

BORING LOG NO. B-18

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: 29.30684° Longitude: -94.82753°	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											
	POORLY GRADED SAND WITH SILT (SP-SM) , gray, medium dense to dense				3-6-6 N=12							7
					5-7-13 N=20							
		5			5-7-10 N=17							
	- with shell fragments 6 to 10 feet				8-10-13 N=23							12
					6-9-11 N=20							
		10			10-11-19 N=30							
					5-10-15 N=25							5
		15			16-17-27 N=44							
	SILTY SAND (SM) , gray, loose to very dense, with shell fragments				17-24-28 N=52							
	- with clay pockets 16 to 18 feet				7-8-8 N=16							14
		20			10-17-20 N=37							
	- with clay pockets below 22 feet				4-3-1 N=4							23
		25			5-5-5 N=10							
	Boring Terminated at 26 Feet											

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

Hammer Type: Automatic

Advancement Method:
Dry augered to 20 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:
- Water depth of about 10 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: 07-14-2017

Drill Rig: Truck

Project No.: 91175047

Boring Completed: 07-14-2017

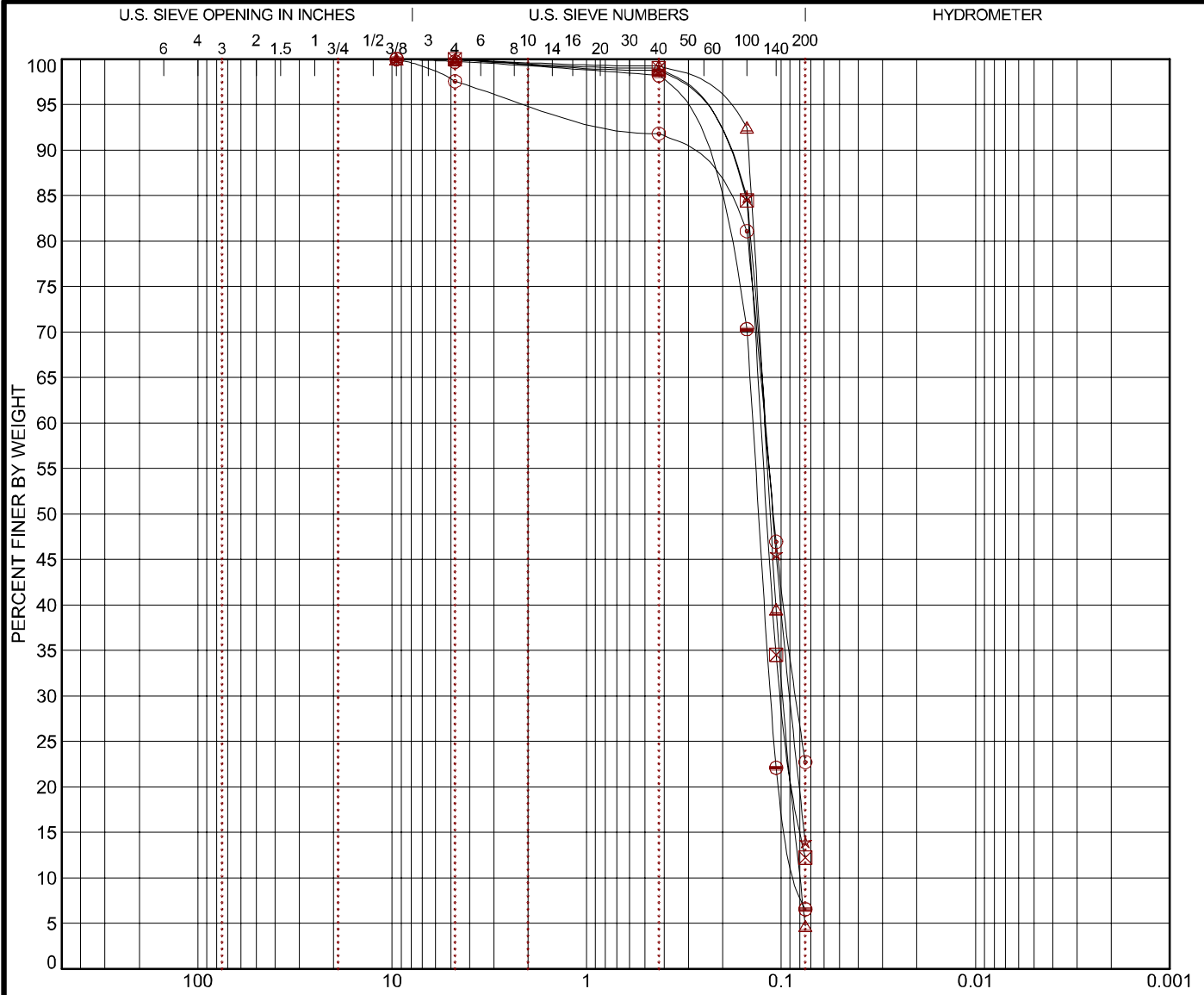
Driller: Van and Sons

Exhibit: A-20

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-18	0.5 - 2	POORLY GRADED SAND WITH SILT (SP-SM)								1.12	1.72
⊗	B-18	6.5 - 8	POORLY GRADED SAND WITH SILT (SP-SM)								1.07	1.75
△	B-18	12.5 - 14	POORLY GRADED SAND (SP)								0.97	1.53
★	B-18	18.5 - 20	SILTY SAND (SM)									
⊕	B-18	22.5 - 24	SILTY SAND (SM)									
Boring ID		Depth	D ₁₀₀	D ₈₅	D ₅₀	D ₁₀	%Gravel	%Sand	%Silt	%Fines	%Clay	
⊖	B-18	0.5 - 2	9.5	0.26	0.13	0.081	0.3	93.2		6.6		
⊗	B-18	6.5 - 8	4.75	0.156	0.118		0.0	87.8		12.2		
△	B-18	12.5 - 14	9.5	0.143	0.114	0.079	0.1	95.2		4.7		
★	B-18	18.5 - 20	9.5	0.151	0.11		0.1	86.0		14.0		
⊕	B-18	22.5 - 24	9.5	0.219	0.109		2.4	74.8		22.7		

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EXHIBIT: A-35