Colorado River Floodgate

McClelland

BORING NUMBER	SAMPLE NUMBER/TYPE	SAMPLE DEPTH (FT)	VISUAL CLASSIFICATION Gnd. El. +14.2 M.L.T. → X-Sec. El +15.0	UNIFIED SOIL CLASSIFICATION	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (PCF)	SPECIFIC GRAVITY OF SOLIDS	LIQUID LIMIT	PLASTIC LIMIT	BAR LINEAR SHRINKAGE (%)	PERCENT FINER BY WEIGHT (ABBEVIATED MECHANICAL SIEVE ANALYSIS) 3/8"	#4	#10	#40	#200	COMPLETE MECHANICAL ANALYSIS	HYDROMETER ANALYSIS	STANDARD COMPACTION TEST	MODIFIED COMPACTION TEST	UNDRAINED SHEAR STRENGTH (KSF)*	TORVANE SHEAR (KSF)
88-10	1Q	0-2'	Very stiff reddish brown clay with sand seams, calcareous nodules, silt pockets, organic material and shell fragments	CL	18																
	2 bag	2-4'	Brown sand with shell fragments and organic material	SP-SM				Non-Plastic				100	99	99	9						
	3J	4-5.5'	Brown sand with clay pockets and organic material	SP-SM	4									100	9						
	4J	8.5-10'	Brown sand with clay pockets	SP-SC	6									100	12						
	5J	13.5-15'	Firm reddish brown clayey sand with sand pockets and shell fragments	SC	31							100	99	97	26						
	6J	18.5-20'	Firm reddish brown clay with silt pockets and calcareous nodules	CH	30			57	21					100	90						
	7Q	22-24'	Stiff yellowish red clay with calcareous nodules, shell fragments, ferrous nodules, sand partings and seams	CL	21	105		48	18				100	99	91					1.2	
	8Q	24-26'	Firm yellowish red and gray clay, with sand seams, shell fragments, ferrous nodules, and calcareous nodules	CH	23	99		53	21				100	99	59					.77	
	9Q	26-28'	Stiff yellowish red and brownish yellow clay, with sand seams, partings and pockets, shell fragments and calcareous nodules	CH	26	98		56	19		100	99	99	99	69					1.0	
	10Q	28-30'	** Tested by Southwest Division Laboratory **																		
	11J	33.5-35'	Soft dark gray and brown clay with silt partings	CH	36			63						100	94						
	12J	38.5-40'	Soft brownish yellow silty clay	CL	21									100	93						
	13J	43.5-45'	Brownish yellow silty sand	SM	24								100	99	16						
	14J	48.5-50'	Firm yellowish red sandy clay with sand seams, calcareous nodules, silt partings and shell fragments	CL	32			46	22		100	99	99	96	63						
	15J	53.5-55'	Very stiff gray sandy clay with calcareous nodules	CL	23							100	99	98	86						
	16Q	56-58'	** Tested by Southwest Division Laboratory **																		
	17J	60-61.5'	Firm yellowish red silty clay with calcareous nodules	CL	15																
	18J	63.5-65'	Firm yellowish red silty clay with calcareous nodules	CL	20			25					100	97	91						
	19Q	66-68'	Stiff yellowish red clay with silt partings and seams, slickensided	CH	19	109		61	24					100	97					1.5	1.7
	20Q	68-70'	** Tested by Southwest Division Laboratory **																		

*Based on Unconfined Compression Test Results

SUMMARY OF TEST RESULTS
Delivery Order No. 0009
Colorado River Floodgates
Gulf Intercoastal Waterway Project
Matagorda County, Texas

PLATE 1

LOG OF BORING NO. 88-10

Brazos River Floodgates
Gulf Intercoastal Waterway
Brazoria County, Texas

TYPE: Wet Rotary

LOCATION: See Plate 1

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WT LB/CU FT	UNDRAINED SHEAR STRENGTH, KSF (⊠ Penetrometer, ⊕ Torvane) 0.4 0.8 1.2 1.6 2.0 2.4 2.8	PLASTIC LIMIT / WATER CONTENT, % / LIQUID LIMIT (10 20 30 40 50 60 70)	PENETROMETER
	1 Q		CLAY, stiff, red, with sand seams					3.00
	2 Thw		(3')					
5	3 J		SILTY SAND, loose, tan, fine	1-2-2				
	4 J		- medium dense at 9'	6-7-15				
10			- slightly clayey 10 to 13'					
	5 J		- with sandy clay layers 13 to 15.5'	3-2-2				
15			(15.5')					
			CLAY, firm, red, with silty sand partings					
	6 J			2-3-5				
20								
	7 Q		- with few 3 to 6" sand layers 24' to 29.5'					1.25
25	8 Q							1.00
	9 Q							1.00
	⊕ 10 Q		(29.5')					1.00
30			CLAY and CLAYEY SAND, interlayered firm, gray - washed 30 to 33.5'					
	11 J			3-4-3				
35			- tan sand layer 38 to 41'					
	12 J			6-5-4				
40			(41')					
			SAND, dense, light brown, slightly silty					
	13 J			23-28-18				
45			(48')					
	14 J		CLAY and CLAYEY SAND, interlayered stiff, red (6" to 1' layers)	4,6,7				
50			Continued on Plate 4					

LOG OF BORING NO. 88-10

Brazos River Floodgates
Gulf Intercoastal Waterway
Brazoria County, Texas

TYPE: Wet Rotary

LOCATION: See Plate 1

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WT LB/CU FT	UNDRAINED SHEAR STRENGTH, KSF (Penetrometer / Torvane) 0.4 0.8 1.2 1.6 2.0 2.4 2.8	PLASTIC LIMIT / WATER CONTENT,% / LIQUID LIMIT 10 20 30 40 50 60 70	PENETROMETER
			CLAY and CLAYEY SAND, interlayered, stiff, red					
	15 J			6-6-10				
55			(56')					
	16 Q ⊕		SANDY CLAY, very stiff, light brown					4.00
			- very sandy at 58'					
60	17 J		- with hard calcareous Nodules at 60'	25-37				
	18 J		- with red clayey silt seams below 63'	13-25-30				
65								
	19 Q							4.50+
	20* Q ⊕							4.50+
70			(70')					
75								
80								
85								
90								
95								
100								

* Short sample
⊕ Sample No.s 10, 16, and 20 6" diameter
\+ Sample Collapsed after extruding

Driller: A. Clark
Technician: R. Mitchell
Equipment: Truck-mounted Failing 250

COMPLETION DEPTH: 70'
DATE: Jan. 27 – 28, 1988

DEPTH TO WATER IN BORING:

CAVED AT:
DATE:

McCLELLAND ENGINEERS

PLATE 4

Job No. ____ Date: ____ Drafted: ____ Form MET-1.00 (5/84)