



- Geotechnical Engineering
- Construction Materials Testing

PROJECT NAME: Anchorage Basin Sand Source Investigation

CLIENT: HDR Engineering, Inc.

BORING ID.: AA-02

DESCRIPTION: Anchorage Basin Borrow Source Area

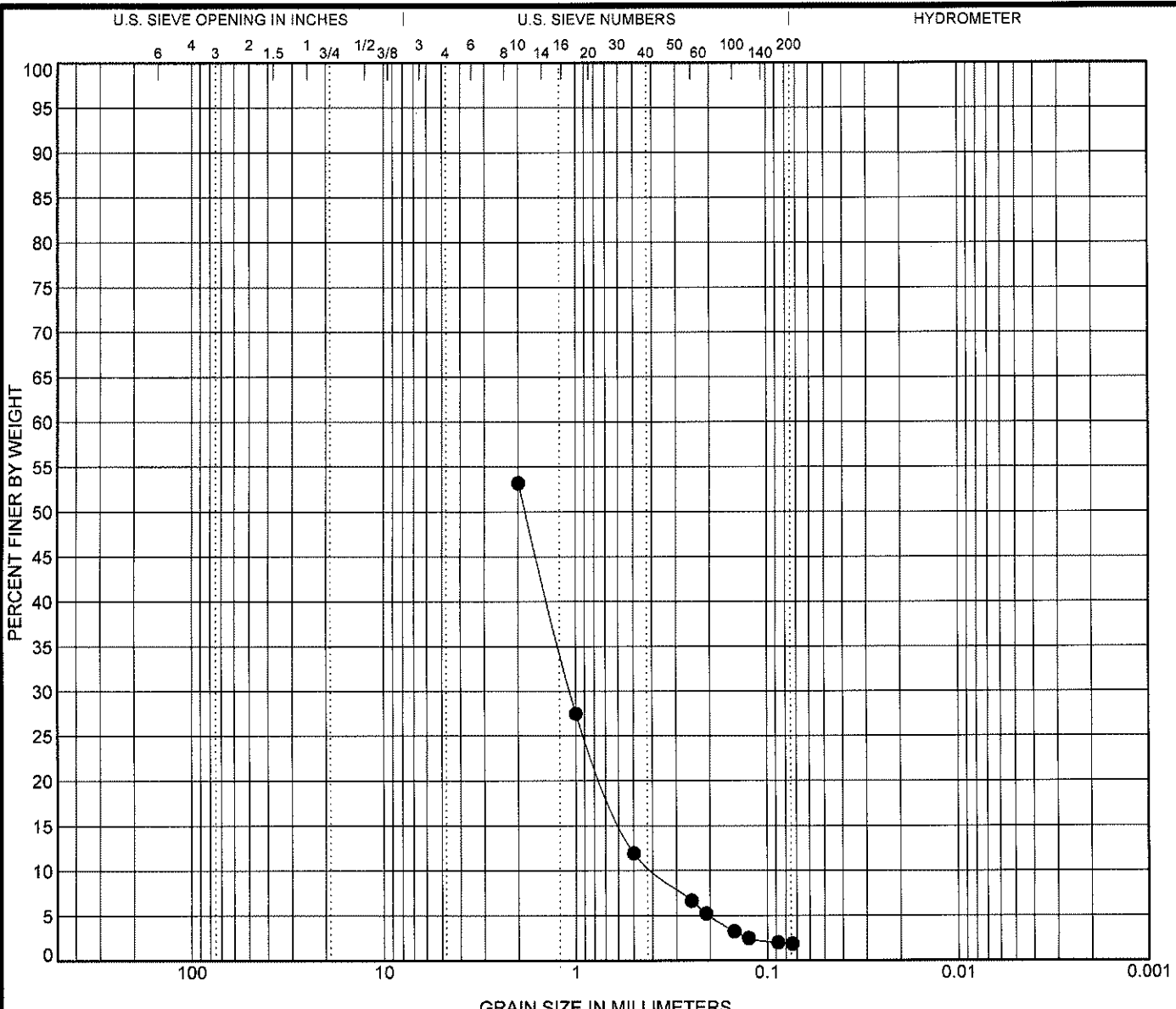
PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)			
-22' to -23' NAVD	-24' to -25' NAVD	-27' to -28' NAVD	-29' to -30' NAVD
62.20	46.80	20.56	22.95

ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL			
	-22' to -23' NAVD	-24' to -25' NAVD	-27' to -28' NAVD	-29' to -30' NAVD
#10	100.00	100.00	100.00	100.00
#18	N/A	27.49	68.63	66.09
#35	N/A	11.94	60.99	59.34
#60	N/A	6.67	58.05	55.30
#70	N/A	5.24	56.43	52.93
#100	N/A	3.27	46.89	33.36
#120	N/A	2.51	41.88	19.33
#170	N/A	2.02	38.33	10.51
#200	N/A	1.88	37.55	8.86
STATISTICS (EXCLUDING SHELL)				
MEDIAN GRAIN SIZE (mm)	N/A	1.80	0.18	0.19
MEAN GRAIN SIZE (mm)	N/A	1.05	N/A	0.28
SORTING (σ)	N/A	0.50	N/A	N/A

*AA-02; -22' to -23' NAVD was only passed through the #10 sieve.

*The #10 material was utilized as the total sample for Grain Size Distribution Curve calculations.

US GRAIN SIZE G109112 PROP ANCHORAGE BASIN SAND SOURCE GPJ US LAB GDT 4/9/09



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● AA-02	(-24' to -25' NAVD)	Borrow Area (-24' to -25' NAVD)					

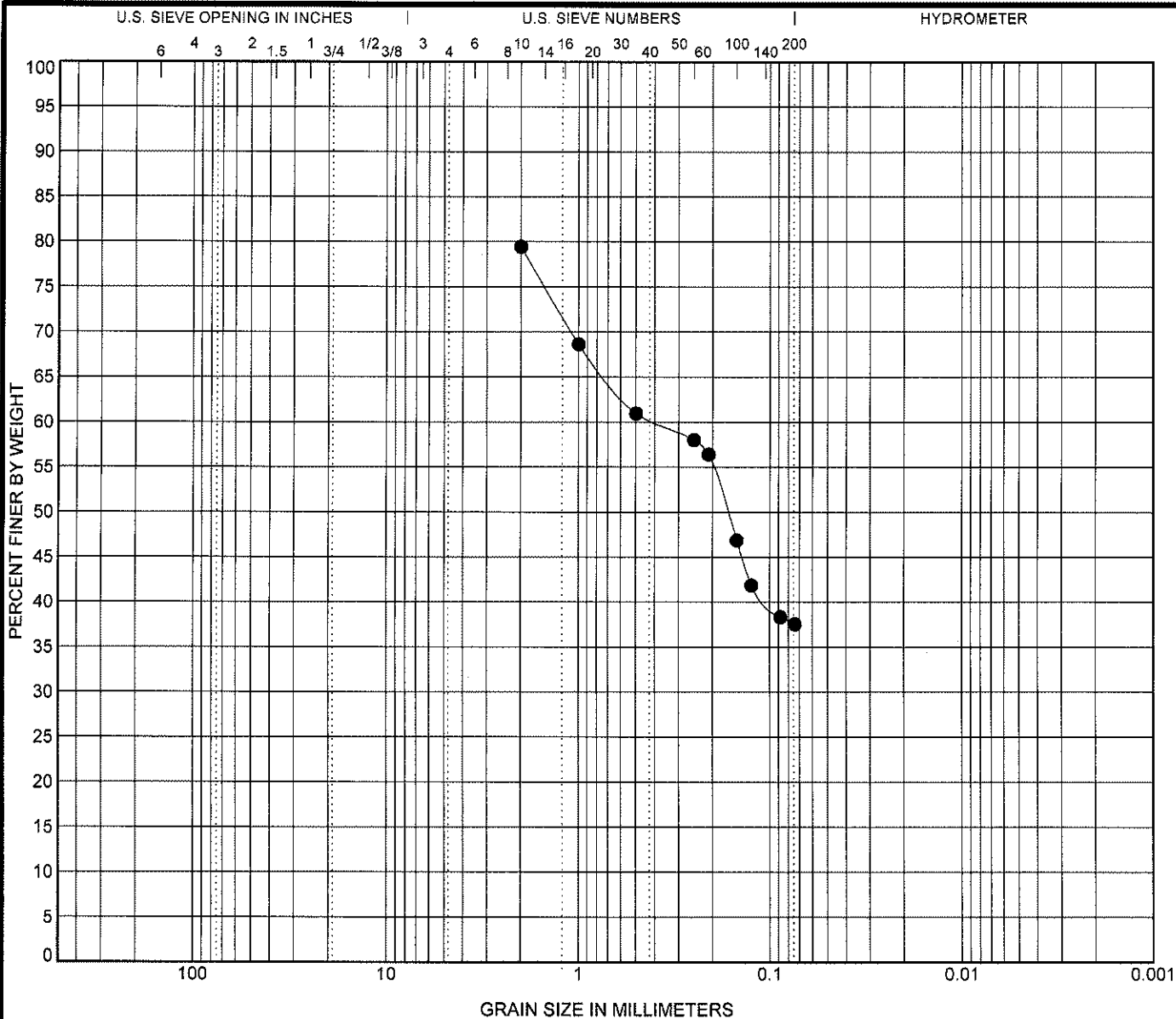
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● AA-02	(-24' to -25' NAVD)	2		1.07	0.387	0.0			

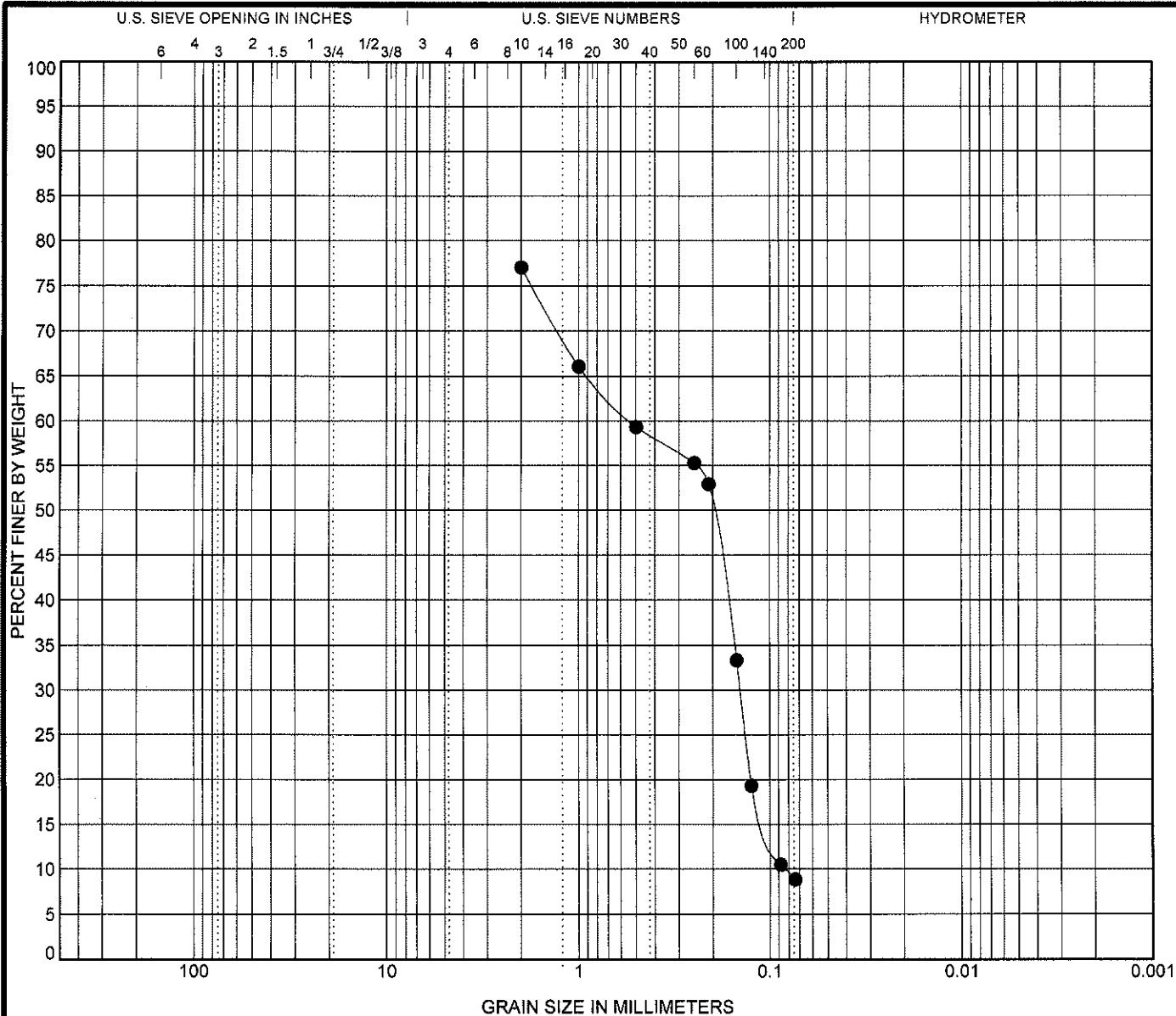


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GRAIN SIZE DISTRIBUTION

Project: Anchorage Basin Sand Source Investigation
 Location: Anchorage Basin; Galveston, Texas
 Number: G109112





COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID		Depth	Classification					LL	PL	PI	Cc	Cu
●	AA-02	(-29' to -30' NAVD)	Borrow Area (-29' to -30' NAVD)								0.46	6.41
Specimen ID		Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay		
●	AA-02	(-29' to -30' NAVD)	2	0.535	0.143	0.083	0.0					



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SHEET 1 OF 1



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CLIENT: HDR Engineering, Inc.
PROJECT: Anchorage Basin Sand Source Investigation
LOCATION: Anchorage Basin; Galveston, Texas
NUMBER: G109112

DATE(S) DRILLED: 03/13/09 - 03/13/09

DRILLING METHOD(S):

Vibracore

GROUNDWATER INFORMATION:

SURFACE ELEVATION: -22' NAVD

DESCRIPTION OF STRATUM

FIELD DATA		LABORATORY DATA								DRILLING METHOD(S):		
SOIL SYMBOL	Elevation, Ft. [NAVD]	SAMPLE NUMBER	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: TONS/SQ FT PERCENT RECOVERY/ ROCK QUALITY DESIGNATION	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	MINUS NO. 200 SIEVE (%)	Vibracore
						LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX				GROUNDWATER INFORMATION:
						LL	PL	PI				
												DESCRIPTION OF STRATUM
	21											
	22	S-1									2	POORLY GRADED SAND , with shell fragments, brown and gray.
	23											Same as above.
	24		S-2									Same as above.
	25		S-3									POORLY GRADED SAND , with shell fragments, brown and gray.
	26		S-4									Same as above.
	27	S-5									38	CLAYEY SAND , with shell fragments, brown and gray.
	28	S-6										Same as above.
	29	S-7										POORLY GRADED SAND , with clay and shell fragments, gray.
	30	S-8									9	Same as above.
	31	S-9										Boring was extended to an elevation of -31-feet NAVD during the drilling operations.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - POCKET TORVANE SHEAR STRENGTH

REMARKS:

Boring depth and location was determined by HDR Engineering, Inc. Boring operations were performed by Ocean Surveys, Inc.
GPS Coord. N. 13,698,267' E. 3,316,725'

OG OF BORING G109112 PROP. ANCHORAGE BASIN SAND SOURCE.GPJ ROCK ETL.GDT 4/28/09