PRELIMINARY INVESTIGATIONS OF SUBMERGED AREAS

Delivery Order Number 023 Date 10/20/04
Project ANW Refuge

Location ID Number J-14
Coordinates: X 2638466
Y 13236200
Water Depth 2.2
Pipe Length 10-8165

Tide Staff Readings:

	Time	Reading
Morning		
Mid-Day		
Evening		

Push No. 1 Time 1:16
Weight of Pipe Penetration (WOP) 2.9 Comment SA
One-Hand Push (40-lb) Depth 3.1 Comments SA
1" SA Layer
One-Hand Push (70-lb) Depth 5.2 Comments SA CL
Two-Hand Push to Refusal – Depth 6.5 Comments SA CL w/ shell frag.
Jig 6.8 SA + shell mix

Push No. 2 Time 1:25
Weight of Pipe Penetration (WOP) 3.1 Comment SA
One-Hand Push (40-lb) Depth 3.1 Comments SA
One-Hand Push (70-lb) Depth 3.2 Comments SA
Two-Hand Push to Refusal – Depth 3.6 Comments SA
Jig 6.0 SA CL w/ shell frag.
3.6 to 3.9 SA Layer

Hand Proving Ring Penetrometer Test? Yes
Hand Vane Shear Test?

Technician (Probe Handler) mike A. Recorder Gary L.

HAND CONE PENETRATION TEST (CPT)

Delivery Order Number 023 Date 10/20/04
Project ANW Refuge

Location ID Number J-14 Weight of Proving Ring
Time 1:37 Weight of Rod Section

Weight of Rod Penetration 4.3 Number of Rods
Comments

End Depth	Dial	No. Rods	Comment	End Depth	Dial	No. Rods	Comment
4.6	51		SA CL				
4.9	104						
5.0	77						
5.3	45						
5.6	45						
5.9	41						
6.0	59						
6.3	64						
6.6	103		SA Layers				
6.9	196		" "				
7.0	191		" "				
7.3	74		SA CL				
7.6	81		" "				
7.9	170		SA				
8.0	232		"				
8.3	219		"				

Comments

A30

B39

Hand Cone Penetrometer Test and Analysis: RTB 11/8/4

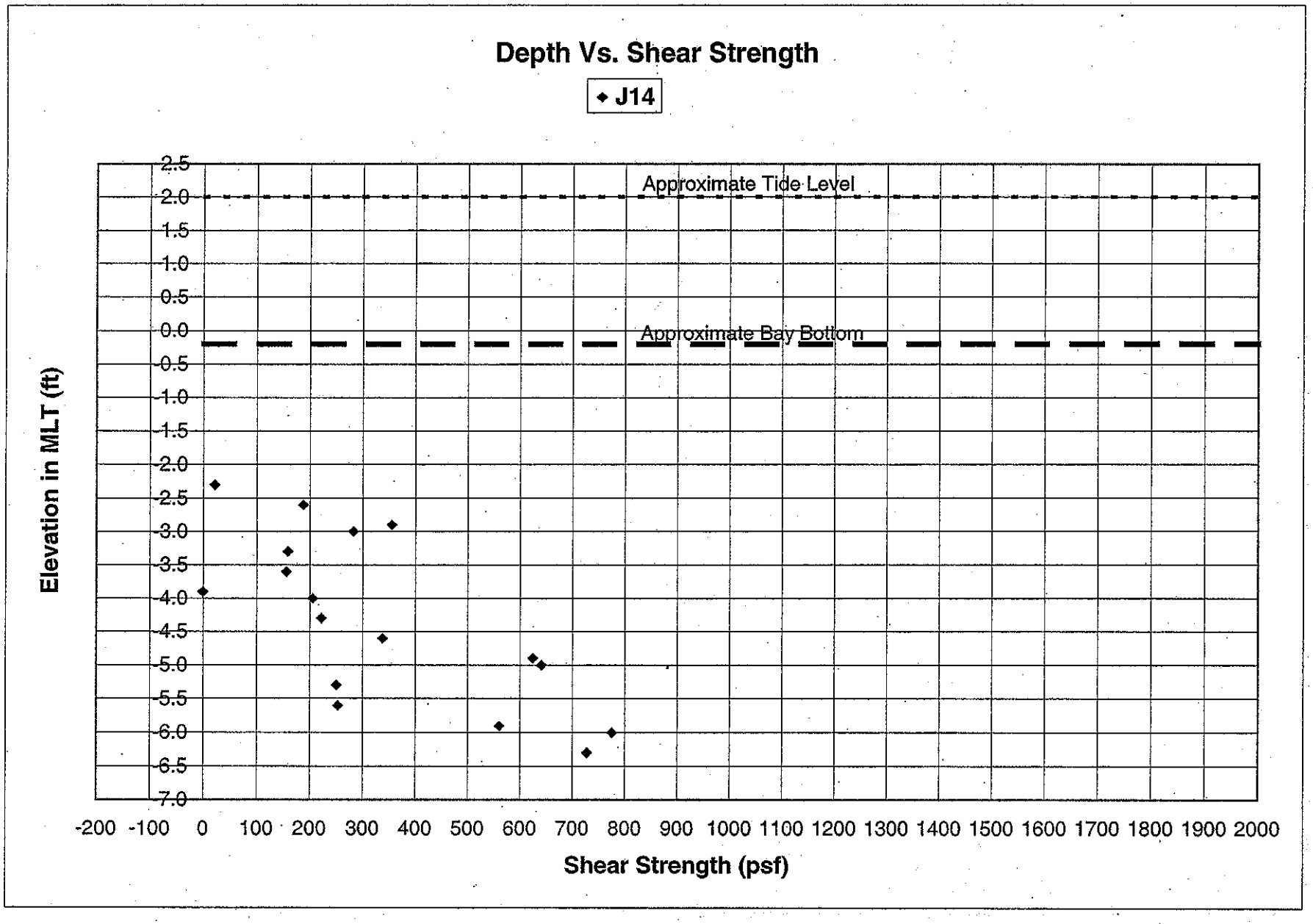
Project: Aransas National Wildlife Ref. - BUS Site "J"
Location: Dunham Bay located outside of Rockport, TX
Delivery Order #: 0023
Date of Testing: 10/20/04 to 10/22/04

Probing Results

Resistance	Depth1 '	Depth2 '	MLT1'	MLT2'	Average
Weight of Pipe	2.9	3.1	-0.9	-1.1	-1.0
1 HP (40lbs)	3.1	3.1	-1.1	-1.1	-1.1
1 HP (70lbs)	5.2	3.2	-3.2	-1.2	-2.2
2 Hand Refusal	6.5	3.6	-4.5	-1.6	-3.1

HCPT ID	~ Bay Bottom (MLT in ft)	Water Depth (ft)	# of Rods	Rod End-depth (ft)	Thickness Soil Layer (ft)	Total Unit Wt. of Soil (pcf)	N_k factor	Total Stress (psf)	Dial Reading	Dial Conv. X(lb)	Capacity q_c (psi)	shear str. S_u (psf)	Below Mudline (ft)	~ Elev. MLT in ft
J14	-0.2	2.2	3	4.3	2.1	90	9	189.0	0	0.7	2.7	22	2.1	-2.3
	-0.2	2.2	3	4.6	2.4	105	12	441.0	51	16.7	18.7	188	2.4	-2.6
	-0.2	2.2	3	4.9	0.3	110	13	474.0	104	33.4	35.4	355	2.7	-2.9
	-0.2	2.2	3	5.0	0.1	105	12	484.5	77	24.9	26.9	282	2.8	-3.0
	-0.2	2.2	3	5.3	0.3	105	12	516.0	45	14.9	16.8	159	3.1	-3.3
	-0.2	2.2	3	5.6	0.3	105	12	547.5	45	14.9	16.8	156	3.4	-3.6
	-0.2	2.2	3	5.9	0.3	95	10	576.0	4.1	2.0	4.0	-1	3.7	-3.9
	-0.2	2.2	3	6.0	0.1	105	12	586.5	59	19.3	21.2	206	3.8	-4.0
	-0.2	2.2	3	6.3	0.3	105	12	618.0	64	20.8	22.8	222	4.1	-4.3
	-0.2	2.2	3	6.6	0.3	110	13	651.0	103	33.1	35.0	338	4.4	-4.6
	-0.2	2.2	3	6.9	0.3	110	13	684.0	186	59.2	61.1	625	4.7	-4.9
	-0.2	2.2	3	7.0	0.1	110	13	695.0	191	60.8	62.7	641	4.8	-5.0
	-0.2	2.2	3	7.3	0.3	105	12	726.5	74	24.0	25.9	251	5.1	-5.3
	-0.2	2.2	3	7.6	0.3	110	13	759.5	81	26.2	28.1	253	5.4	-5.6
	-0.2	2.2	3	7.9	0.3	110	13	792.5	170	54.2	56.1	560	5.7	-5.9
	-0.2	2.2	3	8.0	0.1	110	13	803.5	232	73.6	75.6	776	5.8	-6.0
	-0.2	2.2	3	8.3	0.3	110	13	836.5	219	69.6	71.5	728	6.1	-6.3

B40


Depth Vs. Shear Strength
J14
Approximate Tide Level
Approximate Bay Bottom
Elevation in MLT (ft)
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-5.5
-6.0
-6.5
-7.0
-200 -100 0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000
Shear Strength (psf)