

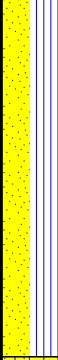
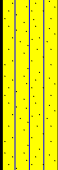
BORING LOG NO. B-10

Page 1 of 1

PROJECT: Galveston Bay Sand Reclamation Project

CLIENT: Atkins North America, Inc.
Houston, Texas

SITE: Galveston Bay
Galveston, Texas

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 29.30728° Longitude: -94.83437°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
						TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
	DEPTH											
	SILTY, CLAYEY SAND (SC) , gray, very loose, with shell fragments	2.0		X	WOH							46
	SANDY CLAY , gray, soft, with shell fragments	4.0		X	1-1-1 N=2							
	POORLY GRADED SAND WITH SILT (SP-SM) , gray, medium dense, with shell fragments	5		X	4-5-9 N=14							11
				X	6-9-11 N=20							
				X	5-6-9 N=15							7
				X	5-7-5 N=12							
	SILTY SAND (SM) , gray, medium dense to dense, with shell fragments	12.0		X	11-16-19 N=35							13
				X	5-6-4 N=10							
	CLAY , gray and tan, medium stiff to very stiff, with ferrous nodules - reddish brown and light gray below 18 feet	16.0		X	1-2-3 N=5							
		20.0			3.5 (HP)							
	Boring Terminated at 20 Feet	20										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry augered to 18 feet; wet rotary thereafter.

Abandonment Method:
Not applicable

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
- WOH = Weight of Hammer.
- Water depth of about 6 feet at the time of our field program.

WATER LEVEL OBSERVATIONS

Not applicable

Terracon
551 League City Pkwy Ste F
League City, TX

Boring Started: 07-12-2017

Drill Rig: Truck

Project No.: 91175047

Boring Completed: 07-12-2017

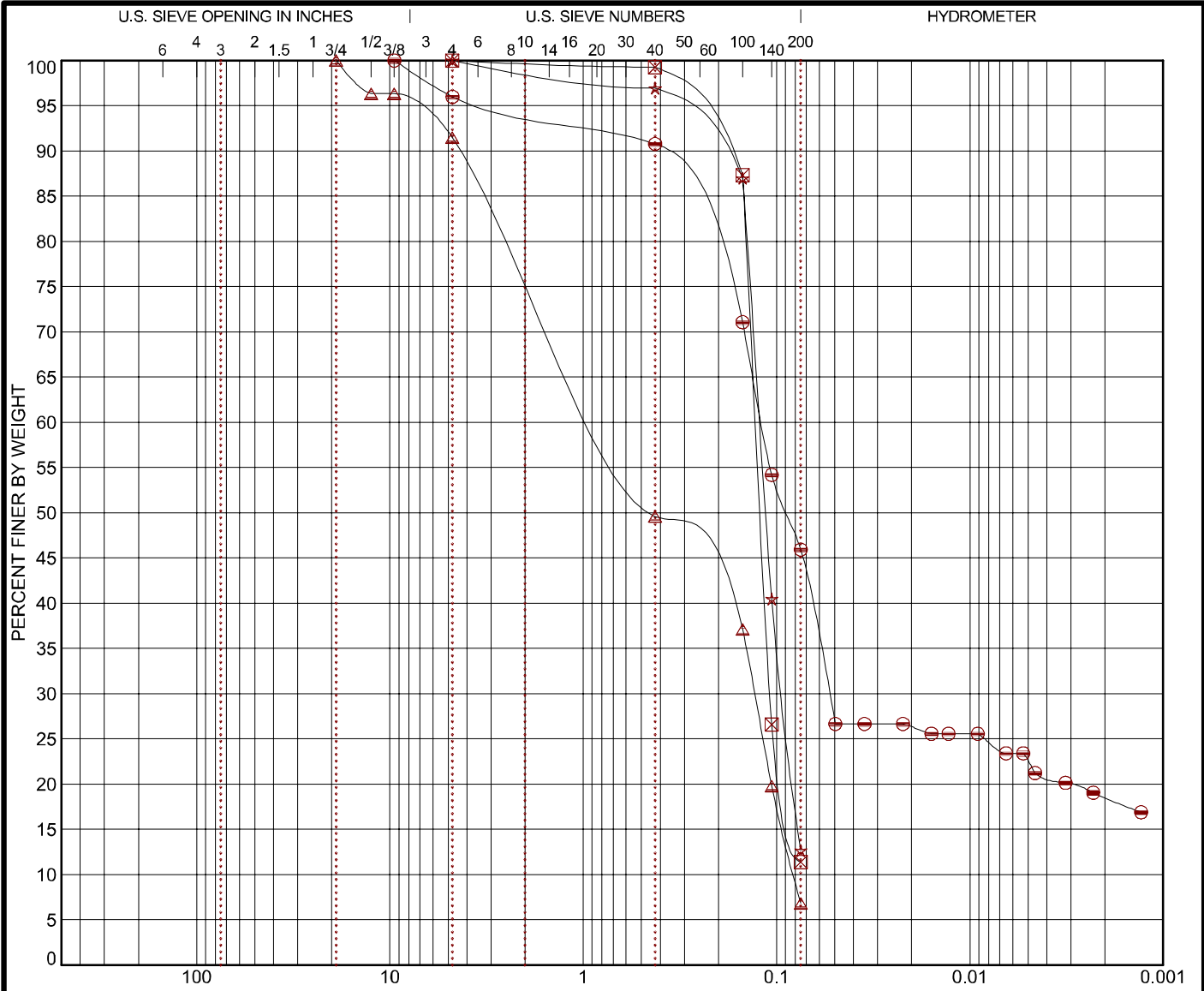
Driller: Van and Sons

Exhibit: A-12

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 91175047 REV1 GALVESTON BAY SAN.GPJ TERRACON_DATATEMPLATE.GDT 11/2/17

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID		Depth	USCS Classification				WC (%)	LL	PL	PI	Cc	Cu
⊖	B-10	2.5 - 4	SILTY, CLAYEY SAND (SC)									
⊗	B-10	4.5 - 6	POORLY GRADED SAND WITH SILT (SP-SM)								1.25	1.77
△	B-10	8.5 - 10	POORLY GRADED SAND WITH SILT (SP-SM)								0.27	9.49
★	B-10	12.5 - 14	SILTY SAND (SM)									
Boring ID		Depth	D ₁₀₀	D ₈₅	D ₅₀	D ₁₀	%Gravel	%Sand	%Silt	%Fines	%Clay	
⊖	B-10	2.5 - 4	9.5	0.313	0.089		4.0	50.1	23.4		22.5	
⊗	B-10	4.5 - 6	4.75	0.148	0.121		0.0	88.6		11.4		
△	B-10	8.5 - 10	19	3.27	0.435	0.082	8.5	84.7		6.8		
★	B-10	12.5 - 14	4.75	0.148	0.114		0.0	87.3		12.7		

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Houston, Texas

EXHIBIT: A-27