PRELIMINARY INVESTIGATIONS OF SUBMERGED AREAS

Delivery Order Number 023 Date 10/27/04
Project ANW Refuge

Location ID Number J-7
Coordinates: X 2636350
Y 13233411
Water Depth 2.8
Pipe Length 15 13/35

Tide Staff Readings:

	Time	Reading
Morning		
Mid-Day		
Evening		

Push No. 1 Time 4:18
Weight of Pipe Penetration (WOP) 3.4 Comment SA CL
One-Hand Push (40-lb) Depth 5.5 Comments

One-Hand Push (70-lb) Depth 5.7 Comments SA CL

Two-Hand Push to Refusal – Depth 6.1 Comments SA + Shell
Jig 6.5 Shell

Push No. 2 Time 4:23
Weight of Pipe Penetration (WOP) 3.5 Comment
One-Hand Push (40-lb) Depth 3.7 Comments SA @ Bottom

One-Hand Push (70-lb) Depth 3.9 Comments SA

Two-Hand Push to Refusal – Depth 4.0 Comments SA
Jig 6.0 SA

CL Layer 4.5 to 5.5

① Top of Vane 1.0' Below mud Li
Shear 13 LBS

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

② Top of Vane 2.0 Below mud Li
Shear 24 LBS

Technician (Probe Handler) mike A Recorder Gary L.

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HAND CONE PENETRATION TEST (CPT)

Delivery Order Number 023 Date 10/21/04
Project

Location ID Number J-7 Weight of Proving Ring
Time 4:31 Weight of Rod Section 13 165

Weight of Rod Penetration 4.0 Number of Rods 3
Comments

End Depth	Dial	No. Rods	Comment	End Depth	Dial	No. Rods	Comment
			small SA layer @ 4.0				
4.6	WOR		SOFT CL				
4.9	12						
5.3	WOR		SOFT CL				
5.6	28		SA CL				
6.0	66		" "				
6.3	89		" "				
6.6	54		" "				
6.9	110		SA				
7.0	240		"				
7.1	248		"				

Comments

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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	3.4	3.5	-1.2	-1.3	-1.3
1 HP (40lbs)	5.5	3.7	-3.3	-1.5	-2.4
1 HP (70lbs)	5.7	3.9	-3.5	-1.7	-2.6
2 Hand Refusal	6.1	4.0	-3.9	-1.8	-2.9

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**
J7	-0.6	2.8	3	4.0	1.2	90	9	108.0	0	0.7	2.7	31	1.2	-1.8
	-0.6	2.8	3	4.6	1.8	90	9	270.0	0	0.7	2.7	13	1.8	-2.4
	-0.6	2.8	3	4.9	0.3	100	11	300.0	12	4.5	6.4	57	2.1	-2.7
	-0.6	2.8	3	5.3	0.4	90	9	336.0	0	0.7	2.7	5	2.5	-3.1
	-0.6	2.8	3	5.6	0.3	100	11	366.0	28	9.5	11.5	117	2.8	-3.4
	-0.6	2.8	3	6.0	0.4	105	12	408.0	66	21.5	23.4	247	3.2	-3.8
	-0.6	2.8	3	6.3	0.3	110	13	441.0	89	28.7	30.6	305	3.5	-4.1
	-0.6	2.8	3	6.6	0.3	105	12	472.5	54	17.7	19.6	196	3.8	-4.4
	-0.6	2.8	3	6.9	0.3	110	13	505.5	110	35.3	37.2	374	4.1	-4.7
	-0.6	2.8	3	7.0	0.1	110	13	516.5	240	76.2	78.1	825	4.2	-4.8
	-0.6	2.8	3	7.1	0.1	110	13	527.5	248	78.7	80.6	852	4.3	-4.9

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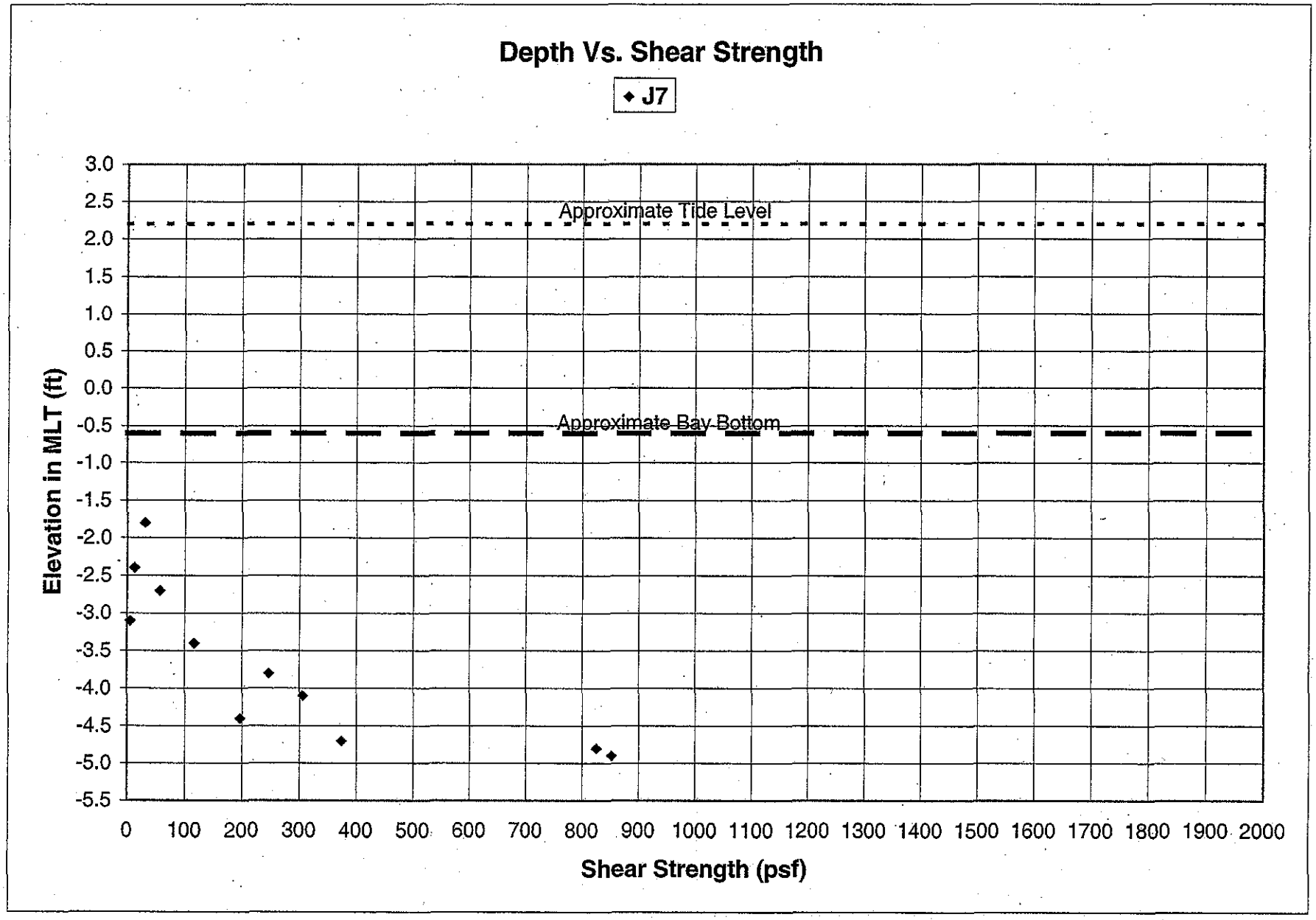
Depth Vs. Shear Strength
J7
Approximate Tide Level
Approximate Bay Bottom
Elevation in MLT (ft)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-5.5
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
Shear Strength (psf)