

BORING LOG NO. B-18

PROJECT: Galveston Island Sand Source Investigation

CLIENT: Atkins North America, Inc.
Houston, Texas

SITE: Sullivan Ranch Property
Galveston, Texas

GRAPHIC LOG	LOCATION See Exhibit A-6 Latitude: 29.2438° Longitude: -94.8945°	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 (%)				
	<p>POORLY GRADED SAND WITH SILT (SP-SM), dark gray and tan, medium dense - with scattered roots 0 to 4 feet</p> <p>- tan 2 to 4 feet</p> <p>- dark gray 4 to 6 feet</p>	<p>6.0</p>	<p>▽</p> <p>▽</p> <p>▽</p>	<p>×</p> <p>×</p> <p>×</p>	<p>3-5-5 N=10</p> <p>5-6-9 N=15</p> <p>9-12-10 N=22</p>				<p>22</p>		<p>6</p>	
	<p>POORLY GRADED SAND (SP), gray, medium dense to very dense</p> <p>- with shell fragments below 8 feet</p>	<p>20.0</p>	<p>▽</p>	<p>×</p> <p>×</p> <p>×</p> <p>×</p> <p>×</p> <p>×</p> <p>×</p> <p>×</p>	<p>9-15-26 N=41</p> <p>20-27-30 N=57</p> <p>17-24-30 N=54</p> <p>24-34-44 N=78</p> <p>17-28-29 N=57</p> <p>11-20-24 N=44</p> <p>7-8-14 N=22</p>				<p>25</p>		<p>2</p>	
	Boring Terminated at 20 Feet											

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

Hammer Type: Rope and Cathead

Advancement Method:
Dry augered to 6 feet; wet rotary thereafter.

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS	
▽	6 ft While drilling
▽	4.5 ft After 5 minutes
▽	3.5 ft After 15 minutes

Notes:

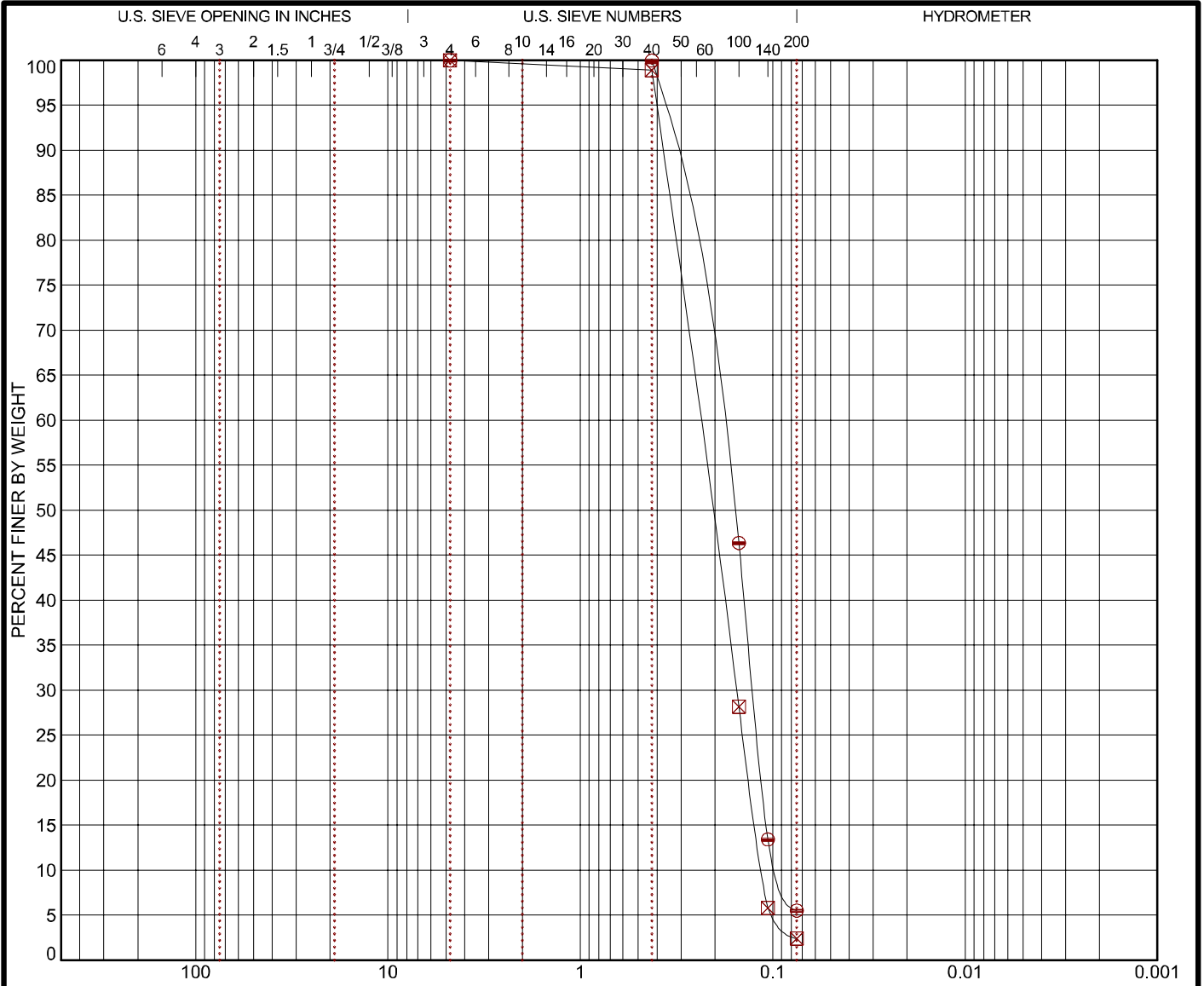


Boring Started: 09-25-2017	Boring Completed: 09-25-2017
Drill Rig: ATV	Driller: Van and Sons
Project No.: 91175091	Exhibit: A-23

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_91175091 GALVESTON ISLAND REDO.GPJ TERRACON_DATATEMPLATE.GDT 10/31/17

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	2.5 - 4	22				0.89	2.14
⊠	B-18	6.5 - 8	25				0.88	2.12

Boring ID	Depth	D ₁₀₀	D ₈₅	D ₅₀	D ₁₀	%Gravel	%Sand	%Silt	%Fines	%Clay
⊖	B-18	2.5 - 4	4.75	0.318	0.161	0.091	0.0	94.5	5.5	
⊠	B-18	6.5 - 8	4.75	0.347	0.207	0.113	0.0	97.6	2.4	

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. 91175091_ATKINS_NORTH_GRAINSIZE_TEMP_91175091_GALVESTON_ISLAND.GPJ TERRACON_DATATEMPLATE.GDT 11/6/17

PROJECT: Galveston Island Sand Source Investigation SITE: Sullivan Ranch Property Galveston, Texas	551 League City Pkwy Ste F League City, TX	PROJECT NUMBER: 91175091 CLIENT: Atkins North America, Inc. Houston, Texas EXHIBIT: A-40
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