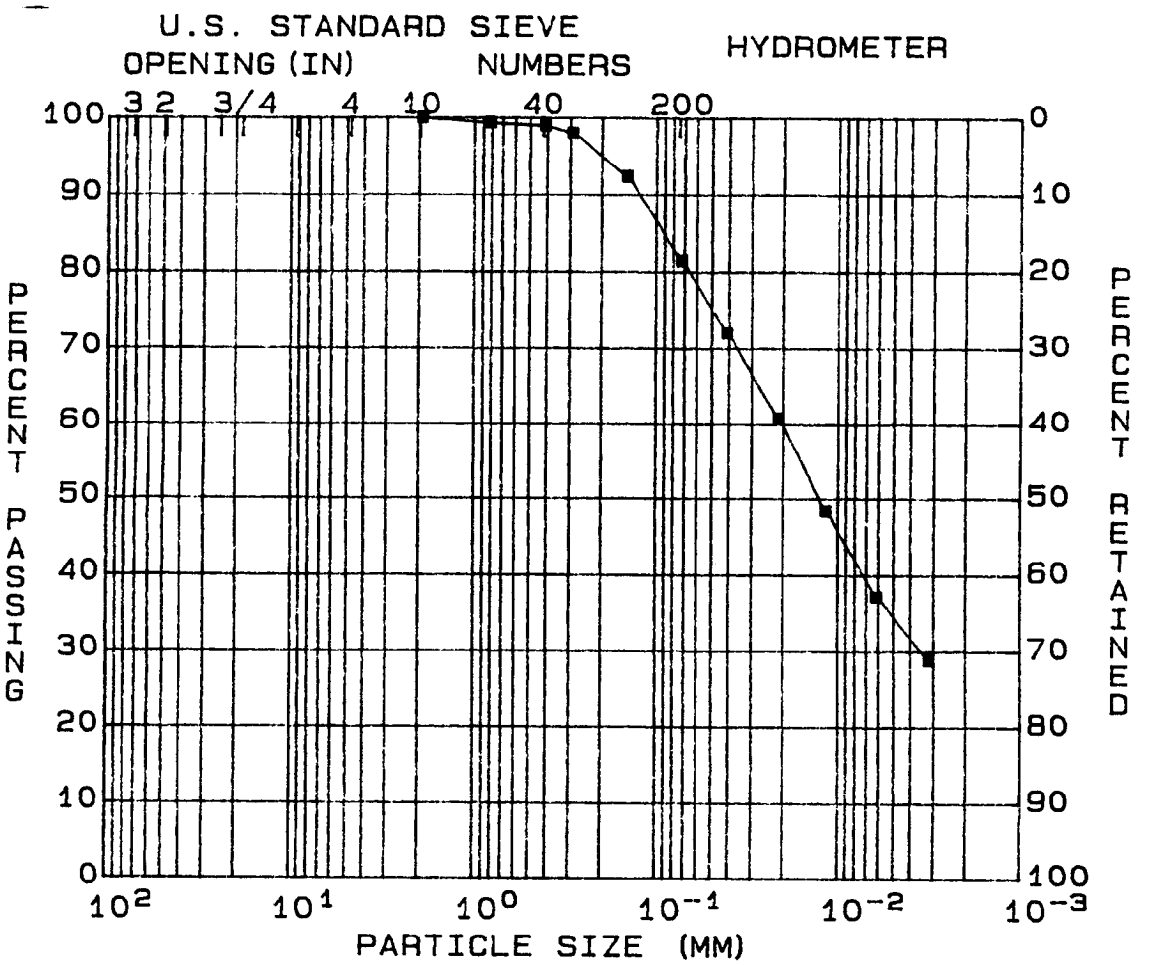
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	41.0	6.0	72.2	0.0421
4 min.	20.8	35.5	6.0	60.9	0.0220
15 min.	20.8	29.5	6.0	48.5	0.0119
1 hour	20.8	24.0	6.0	37.1	0.0062
4 hours	20.8	20.0	6.0	28.9	0.0032

Soil Symbol= CL (Inorganic clay of low plasticity)
Gravel(%)= 0 Sand(%)=18 Silt(%)= 47 Clay(%)= 35

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 3

BORING: US-1
EL. : 8'-10'
SAMPLE: 1
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 18	D30 (MM)	= --
SILT (%)	= 47	D60 (MM)	= --
CLAY (%)	= 35	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%)	= 31	DENSITY (pcf)	= 107.3
MOISTURE (%)	= 19.3	P.I. (%)	= 10	SATURATION (%)	= 98.05
SP. GR.	= 2.60			VOID RATIO	= 0.511

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 8'-10'
Sample: 1
Part : 3

FILE : 31
TESTED BY : REG
Computed By:MHD
Checked By : TA
Report Date:09-29-94

Specific Gravity = 2.598
Flask No. = 5.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.20
Total Wt.(gm) =703.68

Chunk Density
Wet Wt.+Tare(gm)= 166.1
Dry Wt.+Tare(gm)= 145.5
Tare Wt(gm) = 38.6
Moisture(%) = 19.3
Void Ratio =0.511
Sample Wt.(gm) = 834.5
Sa.+ Wt.(air) = 880.7
SA.+ PA. Wt(Water) = 422.0
Density(pcf) =107.3
Saturation(%) = 98.05

Moisture Determination
Dry Wt.+Tare(gm)= 304.90
Tare Wt(gm) = 106.40

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 59.10
Tare Wt(gm) = 37.70
Dry Wt.+Tare(gm)= 58.70
Moisture(%) = 1.90

Liquid Limit
Blows = 27.00
Wet Wt.(gm) = 19.60
Dry Wt.(gm) = 15.97
Tare Wt.(gm) = 4.10
Liquid Limit(%) = 30.87
Plasticity Index= 9.52

Plastic Limit
Wet Wt.(gm) = 17.72
Dry Wt.(gm) = 15.31
Tare Wt.(gm) = 4.02
Plastic Limit(%)= 21.35

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 198.5

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.1	99.8	0.8500
NO.40	0.3	99.4	0.4250
NO.50	0.8	98.4	0.3000
NO.100	3.6	92.7	0.1500
NO.200	9.0	81.7	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.07

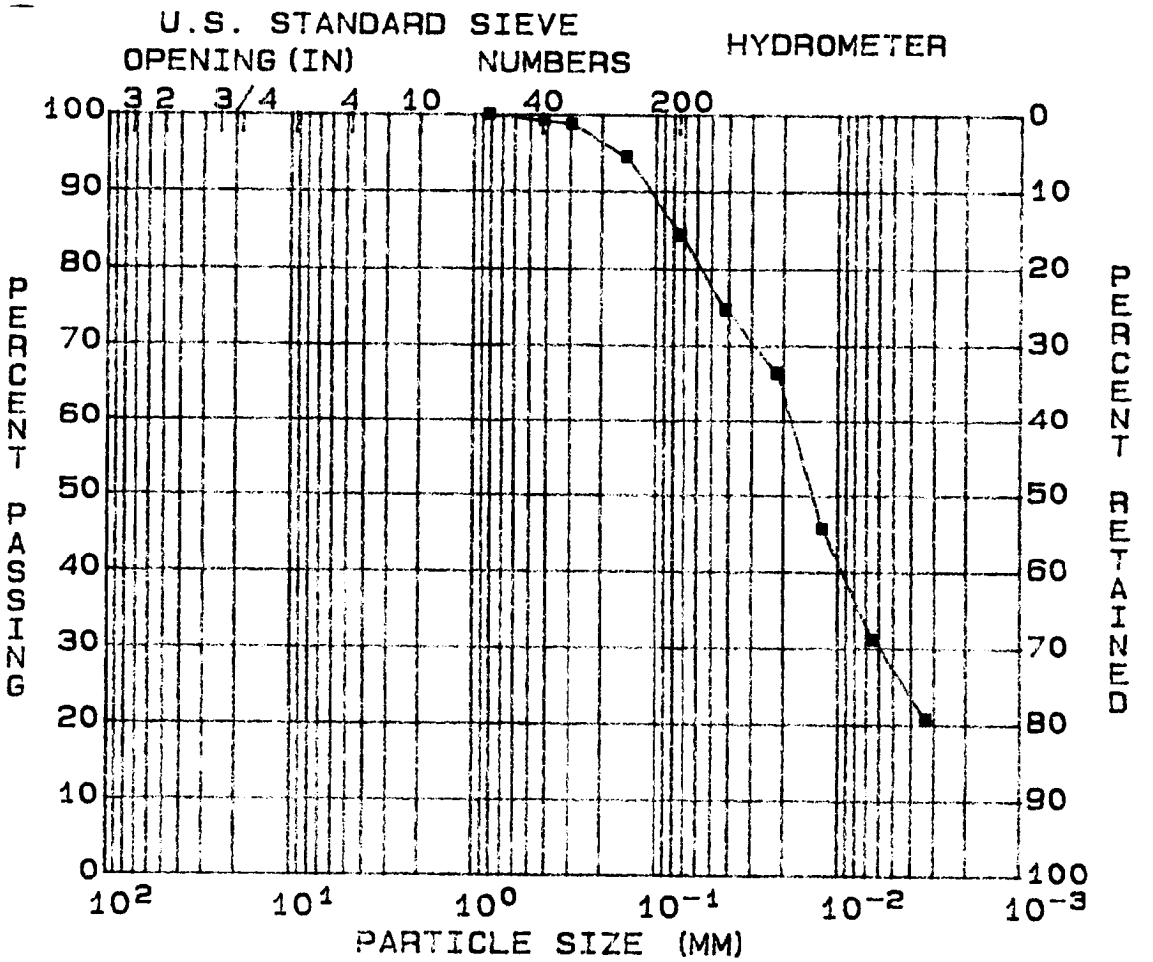
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	41.0	6.0	72.2	0.0421
4 min.	20.8	35.5	6.0	60.9	0.0220
15 min.	20.8	29.5	6.0	48.5	0.0119
1 hour	20.8	24.0	6.0	37.1	0.0062
4 hours	20.8	20.0	6.0	28.9	0.0032

Soil Symbol= CL (Inorganic clay of low plasticity)
Gravel(%)= 0 Sand(%)=18 Silt(%)= 47 Clay(%)= 35

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 5

BORING: US-1
EL. : 22'-24'
SAMPLE: 2
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 15	D30 (MM)	= --
SILT (%)	= 58	D60 (MM)	= --
CLAY (%)	= 27	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%)	= 27	DENSITY (pcf)	= 94.2
MOISTURE (%)	= 28.8	P.I. (%)	= 7	SATURATION (%)	= 100.00
SP. GR.	= 2.53			VOID RATIO	= 0.679

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 22'-24'
Sample: 2
Part : 5

FILE : 21
TESTED BY : REG
Computed By: MHD
Checked By : TAL
Report Date: 09-29-94

Specific Gravity = 2.534
Flask No. = 7.00
Soil Wt.(gm) = 50.00
Chunk Density
Wet Wt.+Tare(gm)= 183.7
Dry Wt.+Tare(gm)= 151.3
Tare Wt(gm) = 38.7
Moisture(%) = 28.8
Void Ratio =0.679

Temp.(deg.c.) = 22.20
Total Wt.(gm) =708.56

Sample Wt.(gm) = 965.9
Sa.+ Wt.(air) =1013.7
SA.+ PA. Wt(Water) = 463.0
Density(pcf) = 94.2
Saturation(%) =100.00

Moisture Determination
Dry Wt.+Tare(gm)= 350.10
Tare Wt(gm) = 98.30

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 68.00
Tare Wt(gm) = 37.30
Dry Wt.+Tare(gm)= 67.60
Moisture(%) = 1.32

Liquid Limit
Blows = 26.00
Wet Wt.(gm) = 17.60
Dry Wt.(gm) = 14.73
Tare Wt.(gm) = 3.93
Liquid Limit(%) = 26.70
Plasticity Index= 6.87

Plastic Limit
Wet Wt.(gm) = 21.06
Dry Wt.(gm) = 18.20
Tare Wt.(gm) = 3.78

Plastic Limit(%)= 19.83

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 251.8

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.0	100.0	0.8500
NO.40	0.1	99.8	0.4250
NO.50	0.4	99.2	0.3000
NO.100	2.5	94.9	0.1500
NO.200	7.5	84.8	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.35

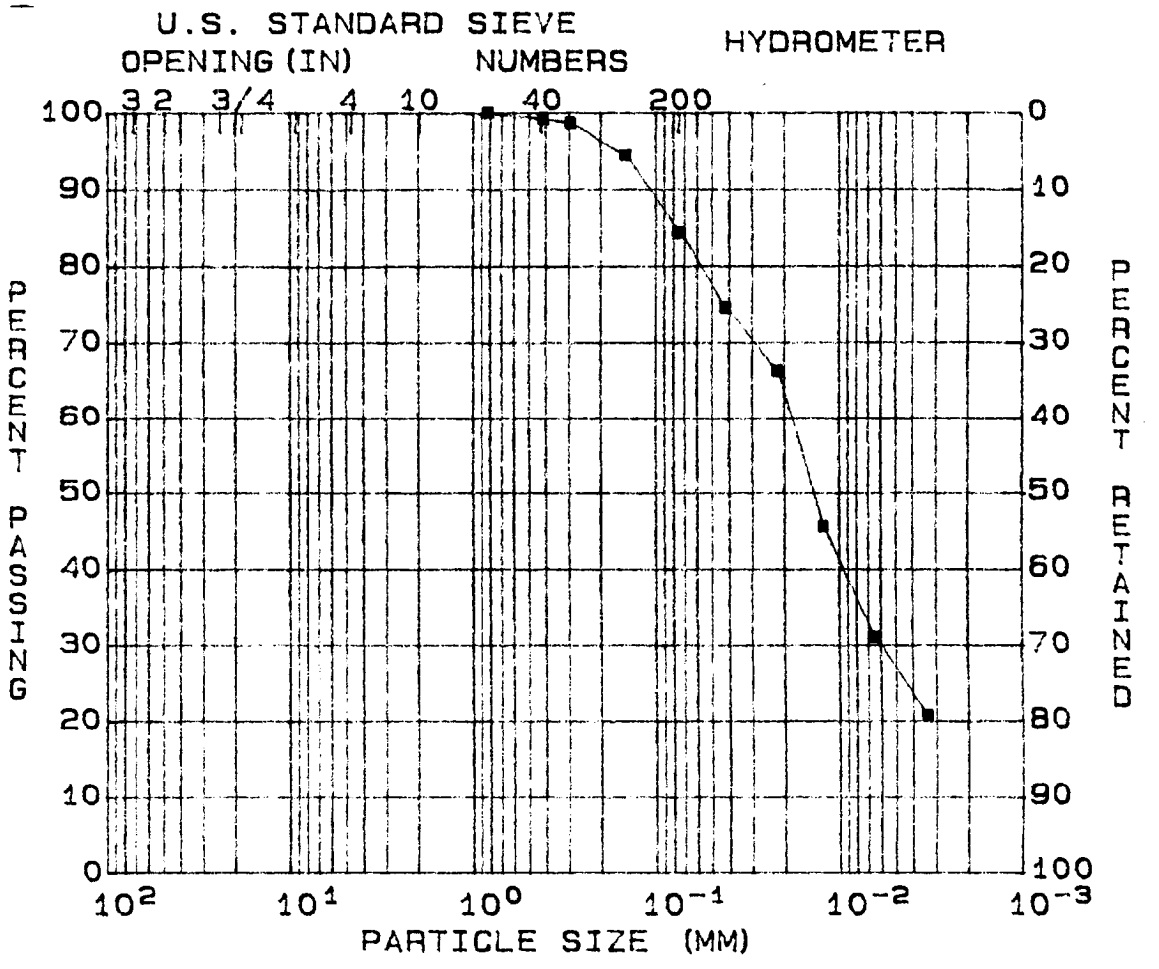
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	42.0	6.0	75.0	0.0426
4 min.	20.8	38.0	6.0	66.7	0.0220
15 min.	20.8	28.0	6.0	45.9	0.0123
1 hour	20.8	21.0	6.0	31.3	0.0064
4 hours	20.8	16.0	6.0	20.8	0.0033

Soil Symbol= CL (Inorganic clay of low plasticity)
Gravel(%)= 0 Sand(%)=15 Silt(%)= 58 Clay(%)= 27

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 5

BORING: US-1
EL. : 22'-24'
SAMPLE: 2
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 15	D30 (MM)	= --
SILT (%)	= 58	D60 (MM)	= --
CLAY (%)	= 27	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%)	= 27	DENSITY (pcf)	= 94.2
MOISTURE (%)	= 28.8	P.I. (%)	= 7	SATURATION (%)	= 100.00
SP. GR.	= 2.53			VOID RATIO	= 0.679

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 22'-24'
Sample: 2
Part : 5

FILE : 22
TESTED BY : REG
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.534
Flask No. = 7.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.20
Total Wt.(gm) =708.56

Chunk Density
Wet Wt.+Tare(gm)= 183.7
Dry Wt.+Tare(gm)= 151.3
Tare Wt(gm) = 38.7
Moisture(%) = 28.8
Void Ratio =0.679
Sample Wt.(gm) = 965.9
Sa.+ Wt.(air) =1013.7
SA.+ PA. Wt(Water) = 463.0
Density(pcf) = 94.2
Saturation(%) =100.00

Moisture Determination
Dry Wt.+Tare(gm)= 350.10
Tare Wt(gm) = 98.30

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 68.00
Tare Wt(gm) = 37.30
Dry Wt.+Tare(gm)= 67.60
Moisture(%) = 1.32

Liquid Limit
Blows = 26.00
Wet Wt.(gm) = 22.90
Dry Wt.(gm) = 18.93
Tare Wt.(gm) = 4.07
Liquid Limit(%) = 26.84
Plasticity Index= 7.01

Plastic Limit
Wet Wt.(gm) = 21.06
Dry Wt.(gm) = 18.20
Tare Wt.(gm) = 3.78
Plastic Limit(%)= 19.83

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 251.8

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.0	100.0	0.8500
NO.40	0.1	99.8	0.4250
NO.50	0.4	99.2	0.3000
NO.100	2.5	94.9	0.1500
NO.200	7.5	84.8	0.0750

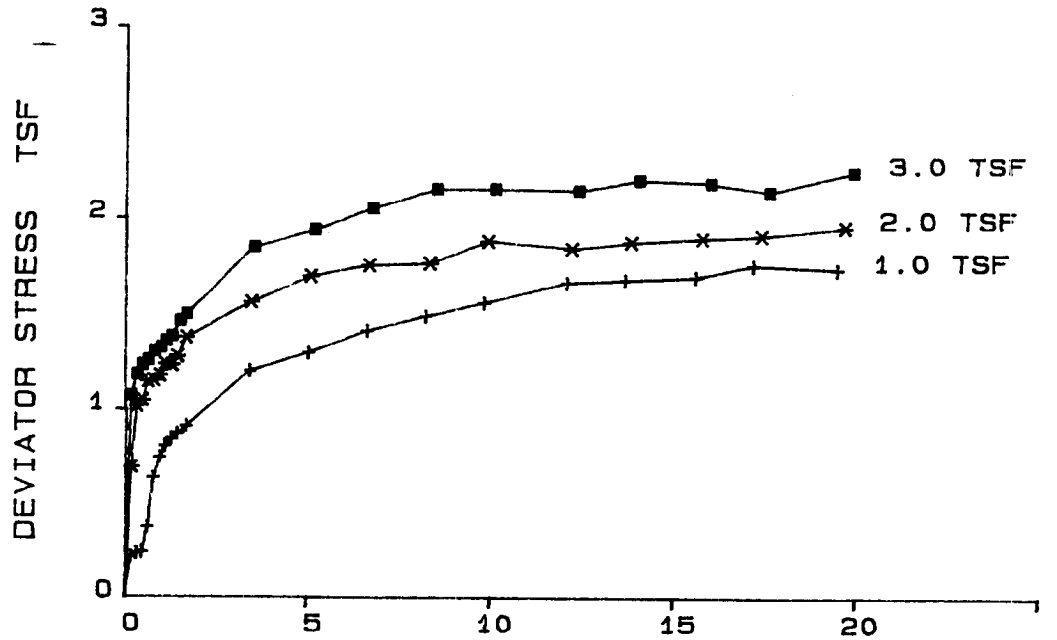
Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.35

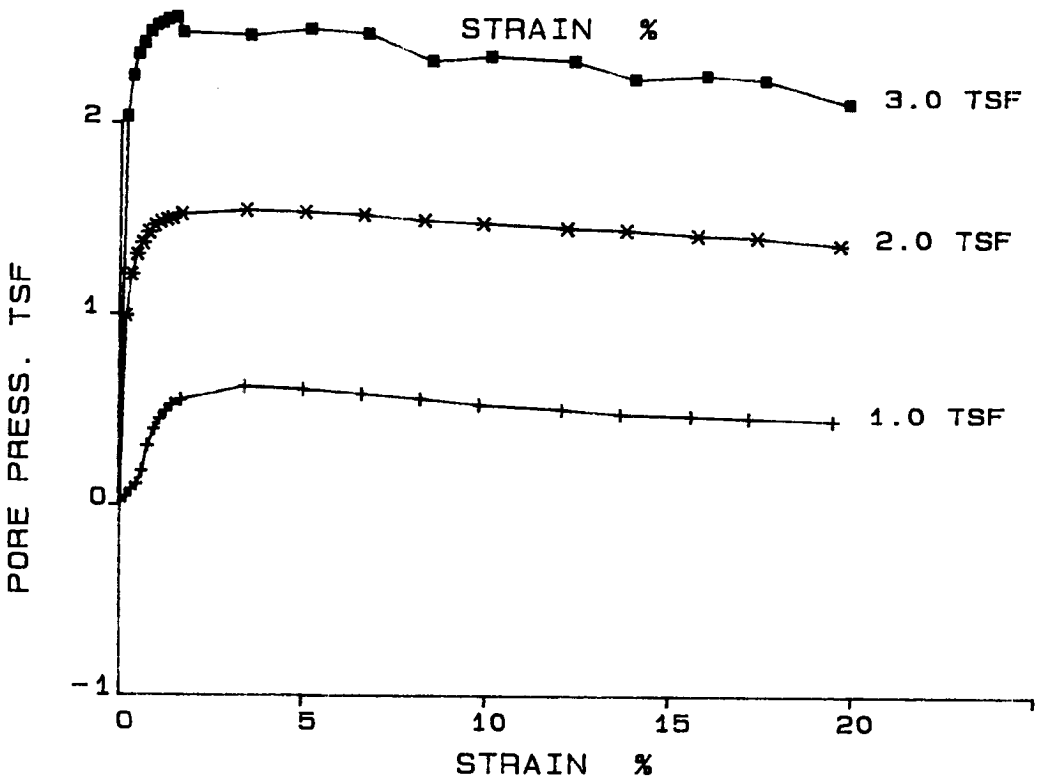
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	42.0	6.0	75.0	0.0426
4 min.	20.8	38.0	6.0	66.7	0.0220
15 min.	20.8	28.0	6.0	45.9	0.0123
1 hour	20.8	21.0	6.0	31.3	0.0064
4 hours	20.8	16.0	6.0	20.8	0.0033

Soil Symbol= CL (Inorganic clay of low plasticity)
Gravel(%)= 0 Sand(%)=15 Silt(%)= 58 Clay(%)= 27

SINGLETON LABORATORIES
CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (R) TEST

PROJECT:	KINGSTON FP	EL.	: 22.0-24.0'
FEATURE:	DREDGE CELLS	SAMPLE	: 2
STATION:		PART	: 3
RANGE :		SOIL SYM:	
BORING :	US-1	DATE	: 09-26-94



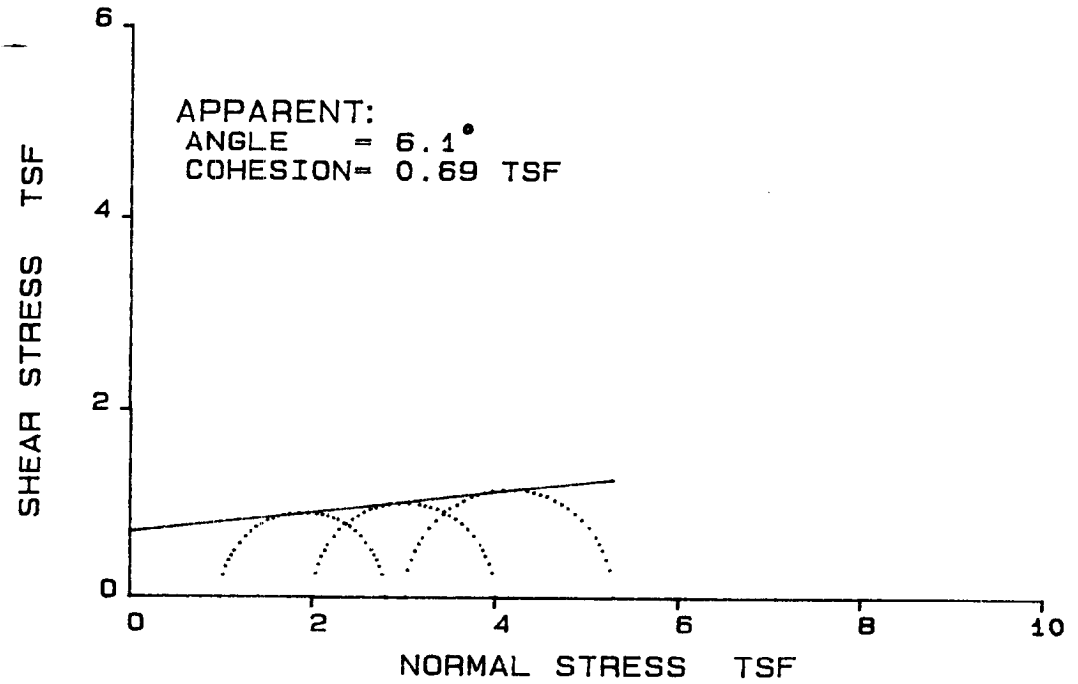


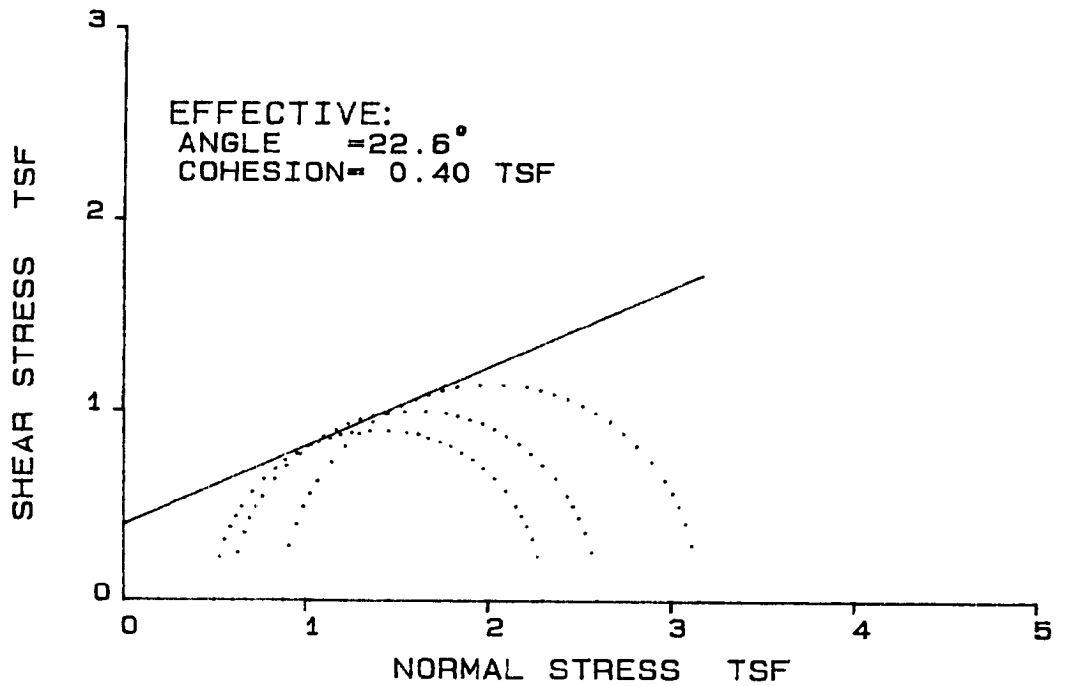
REMARKS:

SINGLETON LABORATORIES

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (R) TEST

PROJECT:	KINGSTON FP	EL.	: 22.0-24.0'
FEATURE:	DREDGE CELLS	SAMPLE	: 2
STATION:		PART	: 3
RANGE :		SOIL SYM:	
BORING :	US-1	DATE	: 09-26-94





REMARKS:

Singleton Laboratories
CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (R) TEST

Project: KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 22.0-24.0'
Sample: 2
Part : 3

File : 10
Tested By : TAL
Computed By: MHD
Checked By : GPB
Report Date: 09-26-94

Soil Symbol=
Sp. Gr. = 2.6

L.L.(%)=
D10(mm)=

P.I.(%) =

Specimen Number	1	2	3	4
Initial:				
Moisture Content(%)	30.4	29.9	29.3	0.0
Dry Density(pcf)	88.6	89.1	90.7	0.0
Void Ratio	0.832	0.821	0.789	0.000
Saturation(%)	95.0	94.6	96.6	0.0
Before Shearing:				
Moisture(%) (after satur.)	32.0	31.6	30.4	0.0
Saturation(%)	100.0	100.0	100.0	0.0
Moisture(%) (after cons.)	30.0	27.9	24.6	0.0
Void Ratio (after cons.)	0.780	0.724	0.639	0.000
Final Moisture Content(%)	28.4	29.1	26.0	0.0
Minor Principal Stress(tsf)	1.01(1.01)	2.02(2.02)	3.02(3.02)	0.00(0.00)
Major Principal Stress(tsf)	2.81(2.45)	4.02(3.80)	5.31(5.10)	0.00(0.00)
Eff. Minor Prin Stress(tsf)	0.50(0.40)	0.60(0.47)	0.88(0.53)	0.00(0.00)
Eff. Major Prin Stress(tsf)	2.30(1.84)	2.60(2.25)	3.16(2.61)	0.00(0.00)
Time to Failure(min)	100	110	110	0
Rate of Strain(%/min)	0.17	0.18	0.18	0.00
Specimen Height(in.)	3.11	3.11	3.11	0.00
Specimen Dia (in.)	1.41	1.41	1.41	0.00

Shear Strength	Max Deviator Stress Deg	Max Deviator Stress c(tsf)	Max Eff Stress Ratio Deg	Max Eff Stress Ratio c(tsf)
Apparent	6.1	0.69	7.8	0.49
Effective	22.6	0.40	90.0	0.00

NOTE: Figures in parenthesis are based on the failure criteria of Maximum Effective Principal Stress Ratio.

Remark:

Singleton Laboratories

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (R) TEST

Project: KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 22.0-24.0'
Sample: 2
Part : 3

File : 6
Tested By : TAL
Computed By: MHD
Checked By : GPB
Report Date: 09-26-94

Moisture Content	Trimming	Initial	Final
Wet Wt. and Tare(gm)=	171.4	146.7	184.0
Dry Wt. and Tare(gm)=	140.8	112.5	152.1
Wt. of Tare(gm) =	39.5	0.0	39.6
Moisture(%) =	30.2	30.4	28.4

Test Conditions and Constants:

Proving Ring No. = 2212
Proving Ring Constant:
Slope Const. = 1
Intercept = 0
Confining Pres.(psi) = 14
Initial Pore Pre(psi)= 100

Tube No. = 1
Sample Volume (cc) = 79.281
Sample Height(in.) = 3.113
Specific Gravity = 2.6
Consolidation(in.) = .03
Initial P.R. Rdg = 93

Time (Min)	Deflection (ins.)	Pro.Ring Reading	Pore Pres. (psi)	Strain (%)	±1 - ±3 (tsf)	Pore Press. (tsf)	±1 / ±3 (TSF)
1	0.006	97.6	100.6	0.19	0.22	0.04	1.22
2	0.011	98.1	101.2	0.36	0.24	0.09	1.26
3	0.016	98.3	101.6	0.52	0.25	0.12	1.28
4	0.021	101.1	102.6	0.68	0.38	0.19	1.46
5	0.026	106.8	104.5	0.84	0.65	0.32	1.94
6	0.032	109.3	105.7	1.04	0.76	0.41	2.27
7	0.037	110.7	106.5	1.20	0.83	0.47	2.53
8	0.043	111.6	107.1	1.39	0.87	0.51	2.74
9	0.048	112.2	107.6	1.56	0.89	0.55	2.94
10	0.056	113.2	108.0	1.82	0.94	0.58	3.17
20	0.110	120.0	109.0	3.57	1.23	0.65	4.42
30	0.160	122.6	108.8	5.19	1.33	0.63	4.54
40	0.210	125.8	108.5	6.81	1.44	0.61	4.65
50	0.260	128.2	108.2	8.43	1.52	0.59	4.65
60	0.310	130.6	107.8	10.06	1.60	0.56	4.58
70	0.380	134.2	107.5	12.33	1.71	0.54	4.65
80	0.430	135.4	107.2	13.95	1.72	0.52	4.52
90	0.490	136.8	107.1	15.89	1.74	0.51	4.50
100	0.539	139.2	107.0	17.48	1.80	0.50	4.57
110	0.610	140.1	106.8	19.79	1.78	0.49	4.44

Initial:
Moisture(%) = 30.4
Density(pcf)= 88.6
Void Ratio =0.832
Saturation(%)= 95.0

After Saturation:
Moisture(%) = 32.0
Void Ratio =0.780

Minor Prin. Stress(tsf) =1.01
Major Prin. Stress(tsf) = 2.81(2.45)
Eff. Minor Prin. Stress(tsf)=0.50(0.40)
Eff. Major Prin. Stress(tsf)= 2.30(1.84)

NOTE: Figures in parenthesis are based on the failure criteria of Maximum Effective Principal Stress Ratio.

Singleton Laboratories

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (R) TEST

Project: KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 22.0-24.0'
Sample: 2
Part : 3

File : 7
Tested By : TAL
Computed By: MHD
Checked By : GPB
Report Date: 09-26-94

Moisture Content	Trimming	Initial	Final
Wet Wt. and Tare(gm)=	156.8	147.0	185.1
Dry Wt. and Tare(gm)=	129.1	113.2	152.2
Wt. of Tare(gm) =	37.2	0.0	39.0
Moisture(%) =	30.1	29.9	29.1

Test Conditions and Constants:

Proving Ring No. = 2515
Proving Ring Constant:
Slope Const. = 1
Intercept = 0
Confining Pres.(psi) = 28
Initial Pore Pre(psi)= 100

Tube No. = 1
Sample Volume (cc) = 79.281
Sample Height(in.) = 3.113
Specific Gravity = 2.6
Consolidation(in.) = .056
Initial P.R. Rdg = 102

Time (Min)	Deflection (ins.)	Pro.Ring Reading	Pore Pres. (psi)	Strain (%)	±1 - ±3 (tsf)	Pore Press. (tsf)	±1 / ±3 (TSF)
1	0.006	116.5	113.8	0.20	0.70	0.99	1.68
2	0.011	123.4	116.8	0.36	1.02	1.21	2.27
3	0.016	124.1	118.3	0.52	1.06	1.32	2.51
4	0.021	126.3	119.2	0.69	1.16	1.38	2.83
5	0.026	126.5	120.0	0.85	1.17	1.44	3.03
6	0.032	127.1	120.5	1.05	1.19	1.48	3.21
7	0.037	128.5	120.8	1.21	1.26	1.50	3.43
8	0.043	128.5	121.0	1.41	1.26	1.51	3.49
9	0.048	129.6	121.2	1.57	1.31	1.53	3.67
10	0.056	131.8	121.5	1.83	1.41	1.55	4.00
20	0.111	136.4	121.8	3.63	1.59	1.57	4.57
30	0.161	140.0	121.7	5.27	1.73	1.56	4.81
40	0.210	141.9	121.5	6.87	1.79	1.55	4.81
50	0.261	142.9	121.1	8.54	1.80	1.52	4.62
60	0.310	146.4	120.9	10.14	1.92	1.50	4.75
70	0.380	146.7	120.6	12.43	1.88	1.48	4.53
80	0.430	148.4	120.5	14.07	1.92	1.48	4.55
90	0.490	150.0	120.2	16.03	1.94	1.45	4.45
100	0.540	151.4	120.1	17.66	1.95	1.45	4.44
110	0.610	154.0	119.6	19.95	2.00	1.41	4.31

Initial:
Moisture(%) = 29.9
Density(pcf)= 89.1
Void Ratio =0.821
Saturation(%)= 94.6

After Saturation:
Moisture(%) = 31.6
Void Ratio =0.724

Minor Prin. Stress(tsf) =2.02
Major Prin. Stress(tsf) = 4.02(3.80)
Eff. Minor Prin. Stress(tsf)=0.60(0.47)
Eff. Major Prin. Stress(tsf)= 2.60(2.25)

NOTE: Figures in parenthesis are based on the failure criteria of Maximum Effective Principal Stress Ratio.

Singleton Laboratories

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (R) TEST

Project: KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 22.0-24.0'
Sample: 2
Part : 3

File : 6
Tested By : TAL
Computed By: MHD
Checked By : GPB
Report Date: 09-26-94

Moisture Content	Trimming	Initial	Final
Wet Wt. and Tare(gm)=	145.7	149.0	184.3
Dry Wt. and Tare(gm)=	121.8	115.2	154.3
Wt. of Tare(gm) =	40.5	0.0	39.1
Moisture(%) =	29.4	29.3	26.0

Test Conditions and Constants:

Proving Ring No. = 2288
Proving Ring Constant:
Slope Const. = 1
Intercept = 0
Confining Pres.(psi) = 42
Initial Pore Pre(psi)= 100

Tube No. = 1
Sample Volume (cc) = 79.281
Sample Height(in.) = 3.113
Specific Gravity = 2.6
Consolidation(in.) = 9.000001E-02
Initial P.R. Rdg = 113

Time (Min)	Deflection (ins.)	Pro.Ring Reading	Pore Pres. (psi)	Strain (%)	±1 - ±3 (tsf)	Pore Press. (tsf)	±1 / ±3 (TSF)
1	0.006	135.0	128.2	0.20	1.08	2.03	2.09
2	0.011	137.3	131.2	0.36	1.19	2.25	2.53
3	0.016	138.4	132.8	0.53	1.24	2.36	2.87
4	0.021	139.0	133.7	0.69	1.27	2.43	3.12
5	0.027	140.0	134.6	0.89	1.31	2.49	3.47
6	0.033	140.5	135.1	1.09	1.34	2.53	3.69
7	0.038	141.3	135.3	1.26	1.37	2.54	3.85
8	0.043	141.9	135.6	1.42	1.40	2.56	4.04
9	0.050	143.7	135.8	1.65	1.48	2.58	4.32
10	0.056	144.5	134.7	1.85	1.52	2.50	3.89
20	0.112	152.6	134.5	3.70	1.87	2.48	4.47
30	0.162	155.3	135.0	5.36	1.97	2.52	4.90
40	0.210	158.5	134.7	6.95	2.08	2.50	4.96
50	0.263	161.7	132.7	8.70	2.18	2.35	4.26
60	0.312	162.6	133.1	10.32	2.19	2.38	4.41
70	0.381	163.7	132.8	12.60	2.18	2.36	4.29
80	0.431	166.0	131.5	14.26	2.23	2.27	3.95
90	0.491	166.9	131.8	16.24	2.22	2.29	4.02
100	0.540	166.9	131.5	17.86	2.17	2.27	3.88
110	0.610	171.2	129.8	20.18	2.28	2.15	3.60

Initial:
Moisture(%) = 29.3
Density(pcf)= 90.7
Void Ratio =0.789
Saturation(%)= 96.6

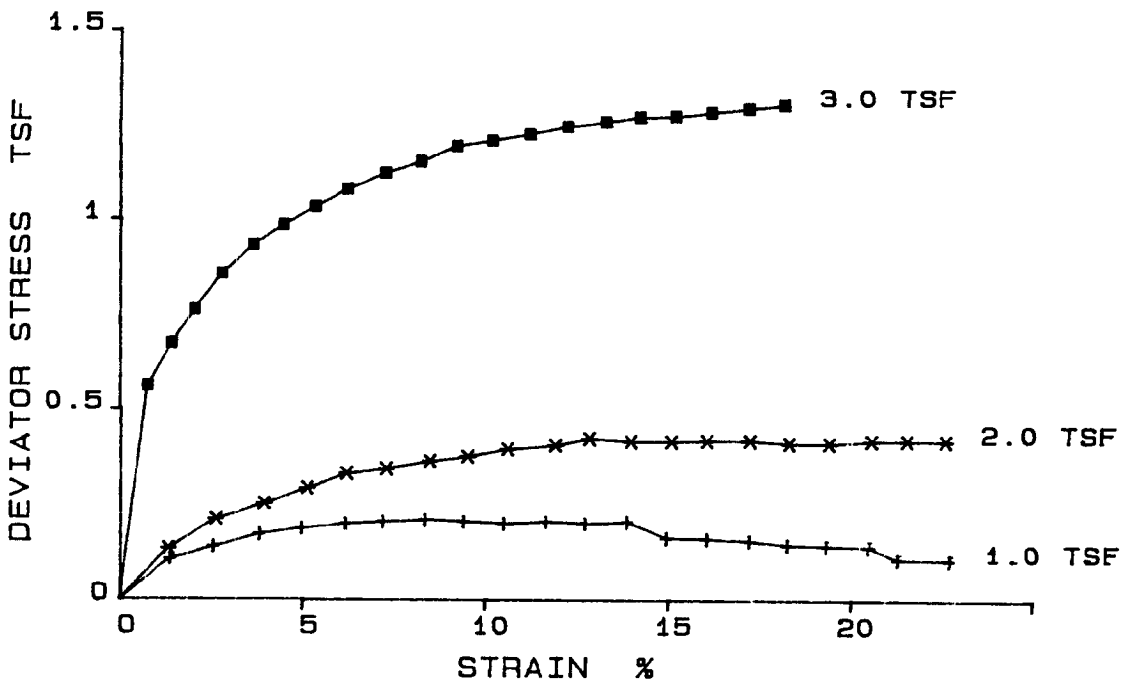
After Saturation:
Moisture(%) = 30.4
Void Ratio =0.639

Minor Prin. Stress(tsf) =3.02
Major Prin. Stress(tsf) = 5.31(5.10)
Eff. Minor Prin. Stress(tsf)=0.88(0.53)
Eff. Major Prin. Stress(tsf)= 3.16(2.61)

NOTE: Figures in parenthesis are based on the failure criteria of Maximum Effective Principal Stress Ratio.

SINGLETON LABORATORIES
UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (Q) TEST

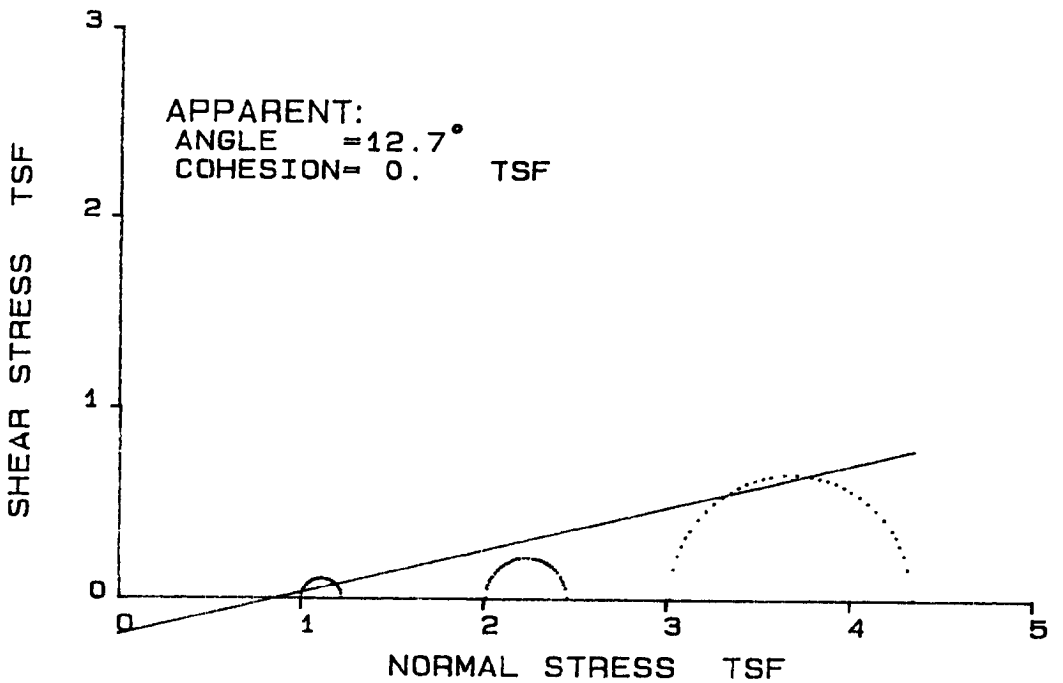
PROJECT:	KINGSTON FP	EL.	: 22.0-24.0'
FEATURE:	DREDGE CELLS	SAMPLE	: 2
STATION:		PART	: 1
RANGE :		SOIL SYM:	
BORING :	US-1	DATE	: 09-26-94



REMARKS:

SINGLETON LABORATORIES
UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (Q) TEST

PROJECT:	KINGSTON FP	EL.	: 22.0-24.0'
FEATURE:	DREDGE CELLS	SAMPLE	: 2
STATION:		PART	: 1
RANGE :		SOIL SYM:	
BORING :	US-1	DATE	: 09-26-94



REMARKS:

Singleton Laboratories
UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION(Q) TEST

Project: KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 22.0-24.0'
Sample: 2
Part : 1

File : 9
Tested By : TAL
Computed By: MHD
Checked By : GPB
Report Date: 09-26-94

Soil Symbol=
Sp. Gr. = 2.6

L.L.(%)=
D10(mm)=

P.I.(%) =

Specimen Number	1	2	3	4
Initial:				
Moisture Content(%)	27.4	23.4	30.4	0.0
Dry Density(pcf)	94.5	99.5	89.1	0.0
Void Ratio	0.718	0.632	0.821	0.000
Saturation(%)	99.3	96.1	96.2	0.0
Before Shearing:				
Moisture(%) (after satur.)	--	--	--	--
Saturation(%)	--	--	--	--
Moisture(%) (after cons.)	--	--	--	--
Void Ratio (after cons.)	--	--	--	--
Final Moisture Content(%)	26.5	22.6	30.1	0.0
Minor Principal Stress(tsf)	1.01	2.02	3.02	0.00
Major Principal Stress(tsf)	1.23	2.46	4.35	0.00
Eff. Minor Prin Stress (tsf)	--	--	--	--
Eff. Major Prin Stress (tsf)	--	--	--	--
Time to Failure(min)	12	20	20	0
Rate of Strain(%/min)	1.17	1.15	0.92	0.00
Specimen Height(in.)	3.11	3.11	3.11	0.00
Specimen Dia (in.)	1.41	1.41	1.41	0.00

Shear Strength	Max Deviator Stress Deg	c(tsf)	Max Eff Deg	Stress Ratio c(tsf)
Apparent	12.7	0		
Effective	--	--		

NOTE: Figures in parenthesis are based on the failure criteria of Maximum Effective Principal Stress Ratio.

Remark:

Singleton Laboratories
UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION(Q) TEST

Project: KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1
El. : 22.0-24.0'
Sample: 2
Part : 1
File : 8
Tested By : TAL
Computed By: MHD
Checked By : GPB
Report Date: 09-26-94

Moisture Content	Trimming	Initial	Final
Wet Wt. and Tare(gm)=	155.0	152.9	188.8
Dry Wt. and Tare(gm)=	131.2	120.0	157.0
Wt. of Tare(gm) =	39.5	0.0	37.0
Moisture(%) =	26.0	27.4	26.5

Test Conditions and Constants:

Proving Ring No. = 2411
Proving Ring Constant:
Slope Const. = 1
Intercept = 0
Confining Pres.(psi) = 14
Initial Pore Pre(psi)= 0
Tube No. = 1
Sample Volume (cc) = 79.281
Sample Height(in.) = 3.113
Specific Gravity = 2.6
Consolidation(in.) = 0
Initial P.R. Rdg = 13.4

Time (Min)	Deflection (ins.)	Pro.Ring Reading	Strain (%)	±1 - ±3 (tsf)
1	0.043	15.8	1.38	0.11
2	0.080	16.6	2.57	0.14
3	0.120	17.4	3.85	0.18
4	0.156	17.8	5.01	0.19
5	0.194	18.2	6.23	0.21
6	0.226	18.4	7.26	0.21
7	0.262	18.6	8.42	0.22
8	0.295	18.6	9.48	0.22
9	0.330	18.6	10.60	0.22
10	0.366	18.8	11.76	0.22
11	0.400	18.8	12.85	0.22
12	0.436	19.0	14.01	0.22
13	0.470	18.0	15.10	0.18
14	0.505	18.0	16.22	0.18
15	0.542	18.0	17.41	0.18
16	0.574	17.8	18.44	0.17
17	0.608	17.8	19.53	0.16
18	0.644	17.8	20.69	0.16
19	0.669	17.0	21.49	0.13
20	0.714	17.0	22.94	0.13

Initial:
Moisture(%) = 27.4
Density(pcf)= 94.5
Void Ratio =0.718
Saturation(%)= 99.3

Minor Prin. Stress(tsf) =1.01
Major Prin. Stress(tsf) = 1.23

NOTE: Figures in parenthesis are based on the failure criteria of Maximum Effective Principal Stress Ratio.

Singleton Laboratories
Unconsolidated Undrained Triaxial Compression (Q) Test

Project: KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 22.0-24.0'
Sample: 2
Part : 1

File : 8
Tested By : TAL
Computed By: MHD
Checked By : GPB
Report Date: 09-26-94

Moisture Content	Trimming	Initial	Final
Wet Wt. and Tare(gm)=	160.4	155.8	194.0
Dry Wt. and Tare(gm)=	136.5	126.3	165.4
Wt. of Tare(gm) =	38.8	0.0	39.1
Moisture(%) =	24.5	23.4	22.6

Test Conditions and Constants:

Proving Ring No. = 2515
Proving Ring Constant:
Slope Const. = 1
Intercept = 0
Confining Pres.(psi) = 28
Initial Pore Pre(psi)= 0

Tube No. = 1
Sample Volume (cc) = 79.281
Sample Height(in.) = 3.113
Specific Gravity = 2.6
Consolidation(in.) = 0
Initial P.R. Rdg = 22

Time (Min)	Deflection (ins.)	Pro.Ring Reading	Strain (%)	±1 - ±3 (tsf)
1	0.042	25.0	1.35	0.14
2	0.083	26.8	2.67	0.22
3	0.125	27.8	4.02	0.26
4	0.162	28.8	5.20	0.30
5	0.196	29.8	6.30	0.34
6	0.230	30.2	7.39	0.35
7	0.268	30.8	8.61	0.37
8	0.300	31.2	9.64	0.39
9	0.335	31.8	10.76	0.41
10	0.376	32.2	12.08	0.42
11	0.405	32.8	13.01	0.44
12	0.441	32.8	14.17	0.43
13	0.476	33.0	15.29	0.43
14	0.507	33.2	16.29	0.43
15	0.544	33.4	17.48	0.44
16	0.578	33.4	18.57	0.43
17	0.613	33.6	19.69	0.43
18	0.649	34.0	20.85	0.44
19	0.680	34.2	21.84	0.44
20	0.714	34.4	22.94	0.44

Initial:

Moisture(%) = 23.4
Density(pcf)= 99.5

Void Ratio =0.632
Saturation(%)= 96.1

Minor Prin. Stress(tsf) =2.02

Major Prin. Stress(tsf) = 2.46

NOTE: Figures in parenthesis are based on the failure criteria of Maximum Effective Principal Stress Ratio.

Singleton Laboratories
Unconsolidated Undrained Triaxial Compression (Q) Test

Project: KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-1

El. : 22.0-24.0'
Sample: 2
Part : 1

File : 8
Tested By : TAL
Computed By: MHD
Checked By : GPB
Report Date: 09-26-94

Moisture Content	Trimming	Initial	Final
Wet Wt. and Tare(gm)=	177.5	147.6	186.6
Dry Wt. and Tare(gm)=	144.9	113.2	152.5
Wt. of Tare(gm) =	38.0	0.0	39.3
Moisture(%) =	30.5	30.4	30.1

Test Conditions and Constants:

Proving Ring No. = 2288
Proving Ring Constant:
Slope Const. = 1
Intercept = 0
Confining Pres.(psi) = 42
Initial Pore Pre(psi)= 0

Tube No. = 1
Sample Volume (cc) = 79.281
Sample Height(in.) = 3.113
Specific Gravity = 2.6
Consolidation(in.) = 0
Initial P.R. Rdg = 34

Time (Min)	Deflection (ins.)	Pro.Ring Reading	Strain (%)	±1 - ±3 (tsf)
1	0.024	46.2	0.77	0.56
2	0.045	48.8	1.45	0.68
3	0.065	50.9	2.09	0.77
4	0.089	53.2	2.86	0.86
5	0.116	55.1	3.73	0.94
6	0.142	56.5	4.56	0.99
7	0.170	57.8	5.46	1.04
8	0.198	59.1	6.36	1.09
9	0.230	60.4	7.39	1.13
10	0.261	61.4	8.38	1.16
11	0.292	62.7	9.38	1.20
12	0.323	63.4	10.38	1.22
13	0.355	64.2	11.40	1.24
14	0.387	65.1	12.43	1.26
15	0.420	65.8	13.49	1.27
16	0.449	66.5	14.42	1.29
17	0.480	67.0	15.42	1.29
18	0.511	67.7	16.42	1.30
19	0.543	68.4	17.44	1.32
20	0.574	69.1	18.44	1.33

Initial:
Moisture(%) = 30.4
Density(pcf)= 89.1

Void Ratio =0.821
Saturation(%)= 96.2

Minor Prin. Stress(tsf) =3.02

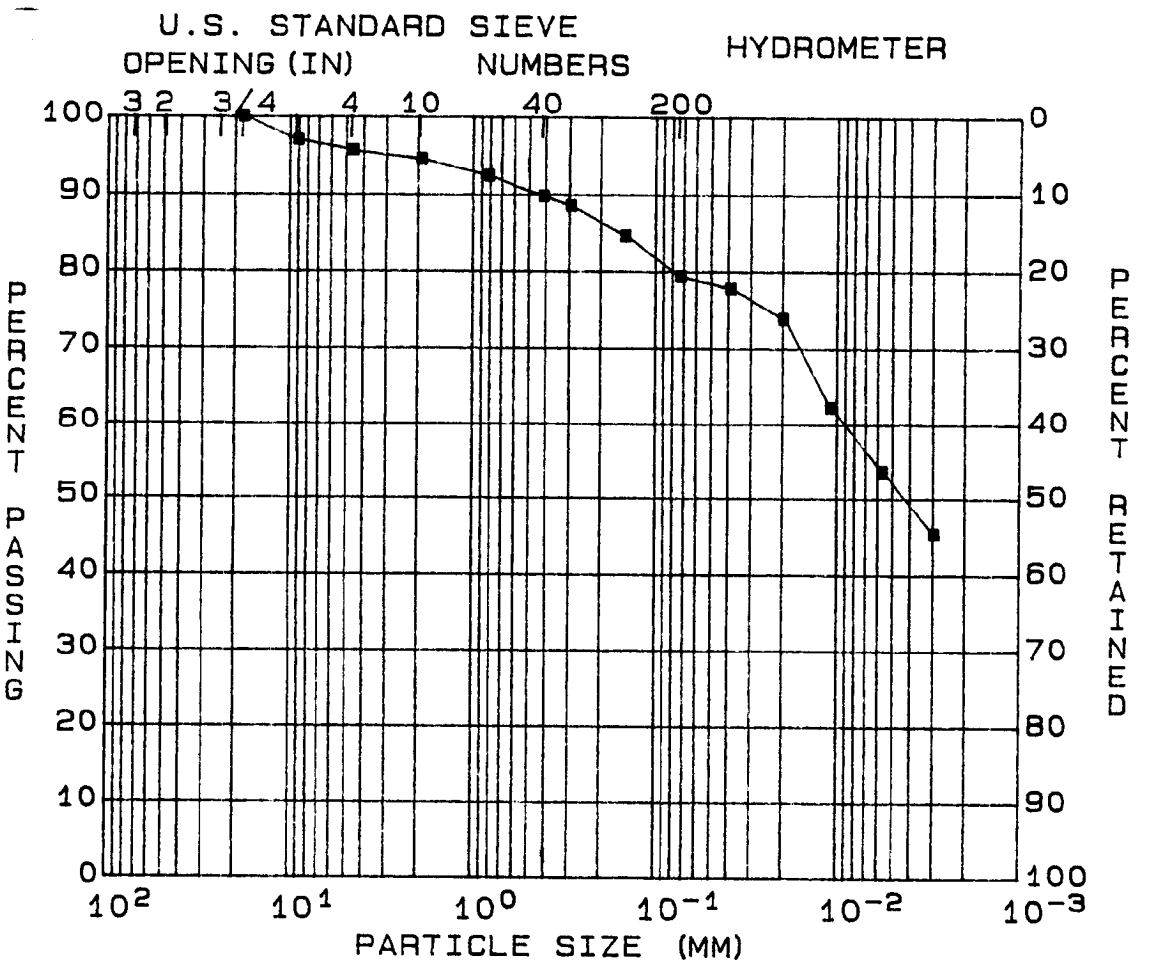
Major Prin. Stress(tsf) = 4.35

NOTE: Figures in parenthesis are based on the failure criteria of Maximum Effective Principal Stress Ratio.

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 5

BORING: US-2
EL. : 13'-15'
SAMPLE: 1
DATE : 09-29-94



GRAVEL (%)	= 4	D10 (MM)	= --
SAND (%)	= 17	D30 (MM)	= --
SILT (%)	= 28	D60 (MM)	= --
CLAY (%)	= 51	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%)	= 43	DENSITY (pcf)	= 72.6
MOISTURE (%)	= 64.2	P.I. (%)	= 20	SATURATION (%)	= 100.00
SP. GR.	= 2.66			VOID RATIO	= 1.288

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-2

El. : 13'-15'
Sample: 1
Part : 5

FILE : 28
TESTED BY : REG
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.661
Flask No. = 9.00
Soil Wt.(gm) = 50.00
Chunk Density
Wet Wt.+Tare(gm)= 200.6
Dry Wt.+Tare(gm)= 137.9
Tare Wt(gm) = 40.2
Moisture(%) = 64.2
Void Ratio =1.288

Temp.(deg.c.) = 22.20
Total Wt.(gm) =707.06

Sample Wt.(gm) = 942.5
Sa.+ Wt.(air) = 990.5
SA.+ PA. Wt(Water) = 443.0
Density(pcf) = 72.6
Saturation(%) =100.00

Moisture Determination
Dry Wt.+Tare(gm)= 508.70
Tare Wt(gm) = 108.10

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 77.80
Tare Wt(gm) = 39.50
Dry Wt.+Tare(gm)= 76.80
Moisture(%) = 2.68

Liquid Limit
Blows = 26.00
Wet Wt.(gm) = 16.15
Dry Wt.(gm) = 12.54
Tare Wt.(gm) = 4.14
Liquid Limit(%) = 43.18
Plasticity Index= 20.15

Plastic Limit
Wet Wt.(gm) = 17.15
Dry Wt.(gm) = 14.70
Tare Wt.(gm) = 4.06

Plastic Limit(%)= 23.03

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 400.6

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	8.2	98.0	9.5300
NO.4	14.1	96.5	4.7500
NO.10	19.0	95.3	2.0000
NO.20	1.1	93.1	0.8500
NO.40	2.5	90.4	0.4250
NO.50	3.2	89.0	0.3000
NO.100	5.2	85.1	0.1500
NO.200	7.9	79.8	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 48.69

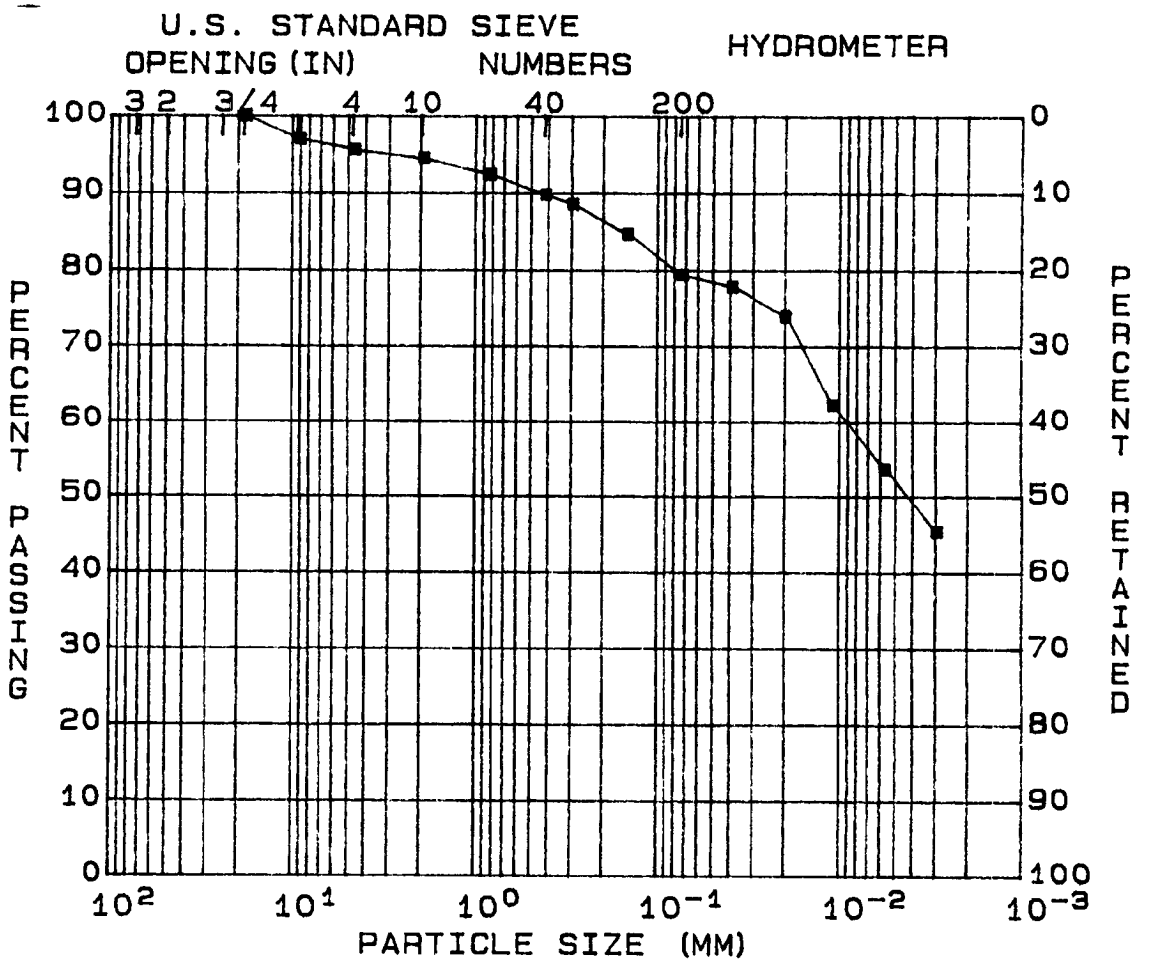
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	46.0	6.0	78.1	0.0394
4 min.	20.8	44.0	6.0	74.2	0.0201
15 min.	20.8	38.0	6.0	62.4	0.0109
1 hour	20.8	33.5	6.0	53.7	0.0057
4 hours	20.8	29.3	6.0	45.5	0.0029

Soil Symbol= CL (Inorganic clay of medium plasticity)
Gravel(%)= 4 Sand(%)=17 Silt(%)= 28 Clay(%)= 51

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 5

BORING: US-2
EL. : 13'-15'
SAMPLE: 1
DATE : 09-29-94



GRAVEL (%)	= 4	D10 (MM)	= --
SAND (%)	= 17	D30 (MM)	= --
SILT (%)	= 28	D60 (MM)	= --
CLAY (%)	= 51	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%)	= 44	DENSITY (pcf)	= 72.6
MOISTURE (%)	= 64.2	P.I. (%)	= 21	SATURATION (%)	= 100.00
SP. GR.	= 2.66			VOID RATIO	= 1.288

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-2

El. : 13'-15'
Sample: 1
Part : 5

FILE : 29
TESTED BY : REG
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.661
Flask No. = 9.00
Soil Wt.(gm) = 50.00
Chunk Density
Wet Wt.+Tare(gm)= 200.6
Dry Wt.+Tare(gm)= 137.9
Tare Wt(gm) = 40.2
Moisture(%) = 64.2
Void Ratio =1.288
Moisture Determination
Dry Wt.+Tare(gm)= 508.70
Hygroscopic Moisture
Wet Wt.+Tare(gm)= 77.80
Tare Wt(gm) = 39.50
Liquid Limit
Blows = 26.00
Wet Wt.(gm) = 16.67
Dry Wt.(gm) = 12.90
Tare Wt.(gm) = 4.23
Liquid Limit(%) = 43.69
Plasticity Index= 20.66

Temp.(deg.c.) = 22.20
Total Wt.(gm) =707.06

Sample Wt.(gm) = 942.5
Sa.+ Wt.(air) = 990.5
SA.+ PA. Wt(Water) = 443.0
Density(pcf) = 72.6
Saturation(%) =100.00

Tare Wt(gm) = 108.10

Dry Wt.+Tare(gm)= 76.80
Moisture(%) = 2.68
Plastic Limit
Wet Wt.(gm) = 17.15
Dry Wt.(gm) = 14.70
Tare Wt.(gm) = 4.06

Plastic Limit(%)= 23.03

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 400.6

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	8.2	98.0	9.5300
NO.4	14.1	96.5	4.7500
NO.10	19.0	95.3	2.0000
NO.20	1.1	93.1	0.8500
NO.40	2.5	90.4	0.4250
NO.50	3.2	89.0	0.3000
NO.100	5.2	85.1	0.1500
NO.200	7.9	79.8	0.0750

Air Dry Weight(gm)= 50.00 Corrected Weight(gm)= 48.69

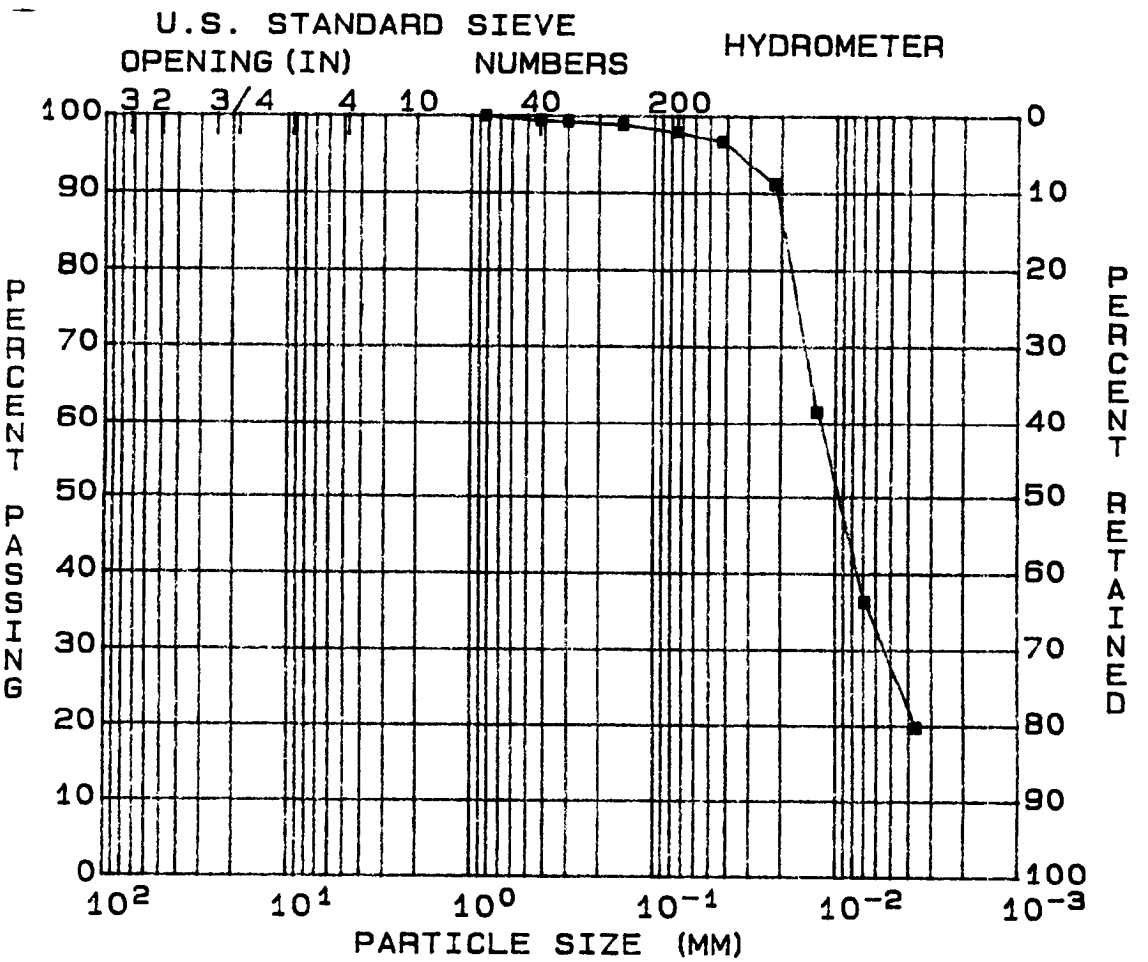
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	46.0	6.0	78.1	0.0394
4 min.	20.8	44.0	6.0	74.2	0.0201
15 min.	20.8	38.0	6.0	62.4	0.0109
1 hour	20.8	33.5	6.0	53.7	0.0057
4 hours	20.8	29.3	6.0	45.5	0.0029

Soil Symbol= CL (Inorganic clay of medium plasticity)
Gravel(%)= 4 Sand(%)=17 Silt(%)= 28 Clay(%)= 51

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 4

BORING: US-3
EL. : 15.0'-17.0'
SAMPLE: 1
DATE : 09-28-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 2	D30 (MM)	= --
SILT (%)	= 70	D60 (MM)	= --
CLAY (%)	= 28	COEF UNIF	= --

SOIL SYMBOL	= ML	L.L. (%)	= NP	DENSITY (pcf)	= 77.9
MOISTURE (%)	= 34.5	P.I. (%)	= NP	SATURATION (%)	= 93.49
SP. GR.	= 2.32			VOID RATIO	= 0.855

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-3

El. : 15.0'-17.0'
Sample: 1
Part : 4

FILE : 93
TESTED BY : REG
Computed By:MHD
Checked By : TA
Report Date:09-28-94

Specific Gravity = 2.315
Flask No. = 10.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.20
Total Wt.(gm) =704.31

Chunk Density
Wet Wt.+Tare(gm)= 206.6
Dry Wt.+Tare(gm)= 163.7
Tare Wt(gm) = 39.4
Moisture(%) = 34.5
Void Ratio =0.855
Sample Wt.(gm) = 842.8
Sa.+ Wt.(air) = 898.7
SA.+ PA. Wt(Water) = 334.0
Density(pcf) = 77.9
Saturation(%) = 93.49

Moisture Determination
Dry Wt.+Tare(gm)= 450.70
Tare Wt(gm) = 96.40

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 100.00
Tare Wt(gm) = 38.30
Dry Wt.+Tare(gm)= 99.70
Moisture(%) = 0.49

Non-Plastic Soil

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 354.3

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.0	100.0	0.8500
NO.40	0.1	99.8	0.4250
NO.50	0.2	99.6	0.3000
NO.100	0.4	99.2	0.1500
NO.200	0.9	98.2	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.76

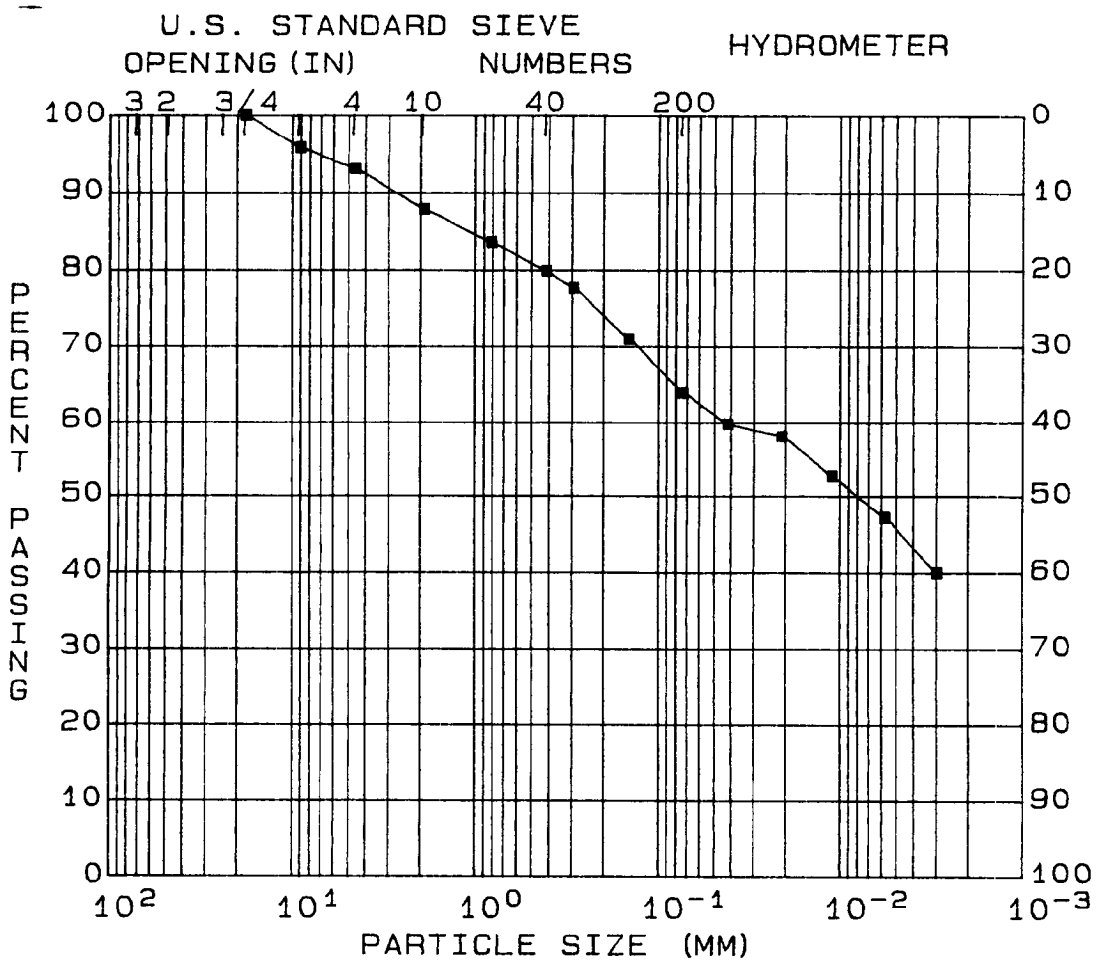
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	50.0	6.0	96.9	0.0426
4 min.	20.8	47.5	6.0	91.4	0.0218
15 min.	20.8	34.0	6.0	61.7	0.0127
1 hour	20.8	22.5	6.0	36.3	0.0069
4 hours	20.8	15.0	6.0	19.8	0.0036

Soil Symbol= ML (Inorganic silt of low plasticity)
Gravel(%)= 0 Sand(%)= 2 Silt(%)= 70 Clay(%)= 28

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 1

BORING: US-3
EL. : 33'-35'
SAMPLE: 2
DATE : 09-29-94



GRAVEL (%)	= 6	D10 (MM)	= --
SAND (%)	= 30	D30 (MM)	= --
SILT (%)	= 18	D60 (MM)	= --
CLAY (%)	= 46	COEF UNIF	= --

SOIL SYMBOL	= CL	L.L. (%)	= 41	DENSITY (pcf)	= 97.8
MOISTURE (%)	= 22.8	P.I. (%)	= 18	SATURATION (%)	= 88.41
SP. GR.	= 2.63			VOID RATIO	= 0.676

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-3

El. : 33'-35'
Sample: 2
Part : 1

FILE : 25
TESTED BY : REG
Computed By:MHD
Checked By : TAC
Report Date:09-29-94

Specific Gravity = 2.627
Flask No. = 13.00
Soil Wt.(gm) = 50.00
Chunk Density
Wet Wt.+Tare(gm)= 138.4
Dry Wt.+Tare(gm)= 120.1
Tare Wt(gm) = 39.7
Moisture(%) = 22.8
Void Ratio =0.676

Temp.(deg.c.) = 22.40
Total Wt.(gm) =704.43

Sample Wt.(gm) =1058.0
Sa.+ Wt.(air) =1115.6
SA.+ PA. Wt(Water) = 501.0
Density(pcf) = 97.8
Saturation(%) = 88.41

Moisture Determination
Dry Wt.+Tare(gm)= 280.10
Hygroscopic Moisture
Wet Wt.+Tare(gm)= 64.10
Tare Wt(gm) = 39.90

Tare Wt(gm) = 70.80

Dry Wt.+Tare(gm)= 63.60
Moisture(%) = 2.11

Liquid Limit
Blows = 27.00
Wet Wt.(gm) = 11.10
Dry Wt.(gm) = 9.00
Tare Wt.(gm) = 3.86
Liquid Limit(%) = 41.24
Plasticity Index= 17.61

Plastic Limit
Wet Wt.(gm) = 20.84
Dry Wt.(gm) = 17.65
Tare Wt.(gm) = 4.15

Plastic Limit(%)= 23.63

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 209.3

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	6.7	96.8	9.5300
NO.4	12.7	93.9	4.7500
NO.10	23.9	88.6	2.0000
NO.20	2.4	84.2	0.8500
NO.40	4.5	80.4	0.4250
NO.50	5.8	78.1	0.3000
NO.100	9.5	71.4	0.1500
NO.200	13.5	64.2	0.0750

Air Dry Weight(gm)= 50.00 Corrected Weight(gm)= 48.97

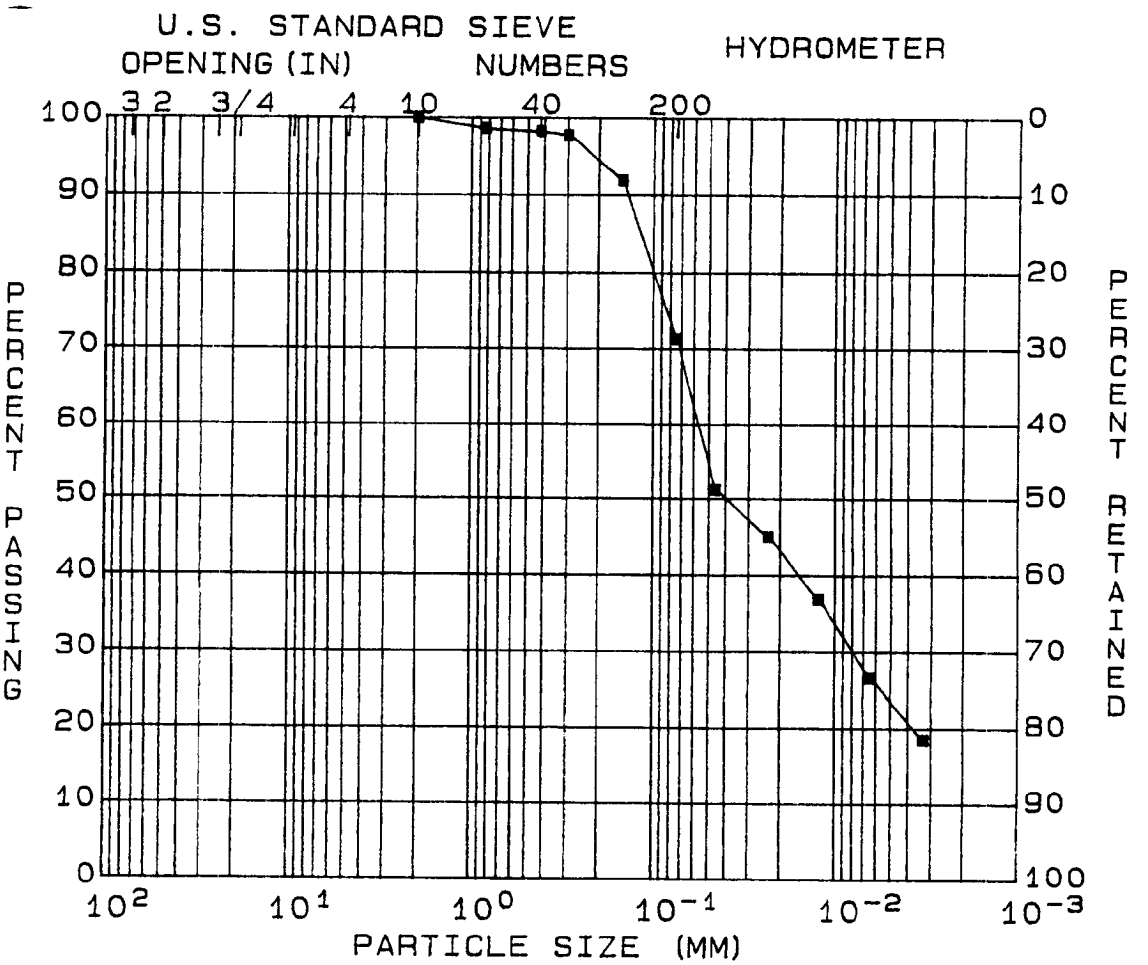
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	39.0	6.0	60.0	0.0424
4 min.	20.8	38.0	6.0	58.2	0.0214
15 min.	20.8	35.0	6.0	52.7	0.0113
1 hour	20.8	32.0	6.0	47.3	0.0058
4 hours	20.8	28.0	6.0	40.0	0.0030

Soil Symbol= CL (Inorganic sandy clay of medium plasticity)
Gravel(%)= 6 Sand(%)=30 Silt(%)= 18 Clay(%)= 46

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 3

BORING: US-4
EL. : 8'-10'
SAMPLE: 1
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 28	D30 (MM)	= --
SILT (%)	= 48	D60 (MM)	= --
CLAY (%)	= 24	COEF UNIF	= --

SOIL SYMBOL	= CL-ML	L.L. (%)	= 23	DENSITY (pcf)	= 103.6
MOISTURE (%)	= 17.8	P.I. (%)	= 6	SATURATION (%)	= 82.07
SP. GR.	= 2.59			VOID RATIO	= 0.561

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-4

El. : 8'-10'
Sample: 1
Part : 3

FILE : 26
TESTED BY : REG
Computed By:MHD
Checked By : TAK
Report Date:09-29-94

Specific Gravity = 2.591
Flask No. = 19.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.20
Total Wt.(gm) =711.74

Chunk Density
Wet Wt.+Tare(gm)= 155.6
Dry Wt.+Tare(gm)= 137.9
Tare Wt(gm) = 38.3
Moisture(%) = 17.8
Void Ratio =0.561
Sample Wt.(gm) =1026.8
Sa.+ Wt.(air) =1079.6
SA.+ PA. Wt(Water) = 495.0
Density(pcf) =103.6
Saturation(%) = 82.07

Moisture Determination
Dry Wt.+Tare(gm)= 309.30
Tare Wt(gm) = 103.60

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 73.70
Tare Wt(gm) = 39.00
Dry Wt.+Tare(gm)= 73.20
Moisture(%) = 1.46

Liquid Limit
Blows = 26.00
Wet Wt.(gm) = 20.68
Dry Wt.(gm) = 17.56
Tare Wt.(gm) = 4.10
Liquid Limit(%) = 23.29
Plasticity Index= 5.95

Plastic Limit
Wet Wt.(gm) = 23.23
Dry Wt.(gm) = 20.40
Tare Wt.(gm) = 4.08
Plastic Limit(%)= 17.34

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 205.7

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.4	99.2	0.8500
NO.40	0.6	98.8	0.4250
NO.50	0.9	98.2	0.3000
NO.100	3.8	92.3	0.1500
NO.200	14.0	71.6	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.28

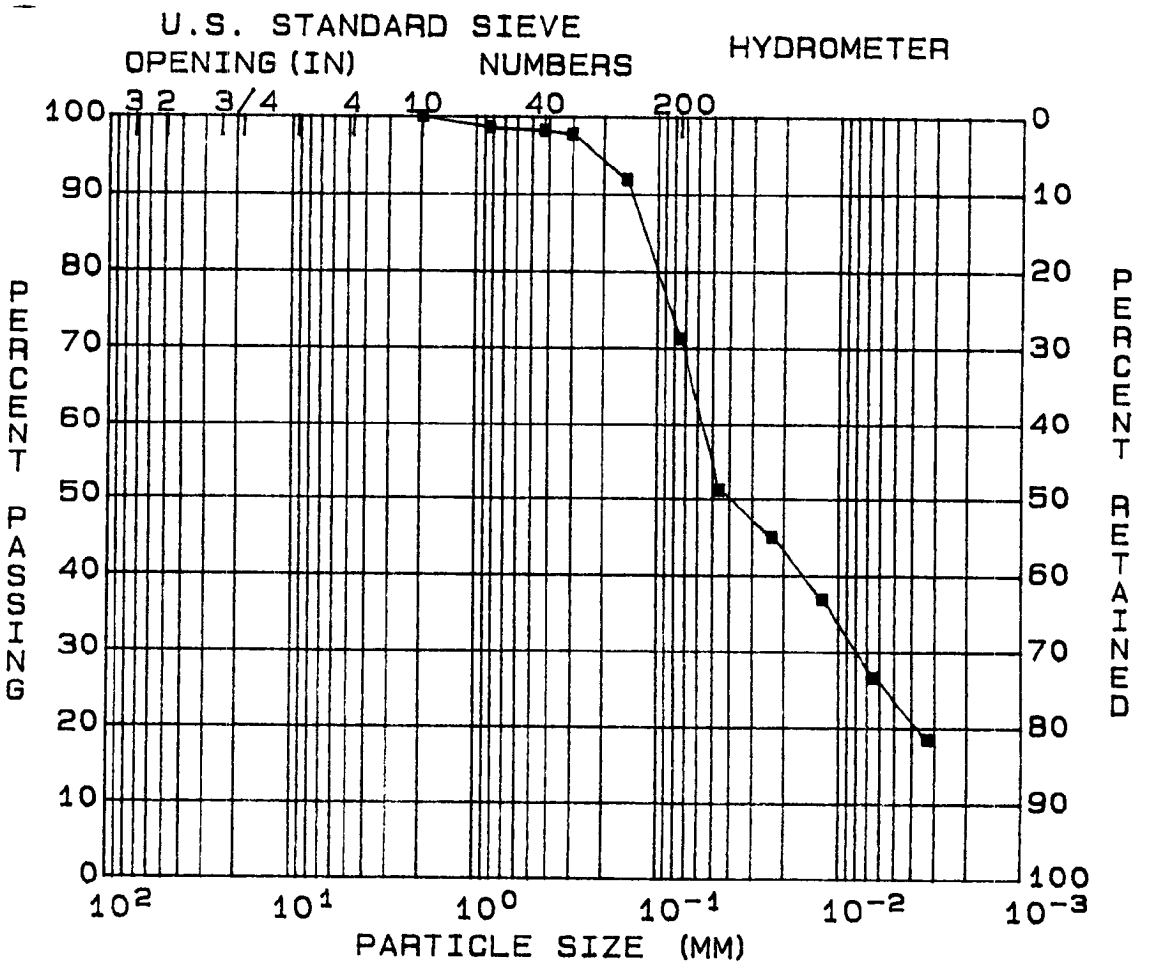
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	31.0	6.0	51.4	0.0457
4 min.	20.8	28.0	6.0	45.3	0.0234
15 min.	20.8	24.0	6.0	37.0	0.0124
1 hour	20.8	19.0	6.0	26.7	0.0064
4 hours	20.8	15.0	6.0	18.5	0.0033

Soil Symbol= CL-ML (Inorganic sandy clayey silt)
Gravel(%)= 0 Sand(%)=28 Silt(%)= 48 Clay(%)= 24

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 3

BORING: US-4
EL. : 8'-10'
SAMPLE: 1
DATE : 09-29-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 28	D30 (MM)	= --
SILT (%)	= 48	D60 (MM)	= --
CLAY (%)	= 24	COEF UNIF	= --

SOIL SYMBOL	= CL-ML	L.L. (%)	= 24	DENSITY (pcf)	= 103.6
MOISTURE (%)	= 17.8	P.I. (%)	= 6	SATURATION (%)	= 82.07
SP. GR.	= 2.59			VOID RATIO	= 0.561

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-4

El. : 8'-10'
Sample: 1
Part : 3

FILE : 27
TESTED BY : REG
Computed By:MHD
Checked By : TAL
Report Date:09-29-94

Specific Gravity = 2.591
Flask No. = 19.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.20
Total Wt.(gm) =711.74

Chunk Density
Wet Wt.+Tare(gm)= 155.6
Dry Wt.+Tare(gm)= 137.9
Tare Wt(gm) = 38.3
Moisture(%) = 17.8
Void Ratio =0.561
Sample Wt.(gm) =1026.8
Sa.+ Wt.(air) =1079.6
SA.+ PA. Wt(Water) = 495.0
Density(pcf) =103.6
Saturation(%) = 82.07

Moisture Determination
Dry Wt.+Tare(gm)= 309.30
Tare Wt(gm) = 103.60

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 73.70
Tare Wt(gm) = 39.00
Dry Wt.+Tare(gm)= 73.20
Moisture(%) = 1.46

Liquid Limit
Blows = 26.00
Wet Wt.(gm) = 14.61
Dry Wt.(gm) = 12.56
Tare Wt.(gm) = 3.82
Liquid Limit(%) = 23.57
Plasticity Index= 6.23

Plastic Limit
Wet Wt.(gm) = 23.23
Dry Wt.(gm) = 20.40
Tare Wt.(gm) = 4.08
Plastic Limit(%)= 17.34

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 205.7

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.4	99.2	0.8500
NO.40	0.6	98.8	0.4250
NO.50	0.9	98.2	0.3000
NO.100	3.8	92.3	0.1500
NO.200	14.0	71.6	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.28

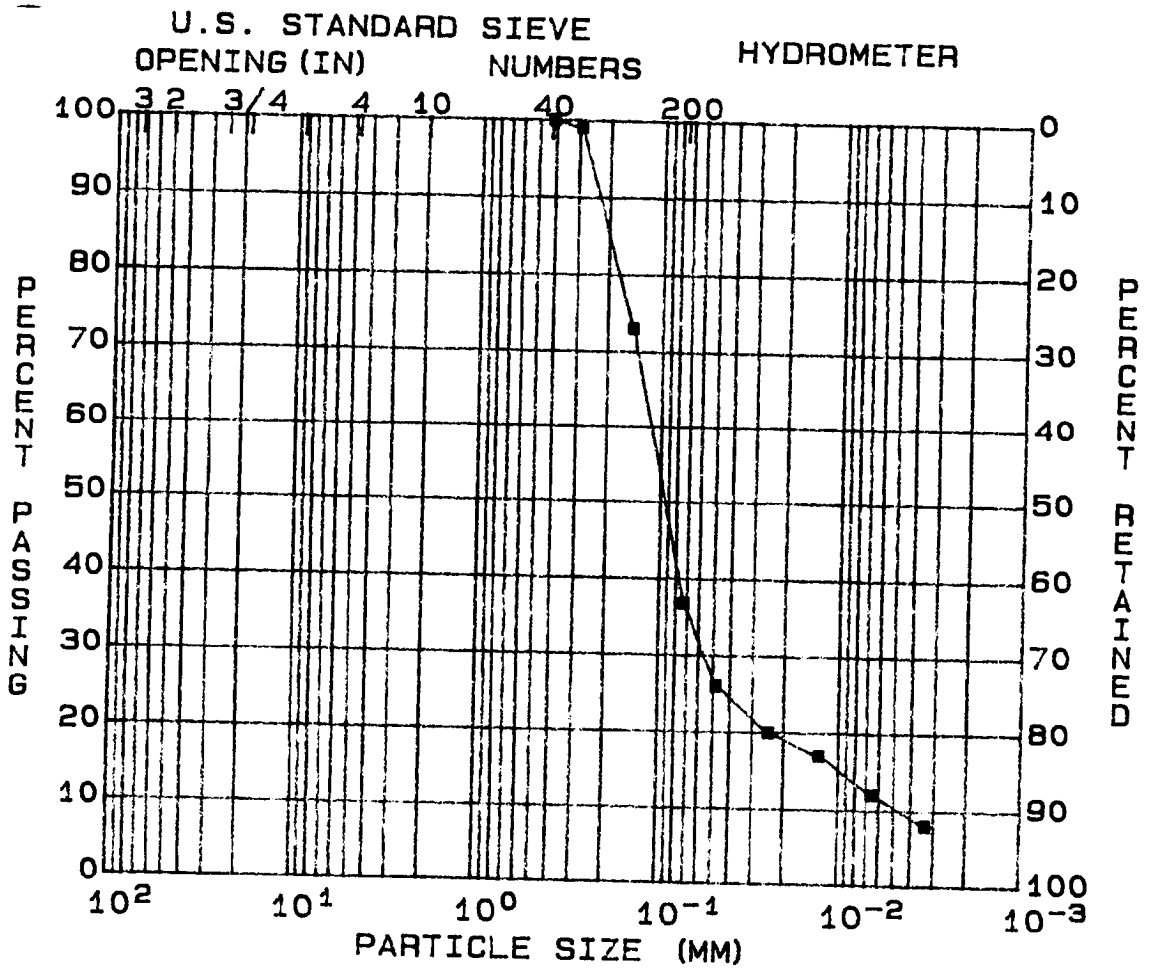
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	31.0	6.0	51.4	0.0457
4 min.	20.8	28.0	6.0	45.3	0.0234
15 min.	20.8	24.0	6.0	37.0	0.0124
1 hour	20.8	19.0	6.0	26.7	0.0064
4 hours	20.8	15.0	6.0	18.5	0.0033

Soil Symbol= CL-ML (Inorganic sandy clayey silt)
Gravel(%)= 0 Sand(%)=28 Silt(%)= 48 Clay(%)= 24

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 4

BORING: US-4
EL. : 22.0'-24.0'
SAMPLE: 2
DATE : 09-28-94



GRAVEL (%)	= 0	D10 (MM)	= 0.0046
SAND (%)	= 63	D30 (MM)	= 0.0566
SILT (%)	= 27	D60 (MM)	= 0.1162
CLAY (%)	= 10	COEF UNIF	= 25.3

SOIL SYMBOL	= SM	L.L. (%)	= NP	DENSITY (pcf)	= 106.8
MOISTURE (%)	= 19.9	P.I. (%)	= NP	SATURATION (%)	= 100.00
SP. GR.	= 2.57			VOID RATIO	= 0.498

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-4

El. : 22.0'-24.'
Sample: 2
Part : 4

FILE : 96
TESTED BY : REG
Computed By:MHD
Checked By :TAL
Report Date:09-28-94

Specific Gravity = 2.565
Flask No. = 23.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.20
Total Wt.(gm) =706.04

Chunk Density
Wet Wt.+Tare(gm)= 209.7
Dry Wt.+Tare(gm)= 181.3
Tare Wt(gm) = 38.5
Moisture(%) = 19.9
Void Ratio =0.498
Sample Wt.(gm) =1066.8
Sa.+ Wt.(air) =1124.5
SA.+ PA. Wt(Water) = 540.0
Density(pcf) =106.8
Saturation(%) =100.00

Moisture Determination
Dry Wt.+Tare(gm)= 302.80
Tare Wt(gm) = 70.90

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 73.80
Tare Wt(gm) = 39.70
Dry Wt.+Tare(gm)= 73.50
Moisture(%) = 0.89

Non-Plastic Soil

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 231.9

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.0	100.0	0.8500
NO.40	0.0	100.0	0.4250
NO.50	0.3	99.4	0.3000
NO.100	13.2	73.4	0.1500
NO.200	31.2	37.0	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.56

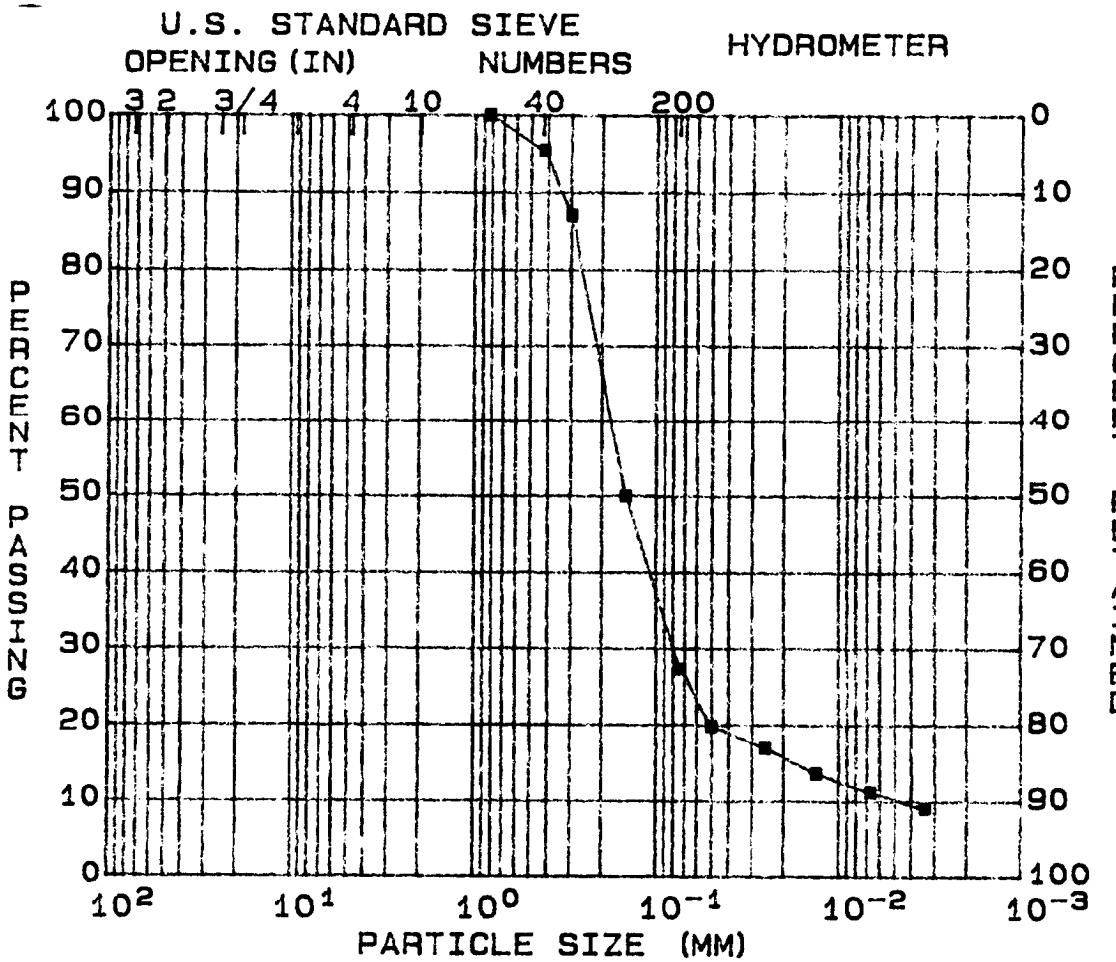
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	20.8	19.0	6.0	26.2	0.0487
4 min.	20.8	16.0	6.0	20.2	0.0248
15 min.	20.8	14.5	6.0	17.2	0.0129
1 hour	20.8	12.0	6.0	12.1	0.0066
4 hours	20.8	10.0	6.0	8.1	0.0033

Soil Symbol= SM (Silty sand)
D10(mm) =0.0046 D30(mm)= 0.0566 D60(mm)= 0.1162
Gravel(%)= 0 Sand(%)=63 Silt(%)= 27 Clay(%)= 10

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 2

BORING: US-4
EL. : 24.0'-26.0'
SAMPLE: 3
DATE : 09-28-94



GRAVEL (%)	= 0	D10 (MM)	= 0.0046
SAND (%)	= 72	D30 (MM)	= 0.0808
SILT (%)	= 17	D60 (MM)	= 0.1800
CLAY (%)	= 11	COEF UNIF	=39.4

SOIL SYMBOL	= SM	L.L. (%)	= NP	DENSITY (pcf)	= 116.9
MOISTURE (%)	= 11.5	P.I. (%)	= NP	SATURATION (%)	= 72.76
SP. GR.	= 2.66			VOID RATIO	= 0.418

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-4

El. : 24.0'-26.0'
Sample: 3
Part : 2

FILE : 95
TESTED BY : REG
Computed By: MHD
Checked By : TAC
Report Date: 09-28-94

Specific Gravity = 2.656
Flask No. = 24.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.20
Total Wt.(gm) =707.00

Chunk Density
Wet Wt.+Tare(gm)= 231.4
Dry Wt.+Tare(gm)= 211.5
Tare Wt(gm) = 37.8
Moisture(%) = 11.5
Void Ratio =0.418
Sample Wt.(gm) =1100.2
Sa.+ Wt.(air) =1158.4
SA.+ PA. Wt(Water) = 566.0
Density(pcf) =116.9
Saturation(%) = 72.76

Moisture Determination
Dry Wt.+Tare(gm)= 409.90
Tare Wt(gm) = 104.80

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 98.90
Tare Wt(gm) = 39.60
Dry Wt.+Tare(gm)= 98.70
Moisture(%) = 0.34

Non-Plastic Soil

Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 305.1

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.0	100.0	0.8500
NO.40	2.1	95.8	0.4250
NO.50	6.3	87.4	0.3000
NO.100	24.8	50.2	0.1500
NO.200	36.1	27.6	0.0750

Air Dry Weight(gm)= 50.00 Corrected Weight(gm)= 49.83

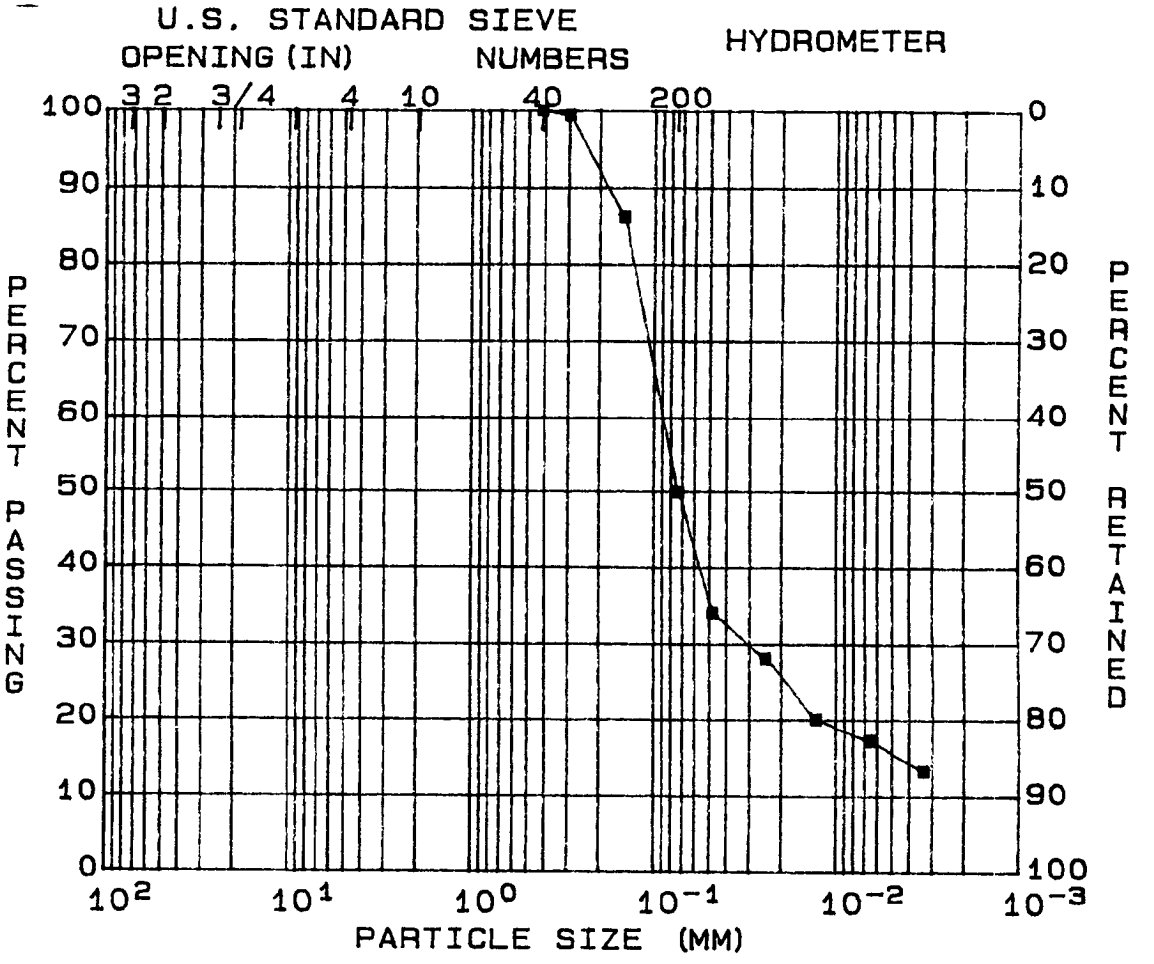
Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	19.0	16.0	6.0	20.0	0.0506
4 min.	19.0	14.6	6.0	17.2	0.0255
15 min.	19.0	12.9	6.0	13.8	0.0133
1 hour	19.0	11.6	6.0	11.2	0.0067
4 hours	19.4	10.5	6.0	9.0	0.0034

Soil Symbol= SM (Silty sand)
D10(mm) =0.0046 D30(mm)= 0.0808 D60(mm)= 0.1800
Gravel(%)= 0 Sand(%)=72 Silt(%)= 17 Clay(%)= 11

SINGLETON LABORATORIES
PARTICLE SIZE ANALYSIS

PROJECT: TVA/KINGSTON FP
FEATURE: DREDGE CELLS/CLOSURE
STATION:
RANGE :
PART : 4

BORING: US-4
EL. : 30.0'-32.0'
SAMPLE: 4
DATE : 09-28-94



GRAVEL (%)	= 0	D10 (MM)	= --
SAND (%)	= 50	D30 (MM)	= --
SILT (%)	= 34	D60 (MM)	= --
CLAY (%)	= 16	COEF UNIF	= --

SOIL SYMBOL	= ML	L.L. (%)	= NP	DENSITY (pcf)	= 105.6
MOISTURE (%)	= 20.6	P.I. (%)	= NP	SATURATION (%)	= 95.59
SP. GR.	= 2.66			VOID RATIO	= 0.573

REMARKS:

Singleton Laboratories
General Classification Tests

Project: TVA/KINGSTON FP
Feature: DREDGE CELLS/CLOSURE
Station:
Range :
Boring : US-4

El. : 30.0'-32.0'
Sample: 4
Part : 4

FILE : 97
TESTED BY : REG
Computed By:MHD
Checked By : TAL
Report Date:09-28-94

Specific Gravity = 2.662
Flask No. = 22.00
Soil Wt.(gm) = 50.00
Temp.(deg.c.) = 22.20
Total Wt.(gm) =708.00

Chunk Density
Wet Wt.+Tare(gm)= 187.4
Dry Wt.+Tare(gm)= 162.0
Tare Wt(gm) = 38.5
Moisture(%) = 20.6
Void Ratio =0.573
Sample Wt.(gm) =1016.9
Sa.+ Wt.(air) =1070.3
SA.+ PA. Wt(Water) = 512.0
Density(pcf) =105.6
Saturation(%) = 95.59

Moisture Determination
Dry Wt.+Tare(gm)= 294.50
Tare Wt(gm) = 96.50

Hygroscopic Moisture
Wet Wt.+Tare(gm)= 80.50
Tare Wt(gm) = 37.80
Dry Wt.+Tare(gm)= 80.10
Moisture(%) = 0.95

Non-Plastic Soil

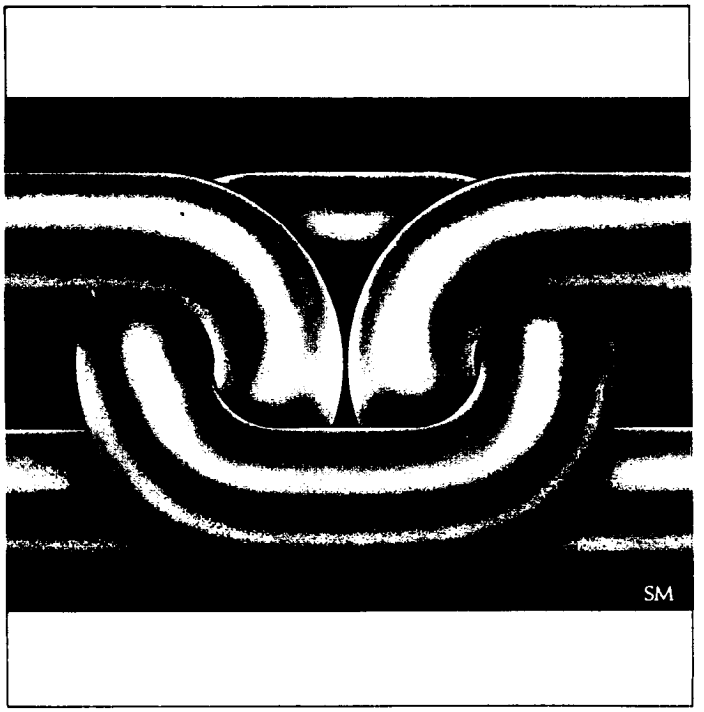
Sieve and Hydrometer Analysis
Total Dry Weight(gm) = 198

Sieve	Wt.Ret.	% Pass.	Size(mm)
3 in.	0.0	100.0	76.2000
2 in.	0.0	100.0	50.8000
1.5 in.	0.0	100.0	38.1000
1 in.	0.0	100.0	25.4000
3/4 in.	0.0	100.0	19.0500
3/8 in.	0.0	100.0	9.5300
NO.4	0.0	100.0	4.7500
NO.10	0.0	100.0	2.0000
NO.20	0.0	100.0	0.8500
NO.40	0.0	100.0	0.4250
NO.50	0.1	99.8	0.3000
NO.100	6.7	86.5	0.1500
NO.200	24.7	50.1	0.0750

Air Dry Weight(gm)= 50.00
Corrected Weight(gm)= 49.53

Time	Temp.	Hyd.Rdg	Corr	% Pass	Size(mm)
1 min.	19.0	23.0	6.0	34.2	0.0484
4 min.	19.0	20.0	6.0	28.2	0.0247
15 min.	19.0	16.0	6.0	20.1	0.0131
1 hour	19.0	14.6	6.0	17.3	0.0066
4 hours	19.4	12.6	6.0	13.3	0.0033

Soil Symbol= ML (Inorganic sandy silt of low plasticity)
Gravel(%)= 0 Sand(%)=50 Silt(%)= 34 Clay(%)= 16



The Critical Link.SM

United Energy Services Corporation

COMPANY HEADQUARTERS

United Energy Services Corporation
1130 Northchase Parkway, Suite 200
Marietta, Georgia 30067
Telephone: (404) 951-8989

OFFICES

5 Lancaster Avenue
ading, Pennsylvania 19603
lephone: (215) 375-0051

90 East Gray Road, Suite 202
ottsdale, Arizona 85260
lephone: (602) 951-1191

25 Waukegan Road
nnockburn, Illinois 60015
lephone: (708) 945-0555

5976 West Las Positas, Suite 106
Pleasanton, California 94588
Telephone: (510) 734-6110

1416 Tipside Road
Louisville, Tennessee 37777
Telephone: (615) 970-2299

2701 Miles Road S.E.
Albuquerque, New Mexico 87106
Telephone: (505) 342-6605

524 International Airport Road, Suite 101
Anchorage, Alaska 99507
Telephone: (907) 562-0625

190 James Drive East, Suite 120
St. Rose, Louisiana 70087
Telephone: (504) 466-9565

658 Discovery Drive
Huntsville, Alabama 35806
Telephone: (205) 922-0700