



Technical Report

Sediment Characteristics Along Texas Gulf Beaches

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Appendix 7 – Sediment Sieve Analysis Tables (Shell Included)



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1. INTRODUCTION

1.1 BACKGROUND

This technical report documents a sediment characterization of beaches along the Texas Gulf coast that are being considered by the Texas General Land Office (GLO) for future beach nourishment projects. This report was funded by a Texas Coastal Management Program (CMP) grant approved by the Texas Land Commissioner, providing financial assistance under the Coastal Zone Management Act of 1972, as amended, awarded by the National Oceanic and Atmospheric Administration (NOAA), Office for Coastal Management, pursuant to NOAA Award No. NA21NOS4190136. The views expressed herein are those of the author(s) and do not necessarily reflect the views of NOAA, the U.S. Department of Commerce, or any of their subagencies. The intent of the project is to establish representative values for sediment grain size, percent fines, sorting index, and other parameters to help establish guidelines for selecting borrow sources for beach nourishment projects. This characterization will support development of two regional permits being pursued by GLO from the U.S. Army Corps of Engineers (USACE) for beach nourishment projects along the Texas coast. The GLO's project manager for this work was Melissa (McCutcheon) Smuck, Ph.D., at CMP.

1.2 PROJECT OVERVIEW

The project area extends along the Texas Gulf shoreline from Bolivar Peninsula to Boca Chica Peninsula. In 2020, GLO reported that 80% of the Texas Gulf shorelines are eroding at a rate greater than 2 ft/yr, with a coast-wide average of -4.17 ft/yr (McKenna, 2020). One of the strategies used by GLO to combat coastal erosion in Texas is beach nourishment, which helps reduce storm impacts to landward infrastructure, provides recreational benefits, and maintains natural resources. A photo from a 2017 beach nourishment being constructed along the seawall at Galveston Island is shown in Figure 1.



Figure 1. Previous Nourishment in Galveston

Section 404 of the Clean Water Act (33 U.S.C. 1344) and Section 10 of the Rivers and Harbors Act (33 U.S.C. 403) require federal permits for beach nourishments on the Texas coast. The permitting process generally requires identification of a borrow source containing “beach quality” sand compatible with the native beach sand. Sand compatibility considers physical sediment characteristics such as grain size distribution and, depending on the borrow source, may also consider chemical constituents. Compatibility between the borrow material and native beach sands influences the effectiveness, longevity, and appearance of nourishment projects. The GLO is pursuing two regional USACE permits to support future beach nourishments in Texas; one for the upper Texas coast and another for the lower Texas coast. The current assessment was performed to help establish standard criteria for borrow sources based on local sediment characteristics. The methodology applied to develop these criteria is presented in the following sections.

2. DATA COLLECTION

2.1 AREAS SAMPLED

Grab samples of native beach sediments were collected at different beaches along the upper and lower Texas coast. Sampling was performed at pre-determined areas, referred to herein as “reaches,” selected by the GLO. With the exception of historical nourishments along Bolivar Peninsula that occurred within approximately one mile of Rollover Pass, none of these areas have been previously nourished, but all are considered priority areas for future nourishments. The locations of these reaches are listed in Table 1 and shown in Figure 2



Table 1. Sediment Sampling Locations

Location (Reach)	Start	End	Distance, mi
Upper Coast			
1. Bolivar Peninsula East	High Island	Rollover Pass	8.2
2. Bolivar Peninsula Central	Gordon Drive	Beaumont Drive	6.2
3. Bolivar Peninsula West	Beaumont Drive	Magnolia Lane	6
4. Galveston Island State Park	13 Mile Road	15 Mile Road	1.5
5. Follets Island	Buccaneer Pkwy	Yucca Avenue	11.6
6. Sargent Beach Hwy	Hwy 457	Brow Cedar Cut	2.5
7. Matagorda Peninsula	Beach Access Road	FM 2031	1.2
Lower Coast			
8. Mustang Island North	Access Road 1	Wilson's Cut	4.9
9. Mustang Island Central	Wilson's Cut	Pass 4.5	4.5
10. Mustang Island South	S. Boundary of State Park	Newport Pass Road	1.3
11. North Padre Island	Blvd Bob Hall	Bob Hall Pier	1.2
12. South Padre Island	Beach Access Rd 6	Beach Access Rd	3
13. Boca Chica Peninsula	South Jetty	Boca Chica Blvd	4.7



Figure 2. Sediment Sampling Locations

2.2 SAMPLING TRANSECTS

Within each reach, sediment samples were collected at transects that were considered representative of the surrounding area. The distance between each transect was selected to be approximately equidistant throughout each reach and not exceed 1 mile. For shorter reaches such as the Galveston Island State Park a minimum of three transects were established; 2 transects located near the start and end of the reach and 1 transect taken approximately in the middle of the reach. Transects were also located to avoid sampling within areas of frequent vehicular traffic (beach access roads), near local structures (fishing piers, retention walls, sand fences, and jetties), or geomorphic variances (dune washouts) as these features can affect the local sediment gradation by altering nearby coastal processes. An example of the transect spacing is illustrated in Figure 3 in which the transect locations with respect to either anthropogenic or unique geomorphic features are shown.



Figure 3. Transect Locations for Boca Chica Sampling

At each transect HDR collected 6 sediment grab samples for a total of 450 samples. The number of transects and samples for each reach is presented in Table 2. The sampling effort was performed in four separate site visits, also shown in Table 2.

Table 2. Transect and Sample Distribution between Reaches

Site Visit Date	Location (Reach)	Number of Transects	Number of Grab Samples
Upper Coast			
July 26-27, 2022	1. Bolivar Peninsula East	9	54
	2. Bolivar Peninsula Central	7	42
	3. Bolivar Peninsula West	7	42
	4. Galveston Island State Park (GISP)	3	18
July 12-13, 2022	5. Follets Island	13	78
	6. Sargent Beach Hwy	4	24
	7. Matagorda Peninsula	3	18
Lower Coast			
July 6-7, 2022	8. Mustang Island North	6	36
	9. Mustang Island Central	6	36
	10. Mustang Island South	3	18
	11. North Padre Island	3	18
July 21-22, 2022	12. South Padre Island	5	30
	13. Boca Chica Peninsula	6	36

The cross-shore locations of the samples were selected to represent prominent geomorphic features from the toe of the dune to wading depth (Figure 4). All samples were collected via walking or wading to the sample location. Sampling depths for the trough and second bar were limited to water depths considered safe for wading by field personnel. The sampling methodology detailing how the samples were collected is described in Section 2.3.

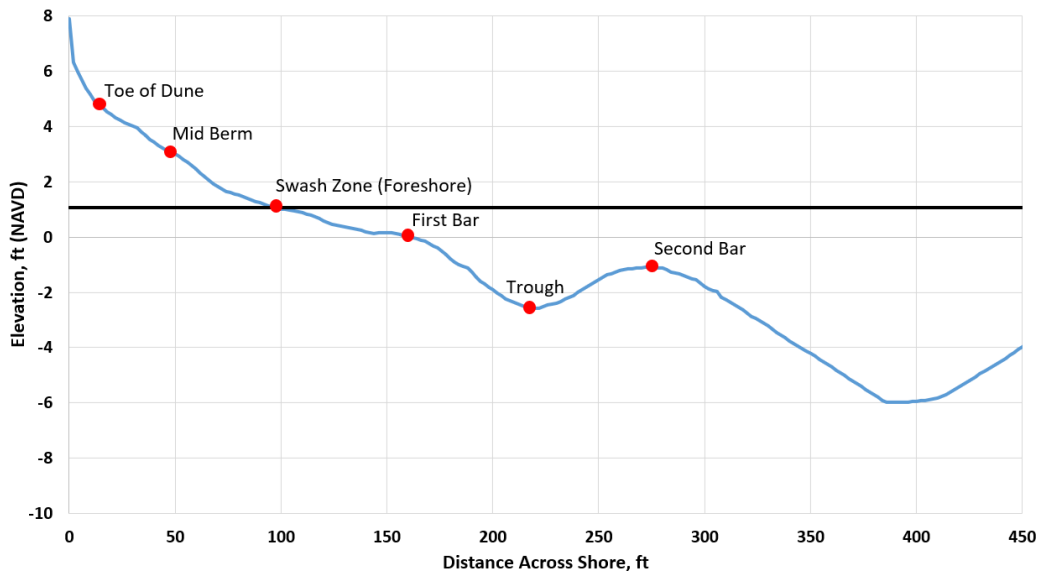


Figure 4. Cross-shore Sampling Locations Along Transect

2.3 TRANSECT LOCATIONS

Maps showing the locations of the transects in each reach are provided in Figure 5 through Figure 17.



Figure 5. Transect Map of Bolivar Peninsula East Reach



Figure 6. Transect Map of Bolivar Peninsula Central Reach



Figure 7. Transect Map of Bolivar Peninsula West Reach



Figure 8. Transect Map of Galveston Island State Park Reach



Figure 9. Transect Map of Follets Island Reach



Figure 10. Transect Map of Sargent Beach Reach



Figure 11. Transect Map of Matagorda Peninsula Reach



Figure 12. Transect Map of Mustang Island North Reach



Figure 13. Transect Map of Mustang Island Central Reach



Figure 14. Transect Map of Mustang Island South Reach



Figure 15. Transect Map of North Padre Island Reach

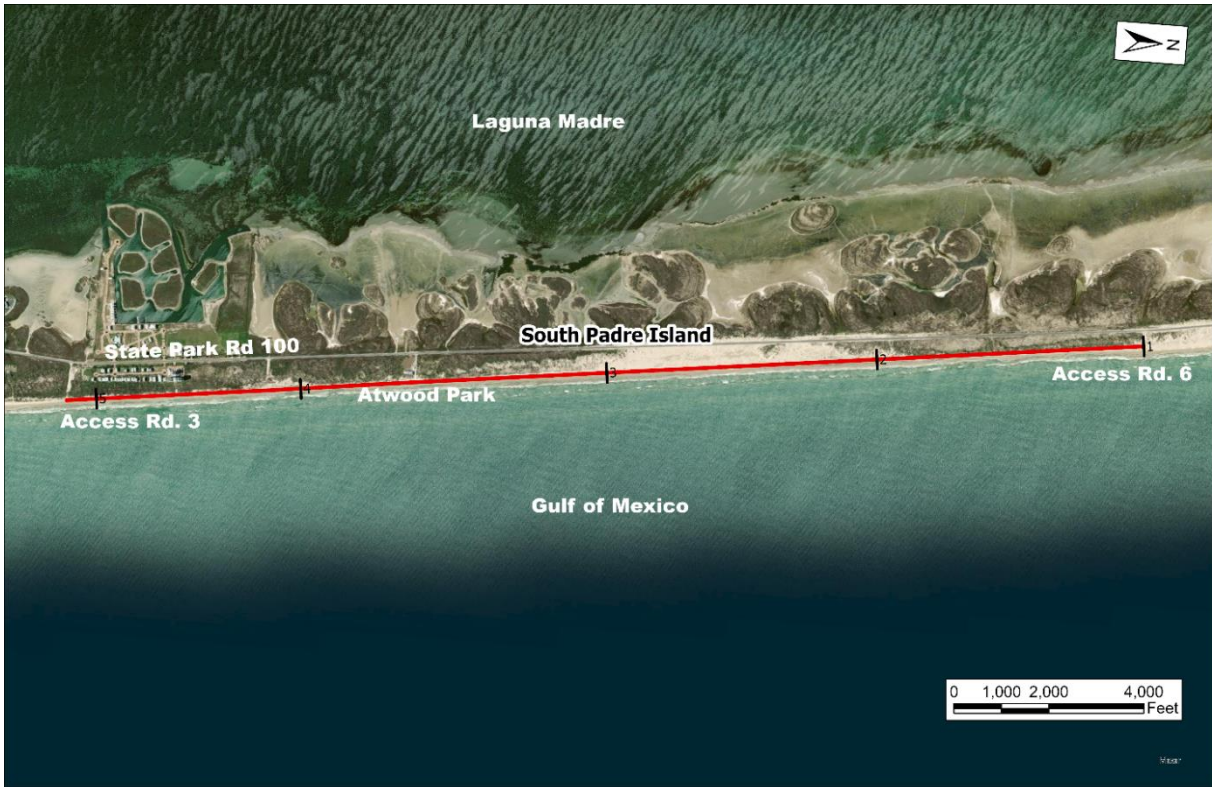


Figure 16. Transect Map of South Padre Island Reach



Figure 17. Transect Map of Boca Chica Reach

2.4 SAMPLING METHODOLOGY

2.4.1 Equipment

The sediment samples were collected in 10" long by 2" diameter tubes as shown in Figure 18. Upon collecting the sample, the respective tube was sealed on either side with caps (green colored in the figure) and secured with tape to avoid spillage during transit. Tubes were labeled with the reach name, transect number, and sample location (geomorphic feature) where the sample was collected.



Figure 18. Sampling Tube 10" Long by 2" Diameter

Transects coordinates were mapped in GIS software prior to each site visit. Coordinates and maps with transect locations labeled with respect to visual landmarks were used in the field to navigate to sampling locations. Coordinates were tracked using a hand-held GPS and a Google Earth phone application as shown in Figure 19.



Figure 19. Locating Transect 1 in Mustang Island Central

A shovel was used in conjunction with the sampling tubes to facilitate sample collection in areas where high concentrations of shell hash, rock, stiff clay, compacted soils from vehicle traffic, and debris were present. Samples in the mid-berm location typically required a shovel because of higher levels of sediment compaction (see Figure 20). A trench shovel was also used in the wading depth samples to excavate sediment from the seafloor before transferring it to the sample tube. An example of an transect in which shell hash, debris, and rocks were observed is shown in Figure 21.



Figure 20. Shovel Used to Loosen Soil at Mid-Berm Location in Transect 2 at Sargent Beach



Figure 21. Debris and Rock present at Transect 1 in Bolivar Peninsula East

2.4.2 Sampling Procedure

Variability in the geomorphic features (i.e., toe of dune, mid berm, swash zone, etc.) was observed from one reach to the next, requiring careful consideration by field personnel to maintain consistency during the overall sampling effort. To help maintain consistency, the sampling procedure described in Table 3 was followed. Site visit photos illustrating this sampling procedure are presented in Figure 22 through Figure 26.

Table 3. Field work procedure for collecting samples

Sampled Geomorphic Feature	Protocol for Locating Feature	Protocol for Collecting Sample
Toe of Dune	<ul style="list-style-type: none"> Locate toe of dune as first notable and sustained increase in elevation leading from berm Look at dunes to the right and left of sample location for reference 	<ul style="list-style-type: none"> Vertically insert sample tube into sand, use shovel to loosen compacted soils
Mid Berm	<ul style="list-style-type: none"> Sample near the mid-point between toe of dune and swash zone. Avoid sampling in areas of high vehicle traffic 	
Swash Zone	<ul style="list-style-type: none"> Collect sample close to the high-tide wrack line 	
First Bar	<ul style="list-style-type: none"> Define the 1st bar as the first increase in elevation seaward of the swash zone. 	<ul style="list-style-type: none"> Excavate sand with trenching shovel from sea bottom, transfer to sample tube.
Trough	<ul style="list-style-type: none"> Locate deepest point between 1st and 2nd bar while maintaining safe wading depths. 	
Second Bar	<ul style="list-style-type: none"> Define as the next consecutive increase in elevation following the 1st bar. 	

Sampling of the dune toe at Transect 4 in Bolivar Peninsula West is shown in Figure 22. The location of the toe of dune sample aligns with the dune in the background. In areas with loose sands/sediments (e.g., as shown in Figure 22), the sample tube was pushed vertically down until capturing the top 10” of sediment.



Figure 22. Sampling of the Toe of Dune in Bolivar Peninsula

Sampling in the mid berm at Transect 2 in Follets Island is shown in Figure 23. The majority of vehicle traffic occurs in the mid-berm location. Sampling from ruts left by tire tracks was avoided where possible.



Figure 23. Sampling of the Mid Berm in Follets Island

Sampling of the swash zone at Transect 7 in Bolivar Peninsula East is shown in Figure 24. Outcroppings of shell hash and coquina were present in some transects. Depending on the extent of the shell coverage, these areas were avoided to capture an accurate representation of the beach sand. Seaweed was also avoided.



Figure 24. Sampling of the Swash Zone at Bolivar Peninsula

The wading depth sampling locations varied between reaches as well as from transect to transect. In Figure 25, the first bar can be observed by waves breaking close to shoreline.



Figure 25. Sampling of First Bar in Bolivar Peninsula

Sampling of the trough and 2nd bar at Transect 3 of Mustang Island Central is shown in Figure 26.



Figure 26. Wading Samples in Mustang Island Central Reach

2.4.3 Field Observations

At several locations the beach profile included either anthropogenic or unique geomorphic features that altered the cross-shore profile of the beach. Notable observations from the field work that warranted adjustments to the sampling procedure are documented in the following sections.

Bolivar Peninsula

In Figure 27, the toe of a riprap revetment protecting State Highway 87 extends into the swash zone at Transect 2 in Bolivar Peninsula East. No dunes or berm were present at the time of the site visit. The two respective samples were omitted from this transect and additional sampling was performed in Sargent Beach to compensate for these two samples.



Figure 27. Riprap Revetment at Transect 2 in Bolivar Peninsula East

At Transect 4 in Bolivar Peninsula East a damaged concrete Jersey Barrier ran along the beach (Figure 28). The sample corresponding to the “toe of the dune” was collected on the landward side of the barrier near the existing vegetation. No continuous system of dunes was observed in the vicinity of this transect.



Figure 28. Locating the Toe of Dune Sample at Transect 4 in Bolivar Peninsula East

Sargent Beach

Sampling at Sargent Beach was performed immediately to the southwest of the “corkscrew” bridge spanning the Gulf Intracoastal Waterway. A revetment and concrete bulkhead extend along the first mile of beach up to the relic fishing pier adjacent to the West Moring Dock parking lot. The dune toe sample at Transect 1 in Sargent Beach was collected on the landside of the revetment as shown in Figure 29. Subsequent samples at Transect 1 were collected on the seaward side of the revetment (Figure 30).



Figure 29. Location of Toe of Dune Sample at Transect 1 in Sargent Beach



Figure 30. Mid-berm sample at transect 1 in Sargent Beach

To compensate for the samples that were not collected at Transect 2 at Bolivar Peninsula East, two samples were collected seaward of the concrete bulkhead in Sargent Beach. The beach width varied along the length of the bulkhead at the time of the site visit. The samples were collected at the widest part of the beach in front of the bulkhead. This location is referred to as Transect 2B in Figure 10. Samples were collected at the swash zone and the 1st bar locations as shown in Figure 31.



Figure 31. Sampling of Transect 2B in Sargent Beach

South of the relic fishing pier at Sargent Beach in front of the West Mooring Dock parking lot the cross-shore profile consisted largely of clay and shell hash (Figure 32). No sampling was performed in this area.

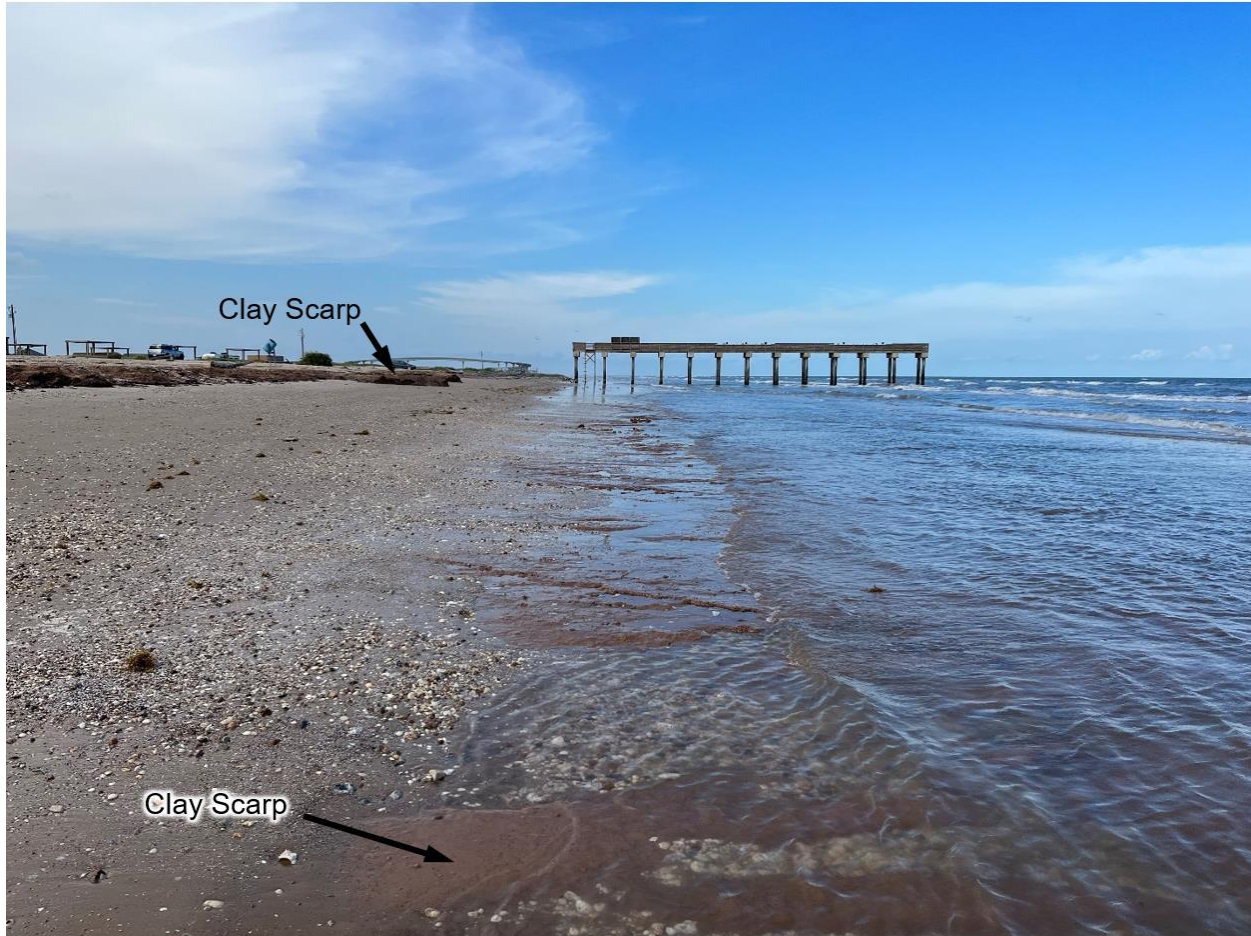


Figure 32. Beach Sediments Near Relic Fishing Pier in Sargent Beach

At Transects 2 through 4 in Sargent Beach a clay scarp was observed near the swash zone and in the wading sample locations. Sediment samples at these locations were collected outside of these deposits to represent local sands. Sampling of the swash zone at Transect 3 in Sargent Beach is presented in Figure 33 and was performed seaward of the clay scarp.



Figure 33. Clay Deposits Near Swash Zone in Sargent Beach

At Transect 4 in Sargent Beach, the dune system was not well defined. The toe of the dune sample was collected at the margin where sparse grasses were observed in the cross-shore profile (Figure 34).



Figure 34. Locating the Toe of the Dune Sample at Transect 4 in Sargent Beach

Coastal Bend

At portions of the Mustang Island and North Padre Island reaches, sand was observed to be mounded in front of the dune from maintenance of beach driving lanes and aeolian transport. A photo taken during the sampling of the dune toe at Transect 1 in Mustang Island North is provided in Figure 35.



Figure 35. Sand Piled Up on Dune in Mustang Island North

The damaged beach access road at North Padre Island in front of Padre Bali Park extended through Transect 1 (Figure 36).



Figure 36. Beach Access Road at Transect 1 in North Padre Island

3. DATA ANALYSIS

3.1 SIEVE ANALYSIS METHODOLOGY

Sediment samples were delivered to Rock Engineering and Testing Laboratory, LLC. (RETL) for sieve analyses. The sieve analyses were performed in accordance with standard test methods ASTM C136 (Particle Size Distribution) and ASTM C117 (Percent Finer Than the #200 Sieve). The sieve sizes used in the analysis are listed in Table 4. To focus the grain-size statistics on sand-sized particles, shell and other granule-sized particles were removed using an initial pass through a #10 (2 mm) sieve. In some samples, residual shell and granule-sized particles remained after passing through the #10 sieve and were left in with the rest of the sample for the following sieve analysis¹. The results of the sieve analysis were applied to calculate percent finer, mean grain size, median grain size, and sorting index. Technical definitions of these parameters are provided in Appendix 1. In addition to these gradation parameters, the Munsell color for each sample was determined. These results are summarized in Section 3.2. The complete analysis and results can be referenced in the geotechnical report provided by RETL, included as an attachment in Appendix 2.

¹ Grain size statistics reported within the main body of this report exclude the shell and other granule-sized particles retained by the initial pass through the #10 sieve. Grain size statistics including and excluding the percent initially retained on the #10 sieve are provided in Appendices 6 and 7, respectively.

Table 4. ASTM Standard Sieves

Sieve Number	Sieve Size (mm)
#10	2.000
#18	1.000
#35	0.500
#60	0.250
#70	0.210
#80	0.177
#100	0.149
#120	0.125
#170	0.088
#200	0.074

3.2 SEDIMENT ANALYSIS RESULTS

Based on the sediment testing results provided by RETL, HDR calculated average values for percent finer, mean grain size, median grain size, and sorting index for each reach. A composite grain size curve and envelope of minimum and maximum percent passing values were graphed for each reach. These analyses provide representative information on the sediment characteristics and grain size variability.

Two methods were used to calculate the averaged gradation parameters; 1) averaging gradation parameters across all individual samples in the reach and 2) calculating the gradation parameters based on the composite curves. The two methods yielded similar results, although greater variability was observed in the Bolivar Peninsula East reach. Results are provided in the following sections.

The Munsell color classifications reported by RETL were organized in pie graphs to display the range and occurrence of sediment color within each reach. A Munsell Soil-Color Chart was used to color the corresponding values in each pie graph. These graphs are provided in Appendix 3.

3.2.1 Averaged Gradation Parameters per Reach

Gradation parameters calculated by averaging individual sample parameters are presented in Table 5. Parameters determined from composite curves are presented in Table 6. In addition, an approximate estimate of the percent shell fragments was developed based on the percent retained by the #10 (2 mm) sieve; these results are summarized in Table 7.



Table 5. Averaged Gradation Parameters for All Reaches (Individual Sample Averages)

Regions	Reaches	Grain Size (mm)				Passing #200 Sieve (%)	Sorting Index
		Median	Mean	Maximum	Minimum		
Upper Texas Coast	Bolivar Peninsula East	0.190	0.224	0.650	0.116	3.7	0.766
	Bolivar Peninsula Central	0.156	0.164	0.200	0.119	2.3	0.557
	Bolivar Peninsula West	0.146	0.150	0.177	0.103	2.3	0.476
	Galveston Island State Park	0.118	0.120	0.131	0.108	1.2	0.280
	Follets Island	0.129	0.130	0.165	0.109	2.4	0.325
	Sargent Beach Hwy	0.127	0.132	0.200	0.107	12.2	0.425
	Matagorda Peninsula	0.184	0.191	0.240	0.161	1.4	0.440
Lower Texas Coast	Mustang Island North	0.130	0.131	0.149	0.110	1.8	0.352
	Mustang Island Central	0.143	0.142	0.160	0.120	1.1	0.370
	Mustang Island South	0.150	0.148	0.172	0.126	1.0	0.391
	North Padre Island	0.150	0.147	0.178	0.133	1.1	0.381
	South Padre Island	0.182	0.180	0.204	0.158	1.2	0.342
	Boca Chica Peninsula	0.168	0.166	0.200	0.139	1.5	0.332

Table 6. Averaged Gradation Parameters for All Reaches (Composite Curve Averages)

Regions	Reaches	Composite Curve Statistics		
		Median Grain Size (mm)	Mean Grain Size (mm)	Sorting Index
Upper Texas Coast	Bolivar Peninsula East	0.167	0.205	1.120
	Bolivar Peninsula Central	0.155	0.153	0.587
	Bolivar Peninsula West	0.144	0.143	0.521
	Galveston Island State Park	0.116	0.119	0.286
	Follets Island	0.128	0.128	0.334
	Sargent Beach Hwy	0.115	0.123	-
	Matagorda Peninsula	0.179	0.183	0.456
Lower Texas Coast	Mustang Island North	0.129	0.130	0.359
	Mustang Island Central	0.143	0.141	0.371
	Mustang Island South	0.149	0.147	0.395
	North Padre Island	0.147	0.146	0.392
	South Padre Island	0.181	0.180	0.339
	Boca Chica Peninsula	0.168	0.165	0.357

Note: Sorting index was not calculated for the Sargent Beach composite curve based on the high percentage of fines passing the #200 sieve.



Table 7. Percent Shell Statistics for All Reaches

PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)			
Reaches	Average Retained (%)	Max Retained in Individual Sample (%)	Standard Deviation of Percent Retained (σ)
Bolivar Peninsula East	7.77	30.50	7.24
Bolivar Peninsula Central	3.71	29.70	6.08
Bolivar Peninsula West	0.59	9.90	1.74
Galveston Island State Park	0.03	0.20	0.06
Follets Island	0.02	0.50	0.07
Sargent Beach Hwy	1.22	15.10	2.92
Matagorda Peninsula Beach	2.03	14.80	3.67
Mustang Island North	0.03	0.20	0.06
Mustang Island Central	0.03	0.40	0.09
Mustang Island South	0.04	0.20	0.06
North Padre Island	0.15	1.00	0.28
South Padre Island	0.25	2.80	0.54
Boca Chica Peninsula	0.05	0.40	0.09

3.2.2 Composite Curves

The composite curves for all reaches are presented in Figure 37 through Figure 49. The minimum and maximum grain size curves are graphed as well to provide an envelope of the percent passing values measured in each reach. The maroon circle on the grain size curve identifies the approximate median grain size of each composite curve.

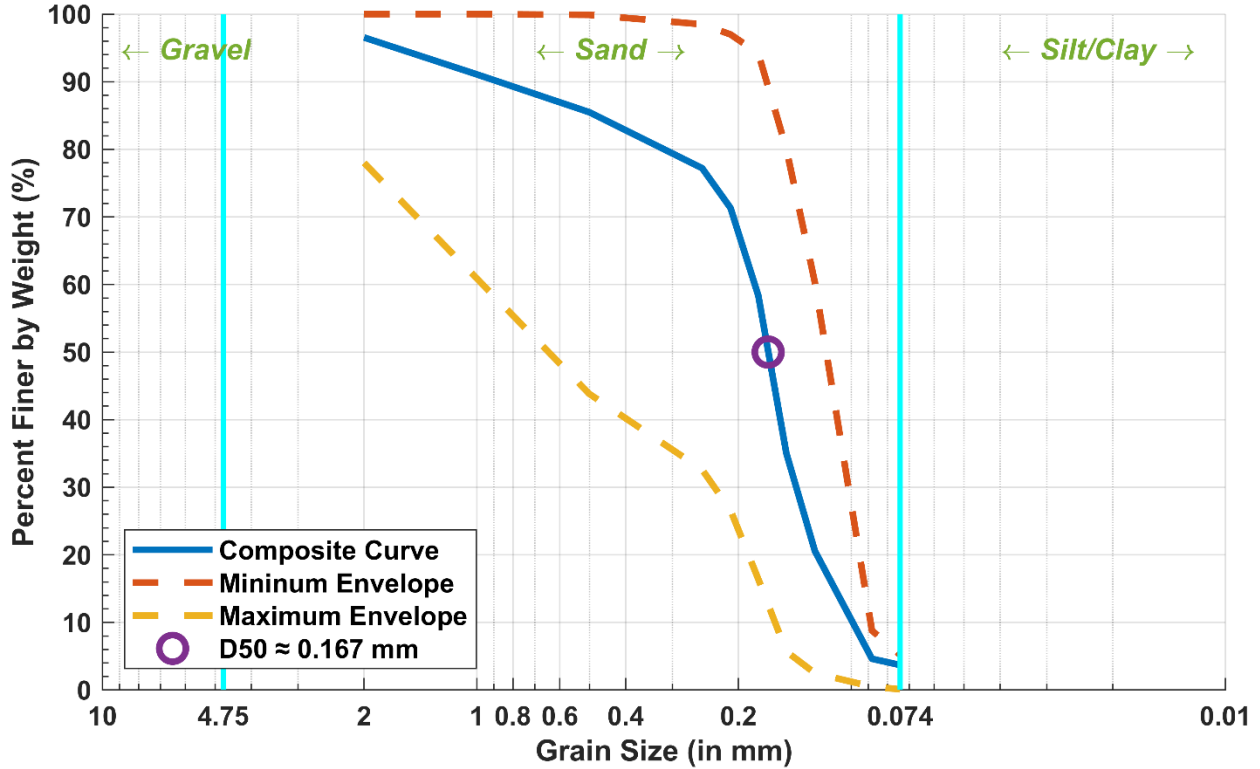


Figure 37. Bolivar Peninsula East (BPE) Grain Size Composite Curve

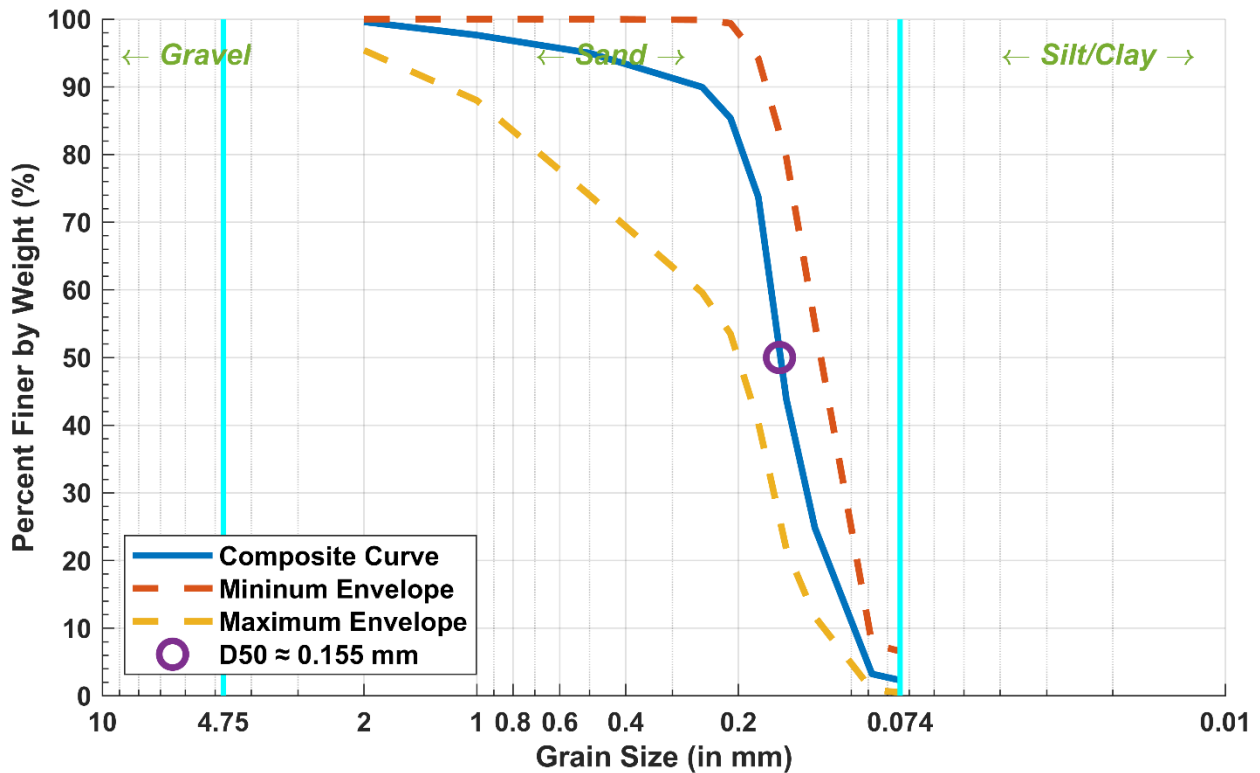


Figure 38. Bolivar Peninsula Central (BPC) Grain Size Composite Curve

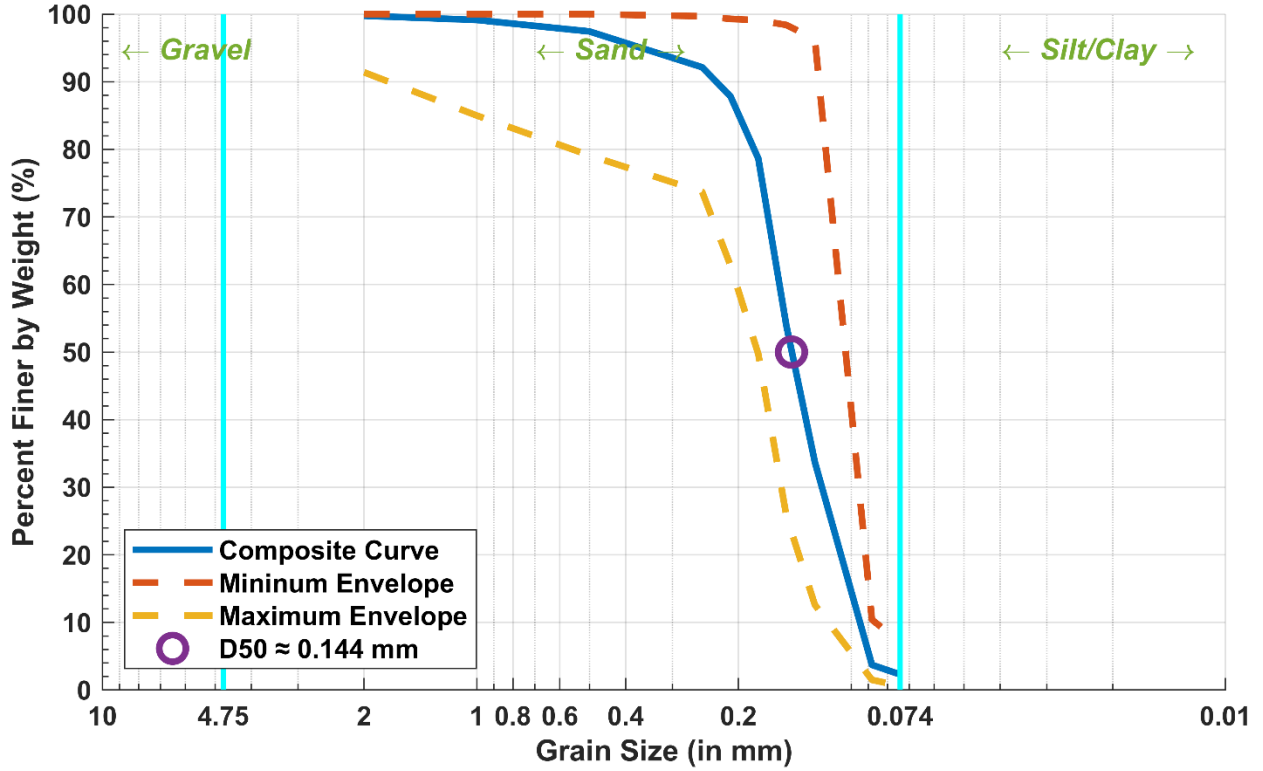


Figure 39. Bolivar Peninsula West (BPW) Grain Size Composite Curve

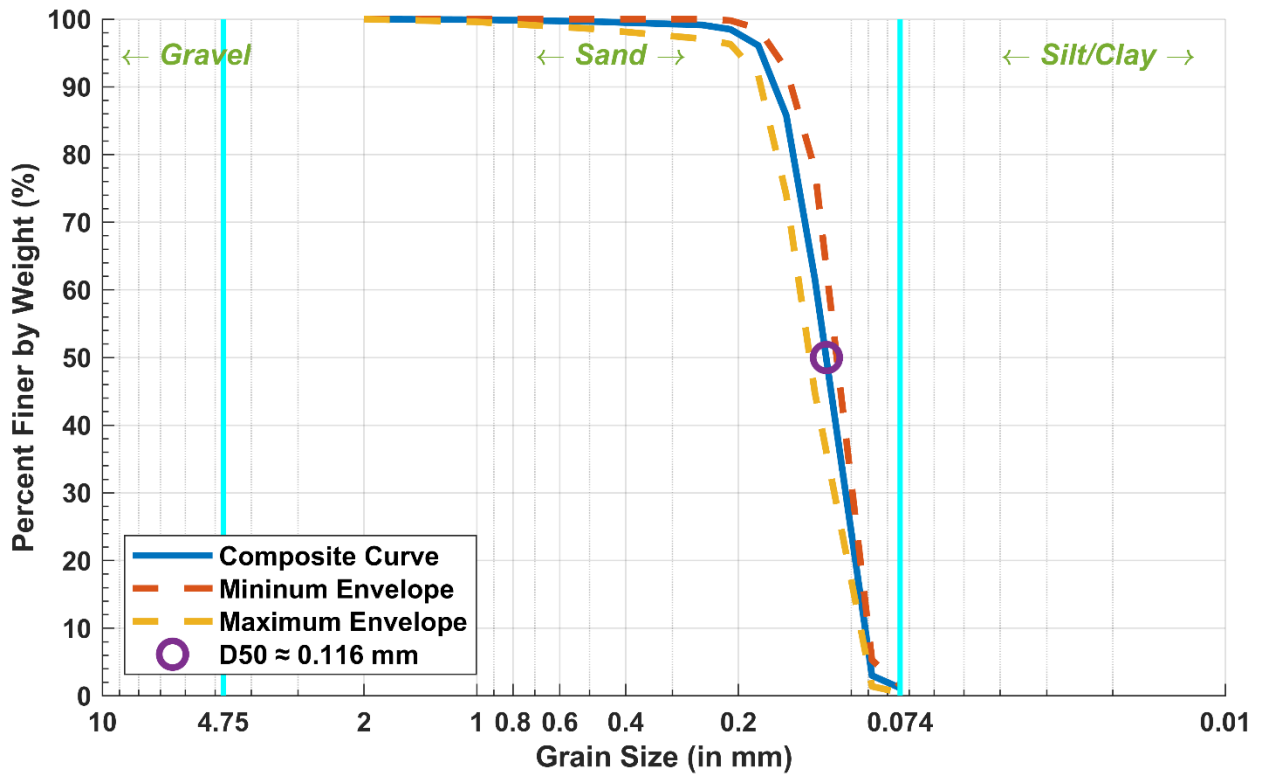


Figure 40. Galveston Island State Park (GISP) Grain Size Composite Curve

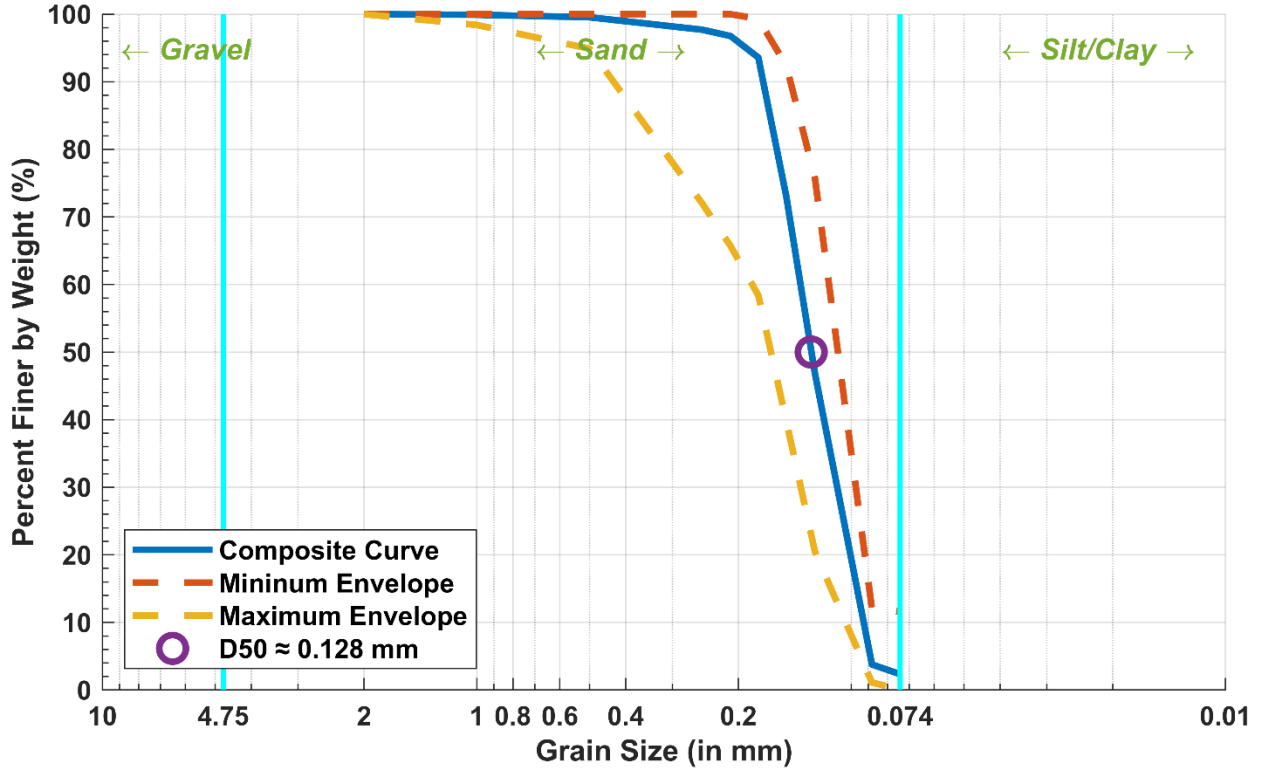


Figure 41. Follets Island (FI) Grain Size Composite Curve

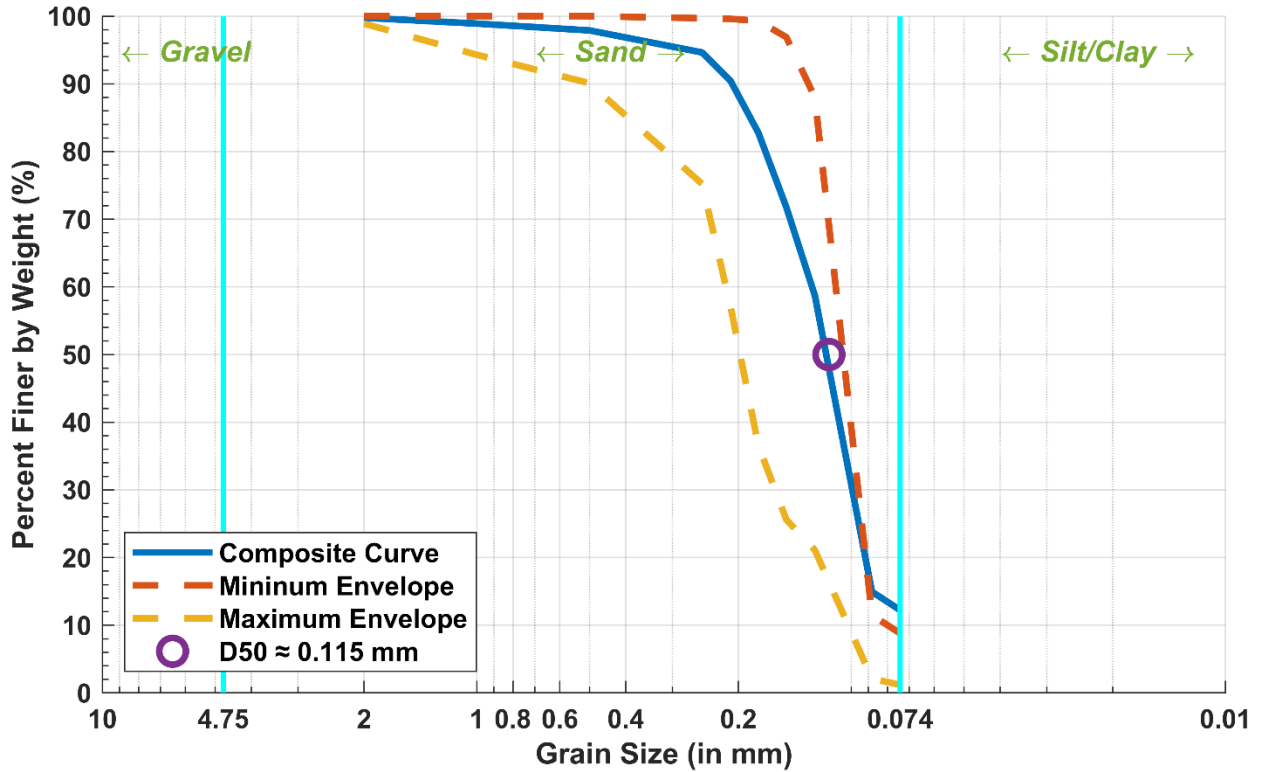


Figure 42. Sargent Beach (SB) Grain Size Composite Curve

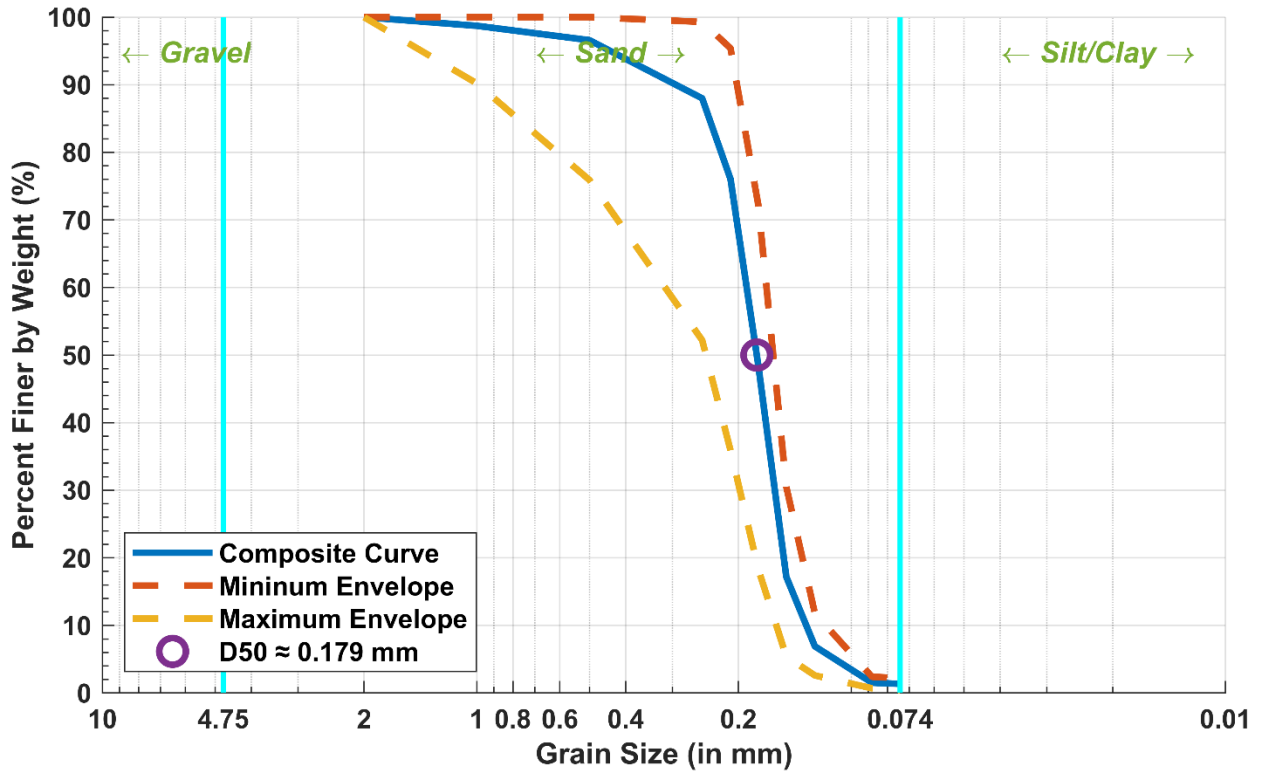


Figure 43. Matagorda Peninsula (MP) Grain Size Composite Curve

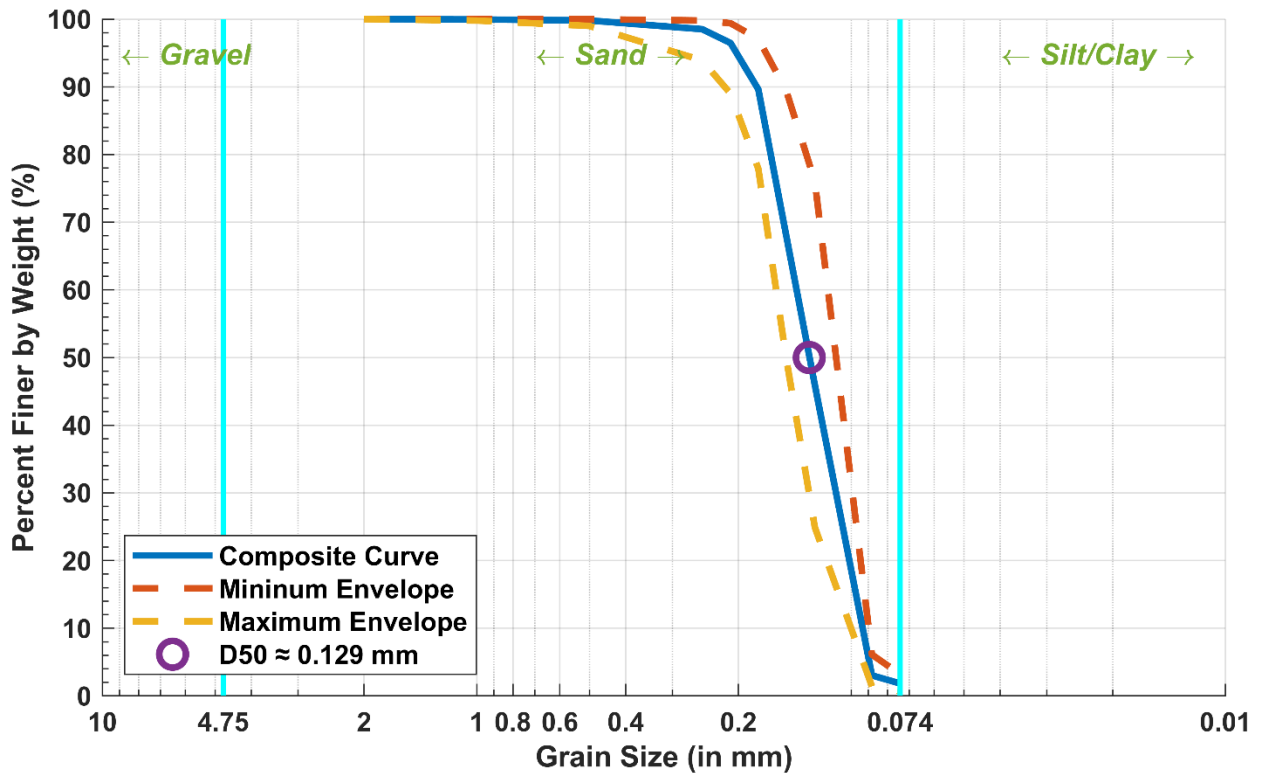


Figure 44. Mustang Island North Grain Size Composite Curve

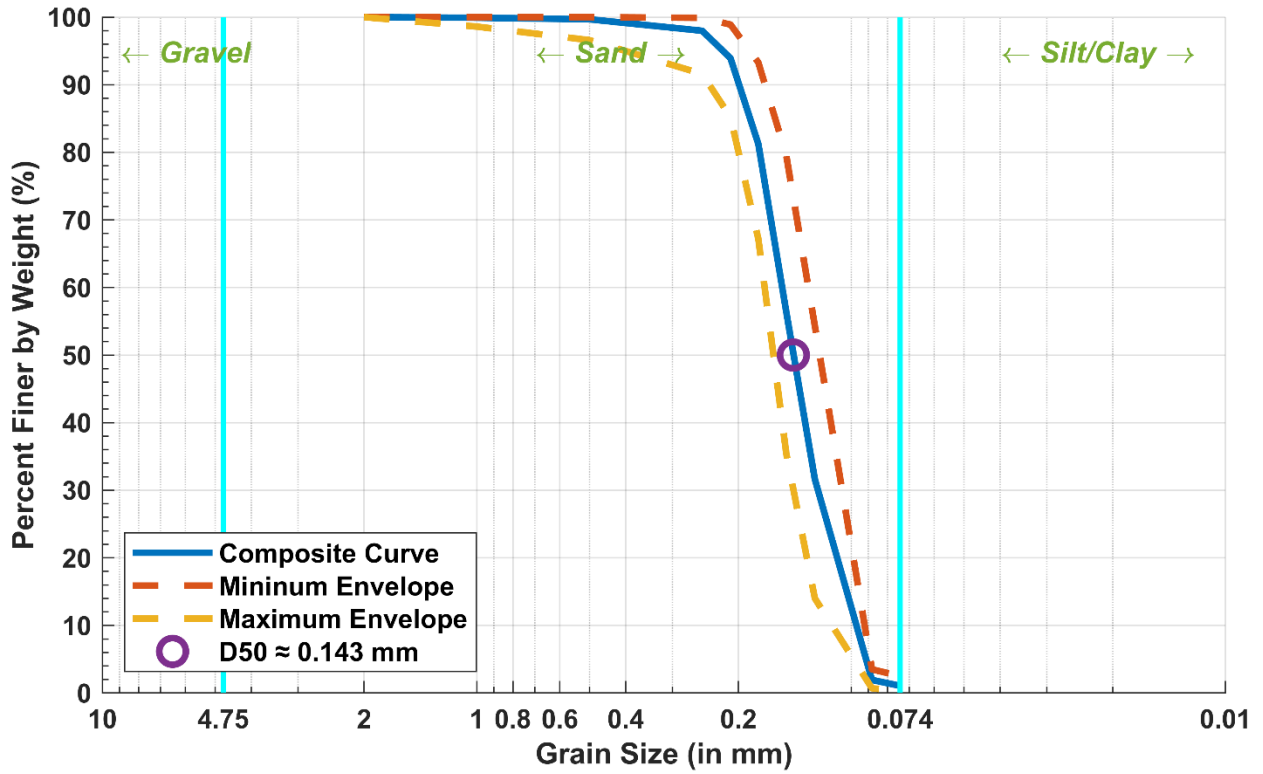


Figure 45. Mustang Island Central Grain Size Composite Curve

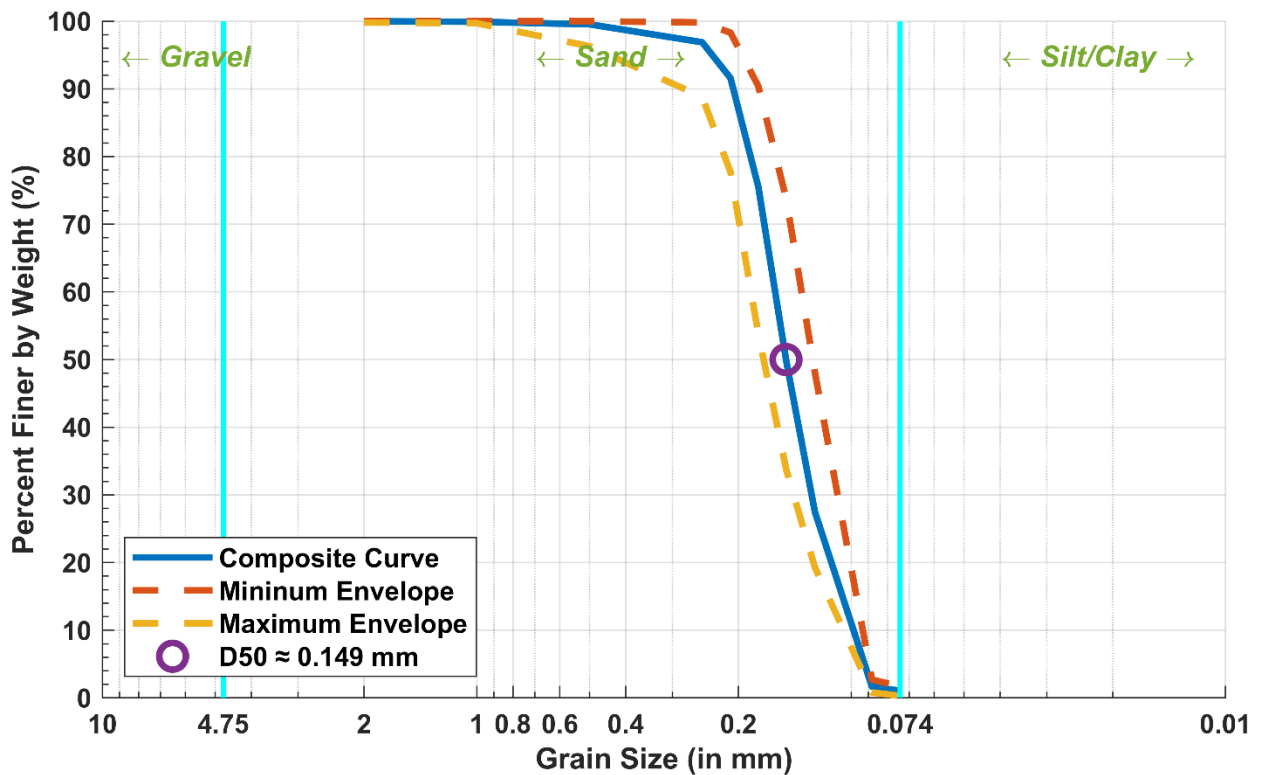


Figure 46. Mustang Island South Grain Size Composite Curve

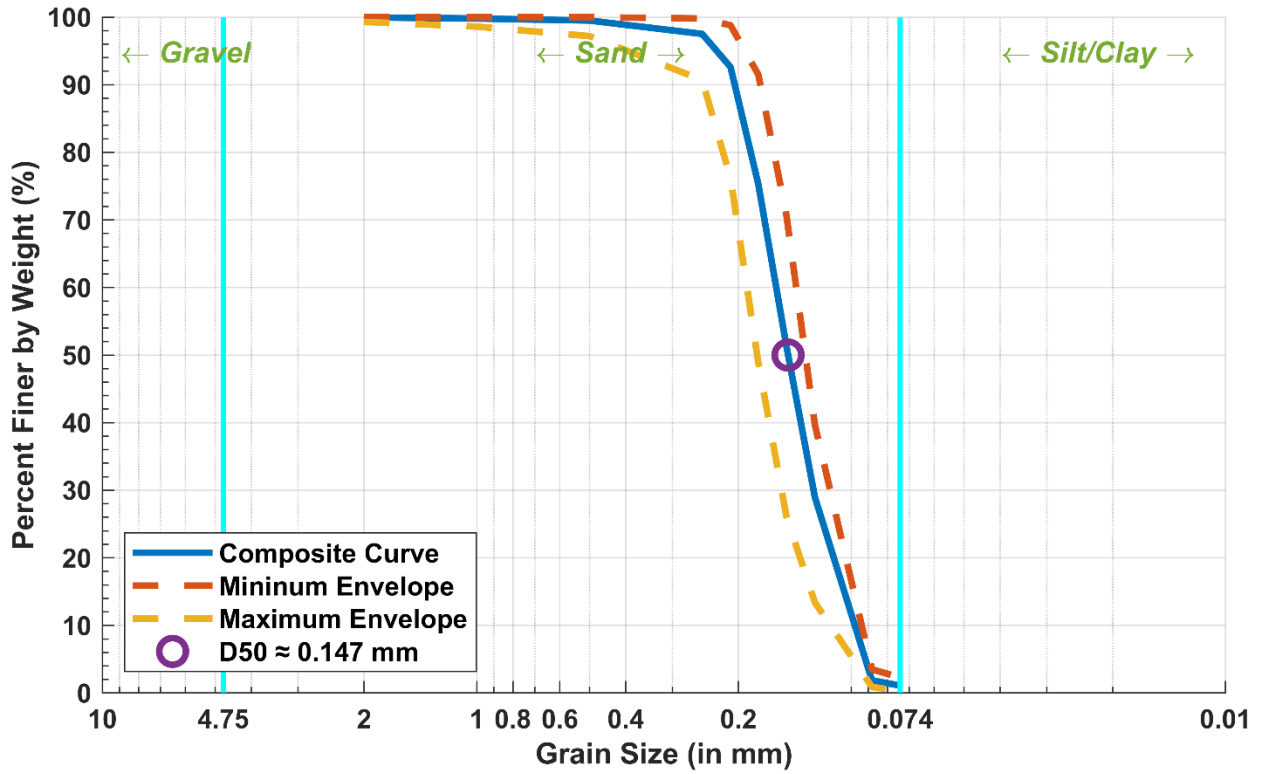


Figure 47. North Padre Island Grain Size Composite Curve

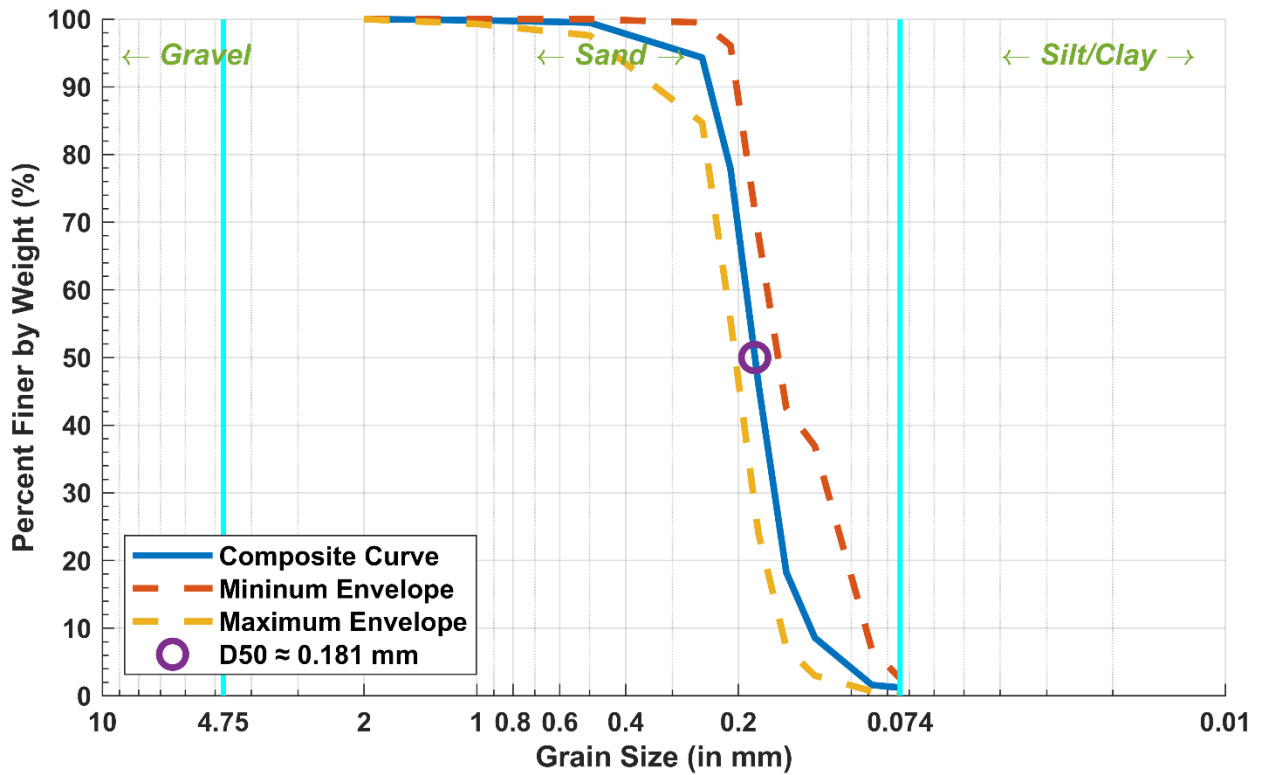


Figure 48. South Padre Island Grain Size Composite Curve

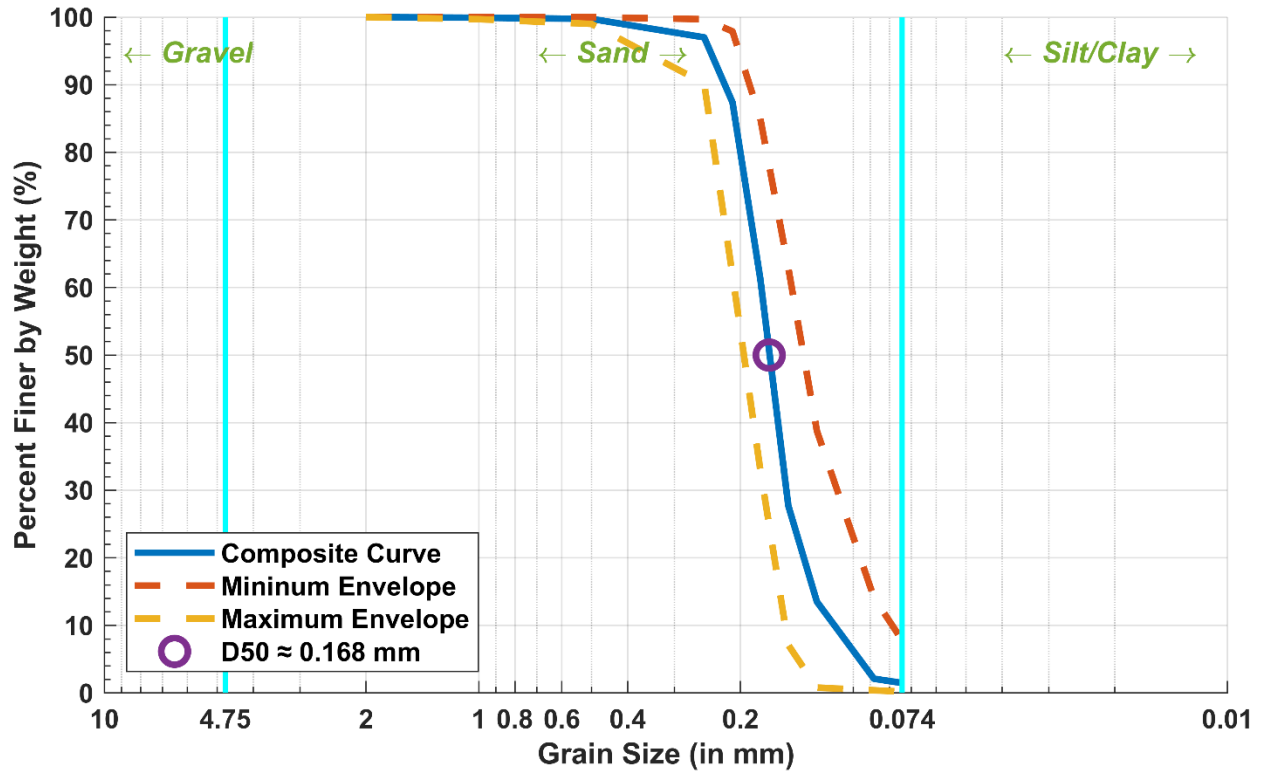


Figure 49. Boca Chica Grain Size Composite Curve

3.2.3 Result Summary

The sand collected from all regions tended to be very well sorted to well sorted with typically less than 3% fines (silt and clay sized particles). Median grain sizes ranged from approximately 0.12 mm to 0.19 mm. A summary of the regional trends observed in the average gradation parameters and composite curves are provided below.

Upper Coast Region

Larger median grain sizes (greater than 0.15 mm) were observed in eastern and central Bolivar Peninsula and Matagorda Peninsula. Galveston Island State Park represented the smallest median grain size (0.12 mm) within the upper coast region.

With the exception of the Galveston Island State Park, the minimum and maximum grain size envelopes show a wider deviation from the respective composite curves than what is observed in the lower coast reaches, indicating a greater variability in grain sizes within the upper coast reaches. Sargent Beach and Bolivar Peninsula East showed the highest percent fines with values of 12.2% and 3.7% respectively.

The variations in the grain size parameters observed in the eastern and central portions of Bolivar Peninsula East, Sargent Beach and Matagorda Peninsula can be attributed to higher concentrations of clay, shell hash, and coarser sediments present at these reaches.

Lower Coast Region

The largest median grain sizes in the lower coast region were observed in South Padre Island and Boca Chica with values of 0.18 mm and 0.17 mm respectively. Median grain size in the Coastal Bend area ranged from 0.13 mm to 0.15 mm.

The minimum and maximum grain size envelopes indicated more uniformity in beach sediments than the upper coast region. The composite curves also represented very well sorted to well sorted sediments, more so than the reaches sampled in the upper coast region. Percent finer values were below 2% across the lower coast reaches.

4. DISCUSSION AND RECOMMENDATIONS

Typical sources of borrow material for beach nourishment in Texas include:

- Channel dredging
- Riverine deposits
- Marine deposits in bays, tidal inlets, and the Gulf
- Existing dredged material placement areas
- Commercial sand quarries

When borrow material is placed as beach nourishment it is washed, sorted, and bleached by natural processes such as waves, currents, rain, wind, and sun. Over time, these natural processes help beach fill material look, feel, and migrate like native beach sand. In addition to washing from natural processes, sand from upland and riverine sources is sometimes artificially processed through screening and washing at commercial quarries, and sand from submerged sources is indirectly washed during construction if the sediment is transported and placed through pipeline or hopper dredging.

The timescale for washing may vary from days to months depending on whether the washing process is natural or artificial. Regardless of the timescale, removal of fines during the washing process increases the median grain size of borrow material by separating silt and clay sized particles from sand-sized particles (Maglio, Das, & Fenner, 2019). This process also decreases the sorting index of borrow material, contributing to a well sorted composition that remains loose and resists compaction similar to natural beach sand. Because most of the silt and clay is removed from the sand and transported offshore, sediment that may not initially appear compatible can still be a good source for beach nourishment. During design, coastal engineers can simulate the washing process through numerical means by mathematically revising or lessening the fine content of sediment sample(s) to evaluate overall sediment compatibility.

Although washing and other processes improve borrow material quality from its in-situ condition, borrow material that is significantly different than native beach sediments can create temporary undesirable affects as summarized in Table 8. Although these undesirable affects may be mitigated by natural processes over time, the initial beach may not be considered good quality compared to the native beach if significant compatibility issues exist.

Sand quality requirements for beach nourishments in Texas should address the potential undesirable affects listed in Table 8 without making the criteria overly restrictive. Coarser sand yields a wider beach for a given nourishment volume and generally provides greater resistance to erosion. However, borrow material that is excessively coarse may adversely impact recreational value (such as walking with bare feet) or biological activity (such as sea turtle nesting), particularly if the material contains pebbles or gravel as is common in riverine sources.



Table 8. Potential undesirable effects of poor quality borrow material.

Sediment Incompatibility Issue	Examples of Potential Undesirable Consequence
1. Median grain size of borrow material is very fine compared to native sand.	<ul style="list-style-type: none"> - Flatter beach profile may occur which adds little to no beach width for public access and recreation, and increases project volumes and associated costs.
2. Median grain size of borrow material is very coarse compared to native sand.	<ul style="list-style-type: none"> - Steeper beach profile that may create deeper water closer to shore and rougher wave conditions. - If fill material contains excessive pebbles, gravel, shell, or other large particles, beach may be uncomfortable when walking with bare feet.
3. Percent fines of borrow material is greater than native sand.	<ul style="list-style-type: none"> - Nourished beach may have a hard, cemented surface or may have a muddy composition. - Nourished beach may erode faster than native beach.
4. Borrow material contains excessive shell, pebbles, gravel, rock fragments, or other particles larger than native sand particles.	<ul style="list-style-type: none"> - Over time the coarser particles will tend to accumulate on beach surface and/or shoreface, creating an unnatural appearance and texture that is uncomfortable when walking with bare feet.
5. Sorting index of borrow material is greater than native sand.	<ul style="list-style-type: none"> - Nourished beach may have a very “packed” or firm feel compared to native beach.
6. Borrow material contains excessive: <ol style="list-style-type: none"> a. Poorly-sorted sediment, carbonate sediment, or shell fragments; b. Dark or black minerals; or c. Particles that are significantly finer or coarser than native sand. 	<ul style="list-style-type: none"> - Nourished beach may exceed acceptable bulk properties for compaction and cementation, impacting sea turtle nesting (Reine, 2022), benthic organisms (Colosio, Abbiati, & Airoidi, 2007), and other natural habitat.

As shown in Table 5 the largest sediments that occur naturally on Texas beaches tend to be less than 1 mm. Previous beach nourishments at Surfside Beach, Texas have successfully utilized sand from an upland source on the Colorado River. This sand had a median grain size of 0.33 mm, and further exploration has revealed sand having a median grain size of up to 0.47 mm². It is anticipated that this sand source will continue to be utilized for nourishment projects in Brazoria County.

² Personal Communication, Mr. Josh Carter, Vice President, Mott MacDonald, Austin, TX, Nov 8, 2022.

For the purposes of regulatory permitting, borrow source criteria for projects in Texas are recommended to be based on composite percent fines, adjusted median grain size based on mathematical “washing” to simulate loss of fines by waves and currents, and chemical constituents. Although sorting index, color, percent coarse material, and other parameters are also important, these more technical parameters are recommended to be evaluated on a case-by-case basis by the design engineer separately from permitting considerations.

Table 9 lists the sediment quality criteria that are recommended for regulatory permitting. These criteria were selected based on the sampling and testing results from this investigation, engineering judgment, previous experience with beach nourishments in Texas, and general familiarity with viable borrow sources along the Texas coast. The median grain size and percent fines criteria are relatively broad to serve as an initial screening standard for selecting borrow sources. For specific projects the actual sediment quality limits may be more restrictive as determined by the design engineer based on the size, location, timing, and purpose of the nourishment. The table includes considerations for engineering design which typically serve as the basis for more restrictive criteria on a per-project basis.

When selecting the borrow sediment criteria in Table 9, consideration was also given to the characteristics of borrow sources known to be available in certain regions of Texas. For example, the Colorado River borrow source mentioned above is a viable source for nourishments at Follets Island, Surfside Beach, and Matagorda Peninsula, and borrow sources along the Nueces River are viable for beach nourishments at Mustang Island and North Padre Island. These inland riverine sources generally yield coarser sand than offshore borrow sources or channel dredging. Therefore a median grain size of up to 0.5 mm is recommended for projects in these regions.

Although not covered in detail in this assessment, another consideration for characterizing borrow sources is the spatial distribution and depth of soil borings sampled during the geotechnical investigation. Guidance concerning the number of borings collected, depth of borings, and sampling interval will depend on the size, composition, and configuration of the borrow area. Geotechnical investigations performed during the permitting phase of a project are typically exploratory-level efforts and may not include as many borings or samples as a design-level investigation. Supplemental geotechnical investigation may be required during the design phase of a project to better understand the borrow material. Johnson (2005) provides general guidance on geotechnical sampling for dredging projects. In addition, FDEP (2010) and Finkl & Khalil (2005) provide example guidelines for offshore sand source investigations.



Table 9. Sediment Quality Criteria for Regulatory Permitting, and Considerations for Engineering Design

Sediment Parameter	Recommended Criteria for Regulatory Permitting		Additional Considerations for Engineering Design
	Upper Coast	Lower Coast	
Median Grain Size After Natural Washing and Loss of Fines	Bolivar Peninsula: 0.10 to 0.30 mm Galveston Island: 0.10 to 0.30 mm Follets Island: 0.10 to 0.50 mm Sargent Beach: 0.10 to 0.50 mm Matagorda Peninsula: 0.13 to 0.50 mm	Mustang Island: 0.10 to 0.50 mm North Padre Island: 0.10 to 0.50 mm South Padre Island: 0.13 to 0.30 mm Boca Chica Peninsula: 0.13 to 0.30 mm	<ul style="list-style-type: none"> - Sand placement method (hydraulic or mechanical). - Borrow source location (terrestrial or marine). - Size, purpose, and timing of nourishment. - Renourishment cycle. - Placement of sediment as beach fill, dune, or nearshore berm. - Native flora and fauna, and ecosystem restoration goals.
Percent Fines (Prior to Natural Washing by Waves and Currents)	≤ 20%	≤ 15%	
Sorting Index ^[2]	Not applicable for permitting. Evaluate during design.		
Percent Coarse Material ^[2]	Not applicable for permitting. Evaluate during design.		
Color ^[2]	Not applicable for permitting. Evaluate during design.		
Incidental Chemical Substances	For evaluation of Heavy Metals, Total Recoverable Petroleum Hydrocarbons, Total Organic Halides, and Volatile Organic Compounds, apply the following screening benchmarks: <ul style="list-style-type: none"> - NOAA Marine Effects Range Low (ERL) - USEPA Marine Acute - NOAA Marine Effects Range Median (ERM) - TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Protective Concentration Levels (PCLs) for Human Health Screening for Common COCs and Parameters (Private Dredging Application) 		
Notes: <ol style="list-style-type: none"> 1. For regulatory permitting, median grain size and percent fines are recommended to be based on composite values, and percent fines is recommended to be based on the #200 sieve. 2. Sorting index, percent coarse material, and color are considered technical parameters that should be evaluated during the engineering design process on a case-by-case basis. 			



5. SUMMARY

HDR collected 450 sediment grab samples from 13 Texas Gulf coast beaches, referred to herein as “reaches,” during July 2022. Sieve analysis and Munsell color classifications were performed to determine percent finer, mean grain size, median grain size, sorting index values, and Munsell color ranges of the native sediments in each reach. Averages of these parameters were calculated for all reaches, and composite grain size curves were generated to help characterize the grain size and variability within the various reaches. This analysis was applied to develop recommendations for borrow source criteria for regional beach nourishment permits in Texas. These results can also be referenced by coastal engineers to establish baseline parameters for evaluating potential borrow sources when designing beach nourishment projects along the Texas coast.

6. REFERENCES

- Colosio, F., Abbiati, M., & Airoidi, L. (2007, August). Effects of Beach Nourishment on Sediments and Benthic Assemblages. *Marine Pollution Bulletin*, 54(8), 1197-1206.
- Finkl, C., & Khalil, M. (2005). Offshore Exploration for Sand Sources: General Guidelines and Procedural Strategies along Deltaic Coasts. *Journal of Coastal Research*, SI 44, 203-233.
- Florida Department of Environmental Protection (FDEP). (2010). *Offshore Sand Search Guidelines*. Bureau of Beaches and Coastal Systems. Retrieved from <https://floridadep.gov/sites/default/files/offshore-sand-search-guidelines.pdf>
- Johnson, K. (2005). Geotechnical Investigations for Dredging Projects. *Proceedings of the Western Dredging Association Twenty-Fifth Technical Conference & Thirty-Seventh Texas A&M Seminar* (p. 16). College Station: Western Dredging Association.
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- McKenna, K. (2020). *Texas Coastwide Erosion Response Plan*. Austin: Texas General Land Office. Retrieved from The Texas General Land Office: https://glo.texas.gov/coast/coastal-management/forms/files/2020coastwide-erosion-response-plan_2020_final.pdf
- Reine, K. J. (2022). *A Literature Review of Beach Nourishment Impacts on Marine Turtles*. Engineer Research and Development Center. Vicksburg: U.S. Army Corps of Engineers.



Appendix 1

Definitions of Grain Size Parameters





Percent Finer

Percent finer refers to the amount of material of a sample that is smaller than a given size. This is determined through sieve analyses in which the sample is sorted through standardized meshes to determine its grain size distribution.

Median Grain Size (M_d & D_{50})

The median grain size represents the diameter for which half the particles in the sample are coarser (bigger) than and half are finer (smaller) than. This parameter corresponds to the 50 percent finer value and can be determined graphically on the grain size curve of the sample (plot of grain size vs. percent finer). The median grain size is commonly used in coastal engineering as the measure of central tendency given the ease and simplicity of its calculation.

Mean Grain Size (M_z)

Mean grain size is another measure of central tendency. There exist several methods to calculate the mean grain size. The Coastal Engineering Manual uses the graphical mean formula established by Folk (1974) which is based on the corresponding grain sizes of the 16, 50, and 84 percent finer values,

$$M = \frac{(\phi_{16} + \phi_{50} + \phi_{84})}{3} \dots\dots\dots \text{Eq. 1}$$

where Φ_{16} represents the grain size of the sample for which 16 percent of the particles are finer (smaller) than. The Φ_{50} corresponds to the median grain size parameter defined above. See the definition for *Phi Units* to understand the conversion to millimeters.

For beach sediments, the mean grain size does not typically vary significantly from the median grain size. However, the mean grain size can provide a closer representation of sediment size for samples with skewed grain size curves. This is attributed to the graphical mean formula averaging three points across the grain size distribution instead of only the 50 percent finer value.



Sorting Index (σ)

The sorting index, called the *inclusive graphic standard deviation* by Folk (1974), is a measure of how much the particle grain sizes within the sample vary from the mean. This variation from the mean is referred to as the “sorting” of the different grain sizes in the sample. A sample that is described as “well sorted” is one in which most sediment particles have similar grain sizes.

The sorting index formula is composed of the average of two standard deviations: the first covers 2σ of the grain size distribution from the 84 to 16 percent finer values (Φ_{84} and Φ_{16}) and the second covers 3.3σ of the grain sizes in the sample from the 95 to 5 percent finer values (Φ_{95} and Φ_5).

$$\sigma = \frac{(\phi_{84} - \phi_{16})}{4} + \frac{(\phi_{95} - \phi_5)}{6.6} \dots\dots\dots \text{Eq. 2}$$

A table of sorting index ranges and the corresponding qualitative descriptions are provided below for reference. Sorting index is always expressed in Phi units, not millimeters.

Table 1. Description of Sorting Index Ranges	
Phi Range	Description
< 0.35	Very well sorted
0.35 - 0.5	Well sorted
0.50 - 0.71	Moderately well sorted
0.71 - 1.00	Moderately sorted
1.00 - 2.00	Poorly sorted
2.00 - 4.00	Very poorly sorted
> 4.00	Extremely poorly sorted

Phi Units (Φ)

Phi is a unit of sediment size. Millimeters and U.S. standard sieve numbers are two other ways used to measure sediment size. The relationship between phi units and millimeters is shown in the following equations,

$$\Phi = -\log_2 D \dots\dots\dots \text{Eq. 3}$$

$$D = 2^{-\Phi} \dots\dots\dots \text{Eq. 4}$$

where D is grain size in millimeters and Φ represents grain size in phi units.

Example Calculation of Grain Size Parameters

An example calculation of the grain size parameters defined herein is provided in the following page. Percent finer values from a sieve analysis are shown in Table 2. Estimates of the different grain sizes in mm and phi units for Equations 1 and 2 are shown in Table 3. The grain size curve of the example data is shown in Figure 1. The grain size parameter results are summarized in Table 4.

Table 2. Example of Percent Finer Values		
ASTM Standardized Meshes		Percent Finer
Sieve Number	Sieve Size [mm]	
#10	2.000	100.0
#18	1.000	99.8
#35	0.500	99.0
#60	0.250	96.7
#70	0.210	94.3
#80	0.177	88.4
#100	0.149	74.2
#120	0.125	58.8
#170	0.088	4.3
#200	0.074	2.0

Table 3. Graphical Estimates of Grain Sizes		
D#	Grain Size (mm)	Phi Units (Φ)
95	0.218	3.50
84	0.167	3.38
50	0.117	3.10
16	0.096	2.59
5	0.089	2.20

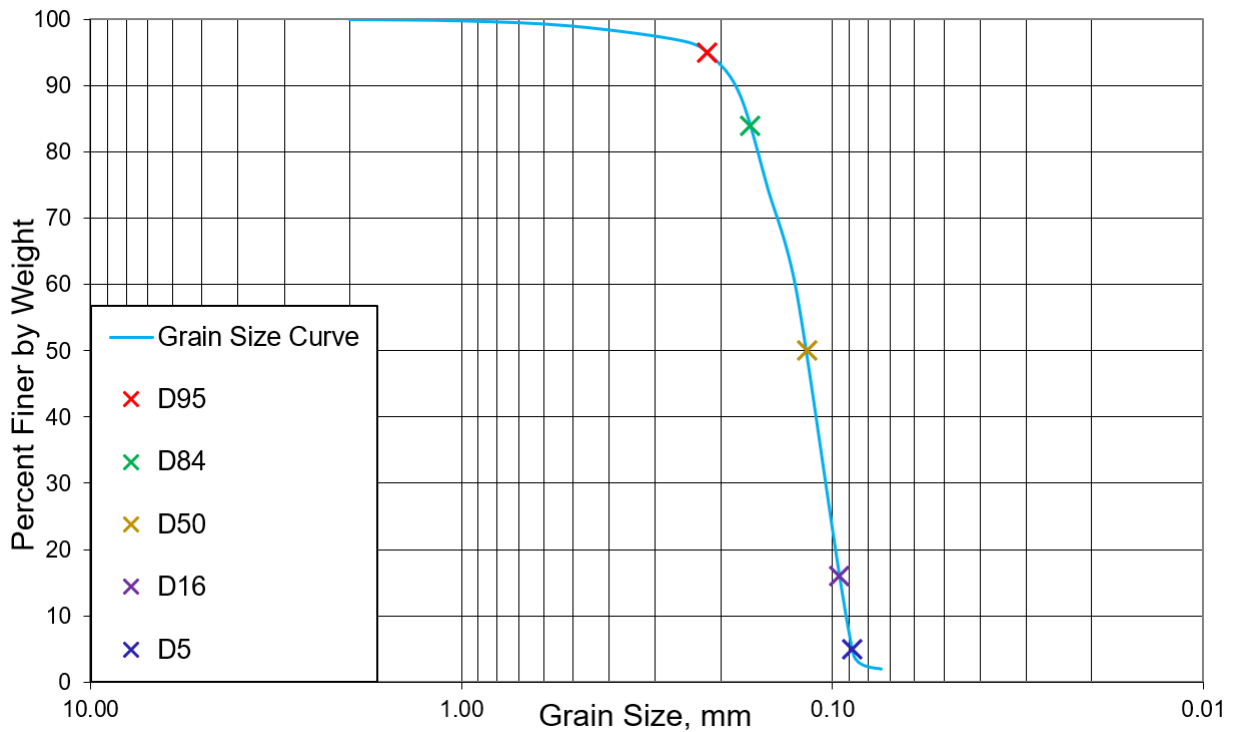


Figure 1. Grain Size Curve Based on Example Percent Finer Data

Table 4. Calculation of Gradation Parameters Values		
Parameter	Grain Size D (mm)	Grain Size Phi (Φ)
Median Grain Size	0.117	3.100
Mean grain Size	0.123	3.020
Sorting Index	-	0.396



References

Folk, R. (1974). Petrology of Sedimentary Rocks, pgs. 41-42. Access provided by the Walter Geology Library, University of Texas at Austin. Retrieved from [Petrology of Sedimentary Rocks \(utexas.edu\)](#)

USACE (United States Army Corps of Engineers). (2002). Coastal engineering manual – Part III, Chapter 1, Pgs. 9 – 10.



Appendix 2
Rock Engineering
Geotechnical Report





A UES Company

November 8, 2022

- GEOTECHNICAL ENGINEERING
- CONSTRUCTION MATERIALS ENGINEERING & TESTING
- SOILS • ASPHALT • CONCRETE

HDR
555 N. Carancahua, Suite 1600
Corpus Christi, Texas 78401

Attention: Mr. Daniel Heilman, P.E., D.CE

SUBJECT: Beach Sediment Analysis
RETL Project No.: G122361

Dear Mr. Heilman,

Rock Engineering and Testing Laboratory, LLC. (RETL) (TBPE Firm No. 2101) performed a laboratory testing program and statistical analysis for the above-mentioned project. The scope of the project was to obtain grain size distribution analysis along 13 beaches throughout the Texas Gulf Coast system. The samples were collected by HDR and transported to RETL. Upon completion of testing, the samples were packed in plastic bags and will be stored in our laboratory for 90 days upon issuance of the report. If the samples need to be held onto longer or distributed to HDR, our office should be contacted; otherwise the samples will be discarded. The scope of work was performed in accordance with the Subconsultant Agreement Number 1 issued by HDR and RETL's proposal number CGP022322B.

Laboratory Testing Program

The laboratory testing program consisted of a series of sieves ran in accordance with ASTM C136 Particle Size Distribution and ASTM C117 Percent Finer Than the #200 Sieve. The lists of the sieve used in the analysis is provided below:

- #10 Sieve, #18 Sieve, #35 Sieve, #60 Sieve, #70 Sieve, #80 Sieve, #100 Sieve, #120 Sieve, #170 Sieve, and #200 Sieve.

The percent shell retained on the #10 sieve was separated from the remaining sample and recorded. The percent shell retained on the #10 sieve was not included in the general sieve analysis. The Munsell color of each sample was evaluated using a Munsell chart under LED lighting by an experienced laboratory technician. Upon completion, the results were entered into the Geotechnical laboratory application gINT to evaluate the Percent Finer, Mean Grain Size, Median Grain Size and the Sorting Index.

ROCK ENGINEERING & TESTING LABORATORY, LLC.

Corpus Christi

Office: 361.883.4555
Fax: 361.883.4711
6817 Leopard St.
Corpus Christi, TX 78409

San Antonio

Office: 210.495.8000
Fax: 210.495.8015
10856 Vandale
San Antonio, TX 78216

Round Rock

Office: 512.284.8022
Fax: 512.284.7764
1 Roundville Ln.
Round Rock, TX 78664

www.rocktesting.com

Data Analysis

The Percent finer was calculated using the equation below:

$$\%Finer = 1 - \left[\frac{Soil\ Retained\ on\ Sieve}{Total\ Amount\ of\ Sample} \right] * 100$$

The median grain size was determined from the plot of %Finer vs. Particle Diameter. Additionally, the median grain size was taken as the interpolated diameter attributed to the 50% particle diameter Retained/Finer value or D50. The mean grain size and sorting index (Inclusive Graphic Standard Deviation) were found utilizing interpolated data from the %Finer vs Particle Diameter graphs plugged into industry standard equations (Folk and Ward, 1957). The equations (Folk and Ward, 1957) can be found below:

$$Mean\ Grain\ Size\ (mm) = Mz = \frac{\emptyset_{16} + \emptyset_{50} + \emptyset_{84}}{3}$$

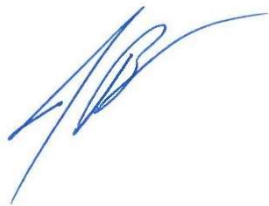
$$Sorting\ Index\ (units\ of\ phi) = \left(\frac{\emptyset_{84} - \emptyset_{16}}{4} + \frac{\emptyset_{95} - \emptyset_{5}}{6} \right)$$

The results of the laboratory testing program and the data analysis can be found in the Appendix.

Important Notes: Cells with “ - ” indicate that the sample had enough clay or silt to not satisfy the particular value or equation above. Also, the samples at Bolivar Peninsula East-Transect 2: Toe of Dune and Mid Berm were not collected because no dune or berm was present, the swash zone extended up to a riprap revetment.

If there are any questions or comments, please contact our office. Thank you for the opportunity to assist you with this project.

Sincerely,



James Bauer, P.E.
Corpus Christi Department Manager

Joshua A. McCann
Project Manager

Appendix Attachments: Approximate GPS coordinates for each sample location
Tabular Results
Graphical Results

ROCK ENGINEERING & TESTING LABORATORY, LLC.

Corpus Christi
Office: 361.883.4555
Fax: 361.883.4711
6817 Leopard St.
Corpus Christi, TX 78409

San Antonio
Office: 210.495.8000
Fax: 210.495.8015
10856 Vandale
San Antonio, TX 78216

Round Rock
Office: 512.284.8022
Fax: 512.284.7764
1 Roundville Ln.
Round Rock, TX 78664



Transect	Latitude	Longitude
1	29.551391	-94.3836
2	29.545697	-94.397914
3	29.540078	-94.412266
4	29.534561	-94.426669
5	29.529187	-94.441143
6	29.523826	-94.455621
7	29.518484	-94.470297
8	29.51324	-94.48429
9	29.50802	-94.496948





Transect	Latitude	Longitude
1	29.457112	-94.620108
2	29.450169	-94.63459
3	29.44303	-94.64868
4	29.434454	-94.66487
5	29.426444	-94.678734
6	29.416965	-94.692199
7	29.409588	-94.701064



Termini-San Luis Pass Rd.

State Hwy Park Rd.

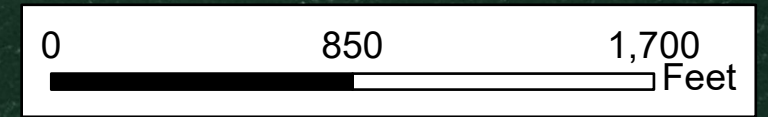
13 Mile Rd.

15 Mile Rd.

Galveston Island State Park

Gulf of Mexico

Transect	Latitude	Longitude
1	29.194846	-94.949463
2	29.189084	-94.959193
3	29.183571	-94.968502







Transect	Latitude	Longitude
1	28.769208	-95.61677
2	28.761123	-95.633234
2B	28.765338	-95.624549
3	28.757691	-95.64079
4	28.753962	-95.650028



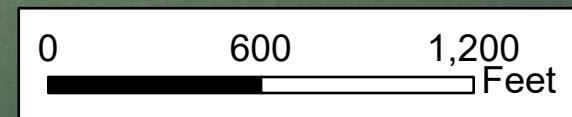
Beach Access Rd.

FM 2031

Matagorda Peninsula

Gulf of Mexico

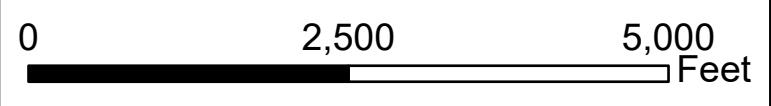
Transect	Latitude	Longitude
1	28.603618	-95.959678
2	28.599867	-95.967618
3	28.596914	-95.973867







Transect	Latitude	Longitude
1	27.726425	-97.134322
2	27.717307	-97.140741
3	27.708827	-97.146486
4	27.700309	-97.152158
5	27.691758	-97.157768
6	27.68314	-97.163243





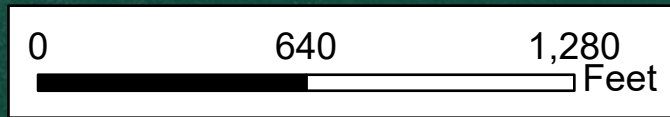
Access Rd. 3

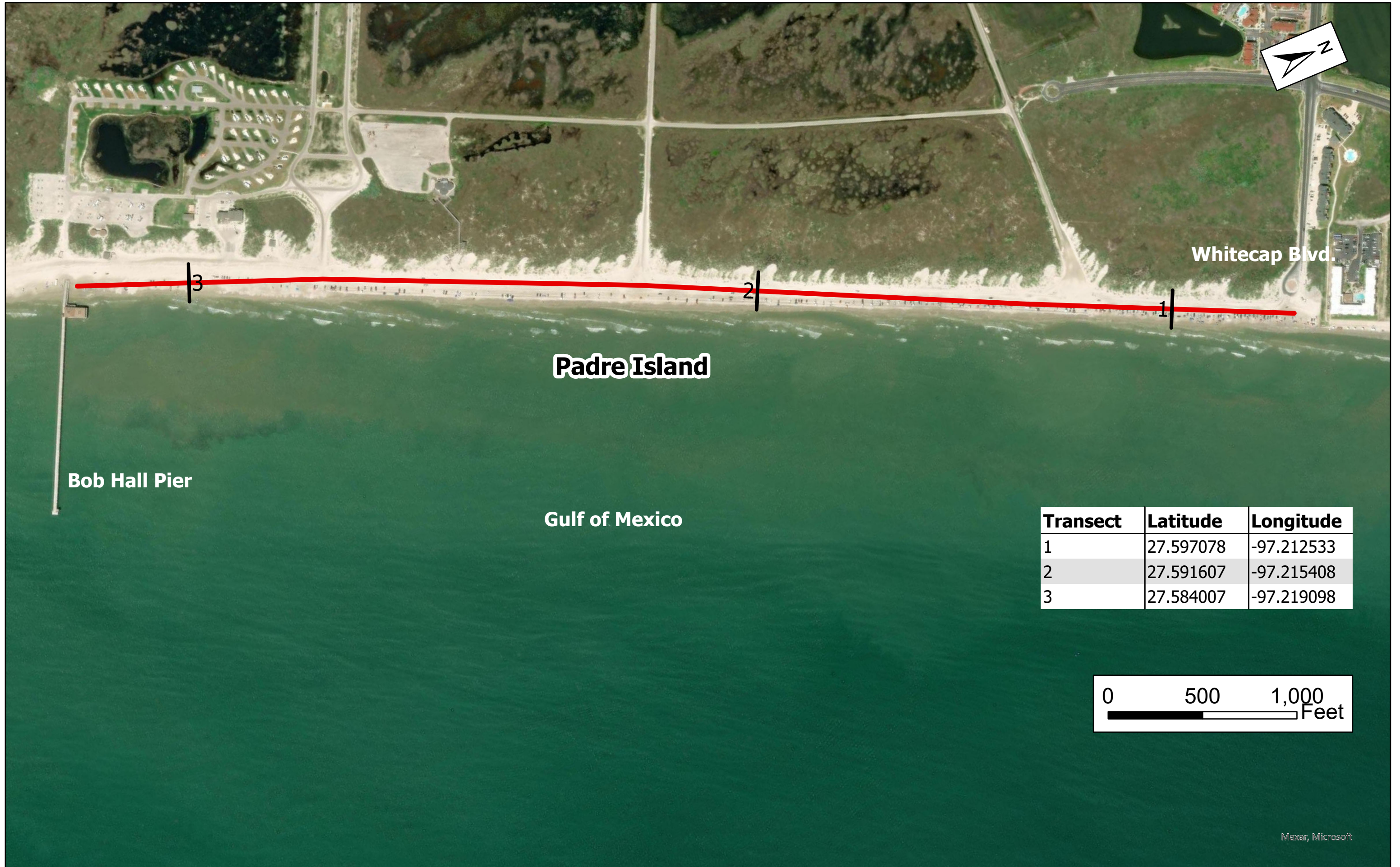
Newport Pass Rd.

Mustang South

Gulf of Mexico

Transect	Latitude	Longitude
1	27.648095	-97.184244
2	27.640071	-97.189008
3	27.633973	-97.192642





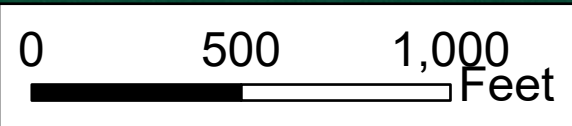
Whitecap Blvd.

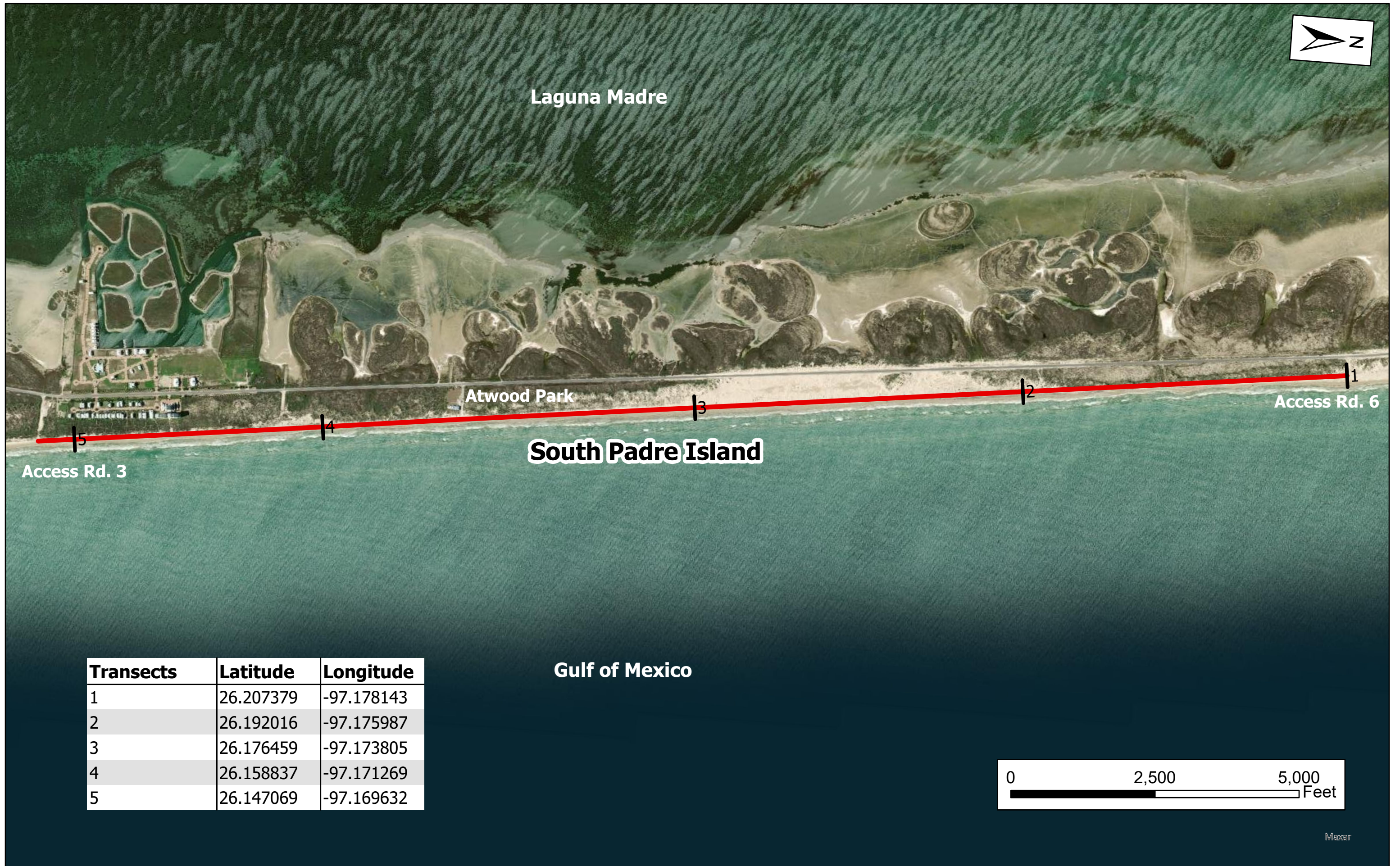
Padre Island

Bob Hall Pier

Gulf of Mexico

Transect	Latitude	Longitude
1	27.597078	-97.212533
2	27.591607	-97.215408
3	27.584007	-97.219098





Laguna Madre

Atwood Park

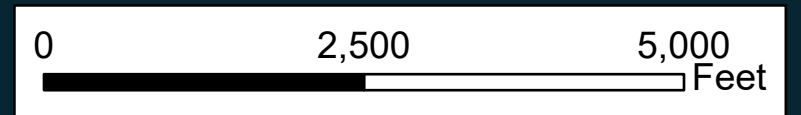
South Padre Island

Gulf of Mexico

Access Rd. 3

Access Rd. 6

Transects	Latitude	Longitude
1	26.207379	-97.178143
2	26.192016	-97.175987
3	26.176459	-97.173805
4	26.158837	-97.171269
5	26.147069	-97.169632





South Bay



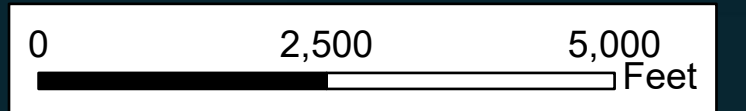
Boca Chica

Gulf of Mexico

Boca Chica Blvd.

Brazos Santiago Pass

Transects	Latitude	Longitude
1	26.059083	-97.15195
2	26.046745	-97.152666
3	26.034231	-97.15264
4	26.021719	-97.152242
5	26.009234	-97.151237
6	25.998338	-97.150453



PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPE-T1
 LOCATION: Bolivar Peninsula East

BOLIVAR PENINSULA EAST						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	6.9	13.8	16.2	0.1	0.9	0.3
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	98.2	100.0	90.6	100.0	98.3	99.2
#18	90.2	86.8	85.8	99.9	98.1	97.8
#35	75.4	74.2	80.0	99.9	97.6	97.1
#60	47.6	55.5	73.4	99.5	94.8	96.4
#70	35.6	43.6	69.6	98.9	90.8	95.7
#80	20.6	24.9	57.1	95.9	79.4	91.6
#100	7.3	9.2	24.4	86.3	49.2	74.9
#120	4.0	4.5	8.7	75.8	27.1	51.8
#170	2.1	1.3	1.4	62.7	4.1	7.5
#200	1.7	0.7	1.2	60.8	2.9	4.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.265	0.231	0.171	--	0.150	0.123
MEAN GRAIN SIZE (mm)	0.393	0.416	0.371	--	0.149	0.127
SORTING (σ)	1.278	1.203	--	--	0.471	0.435
Munsell Color	Yellowish Brown	Light Brownish Gray	Light Yellowish Brown	Yellowish Brown	Yellowish Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPE-T2
 LOCATION: Bolivar Peninsula East

BOLIVAR PENINSULA EAST						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	No Sample	No Sample	6.2	6.5	0.2	0.5
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	No Sample	No Sample	89.9	85.7	99.8	99.9
#18	No Sample	No Sample	87.1	80.7	99.5	99.2
#35	No Sample	No Sample	82.2	77.6	99.1	98.5
#60	No Sample	No Sample	67.3	72.0	97.6	97.7
#70	No Sample	No Sample	56.6	67.6	95.6	97.0
#80	No Sample	No Sample	37.9	52.6	89.9	94.2
#100	No Sample	No Sample	13.6	27.8	77.0	80.1
#120	No Sample	No Sample	5.8	13.4	67.3	60.3
#170	No Sample	No Sample	2.6	1.9	46.4	8.8
#200	No Sample	No Sample	2.4	1.4	40.9	5.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	No Sample	No Sample	0.198	0.174	0.093	0.117
MEAN GRAIN SIZE (mm)	No Sample	No Sample	0.332	0.628	--	0.122
SORTING (σ)	No Sample	No Sample	--	--	--	--
Munsell Color	No Sample	No Sample	Light Yellowish Brown	Dark Yellowish Brown	Yellowish Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPE-T3
 LOCATION: Bolivar Peninsula East

BOLIVAR PENINSULA EAST						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	6.1	20.5	15.6	3.9	1.5	3.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.4	83.4	93.7	98.8	98.2	99.0
#18	91.6	71.9	60.9	91.1	96.6	94.0
#35	76.0	60.6	43.8	83.1	95.7	89.8
#60	50.3	42.5	32.6	74.9	94.4	86.6
#70	37.6	32.1	26.6	69.6	92.5	84.1
#80	22.1	16.4	17.7	54.4	84.1	76.6
#100	7.4	5.7	6.5	31.1	52.3	58.3
#120	3.3	2.5	2.8	16.8	29.1	38.2
#170	0.9	0.7	1.0	3.1	3.3	4.4
#200	0.6	0.5	0.9	2.5	2.2	2.5
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.249	0.333	0.643	0.171	0.146	0.139
MEAN GRAIN SIZE (mm)	0.376	--	0.815	0.278	0.143	0.149
SORTING (σ)	1.084	--	--	1.195	0.511	0.886
Munsell Color	Light Brown	Pale Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPE-T4
 LOCATION: Bolivar Peninsula East

BOLIVAR PENINSULA EAST						
Transect 4						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	13.5	4.6	2.1	7.1	2.3	12.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	95.8	97.0	95.7	99.0	99.8	93.6
#18	84.6	96.5	95.4	97.6	99.0	78.9
#35	67.6	95.1	94.6	95.4	97.9	71.3
#60	43.3	81.6	87.7	89.1	94.9	65.3
#70	32.2	68.1	78.0	84.3	91.6	61.6
#80	19.1	42.2	58.4	68.0	82.5	49.3
#100	7.1	17.2	25.0	35.5	53.5	28.4
#120	3.3	6.1	10.9	17.3	31.7	14.5
#170	0.7	0.9	1.4	2.2	4.0	2.2
#200	0.4	0.4	1.0	1.7	2.9	1.3
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.303	0.186	0.169	0.161	0.145	0.179
MEAN GRAIN SIZE (mm)	0.483	0.205	0.179	0.164	0.143	0.526
SORTING (σ)	1.269	0.589	0.671	0.588	0.463	--
Munsell Color	Pale Brown	Pale Brown	Brown	Brown	Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPE-T5
 LOCATION: Bolivar Peninsula East

BOLIVAR PENINSULA EAST						
Transect 5						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	2.0	15.7	14.8	14.6	1.2	17.7
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.0	78.0	96.8	87.7	99.6	97.5
#18	95.7	77.8	94.1	81.6	98.6	86.4
#35	88.3	77.4	91.6	76.2	97.5	77.8
#60	71.2	72.7	87.9	69.3	95.0	70.0
#70	58.8	65.6	83.2	65.0	92.6	66.0
#80	39.0	45.5	71.8	53.4	85.4	55.4
#100	14.3	20.0	38.0	32.2	60.8	33.9
#120	5.7	7.9	17.3	18.3	32.9	19.3
#170	1.2	1.0	1.7	2.7	3.0	1.7
#200	0.8	0.7	1.4	2.1	2.1	0.9
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.195	0.184	0.158	0.172	0.139	0.170
MEAN GRAIN SIZE (mm)	0.255	--	0.165	0.535	0.139	0.370
SORTING (σ)	0.867	--	0.831	--	0.437	1.401
Munsell Color	Very Pale Brown	Pale Brown	Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPE-T6
 LOCATION: Bolivar Peninsula East

BOLIVAR PENINSULA EAST						
Transect 6						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.1	12.0	8.2	30.5	9.5	3.3
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.2	96.5	98.6	89.7	98.6	99.5
#18	98.7	87.7	92.1	64.4	88.4	92.2
#35	97.9	76.8	84.8	52.1	79.8	88.3
#60	92.2	61.5	71.3	43.6	70.9	86.6
#70	82.6	53.7	63.0	39.1	65.4	85.4
#80	59.9	37.1	48.4	30.0	55.0	81.9
#100	23.9	16.4	24.9	17.3	33.6	69.9
#120	9.4	6.3	12.1	9.3	20.1	53.1
#170	1.3	0.5	1.8	1.8	2.9	7.2
#200	1.0	0.1	1.4	1.5	2.2	4.1
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.169	0.202	0.180	0.421	0.170	0.122
MEAN GRAIN SIZE (mm)	0.173	0.380	0.264	0.759	0.329	0.137
SORTING (σ)	0.463	1.260	1.098	--	1.334	0.942
Munsell Color	Very Pale Brown	Light Brownish Gray	Pale Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPE-T7
 LOCATION: Bolivar Peninsula East

BOLIVAR PENINSULA EAST						
Transect 7						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	15.5	2.0	6.8	4.3	19.8
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	93.7	100.0	99.4	99.2	98.9	94.3
#18	93.2	99.3	99.0	97.2	96.0	86.5
#35	92.7	98.2	98.4	91.9	91.5	65.6
#60	91.0	91.2	92.5	78.8	85.2	54.5
#70	87.8	84.8	83.5	70.2	81.3	49.0
#80	76.3	66.0	67.7	53.0	72.4	37.3
#100	39.4	34.6	37.9	29.2	49.8	21.5
#120	18.9	18.3	20.8	16.5	31.2	11.6
#170	2.4	4.4	2.5	2.6	3.9	1.9
#200	1.7	3.9	1.9	2.0	2.4	1.1
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.157	0.162	0.160	0.173	0.149	0.217
MEAN GRAIN SIZE (mm)	0.158	0.163	0.162	0.208	0.163	0.424
SORTING (σ)	--	0.543	0.535	0.857	0.845	--
Munsell Color	Yellowish Pale Brown	Pale Brown	Yellowish Brown	Brown	Yellowish Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPE-T8
 LOCATION: Bolivar Peninsula East

BOLIVAR PENINSULA EAST						
Transect 8						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	1.3	0.3	8.4	4.8	6.5	20.2
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	98.3	100.0	98.0	99.1	98.4	95.1
#18	98.1	100.0	95.1	93.9	94.9	83.7
#35	97.9	99.9	91.6	84.8	91.0	76.1
#60	96.3	98.3	84.5	75.1	85.4	70.6
#70	93.0	94.2	77.2	69.2	81.1	67.9
#80	81.0	78.6	59.8	53.8	70.9	60.0
#100	43.6	48.0	27.3	30.4	45.7	43.5
#120	20.4	25.8	14.3	15.7	26.3	28.3
#170	2.6	2.3	1.6	1.9	3.9	4.0
#200	1.7	1.5	1.4	1.3	3.0	3.1
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.153	0.151	0.168	0.172	0.153	0.159
MEAN GRAIN SIZE (mm)	0.151	0.149	0.181	0.256	0.165	0.427
SORTING (σ)	0.395	0.406	0.793	1.080	0.872	1.566
Munsell Color	Light Gray	Light Yellowish Brown	Yellowish Brown	Light Yellowish Brown	Yellowish Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPE-T9
 LOCATION: Bolivar Peninsula East

BOLIVAR PENINSULA EAST						
Transect 9						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.1	0.3	3.5	15.5	2.4	18.5
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	94.0	99.4	97.1
#18	99.3	99.9	97.6	86.6	96.4	79.2
#35	96.8	99.8	93.5	79.3	92.3	62.9
#60	85.5	98.5	84.1	69.5	87.1	49.5
#70	74.0	95.4	77.7	63.3	84.3	45.3
#80	52.4	78.3	65.1	49.1	78.6	36.4
#100	21.4	42.2	37.1	26.7	58.6	22.3
#120	10.0	18.5	18.3	13.8	41.5	12.5
#170	3.1	0.9	2.3	2.3	6.0	1.3
#200	1.7	0.4	2.0	1.7	3.9	0.8
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.175	0.155	0.161	0.179	0.136	0.257
MEAN GRAIN SIZE (mm)	0.185	0.154	0.176	0.363	0.147	0.531
SORTING (σ)	0.576	0.353	0.732	--	0.822	1.498
Munsell Color	Pale Brown	Pale Brown	Brown	Brown	Brown	Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPC -T1
 LOCATION: Bolivar Peninsula Central

BOLIVAR PENINSULA CENTRAL						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.4	0.2	5.3	2.4	3.0	12.3
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.3	98.5
#18	99.6	99.8	99.0	98.4	98.7	88.0
#35	98.8	99.4	97.4	96.7	97.7	77.3
#60	97.3	98.0	91.3	94.0	94.3	67.9
#70	94.7	94.1	84.4	91.7	91.7	63.8
#80	81.3	80.9	64.6	84.2	82.4	53.9
#100	37.0	35.3	35.4	65.8	52.3	34.6
#120	17.5	17.0	13.4	40.8	27.7	18.7
#170	1.8	1.8	3.4	5.7	3.2	2.7
#200	1.4	1.5	3.1	4.5	2.5	2.1
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.157	0.158	0.162	0.133	0.147	0.171
MEAN GRAIN SIZE (mm)	0.154	0.155	0.166	0.136	0.145	0.354
SORTING (σ)	0.344	0.349	0.516	0.549	0.475	1.359
Munsell Color	Very Pale Brown	Pale Brown	Pale Brown	Brown	Pale Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPC -T2
 LOCATION: Bolivar Peninsula Central

BOLIVAR PENINSULA CENTRAL						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.9	0.0	14.9	1.3	3.5
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	96.9	100.0	100.0	100.0	100.0	99.4
#18	96.5	99.4	100.0	90.5	99.2	95.8
#35	96.3	98.9	99.9	77.9	98.6	91.5
#60	95.8	97.2	94.7	61.7	97.7	86.7
#70	94.0	94.3	86.3	54.8	96.8	84.0
#80	89.9	82.6	70.5	40.4	94.2	76.9
#100	43.2	45.7	33.3	21.7	79.6	59.6
#120	20.1	22.2	14.9	11.7	55.0	41.9
#170	1.9	1.6	2.1	0.9	7.2	7.7
#200	1.5	1.0	1.8	0.5	4.8	5.5
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.153	0.152	0.161	0.198	0.120	0.135
MEAN GRAIN SIZE (mm)	0.147	0.148	0.164	0.344	0.124	0.147
SORTING (σ)	0.366	0.379	0.418	1.223	0.405	--
Munsell Color	Light Gray	Pale Brown	Pale Brown	Yellowish Brown	Light Brownish Gray	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPC -T3
 LOCATION: Bolivar Peninsula Central

BOLIVAR PENINSULA CENTRAL						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.5	16.4	1.2	2.7
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	100.0	99.5	95.0	99.3	97.5
#35	99.7	100.0	97.9	91.0	97.8	93.9
#60	99.0	99.6	88.3	86.5	93.8	88.8
#70	96.7	98.3	79.6	83.1	90.0	85.2
#80	87.1	88.6	63.7	72.2	80.9	75.8
#100	47.2	53.8	33.1	48.4	50.9	53.0
#120	22.0	26.9	14.7	30.6	32.3	34.4
#170	1.5	2.3	2.0	4.1	4.7	4.2
#200	0.6	1.4	1.7	3.1	3.5	2.6
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.151	0.145	0.164	0.151	0.148	0.145
MEAN GRAIN SIZE (mm)	0.146	0.142	0.173	0.158	0.146	0.150
SORTING (σ)	0.346	0.360	0.559	0.855	0.522	0.721
Munsell Color	Pale Brown	Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPC -T4
 LOCATION: Bolivar Peninsula Central

BOLIVAR PENINSULA CENTRAL						
Transect 4						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.1	1.4	0.0	6.0	4.8	13.2
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.7	100.0	100.0	98.8	99.1
#18	99.8	99.4	99.5	97.8	97.1	88.4
#35	99.5	99.1	99.3	92.4	93.3	74.0
#60	95.3	97.2	97.3	82.4	84.6	59.6
#70	86.8	94.4	91.9	76.8	77.6	53.5
#80	67.5	81.9	77.6	65.6	65.1	42.8
#100	31.2	50.3	42.6	46.9	40.0	27.6
#120	16.4	28.4	19.9	29.6	23.6	16.7
#170	2.8	3.8	1.8	7.2	3.8	2.4
#200	1.2	2.7	1.4	6.6	2.8	1.7
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.163	0.149	0.155	0.153	0.160	0.199
MEAN GRAIN SIZE (mm)	0.164	0.145	0.154	0.178	0.172	0.377
SORTING (σ)	0.417	0.411	0.397	--	0.781	1.351
Munsell Color	Pale Brown	Light Brownish Gray	Yellowish Brown	Brown	Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPC -T5
 LOCATION: Bolivar Peninsula Central

BOLIVAR PENINSULA CENTRAL						
Transect 5						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.2	0.3	4.5	29.7	0.9
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.6	100.0	99.6	97.7	100.0
#18	100.0	99.5	100.0	96.7	89.0	99.3
#35	99.8	99.5	99.8	91.7	80.0	97.5
#60	97.8	98.1	97.0	82.2	64.4	90.3
#70	91.8	95.5	89.5	74.8	55.3	85.1
#80	74.2	84.5	73.9	58.2	43.0	73.5
#100	32.2	54.3	40.1	31.1	22.5	53.7
#120	16.0	31.0	20.4	15.6	12.2	37.1
#170	3.3	2.8	1.8	2.1	1.6	5.9
#200	2.1	1.6	1.2	1.6	1.2	3.8
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.160	0.144	0.157	0.168	0.195	0.143
MEAN GRAIN SIZE (mm)	0.160	0.141	0.157	0.193	0.336	0.150
SORTING (σ)	0.381	0.391	0.423	0.804	1.262	0.643
Munsell Color	Pale Brown	Pale Brown	Pale Brown	Yellowish Brown	Yellowish Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPC -T6
 LOCATION: Bolivar Peninsula Central

BOLIVAR PENINSULA CENTRAL						
Transect 6						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	1.2	3.0	12.3	1.5
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.7	95.4	100.0
#18	100.0	99.9	99.9	98.4	90.9	98.4
#35	100.0	99.9	99.8	95.7	85.2	95.3
#60	99.9	99.5	98.7	87.8	72.5	89.7
#70	99.4	98.2	96.3	82.2	61.4	85.3
#80	93.8	87.1	85.8	69.4	46.4	75.5
#100	53.4	50.6	47.0	47.4	24.7	52.6
#120	28.6	35.3	24.9	28.9	13.1	35.5
#170	2.6	3.1	2.8	3.7	2.0	4.6
#200	1.9	2.4	2.0	2.5	1.3	2.9
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.145	0.148	0.151	0.152	0.184	0.145
MEAN GRAIN SIZE (mm)	0.140	0.141	0.145	0.159	0.261	0.150
SORTING (σ)	0.343	0.388	0.369	0.671	1.172	0.668
Munsell Color	Light Gray	Pale Brown	Yellowish Brown	Yellowish Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPC-T7
 LOCATION: Bolivar Peninsula Central

BOLIVAR PENINSULA CENTRAL						
Transect 7						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.6	0.0	0.0	0.4	1.7	8.9
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	99.7
#18	99.9	100.0	100.0	99.9	99.0	92.4
#35	99.8	99.9	100.0	99.2	96.6	81.9
#60	98.9	99.7	97.4	92.6	91.7	71.1
#70	96.6	98.9	91.6	85.7	88.0	65.4
#80	83.4	92.3	80.7	67.2	82.2	54.6
#100	39.5	52.1	42.1	33.7	62.0	34.5
#120	17.9	24.9	22.7	21.0	41.3	20.3
#170	1.8	3.2	3.0	2.1	6.5	2.9
#200	1.0	2.1	2.3	1.4	4.4	2.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.155	0.147	0.154	0.162	0.135	0.170
MEAN GRAIN SIZE (mm)	0.151	0.142	0.150	0.161	0.140	0.286
SORTING (σ)	0.331	0.343	0.412	0.514	0.629	1.213
Munsell Color	Very Pale Brown	Pale Brown	Brown	Brown	Dark Grayish Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPW-T1
 LOCATION: Bolivar Peninsula West

BOLIVAR PENINSULA WEST						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	1.3	9.9	5.5
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.8	100.0	99.6	91.4	99.2
#18	100.0	99.8	100.0	97.5	85.0	95.1
#35	97.1	99.8	99.9	90.5	79.1	90.2
#60	91.1	99.5	98.4	77.7	73.7	84.8
#70	84.1	98.7	94.0	68.1	69.9	81.3
#80	69.7	91.3	81.7	49.7	62.0	72.8
#100	33.4	52.3	45.5	25.8	39.8	55.7
#120	18.2	26.5	24.2	12.6	22.2	36.7
#170	1.5	2.2	3.1	3.1	3.2	4.1
#200	0.6	1.1	2.5	2.6	2.3	2.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.161	0.147	0.152	0.177	0.161	0.141
MEAN GRAIN SIZE (mm)	0.163	0.142	0.148	0.220	0.387	0.160
SORTING (σ)	0.546	0.347	0.397	0.866	--	0.894
Munsell Color	Very Pale Brown	Pale Brown	Pale Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPW-T2
 LOCATION: Bolivar Peninsula West

BOLIVAR PENINSULA WEST						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	1.1	2.2	0.2
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	100.0	99.8	99.2	98.4	99.7
#35	99.8	99.9	99.5	97.2	94.8	99.0
#60	98.6	99.0	98.1	86.4	87.7	97.9
#70	94.9	96.6	94.4	75.6	81.7	97.0
#80	81.8	86.3	83.8	56.3	73.8	93.7
#100	39.5	57.8	49.2	30.7	48.8	82.2
#120	19.0	32.3	23.7	15.7	29.8	63.2
#170	2.3	4.1	1.9	1.9	4.0	7.0
#200	1.6	3.0	1.3	1.4	2.5	2.9
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.156	0.141	0.150	0.170	0.150	0.115
MEAN GRAIN SIZE (mm)	0.152	0.139	0.146	0.178	0.160	0.120
SORTING (σ)	0.356	0.394	0.376	0.601	0.703	0.383
Munsell Color	Very Pale Brown	Pale Brown	Pale Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPW-T3
 LOCATION: Bolivar Peninsula West

BOLIVAR PENINSULA WEST						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.1	0.0	1.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	99.9
#18	99.9	100.0	99.7	99.7	99.9	99.3
#35	99.6	99.9	99.4	98.7	99.4	96.3
#60	98.8	99.4	96.0	86.0	97.4	88.7
#70	96.4	98.1	91.6	76.0	95.0	84.0
#80	88.0	90.7	81.4	60.1	90.2	73.7
#100	54.6	62.7	52.4	39.5	72.0	52.9
#120	26.8	36.5	31.4	24.5	52.8	33.7
#170	2.2	3.5	3.0	4.2	7.2	4.0
#200	1.4	1.7	1.7	2.8	2.9	2.1
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.145	0.137	0.146	0.163	0.122	0.145
MEAN GRAIN SIZE (mm)	0.142	0.136	0.145	0.171	0.128	0.152
SORTING (σ)	0.365	0.376	0.447	0.656	0.436	0.650
Munsell Color	Very Pale Brown	Pale Brown	Pale Brown	Pale Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPW-T4
 LOCATION: Bolivar Peninsula West

BOLIVAR PENINSULA WEST						
Transect 4						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.3	0.0	1.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	99.9	99.9	99.6	99.9	99.1
#35	99.8	99.7	99.8	97.8	99.2	94.6
#60	98.7	99.3	98.7	83.3	91.5	81.4
#70	95.7	97.8	95.1	75.3	86.7	74.9
#80	84.1	89.4	86.3	64.2	78.7	65.0
#100	41.4	59.3	55.9	45.2	59.3	46.9
#120	19.9	32.1	30.9	30.9	39.9	31.3
#170	1.8	3.3	2.7	4.2	4.9	3.6
#200	1.0	1.7	1.9	2.7	2.5	1.7
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.154	0.140	0.143	0.156	0.137	0.153
MEAN GRAIN SIZE (mm)	0.149	0.138	0.141	0.173	0.144	0.181
SORTING (σ)	0.343	0.375	0.389	0.715	0.581	0.797
Munsell Color	Very Pale Brown	Very Pale Brown	Pale Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPW-T5
 LOCATION: Bolivar Peninsula West

BOLIVAR PENINSULA WEST						
Transect 5						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.2	0.5	0.4
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.8	99.3	99.3
#35	99.9	99.9	99.6	98.6	95.5	95.5
#60	97.6	99.6	96.9	84.2	75.3	78.9
#70	92.8	98.9	91.2	74.6	62.8	69.0
#80	78.5	93.6	79.1	60.3	51.2	53.6
#100	40.3	69.2	47.5	40.6	32.6	33.7
#120	18.9	42.3	26.8	23.8	19.1	19.0
#170	1.6	3.6	2.5	2.7	3.2	1.5
#200	1.0	1.8	1.6	1.9	2.4	0.9
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.156	0.131	0.151	0.162	0.175	0.172
MEAN GRAIN SIZE (mm)	0.154	0.131	0.149	0.174	0.210	0.200
SORTING (σ)	0.382	0.364	0.436	0.662	0.784	0.744
Munsell Color	Very Pale Brown	Pale Brown	Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPW-T6
 LOCATION: Bolivar Peninsula West

BOLIVAR PENINSULA WEST						
Transect 6						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.2	0.2	0.3
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.4	99.7	98.1
#35	99.9	100.0	100.0	95.6	97.7	92.2
#60	99.1	99.7	97.4	81.7	92.1	85.4
#70	96.7	98.8	93.4	76.1	88.9	82.4
#80	89.2	92.8	85.4	68.6	83.3	76.7
#100	55.1	68.8	63.0	54.3	67.5	63.5
#120	28.8	42.4	40.2	39.3	47.1	44.9
#170	3.1	3.0	4.5	8.6	5.4	4.8
#200	2.3	1.7	3.0	7.1	3.1	3.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.144	0.131	0.135	0.142	0.128	0.131
MEAN GRAIN SIZE (mm)	0.140	0.132	0.136	0.173	0.135	0.153
SORTING (σ)	0.372	0.364	0.431	--	0.574	0.808
Munsell Color	Very Pale Brown	Light Yellowish Brown	Light Yellowish Brown	Light Yellowish Brown	Grayish Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BPW-T7
 LOCATION: Bolivar Peninsula West

BOLIVAR PENINSULA WEST						
Transect 7						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.2	0.1	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.7	99.8	99.5	99.0	99.3	99.9
#35	99.2	99.6	98.9	91.4	98.4	99.7
#60	98.2	98.9	97.8	80.0	95.7	99.4
#70	95.9	97.5	96.4	76.4	94.9	99.3
#80	90.0	91.5	91.9	70.2	92.8	99.1
#100	58.4	68.0	70.5	52.0	79.8	98.4
#120	33.5	42.0	44.1	36.4	56.4	96.3
#170	2.0	3.7	4.3	3.2	5.0	10.4
#200	1.1	2.4	3.6	2.1	2.3	7.1
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.140	0.132	0.130	0.146	0.120	0.103
MEAN GRAIN SIZE (mm)	0.138	0.133	0.131	0.189	0.124	0.104
SORTING (σ)	0.378	0.384	0.384	0.906	0.398	--
Munsell Color	Very Pale Brown	Light Brownish Gray	Grayish Brown	Pale Brown	Yellowish Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: GISP-T1
 LOCATION: Galveston Island State Park

GALVESTON ISLAND STATE PARK						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.2	0.0	0.0	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	100.0	100.0	99.8	100.0	99.6
#35	99.6	100.0	100.0	98.6	99.9	98.6
#60	98.5	100.0	99.8	97.1	99.6	97.5
#70	97.0	99.7	99.1	96.3	99.2	96.6
#80	91.7	98.0	95.9	94.4	97.8	94.5
#100	74.0	87.1	82.1	88.3	90.5	87.6
#120	44.9	61.3	51.9	71.2	71.7	71.0
#170	1.9	2.5	2.4	3.8	4.2	4.2
#200	0.7	0.6	1.4	1.5	1.6	1.4
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.129	0.117	0.123	0.112	0.112	0.112
MEAN GRAIN SIZE (mm)	0.131	0.119	0.124	0.116	0.115	0.116
SORTING (σ)	0.370	0.309	0.324	0.330	0.296	0.329
Munsell Color	Very Pale Brown	Light Gray	Light Gray	Grayish Brown	Dark Grayish Brown	Light Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: GISP-T2
 LOCATION: Galveston Island State Park

GALVESTON ISLAND STATE PARK						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.1	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.9
#35	100.0	100.0	100.0	99.5	99.8	99.5
#60	99.7	99.9	99.7	98.7	99.5	98.9
#70	98.9	99.8	99.0	97.8	99.2	98.3
#80	94.8	98.6	96.0	94.9	97.9	96.7
#100	76.7	90.3	82.7	84.4	91.9	90.6
#120	44.8	64.5	54.5	61.0	71.9	70.8
#170	1.4	2.1	2.3	3.1	3.7	3.9
#200	0.5	0.5	1.1	1.3	1.4	1.4
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.129	0.115	0.121	0.117	0.112	0.112
MEAN GRAIN SIZE (mm)	0.129	0.118	0.123	0.120	0.115	0.116
SORTING (σ)	0.334	0.294	0.326	0.329	0.287	0.300
Munsell Color	Very Pale Brown	Very Pale Brown	Very Pale Brown	Grayish Brown	Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: GISP-T3
 LOCATION: Galveston Island State Park

GALVESTON ISLAND STATE PARK						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.1	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.8
#35	100.0	100.0	100.0	99.7	99.5	99.2
#60	99.8	99.9	99.8	99.2	98.5	98.5
#70	99.1	99.7	99.3	98.7	97.3	98.0
#80	95.6	98.1	96.8	97.5	94.1	96.7
#100	79.1	85.4	86.1	92.2	82.3	92.6
#120	45.5	52.7	60.8	73.6	59.0	77.8
#170	1.4	2.4	2.6	3.7	3.3	5.3
#200	0.5	1.4	1.3	1.3	1.5	1.6
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.128	0.123	0.117	0.111	0.118	0.109
MEAN GRAIN SIZE (mm)	0.128	0.123	0.120	0.114	0.122	0.112
SORTING (σ)	0.325	0.305	0.316	0.284	0.349	0.288
Munsell Color	Very Pale Brown	Grayish Brown	Grayish Brown	Grayish Brown	Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T1
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.1	0.0	0.0	0.1	0.5
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.6	99.7	98.4
#35	100.0	100.0	100.0	98.4	99.3	94.9
#60	99.6	99.9	99.7	96.7	98.8	92.4
#70	98.7	99.7	99.0	95.6	98.4	91.2
#80	94.9	98.0	93.8	92.2	96.9	88.6
#100	71.0	68.1	48.7	63.2	75.4	77.5
#120	45.3	33.8	22.1	31.7	43.2	57.0
#170	1.4	1.3	1.6	2.0	3.1	4.2
#200	0.6	0.5	1.1	1.1	1.8	1.9
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.129	0.136	0.150	0.138	0.130	0.119
MEAN GRAIN SIZE (mm)	0.131	0.134	0.144	0.137	0.130	0.126
SORTING (σ)	0.343	0.319	0.311	0.369	0.334	0.622
Munsell Color	Pinkish Gray	Pinkish White	Light Brownish Gray	Light Brownish Gray	Light Brownish Gray	Light Brownish Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T2
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.1	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.8
#35	100.0	100.0	99.8	99.1	100.0	99.2
#60	99.8	99.9	99.1	96.5	100.0	98.3
#70	99.3	99.6	98.1	94.1	100.0	97.7
#80	94.9	98.0	93.9	84.0	99.1	95.1
#100	50.6	72.2	60.6	39.8	78.0	75.8
#120	29.1	47.0	36.4	21.5	47.2	53.6
#170	1.1	2.2	4.6	1.6	4.6	3.5
#200	0.4	1.3	3.7	1.1	3.3	1.4
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.148	0.128	0.138	0.155	0.127	0.122
MEAN GRAIN SIZE (mm)	0.141	0.129	0.135	0.148	0.127	0.126
SORTING (σ)	0.329	0.336	0.366	0.373	0.331	0.350
Munsell Color	Light Gray	Grayish Brown	Grayish Brown	Grayish Brown	Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T4
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 4						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.9
#35	100.0	100.0	100.0	99.9	99.9	99.4
#60	100.0	100.0	99.7	99.5	99.3	98.1
#70	100.0	100.0	98.9	98.6	98.8	97.1
#80	98.1	94.8	93.9	94.3	97.1	93.9
#100	65.8	51.1	53.4	70.8	76.6	78.1
#120	35.2	20.5	30.0	45.2	37.6	56.2
#170	1.4	2.2	2.1	2.4	3.7	4.5
#200	0.7	1.6	1.3	1.3	2.3	2.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.136	0.148	0.145	0.129	0.132	0.120
MEAN GRAIN SIZE (mm)	0.134	0.144	0.140	0.130	0.130	0.125
SORTING (σ)	0.327	0.297	0.343	0.355	0.328	0.368
Munsell Color	Pale Brown	Pale Brown	Pale Brown	Pale Brown	Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T5
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 5						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	100.0	100.0	100.0	100.0	100.0	99.9
#60	100.0	100.0	99.6	100.0	100.0	99.3
#70	99.9	100.0	98.6	100.0	100.0	98.6
#80	95.8	99.0	94.5	98.7	99.3	96.4
#100	61.5	80.4	75.1	77.6	92.2	78.9
#120	22.4	43.4	49.6	36.7	75.8	57.3
#170	3.1	3.0	2.8	3.2	10.7	4.2
#200	2.2	2.1	1.6	2.1	6.6	2.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.141	0.129	0.125	0.132	0.109	0.119
MEAN GRAIN SIZE (mm)	0.140	0.127	0.128	0.130	0.112	0.124
SORTING (σ)	0.306	0.314	0.353	0.314	--	0.346
Munsell Color	Pale Brown	Pale Brown	Grayish Brown	Grayish Brown	Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T6
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 6						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	100.0	100.0	100.0	99.8	99.8	99.7
#60	99.4	100.0	99.8	99.3	99.4	99.3
#70	98.2	99.9	99.4	98.7	99.0	99.1
#80	93.4	98.2	96.6	96.3	98.1	98.4
#100	53.3	77.7	75.7	75.5	91.4	86.1
#120	34.0	41.7	50.5	50.7	58.3	49.1
#170	9.8	2.6	3.5	4.1	4.0	3.6
#200	8.0	1.7	2.3	2.6	2.0	1.7
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.145	0.130	0.125	0.124	0.118	0.126
MEAN GRAIN SIZE (mm)	0.137	0.129	0.127	0.127	0.119	0.124
SORTING (σ)	--	0.322	0.343	0.347	0.293	0.307
Munsell Color	Pale Brown	Pale Brown	Pale Brown	Brownish Gray	Gray	Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T7
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 7						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.1	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.9
#35	99.2	100.0	100.0	99.6	100.0	99.3
#60	90.6	99.8	99.6	98.8	99.8	97.3
#70	86.6	99.5	99.2	98.3	99.6	96.7
#80	80.7	97.4	97.9	96.6	98.5	93.8
#100	68.9	84.9	86.8	89.4	89.3	84.4
#120	58.4	55.7	58.8	71.0	65.2	65.6
#170	30.2	2.9	4.0	5.9	3.5	4.7
#200	24.9	1.8	2.0	2.4	1.7	1.8
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.113	0.120	0.118	0.112	0.115	0.114
MEAN GRAIN SIZE (mm)	--	0.121	0.120	0.116	0.117	0.119
SORTING (σ)	--	0.313	0.309	0.322	0.301	0.349
Munsell Color	Dark Yellowish Brown	Gray	Grayish Brown	Grayish Brown	Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T8
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 8						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.1	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.7	99.6
#35	100.0	100.0	100.0	99.3	98.5	97.9
#60	99.7	99.8	99.9	97.1	96.2	95.6
#70	99.4	99.5	99.7	95.8	95.4	94.8
#80	97.6	98.0	98.5	92.0	93.7	93.2
#100	81.9	86.1	90.8	77.8	85.7	86.6
#120	53.8	61.1	65.9	49.4	71.3	66.8
#170	2.1	3.1	5.4	3.3	3.5	4.7
#200	1.4	1.7	3.4	2.0	1.9	1.6
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.122	0.117	0.114	0.125	0.112	0.114
MEAN GRAIN SIZE (mm)	0.124	0.120	0.117	0.128	0.117	0.118
SORTING (σ)	0.318	0.312	0.307	0.381	0.356	0.378
Munsell Color	Pale Brown	Grayish Brown	Grayish Brown	Grayish Brown	Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T9
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 9						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.7
#35	100.0	100.0	100.0	99.8	99.8	98.4
#60	99.8	99.9	99.8	99.1	99.5	97.1
#70	99.5	99.5	99.4	98.5	99.2	96.8
#80	97.3	96.5	97.4	96.4	98.4	96.1
#100	77.9	77.9	80.7	86.4	92.4	91.9
#120	48.2	48.9	53.7	63.9	73.5	71.1
#170	1.5	2.6	2.6	4.5	5.9	5.0
#200	0.7	1.7	1.4	2.0	2.2	1.8
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.126	0.126	0.122	0.115	0.111	0.112
MEAN GRAIN SIZE (mm)	0.127	0.127	0.124	0.118	0.114	0.115
SORTING (σ)	0.327	0.336	0.330	0.321	0.299	0.302
Munsell Color	Very Pale Brown	Light Brownish Gray	Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T10
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 10						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.1	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.7	99.5	99.3
#35	99.9	99.9	99.8	99.4	98.7	95.5
#60	99.7	99.3	99.4	98.2	97.7	87.1
#70	99.5	99.0	98.7	97.3	97.4	85.4
#80	98.0	96.0	95.6	94.3	96.3	82.9
#100	81.6	78.7	77.6	78.9	89.5	73.3
#120	48.4	45.6	44.5	48.6	73.1	50.8
#170	2.1	1.7	3.2	3.6	6.3	3.7
#200	1.4	0.8	2.2	2.2	2.9	1.9
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.126	0.128	0.129	0.126	0.111	0.124
MEAN GRAIN SIZE (mm)	0.126	0.128	0.128	0.127	0.115	0.137
SORTING (σ)	0.316	0.326	0.336	0.351	0.324	0.653
Munsell Color	Very Pale Brown	Very Pale Brown	Pale Brown	Pale Brown	Pale Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T11
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 11						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	99.8	100.0	100.0	100.0	99.9
#35	99.7	99.7	100.0	99.8	99.9	99.1
#60	99.3	99.0	99.9	98.2	99.5	91.7
#70	99.0	98.7	99.5	97.3	97.7	89.4
#80	96.8	96.9	97.2	95.2	95.7	85.7
#100	77.8	82.6	80.9	84.3	84.7	72.9
#120	44.2	45.4	50.3	59.3	61.2	49.4
#170	2.4	1.3	3.0	3.9	4.5	3.5
#200	1.8	0.6	1.9	1.9	2.1	2.3
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.129	0.128	0.125	0.118	0.117	0.126
MEAN GRAIN SIZE (mm)	0.129	0.126	0.125	0.121	0.120	0.132
SORTING (σ)	0.327	0.309	0.327	0.327	0.329	0.532
Munsell Color	Very Pale Brown	Light Grayish Brown	Grayish Brown	Grayish Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T12
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 12						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.9
#35	99.9	100.0	100.0	99.7	99.8	98.7
#60	99.6	99.7	100.0	87.9	98.6	87.4
#70	99.0	99.0	98.9	82.4	97.8	84.9
#80	91.2	94.8	95.2	73.5	95.9	81.4
#100	61.2	63.9	70.7	46.6	86.0	68.4
#120	37.2	32.1	38.9	26.3	59.9	47.8
#170	1.1	1.6	2.7	2.3	3.7	3.5
#200	0.1	1.2	1.9	1.8	2.1	2.3
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.137	0.138	0.133	0.152	0.118	0.127
MEAN GRAIN SIZE (mm)	0.136	0.136	0.132	0.160	0.120	0.142
SORTING (σ)	0.364	0.330	0.341	0.599	0.319	0.623
Munsell Color	Light Gray	Pale Gray	Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: FB-T13
 LOCATION: Follets Island

FOLLETS ISLAND						
Transect 13						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.2	0.2	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.8	99.9	99.8
#35	99.9	100.0	99.8	99.4	99.1	98.3
#60	99.5	99.6	98.0	87.0	86.1	72.0
#70	98.7	98.6	96.6	82.6	81.7	65.7
#80	93.3	94.0	89.8	76.6	74.9	58.4
#100	55.4	58.2	65.7	60.1	56.1	44.7
#120	29.2	29.0	40.8	39.0	37.9	31.3
#170	1.3	1.5	2.9	2.5	5.2	12.0
#200	0.9	1.2	2.2	1.4	4.2	11.6
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.144	0.142	0.133	0.137	0.140	0.159
MEAN GRAIN SIZE (mm)	0.140	0.139	0.134	0.153	0.156	0.199
SORTING (σ)	0.341	0.335	0.389	0.641	0.678	--
Munsell Color	Light Gray	Light Brownish Gray	Brown	Brown	Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: SB-T1
 LOCATION: Sargent Beach

SARGENT BEACH						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.6	0.7	0.1	0.6	0.9	0.7
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.1	100.0	99.8	100.0	99.0	99.9
#18	98.0	100.0	99.8	99.2	98.1	97.3
#35	96.8	100.0	99.7	98.4	97.6	93.8
#60	91.7	98.7	95.8	96.5	97.0	91.1
#70	85.8	94.2	87.6	94.3	96.8	89.5
#80	76.1	81.7	70.7	88.4	96.5	86.9
#100	67.7	56.6	48.4	77.3	96.1	81.9
#120	62.4	34.7	28.9	58.2	95.6	70.4
#170	54.3	2.2	2.1	4.1	93.9	5.8
#200	51.9	1.4	1.2	1.9	92.5	2.3
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	--	0.141	0.151	0.119	--	0.112
MEAN GRAIN SIZE (mm)	--	0.142	0.153	0.126	--	0.122
SORTING (σ)	--	0.420	0.472	0.419	--	0.679
Munsell Color	Light Reddish Brown	Light Reddish Brown	Reddish Brown	Light Reddish Brown	Reddish Brown	Reddish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: SB-T2
 LOCATION: Sargent Beach

SARGENT BEACH						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	15.1	0.2	1.0	0.3	2.0	0.8
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	98.9	100.0	99.5	100.0	99.2	100.0
#18	94.3	100.0	98.7	99.8	95.2	98.9
#35	90.1	100.0	97.2	99.4	90.6	97.2
#60	75.2	99.5	89.3	96.2	81.8	91.1
#70	57.1	95.7	83.0	91.4	76.3	87.1
#80	36.6	79.9	74.5	82.7	69.7	81.4
#100	25.6	57.5	63.4	69.9	61.5	73.4
#120	21.1	36.6	49.7	53.0	50.8	61.2
#170	16.3	3.0	10.0	4.4	6.8	5.9
#200	15.5	1.3	7.8	1.5	3.3	2.4
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.198	0.140	0.125	0.122	0.124	0.116
MEAN GRAIN SIZE (mm)	0.219	0.142	0.145	0.133	0.172	0.134
SORTING (σ)	--	0.420	--	0.471	1.011	0.624
Munsell Color	Very Pale Brown	Very Pale Brown	Light Reddish Brown	Light Reddish Brown	Light Reddish Brown	Reddish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: SB-T2B
 LOCATION: Sargent Beach

SARGENT BEACH						
Transect 2B						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	NOT TESTED	NOT TESTED	0.1	NOT TESTED	0.0	NOT TESTED
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	NOT TESTED	NOT TESTED	100.0	NOT TESTED	100.0	NOT TESTED
#18	NOT TESTED	NOT TESTED	99.9	NOT TESTED	99.9	NOT TESTED
#35	NOT TESTED	NOT TESTED	99.8	NOT TESTED	99.8	NOT TESTED
#60	NOT TESTED	NOT TESTED	96.6	NOT TESTED	99.3	NOT TESTED
#70	NOT TESTED	NOT TESTED	91.6	NOT TESTED	98.7	NOT TESTED
#80	NOT TESTED	NOT TESTED	81.4	NOT TESTED	96.7	NOT TESTED
#100	NOT TESTED	NOT TESTED	59.8	NOT TESTED	87.9	NOT TESTED
#120	NOT TESTED	NOT TESTED	39.4	NOT TESTED	73.5	NOT TESTED
#170	NOT TESTED	NOT TESTED	4.0	NOT TESTED	8.5	NOT TESTED
#200	NOT TESTED	NOT TESTED	2.5	NOT TESTED	3.3	NOT TESTED
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	NOT TESTED	NOT TESTED	0.137	NOT TESTED	0.110	NOT TESTED
MEAN GRAIN SIZE (mm)	NOT TESTED	NOT TESTED	0.140	NOT TESTED	0.115	NOT TESTED
SORTING (σ)	NOT TESTED	NOT TESTED	0.284	NOT TESTED	0.201	NOT TESTED
Munsell Color	NOT TESTED	NOT TESTED	Yellowish Brown	NOT TESTED	Yellowish Brown	NOT TESTED

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: SB-T3
 LOCATION: Sargent Beach

SARGENT BEACH						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	2.6	0.0	0.9	0.3	0.6	0.2
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.9	100.0	99.9	100.0	99.9	99.9
#18	99.7	100.0	99.5	99.8	98.9	99.6
#35	99.3	99.9	98.8	99.5	97.6	99.3
#60	96.3	94.5	96.6	97.6	94.9	98.7
#70	90.7	84.7	94.8	95.2	92.8	98.2
#80	78.4	70.9	91.7	91.3	89.7	97.3
#100	61.1	55.6	86.0	84.2	84.5	95.1
#120	44.2	41.3	75.4	71.6	75.0	88.0
#170	5.8	2.9	31.1	5.4	7.6	8.1
#200	3.5	1.3	27.7	1.9	2.6	2.3
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.133	0.139	0.102	0.111	0.110	0.106
MEAN GRAIN SIZE (mm)	0.140	0.149	--	0.118	0.117	0.107
SORTING (σ)	0.500	0.529	--	0.382	0.452	0.258
Munsell Color	Light Reddish Brown	Light Reddish Brown	Reddish Brown	Light Reddish Brown	Reddish Brown	Reddish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: SB-T4
 LOCATION: Sargent Beach

SARGENT BEACH						
Transect 4						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	1.9	0.0	2.0	0.2	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.5	100.0	99.6	99.9	100.0	100.0
#18	99.3	100.0	96.3	99.5	99.9	99.9
#35	98.9	100.0	92.9	99.1	99.8	99.8
#60	94.2	98.6	91.9	98.3	99.5	99.7
#70	86.1	92.1	91.7	97.5	99.2	99.6
#80	70.8	75.2	91.3	95.0	98.4	99.3
#100	50.7	51.4	90.3	87.9	95.4	96.9
#120	31.4	31.5	88.4	70.5	87.1	86.7
#170	3.8	2.3	78.1	4.4	6.3	11.5
#200	2.8	1.4	73.2	1.8	2.0	8.8
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.148	0.147	--	0.112	0.106	0.105
MEAN GRAIN SIZE (mm)	0.152	0.148	--	0.116	0.107	0.106
SORTING (σ)	0.525	0.443	--	0.319	0.241	--
Munsell Color	Very Pale Brown	Very Pale Brown	Dark Reddish Brown	Light Reddish Brown	Reddish Brown	Reddish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MP-T1
 LOCATION: Matagorda Peninsula

MATAGORDA PENINSULA						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.6	2.7	1.3	3.2	2.6
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.8	99.9	95.1	98.8
#35	100.0	100.0	98.5	99.7	89.6	97.1
#60	98.9	98.6	83.4	92.7	78.0	89.0
#70	93.6	91.7	65.4	80.0	62.9	80.2
#80	65.4	62.5	39.0	45.2	38.7	55.4
#100	20.9	18.2	13.7	14.8	13.5	24.5
#120	8.4	6.9	5.6	5.6	5.2	11.3
#170	1.1	0.7	1.8	1.6	1.4	2.0
#200	0.8	0.4	1.8	1.5	1.3	1.7
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.167	0.169	0.190	0.181	0.192	0.172
MEAN GRAIN SIZE (mm)	0.168	0.171	0.199	0.184	0.234	0.177
SORTING (σ)	0.303	0.291	0.500	0.375	0.810	0.538
Munsell Color	Very Pale Brown	Light Gray	Light Brownish Gray	Pale Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MP-T2
 LOCATION: Matagorda Peninsula

MATAGORDA PENINSULA						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.4	1.7	14.8
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.9	99.3	90.2
#35	99.9	100.0	97.0	99.7	97.8	75.9
#60	98.7	96.3	86.4	96.2	84.7	52.2
#70	92.8	85.3	82.6	87.9	66.4	35.9
#80	63.4	51.9	53.9	64.0	35.4	18.3
#100	25.3	15.3	19.6	24.6	12.6	5.4
#120	11.1	5.4	8.0	9.2	5.0	2.6
#170	2.2	1.4	2.4	1.4	1.5	1.5
#200	1.9	1.2	2.2	1.2	1.5	1.4
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.167	0.175	0.174	0.166	0.192	0.244
MEAN GRAIN SIZE (mm)	0.167	0.178	0.180	0.168	0.198	0.385
SORTING (σ)	0.346	0.292	0.513	0.356	0.472	1.072
Munsell Color	Brown	Brown	Brown	Brown	Pale Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MP-T3
 LOCATION: Matagorda Peninsula

MATAGORDA PENINSULA						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.2	0.1	0.4	1.2	7.3
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.7	99.3	95.1
#35	100.0	100.0	99.9	97.9	98.2	87.5
#60	99.3	99.1	96.0	77.0	85.2	72.1
#70	95.4	93.0	80.3	50.7	68.8	55.9
#80	72.2	68.2	40.8	24.7	37.1	36.3
#100	30.5	22.9	12.4	6.6	13.6	14.9
#120	11.8	8.4	4.3	3.1	5.7	6.7
#170	1.7	0.7	1.5	1.8	1.4	1.3
#200	1.4	0.6	1.4	1.7	1.2	1.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.161	0.165	0.184	0.209	0.190	0.199
MEAN GRAIN SIZE (mm)	0.161	0.166	0.185	0.229	0.196	0.259
SORTING (σ)	0.322	0.307	0.292	0.524	0.482	0.902
Munsell Color	Pale Brown	Very Pale Brown	Pale Brown	Pale Brown	Pale Brown	Pale Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIN-T1
 LOCATION: Mustang Island North

MUSTANG ISLAND NORTH						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.2	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.8
#35	100.0	100.0	99.9	99.9	99.7	99.0
#60	99.8	99.8	99.2	96.7	97.7	96.7
#70	99.4	99.0	97.5	92.8	93.9	94.3
#80	94.5	93.8	89.7	83.6	80.9	88.4
#100	66.9	62.0	69.6	64.1	57.2	74.2
#120	45.7	40.7	48.6	45.5	39.1	58.8
#170	2.9	2.7	2.8	3.3	2.8	4.3
#200	1.8	1.8	1.6	1.9	1.7	2.0
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.130	0.135	0.126	0.130	0.139	0.118
MEAN GRAIN SIZE (mm)	0.131	0.134	0.131	0.135	0.141	0.127
SORTING (σ)	0.357	0.359	0.394	0.446	0.436	0.427
Munsell Color	Light Brownish Gray	Gray	Grayish Brown	Grayish Brown	Gray	Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIN-T2
 LOCATION: Mustang Island North

MUSTANG ISLAND NORTH						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	99.9	100.0	100.0	99.9	99.9
#35	100.0	99.8	99.9	99.8	99.8	99.5
#60	99.8	99.5	99.4	98.8	98.7	98.5
#70	99.1	98.0	98.1	97.3	97.2	97.8
#80	93.3	90.4	92.0	93.4	91.2	96.0
#100	72.2	58.7	74.5	80.8	74.7	89.4
#120	47.0	36.5	52.2	62.9	57.4	76.0
#170	2.1	1.9	4.1	5.5	4.3	6.1
#200	1.0	1.2	1.8	3.2	2.8	2.6
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.128	0.139	0.123	0.116	0.119	0.110
MEAN GRAIN SIZE (mm)	0.130	0.137	0.128	0.122	0.126	0.114
SORTING (σ)	0.360	0.371	0.379	0.376	0.391	0.324
Munsell Color	Light Brownish Gray	Light Brownish Gray	Grayish Brown	Grayish Brown	Dark Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIN-T3
 LOCATION: Mustang Island North

MUSTANG ISLAND NORTH						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.9	100.0	100.0
#35	100.0	99.9	99.9	99.6	99.8	99.7
#60	99.8	99.3	99.6	96.2	98.3	97.8
#70	99.4	98.9	98.7	92.0	96.0	95.7
#80	97.1	94.0	93.2	89.4	89.9	90.7
#100	83.1	66.4	73.8	61.9	74.3	76.1
#120	59.9	41.2	49.8	40.5	54.6	55.5
#170	3.3	1.9	2.6	2.7	3.1	4.4
#200	2.2	1.0	1.8	1.6	1.7	2.7
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.118	0.133	0.125	0.135	0.121	0.120
MEAN GRAIN SIZE (mm)	0.121	0.133	0.128	0.135	0.128	0.126
SORTING (σ)	0.326	0.353	0.363	0.427	0.397	0.400
Munsell Color	Light Brownish Gray	Light Brownish Gray	Gray	Grayish Brown	Gray	Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIN-T4
 LOCATION: Mustang Island North

MUSTANG ISLAND NORTH						
Transect 4						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	100.0	99.9	99.9	99.9	99.9	99.7
#60	99.8	99.6	99.6	98.8	99.1	95.7
#70	99.0	98.2	98.0	97.2	97.5	90.3
#80	92.6	89.2	92.0	91.0	93.4	78.7
#100	66.0	61.5	71.9	72.8	78.6	54.4
#120	40.7	35.5	47.5	53.9	53.2	34.8
#170	2.4	1.4	2.6	3.8	3.1	2.5
#200	2.1	0.7	1.6	2.2	1.8	1.6
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.133	0.138	0.127	0.122	0.122	0.143
MEAN GRAIN SIZE (mm)	0.133	0.137	0.130	0.128	0.126	0.145
SORTING (σ)	0.363	0.373	0.371	0.390	0.363	0.466
Munsell Color	Light Yellowish Brown	Light Gray	Yellowish Brown	Light Brownish Gray	Pale Brown	Light Brownish Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIN-T5
 LOCATION: Mustang Island North

MUSTANG ISLAND NORTH						
Transect 5						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.1	0.0	0.0	0.0	0.1	0.2
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.8	99.9
#35	99.9	99.9	100.0	99.9	99.6	99.5
#60	99.7	99.8	99.6	98.5	96.8	96.7
#70	99.0	99.0	97.9	95.9	92.2	93.1
#80	93.5	93.9	89.0	89.3	80.2	86.2
#100	66.8	66.6	60.4	67.1	60.4	69.3
#120	40.6	24.9	39.3	43.1	41.9	52.5
#170	1.9	2.9	2.6	3.5	2.3	3.6
#200	1.0	2.2	2.0	2.4	1.1	1.9
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.133	0.139	0.137	0.131	0.135	0.123
MEAN GRAIN SIZE (mm)	0.133	0.138	0.136	0.133	0.140	0.131
SORTING (σ)	0.353	0.324	0.386	0.399	0.459	0.441
Munsell Color	Very Pale Brown	Gray	Gray	Gray	Gray	Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIN-T6
 LOCATION: Mustang Island North

MUSTANG ISLAND NORTH						
Transect 6						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.1	0.0	0.1	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.9
#35	99.9	99.9	100.0	99.9	99.7	99.4
#60	99.7	99.7	99.1	98.5	96.5	93.9
#70	98.9	98.4	96.8	96.0	91.8	89.0
#80	91.6	90.9	86.4	89.6	77.9	79.8
#100	58.7	64.2	65.8	71.4	49.8	60.6
#120	33.6	36.3	42.6	47.3	33.1	40.2
#170	2.2	1.9	2.9	3.4	2.7	2.7
#200	1.7	1.3	2.0	2.4	1.8	1.8
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.140	0.136	0.132	0.127	0.149	0.136
MEAN GRAIN SIZE (mm)	0.138	0.136	0.135	0.131	0.148	0.142
SORTING (σ)	0.360	0.364	0.398	0.398	0.454	0.512
Munsell Color	Light Gray	Light Gray	Gray	Gray	Gray	Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIC-T1
 LOCATION: Mustang Island Central

MUSTANG ISLAND CENTRAL						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.4	0.1	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.7	99.9	99.9
#35	100.0	100.0	100.0	98.3	99.6	99.2
#60	99.9	99.9	99.6	93.5	95.7	93.8
#70	98.9	98.9	97.1	86.4	87.8	86.2
#80	92.0	92.6	87.8	72.2	70.6	73.1
#100	68.3	71.2	65.9	53.2	46.0	55.1
#120	33.2	39.0	41.3	32.7	25.9	34.9
#170	1.7	1.5	2.8	3.3	2.1	3.3
#200	0.8	0.7	1.6	2.5	1.4	2.0
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.136	0.133	0.133	0.145	0.153	0.143
MEAN GRAIN SIZE (mm)	0.135	0.133	0.135	0.150	0.154	0.149
SORTING (σ)	0.353	0.353	0.394	0.547	0.462	0.537
Munsell Color	Very Pale Brown	Very Pale Brown	Brown	Grayish Brown	Grayish Brown	Dark Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIC-T2
 LOCATION: Mustang Island Central

MUSTANG ISLAND CENTRAL						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.1	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.9
#35	99.9	100.0	100.0	99.9	99.7	99.8
#60	99.7	99.6	99.5	97.1	97.7	96.4
#70	98.8	97.1	97.0	90.5	94.0	90.0
#80	91.5	84.2	87.1	74.6	84.6	77.4
#100	67.1	54.6	65.1	51.8	65.2	55.4
#120	32.3	28.2	39.3	29.4	41.2	33.9
#170	1.1	1.0	2.2	1.3	3.1	2.0
#200	0.6	0.4	1.0	0.7	1.6	1.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.137	0.145	0.134	0.147	0.133	0.143
MEAN GRAIN SIZE (mm)	0.136	0.143	0.136	0.150	0.136	0.147
SORTING (σ)	0.350	0.370	0.393	0.449	0.422	0.463
Munsell Color	Very Pale Brown	Very Pale Brown	Grayish Brown	Grayish Brown	Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIC-T3
 LOCATION: Mustang Island Central

MUSTANG ISLAND CENTRAL						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	99.8	100.0	100.0	100.0	99.9	99.8
#60	99.6	99.6	99.2	99.0	98.7	96.6
#70	98.3	97.1	95.4	95.9	96.2	90.5
#80	88.0	82.5	81.1	85.4	89.3	76.7
#100	56.0	47.6	55.0	63.1	73.5	55.6
#120	27.7	22.1	29.0	37.5	48.2	33.7
#170	0.9	1.0	1.6	2.2	3.5	2.4
#200	0.3	0.5	1.2	1.2	1.5	1.4
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.144	0.151	0.144	0.136	0.127	0.142
MEAN GRAIN SIZE (mm)	0.141	0.148	0.144	0.137	0.130	0.146
SORTING (σ)	0.356	0.355	0.394	0.399	0.395	0.464
Munsell Color	Very Pale Brown	Dark Grayish Brown	Very Pale Brown	Grayish Brown	Grayish Brown	Dark Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIC-T4
 LOCATION: Mustang Island Central

MUSTANG ISLAND CENTRAL						
Transect 4						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.5
#35	100.0	100.0	100.0	99.5	100.0	98.1
#60	99.8	99.9	98.6	94.6	99.4	94.5
#70	98.2	98.5	94.6	85.8	98.1	89.8
#80	87.5	89.4	83.1	68.2	93.3	80.0
#100	57.6	63.3	62.7	46.3	79.5	63.6
#120	25.2	33.8	38.8	26.9	54.3	39.9
#170	1.2	1.5	2.4	2.1	3.4	2.3
#200	0.7	0.7	1.1	1.3	1.1	1.3
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.143	0.138	0.136	0.153	0.121	0.135
MEAN GRAIN SIZE (mm)	0.142	0.137	0.138	0.155	0.125	0.142
SORTING (σ)	0.351	0.369	0.418	0.491	0.360	0.500
Munsell Color	Very Pale Brown	Light Gray	Grayish Brown	Grayish Brown	Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIC-T5
 LOCATION: Mustang Island Central

MUSTANG ISLAND CENTRAL						
Transect 5						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.6
#35	100.0	100.0	100.0	99.9	99.9	98.9
#60	99.7	99.6	99.1	96.5	99.1	95.0
#70	97.3	96.7	95.0	87.7	97.0	88.6
#80	84.9	81.6	80.4	67.2	90.1	75.5
#100	52.0	49.8	54.3	39.7	71.4	57.2
#120	22.4	22.6	27.9	19.4	46.4	35.0
#170	0.9	0.8	1.5	1.6	2.7	2.5
#200	0.6	0.4	1.0	1.2	1.1	1.0
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.147	0.149	0.145	0.159	0.128	0.141
MEAN GRAIN SIZE (mm)	0.145	0.148	0.146	0.160	0.131	0.147
SORTING (σ)	0.345	0.364	0.396	0.429	0.384	0.485
Munsell Color	Very Pale Brown	Very Pale Brown	Grayish Brown	Grayish Brown	Dark Grayish Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIC-T6
 LOCATION: Mustang Island Central

MUSTANG ISLAND CENTRAL						
Transect 6						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.1	0.3
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	98.6
#35	100.0	100.0	100.0	100.0	99.8	96.6
#60	99.7	99.8	98.9	98.4	98.2	91.6
#70	97.3	96.9	92.9	91.7	93.6	85.2
#80	82.7	79.2	70.3	68.1	80.6	72.0
#100	35.4	40.2	38.4	35.8	58.1	53.7
#120	20.2	14.0	18.3	16.3	35.0	32.3
#170	1.1	0.7	1.4	1.4	2.5	2.7
#200	0.7	0.5	1.0	1.1	1.3	1.5
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.157	0.156	0.159	0.161	0.140	0.145
MEAN GRAIN SIZE (mm)	0.151	0.156	0.158	0.161	0.142	0.152
SORTING (σ)	0.342	0.312	0.385	0.380	0.431	0.611
Munsell Color	Very Pale Brown	Very Pale Brown	Light Gray	Light Gray	Light Gray	Light Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIS-T1
 LOCATION: Mustang Island South

MUSTANG ISLAND SOUTH						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.1	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.7	100.0	99.8
#35	100.0	100.0	100.0	96.3	99.8	99.2
#60	99.5	99.6	98.7	88.8	97.8	94.5
#70	97.3	97.3	93.1	87.4	93.3	86.6
#80	83.9	83.6	73.6	72.5	80.5	71.3
#100	53.6	53.3	41.7	51.5	60.7	51.0
#120	26.5	26.6	22.7	28.6	35.0	30.9
#170	0.9	0.8	2.0	1.8	2.0	1.9
#200	0.5	0.3	1.7	1.1	1.2	1.1
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.146	0.146	0.156	0.147	0.138	0.148
MEAN GRAIN SIZE (mm)	0.144	0.144	0.154	0.152	0.142	0.152
SORTING (σ)	0.367	0.369	0.408	0.611	0.431	0.504
Munsell Color	Very Pale Brown	Very Pale Brown	Dark Grayish Brown	Dark Grayish Brown	Dark Grayish Brown	Dark Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIS-T2
 LOCATION: Mustang Island South

MUSTANG ISLAND SOUTH						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.1	0.0	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.8
#35	100.0	100.0	100.0	99.7	99.9	99.3
#60	99.7	99.7	98.6	93.4	99.1	94.2
#70	98.1	98.3	92.9	77.7	96.7	86.8
#80	81.1	86.0	73.9	53.8	90.4	66.9
#100	45.5	53.1	47.3	33.7	73.7	44.8
#120	21.1	29.3	22.0	19.3	48.1	26.3
#170	1.1	1.6	1.7	1.8	2.7	1.9
#200	0.8	1.1	1.4	1.2	1.3	1.1
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.152	0.146	0.152	0.171	0.127	0.155
MEAN GRAIN SIZE (mm)	0.149	0.142	0.153	0.171	0.130	0.156
SORTING (σ)	0.355	0.369	0.406	0.513	0.383	0.498
Munsell Color	Very Pale Brown	Very Pale Brown	Light Gray	Light Gray	Light Gray	Light Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: MIS-T3
 LOCATION: Mustang Island South

MUSTANG ISLAND SOUTH						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.2	0.1	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.8	100.0	100.0	100.0	100.0	100.0
#18	99.8	100.0	100.0	99.8	99.8	99.7
#35	99.8	100.0	100.0	99.4	99.2	99.1
#60	99.3	99.8	98.8	93.2	94.4	94.8
#70	97.5	97.7	94.0	80.3	86.8	86.7
#80	83.9	80.3	74.0	61.2	73.9	68.7
#100	52.8	46.2	45.1	41.7	54.4	44.9
#120	25.9	24.0	21.6	25.0	34.1	28.1
#170	1.0	0.8	1.5	1.9	2.3	2.1
#200	0.5	0.3	1.2	1.3	1.4	1.3
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.146	0.152	0.153	0.160	0.143	0.155
MEAN GRAIN SIZE (mm)	0.144	0.149	0.153	0.163	0.149	0.155
SORTING (σ)	0.364	0.370	0.395	0.544	0.511	0.486
Munsell Color	Very Pale Brown	Very Pale Brown	Grayish Brown	Brown	Dark Grayish Brown	Light Brownish Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: PI-T1
 LOCATION: Padre Island

PADRE ISLAND						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.1	0.4
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	98.9
#35	99.9	100.0	100.0	99.7	99.7	97.2
#60	99.7	99.6	99.4	97.0	98.3	92.0
#70	98.8	96.1	96.3	91.0	95.0	84.0
#80	91.5	77.4	80.3	75.7	83.3	69.3
#100	70.8	44.9	53.5	55.5	61.7	51.9
#120	37.9	22.5	29.0	34.0	36.4	33.6
#170	2.0	0.9	1.8	2.0	2.2	2.4
#200	0.7	0.3	1.1	1.2	1.4	1.4
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.133	0.153	0.145	0.142	0.137	0.146
MEAN GRAIN SIZE (mm)	0.133	0.151	0.145	0.146	0.139	0.153
SORTING (σ)	0.359	0.378	0.394	0.457	0.407	0.596
Munsell Color	Very Pale Brown	Very Pale Brown	Light Gray	Grayish Brown	Light Gray	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: PI-T2
 LOCATION: Padre Island

PADRE ISLAND						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.7	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.9
#35	100.0	100.0	100.0	99.8	99.7	99.5
#60	99.8	99.1	98.9	96.6	97.8	95.5
#70	98.5	94.2	94.1	87.8	93.5	85.0
#80	88.7	70.3	76.3	68.4	81.5	62.1
#100	63.1	35.9	49.0	45.3	60.4	39.7
#120	34.7	16.3	25.5	24.7	38.7	22.7
#170	1.6	1.6	1.4	1.6	2.8	1.9
#200	0.8	0.7	1.0	1.1	1.8	1.3
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.137	0.160	0.150	0.154	0.137	0.161
MEAN GRAIN SIZE (mm)	0.137	0.160	0.150	0.156	0.140	0.160
SORTING (σ)	0.370	0.361	0.406	0.451	0.436	0.459
Munsell Color	Very Pale Brown	Light Gray	Light Gray	Light Brownish Gray	Grayish Brown	Light Brownish Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: PI-T3
 LOCATION: Padre Island

PADRE ISLAND						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	1.0	0.0	0.0	0.1	0.1	0.2
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.3	100.0	100.0	100.0	100.0	100.0
#18	98.6	100.0	100.0	99.9	99.9	99.4
#35	98.3	100.0	100.0	99.3	99.6	98.3
#60	98.0	99.6	99.5	96.2	97.7	90.7
#70	96.5	96.9	96.7	92.4	94.1	76.2
#80	82.9	78.1	80.7	56.5	83.2	48.9
#100	50.6	42.5	53.5	58.2	62.8	26.2
#120	27.5	19.1	29.6	36.4	39.7	13.4
#170	3.5	1.0	1.7	1.5	2.3	1.5
#200	2.3	0.5	1.1	0.5	1.3	1.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.148	0.155	0.145	0.141	0.135	0.178
MEAN GRAIN SIZE (mm)	0.144	0.153	0.144	0.148	0.138	0.180
SORTING (σ)	0.388	0.352	0.394	0.475	0.424	0.527
Munsell Color	Light Gray	Very Pale Brown	Grayish Brown	Light Gray	Grayish Brown	Light Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: SPI-T1
 LOCATION: South Padre Island

SOUTH PADRE ISLAND						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.2	0.2
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.6	100.0	99.7
#35	100.0	100.0	99.9	99.1	100.0	98.8
#60	97.8	98.4	88.7	87.2	93.8	86.2
#70	82.4	85.6	58.5	55.5	73.1	58.8
#80	38.5	47.4	24.1	29.8	34.5	31.0
#100	10.1	12.7	7.1	8.3	12.2	10.8
#120	4.4	4.4	3.0	3.2	5.4	5.6
#170	1.2	0.9	1.3	1.2	1.8	2.7
#200	0.6	0.7	1.3	1.1	1.7	2.6
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.185	0.179	0.201	0.202	0.190	0.199
MEAN GRAIN SIZE (mm)	0.184	0.180	0.202	0.202	0.191	0.201
SORTING (σ)	0.274	0.269	0.384	0.421	0.356	0.467
Munsell Color	Very Pale Brown	Very Pale Brown	Brown	Brown	Brown	Light Brownish Gray

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: SPI-T2
 LOCATION: South Padre Island

SOUTH PADRE ISLAND						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.8	0.0	0.0	0.2	0.5	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.7	99.9	99.9
#35	99.2	99.9	99.8	99.4	99.6	99.7
#60	92.8	99.1	91.4	93.8	93.6	92.7
#70	68.2	90.5	62.0	77.9	70.9	71.2
#80	45.7	50.7	34.6	45.2	44.7	35.7
#100	42.5	16.7	10.5	19.7	17.2	13.3
#120	36.9	6.2	4.1	9.4	8.2	6.3
#170	6.8	0.9	1.0	1.7	1.1	1.6
#200	2.2	0.6	1.0	1.4	0.9	1.4
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.183	0.176	0.195	0.181	0.183	0.190
MEAN GRAIN SIZE (mm)	0.172	0.176	0.196	0.182	0.187	0.192
SORTING (σ)	0.641	0.285	0.388	0.422	0.410	0.400
Munsell Color	Very Pale Brown	Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: SPI-T3
 LOCATION: South Padre Island

SOUTH PADRE ISLAND						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	99.9	100.0	99.9	100.0	99.5
#35	99.8	99.9	99.9	99.8	99.9	98.2
#60	98.6	98.6	97.2	95.1	97.4	87.5
#70	88.5	87.9	80.7	78.0	88.3	67.0
#80	59.9	43.3	48.9	40.7	64.5	39.4
#100	20.1	15.6	16.7	15.6	31.3	19.0
#120	8.3	6.3	6.8	6.3	16.6	10.0
#170	1.4	1.3	0.7	1.1	1.8	1.5
#200	0.5	1.2	0.6	0.9	1.4	1.2
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.170	0.182	0.178	0.185	0.164	0.189
MEAN GRAIN SIZE (mm)	0.171	0.179	0.181	0.186	0.164	0.191
SORTING (σ)	0.327	0.294	0.326	0.334	0.404	0.528
Munsell Color	Very Pale Brown	Very Pale Brown	Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: SPI-T4
 LOCATION: South Padre Island

SOUTH PADRE ISLAND						
Transect 4						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.4	0.0	0.2	0.6	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	99.9	100.0	99.6	99.9	99.6
#35	99.9	99.8	99.9	99.0	98.8	98.7
#60	99.3	99.4	95.5	90.6	96.3	90.5
#70	94.4	96.1	81.9	69.9	82.3	71.6
#80	68.2	67.7	48.5	35.0	55.7	39.6
#100	25.0	36.3	18.0	13.4	24.2	16.5
#120	11.2	9.0	7.9	5.9	12.3	7.7
#170	0.9	1.0	1.4	1.0	2.0	1.6
#200	0.7	0.7	1.3	0.9	1.8	1.5
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.165	0.161	0.178	0.190	0.172	0.187
MEAN GRAIN SIZE (mm)	0.165	0.162	0.179	0.193	0.173	0.190
SORTING (σ)	0.322	0.309	0.348	0.428	0.398	0.462
Munsell Color	Very Pale Brown	Very Pale Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: SPI-T5
 LOCATION: South Padre Island

SOUTH PADRE ISLAND						
Transect 5						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.9	0.0	0.0	2.8	0.2	0.2
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.7	99.7	99.3
#35	99.9	99.9	100.0	99.2	99.2	97.6
#60	98.8	99.5	97.8	93.8	93.4	84.7
#70	94.5	96.1	82.8	78.0	83.9	60.1
#80	65.7	65.4	49.2	43.9	60.5	27.9
#100	19.9	25.3	16.4	15.5	27.7	10.0
#120	9.7	9.9	6.9	6.6	14.3	4.8
#170	2.4	1.0	2.4	1.1	1.9	1.5
#200	1.3	0.8	2.2	1.0	1.7	1.3
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.167	0.166	0.178	0.182	0.168	0.199
MEAN GRAIN SIZE (mm)	0.168	0.165	0.180	0.185	0.169	0.202
SORTING (σ)	0.309	0.307	0.325	0.375	0.455	0.462
Munsell Color	Light Brownish Gray	Light Brownish Gray	Yellowish Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BCP-T1
 LOCATION: Boca Chica Peninsula

BOCA CHICA PENINSULA						
Transect 1						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.4	0.1	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	100.0	99.9	100.0
#35	99.9	100.0	99.9	99.8	99.5	99.8
#60	98.5	99.7	97.2	95.1	97.4	97.5
#70	97.3	97.9	87.8	79.3	92.6	91.3
#80	74.7	85.0	68.7	52.2	81.7	75.1
#100	32.0	46.7	31.1	24.9	55.1	40.4
#120	14.1	22.7	14.9	11.4	34.5	20.8
#170	1.3	1.5	0.9	1.6	2.9	1.8
#200	0.9	1.2	0.5	1.3	1.8	1.1
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.160	0.151	0.162	0.175	0.143	0.156
MEAN GRAIN SIZE (mm)	0.159	0.146	0.164	0.176	0.143	0.155
SORTING (σ)	0.326	0.350	0.387	0.406	0.437	0.413
Munsell Color	Pale Brown	Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BCP-T2
 LOCATION: Boca Chica Peninsula

BOCA CHICA PENINSULA						
Transect 2						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.2	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	99.9	100.0
#35	100.0	99.9	99.8	99.6	99.8	99.7
#60	99.3	99.2	95.7	96.8	97.7	94.1
#70	94.8	93.5	81.5	82.4	91.7	82.1
#80	64.0	69.4	53.8	52.6	73.9	61.8
#100	25.8	24.8	17.3	21.8	43.8	30.9
#120	10.2	10.5	6.5	10.4	24.7	16.4
#170	1.3	1.0	1.0	1.3	1.4	1.8
#200	0.6	0.8	0.9	1.0	0.8	1.4
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.166	0.164	0.174	0.174	0.154	0.166
MEAN GRAIN SIZE (mm)	0.166	0.165	0.179	0.175	0.153	0.169
SORTING (σ)	0.319	0.322	0.330	0.377	0.425	0.459
Munsell Color	Very Pale Brown	Brown	Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BCP-T3
 LOCATION: Boca Chica Peninsula

BOCA CHICA PENINSULA						
Transect 3						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.9
#35	100.0	100.0	100.0	99.9	99.9	99.8
#60	99.2	99.7	97.3	95.7	99.1	98.5
#70	92.4	96.6	85.0	81.2	95.6	92.3
#80	65.3	77.6	52.9	55.4	80.7	76.6
#100	19.8	33.2	22.2	23.9	50.8	43.7
#120	7.7	14.4	9.0	11.9	29.6	24.2
#170	0.8	1.2	1.6	2.2	3.0	2.1
#200	0.6	0.6	1.5	2.0	2.2	1.6
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.167	0.159	0.174	0.172	0.148	0.154
MEAN GRAIN SIZE (mm)	0.169	0.158	0.173	0.174	0.145	0.152
SORTING (σ)	0.297	0.322	0.358	0.402	0.408	0.418
Munsell Color	Light Yellowish Brown	Brown	Brown	Brown	Brown	Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BCP-T4
 LOCATION: Boca Chica Peninsula

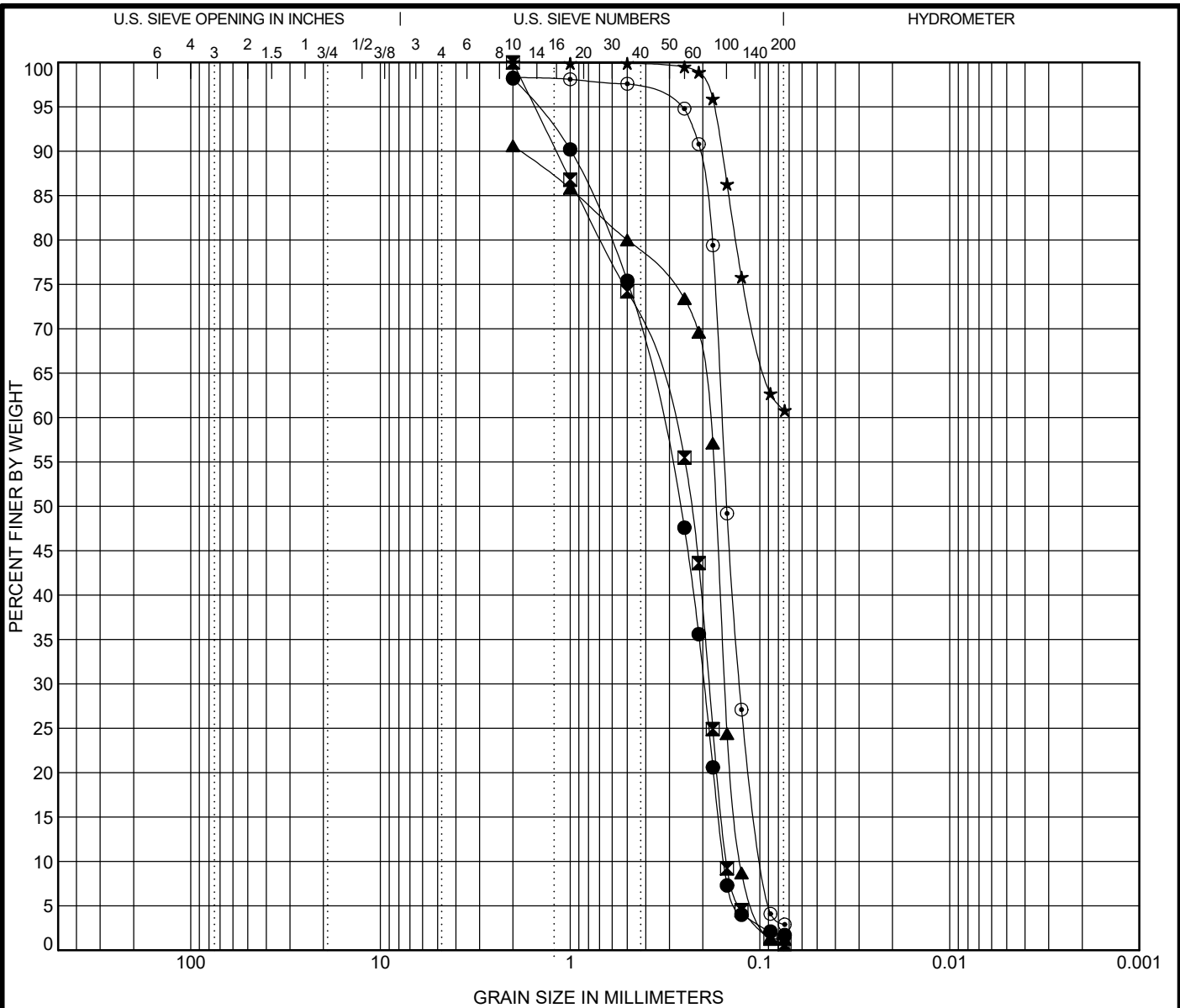
BOCA CHICA PENINSULA						
Transect 4						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.1	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	100.0	100.0	99.9	99.9	99.8
#35	99.8	99.9	100.0	99.7	99.8	99.2
#60	99.1	99.3	98.9	90.5	96.8	90.8
#70	93.0	94.2	89.8	61.8	87.5	68.2
#80	56.3	66.1	51.7	33.5	58.2	41.6
#100	19.5	22.9	18.8	11.3	27.7	16.8
#120	7.9	9.1	7.1	4.5	13.2	7.8
#170	1.1	1.5	1.8	1.5	2.3	1.7
#200	0.7	1.4	1.6	1.5	2.1	1.5
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.172	0.166	0.175	0.196	0.169	0.187
MEAN GRAIN SIZE (mm)	0.171	0.166	0.174	0.197	0.168	0.190
SORTING (σ)	0.301	0.312	0.312	0.402	0.391	0.462
Munsell Color	Very Pale Brown	Pale Brown	Brown	Brown	Brown	Yellowish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BCP-T5
 LOCATION: Boca Chica Peninsula

BOCA CHICA PENINSULA						
Transect 5						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.4	0.0	0.2
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.8	99.9	99.7
#35	100.0	99.9	99.8	99.3	99.8	99.0
#60	99.5	98.9	98.7	90.2	98.3	91.6
#70	95.8	90.0	90.4	64.3	92.5	74.9
#80	74.2	60.4	50.3	33.0	64.5	47.2
#100	62.9	19.6	16.8	8.9	27.4	7.1
#120	38.8	6.7	6.2	3.3	12.2	0.8
#170	14.1	0.4	1.9	0.8	1.6	0.7
#200	4.3	0.2	1.8	0.8	1.4	0.4
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.136	0.169	0.177	0.194	0.165	0.180
MEAN GRAIN SIZE (mm)	0.139	0.171	0.176	0.197	0.165	0.189
SORTING (σ)	0.518	0.300	0.290	0.394	0.352	0.358
Munsell Color	Pale Brown	Brown	Light Yellowish Brown	Brown	Brown	Grayish Brown

PROJECT NAME: Beach Sediment Analysis
 CLIENT: HDR, Inc.
 SAMPLE ID: BCP-T6
 LOCATION: Boca Chica Peninsula

BOCA CHICA PENINSULA						
Transect 6						
ASTM MESH	PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
RETAINED BY #10	0.0	0.0	0.0	0.0	0.1	0.1
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.8	99.9	100.0	99.7	99.9	99.8
#35	99.6	99.8	99.8	99.1	99.6	99.4
#60	99.0	99.1	98.5	94.5	97.4	93.5
#70	93.1	93.2	86.5	85.5	88.8	81.2
#80	55.4	54.2	56.9	61.6	67.2	52.0
#100	18.3	17.5	20.1	34.7	32.7	26.3
#120	8.1	6.3	8.5	19.4	17.0	15.7
#170	2.3	1.4	2.0	2.5	1.7	8.0
#200	0.9	1.1	1.9	2.0	1.3	7.8
STATISTICS (EXCLUDING SHELL)						
MEDIAN GRAIN SIZE (mm)	0.173	0.174	0.171	0.164	0.162	0.175
MEAN GRAIN SIZE (mm)	0.173	0.174	0.173	0.163	0.162	0.173
SORTING (σ)	0.307	0.276	0.342	0.467	0.403	--
Munsell Color	Grayish Brown	Light Grayish Brown	Brown	Brown	Brown	Brown



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPE-T1-Toe of Dune	0.0'	POORLY GRADED SAND				0.74	2.21
⊠ BPE-T1-Mid Berm	0.0'	POORLY GRADED SAND				0.77	1.97
▲ BPE-T1-Swash Zone	0.0'	POORLY GRADED SAND				1.01	1.45
★ BPE-T1-First Bar	0.0'	SANDY LEAN CLAY				--	--
⊙ BPE-T1-Trough	0.0'	POORLY GRADED SAND				1.07	1.65

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPE-T1-Toe of Dune	0.0'	2	0.341	0.197	0.154	0.0			
⊠ BPE-T1-Mid Berm	0.0'	2	0.295	0.185	0.15	0.0			
▲ BPE-T1-Swash Zone	0.0'	2	0.184	0.153	0.127	0.0			
★ BPE-T1-First Bar	0.0'	2	--	--	--	0.0			
⊙ BPE-T1-Trough	0.0'	2	0.158	0.128	0.096	0.0			

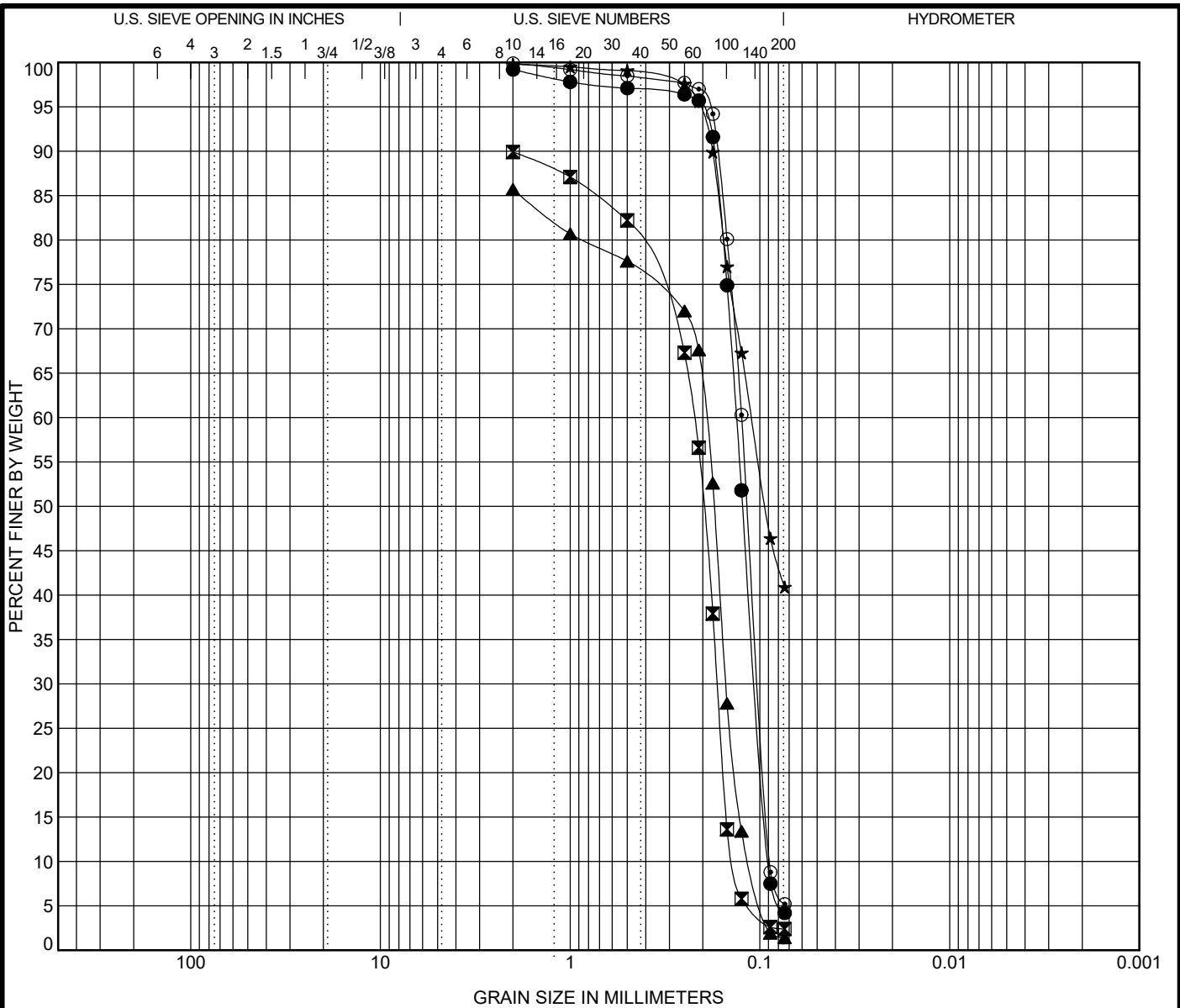


Rock Engineering & Testing Lab. Inc
 6817 Leopard Street
 Corpus Christi, Texas 78409
 Telephone: 361-883-4555
 Fax: 361-883-4711

GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
 Location: Bolivar Peninsula East, Texas
 Number: G122361

US GRAIN SIZE 1 G122361.BPE.GPJ US LAB.GDT 8/22/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification					LL	PL	PI	Cc	Cu
● BPE-T1-Second Bar	0.0'	POORLY GRADED SAND								0.93	1.48
☒ BPE-T2-Swash Zone	0.0'	POORLY GRADED SAND								0.92	1.62
▲ BPE-T2-First Bar	0.0'	POORLY GRADED SAND								1.05	1.71
★ BPE-T2-Trough	0.0'	CLAYEY SAND								--	--
◎ BPE-T2-Second Bar	0.0'	POORLY GRADED SAND with SILT								0.93	1.41
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay		
● BPE-T1-Second Bar	0.0'	2	0.133	0.105	0.09	0.0					
☒ BPE-T2-Swash Zone	0.0'	2	0.222	0.167	0.137	0.0					
▲ BPE-T2-First Bar	0.0'	2	0.193	0.151	0.113	0.0					
★ BPE-T2-Trough	0.0'	2	0.111	--	--	0.0					
◎ BPE-T2-Second Bar	0.0'	2	0.125	0.102	0.089	0.0					

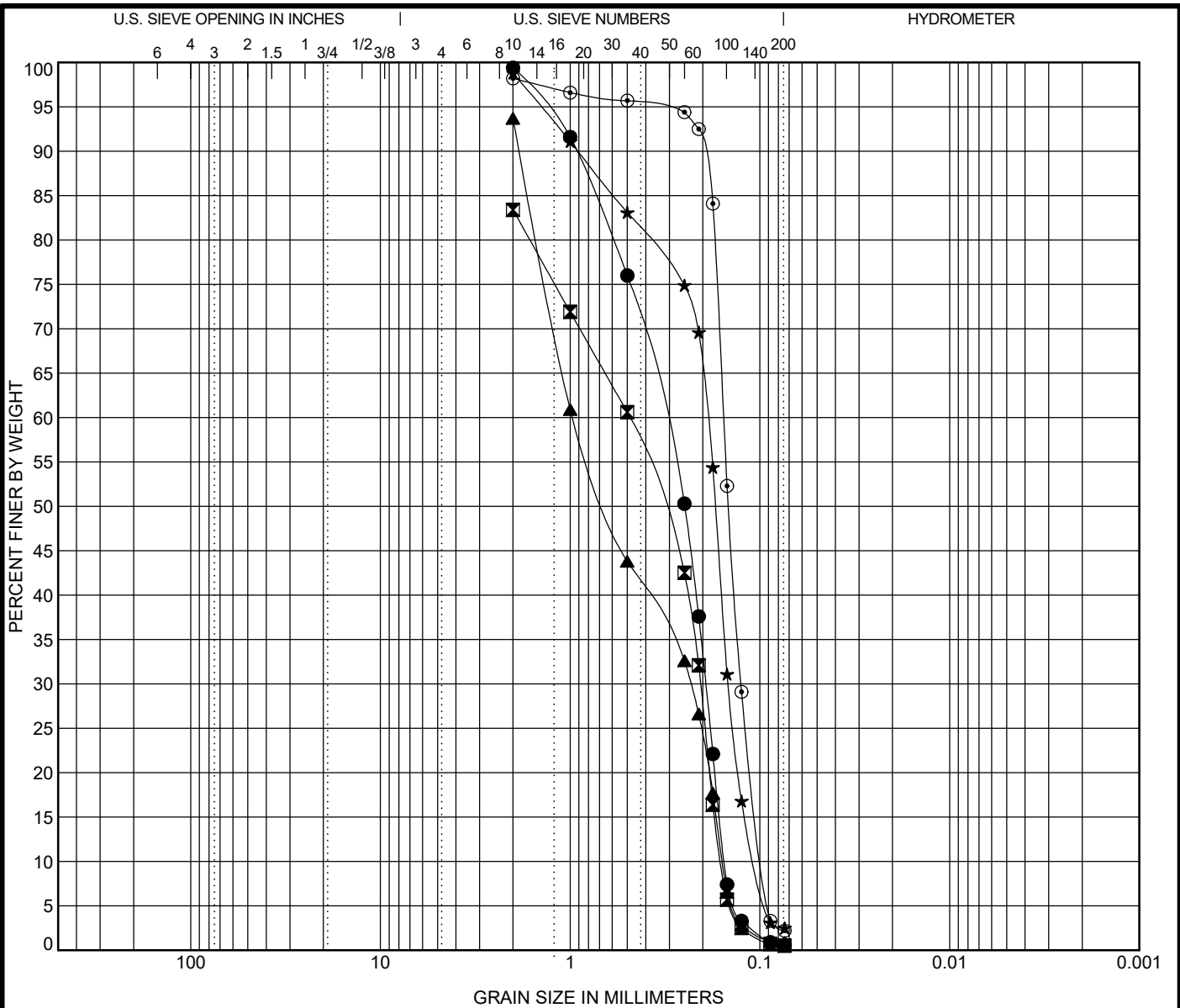
US GRAIN SIZE 1 G122361 BPE.GPJ US LAB.GDT 8/22/22



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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
 Location: Bolivar Peninsula East, Texas
 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPE-T3-Toe of Dune	0.0'	POORLY GRADED SAND				0.75	2.11
⊠ BPE-T3-Mid Berm	0.0'	POORLY GRADED SAND				0.54	3.06
▲ BPE-T3-Swash Zone	0.0'	POORLY GRADED SAND				0.35	6.13
★ BPE-T3-First Bar	0.0'	POORLY GRADED SAND				1.09	1.80
⊙ BPE-T3-Trough	0.0'	POORLY GRADED SAND				1.06	1.61

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPE-T3-Toe of Dune	0.0'	2	0.325	0.193	0.154	0.0			
⊠ BPE-T3-Mid Berm	0.0'	2	0.489	0.205	0.16	0.0			
▲ BPE-T3-Swash Zone	0.0'	2	0.964	0.232	0.157	0.0			
★ BPE-T3-First Bar	0.0'	2	0.189	0.147	0.105	0.0			
⊙ BPE-T3-Trough	0.0'	2	0.155	0.126	0.096	0.0			

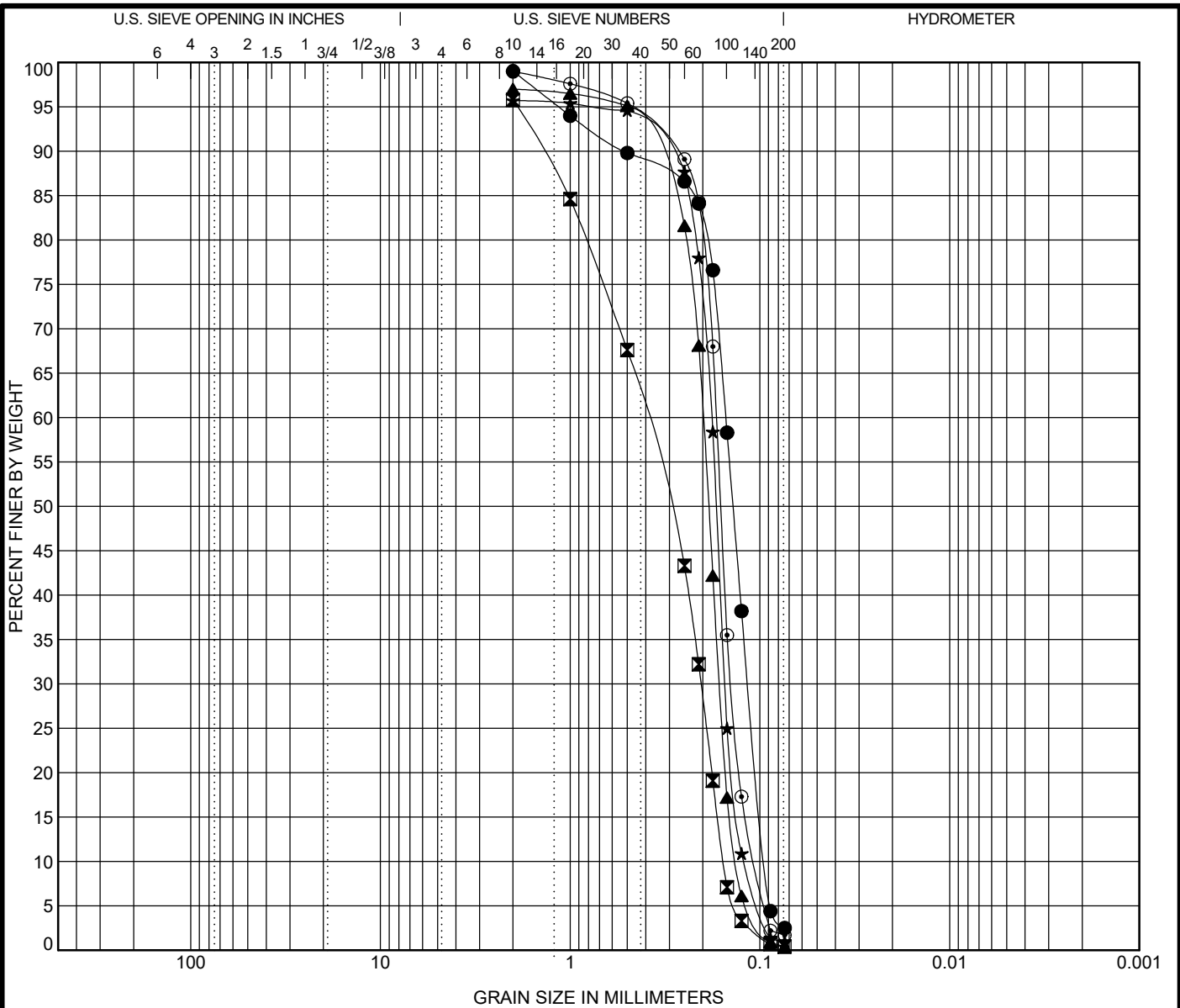


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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
 Location: Bolivar Peninsula East, Texas
 Number: G122361

US GRAIN SIZE 1 G122361 BPE.GPJ US LAB.GDT 8/22/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● BPE-T3-Second Bar	0.0'	POORLY GRADED SAND							0.93	1.62
☒ BPE-T4-Toe of Dune	0.0'	POORLY GRADED SAND							0.67	2.59
▲ BPE-T4-Mid Berm	0.0'	POORLY GRADED SAND							1.00	1.50
★ BPE-T4-Swash Zone	0.0'	POORLY GRADED SAND							1.08	1.48
⊙ BPE-T4-First Bar	0.0'	POORLY GRADED SAND							1.12	1.61
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● BPE-T3-Second Bar	0.0'	2	0.151	0.115	0.093	0.0				
☒ BPE-T4-Toe of Dune	0.0'	2	0.403	0.204	0.155	0.0				
▲ BPE-T4-Mid Berm	0.0'	2	0.199	0.163	0.133	0.0				
★ BPE-T4-Swash Zone	0.0'	2	0.179	0.153	0.121	0.0				
⊙ BPE-T4-First Bar	0.0'	2	0.17	0.141	0.105	0.0				

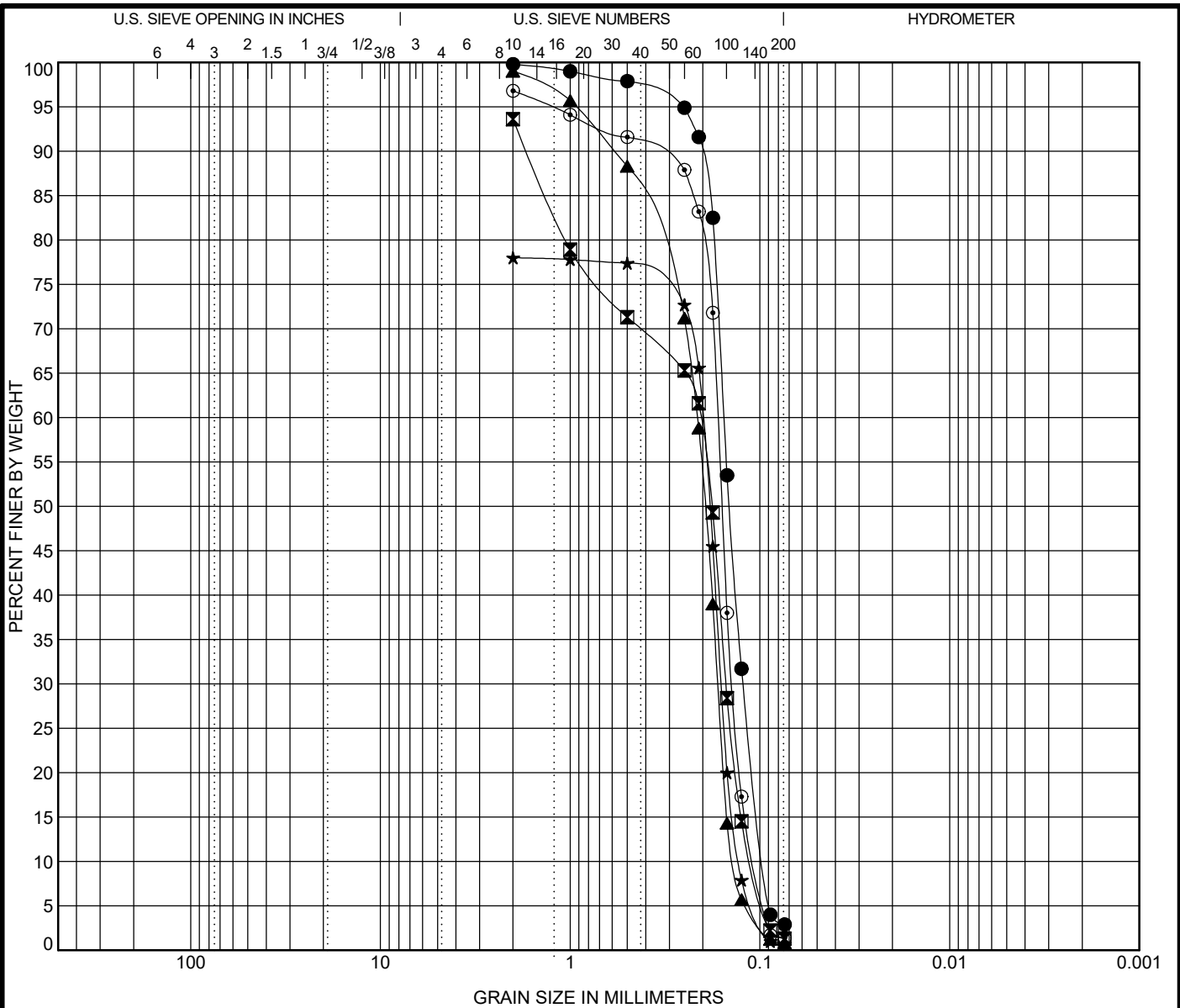
GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
 Location: Bolivar Peninsula East, Texas
 Number: G122361



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US GRAIN SIZE 1 G122361.BPE.GPJ US LAB.GDT 8/22/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPE-T4-Trough	0.0'	POORLY GRADED SAND				1.02	1.63
⊠ BPE-T4-Second Bar	0.0'	POORLY GRADED SAND				1.01	1.87
▲ BPE-T5-Toe of Dune	0.0'	POORLY GRADED SAND				0.95	1.56
★ BPE-T5-Mid Berm	0.0'	POORLY GRADED SAND				0.98	1.55
⊙ BPE-T5-Swash Zone	0.0'	POORLY GRADED SAND				1.10	1.57

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPE-T4-Trough	0.0'	2	0.155	0.122	0.095	0.0			
⊠ BPE-T4-Second Bar	0.0'	2	0.205	0.151	0.11	0.0			
▲ BPE-T5-Toe of Dune	0.0'	2	0.214	0.166	0.136	0.0			
★ BPE-T5-Mid Berm	0.0'	2	0.2	0.159	0.129	0.0			
⊙ BPE-T5-Swash Zone	0.0'	2	0.167	0.139	0.106	0.0			

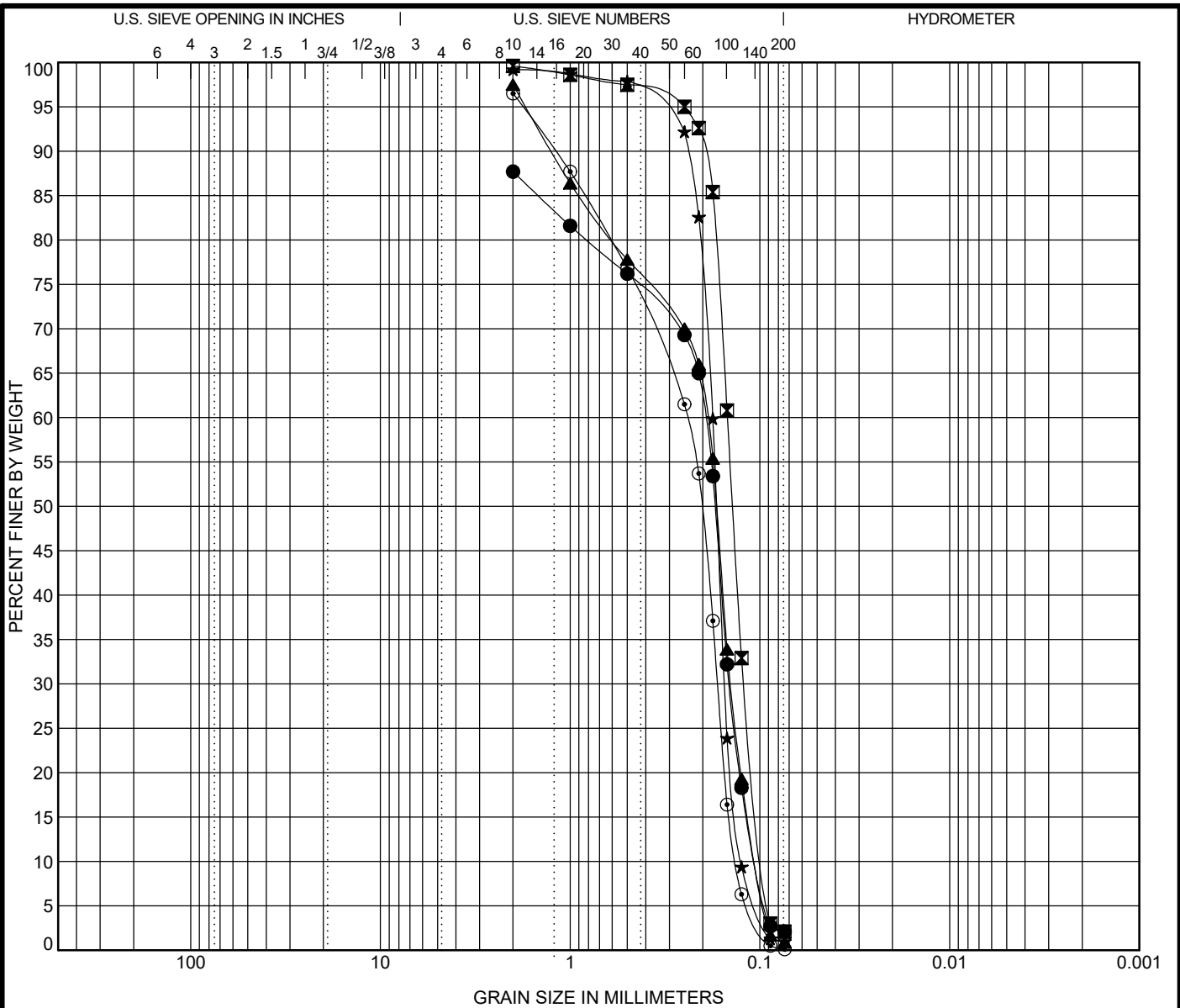


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPE-T5-First Bar	0.0'	POORLY GRADED SAND				1.04	1.88
☒ BPE-T5-Trough	0.0'	POORLY GRADED SAND				1.03	1.55
▲ BPE-T5-Second Bar	0.0'	POORLY GRADED SAND				1.02	1.84
★ BPE-T6-Toe of Dune	0.0'	POORLY GRADED SAND				1.06	1.41
⊙ BPE-T6-Mid Berm	0.0'	POORLY GRADED SAND				0.86	1.81

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPE-T5-First Bar	0.0'	2	0.195	0.145	0.104	0.0			
☒ BPE-T5-Trough	0.0'	2	0.148	0.121	0.096	0.0			
▲ BPE-T5-Second Bar	0.0'	2	0.191	0.142	0.104	0.0			
★ BPE-T6-Toe of Dune	0.0'	2	0.177	0.153	0.126	0.0			
⊙ BPE-T6-Mid Berm	0.0'	2	0.242	0.167	0.133	0.0			

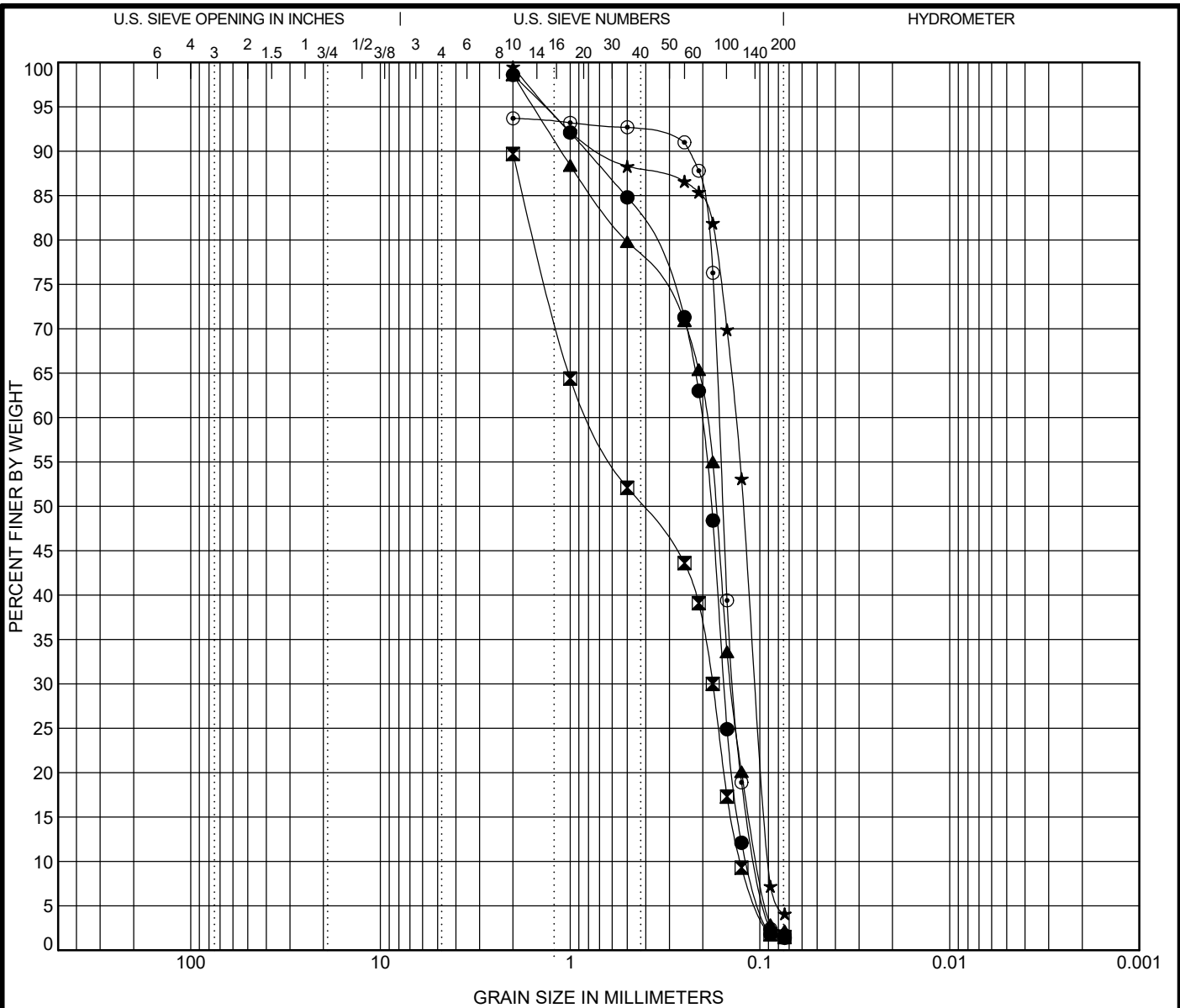


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPE-T6-Swash Zone	0.0'	POORLY GRADED SAND				1.01	1.74
⊠ BPE-T6-First Bar	0.0'	POORLY GRADED SAND				0.32	6.15
▲ BPE-T6-Trough	0.0'	POORLY GRADED SAND				1.03	1.89
★ BPE-T6-Second Bar	0.0'	POORLY GRADED SAND				0.91	1.49
⊙ BPE-T7-Toe of Dune	0.0'	POORLY GRADED SAND				1.11	1.59

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPE-T6-Swash Zone	0.0'	2	0.203	0.155	0.116	0.0			
⊠ BPE-T6-First Bar	0.0'	2	0.78	0.177	0.127	0.0			
▲ BPE-T6-Trough	0.0'	2	0.192	0.142	0.102	0.0			
★ BPE-T6-Second Bar	0.0'	2	0.134	0.105	0.09	0.0			
⊙ BPE-T7-Toe of Dune	0.0'	2	0.164	0.137	0.103	0.0			

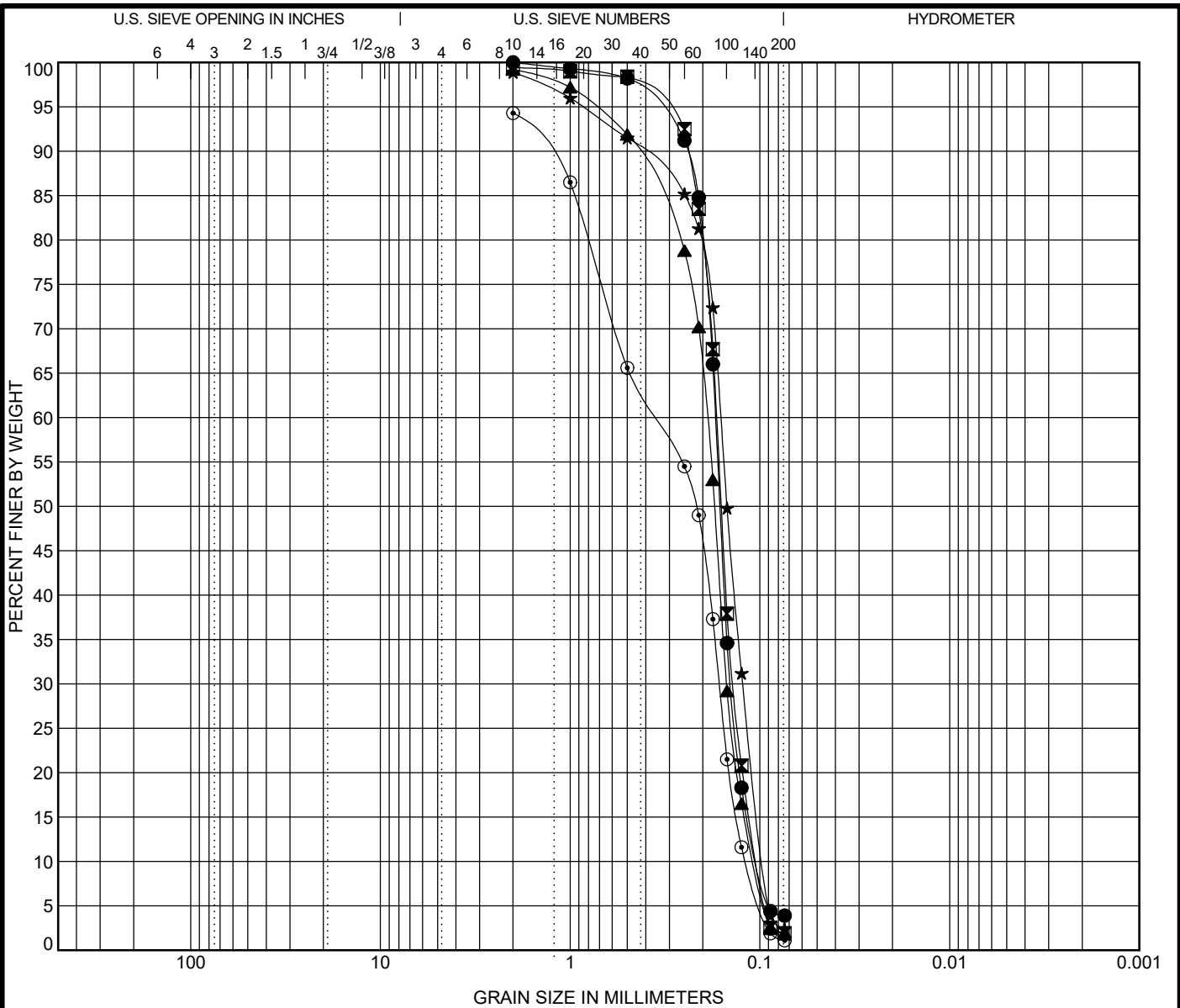


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPE-T7-Mid Berm	0.0'	POORLY GRADED SAND				1.16	1.69
⊠ BPE-T7-Swash Zone	0.0'	POORLY GRADED SAND				1.10	1.67
▲ BPE-T7-First Bar	0.0'	POORLY GRADED SAND				1.12	1.79
★ BPE-T7-Trough	0.0'	POORLY GRADED SAND				0.99	1.69
⊙ BPE-T7-Second Bar	0.0'	POORLY GRADED SAND				0.64	2.99

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPE-T7-Mid Berm	0.0'	2	0.171	0.142	0.101	0.0			
⊠ BPE-T7-Swash Zone	0.0'	2	0.169	0.137	0.102	0.0			
▲ BPE-T7-First Bar	0.0'	2	0.19	0.15	0.106	0.0			
★ BPE-T7-Trough	0.0'	2	0.161	0.123	0.095	0.0			
⊙ BPE-T7-Second Bar	0.0'	2	0.352	0.163	0.118	0.0			

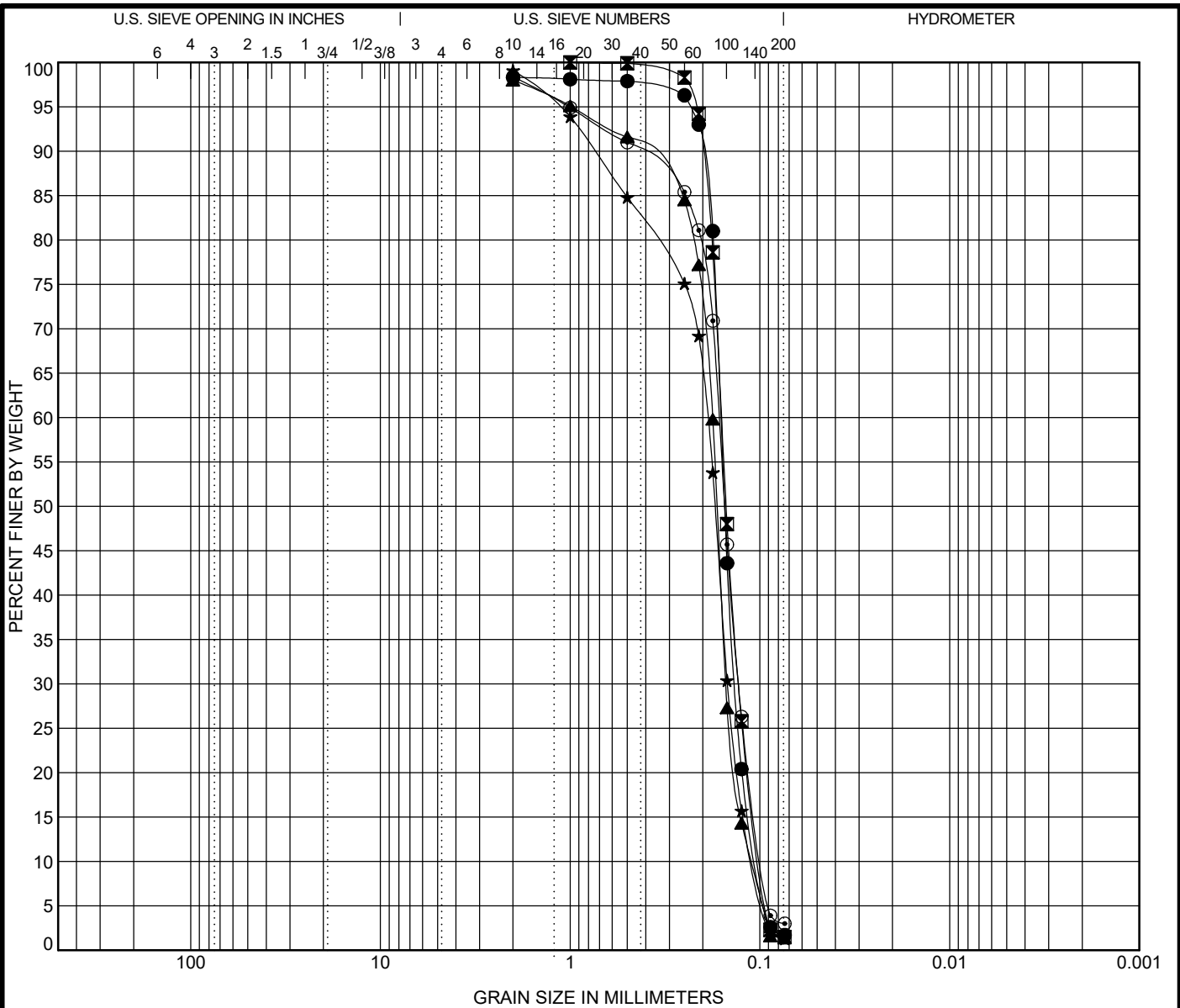


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPE-T8-Toe of Dune	0.0'	POORLY GRADED SAND				1.10	1.58
☒ BPE-T8-Mid Berm	0.0'	POORLY GRADED SAND				1.06	1.61
▲ BPE-T8-Swash Zone	0.0'	POORLY GRADED SAND				1.16	1.60
★ BPE-T8-First Bar	0.0'	POORLY GRADED SAND				1.07	1.75
⊙ BPE-T8-Trough	0.0'	POORLY GRADED SAND				1.05	1.70

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPE-T8-Toe of Dune	0.0'	2	0.161	0.134	0.102	0.0			
☒ BPE-T8-Mid Berm	0.0'	1	0.159	0.129	0.099	0.0			
▲ BPE-T8-Swash Zone	0.0'	2	0.177	0.151	0.111	0.0			
★ BPE-T8-First Bar	0.0'	2	0.19	0.148	0.108	0.0			
⊙ BPE-T8-Trough	0.0'	2	0.164	0.129	0.097	0.0			

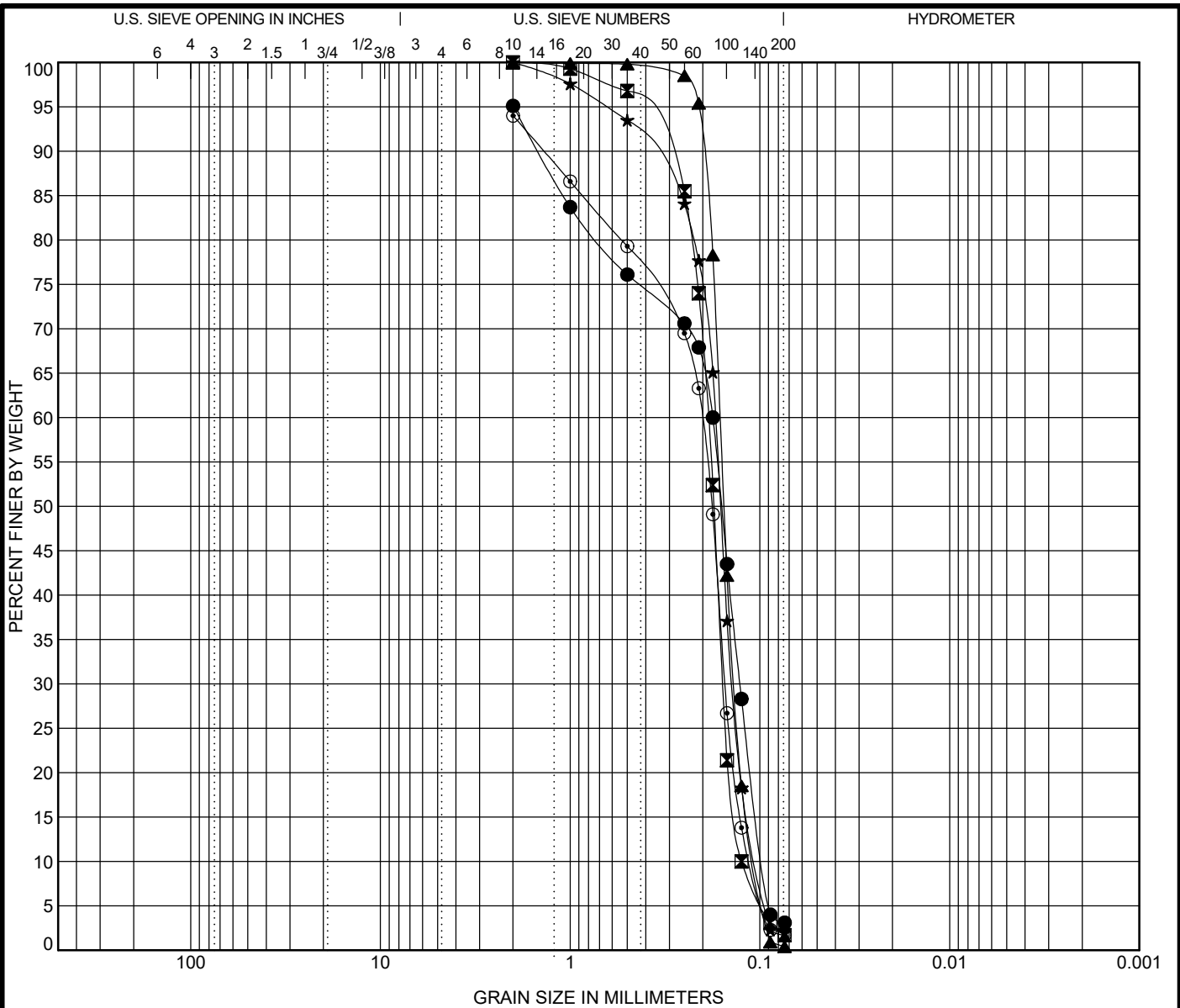


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● BPE-T8-Second Bar	0.0'	POORLY GRADED SAND							0.96	1.84
☒ BPE-T9-Toe of Dune	0.0'	POORLY GRADED SAND							1.04	1.50
▲ BPE-T9-Mid Berm	0.0'	POORLY GRADED SAND							1.08	1.54
★ BPE-T9-Swash Zone	0.0'	POORLY GRADED SAND							1.09	1.65
◎ BPE-T9-Second Bar	0.0'	POORLY GRADED SAND							1.04	1.81
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● BPE-T8-Second Bar	0.0'	2	0.177	0.127	0.096	0.0				
☒ BPE-T9-Toe of Dune	0.0'	2	0.188	0.156	0.125	0.0				
▲ BPE-T9-Mid Berm	0.0'	2	0.162	0.136	0.106	0.0				
★ BPE-T9-Swash Zone	0.0'	2	0.172	0.139	0.104	0.0				
◎ BPE-T9-Second Bar	0.0'	2	0.202	0.153	0.111	0.0				

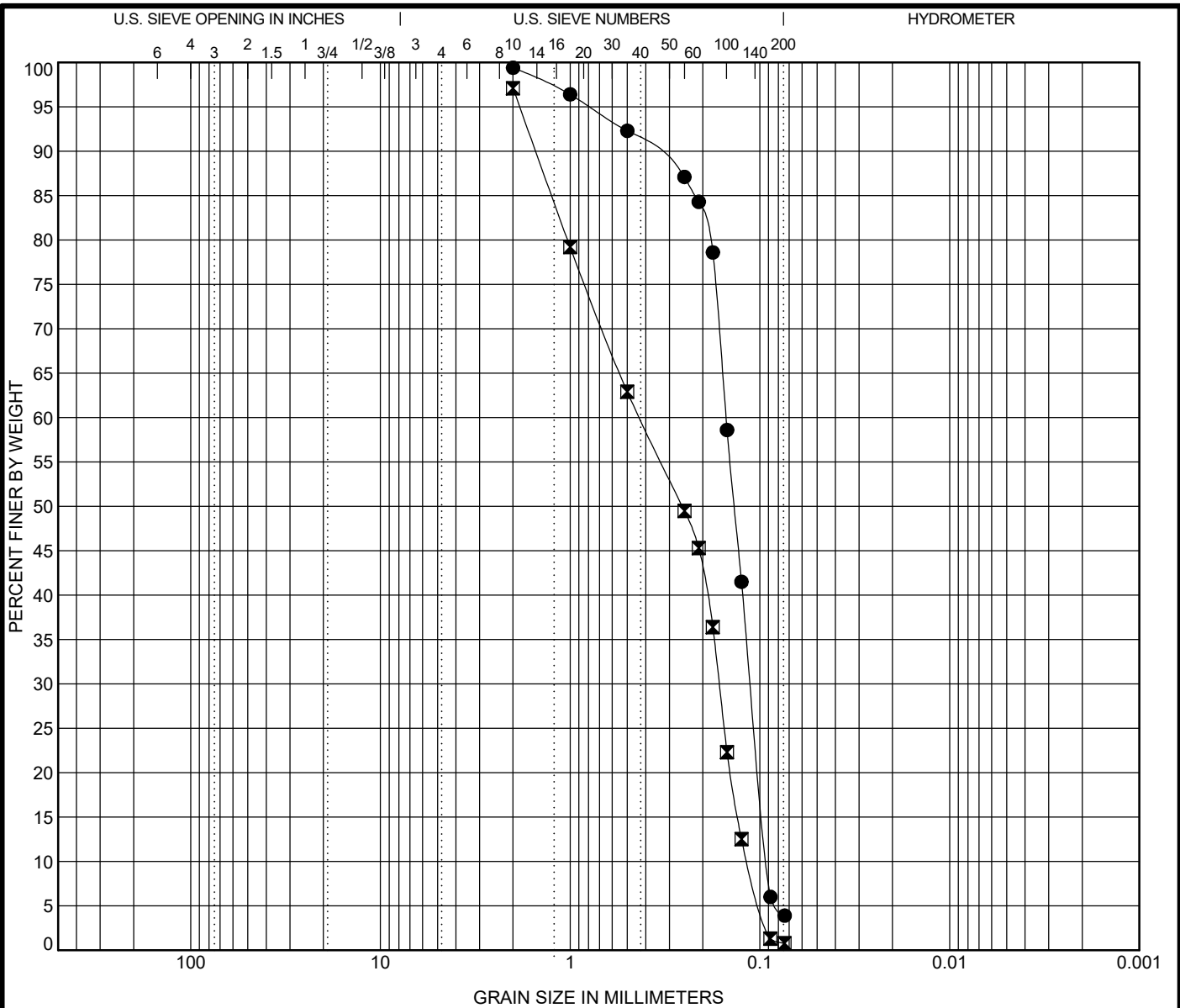
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPE-T9-Trough	0.0'	POORLY GRADED SAND				0.90	1.65
☒ BPE-T9-First Bar	0.0'	POORLY GRADED SAND				0.54	3.72

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPE-T9-Trough	0.0'	2	0.151	0.112	0.092	0.0			
☒ BPE-T9-First Bar	0.0'	2	0.43	0.164	0.116	0.0			

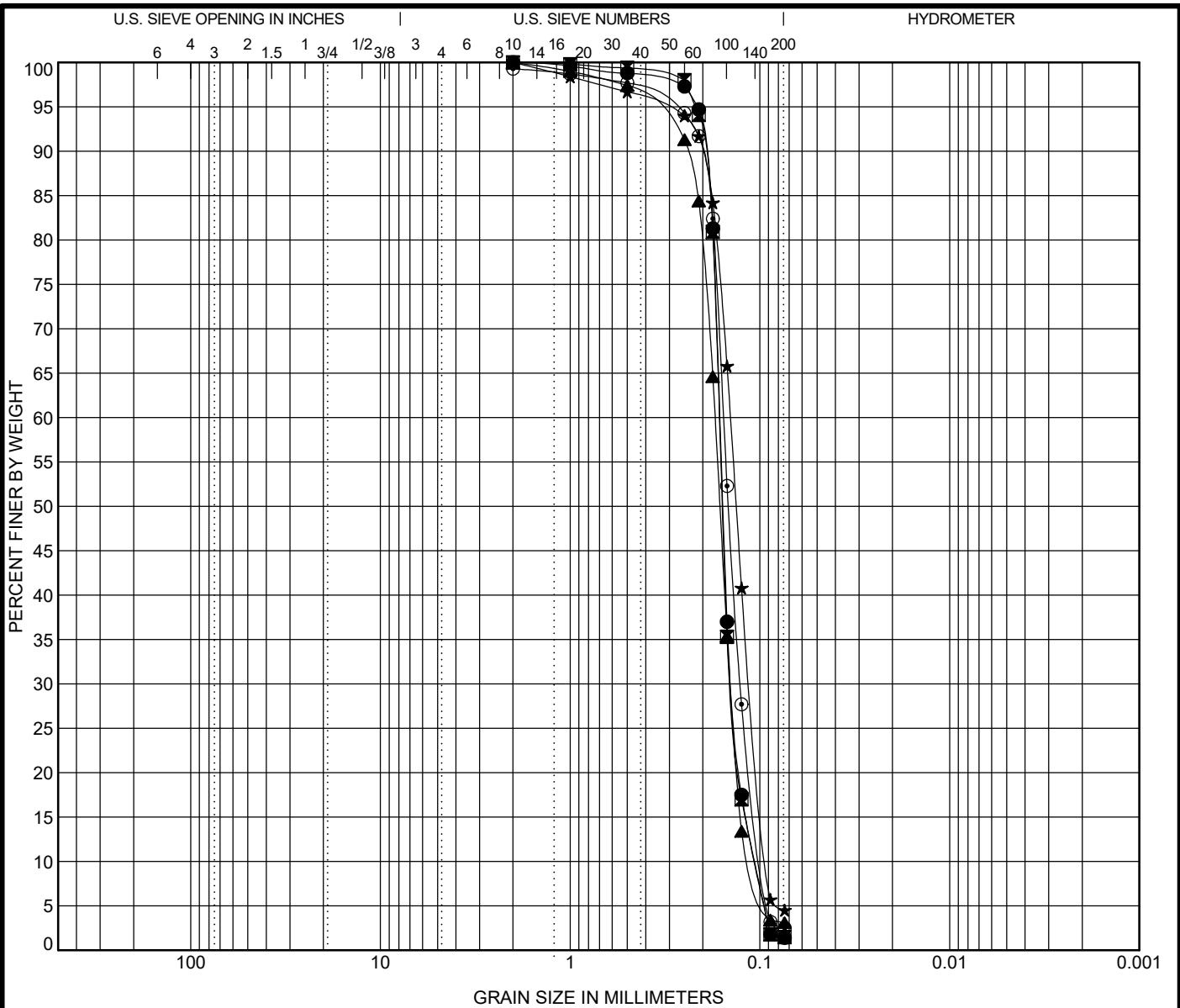
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPC-T1-Toe of Dune	0.0'	POORLY GRADED SAND				1.14	1.54
☒ BPC-T1-Mid Berm	0.0'	POORLY GRADED SAND				1.15	1.54
▲ BPC-T1-Swash Zone	0.0'	POORLY GRADED SAND				1.07	1.55
★ BPC-T1-First Bar	0.0'	POORLY GRADED SAND				0.96	1.56
⊙ BPC-T1-Trough	0.0'	POORLY GRADED SAND				1.07	1.61

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPC-T1-Toe of Dune	0.0'	2	0.163	0.14	0.106	0.0			
☒ BPC-T1-Mid Berm	0.0'	2	0.164	0.142	0.106	0.0			
▲ BPC-T1-Swash Zone	0.0'	2	0.172	0.143	0.111	0.0			
★ BPC-T1-First Bar	0.0'	2	0.143	0.112	0.092	0.0			
⊙ BPC-T1-Trough	0.0'	2	0.156	0.127	0.097	0.0			

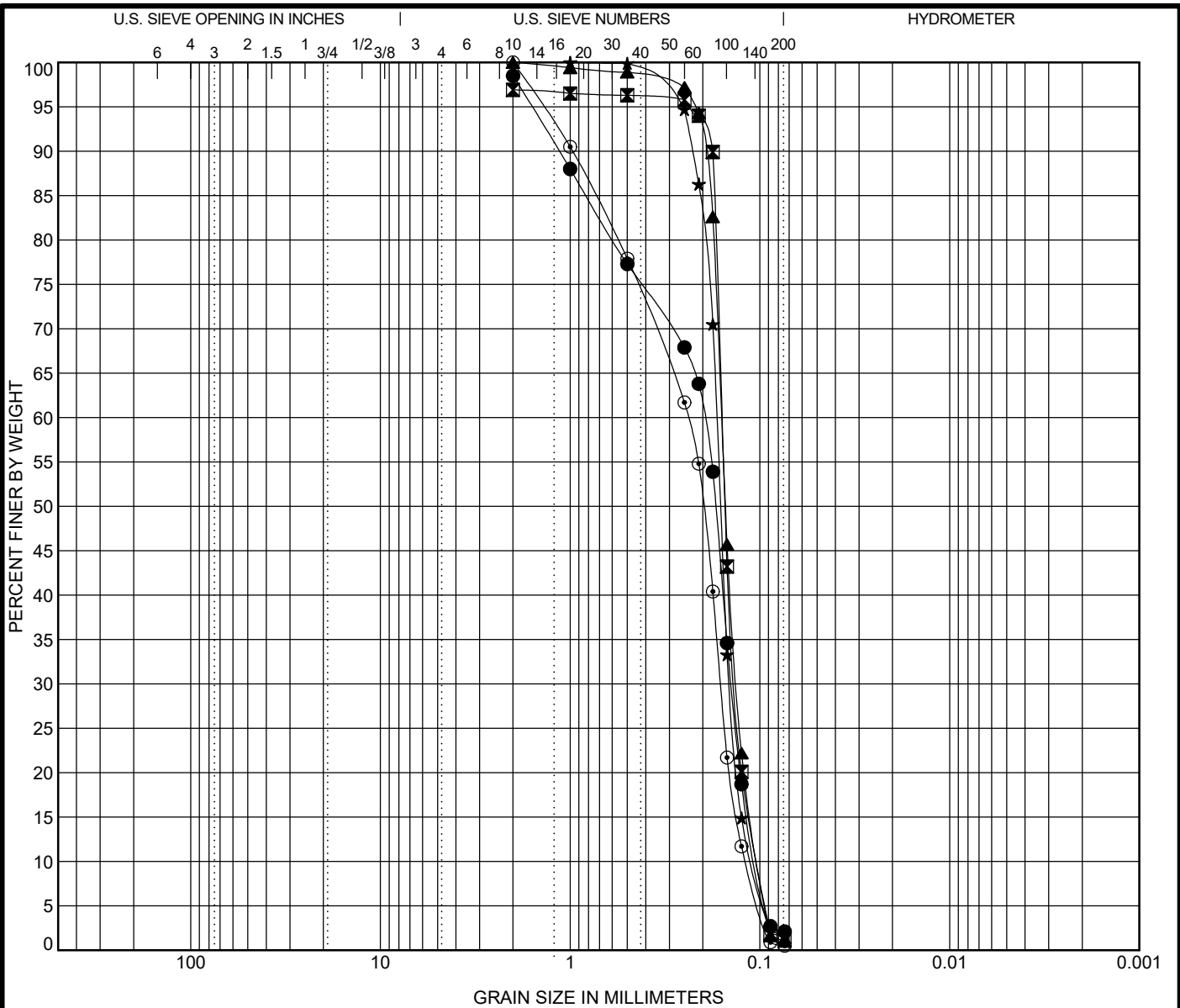


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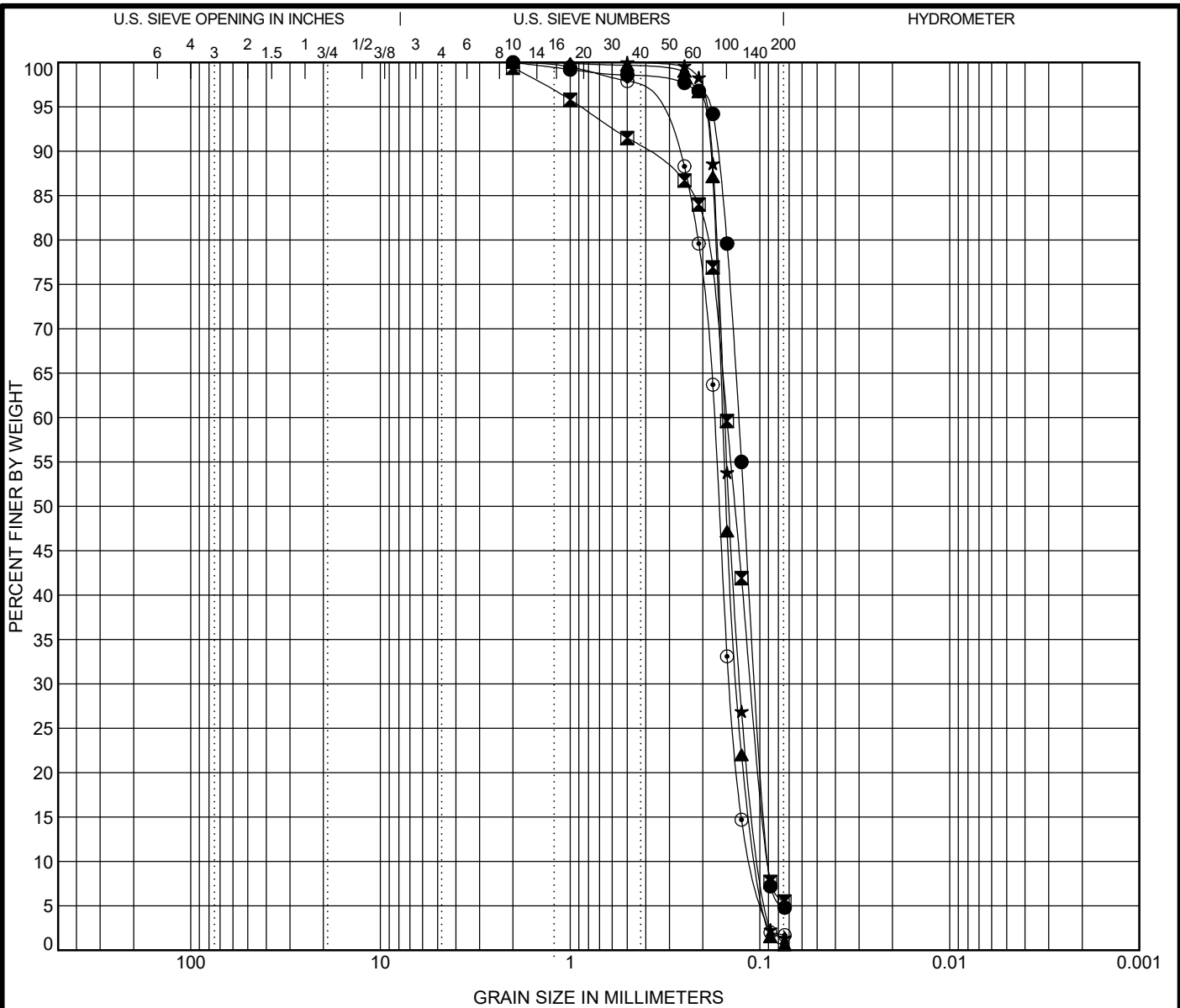
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification					LL	PL	PI	Cc	Cu
● BPC-T1-Second Bar	0.0'	POORLY GRADED SAND								0.99	1.90
☒ BPC-T2-Toe of Dune	0.0'	POORLY GRADED SAND								1.11	1.54
▲ BPC-T2-Mid Berm	0.0'	POORLY GRADED SAND								1.09	1.57
★ BPC-T2-Swash Zone	0.0'	POORLY GRADED SAND								1.13	1.54
◎ BPC-T2-First Bar	0.0'	POORLY GRADED SAND								0.91	2.02

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPC-T1-Second Bar	0.0'	2	0.197	0.142	0.103	0.0			
☒ BPC-T2-Toe of Dune	0.0'	2	0.159	0.135	0.103	0.0			
▲ BPC-T2-Mid Berm	0.0'	2	0.159	0.133	0.102	0.0			
★ BPC-T2-Swash Zone	0.0'	1	0.169	0.144	0.109	0.0			
◎ BPC-T2-First Bar	0.0'	2	0.239	0.161	0.118	0.0			

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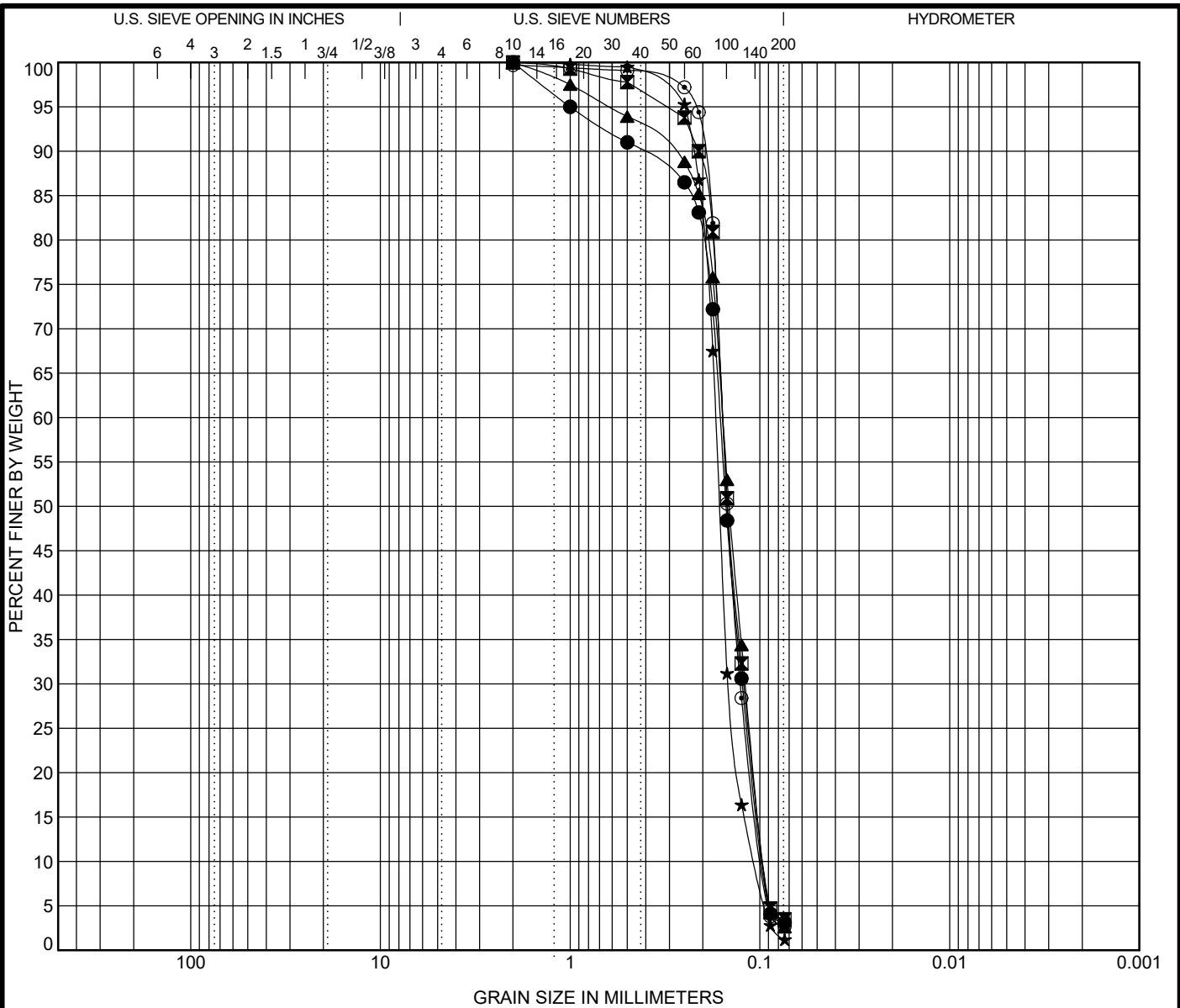
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPC-T2-Trough	0.0'	POORLY GRADED SAND with SILT				0.93	1.44
☒ BPC-T2-Second Bar	0.0'	POORLY GRADED SAND with SILT				0.91	1.66
▲ BPC-T3-Toe of Dune	0.0'	POORLY GRADED SAND				1.09	1.55
★ BPC-T3-Mid Berm	0.0'	POORLY GRADED SAND				1.08	1.56
⊙ BPC-T3-Swash Zone	0.0'	POORLY GRADED SAND				1.10	1.58

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPC-T2-Trough	0.0'	2	0.13	0.104	0.09	0.0			
☒ BPC-T2-Second Bar	0.0'	2	0.15	0.111	0.09	0.0			
▲ BPC-T3-Toe of Dune	0.0'	2	0.157	0.132	0.102	0.0			
★ BPC-T3-Mid Berm	0.0'	0.5	0.154	0.128	0.098	0.0			
⊙ BPC-T3-Swash Zone	0.0'	2	0.173	0.145	0.11	0.0			

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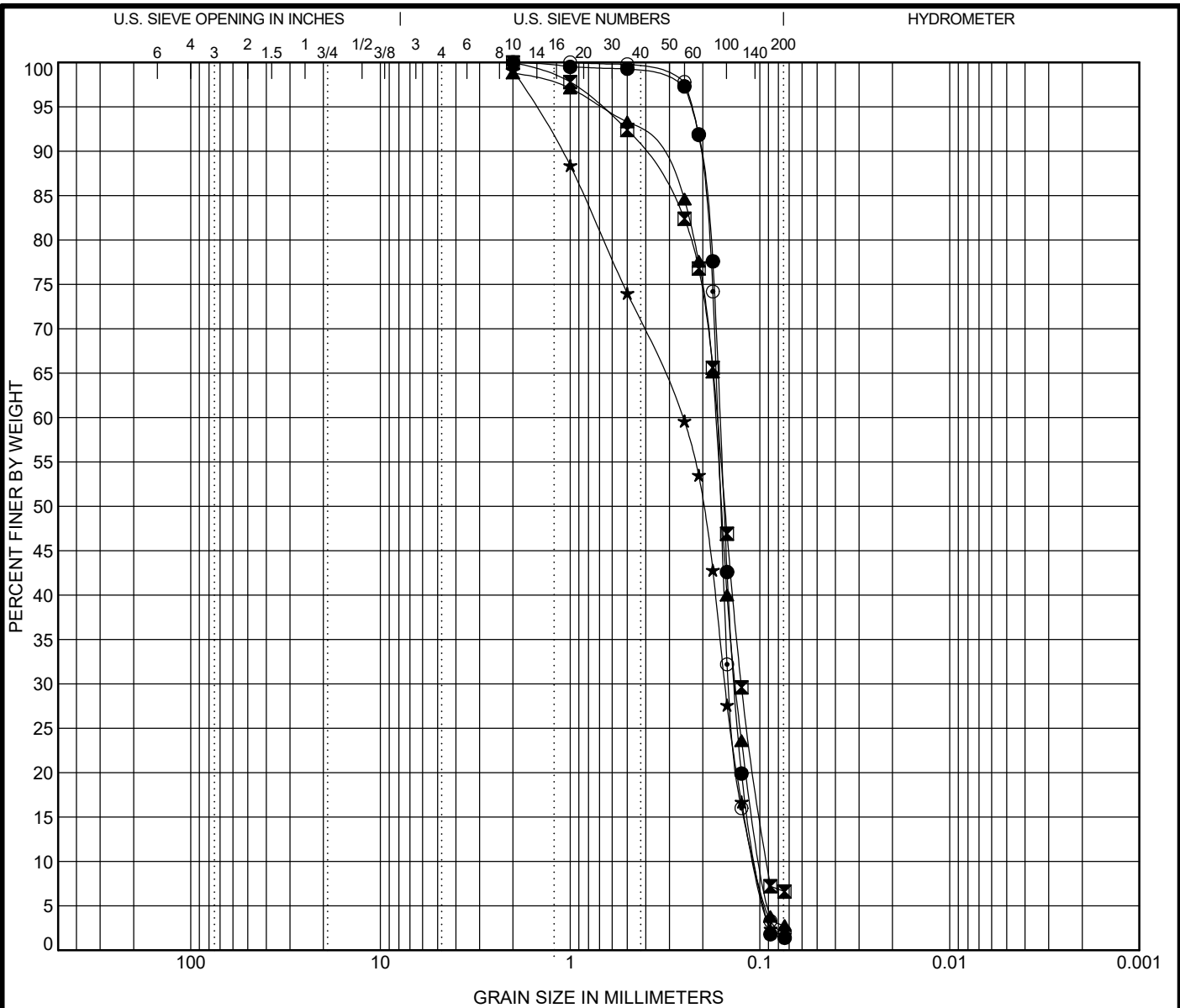
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPC-T3-First Bar	0.0'	POORLY GRADED SAND				1.00	1.70
☒ BPC-T3-Trough	0.0'	POORLY GRADED SAND				1.00	1.67
▲ BPC-T3-Second Bar	0.0'	POORLY GRADED SAND				0.95	1.67
★ BPC-T4-Toe of Dune	0.0'	POORLY GRADED SAND				1.19	1.61
◎ BPC-T4-Mid Berm	0.0'	POORLY GRADED SAND				1.06	1.63

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPC-T3-First Bar	0.0'	2	0.162	0.124	0.095	0.0			
☒ BPC-T3-Trough	0.0'	2	0.157	0.121	0.094	0.0			
▲ BPC-T3-Second Bar	0.0'	2	0.157	0.119	0.094	0.0			
★ BPC-T4-Toe of Dune	0.0'	2	0.171	0.147	0.106	0.0			
◎ BPC-T4-Mid Berm	0.0'	2	0.157	0.127	0.096	0.0			

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPC-T4-Swash Zone	0.0'	POORLY GRADED SAND				1.09	1.57
⊠ BPC-T4-First Bar	0.0'	POORLY GRADED SAND with SILT				1.02	1.83
▲ BPC-T4-Trough	0.0'	POORLY GRADED SAND				1.07	1.74
★ BPC-T4-Second Bar	0.0'	POORLY GRADED SAND				0.87	2.40
⊙ BPC-T5-Toe of Dune	0.0'	POORLY GRADED SAND				1.20	1.58

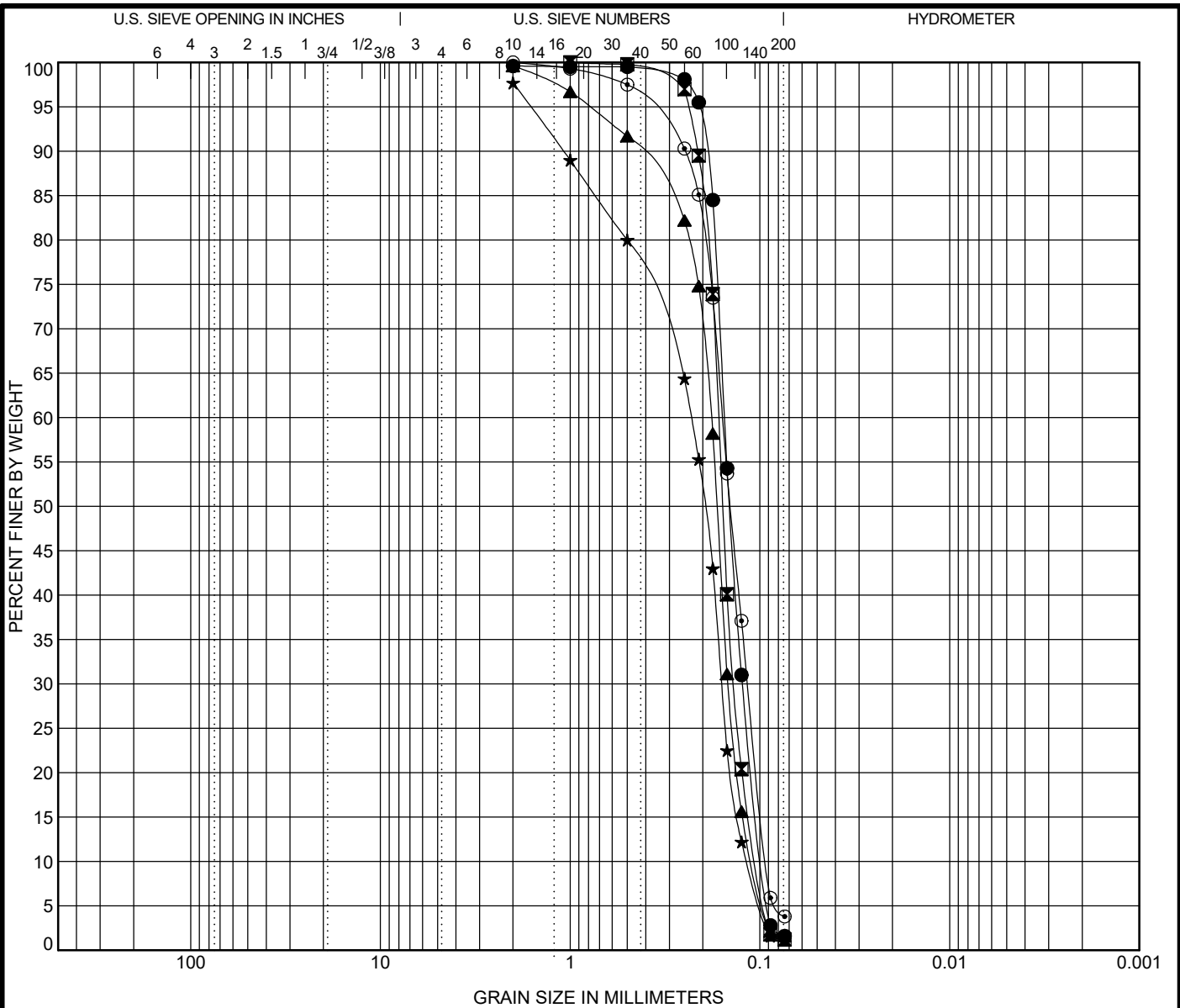
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPC-T4-Swash Zone	0.0'	2	0.162	0.135	0.103	0.0			
⊠ BPC-T4-First Bar	0.0'	2	0.168	0.126	0.092	0.0			
▲ BPC-T4-Trough	0.0'	2	0.171	0.134	0.098	0.0			
★ BPC-T4-Second Bar	0.0'	2	0.255	0.153	0.106	0.0			
⊙ BPC-T5-Toe of Dune	0.0'	1	0.167	0.145	0.106	0.0			

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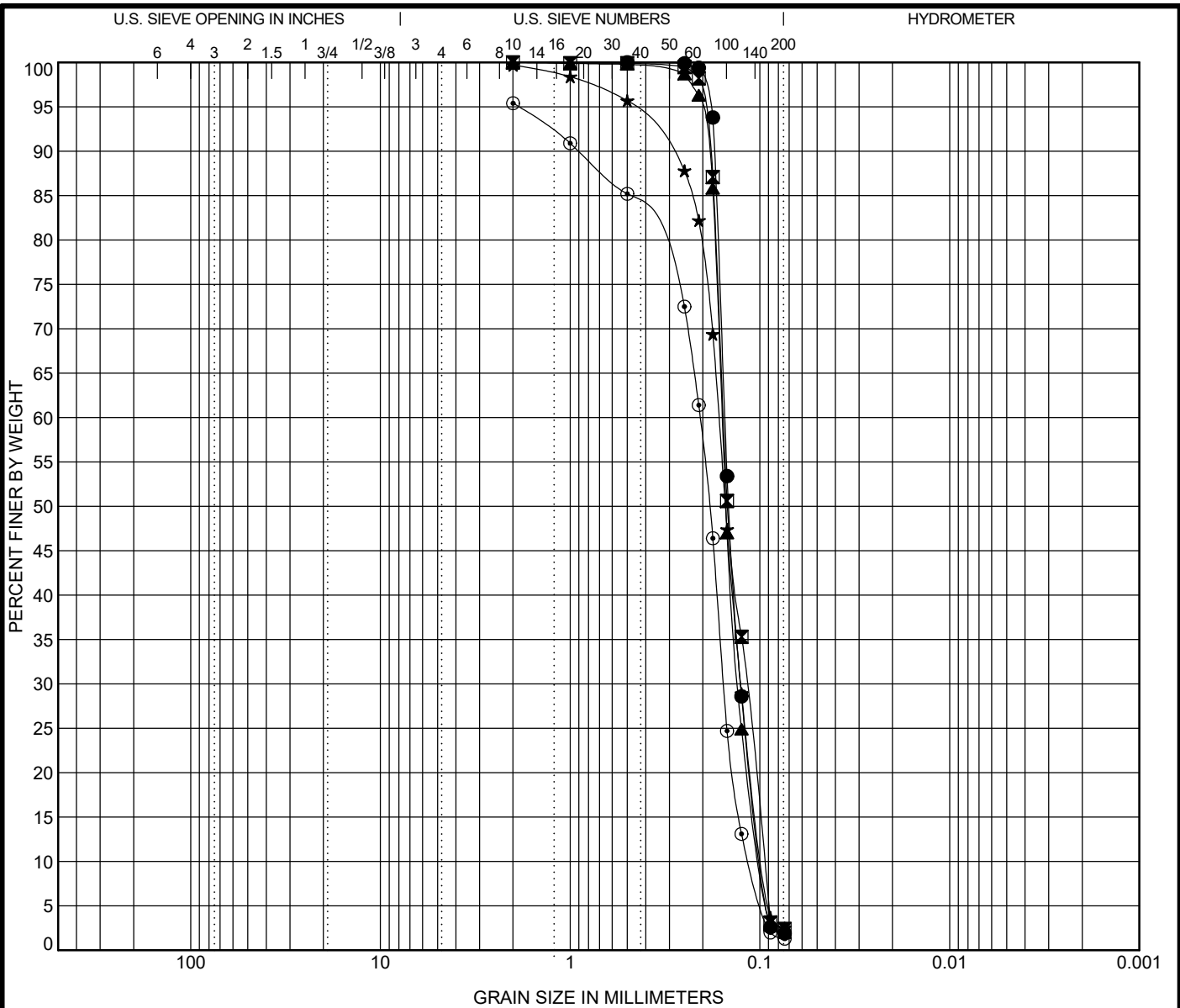
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification					LL	PL	PI	Cc	Cu
● BPC-T5-Mid Berm	0.0'	POORLY GRADED SAND								1.03	1.60
⊠ BPC-T5-Swash Zone	0.0'	POORLY GRADED SAND								1.09	1.61
▲ BPC-T5-First Bar	0.0'	POORLY GRADED SAND								1.11	1.67
★ BPC-T5-Trough	0.0'	POORLY GRADED SAND								0.94	1.98
⊙ BPC-T5-Second Bar	0.0'	POORLY GRADED SAND								0.92	1.71

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPC-T5-Mid Berm	0.0'	2	0.154	0.123	0.096	0.0			
⊠ BPC-T5-Swash Zone	0.0'	1	0.165	0.136	0.103	0.0			
▲ BPC-T5-First Bar	0.0'	2	0.18	0.147	0.108	0.0			
★ BPC-T5-Trough	0.0'	2	0.23	0.159	0.116	0.0			
⊙ BPC-T5-Second Bar	0.0'	2	0.157	0.115	0.092	0.0			

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPC-T6-Toe of Dune	0.0'	POORLY GRADED SAND				1.07	1.58
☒ BPC-T6-Mid Berm	0.0'	POORLY GRADED SAND				0.94	1.64
▲ BPC-T6-Swash Zone	0.0'	POORLY GRADED SAND				1.09	1.60
★ BPC-T6-First Bar	0.0'	POORLY GRADED SAND				1.01	1.71
⊙ BPC-T6-Trough	0.0'	POORLY GRADED SAND				1.03	1.82

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPC-T6-Toe of Dune	0.0'	0.5	0.153	0.126	0.097	0.0			
☒ BPC-T6-Mid Berm	0.0'	2	0.156	0.118	0.095	0.0			
▲ BPC-T6-Swash Zone	0.0'	2	0.158	0.13	0.099	0.0			
★ BPC-T6-First Bar	0.0'	2	0.164	0.126	0.096	0.0			
⊙ BPC-T6-Trough	0.0'	2	0.207	0.155	0.113	0.0			

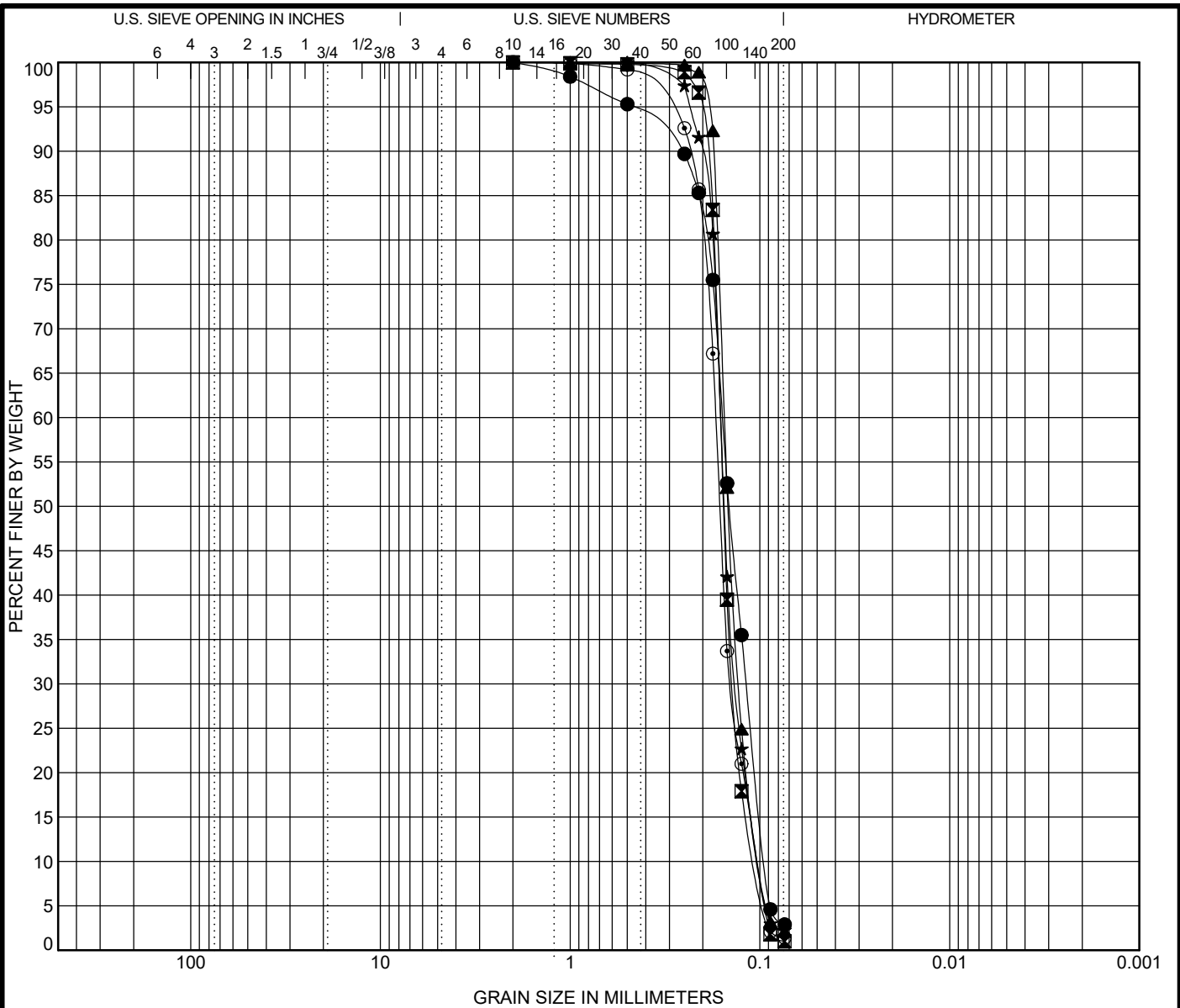


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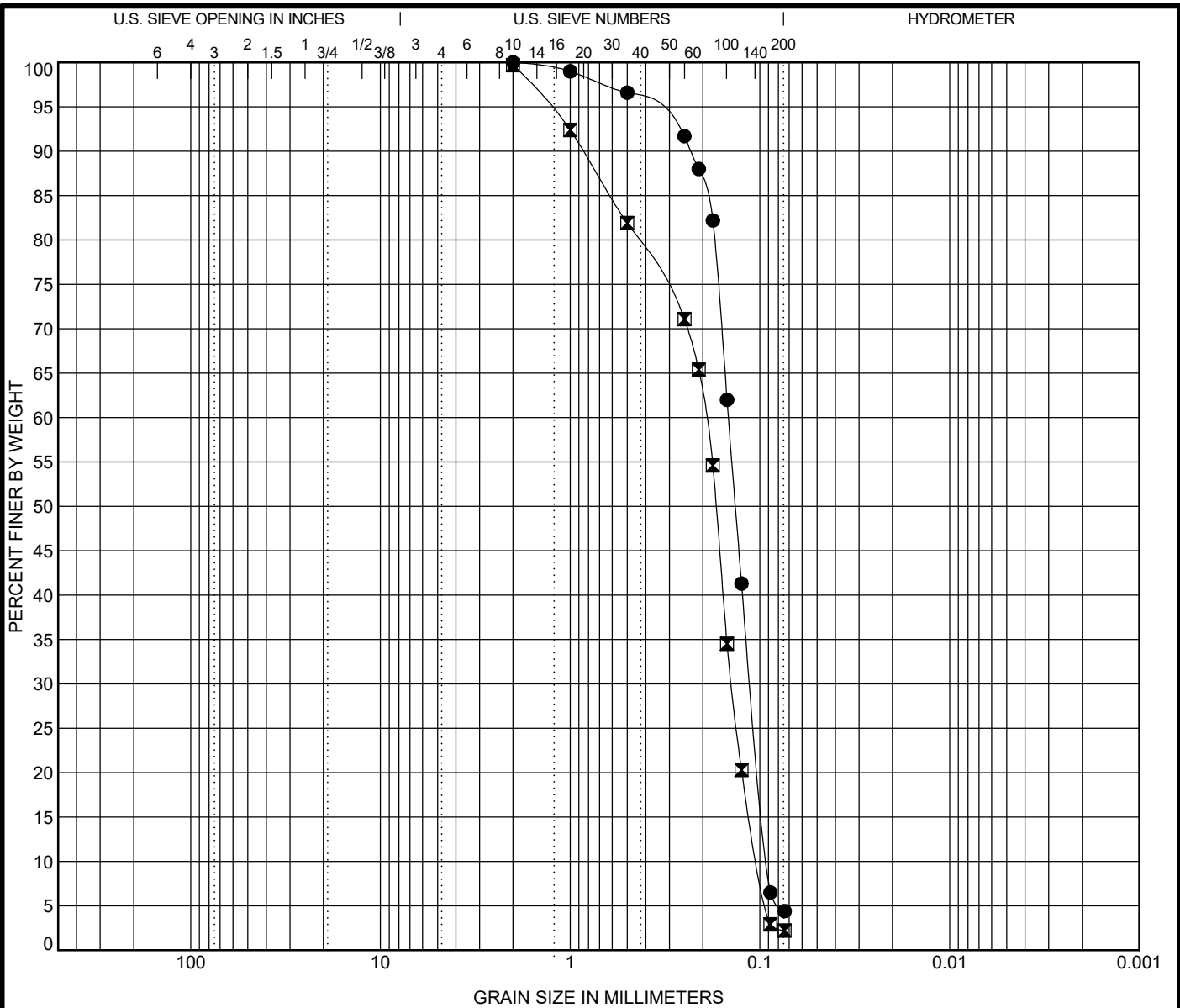
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPC-T6-Second Bar	0.0'	POORLY GRADED SAND				0.94	1.68
☒ BPC-T7-Toe of Dune	0.0'	POORLY GRADED SAND				1.12	1.53
▲ BPC-T7-Mid Berm	0.0'	POORLY GRADED SAND				1.10	1.57
★ BPC-T7-Swash Zone	0.0'	POORLY GRADED SAND				1.11	1.62
⊙ BPC-T7-First Bar	0.0'	POORLY GRADED SAND				1.15	1.67

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPC-T6-Second Bar	0.0'	2	0.158	0.117	0.094	0.0			
☒ BPC-T7-Toe of Dune	0.0'	2	0.161	0.138	0.105	0.0			
▲ BPC-T7-Mid Berm	0.0'	1	0.154	0.129	0.098	0.0			
★ BPC-T7-Swash Zone	0.0'	0.5	0.161	0.134	0.1	0.0			
⊙ BPC-T7-First Bar	0.0'	2	0.171	0.142	0.102	0.0			

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPC-T7-Trough	0.0'	POORLY GRADED SAND				0.93	1.61
☒ BPC-T7-Second Bar	0.0'	POORLY GRADED SAND				1.01	1.90

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPC-T7-Trough	0.0'	2	0.146	0.112	0.091	0.0			
☒ BPC-T7-Second Bar	0.0'	2	0.193	0.141	0.102	0.0			

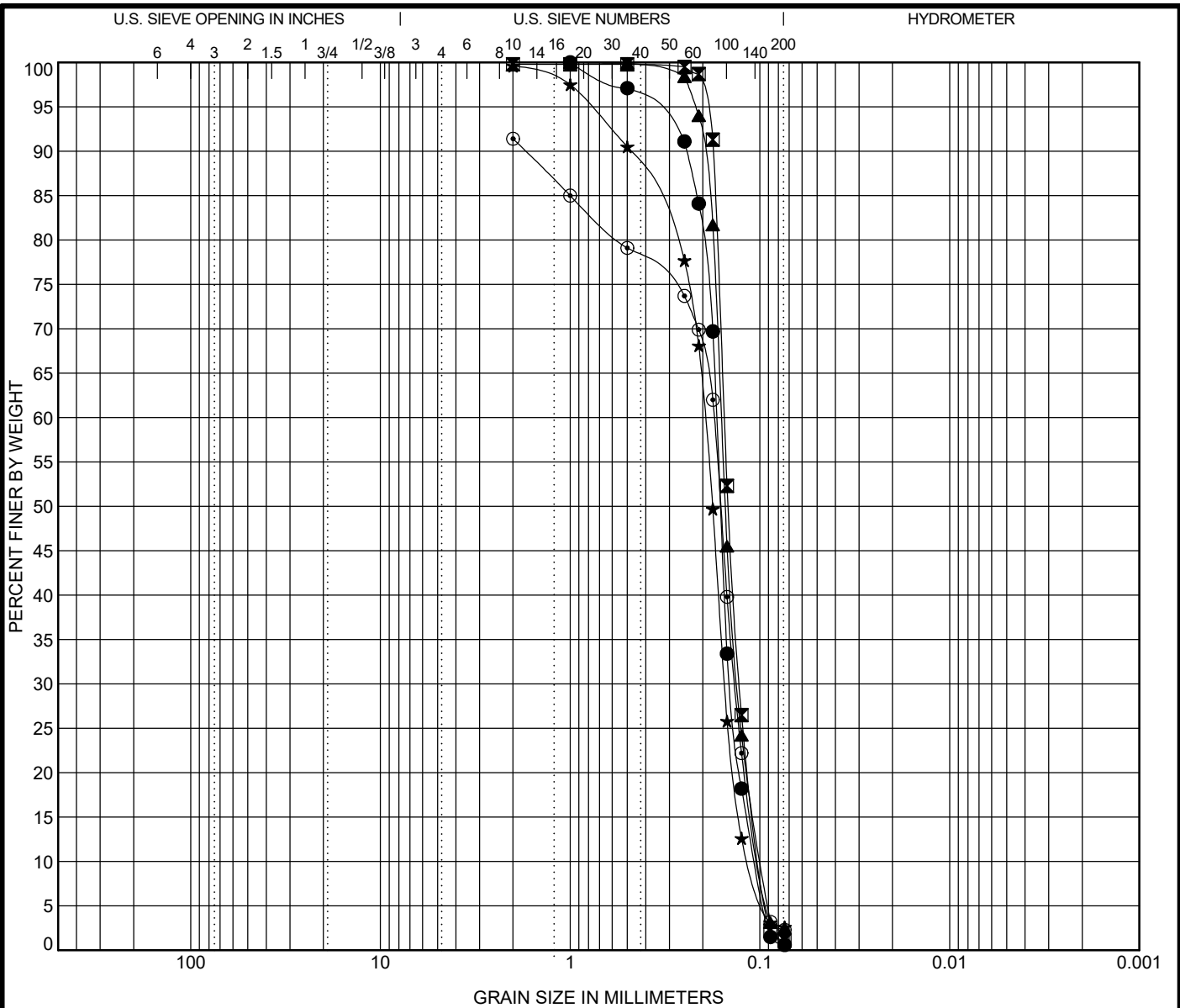
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPW-T1-Toe of Dune	0.0'	POORLY GRADED SAND				1.15	1.61
⊠ BPW-T1-Mid Berm	0.0'	POORLY GRADED SAND				1.08	1.57
▲ BPW-T1-Swash Zone	0.0'	POORLY GRADED SAND				1.09	1.62
★ BPW-T1-First Bar	0.0'	POORLY GRADED SAND				1.07	1.72
⊙ BPW-T1-Trough	0.0'	POORLY GRADED SAND				1.05	1.75

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPW-T1-Toe of Dune	0.0'	1	0.169	0.143	0.105	0.0			
⊠ BPW-T1-Mid Berm	0.0'	2	0.154	0.128	0.098	0.0			
▲ BPW-T1-Swash Zone	0.0'	1	0.16	0.131	0.099	0.0			
★ BPW-T1-First Bar	0.0'	2	0.195	0.154	0.114	0.0			
⊙ BPW-T1-Trough	0.0'	2	0.174	0.135	0.1	0.0			

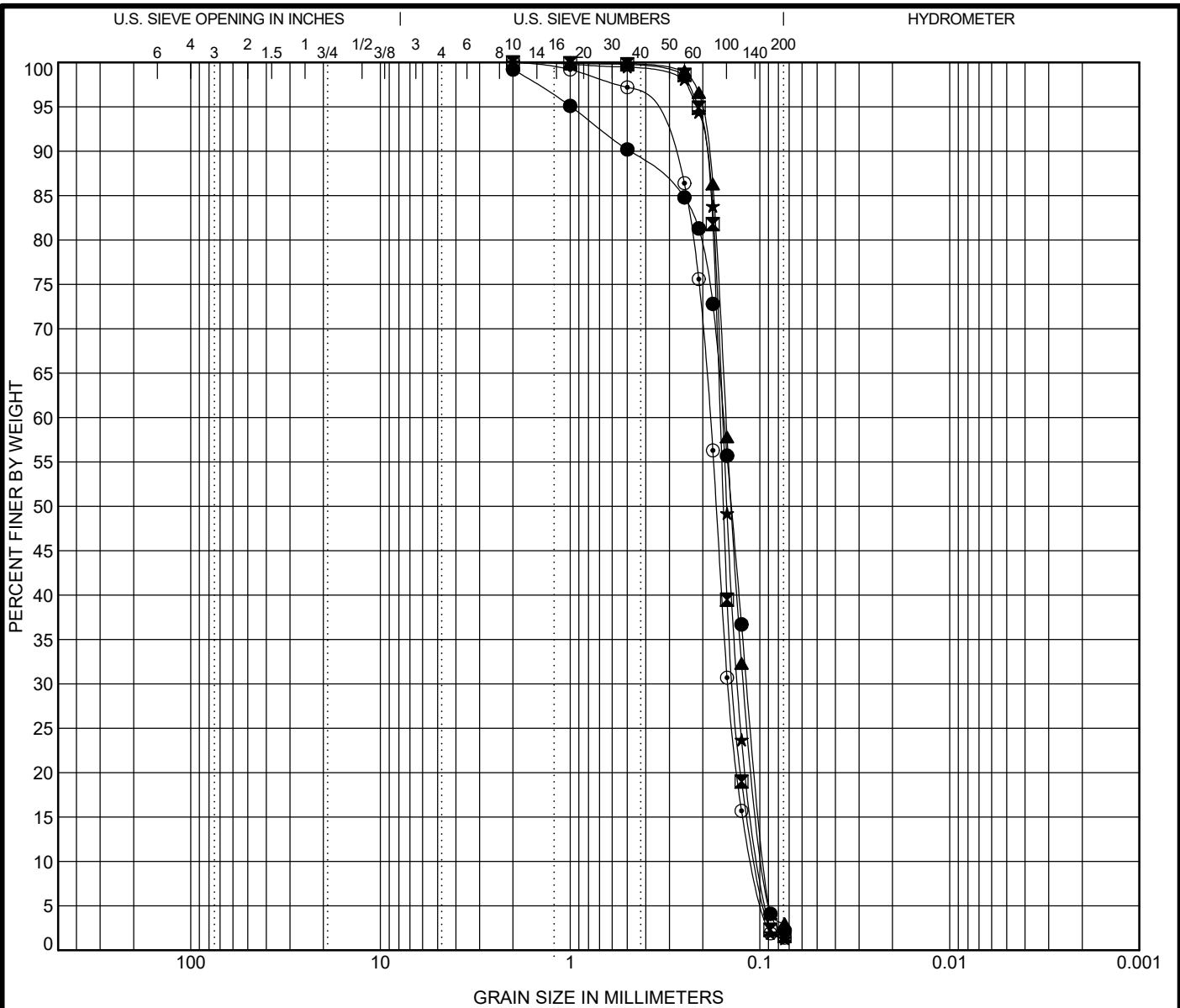


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPW-T1-Second Bar	0.0'	POORLY GRADED SAND				0.93	1.66
☒ BPW-T2-Toe of Dune	0.0'	POORLY GRADED SAND				1.13	1.57
▲ BPW-T2-Mid Berm	0.0'	POORLY GRADED SAND				1.03	1.59
★ BPW-T2-Swash Zone	0.0'	POORLY GRADED SAND				1.08	1.57
⊙ BPW-T2-First Bar	0.0'	POORLY GRADED SAND				1.10	1.69

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPW-T1-Second Bar	0.0'	2	0.156	0.116	0.094	0.0			
☒ BPW-T2-Toe of Dune	0.0'	2	0.162	0.137	0.103	0.0			
▲ BPW-T2-Mid Berm	0.0'	1	0.151	0.121	0.095	0.0			
★ BPW-T2-Swash Zone	0.0'	2	0.157	0.131	0.1	0.0			
⊙ BPW-T2-First Bar	0.0'	2	0.183	0.148	0.108	0.0			

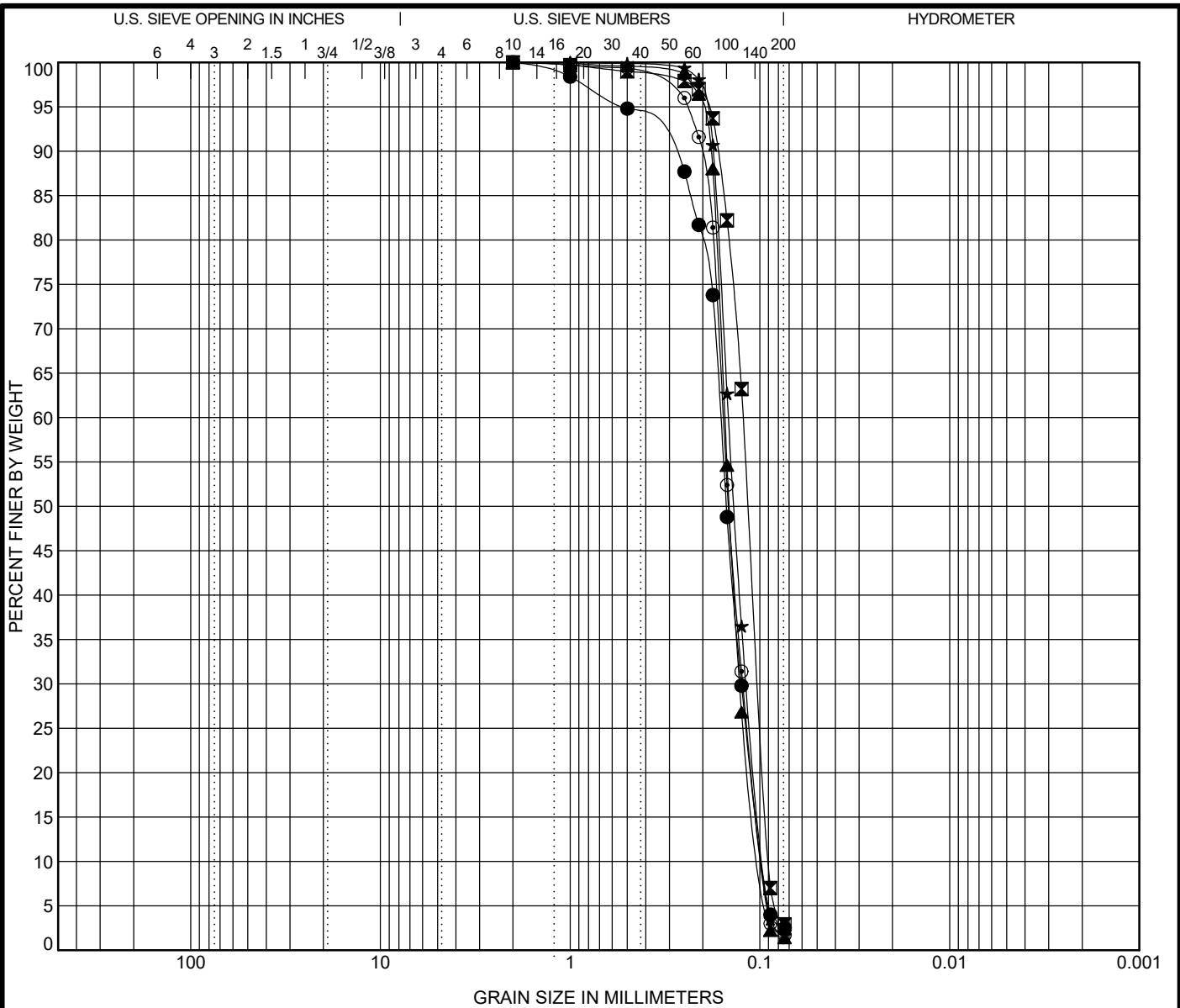


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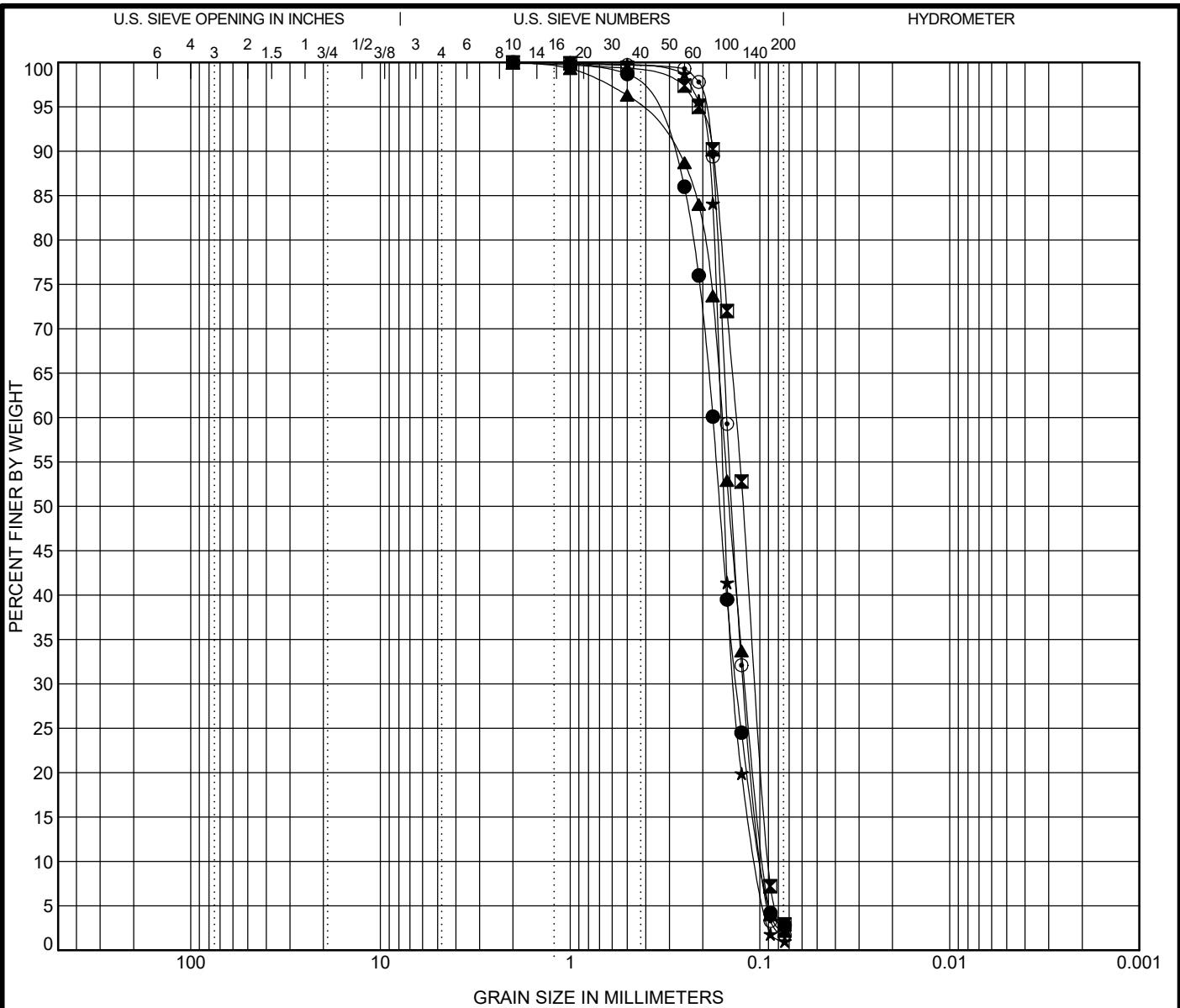
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPW-T2-Trough	0.0'	POORLY GRADED SAND				1.02	1.69
☒ BPW-T2-Second Bar	0.0'	POORLY GRADED SAND				0.94	1.37
▲ BPW-T3-Toe of Dune	0.0'	POORLY GRADED SAND				1.08	1.56
★ BPW-T3-Mid Berm	0.0'	POORLY GRADED SAND				0.99	1.55
◎ BPW-T3-Swash Zone	0.0'	POORLY GRADED SAND				1.01	1.62

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPW-T2-Trough	0.0'	2	0.161	0.125	0.095	0.0			
☒ BPW-T2-Second Bar	0.0'	2	0.123	0.102	0.09	0.0			
▲ BPW-T3-Toe of Dune	0.0'	2	0.153	0.128	0.098	0.0			
★ BPW-T3-Mid Berm	0.0'	1	0.146	0.117	0.094	0.0			
◎ BPW-T3-Swash Zone	0.0'	2	0.156	0.123	0.096	0.0			

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● BPW-T3-First Bar	0.0'	POORLY GRADED SAND							1.03	1.82
☒ BPW-T3-Trough	0.0'	POORLY GRADED SAND							0.92	1.48
▲ BPW-T3-Second Bar	0.0'	POORLY GRADED SAND							0.96	1.67
★ BPW-T4-Toe of Dune	0.0'	POORLY GRADED SAND							1.11	1.56
⊙ BPW-T4-Mid Berm	0.0'	POORLY GRADED SAND							1.04	1.57
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● BPW-T3-First Bar	0.0'	2	0.177	0.133	0.097	0.0				
☒ BPW-T3-Trough	0.0'	2	0.134	0.105	0.09	0.0				
▲ BPW-T3-Second Bar	0.0'	2	0.158	0.12	0.094	0.0				
★ BPW-T4-Toe of Dune	0.0'	1	0.161	0.136	0.103	0.0				
⊙ BPW-T4-Mid Berm	0.0'	2	0.15	0.122	0.095	0.0				

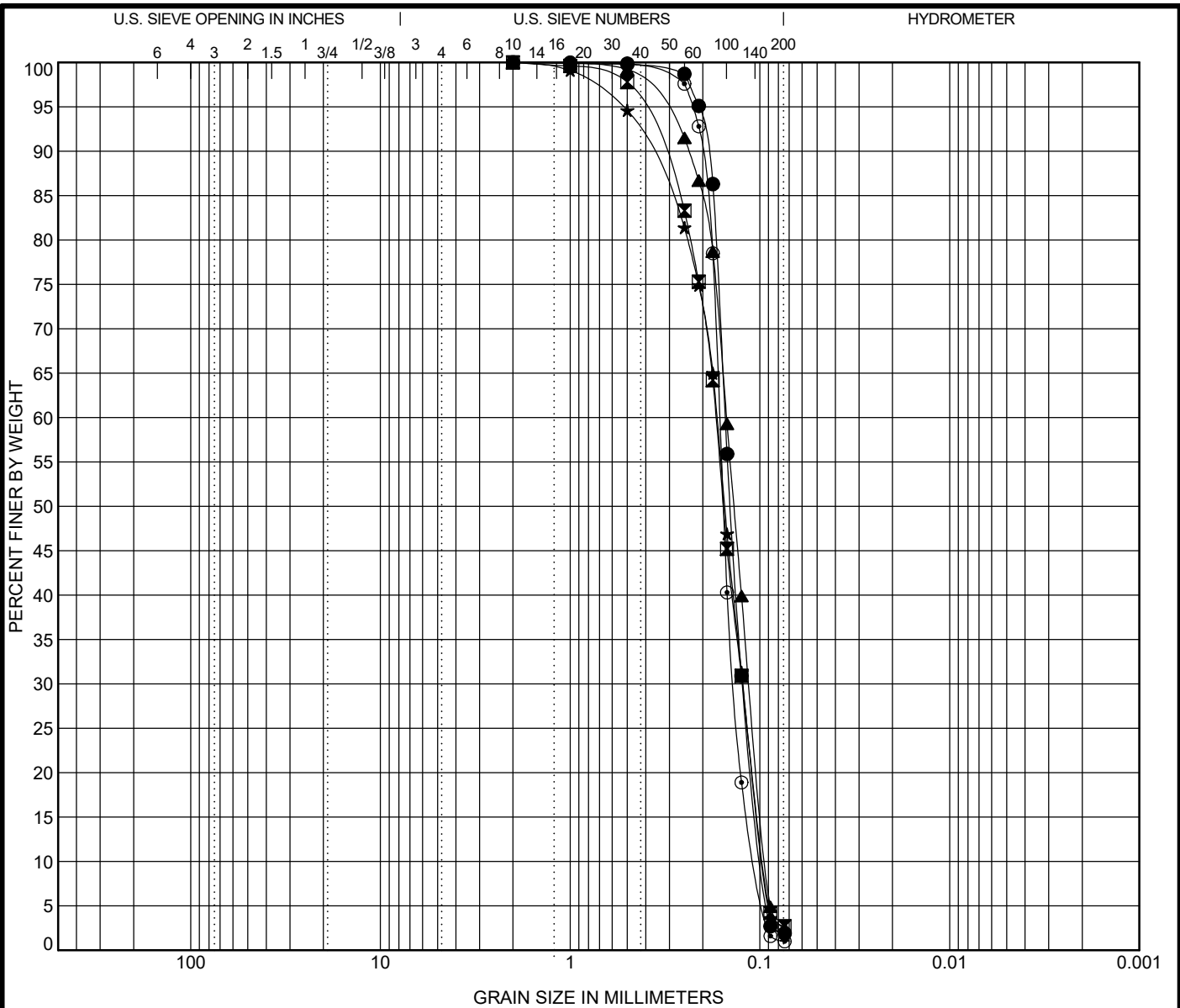
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPW-T4-Swash Zone	0.0'	POORLY GRADED SAND				1.04	1.58
☒ BPW-T4-First Bar	0.0'	POORLY GRADED SAND				0.94	1.79
▲ BPW-T4-Trough	0.0'	POORLY GRADED SAND				0.92	1.62
★ BPW-T4-Second Bar	0.0'	POORLY GRADED SAND				0.94	1.77
⊙ BPW-T5-Toe of Dune	0.0'	POORLY GRADED SAND				1.10	1.56

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPW-T4-Swash Zone	0.0'	2	0.153	0.124	0.096	0.0			
☒ BPW-T4-First Bar	0.0'	2	0.17	0.124	0.095	0.0			
▲ BPW-T4-Trough	0.0'	2	0.15	0.113	0.093	0.0			
★ BPW-T4-Second Bar	0.0'	2	0.169	0.123	0.095	0.0			
⊙ BPW-T5-Toe of Dune	0.0'	1	0.163	0.137	0.104	0.0			

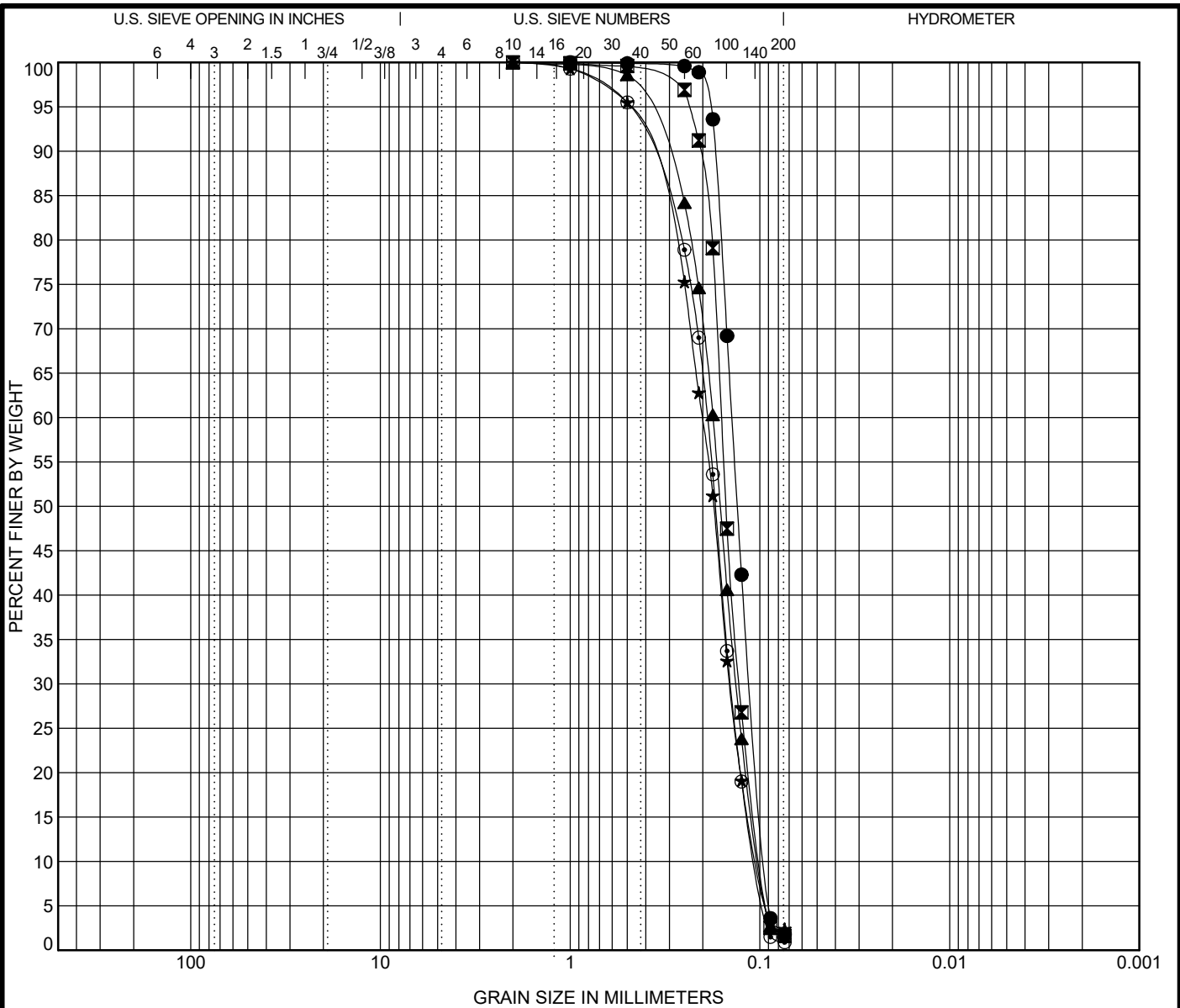


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPW-T5-Mid Berm	0.0'	POORLY GRADED SAND				0.96	1.50
☒ BPW-T5-Swash Zone	0.0'	POORLY GRADED SAND				1.05	1.63
▲ BPW-T5-First Bar	0.0'	POORLY GRADED SAND				1.01	1.78
★ BPW-T5-Trough	0.0'	POORLY GRADED SAND				1.01	1.97
◎ BPW-T5-Second Bar	0.0'	POORLY GRADED SAND				1.02	1.82

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPW-T5-Mid Berm	0.0'	1	0.14	0.112	0.093	0.0			
☒ BPW-T5-Swash Zone	0.0'	2	0.16	0.128	0.098	0.0			
▲ BPW-T5-First Bar	0.0'	2	0.177	0.133	0.099	0.0			
★ BPW-T5-Trough	0.0'	2	0.202	0.144	0.102	0.0			
◎ BPW-T5-Second Bar	0.0'	2	0.19	0.143	0.104	0.0			

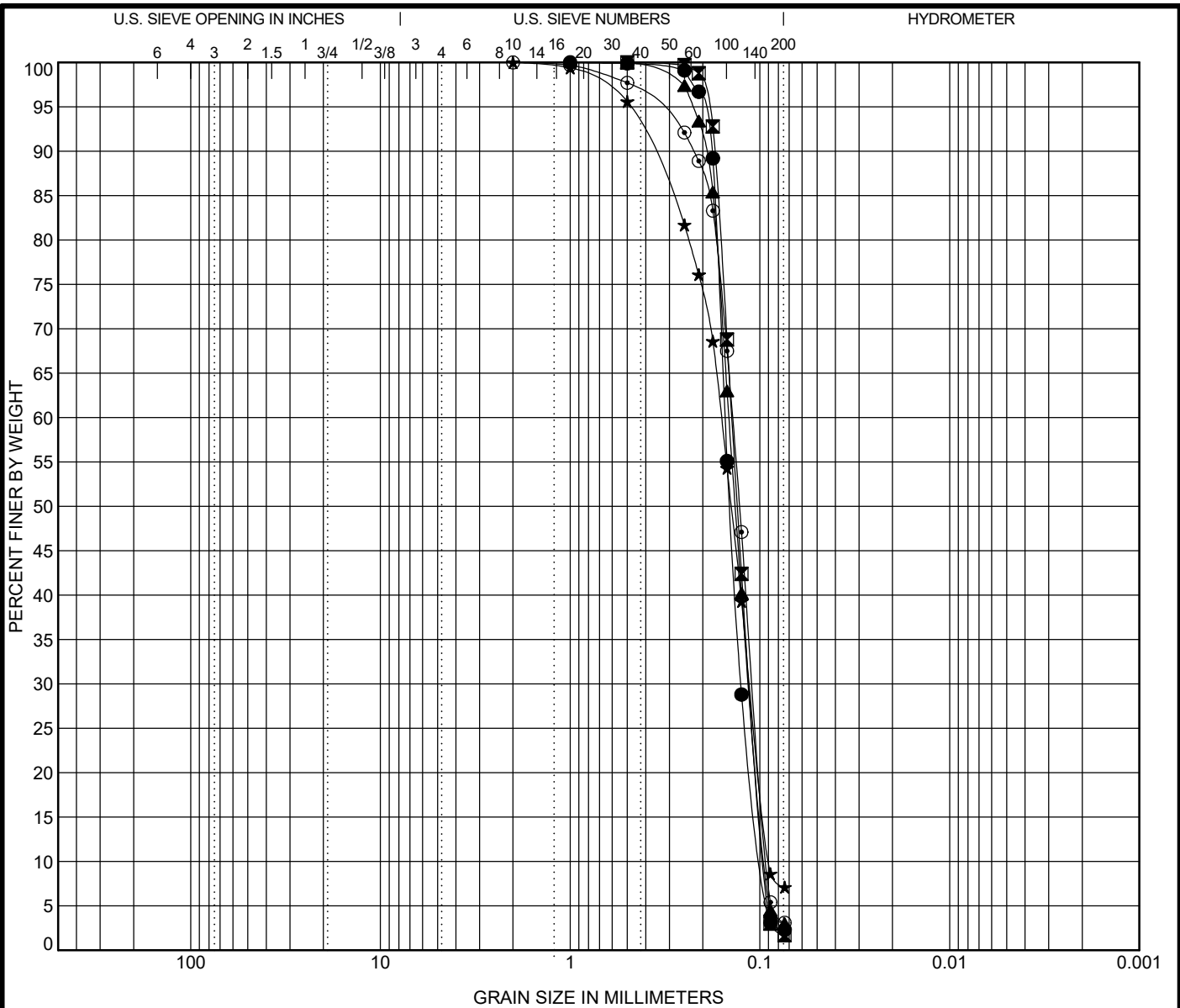


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPW-T6-Toe of Dune	0.0'	POORLY GRADED SAND				1.08	1.58
☒ BPW-T6-Mid Berm	0.0'	POORLY GRADED SAND				0.95	1.50
▲ BPW-T6-Swash Zone	0.0'	POORLY GRADED SAND				0.95	1.57
★ BPW-T6-First Bar	0.0'	POORLY GRADED SAND with SILT				0.89	1.78
◎ BPW-T6-Trough	0.0'	POORLY GRADED SAND				0.92	1.53

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPW-T6-Toe of Dune	0.0'	1	0.153	0.126	0.097	0.0			
☒ BPW-T6-Mid Berm	0.0'	0.5	0.141	0.112	0.094	0.0			
▲ BPW-T6-Swash Zone	0.0'	0.5	0.146	0.113	0.093	0.0			
★ BPW-T6-First Bar	0.0'	2	0.16	0.112	0.089	0.0			
◎ BPW-T6-Trough	0.0'	2	0.14	0.108	0.091	0.0			

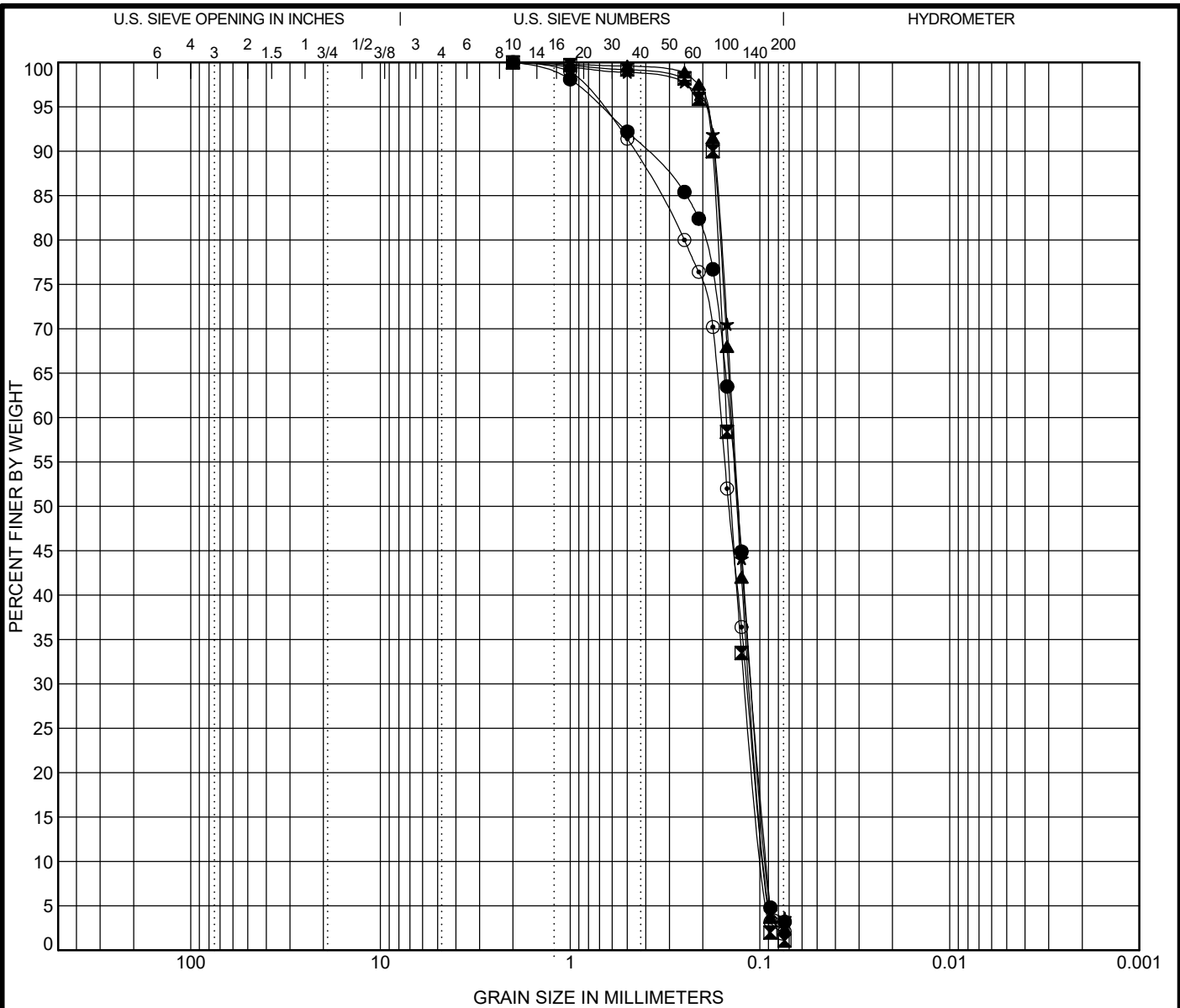


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPW-T6-Second Bar	0.0'	POORLY GRADED SAND				0.91	1.57
☒ BPW-T7-Toe of Dune	0.0'	POORLY GRADED SAND				1.00	1.56
▲ BPW-T7-Mid Berm	0.0'	POORLY GRADED SAND				0.95	1.51
★ BPW-T7-Swash Zone	0.0'	POORLY GRADED SAND				0.95	1.50
⊙ BPW-T7-First Bar	0.0'	POORLY GRADED SAND				0.90	1.70

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPW-T6-Second Bar	0.0'	2	0.144	0.11	0.092	0.0			
☒ BPW-T7-Toe of Dune	0.0'	2	0.15	0.12	0.096	0.0			
▲ BPW-T7-Mid Berm	0.0'	2	0.141	0.112	0.093	0.0			
★ BPW-T7-Swash Zone	0.0'	2	0.139	0.11	0.093	0.0			
⊙ BPW-T7-First Bar	0.0'	2	0.161	0.117	0.095	0.0			

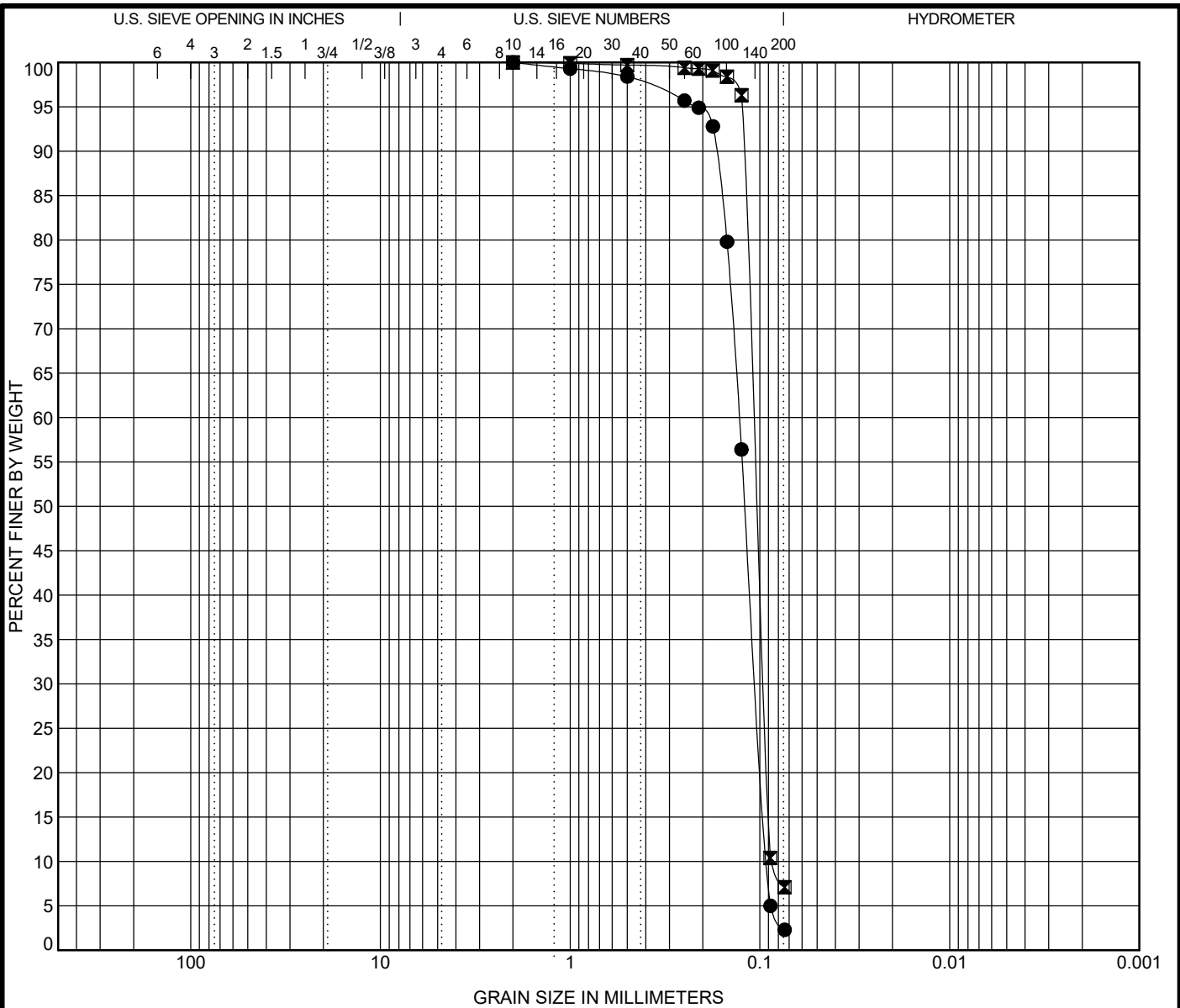


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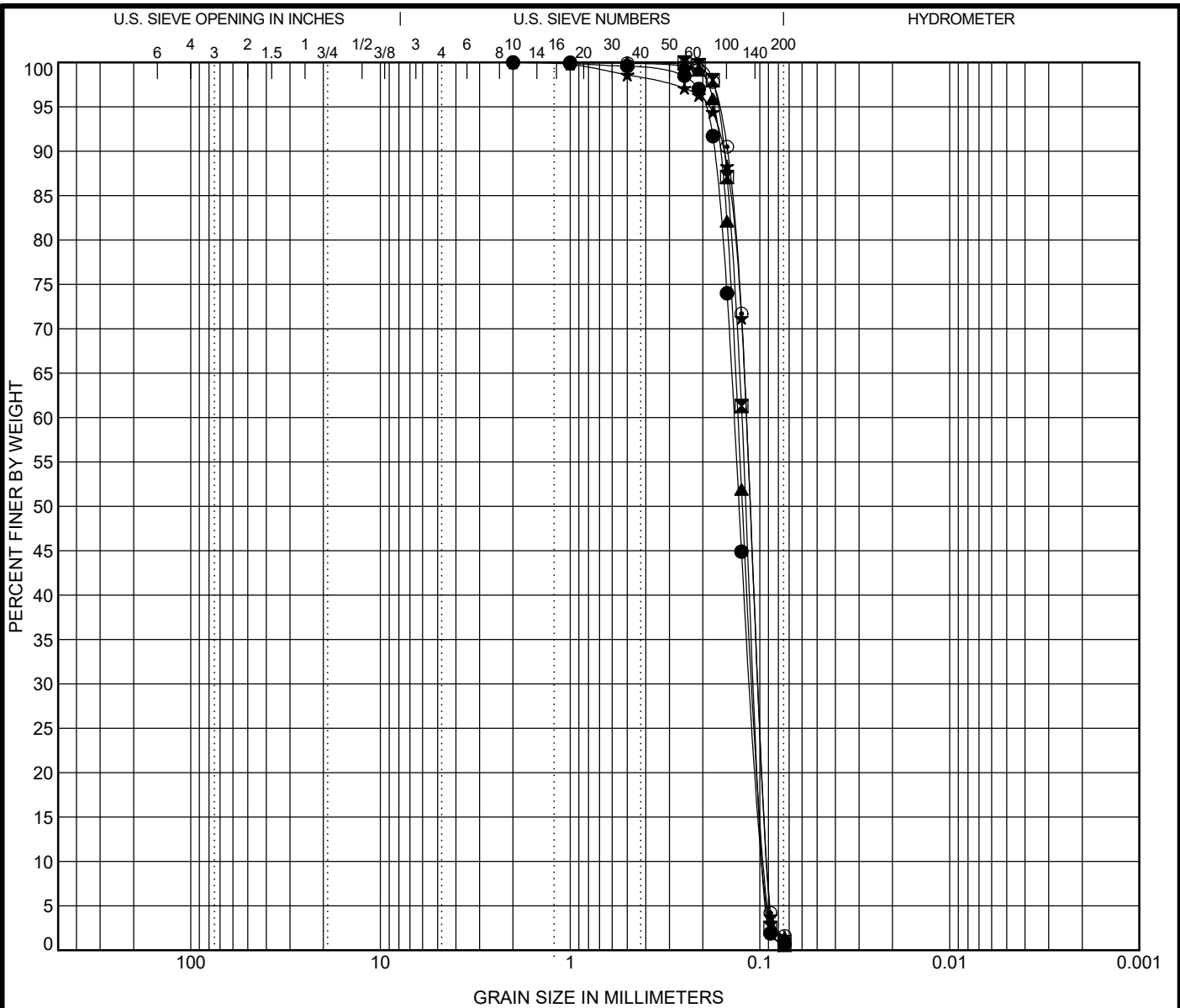
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BPW-T7-Trough	0.0'	POORLY GRADED SAND				0.93	1.41
☒ BPW-T7-Second Bar	0.0'	POORLY GRADED SAND with SILT				0.98	1.25

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BPW-T7-Trough	0.0'	2	0.128	0.104	0.091	0.0			
☒ BPW-T7-Second Bar	0.0'	2	0.108	0.095	0.086	0.0			

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● GISP-T1-Toe of Dune	0.0'	POORLY GRADED SAND				0.95	1.46
☒ GISP-T1-Mid Berm	0.0'	POORLY GRADED SAND				0.94	1.35
▲ GISP-T1-Swash Zone	0.0'	POORLY GRADED SAND				0.94	1.41
★ GISP-T1-First Bar	0.0'	POORLY GRADED SAND				0.95	1.30
◎ GISP-T1-Trough	0.0'	POORLY GRADED SAND				0.95	1.30

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● GISP-T1-Toe of Dune	0.0'	2	0.137	0.111	0.094	0.0			
☒ GISP-T1-Mid Berm	0.0'	0.25	0.124	0.104	0.092	0.0			
▲ GISP-T1-Swash Zone	0.0'	0.5	0.131	0.107	0.093	0.0			
★ GISP-T1-First Bar	0.0'	2	0.118	0.101	0.091	0.0			
◎ GISP-T1-Trough	0.0'	1	0.118	0.101	0.091	0.0			

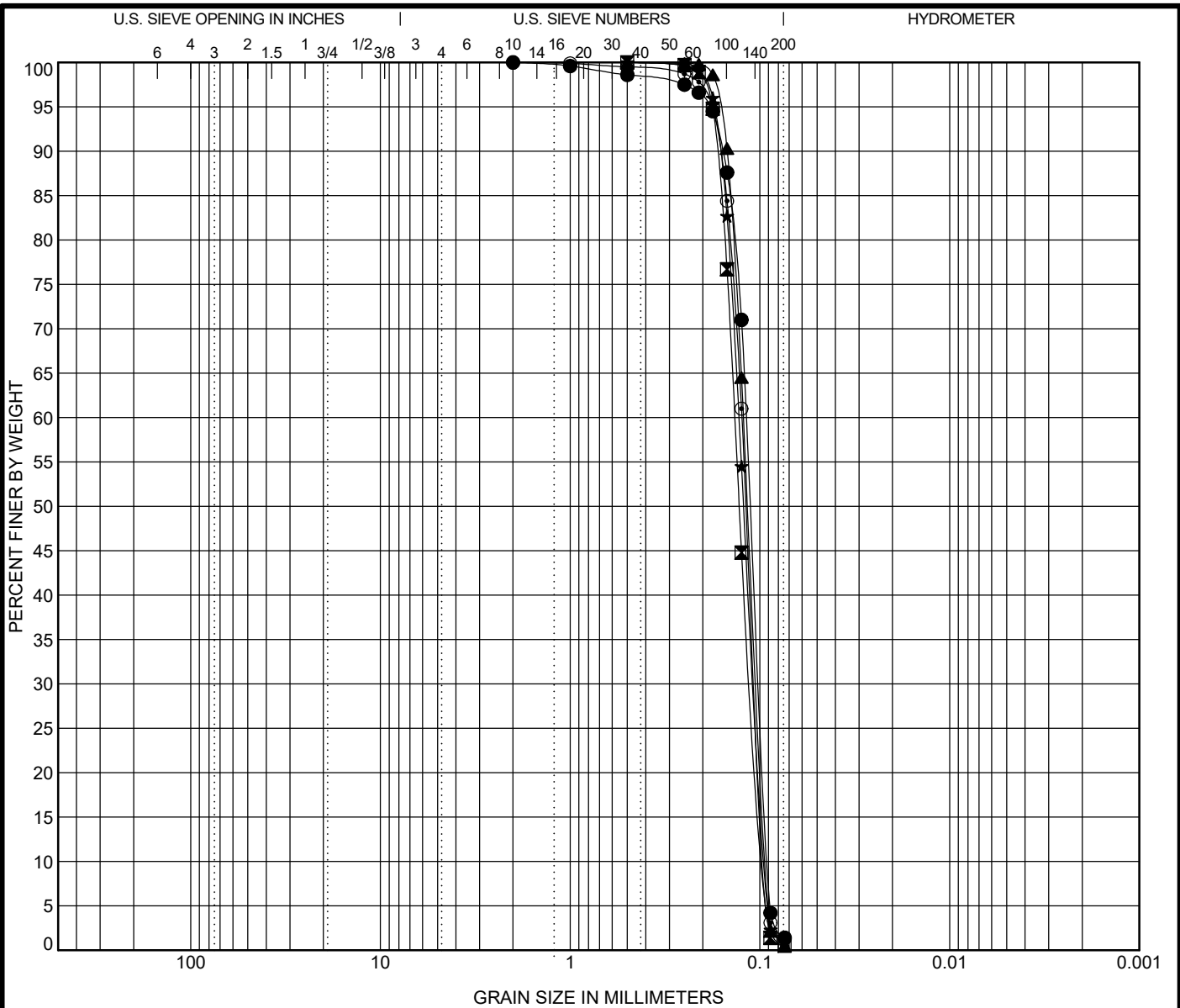


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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
Location: Galveston Island State Park, Texas
Number: G122361


US GRAIN SIZE 4 G122361.GISP.GPJ US LAB.GDT 8/18/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● GISP-T1-Second Bar	0.0'	POORLY GRADED SAND				0.95	1.30
☒ GISP-T2-Toe of Dune	0.0'	POORLY GRADED SAND				0.96	1.44
▲ GISP-T2-Mid Berm	0.0'	POORLY GRADED SAND				0.95	1.32
★ GISP-T2-Swash Zone	0.0'	POORLY GRADED SAND				0.94	1.40
◎ GISP-T2-First Bar	0.0'	POORLY GRADED SAND				0.94	1.35

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● GISP-T1-Second Bar	0.0'	2	0.118	0.101	0.091	0.0			
☒ GISP-T2-Toe of Dune	0.0'	0.5	0.136	0.111	0.094	0.0			
▲ GISP-T2-Mid Berm	0.0'	0.5	0.122	0.103	0.092	0.0			
★ GISP-T2-Swash Zone	0.0'	0.5	0.129	0.106	0.093	0.0			
◎ GISP-T2-First Bar	0.0'	2	0.124	0.104	0.092	0.0			

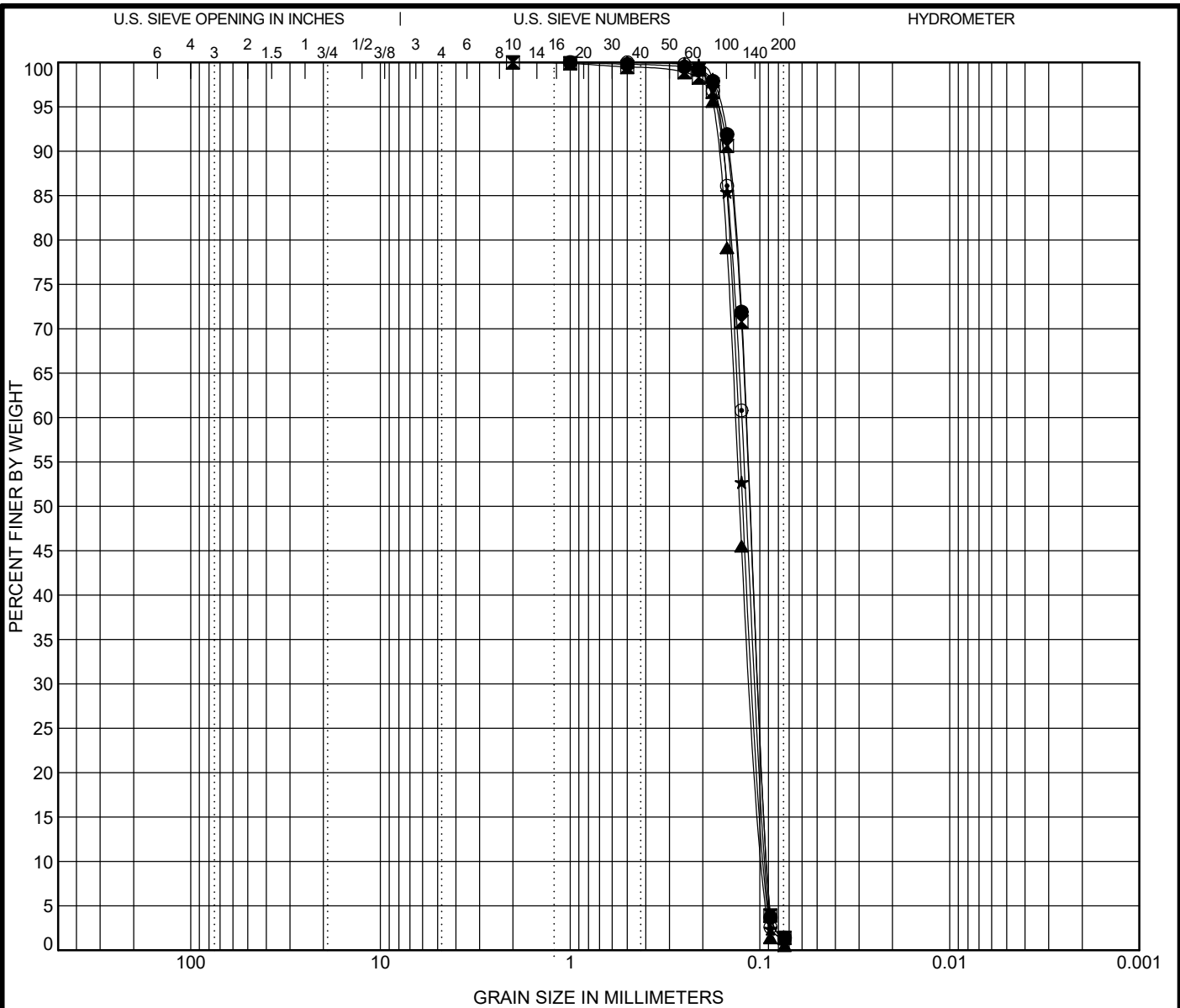


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Number: G122361

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● GISP-T2-Trough	0.0'	POORLY GRADED SAND				0.95	1.29
☒ GISP-T2-Second Bar	0.0'	POORLY GRADED SAND				0.95	1.30
▲ GISP-T3-Toe of Dune	0.0'	POORLY GRADED SAND				0.96	1.43
★ GISP-T3-Mid Berm	0.0'	POORLY GRADED SAND				0.94	1.40
◎ GISP-T3-Swash Zone	0.0'	POORLY GRADED SAND				0.94	1.35

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● GISP-T2-Trough	0.0'	1	0.118	0.101	0.091	0.0			
☒ GISP-T2-Second Bar	0.0'	2	0.118	0.101	0.091	0.0			
▲ GISP-T3-Toe of Dune	0.0'	0.5	0.135	0.11	0.094	0.0			
★ GISP-T3-Mid Berm	0.0'	0.5	0.13	0.107	0.093	0.0			
◎ GISP-T3-Swash Zone	0.0'	0.5	0.124	0.104	0.092	0.0			

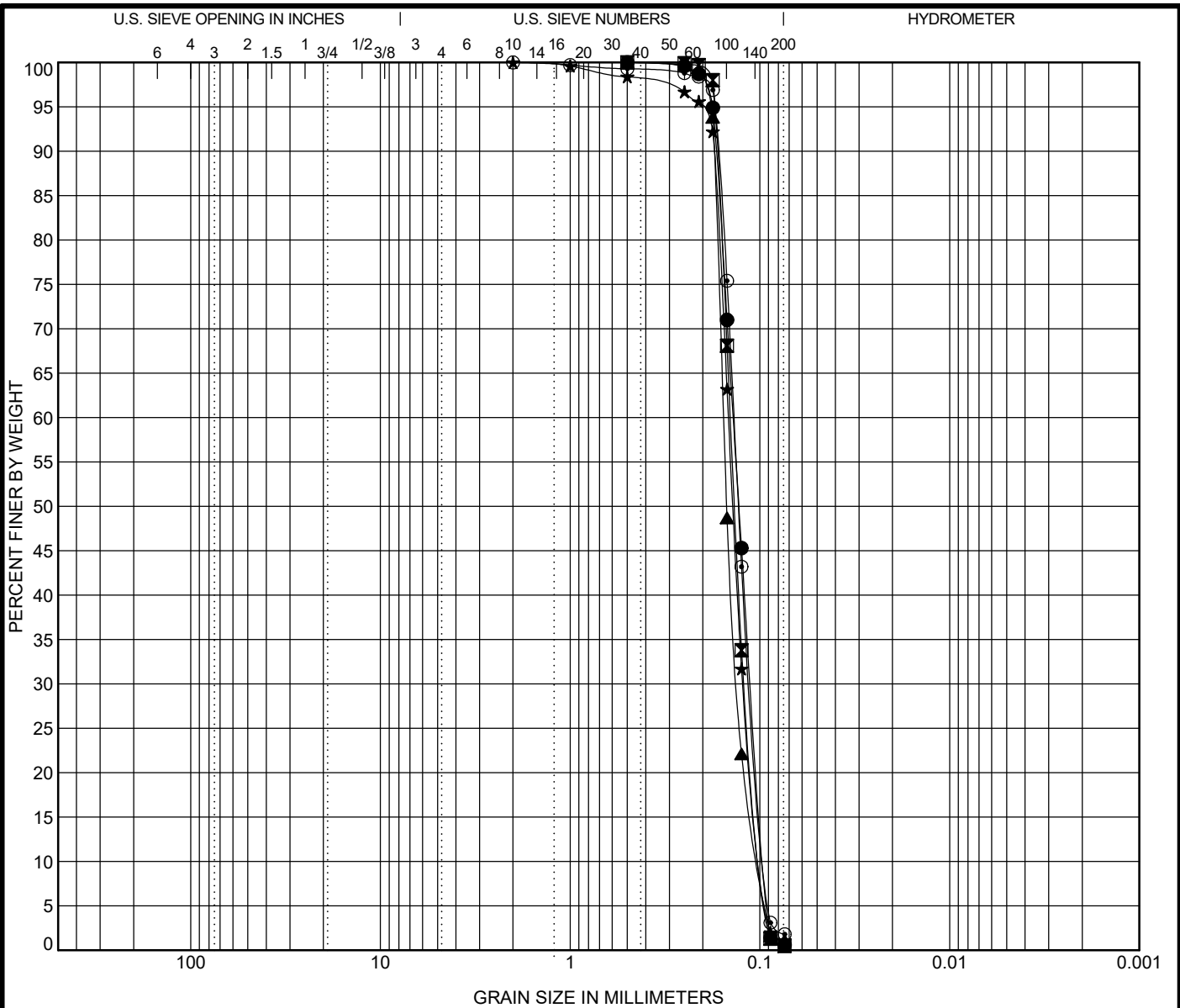


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T1-Toe of Dune	0.0'	POORLY GRADED SAND				0.94	1.47
⊠ FB-T1-Mid Berm	0.0'	POORLY GRADED SAND				1.04	1.48
▲ FB-T1-Swash Zone	0.0'	POORLY GRADED SAND				1.10	1.53
★ FB-T1-First Bar	0.0'	POORLY GRADED SAND				1.06	1.51
⊙ FB-T1-Trough	0.0'	POORLY GRADED SAND				0.97	1.47

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T1-Toe of Dune	0.0'	0.5	0.138	0.111	0.094	0.0			
⊠ FB-T1-Mid Berm	0.0'	0.5	0.143	0.12	0.097	0.0			
▲ FB-T1-Swash Zone	0.0'	0.5	0.156	0.132	0.102	0.0			
★ FB-T1-First Bar	0.0'	2	0.146	0.123	0.097	0.0			
⊙ FB-T1-Trough	0.0'	2	0.137	0.111	0.093	0.0			

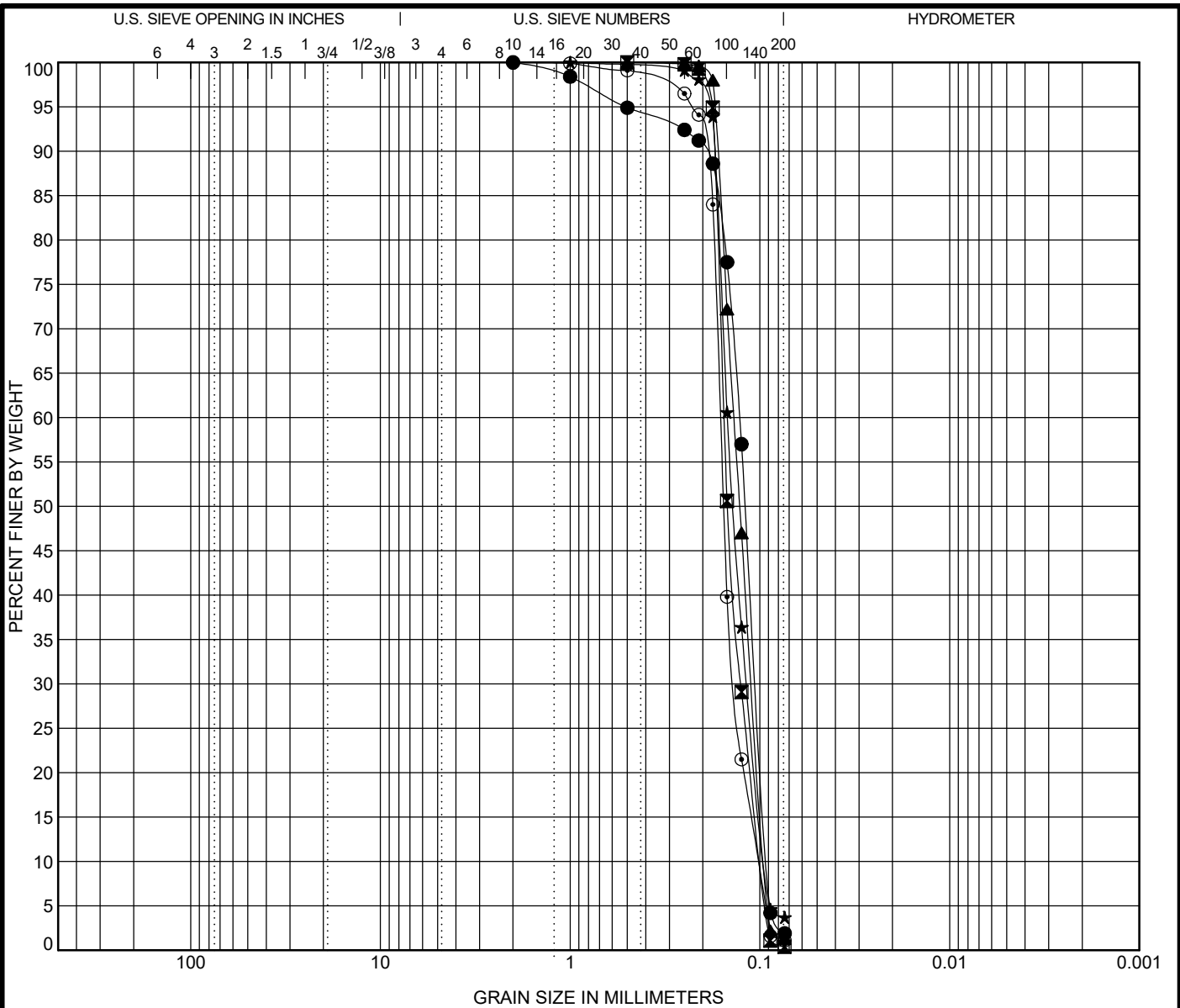


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification					LL	PL	PI	Cc	Cu
● FB-T1-Second Bar	0.0'	POORLY GRADED SAND								0.93	1.40
☒ FB-T2-Toe of Dune	0.0'	POORLY GRADED SAND								1.04	1.57
▲ FB-T2-Mid Berm	0.0'	POORLY GRADED SAND								0.94	1.46
★ FB-T2-Swash Zone	0.0'	POORLY GRADED SAND								0.98	1.59
⊙ FB-T2-First Bar	0.0'	POORLY GRADED SAND								1.12	1.58

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T1-Second Bar	0.0'	2	0.128	0.104	0.091	0.0			
☒ FB-T2-Toe of Dune	0.0'	0.5	0.155	0.126	0.098	0.0			
▲ FB-T2-Mid Berm	0.0'	0.5	0.137	0.109	0.094	0.0			
★ FB-T2-Swash Zone	0.0'	1	0.148	0.116	0.093	0.0			
⊙ FB-T2-First Bar	0.0'	2	0.161	0.136	0.102	0.0			

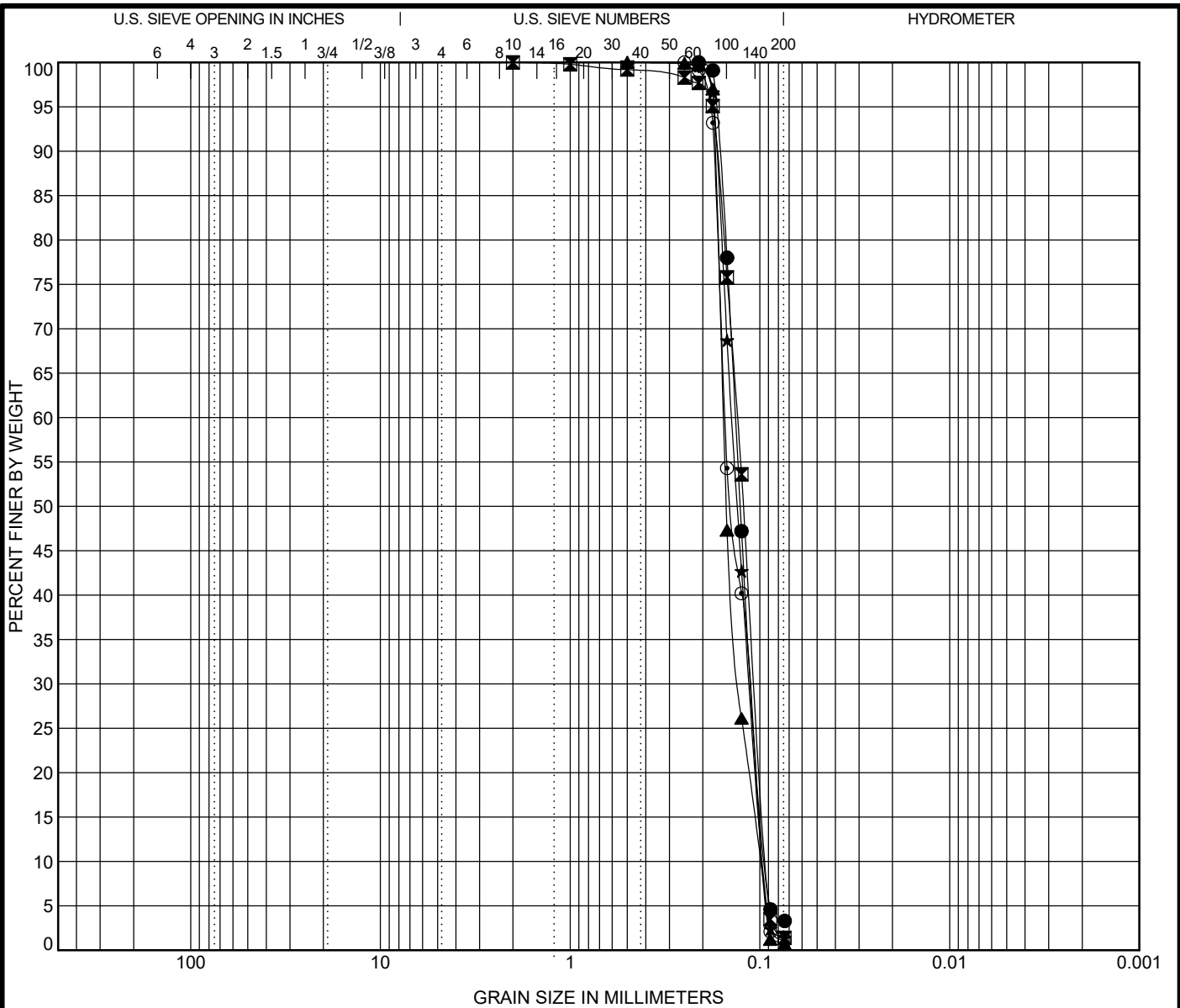


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T2-Trough	0.0'	POORLY GRADED SAND				0.95	1.46
☒ FB-T2-Second Bar	0.0'	POORLY GRADED SAND				0.93	1.43
▲ FB-T3-Toe of Dune	0.0'	POORLY GRADED SAND				1.07	1.56
★ FB-T3-Mid Berm	0.0'	POORLY GRADED SAND				0.95	1.49
◎ FB-T3-Swash Zone	0.0'	POORLY GRADED SAND				0.90	1.61

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T2-Trough	0.0'	0.21	0.134	0.108	0.092	0.0			
☒ FB-T2-Second Bar	0.0'	2	0.131	0.106	0.092	0.0			
▲ FB-T3-Toe of Dune	0.0'	0.5	0.156	0.129	0.1	0.0			
★ FB-T3-Mid Berm	0.0'	0.5	0.14	0.112	0.094	0.0			
◎ FB-T3-Swash Zone	0.0'	0.25	0.153	0.114	0.095	0.0			

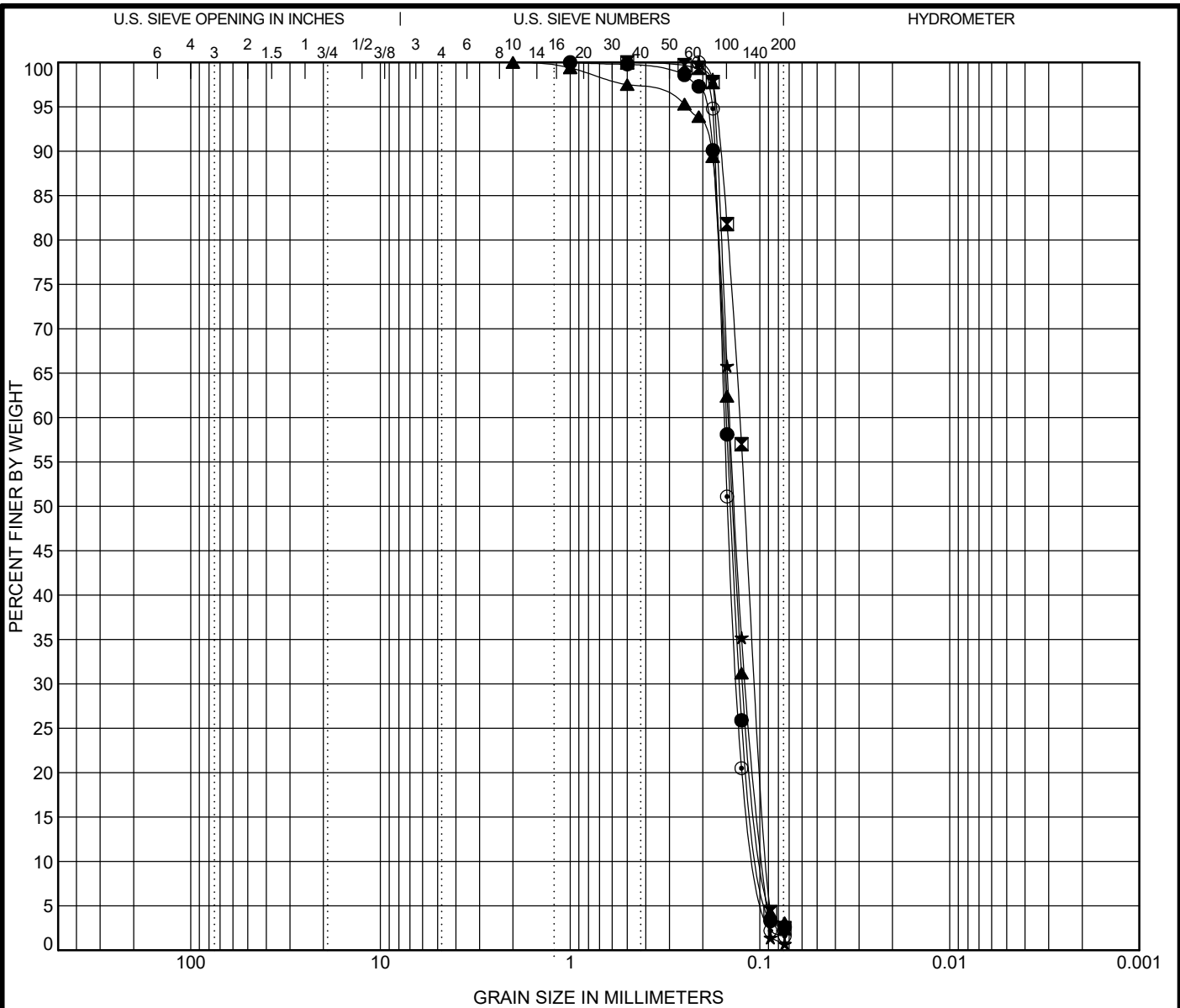


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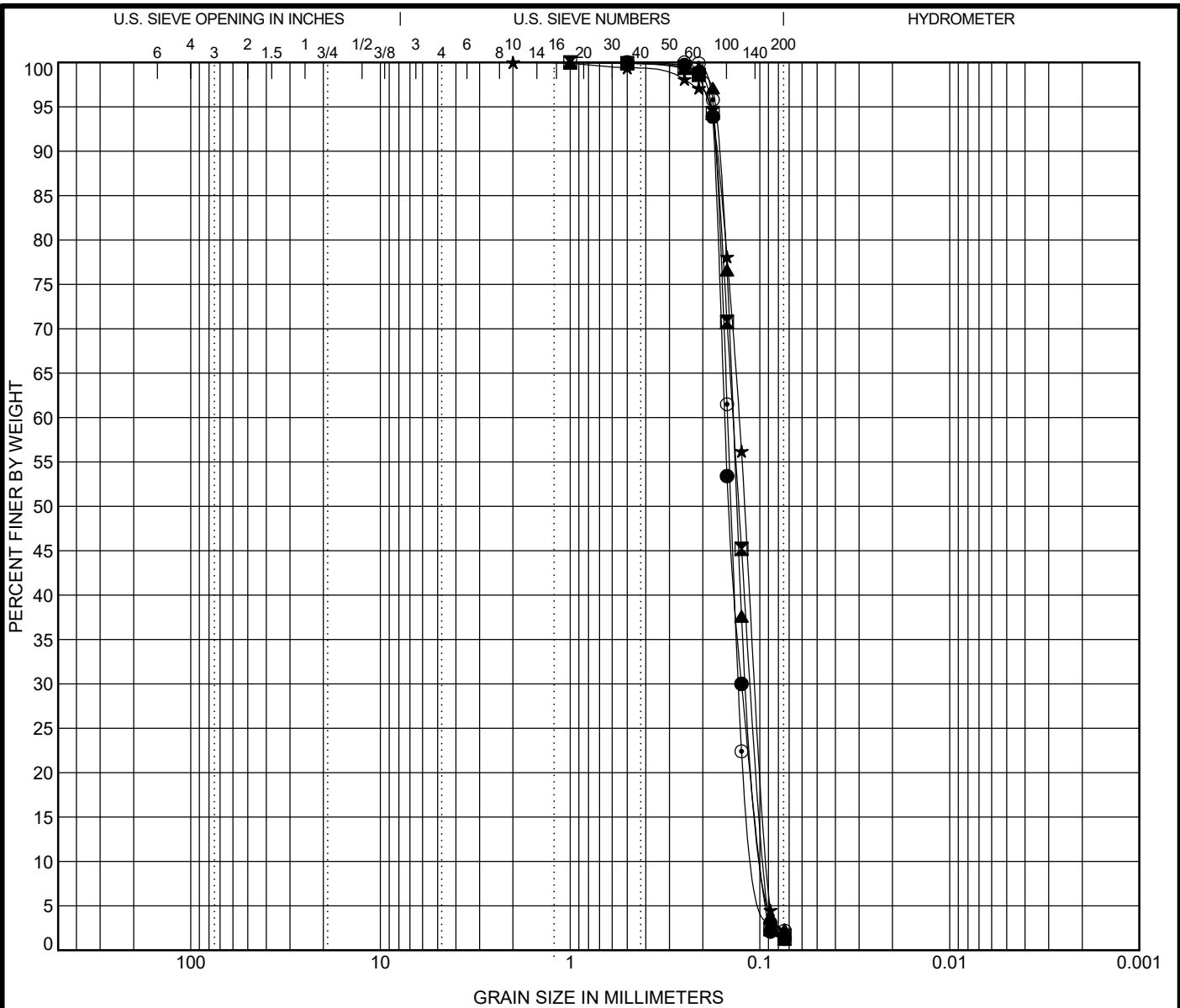
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T3-First Bar	0.0'	POORLY GRADED SAND				1.11	1.54
☒ FB-T3-Trough	0.0'	POORLY GRADED SAND				0.93	1.40
▲ FB-T3-Second Bar	0.0'	POORLY GRADED SAND				1.09	1.55
★ FB-T4-Toe of Dune	0.0'	POORLY GRADED SAND				1.01	1.50
⊙ FB-T4-Mid Berm	0.0'	POORLY GRADED SAND				1.10	1.51

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T3-First Bar	0.0'	1	0.151	0.128	0.098	0.0			
☒ FB-T3-Trough	0.0'	0.5	0.128	0.104	0.091	0.0			
▲ FB-T3-Second Bar	0.0'	2	0.147	0.123	0.095	0.0			
★ FB-T4-Toe of Dune	0.0'	0.21	0.144	0.118	0.096	0.0			
⊙ FB-T4-Mid Berm	0.0'	0.21	0.154	0.132	0.102	0.0			

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US GRAIN SIZE 5 G122361 Fl.GPJ US LAB.GDT 8/11/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● FB-T4-Swash Zone	0.0'	POORLY GRADED SAND							1.05	1.58
☒ FB-T4-First Bar	0.0'	POORLY GRADED SAND							0.94	1.48
▲ FB-T4-Trough	0.0'	POORLY GRADED SAND							1.03	1.47
★ FB-T4-Second Bar	0.0'	POORLY GRADED SAND							0.93	1.41
⊙ FB-T5-Toe of Dune	0.0'	POORLY GRADED SAND							1.13	1.48
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● FB-T4-Swash Zone	0.0'	0.5	0.153	0.125	0.097	0.0				
☒ FB-T4-First Bar	0.0'	1	0.138	0.11	0.094	0.0				
▲ FB-T4-Trough	0.0'	1	0.138	0.116	0.094	0.0				
★ FB-T4-Second Bar	0.0'	2	0.129	0.105	0.091	0.0				
⊙ FB-T5-Toe of Dune	0.0'	0.25	0.148	0.129	0.1	0.0				

US GRAIN SIZE 5 G122361 Fl.GPJ US LAB.GDT 8/11/22

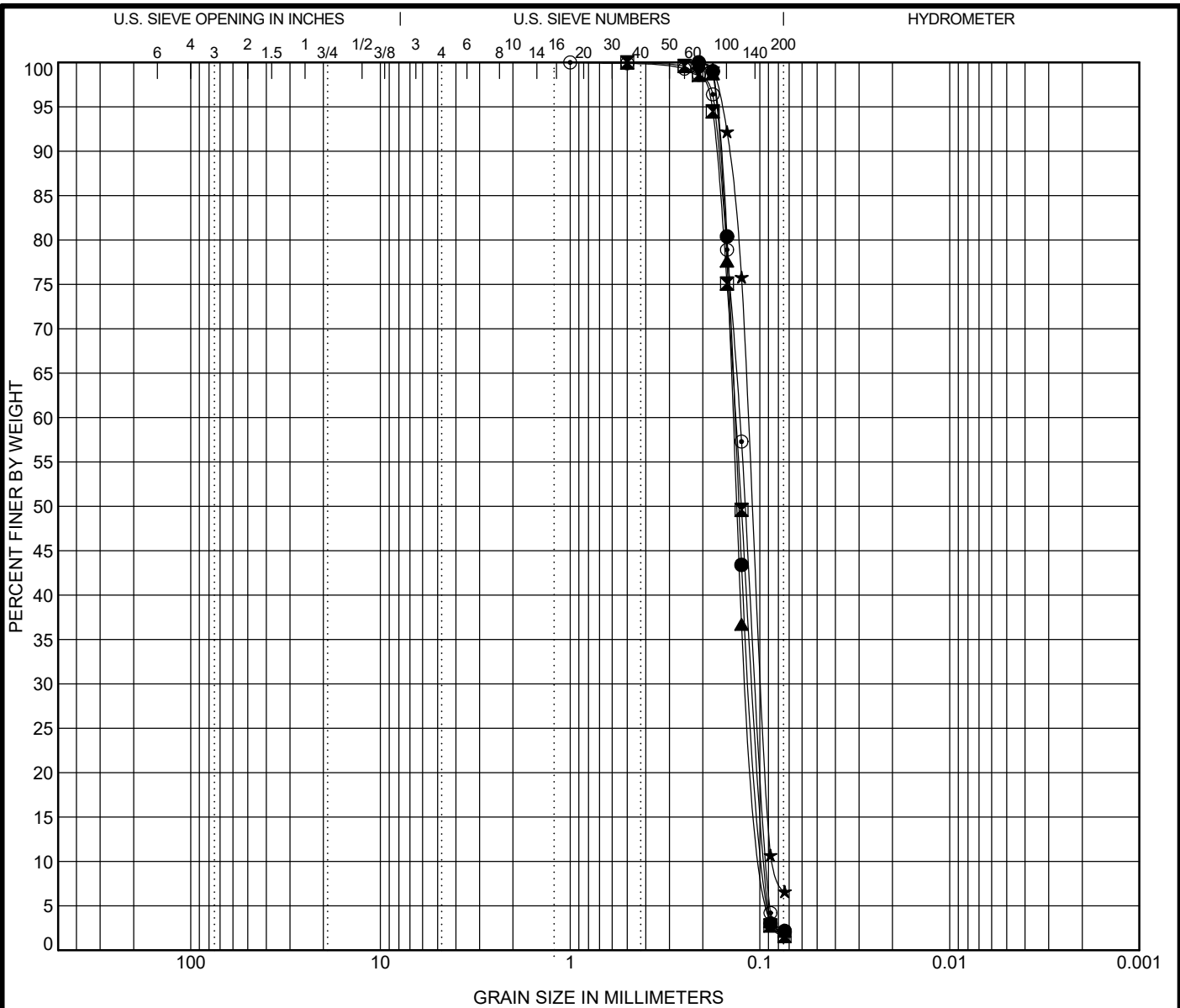
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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis

Location: Follet's Island, Texas


Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T5-Mid Berm	0.0'	POORLY GRADED SAND				0.98	1.45
☒ FB-T5-Swash Zone	0.0'	POORLY GRADED SAND				0.93	1.45
▲ FB-T5-First Bar	0.0'	POORLY GRADED SAND				1.04	1.46
★ FB-T5-Trough	0.0'	POORLY GRADED SAND with SILT				0.97	1.34
⊙ FB-T5-Second Bar	0.0'	POORLY GRADED SAND				0.93	1.40

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T5-Mid Berm	0.0'	0.21	0.135	0.111	0.094	0.0			
☒ FB-T5-Swash Zone	0.0'	0.5	0.134	0.108	0.093	0.0			
▲ FB-T5-First Bar	0.0'	0.21	0.138	0.117	0.094	0.0			
★ FB-T5-Trough	0.0'	0.21	0.115	0.098	0.085	0.0			
⊙ FB-T5-Second Bar	0.0'	1	0.128	0.104	0.091	0.0			

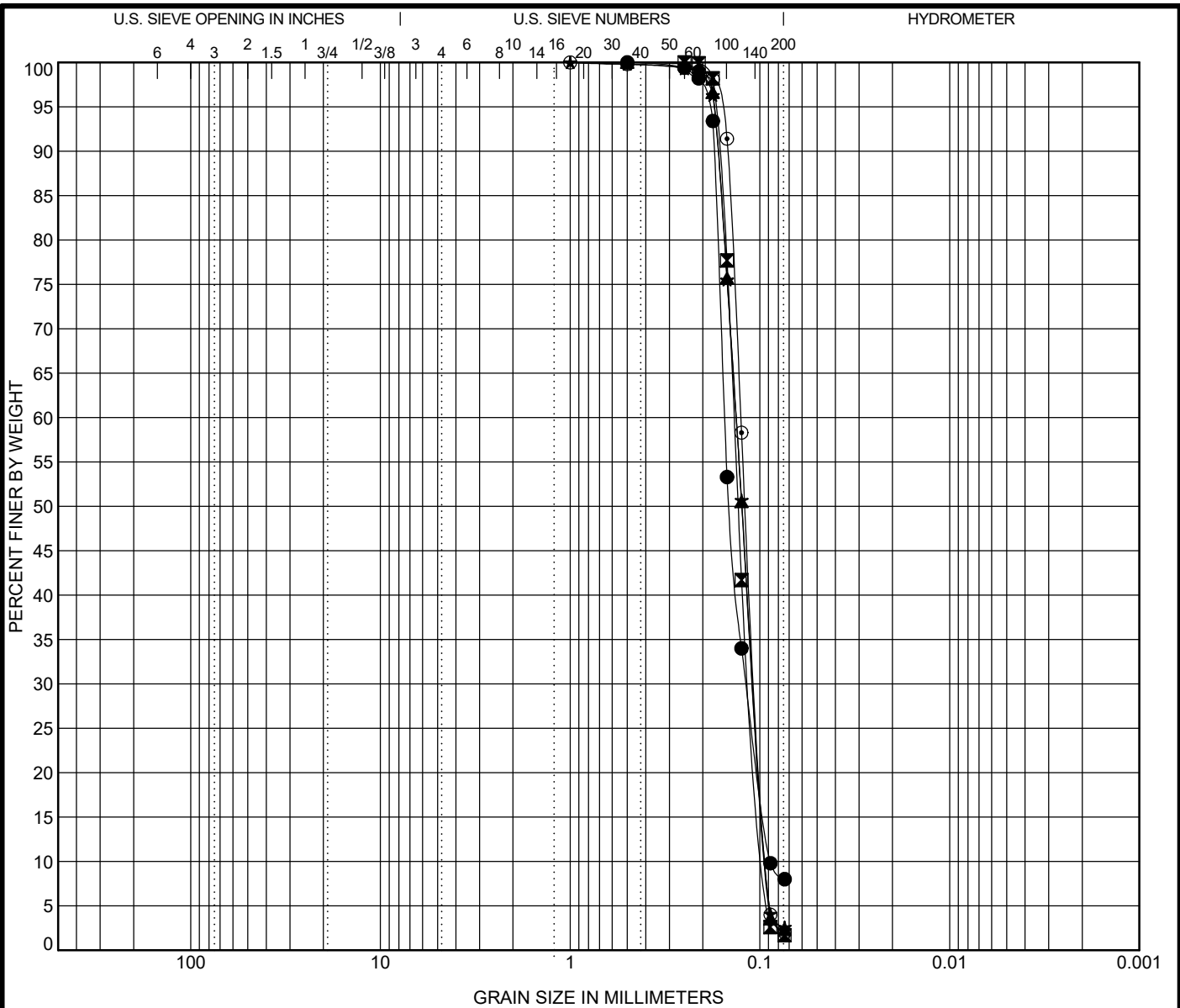


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US GRAIN SIZE 5 G122361 Fl.GPJ US LAB.GDT 8/11/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T6-Toe of Dune	0.0'	POORLY GRADED SAND with SILT				1.03	1.74
☒ FB-T6-Mid Berm	0.0'	POORLY GRADED SAND				0.99	1.45
▲ FB-T6-Swash Zone	0.0'	POORLY GRADED SAND				0.93	1.45
★ FB-T6-First Bar	0.0'	POORLY GRADED SAND				0.93	1.45
⊙ FB-T6-Trough	0.0'	POORLY GRADED SAND				0.94	1.38

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T6-Toe of Dune	0.0'	0.5	0.153	0.118	0.088	0.0			
☒ FB-T6-Mid Berm	0.0'	0.25	0.137	0.113	0.094	0.0			
▲ FB-T6-Swash Zone	0.0'	0.5	0.134	0.107	0.092	0.0			
★ FB-T6-First Bar	0.0'	1	0.134	0.107	0.092	0.0			
⊙ FB-T6-Trough	0.0'	1	0.126	0.104	0.091	0.0			

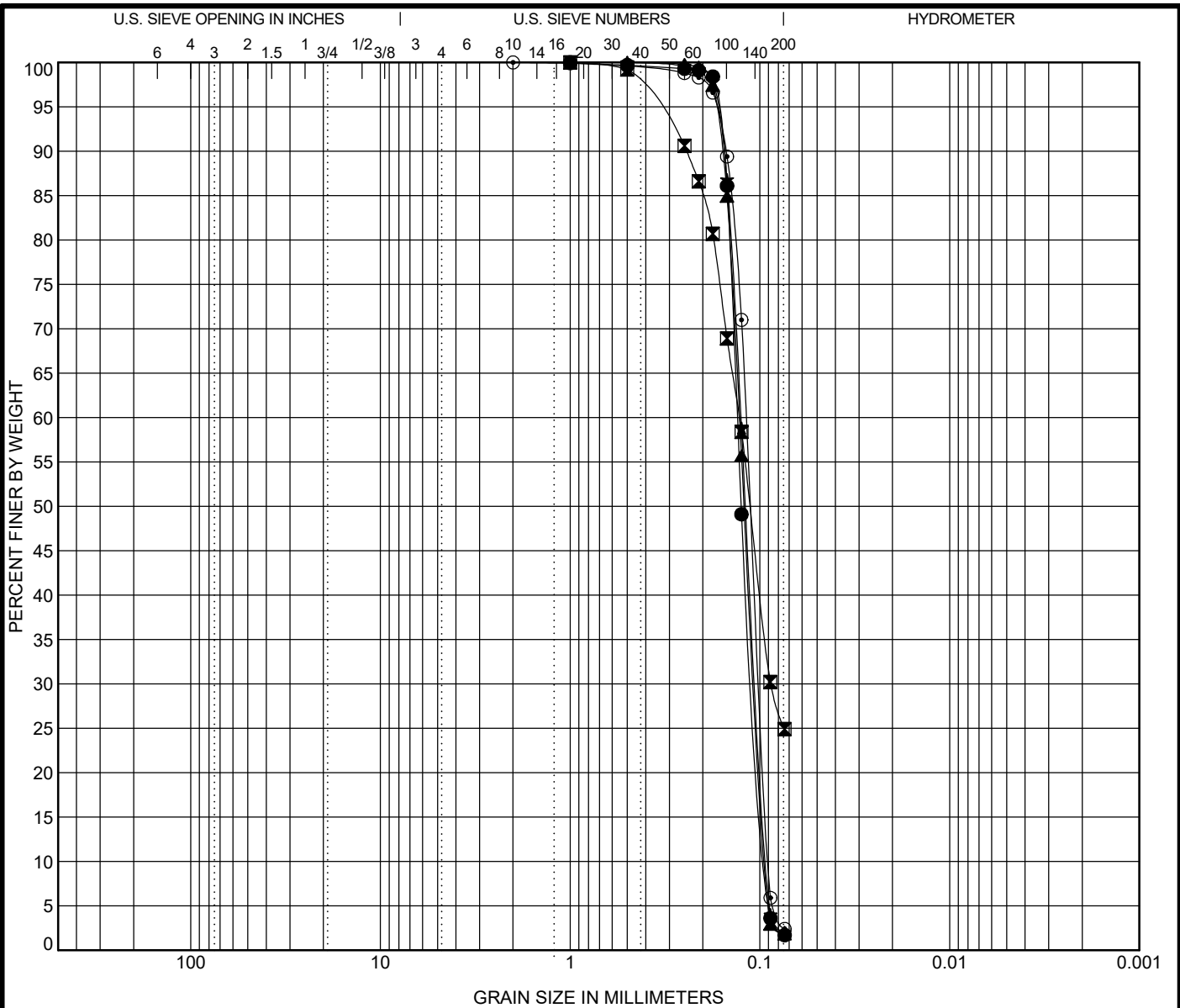


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T6-Second Bar	0.0'	POORLY GRADED SAND				0.96	1.42
☒ FB-T7-Toe of Dune	0.0'	CLAYEY SAND				--	--
▲ FB-T7-Mid Berm	0.0'	POORLY GRADED SAND				0.94	1.39
★ FB-T7-Swash Zone	0.0'	POORLY GRADED SAND				0.94	1.38
◎ FB-T7-First Bar	0.0'	POORLY GRADED SAND				0.95	1.31

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T6-Second Bar	0.0'	1	0.132	0.108	0.092	0.0			
☒ FB-T7-Toe of Dune	0.0'	1	0.128	0.087	--	0.0			
▲ FB-T7-Mid Berm	0.0'	0.5	0.128	0.105	0.092	0.0			
★ FB-T7-Swash Zone	0.0'	0.5	0.126	0.104	0.091	0.0			
◎ FB-T7-First Bar	0.0'	2	0.118	0.1	0.09	0.0			

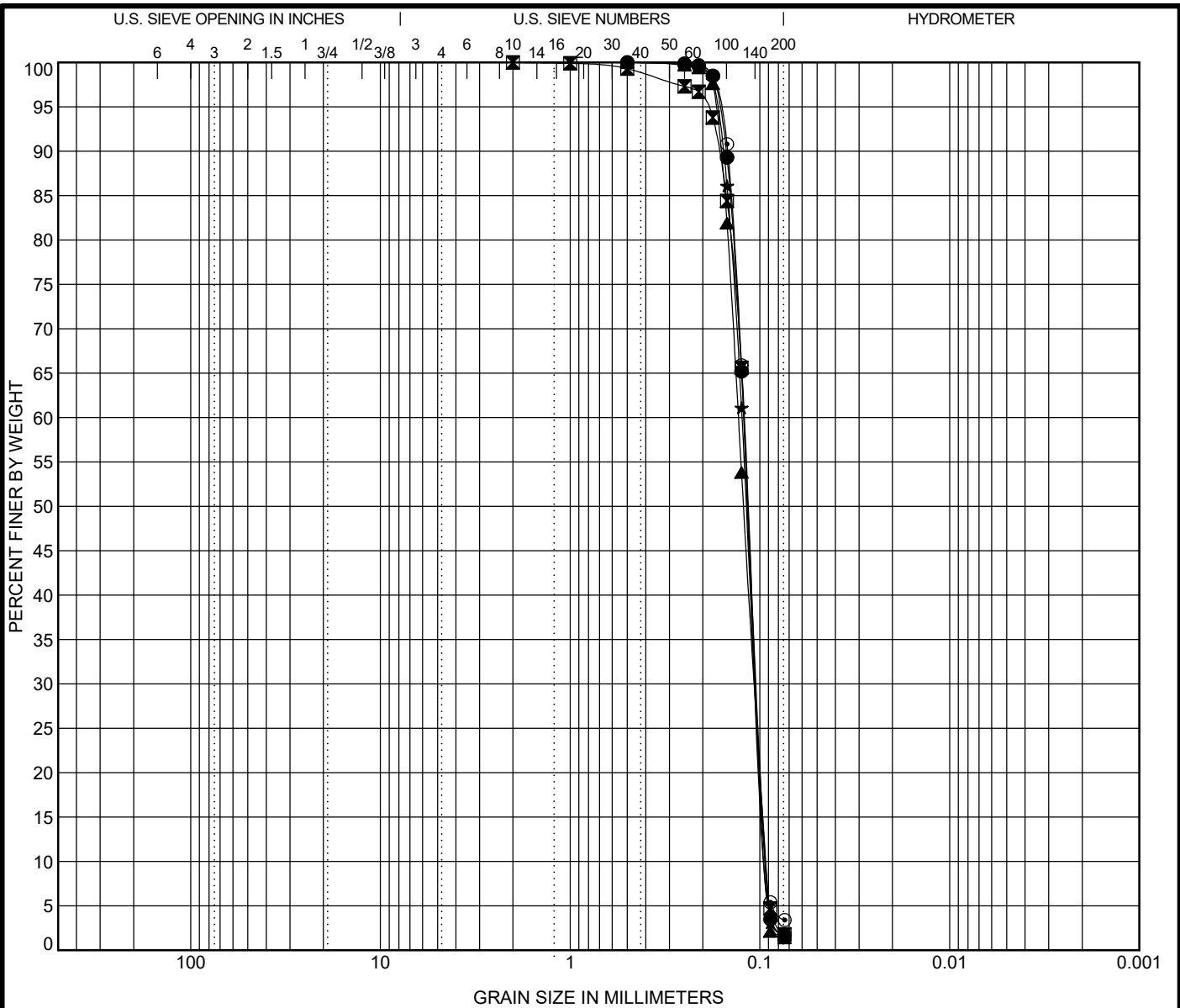


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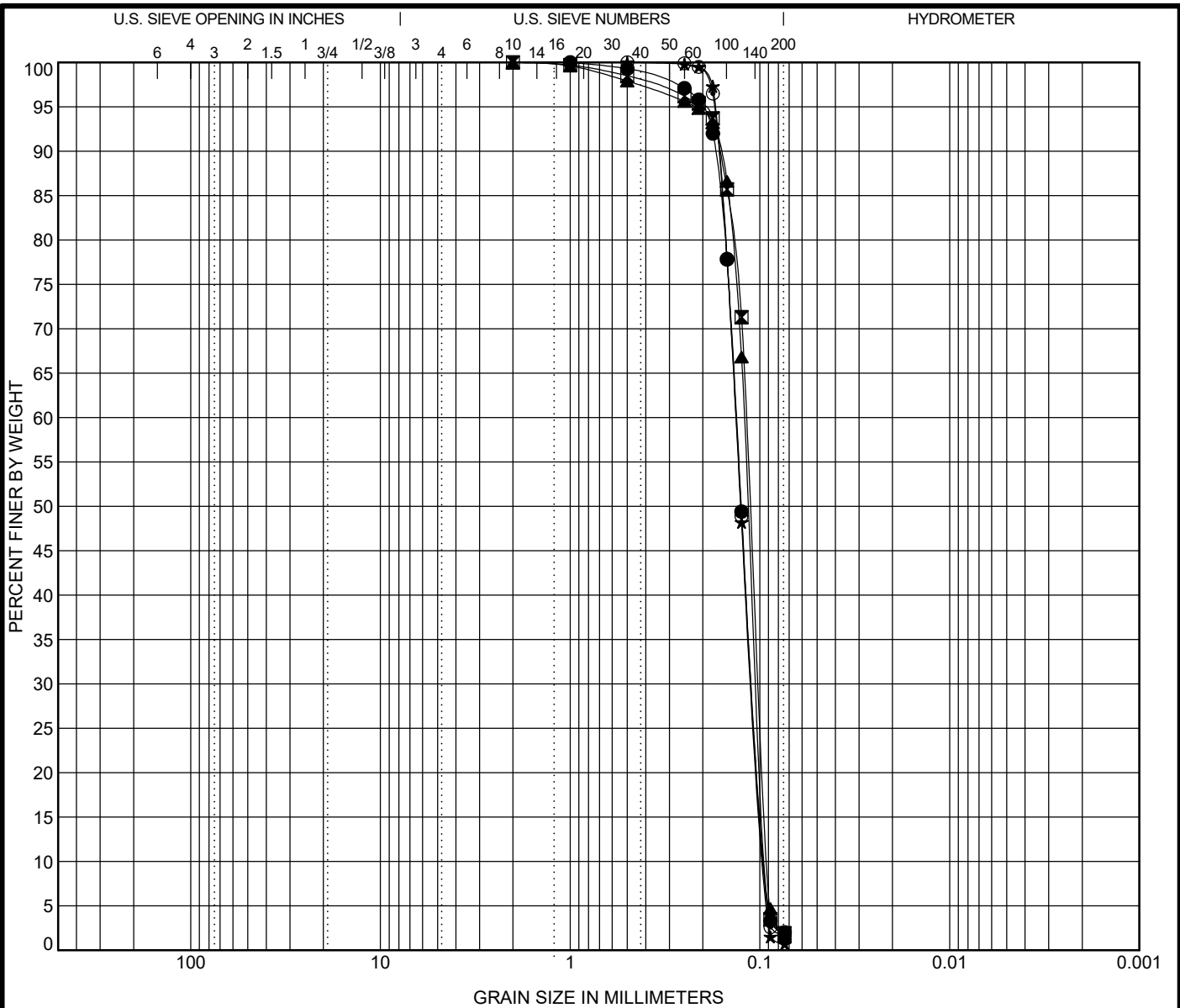
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T7-Trough	0.0'	POORLY GRADED SAND				0.94	1.33
☒ FB-T7-Second Bar	0.0'	POORLY GRADED SAND				0.94	1.33
▲ FB-T8-Toe of Dune	0.0'	POORLY GRADED SAND				0.94	1.40
★ FB-T8-Mid Berm	0.0'	POORLY GRADED SAND				0.94	1.35
◎ FB-T8-Swash Zone	0.0'	POORLY GRADED SAND				0.94	1.34

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T7-Trough	0.0'	0.5	0.121	0.102	0.091	0.0			
☒ FB-T7-Second Bar	0.0'	2	0.121	0.102	0.091	0.0			
▲ FB-T8-Toe of Dune	0.0'	0.5	0.13	0.106	0.093	0.0			
★ FB-T8-Mid Berm	0.0'	0.5	0.124	0.104	0.092	0.0			
◎ FB-T8-Swash Zone	0.0'	0.5	0.121	0.101	0.09	0.0			

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification					LL	PL	PI	Cc	Cu
● FB-T8-First Bar	0.0'	POORLY GRADED SAND								0.94	1.44
☒ FB-T8-Trough	0.0'	POORLY GRADED SAND								0.95	1.30
▲ FB-T8-Second Bar	0.0'	POORLY GRADED SAND								0.95	1.33
★ FB-T9-Toe of Dune	0.0'	POORLY GRADED SAND								0.95	1.43
◎ FB-T9-Mid Berm	0.0'	POORLY GRADED SAND								0.94	1.44

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T8-First Bar	0.0'	1	0.133	0.108	0.093	0.0			
☒ FB-T8-Trough	0.0'	2	0.118	0.101	0.091	0.0			
▲ FB-T8-Second Bar	0.0'	2	0.12	0.102	0.091	0.0			
★ FB-T9-Toe of Dune	0.0'	0.5	0.134	0.109	0.094	0.0			
◎ FB-T9-Mid Berm	0.0'	0.5	0.134	0.108	0.093	0.0			

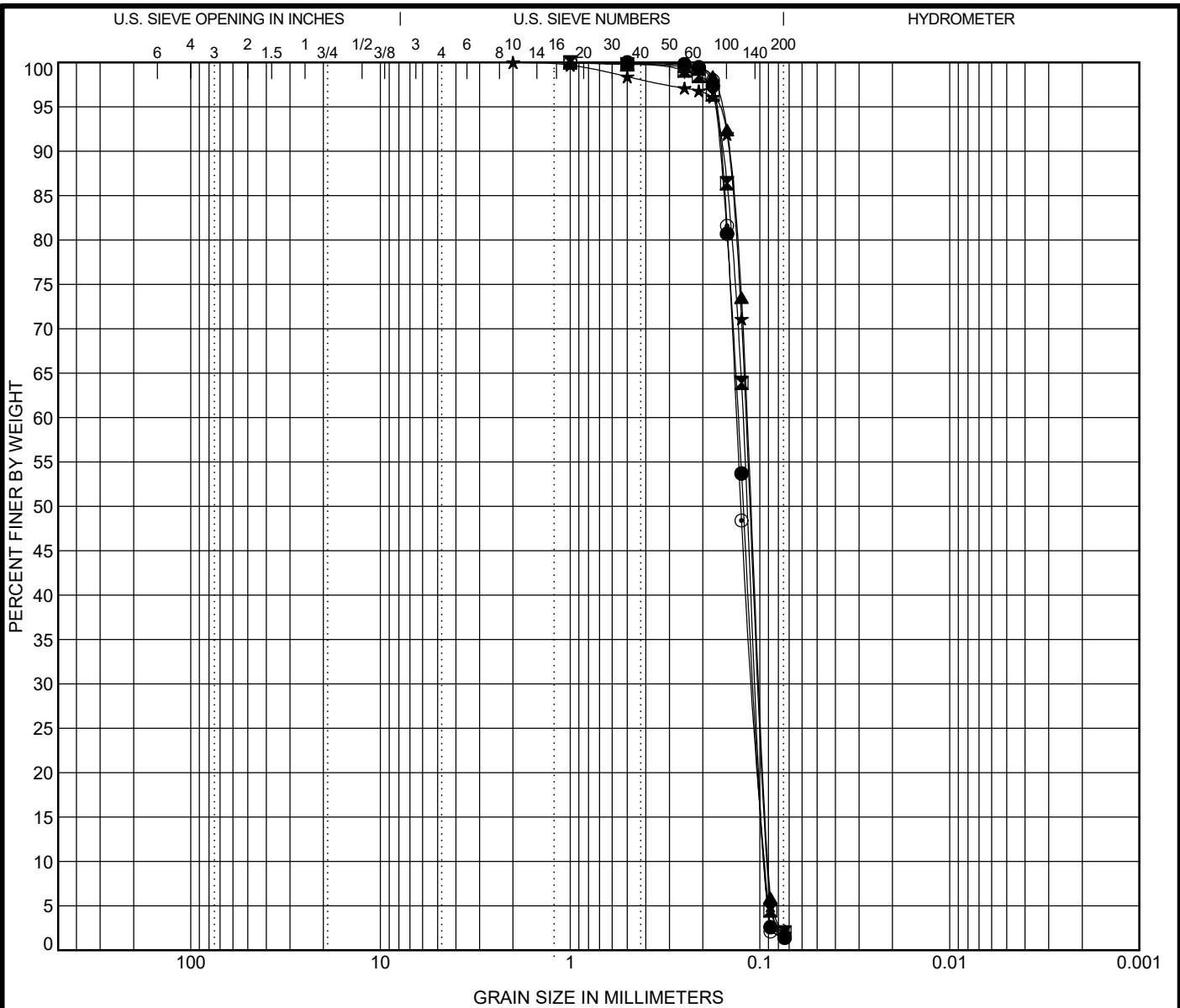


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Corpus Christi, Texas 78409 Telephone:
361-883-4555
Fax: 361-883-4711

GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
Location: Follet's Island, Texas
Number: G122361


US GRAIN SIZE 5 G122361 Fl.GPJ US LAB.GDT 8/11/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T9-Swash Zone	0.0'	POORLY GRADED SAND				0.94	1.41
☒ FB-T9-First Bar	0.0'	POORLY GRADED SAND				0.94	1.34
▲ FB-T9-Trough	0.0'	POORLY GRADED SAND				0.95	1.30
★ FB-T9-Second Bar	0.0'	POORLY GRADED SAND				0.95	1.30
◎ FB-T10-Toe of Dune	0.0'	POORLY GRADED SAND				0.95	1.42

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T9-Swash Zone	0.0'	0.5	0.13	0.106	0.093	0.0			
☒ FB-T9-First Bar	0.0'	1	0.122	0.102	0.091	0.0			
▲ FB-T9-Trough	0.0'	1	0.117	0.1	0.09	0.0			
★ FB-T9-Second Bar	0.0'	2	0.118	0.1	0.09	0.0			
◎ FB-T10-Toe of Dune	0.0'	1	0.133	0.109	0.093	0.0			

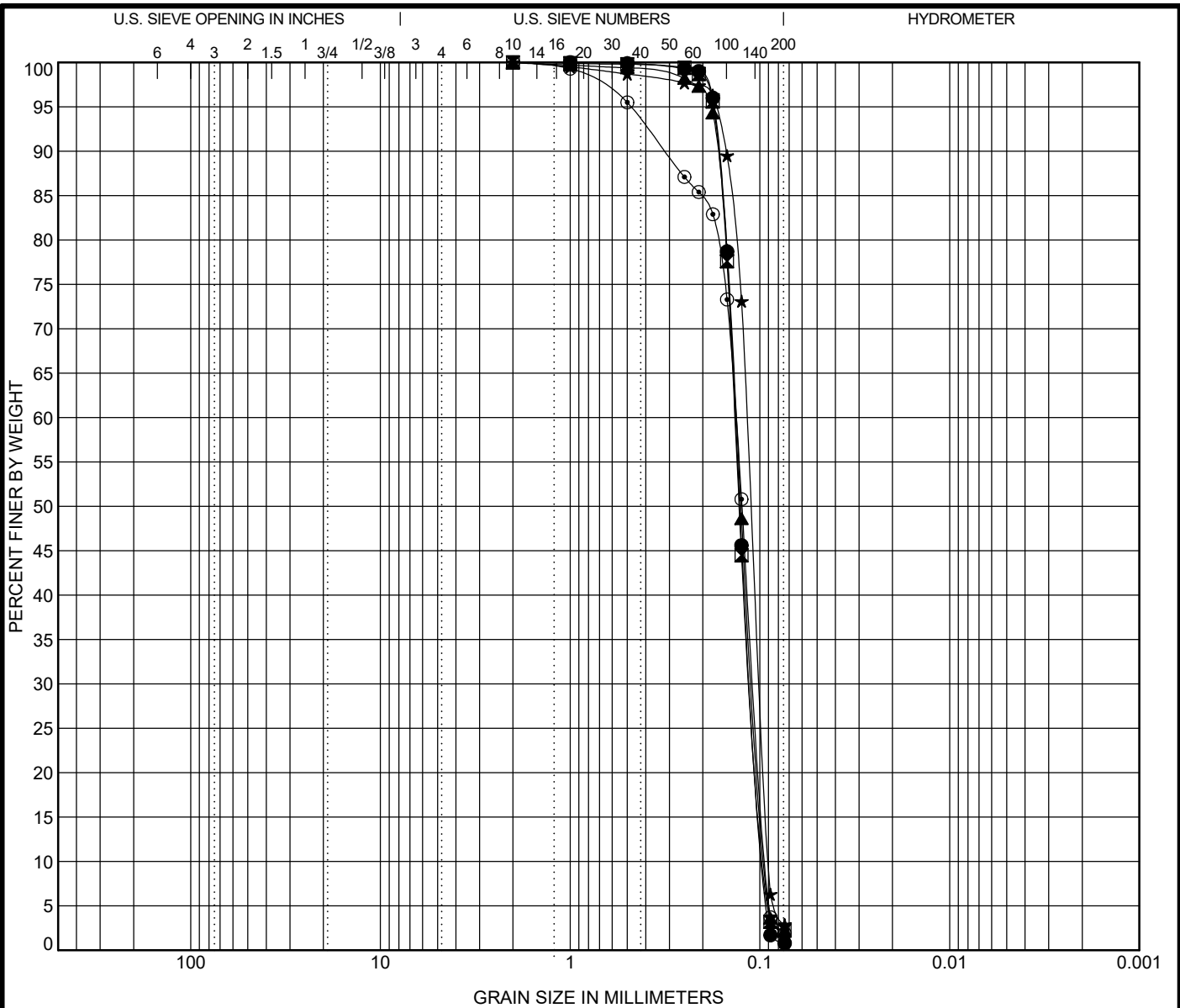


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Number: G122361


US GRAIN SIZE 5 G122361 Fl.GPJ US LAB.GDT 8/11/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T10-Mid Berm	0.0'	POORLY GRADED SAND				0.96	1.43
☒ FB-T10-Swash Zone	0.0'	POORLY GRADED SAND				0.97	1.46
▲ FB-T10-First Bar	0.0'	POORLY GRADED SAND				0.95	1.44
★ FB-T10-Trough	0.0'	POORLY GRADED SAND				0.95	1.30
⊙ FB-T10-Second Bar	0.0'	POORLY GRADED SAND				0.93	1.46

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T10-Mid Berm	0.0'	1	0.135	0.11	0.094	0.0			
☒ FB-T10-Swash Zone	0.0'	2	0.136	0.111	0.093	0.0			
▲ FB-T10-First Bar	0.0'	2	0.134	0.108	0.093	0.0			
★ FB-T10-Trough	0.0'	2	0.117	0.1	0.09	0.0			
⊙ FB-T10-Second Bar	0.0'	2	0.134	0.107	0.092	0.0			

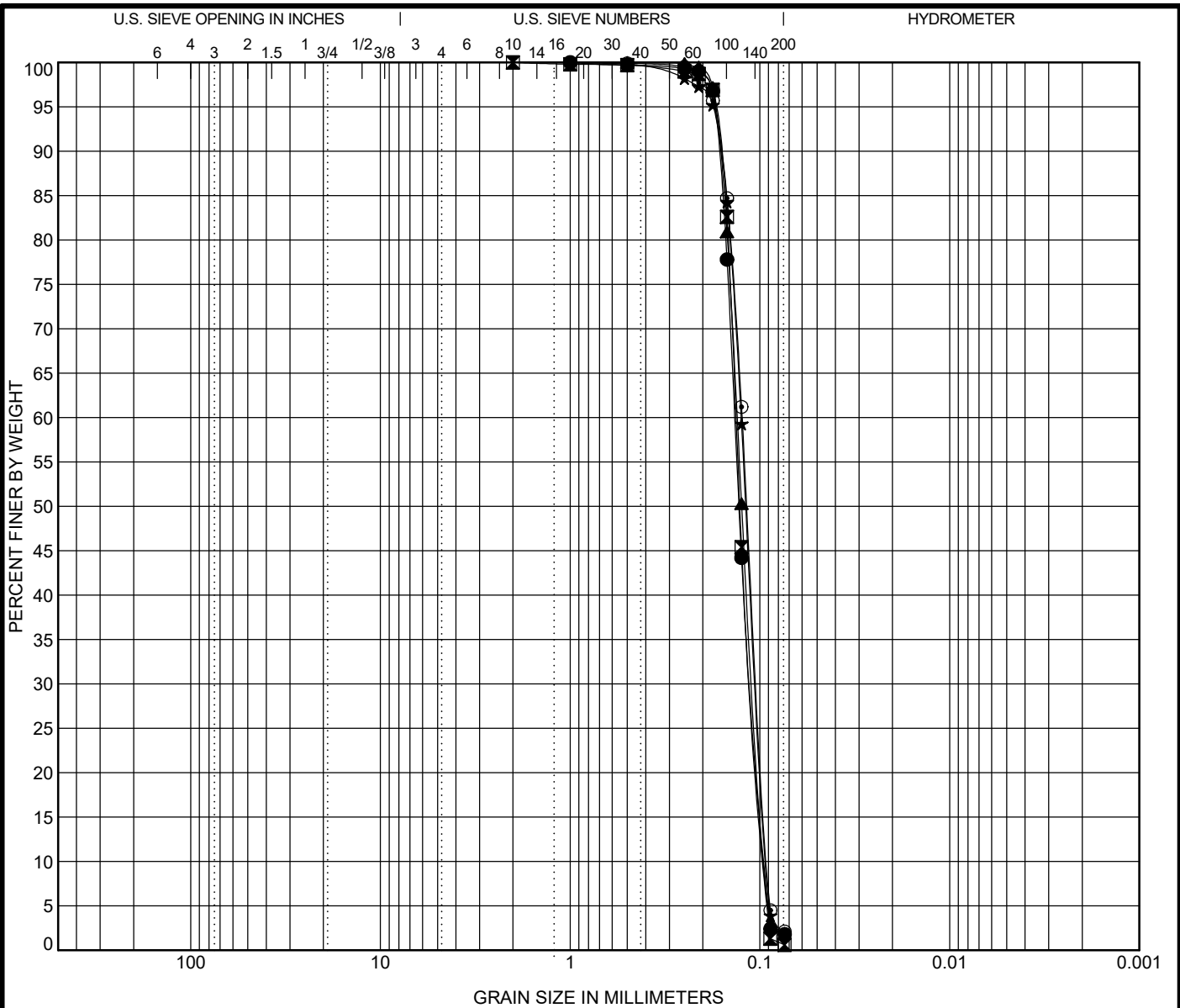


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T11-Toe of Dune	0.0'	POORLY GRADED SAND				0.97	1.45
☒ FB-T11-Mid Berm	0.0'	POORLY GRADED SAND				0.97	1.42
▲ FB-T11-Swash Zone	0.0'	POORLY GRADED SAND				0.94	1.43
★ FB-T11-First Bar	0.0'	POORLY GRADED SAND				0.94	1.37
◎ FB-T11-Trough	0.0'	POORLY GRADED SAND				0.94	1.36

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T11-Toe of Dune	0.0'	1	0.136	0.111	0.094	0.0			
☒ FB-T11-Mid Berm	0.0'	2	0.134	0.111	0.094	0.0			
▲ FB-T11-Swash Zone	0.0'	0.5	0.132	0.108	0.093	0.0			
★ FB-T11-First Bar	0.0'	1	0.126	0.104	0.091	0.0			
◎ FB-T11-Trough	0.0'	1	0.124	0.103	0.091	0.0			

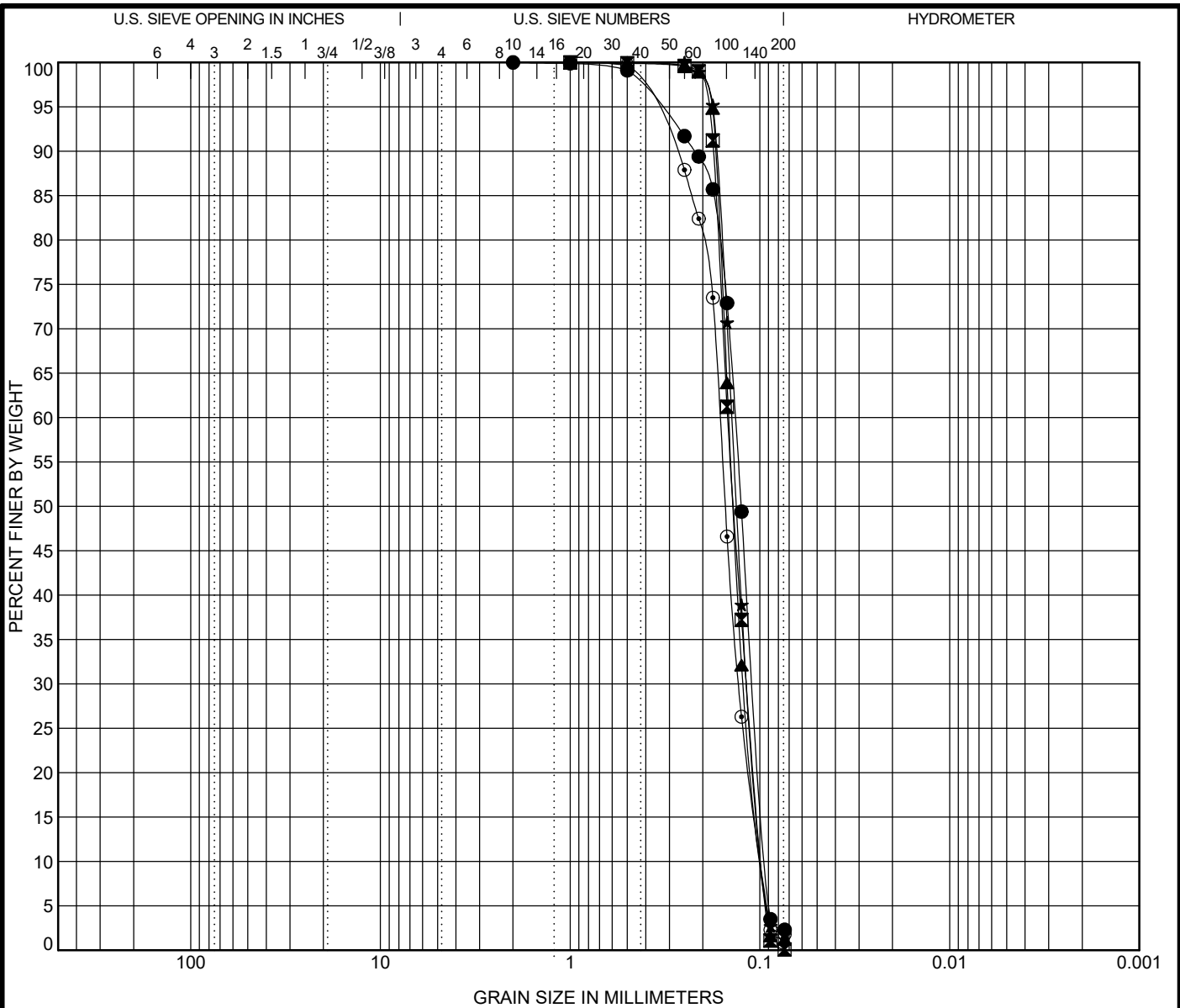
US GRAIN SIZE 5 G122361 Fl.GPJ US LAB.GDT 8/11/22



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GRAIN SIZE DISTRIBUTION


Project: Beach Sediment Analysis
 Location: Follet's Island, Texas
 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T11-Second Bar	0.0'	POORLY GRADED SAND				0.93	1.46
☒ FB-T12-Toe of Dune	0.0'	POORLY GRADED SAND				0.96	1.54
▲ FB-T12-Mid Berm	0.0'	POORLY GRADED SAND				1.05	1.50
★ FB-T12-Swash Zone	0.0'	POORLY GRADED SAND				0.99	1.49
⊙ FB-T12-First Bar	0.0'	POORLY GRADED SAND				1.04	1.65

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T11-Second Bar	0.0'	2	0.135	0.108	0.092	0.0			
☒ FB-T12-Toe of Dune	0.0'	1	0.148	0.117	0.096	0.0			
▲ FB-T12-Mid Berm	0.0'	0.5	0.146	0.122	0.097	0.0			
★ FB-T12-Swash Zone	0.0'	0.25	0.14	0.115	0.094	0.0			
⊙ FB-T12-First Bar	0.0'	1	0.162	0.129	0.098	0.0			

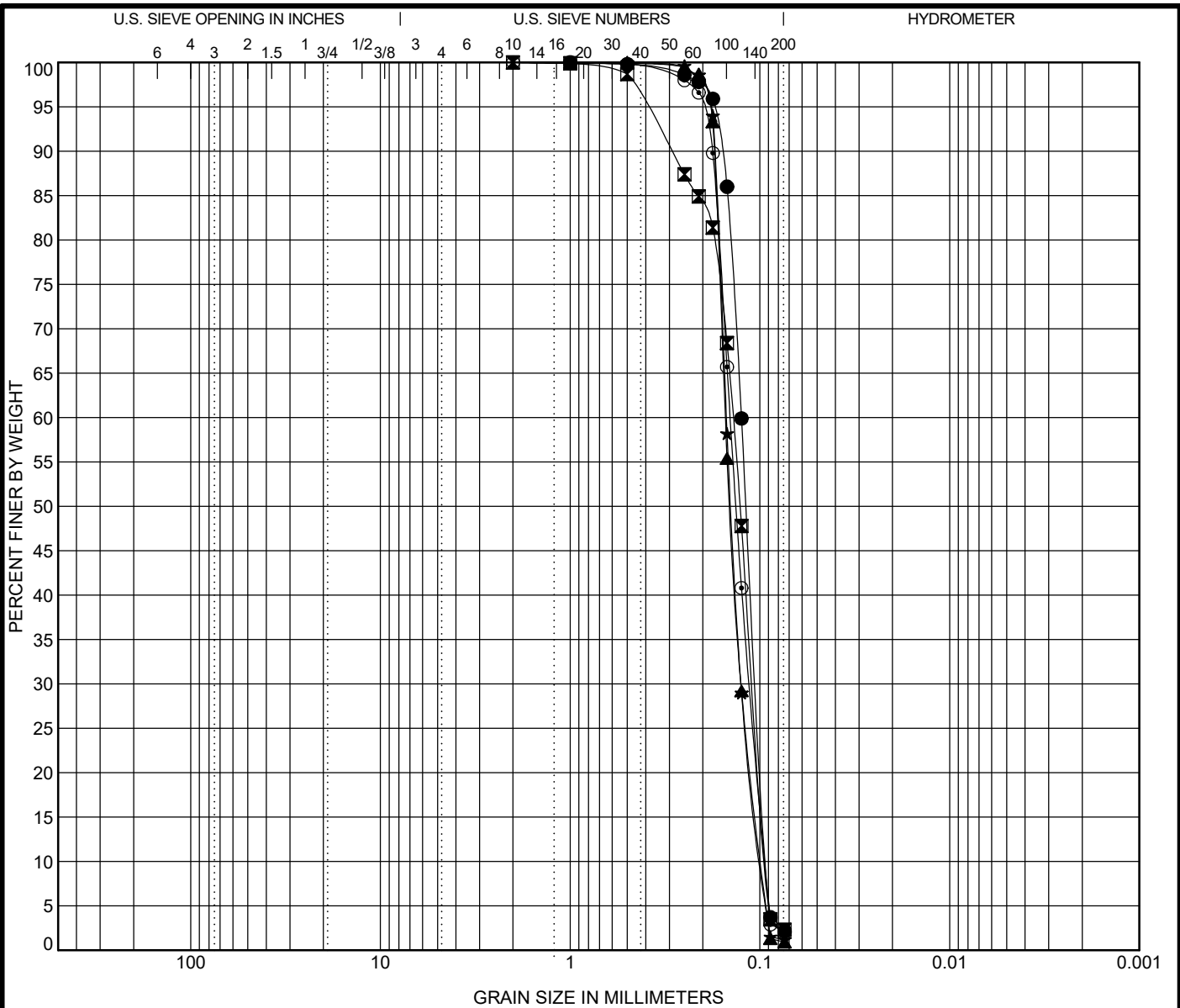


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Corpus Christi, Texas 78409 Telephone:
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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
Location: Follet's Island, Texas
Number: G122361


US GRAIN SIZE 5 G122361 Fl.GPJ US LAB.GDT 8/11/22



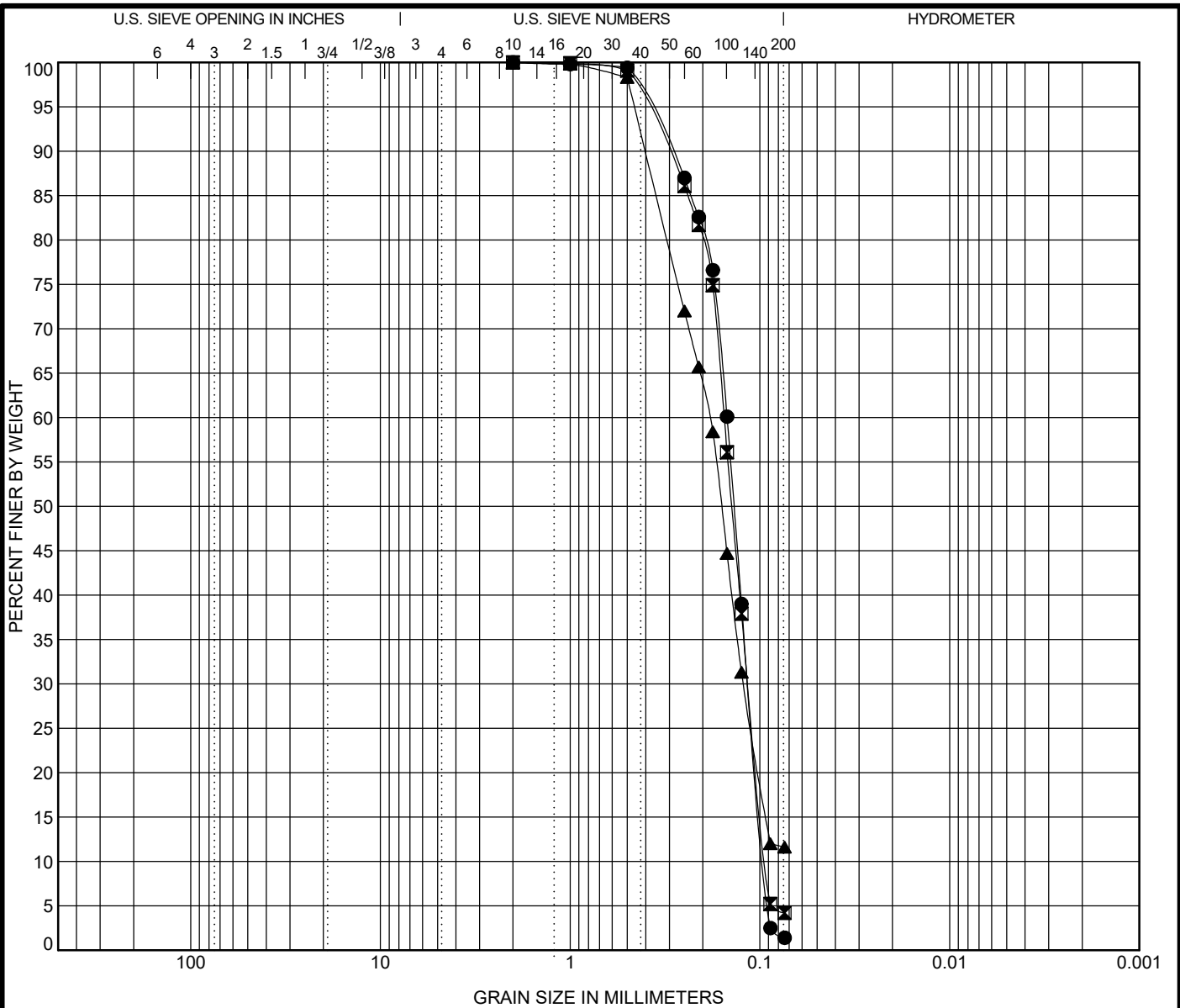
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T12-Trough	0.0'	POORLY GRADED SAND				0.94	1.37
☒ FB-T12-Second Bar	0.0'	POORLY GRADED SAND				0.92	1.50
▲ FB-T13-Toe of Dune	0.0'	POORLY GRADED SAND				1.06	1.55
★ FB-T13-Mid Berm	0.0'	POORLY GRADED SAND				1.07	1.53
◎ FB-T13-Swash Zone	0.0'	POORLY GRADED SAND				0.95	1.52

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T12-Trough	0.0'	1	0.125	0.104	0.092	0.0			
☒ FB-T12-Second Bar	0.0'	2	0.139	0.109	0.093	0.0			
▲ FB-T13-Toe of Dune	0.0'	1	0.152	0.126	0.098	0.0			
★ FB-T13-Mid Berm	0.0'	0.5	0.15	0.126	0.098	0.0			
◎ FB-T13-Swash Zone	0.0'	2	0.143	0.113	0.094	0.0			

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	Project: Beach Sediment Analysis	
	Location: Follet's Island, Texas	
Number: G122361		

US GRAIN SIZE 5 G122361 Fl.GPJ US LAB.GDT 8/11/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● FB-T13-First Bar	0.0'	POORLY GRADED SAND				0.93	1.57
⊠ FB-T13-Trough	0.0'	POORLY GRADED SAND				0.92	1.67
▲ FB-T13-Second Bar	0.0'	POORLY GRADED SAND with SILT				2.19	4.97

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● FB-T13-First Bar	0.0'	2	0.149	0.115	0.095	0.0			
⊠ FB-T13-Trough	0.0'	2	0.154	0.115	0.093	0.0			
▲ FB-T13-Second Bar	0.0'	2	0.184	0.122	--	0.0			

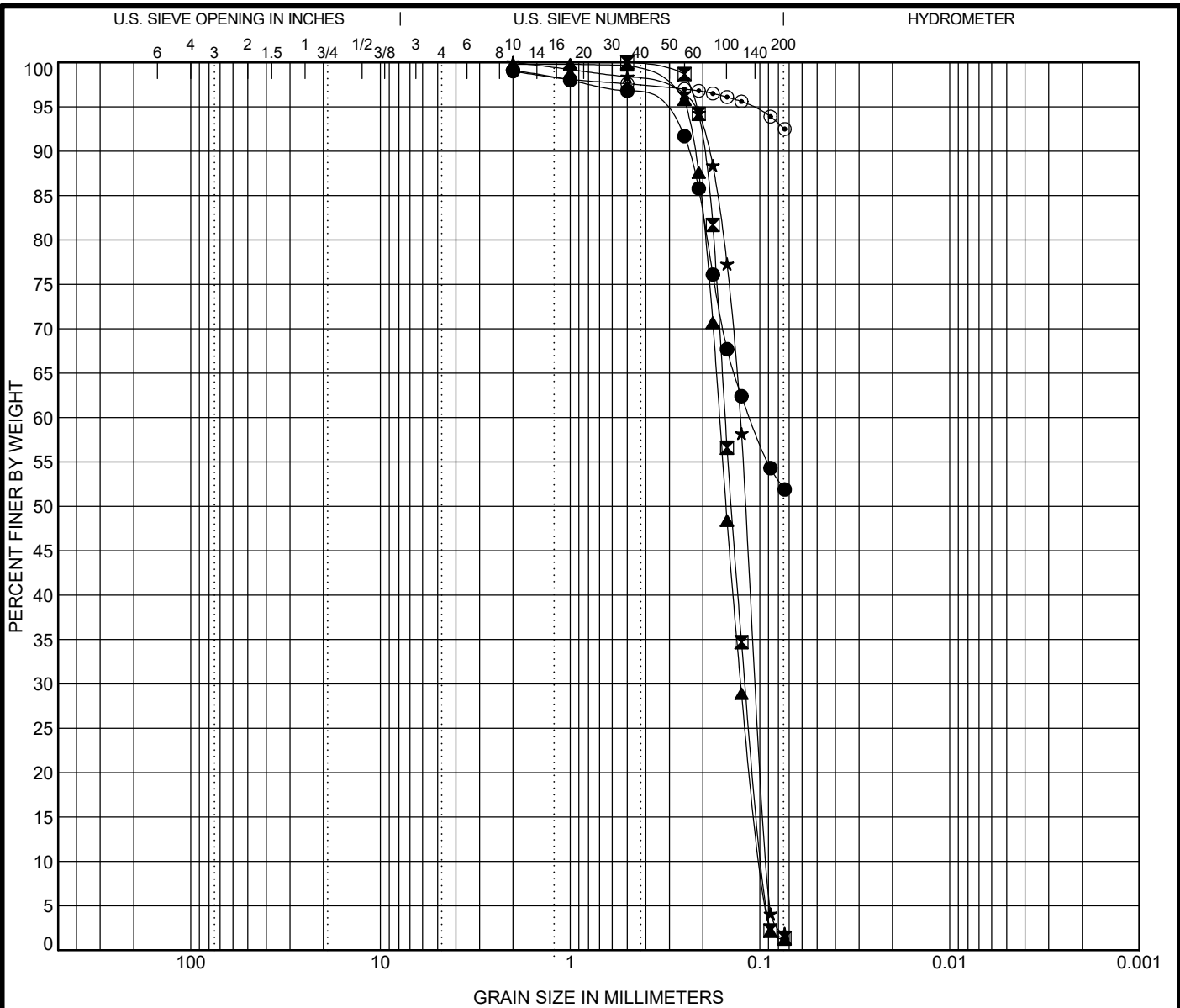
US GRAIN SIZE 5 G122361 Fl.GPJ US LAB.GDT 8/11/22



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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
 Location: Follet's Island, Texas
 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● SB-T1-Toe of Dune	0.0'	LEAN CLAY with SAND				--	--
☒ SB-T1-Mid Berm	0.0'	POORLY GRADED SAND				0.97	1.59
▲ SB-T1-Swash Zone	0.0'	POORLY GRADED SAND				1.00	1.67
★ SB-T1-First Bar	0.0'	POORLY GRADED SAND				0.93	1.39
◎ SB-T1-Trough	0.0'	LEAN CLAY				--	--

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SB-T1-Toe of Dune	0.0'	2	0.113	--	--	0.0			
☒ SB-T1-Mid Berm	0.0'	0.5	0.153	0.119	0.096	0.0			
▲ SB-T1-Swash Zone	0.0'	2	0.163	0.126	0.098	0.0			
★ SB-T1-First Bar	0.0'	2	0.127	0.104	0.091	0.0			
◎ SB-T1-Trough	0.0'	2	--	--	--	0.0			

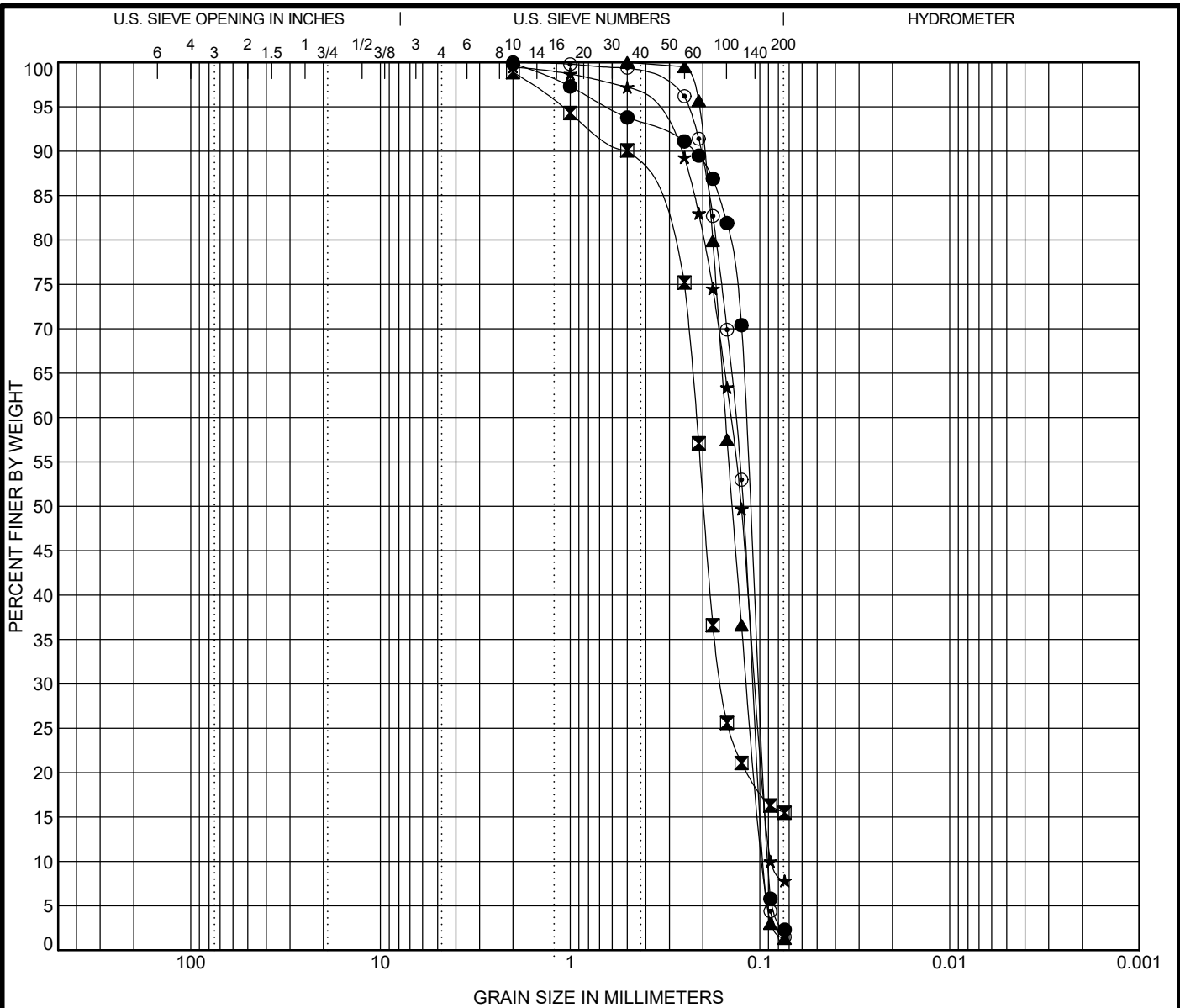


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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
 Location: Sargent Beach, Texas
 Number: G122361

US GRAIN SIZE 6 G122361 SB.GPJ US LAB.GDT 8/19/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● SB-T1-Second Bar	0.0'	POORLY GRADED SAND							0.95	1.31
☒ SB-T2-Toe of Dune	0.0'	CLAYEY SAND							--	--
▲ SB-T2-Mid Berm	0.0'	POORLY GRADED SAND							0.95	1.60
★ SB-T2-Swash Zone	0.0'	POORLY GRADED SAND with SILT							0.88	1.62
⊙ SB-T2-First Bar	0.0'	POORLY GRADED SAND							0.91	1.47
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● SB-T1-Second Bar	0.0'	2	0.118	0.1	0.09	0.0				
☒ SB-T2-Toe of Dune	0.0'	2	0.216	0.16	--	0.0				
▲ SB-T2-Mid Berm	0.0'	0.5	0.152	0.117	0.095	0.0				
★ SB-T2-Swash Zone	0.0'	2	0.143	0.105	0.088	0.0				
⊙ SB-T2-First Bar	0.0'	2	0.134	0.106	0.092	0.0				

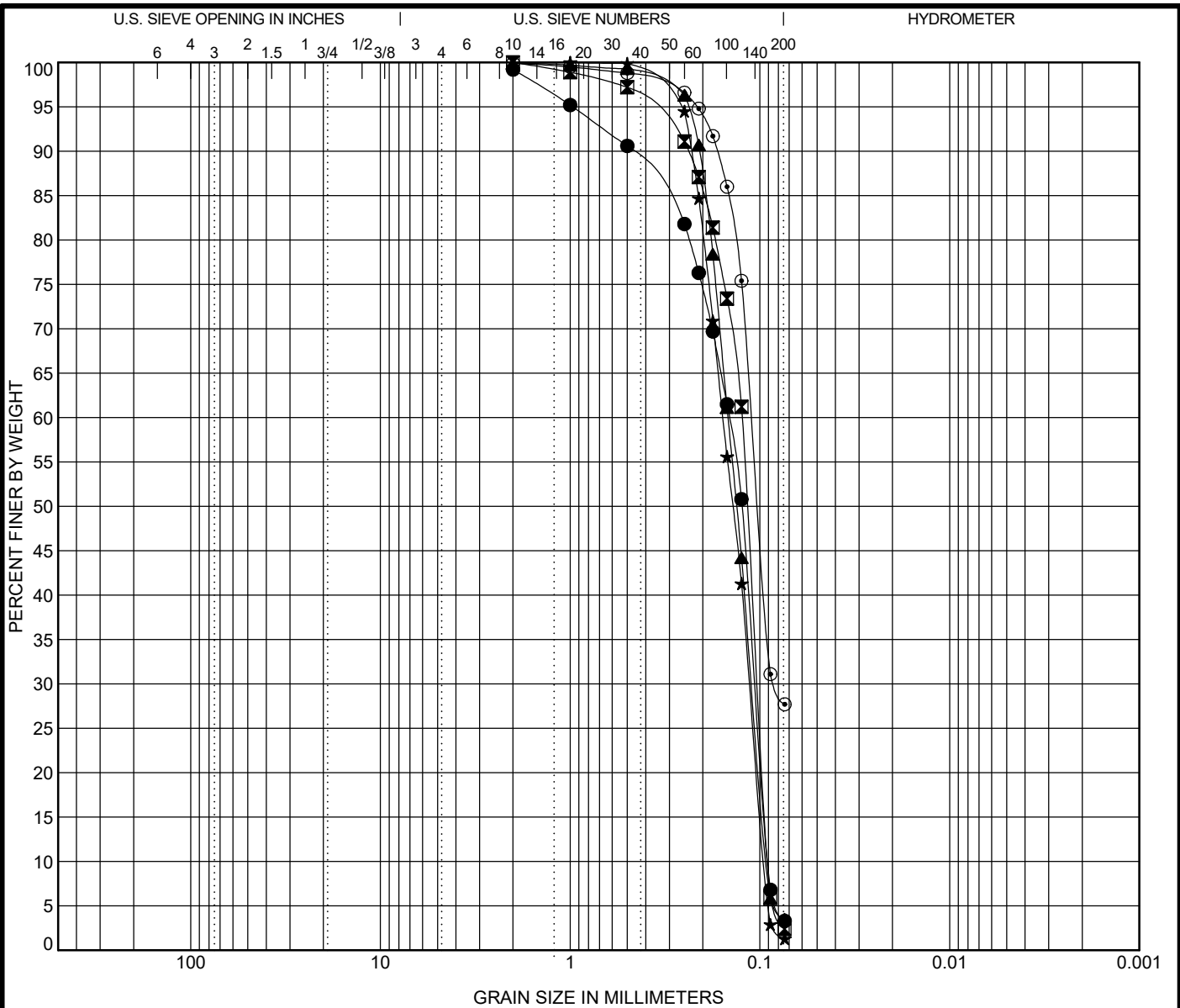
US GRAIN SIZE 6 G122361 SB.GPJ US LAB.GDT 8/19/22



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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
 Location: Sargent Beach, Texas
 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● SB-T2-Trough	0.0'	POORLY GRADED SAND				0.85	1.61
☒ SB-T2-Second Bar	0.0'	POORLY GRADED SAND				0.94	1.37
▲ SB-T3-Toe of Dune	0.0'	POORLY GRADED SAND				0.89	1.61
★ SB-T3-Mid Berm	0.0'	POORLY GRADED SAND				0.86	1.67
◎ SB-T3-Swash Zone	0.0'	CLAYEY SAND				--	--

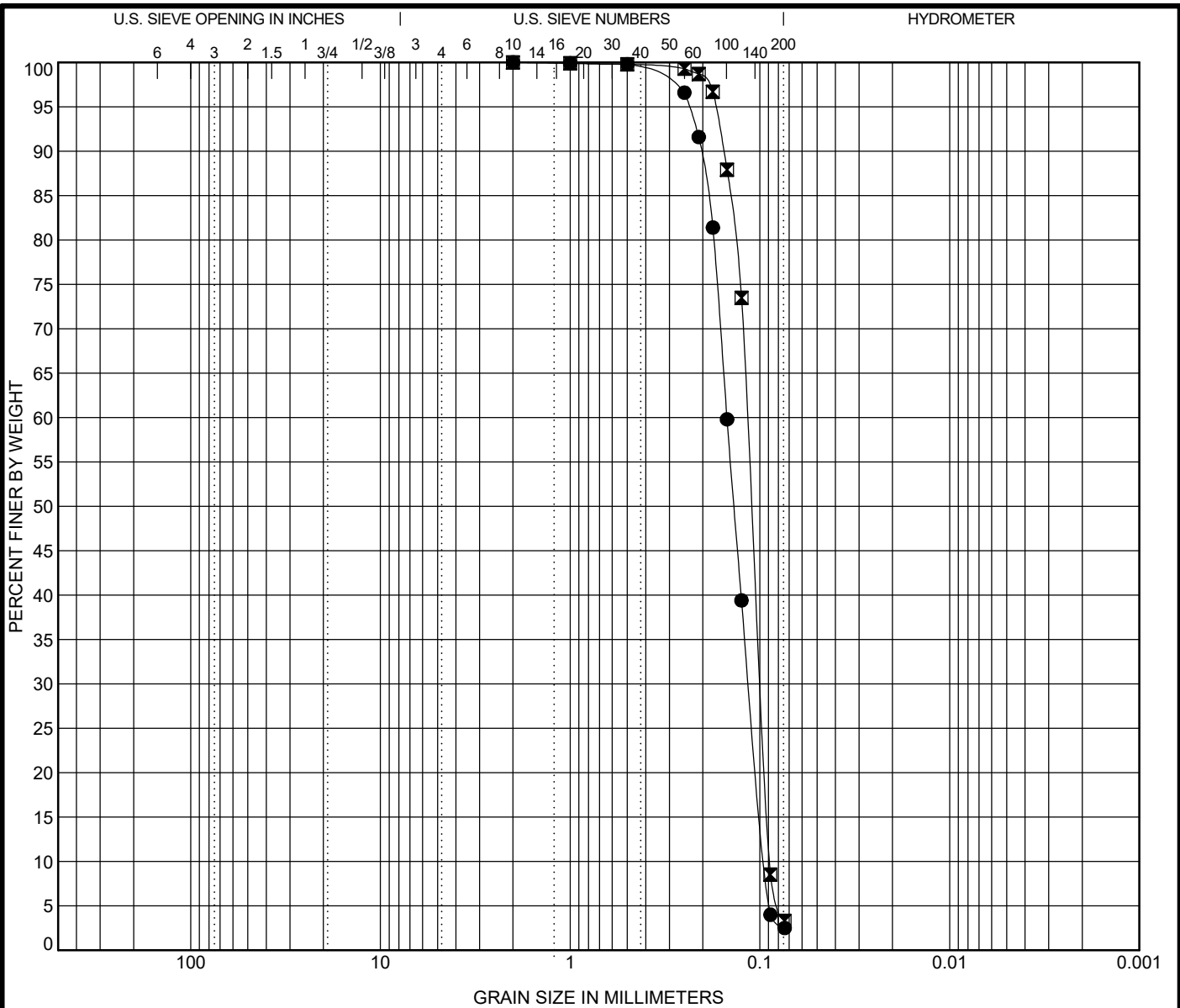
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SB-T2-Trough	0.0'	2	0.145	0.106	0.09	0.0			
☒ SB-T2-Second Bar	0.0'	2	0.124	0.103	0.09	0.0			
▲ SB-T3-Toe of Dune	0.0'	2	0.147	0.11	0.091	0.0			
★ SB-T3-Mid Berm	0.0'	1	0.157	0.113	0.094	0.0			
◎ SB-T3-Swash Zone	0.0'	2	0.111	0.083	--	0.0			



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GRAIN SIZE DISTRIBUTION
 Project: Beach Sediment Analysis
 Location: Sargent Beach, Texas
 Number: G122361

US GRAIN SIZE 6 G122361 SB.GPJ US LAB.GDT 8/19/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● SB-T2B-Swash Zone	0.0'	POORLY GRADED SAND							0.93	1.60
☒ SB-T2B-Trough	0.0'	POORLY GRADED SAND							0.95	1.31

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SB-T2B-Swash Zone	0.0'	2	0.149	0.114	0.093	0.0			
☒ SB-T2B-Trough	0.0'	2	0.116	0.099	0.089	0.0			

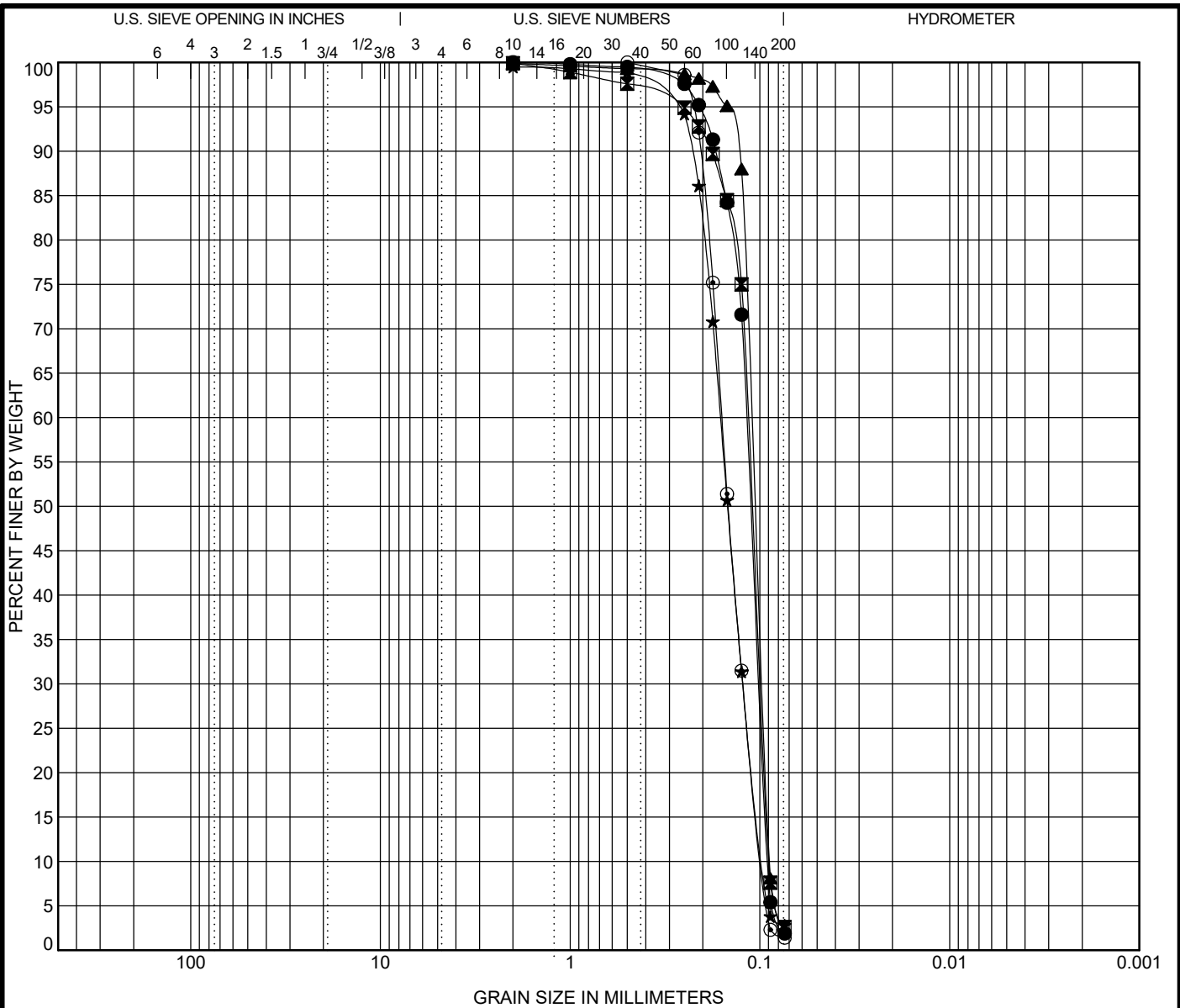
US GRAIN SIZE 6B G122361 SB.GPJ US LAB.GDT 9/16/22



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 Telephone: 361-883-4555
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GRAIN SIZE DISTRIBUTION


Project: Beach Sediment Analysis
 Location: Sargent Beach, Texas
 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● SB-T3-First Bar	0.0'	POORLY GRADED SAND				0.95	1.30
☒ SB-T3-Trough	0.0'	POORLY GRADED SAND				0.95	1.30
▲ SB-T3-Second Bar	0.0'	POORLY GRADED SAND				0.96	1.25
★ SB-T4-Toe of Dune	0.0'	POORLY GRADED SAND				0.98	1.69
◎ SB-T4-Mid Berm	0.0'	POORLY GRADED SAND				0.98	1.64

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SB-T3-First Bar	0.0'	2	0.118	0.1	0.09	0.0			
☒ SB-T3-Trough	0.0'	2	0.116	0.099	0.089	0.0			
▲ SB-T3-Second Bar	0.0'	2	0.111	0.097	0.089	0.0			
★ SB-T4-Toe of Dune	0.0'	2	0.161	0.123	0.095	0.0			
◎ SB-T4-Mid Berm	0.0'	0.5	0.159	0.123	0.097	0.0			

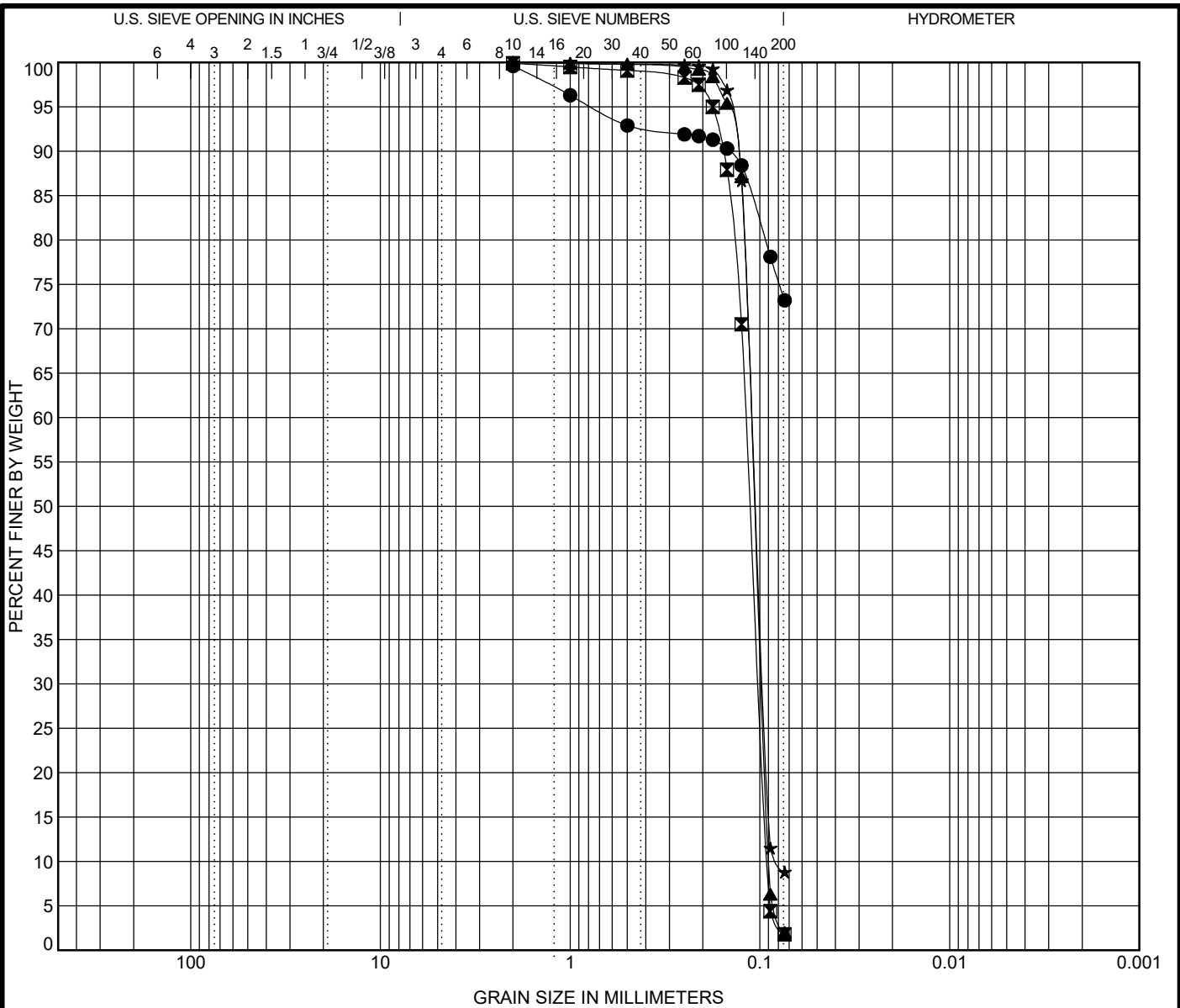


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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
Location: Sargent Beach, Texas
Number: G122361

US GRAIN SIZE 6 G122361 SB.GPJ US LAB.GDT 8/19/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● SB-T4-Swash Zone	0.0'	LEAN CLAY with SAND				--	--
☒ SB-T4-First Bar	0.0'	POORLY GRADED SAND				0.95	1.30
▲ SB-T4-Trough	0.0'	POORLY GRADED SAND				0.96	1.24
★ SB-T4-Second Bar	0.0'	POORLY GRADED SAND with SILT				1.04	1.38
						--	--

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SB-T4-Swash Zone	0.0'	2	--	--	--	0.0			
☒ SB-T4-First Bar	0.0'	2	0.118	0.101	0.091	0.0			
▲ SB-T4-Trough	0.0'	2	0.111	0.098	0.089	0.0			
★ SB-T4-Second Bar	0.0'	2	0.11	0.096	0.08	0.0			

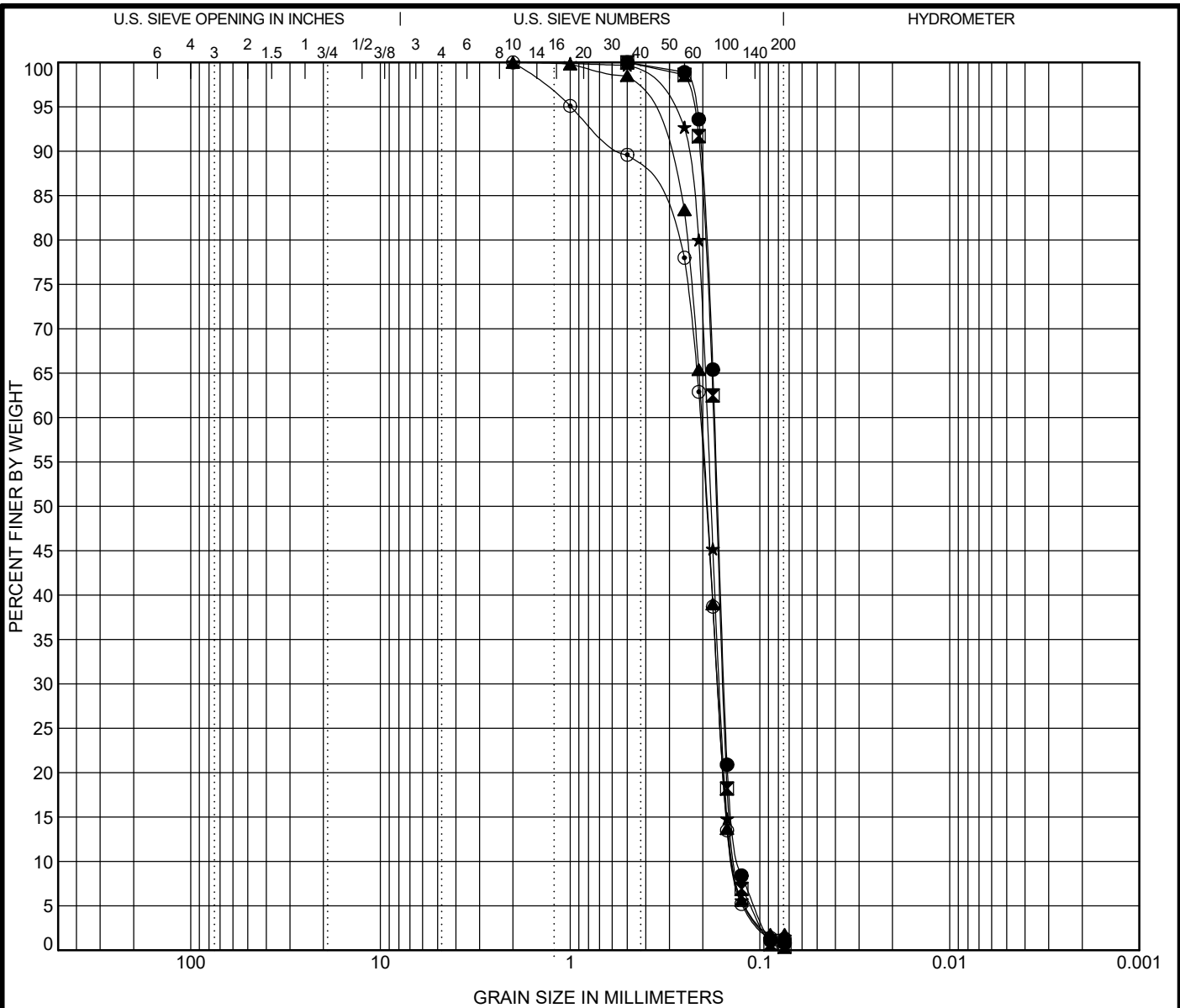


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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
 Location: Sargent Beach, Texas
 Number: G122361


US GRAIN SIZE 6 G122361 SB.GPJ US LAB.GDT 8/19/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MP-T1-Toe of Dune	0.0'	POORLY GRADED SAND				1.07	1.36
☒ MP-T1-Mid Berm	0.0'	POORLY GRADED SAND				1.06	1.34
▲ MP-T1-Swash Zone	0.0'	POORLY GRADED SAND				0.99	1.47
★ MP-T1-First Bar	0.0'	POORLY GRADED SAND				1.02	1.40
⊙ MP-T1-Trough	0.0'	POORLY GRADED SAND				0.98	1.49

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MP-T1-Toe of Dune	0.0'	0.5	0.173	0.154	0.128	0.0			
☒ MP-T1-Mid Berm	0.0'	0.5	0.175	0.156	0.131	0.0			
▲ MP-T1-Swash Zone	0.0'	2	0.203	0.166	0.138	0.0			
★ MP-T1-First Bar	0.0'	2	0.19	0.162	0.136	0.0			
⊙ MP-T1-Trough	0.0'	2	0.206	0.167	0.138	0.0			

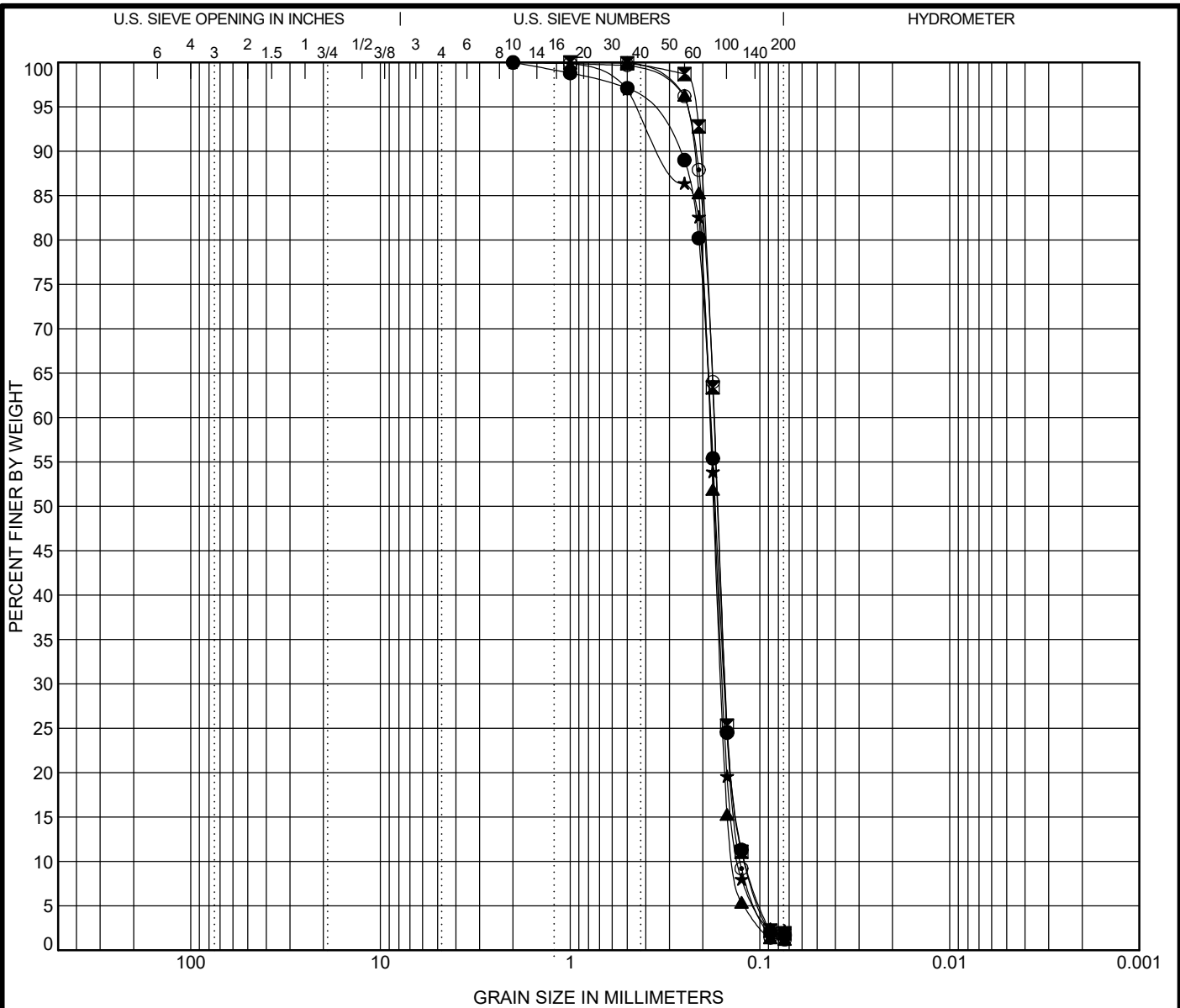


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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
Location: Matagorda Peninsula, Texas
Number: G122361

US GRAIN SIZE 7 G122361.MP.GPJ US LAB.GDT 8/1/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● MP-T1-Second Bar	0.0'	POORLY GRADED SAND							1.09	1.54
☒ MP-T2-Toe of Dune	0.0'	POORLY GRADED SAND							1.11	1.46
▲ MP-T2-Mid Berm	0.0'	POORLY GRADED SAND							1.02	1.36
★ MP-T2-Swash Zone	0.0'	POORLY GRADED SAND							1.04	1.42
◎ MP-T2-First Bar	0.0'	POORLY GRADED SAND							1.06	1.38
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● MP-T1-Second Bar	0.0'	2	0.183	0.154	0.119	0.0				
☒ MP-T2-Toe of Dune	0.0'	1	0.174	0.152	0.12	0.0				
▲ MP-T2-Mid Berm	0.0'	0.5	0.184	0.16	0.136	0.0				
★ MP-T2-Swash Zone	0.0'	2	0.184	0.157	0.129	0.0				
◎ MP-T2-First Bar	0.0'	2	0.174	0.153	0.126	0.0				

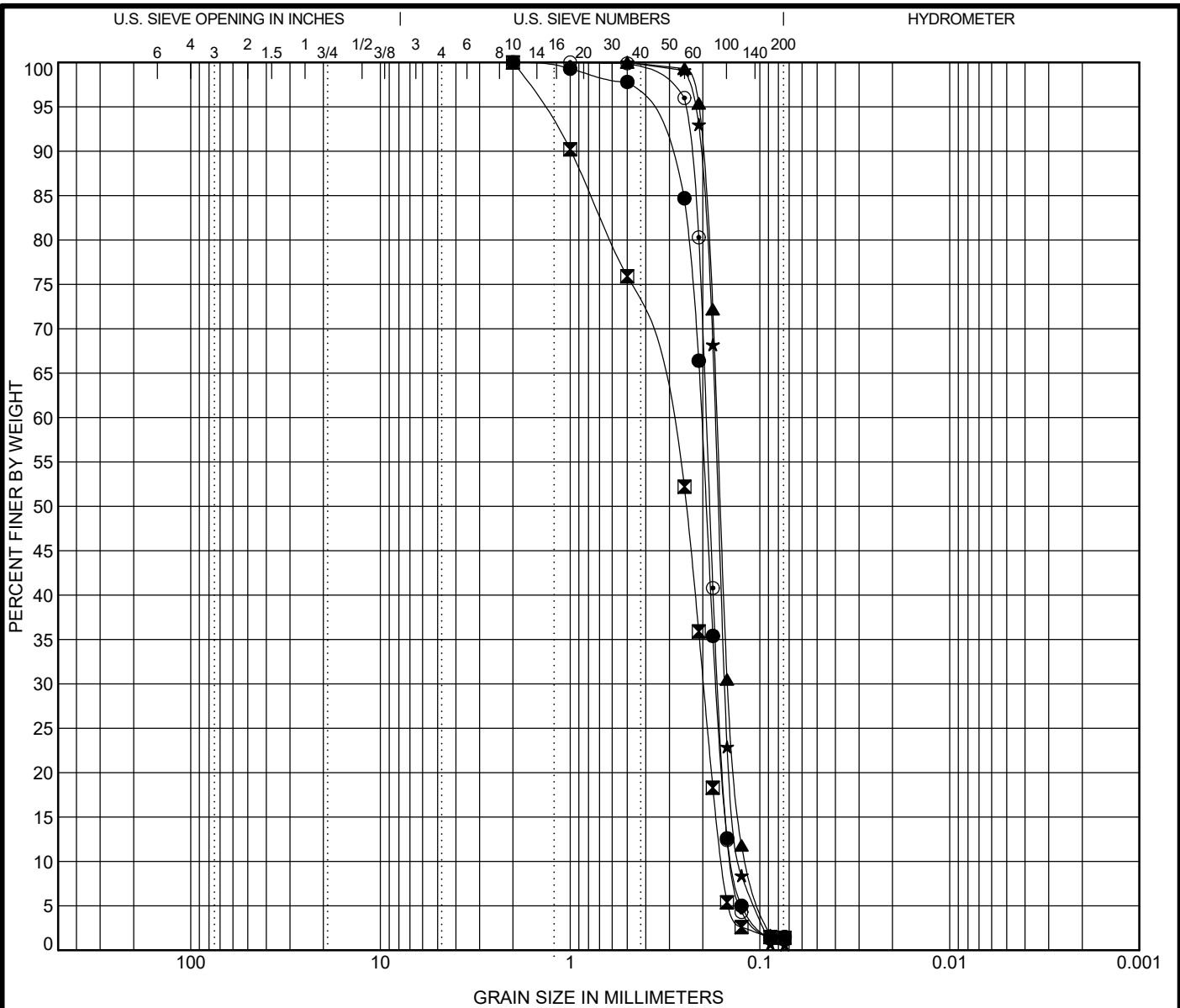
US GRAIN SIZE 7 G122361.MP.GPJ US LAB.GDT 8/1/22



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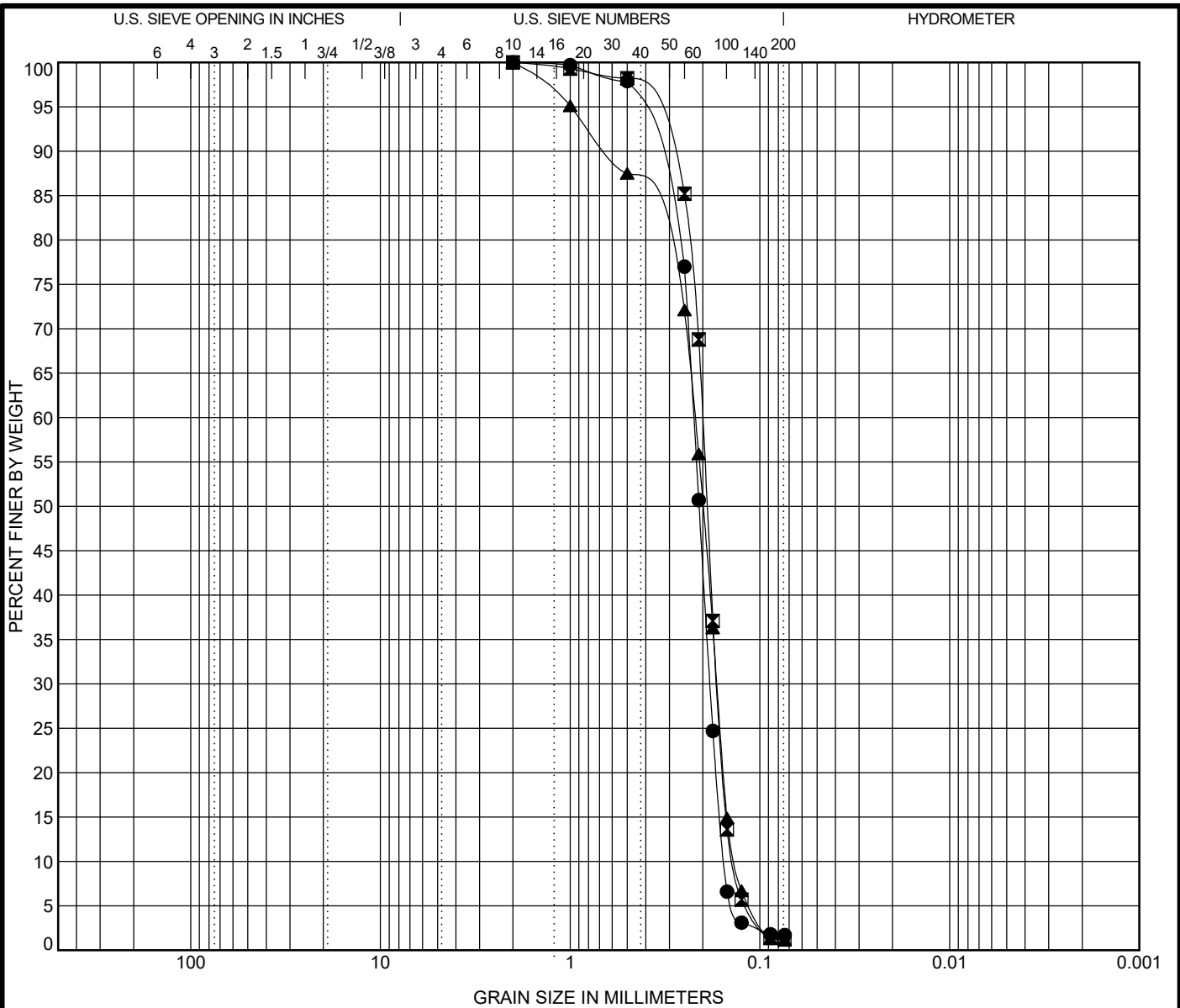
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MP-T2-Trough	0.0'	POORLY GRADED SAND				1.02	1.44
☒ MP-T2-Second Bar	0.0'	POORLY GRADED SAND				0.79	1.98
▲ MP-T3-Toe of Dune	0.0'	POORLY GRADED SAND				1.11	1.43
★ MP-T3-Mid Berm	0.0'	POORLY GRADED SAND				1.07	1.35
⊙ MP-T3-Swash Zone	0.0'	POORLY GRADED SAND				1.01	1.36

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MP-T2-Trough	0.0'	2	0.203	0.17	0.14	0.0			
☒ MP-T2-Second Bar	0.0'	2	0.314	0.198	0.158	0.0			
▲ MP-T3-Toe of Dune	0.0'	0.5	0.168	0.148	0.117	0.0			
★ MP-T3-Mid Berm	0.0'	0.5	0.172	0.153	0.127	0.0			
⊙ MP-T3-Swash Zone	0.0'	1	0.192	0.166	0.141	0.0			

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	Location: Matagorda Peninsula, Texas	
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MP-T3-First Bar	0.0'	POORLY GRADED SAND				0.98	1.45
⊠ MP-T3-Trough	0.0'	POORLY GRADED SAND				1.02	1.46
▲ MP-T3-Second Bar	0.0'	POORLY GRADED SAND				0.96	1.64

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MP-T3-First Bar	0.0'	2	0.223	0.183	0.154	0.0			
⊠ MP-T3-Trough	0.0'	2	0.2	0.168	0.138	0.0			
▲ MP-T3-Second Bar	0.0'	2	0.219	0.168	0.134	0.0			

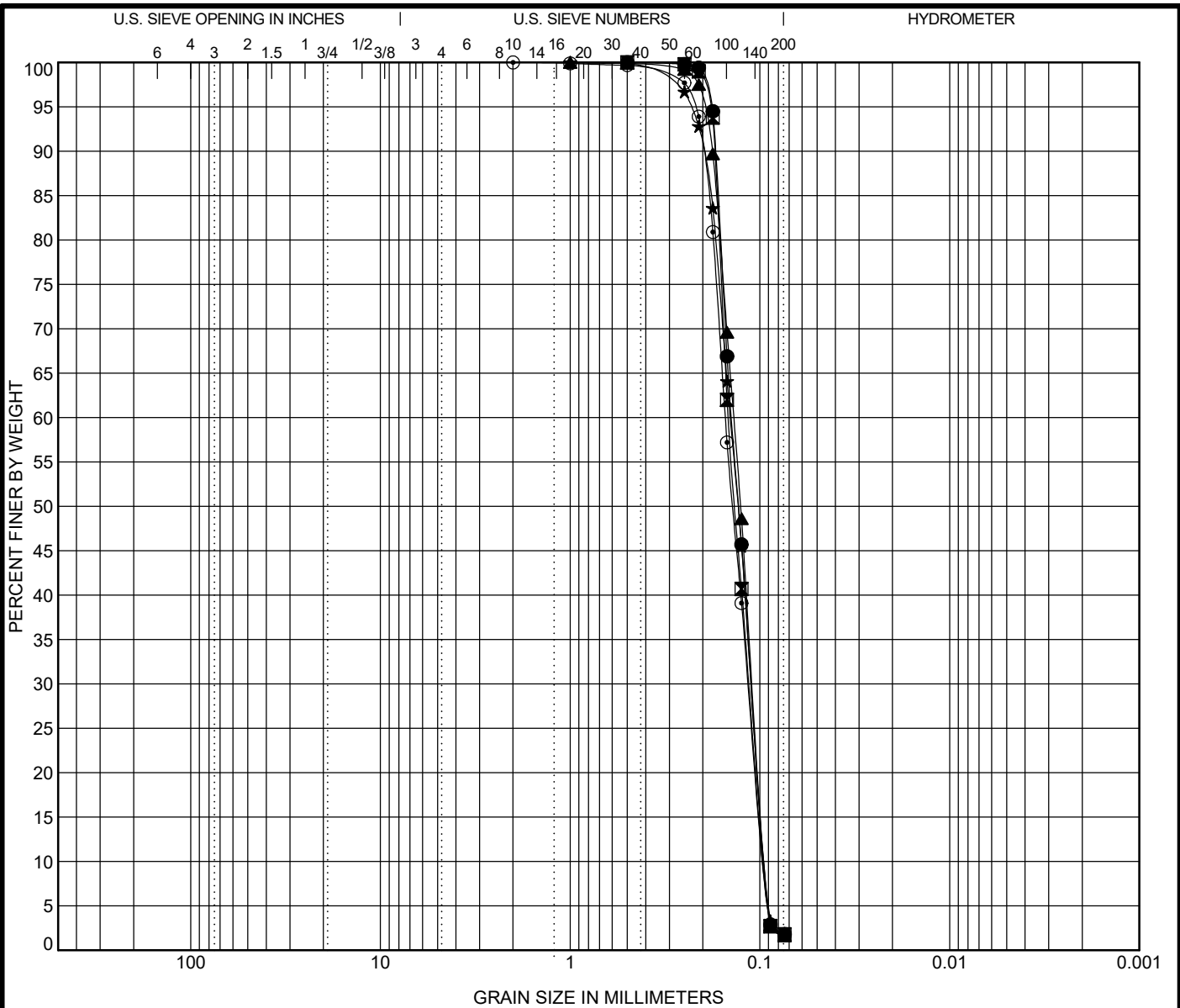


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIN-T1-Toe of Dune	0.0'	POORLY GRADED SAND				0.92	1.51
☒ MIN-T1-Mid Berm	0.0'	POORLY GRADED SAND				0.93	1.56
▲ MIN-T1-Swash Zone	0.0'	POORLY GRADED SAND				0.92	1.48
★ MIN-T1-First Bar	0.0'	POORLY GRADED SAND				0.91	1.54
◎ MIN-T1-Trough	0.0'	POORLY GRADED SAND				0.91	1.61

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIN-T1-Toe of Dune	0.0'	0.5	0.141	0.11	0.093	0.0			
☒ MIN-T1-Mid Berm	0.0'	0.5	0.147	0.113	0.094	0.0			
▲ MIN-T1-Swash Zone	0.0'	1	0.138	0.108	0.093	0.0			
★ MIN-T1-First Bar	0.0'	1	0.143	0.11	0.093	0.0			
◎ MIN-T1-Trough	0.0'	2	0.152	0.114	0.094	0.0			

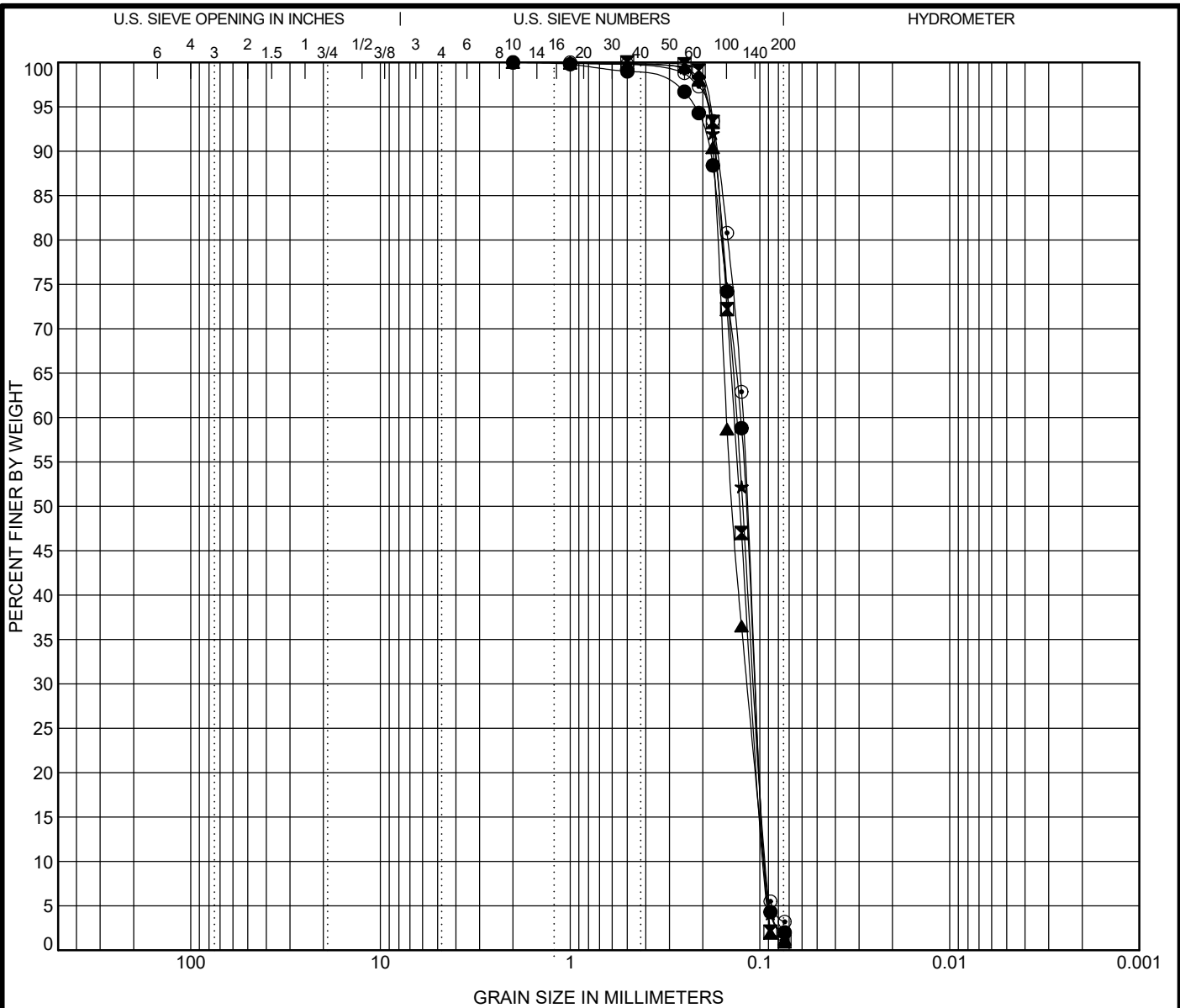
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIN-T1-Second Bar	0.0'	POORLY GRADED SAND				0.93	1.39
☒ MIN-T2-Toe of Dune	0.0'	POORLY GRADED SAND				0.94	1.46
▲ MIN-T2-Mid Berm	0.0'	POORLY GRADED SAND				0.96	1.57
★ MIN-T2-Swash Zone	0.0'	POORLY GRADED SAND				0.93	1.45
◎ MIN-T2-First Bar	0.0'	POORLY GRADED SAND				0.94	1.36

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIN-T1-Second Bar	0.0'	2	0.127	0.104	0.091	0.0			
☒ MIN-T2-Toe of Dune	0.0'	0.5	0.137	0.109	0.094	0.0			
▲ MIN-T2-Mid Berm	0.0'	2	0.15	0.117	0.096	0.0			
★ MIN-T2-Swash Zone	0.0'	1	0.133	0.106	0.092	0.0			
◎ MIN-T2-First Bar	0.0'	1	0.123	0.102	0.09	0.0			

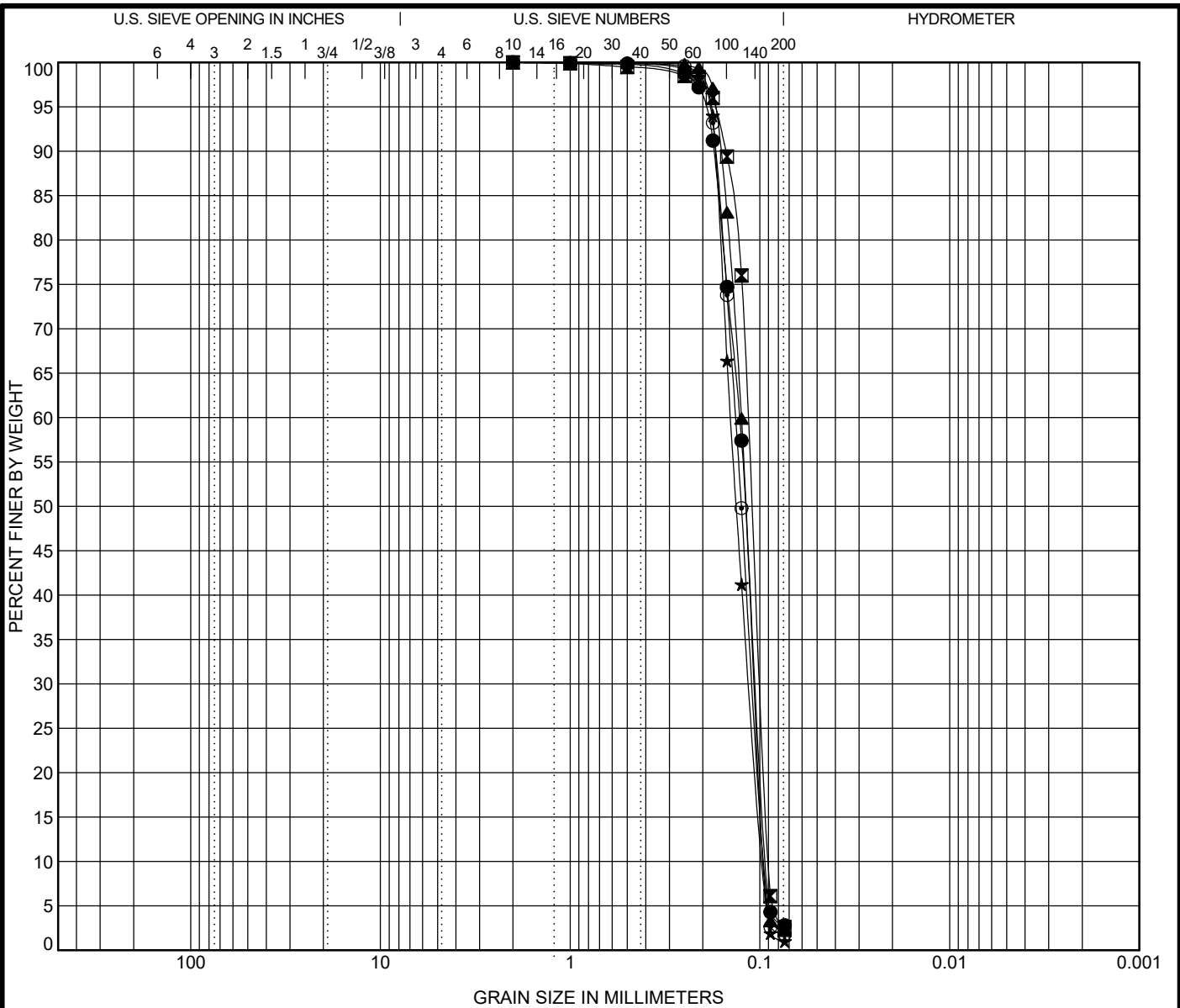


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification					LL	PL	PI	Cc	Cu
● MIN-T2-Trough	0.0'	POORLY GRADED SAND								0.93	1.40
☒ MIN-T2-Second Bar	0.0'	POORLY GRADED SAND								0.95	1.29
▲ MIN-T3-Toe of Dune	0.0'	POORLY GRADED SAND								0.94	1.36
★ MIN-T3-Mid Berm	0.0'	POORLY GRADED SAND								0.95	1.51
⊙ MIN-T3-Swash Zone	0.0'	POORLY GRADED SAND								0.93	1.45

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIN-T2-Trough	0.0'	2	0.128	0.104	0.091	0.0			
☒ MIN-T2-Second Bar	0.0'	2	0.115	0.099	0.09	0.0			
▲ MIN-T3-Toe of Dune	0.0'	0.5	0.125	0.104	0.092	0.0			
★ MIN-T3-Mid Berm	0.0'	1	0.142	0.113	0.095	0.0			
⊙ MIN-T3-Swash Zone	0.0'	2	0.135	0.108	0.093	0.0			

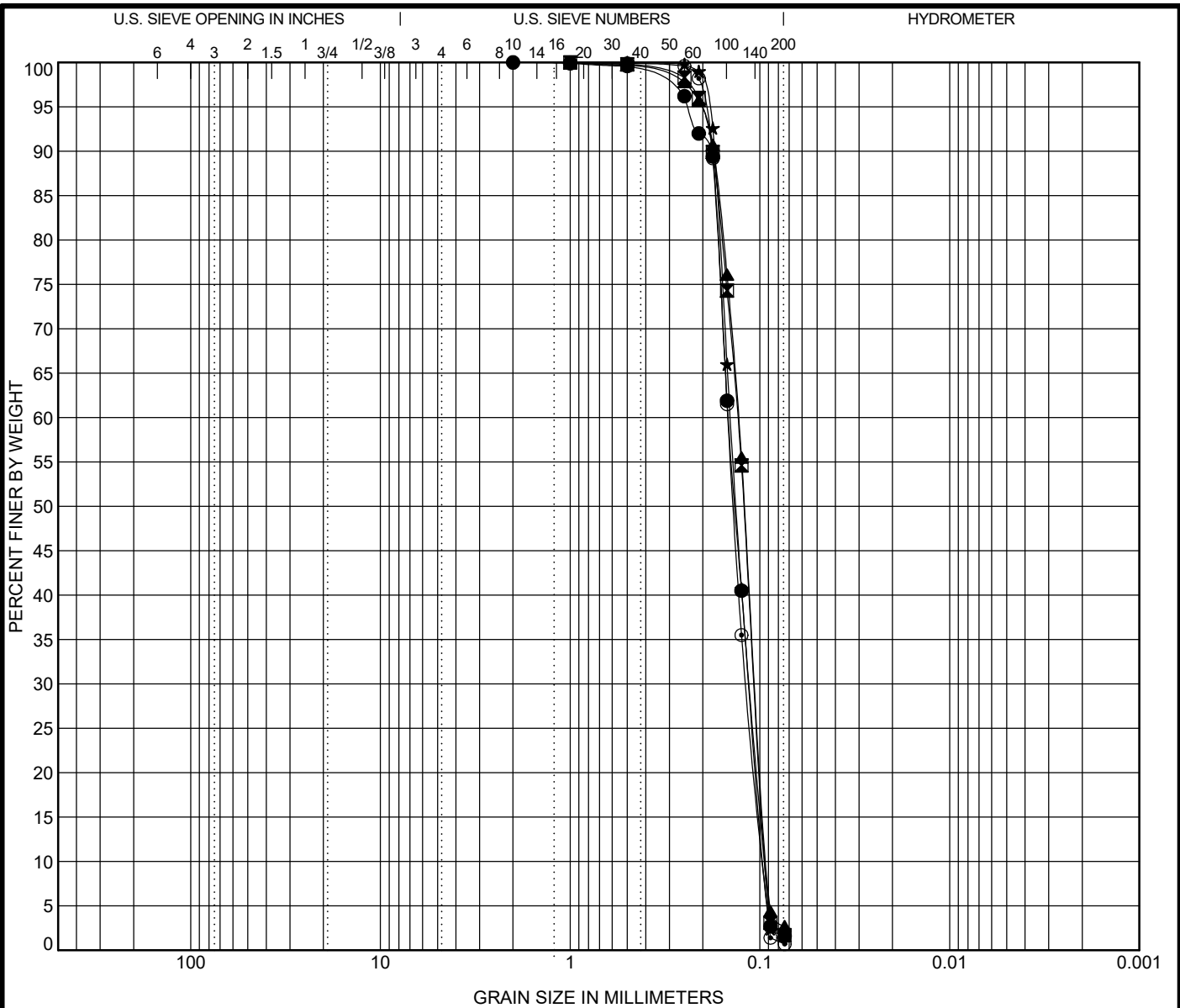


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIN-T3-First Bar	0.0'	POORLY GRADED SAND				0.93	1.56
☒ MIN-T3-Trough	0.0'	POORLY GRADED SAND				0.92	1.42
▲ MIN-T3-Second Bar	0.0'	POORLY GRADED SAND				0.93	1.42
★ MIN-T4-Toe of Dune	0.0'	POORLY GRADED SAND				0.95	1.51
◎ MIN-T4-Mid Berm	0.0'	POORLY GRADED SAND				0.98	1.53

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIN-T3-First Bar	0.0'	2	0.147	0.113	0.094	0.0			
☒ MIN-T3-Trough	0.0'	1	0.131	0.106	0.092	0.0			
▲ MIN-T3-Second Bar	0.0'	1	0.13	0.105	0.091	0.0			
★ MIN-T4-Toe of Dune	0.0'	0.5	0.143	0.113	0.094	0.0			
◎ MIN-T4-Mid Berm	0.0'	1	0.147	0.118	0.096	0.0			

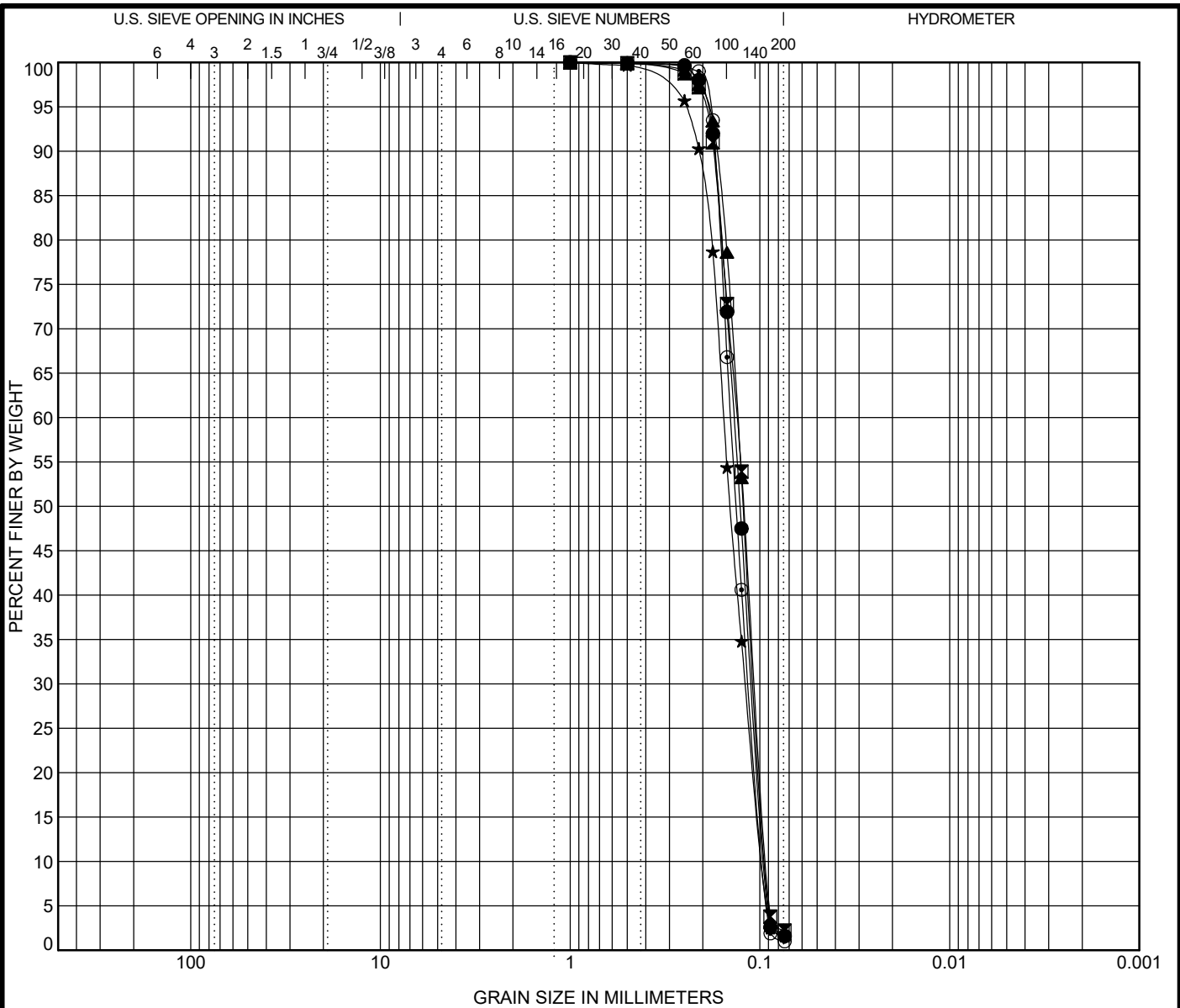


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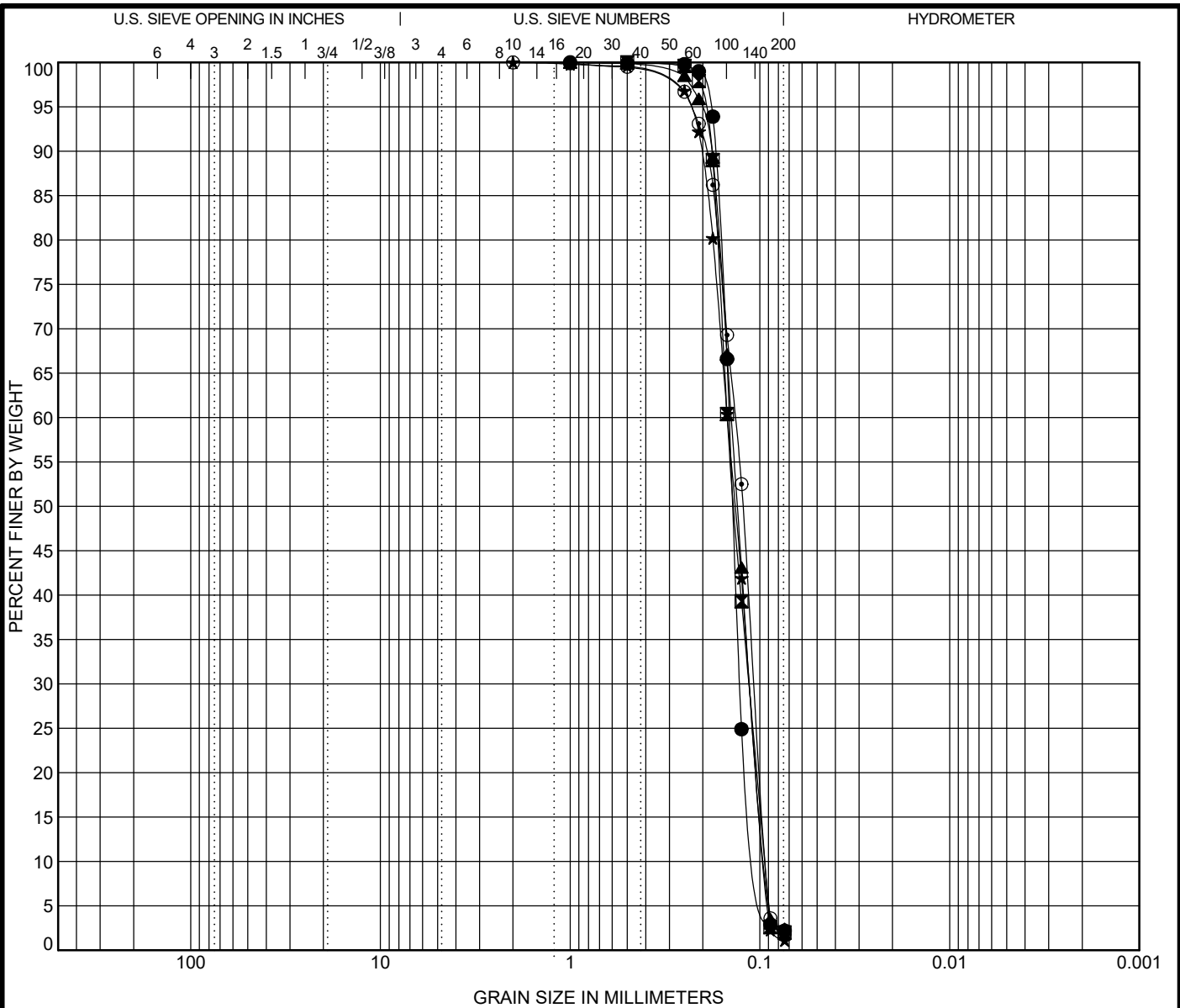
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIN-T4-Swash Zone	0.0'	POORLY GRADED SAND				0.93	1.47
☒ MIN-T4-First Bar	0.0'	POORLY GRADED SAND				0.92	1.44
▲ MIN-T4-Trough	0.0'	POORLY GRADED SAND				0.93	1.42
★ MIN-T4-Second Bar	0.0'	POORLY GRADED SAND				0.95	1.62
◎ MIN-T5-Toe of Dune	0.0'	POORLY GRADED SAND				0.96	1.50

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIN-T4-Swash Zone	0.0'	1	0.137	0.109	0.093	0.0			
☒ MIN-T4-First Bar	0.0'	1	0.132	0.106	0.092	0.0			
▲ MIN-T4-Trough	0.0'	1	0.131	0.106	0.092	0.0			
★ MIN-T4-Second Bar	0.0'	1	0.155	0.119	0.095	0.0			
◎ MIN-T5-Toe of Dune	0.0'	1	0.142	0.114	0.095	0.0			

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	Location: Mustang Island North, Texas	
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US GRAIN SIZE 8 G122361 MIN.GPJ US LAB.GDT 8/12/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIN-T5-Mid Berm	0.0'	POORLY GRADED SAND				1.14	1.47
☒ MIN-T5-Swash Zone	0.0'	POORLY GRADED SAND				0.93	1.57
▲ MIN-T5-First Bar	0.0'	POORLY GRADED SAND				0.94	1.52
★ MIN-T5-Trough	0.0'	POORLY GRADED SAND				0.90	1.58
⊙ MIN-T5-Second Bar	0.0'	POORLY GRADED SAND				0.91	1.47

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIN-T5-Mid Berm	0.0'	1	0.145	0.128	0.099	0.0			
☒ MIN-T5-Swash Zone	0.0'	0.5	0.149	0.114	0.094	0.0			
▲ MIN-T5-First Bar	0.0'	1	0.141	0.111	0.093	0.0			
★ MIN-T5-Trough	0.0'	2	0.148	0.112	0.094	0.0			
⊙ MIN-T5-Second Bar	0.0'	2	0.135	0.106	0.092	0.0			

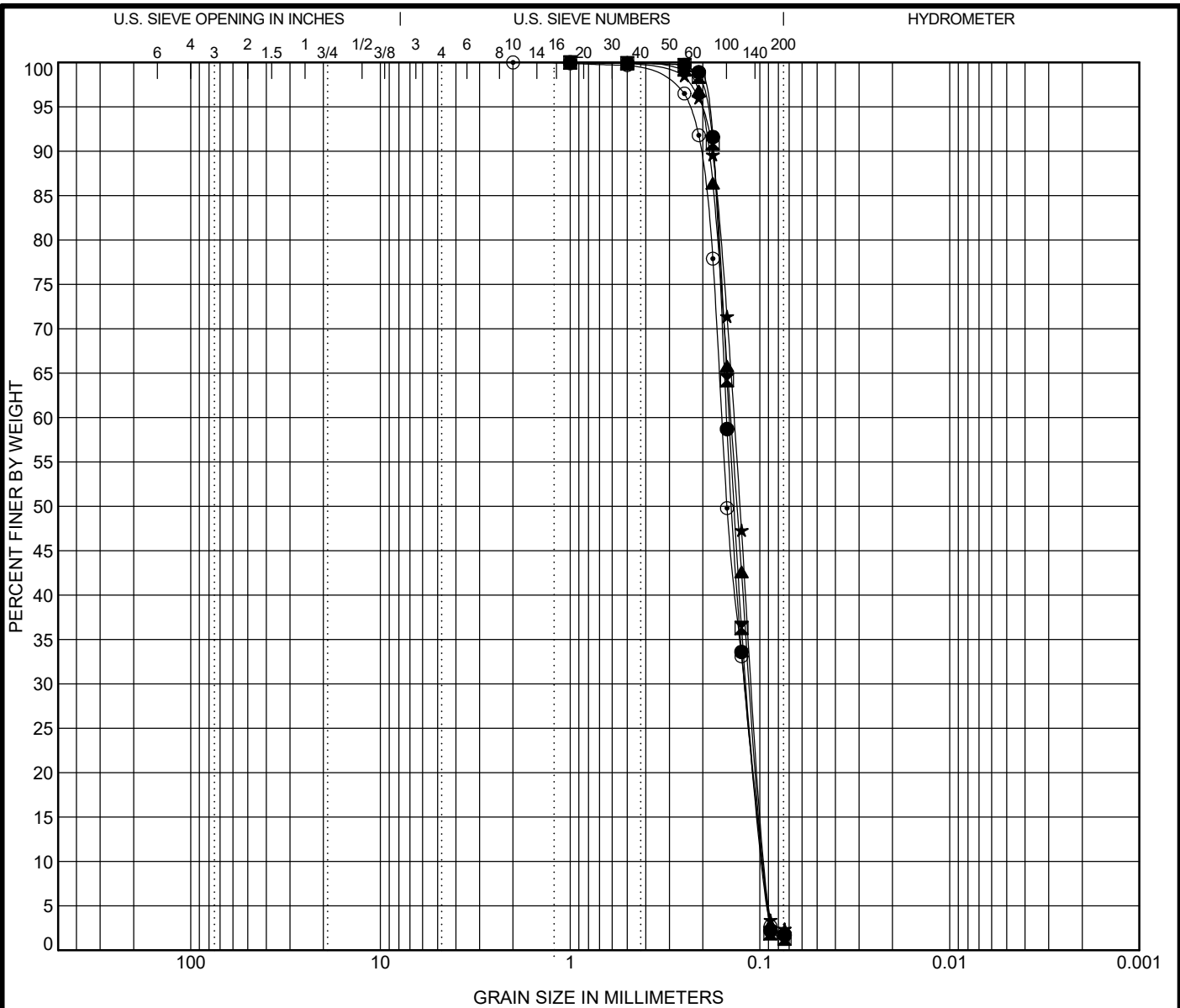
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Project: Beach Sediment Analysis
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIN-T6-Toe of Dune	0.0'	POORLY GRADED SAND				1.00	1.56
☒ MIN-T6-Mid Berm	0.0'	POORLY GRADED SAND				0.99	1.52
▲ MIN-T6-Swash Zone	0.0'	POORLY GRADED SAND				0.94	1.52
★ MIN-T6-First Bar	0.0'	POORLY GRADED SAND				0.93	1.48
◎ MIN-T6-Trough	0.0'	POORLY GRADED SAND				0.96	1.66

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIN-T6-Toe of Dune	0.0'	1	0.15	0.12	0.096	0.0			
☒ MIN-T6-Mid Berm	0.0'	1	0.145	0.117	0.096	0.0			
▲ MIN-T6-Swash Zone	0.0'	0.5	0.143	0.112	0.094	0.0			
★ MIN-T6-First Bar	0.0'	1	0.137	0.109	0.093	0.0			
◎ MIN-T6-Trough	0.0'	2	0.159	0.121	0.096	0.0			

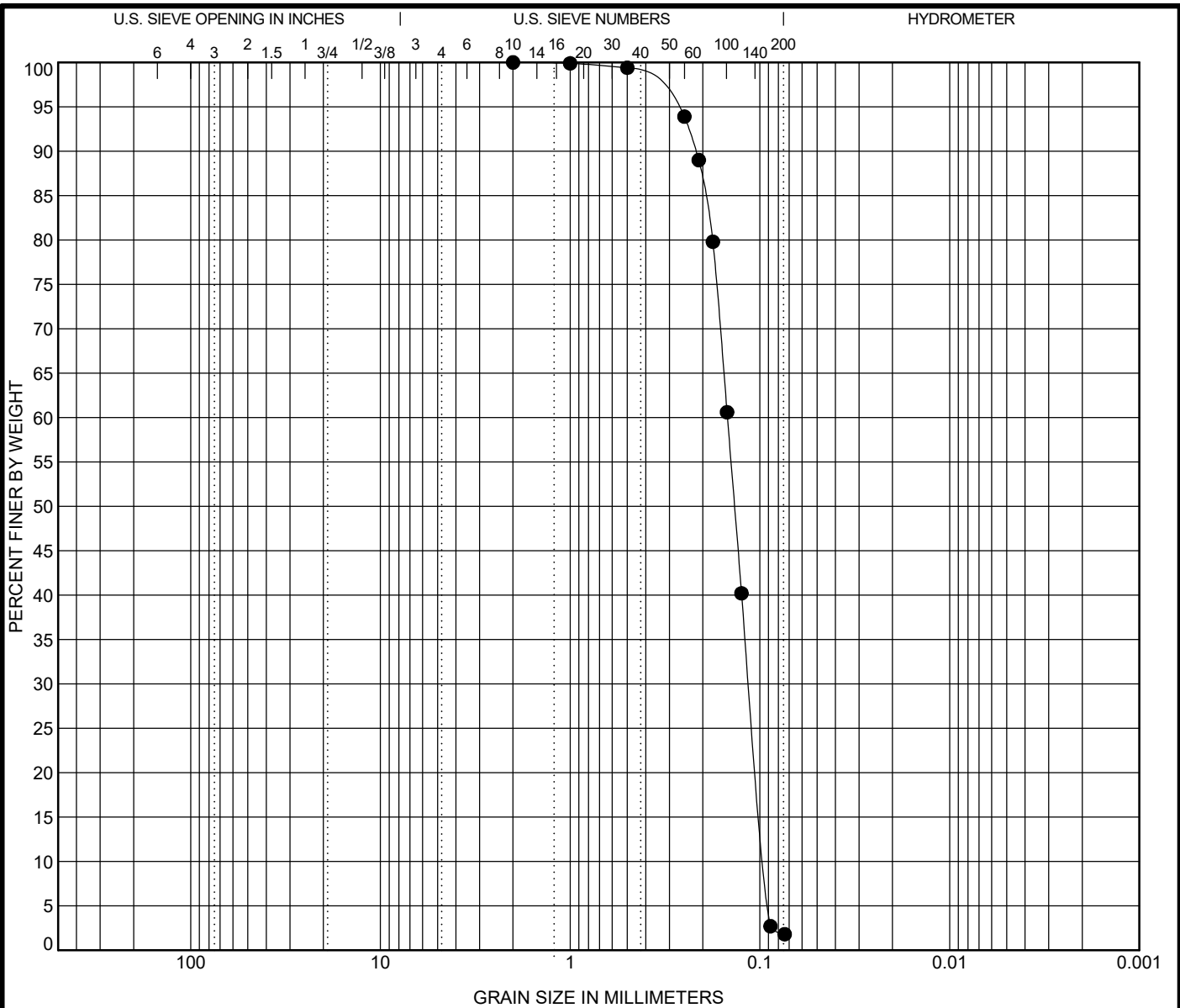
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIN-T6-Second Bar	0.0'	POORLY GRADED SAND				0.92	1.57

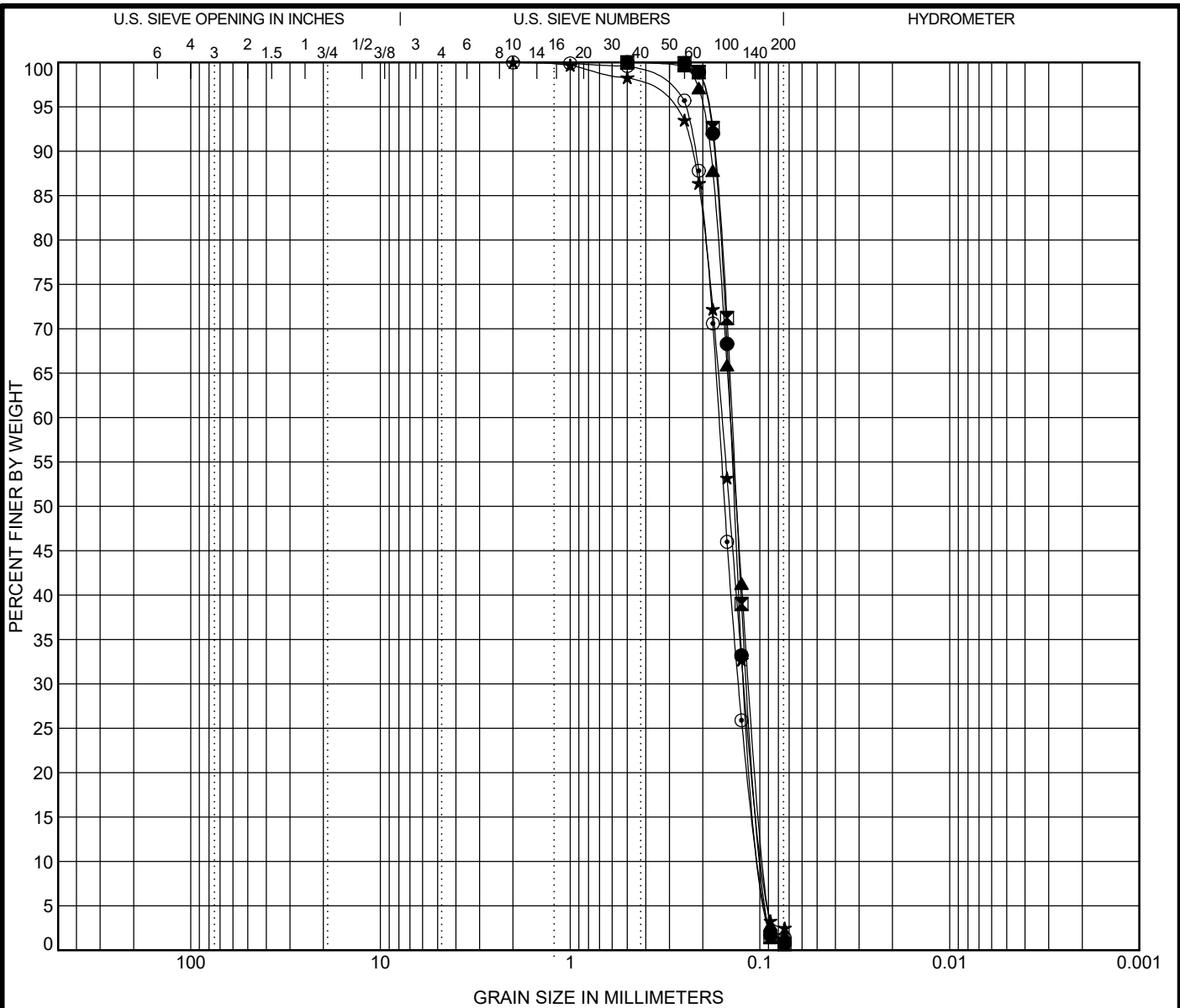
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIN-T6-Second Bar	0.0'	2	0.148	0.114	0.094	0.0			



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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIC-T1-Toe of Dune	0.0'	POORLY GRADED SAND				1.05	1.48
☒ MIC-T1-Mid Berm	0.0'	POORLY GRADED SAND				0.99	1.47
▲ MIC-T1-Swash Zone	0.0'	POORLY GRADED SAND				0.95	1.52
★ MIC-T1-First Bar	0.0'	POORLY GRADED SAND				0.97	1.66
⊙ MIC-T1-Trough	0.0'	POORLY GRADED SAND				1.03	1.66

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIC-T1-Toe of Dune	0.0'	0.5	0.143	0.121	0.097	0.0			
☒ MIC-T1-Mid Berm	0.0'	0.5	0.14	0.115	0.095	0.0			
▲ MIC-T1-Swash Zone	0.0'	0.5	0.143	0.113	0.094	0.0			
★ MIC-T1-First Bar	0.0'	2	0.158	0.121	0.095	0.0			
⊙ MIC-T1-Trough	0.0'	2	0.164	0.13	0.099	0.0			

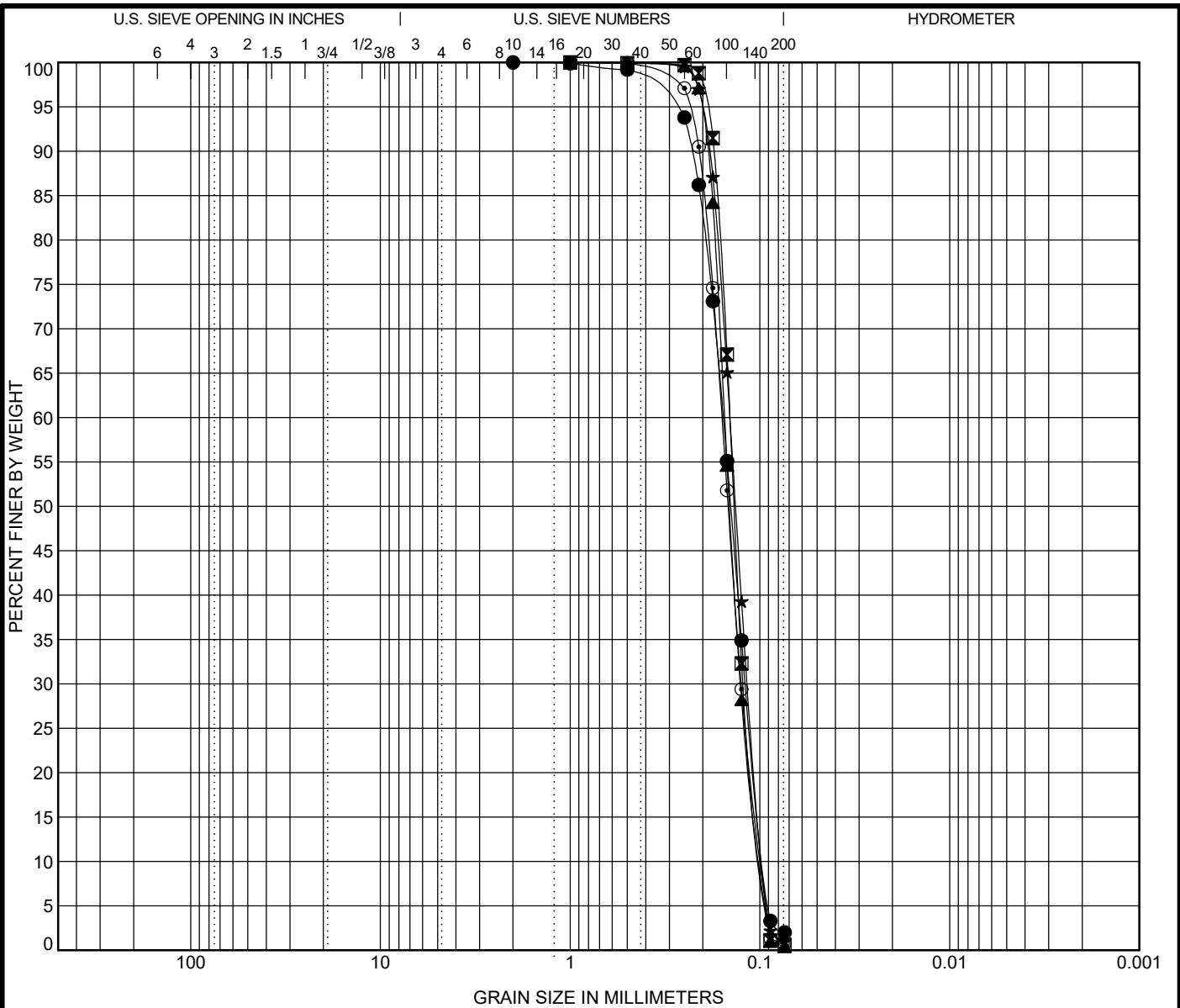
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIC-T1-Second Bar	0.0'	POORLY GRADED SAND				0.95	1.65
☒ MIC-T2-Toe of Dune	0.0'	POORLY GRADED SAND				1.06	1.48
▲ MIC-T2-Mid Berm	0.0'	POORLY GRADED SAND				1.05	1.56
★ MIC-T2-Swash Zone	0.0'	POORLY GRADED SAND				0.96	1.52
◎ MIC-T2-First Bar	0.0'	POORLY GRADED SAND				1.01	1.62

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIC-T1-Second Bar	0.0'	2	0.156	0.118	0.095	0.0			
☒ MIC-T2-Toe of Dune	0.0'	1	0.144	0.122	0.097	0.0			
▲ MIC-T2-Mid Berm	0.0'	0.5	0.154	0.127	0.099	0.0			
★ MIC-T2-Swash Zone	0.0'	0.5	0.144	0.114	0.095	0.0			
◎ MIC-T2-First Bar	0.0'	1	0.159	0.126	0.098	0.0			

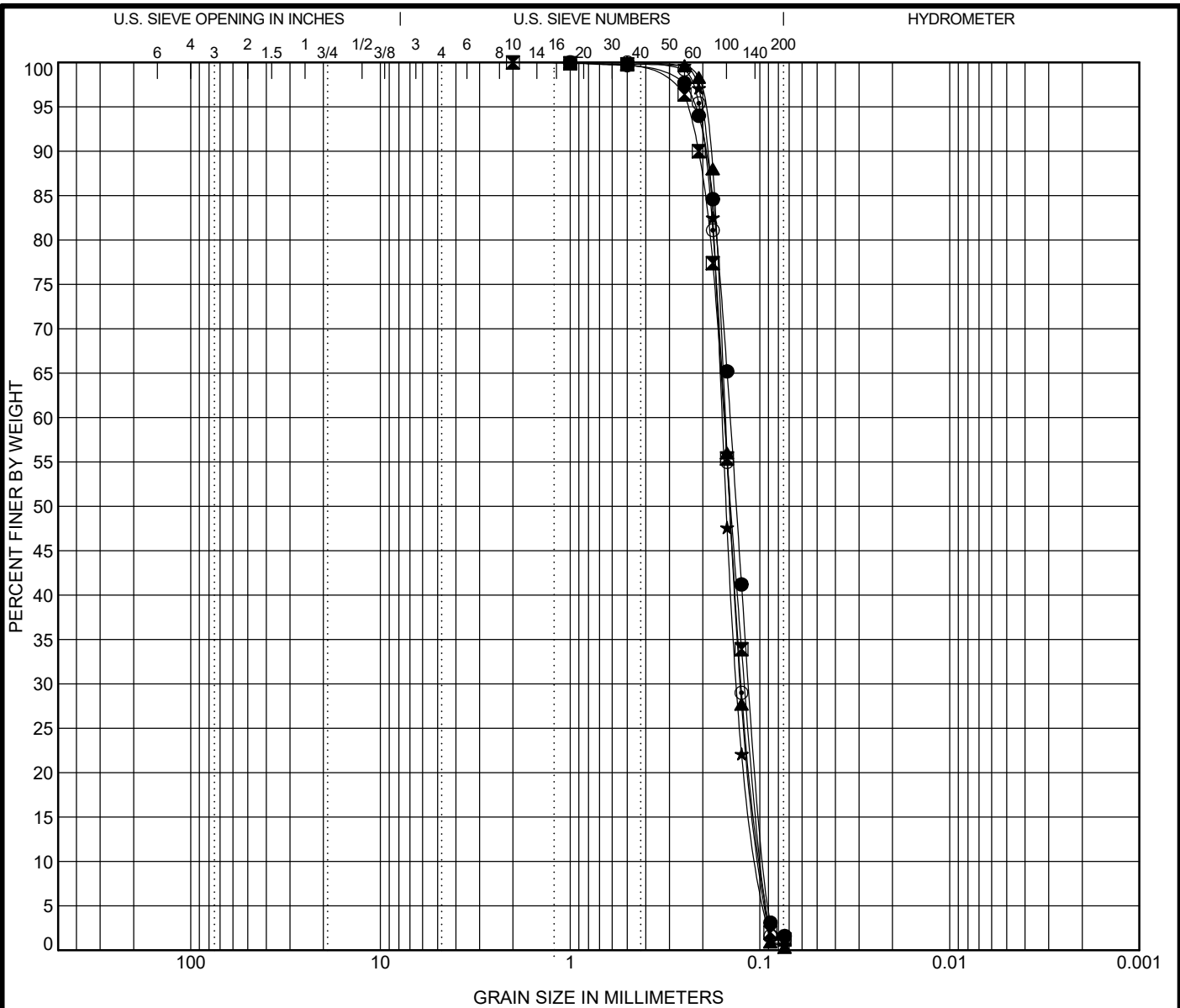
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 Location: Mustang Island Central, Texas
 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● MIC-T2-Trough	0.0'	POORLY GRADED SAND							0.95	1.53
☒ MIC-T2-Second Bar	0.0'	POORLY GRADED SAND							0.97	1.61
▲ MIC-T3-Toe of Dune	0.0'	POORLY GRADED SAND							1.07	1.54
★ MIC-T3-Mid Berm	0.0'	POORLY GRADED SAND							1.08	1.55
◎ MIC-T3-Swash Zone	0.0'	POORLY GRADED SAND							1.05	1.57

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIC-T2-Trough	0.0'	1	0.143	0.113	0.094	0.0			
☒ MIC-T2-Second Bar	0.0'	2	0.154	0.12	0.096	0.0			
▲ MIC-T3-Toe of Dune	0.0'	1	0.152	0.127	0.099	0.0			
★ MIC-T3-Mid Berm	0.0'	0.5	0.158	0.132	0.102	0.0			
◎ MIC-T3-Swash Zone	0.0'	0.5	0.154	0.126	0.098	0.0			

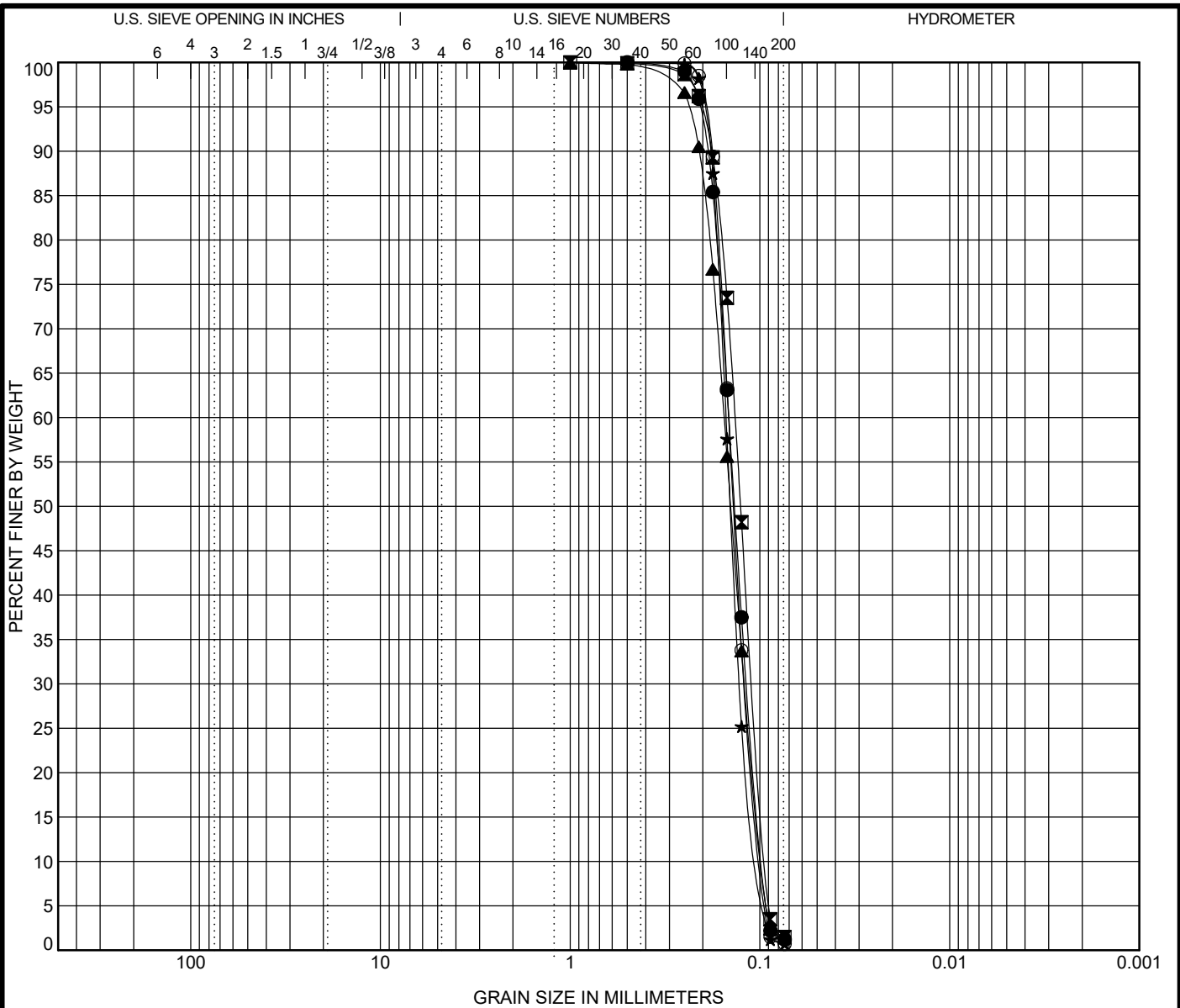


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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
Location: Mustang Island Central, Texas
Number: G122361


US GRAIN SIZE 9 G122361.MIC.GFJ US LAB.GDT 8/18/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIC-T3-First Bar	0.0'	POORLY GRADED SAND				0.97	1.53
☒ MIC-T3-Trough	0.0'	POORLY GRADED SAND				0.93	1.47
▲ MIC-T3-Second Bar	0.0'	POORLY GRADED SAND				0.97	1.61
★ MIC-T4-Toe of Dune	0.0'	POORLY GRADED SAND				1.09	1.51
⊙ MIC-T4-Mid Berm	0.0'	POORLY GRADED SAND				1.02	1.51

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIC-T3-First Bar	0.0'	0.5	0.146	0.116	0.095	0.0			
☒ MIC-T3-Trough	0.0'	1	0.136	0.108	0.093	0.0			
▲ MIC-T3-Second Bar	0.0'	1	0.154	0.12	0.096	0.0			
★ MIC-T4-Toe of Dune	0.0'	0.5	0.151	0.128	0.1	0.0			
⊙ MIC-T4-Mid Berm	0.0'	0.5	0.146	0.12	0.097	0.0			

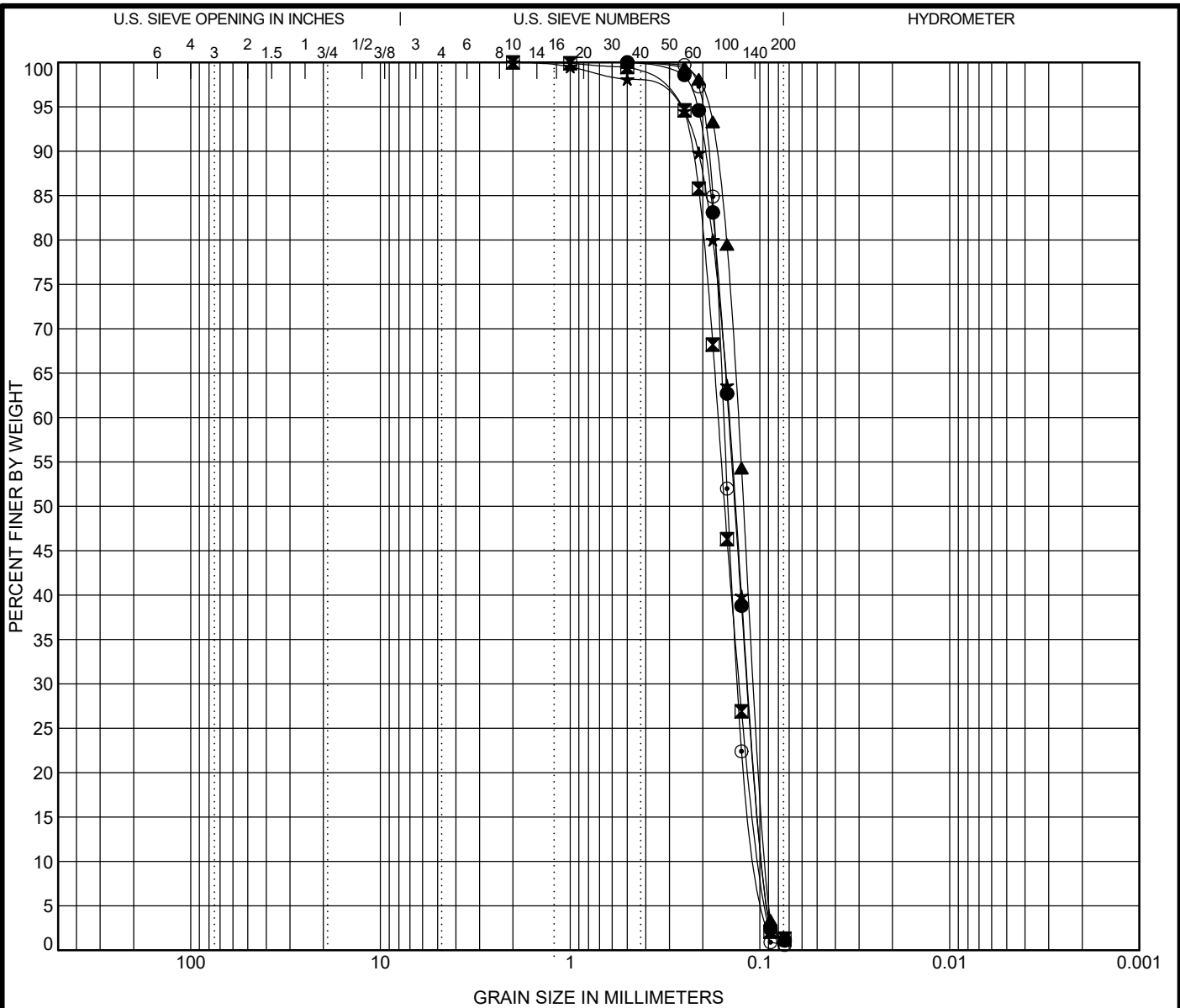


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● MIC-T4-Swash Zone	0.0'	POORLY GRADED SAND							0.95	1.54
☒ MIC-T4-First Bar	0.0'	POORLY GRADED SAND							1.01	1.69
▲ MIC-T4-Trough	0.0'	POORLY GRADED SAND							0.93	1.41
★ MIC-T4-Second Bar	0.0'	POORLY GRADED SAND							0.95	1.53
⊙ MIC-T5-Toe of Dune	0.0'	POORLY GRADED SAND							1.08	1.52
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● MIC-T4-Swash Zone	0.0'	0.5	0.146	0.115	0.095	0.0				
☒ MIC-T4-First Bar	0.0'	2	0.166	0.129	0.098	0.0				
▲ MIC-T4-Trough	0.0'	0.5	0.13	0.106	0.092	0.0				
★ MIC-T4-Second Bar	0.0'	2	0.145	0.114	0.095	0.0				
⊙ MIC-T5-Toe of Dune	0.0'	0.5	0.155	0.131	0.102	0.0				

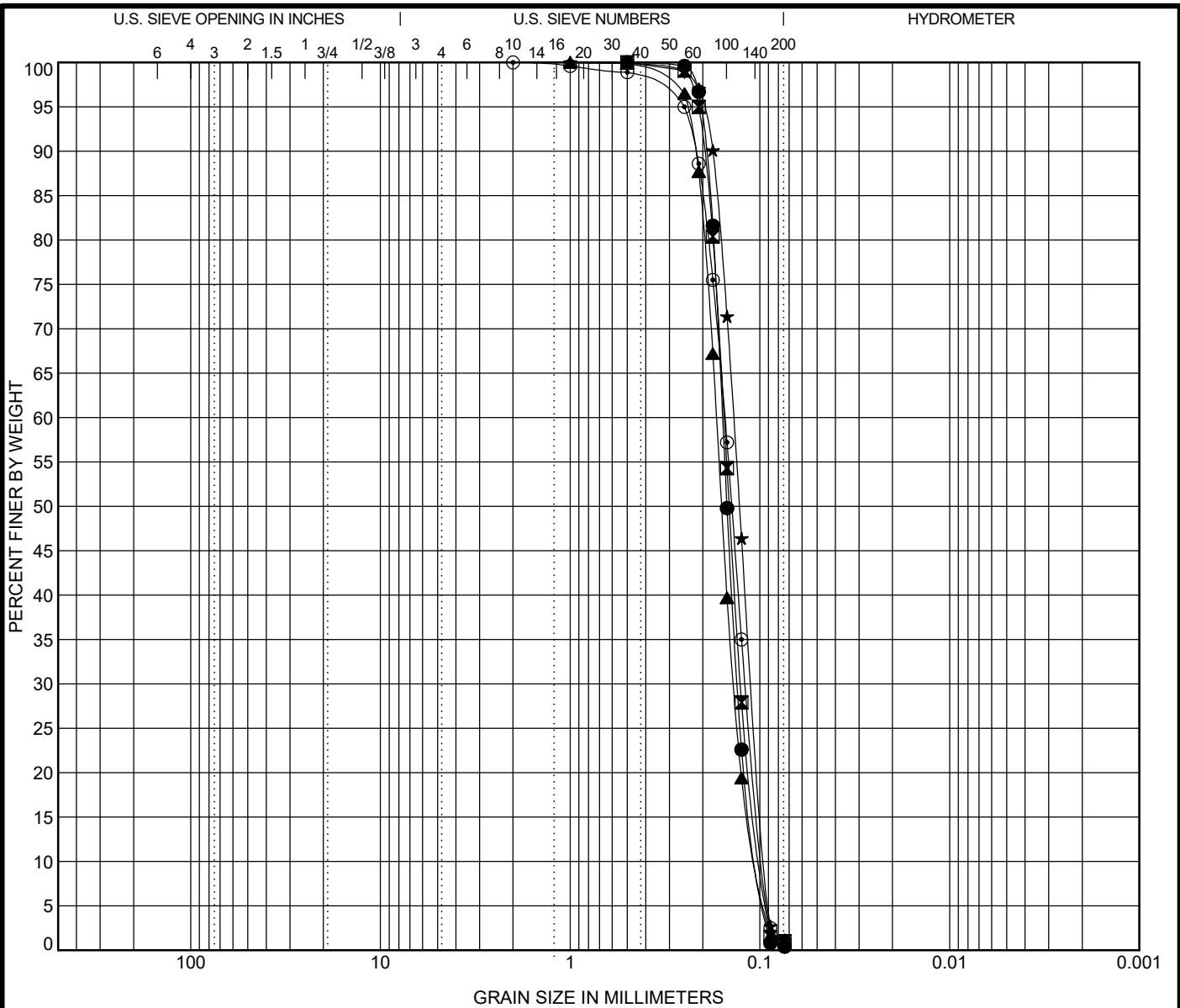
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIC-T5-Mid Berm	0.0'	POORLY GRADED SAND				1.07	1.54
⊠ MIC-T5-Swash Zone	0.0'	POORLY GRADED SAND				1.05	1.57
▲ MIC-T5-First Bar	0.0'	POORLY GRADED SAND				1.07	1.63
★ MIC-T5-Trough	0.0'	POORLY GRADED SAND				0.94	1.47
⊙ MIC-T5-Second Bar	0.0'	POORLY GRADED SAND				0.96	1.60

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIC-T5-Mid Berm	0.0'	0.5	0.157	0.131	0.102	0.0			
⊠ MIC-T5-Swash Zone	0.0'	0.5	0.155	0.127	0.099	0.0			
▲ MIC-T5-First Bar	0.0'	1	0.169	0.137	0.104	0.0			
★ MIC-T5-Trough	0.0'	1	0.138	0.11	0.093	0.0			
⊙ MIC-T5-Second Bar	0.0'	2	0.153	0.118	0.095	0.0			

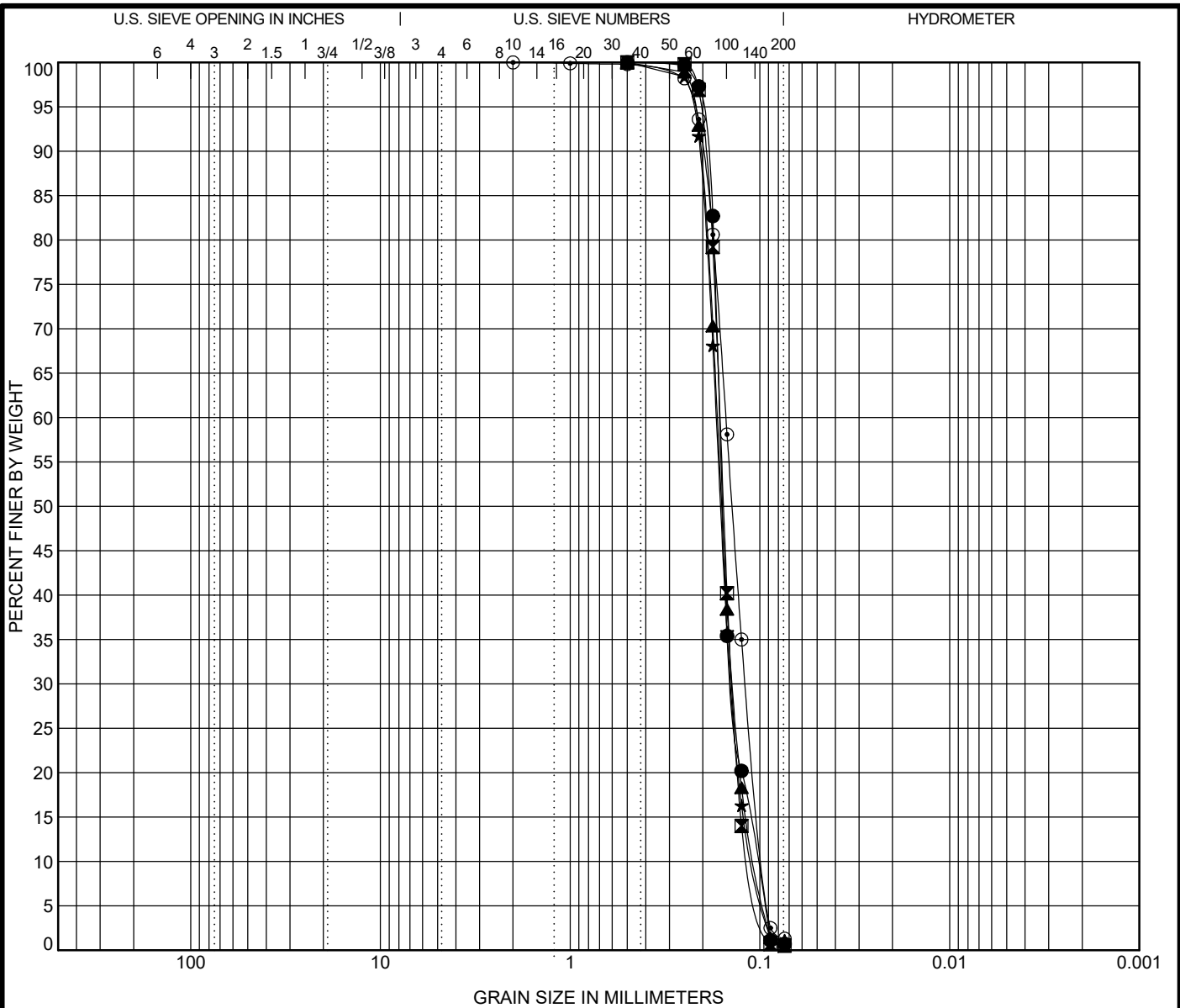


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

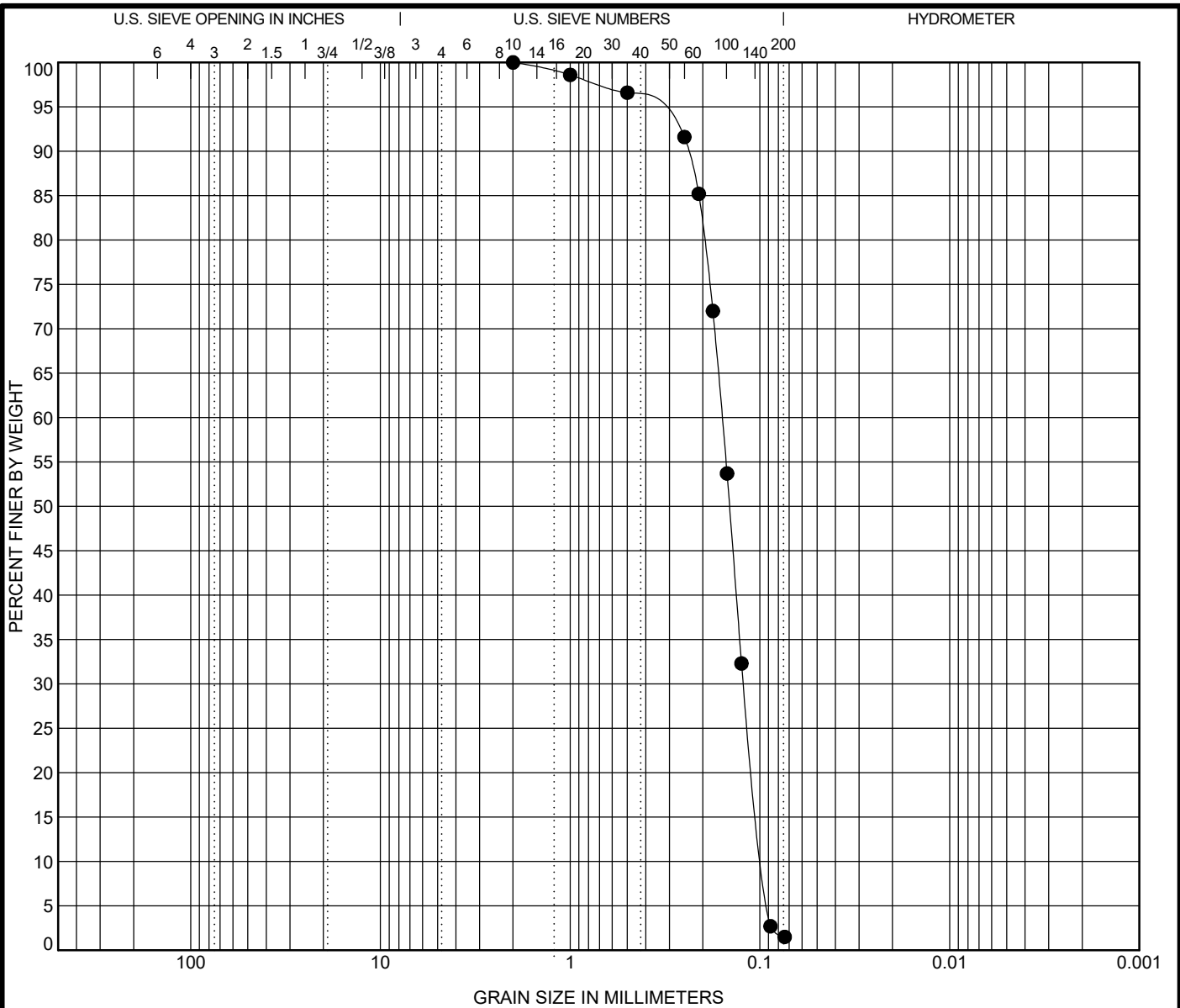
Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● MIC-T6-Toe of Dune	0.0'	POORLY GRADED SAND							1.16	1.57
☒ MIC-T6-Mid Berm	0.0'	POORLY GRADED SAND							1.06	1.45
▲ MIC-T6-Swash Zone	0.0'	POORLY GRADED SAND							1.09	1.59
★ MIC-T6-First Bar	0.0'	POORLY GRADED SAND							1.09	1.57
⊙ MIC-T6-Trough	0.0'	POORLY GRADED SAND							0.97	1.58
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● MIC-T6-Toe of Dune	0.0'	0.5	0.163	0.14	0.104	0.0				
☒ MIC-T6-Mid Berm	0.0'	0.5	0.163	0.139	0.112	0.0				
▲ MIC-T6-Swash Zone	0.0'	0.5	0.167	0.138	0.105	0.0				
★ MIC-T6-First Bar	0.0'	0.5	0.17	0.141	0.108	0.0				
⊙ MIC-T6-Trough	0.0'	2	0.151	0.118	0.095	0.0				

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIC-T6-Second Bar	0.0'	POORLY GRADED SAND				0.98	1.65

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIC-T6-Second Bar	0.0'	2	0.158	0.122	0.096	0.0			

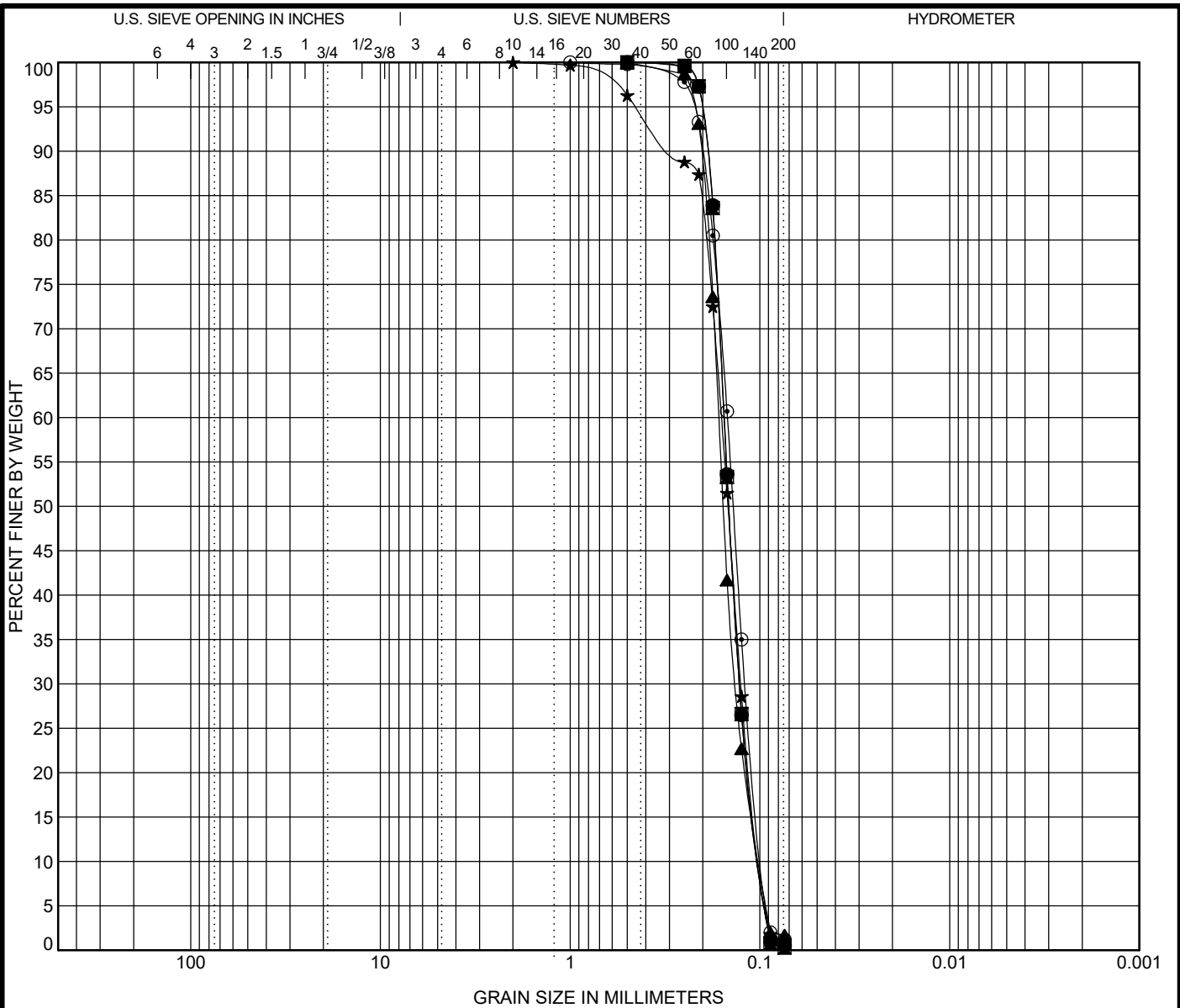


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIS-T1-Toe of Dune	0.0'	POORLY GRADED SAND				1.06	1.55
☒ MIS-T1-Mid Berm	0.0'	POORLY GRADED SAND				1.06	1.55
▲ MIS-T1-Swash Zone	0.0'	POORLY GRADED SAND				1.08	1.63
★ MIS-T1-First Bar	0.0'	POORLY GRADED SAND				1.02	1.63
◎ MIS-T1-Trough	0.0'	POORLY GRADED SAND				0.99	1.55

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIS-T1-Toe of Dune	0.0'	0.5	0.155	0.128	0.1	0.0			
☒ MIS-T1-Mid Berm	0.0'	0.5	0.155	0.128	0.1	0.0			
▲ MIS-T1-Swash Zone	0.0'	0.5	0.164	0.134	0.101	0.0			
★ MIS-T1-First Bar	0.0'	2	0.16	0.126	0.098	0.0			
◎ MIS-T1-Trough	0.0'	1	0.148	0.119	0.096	0.0			

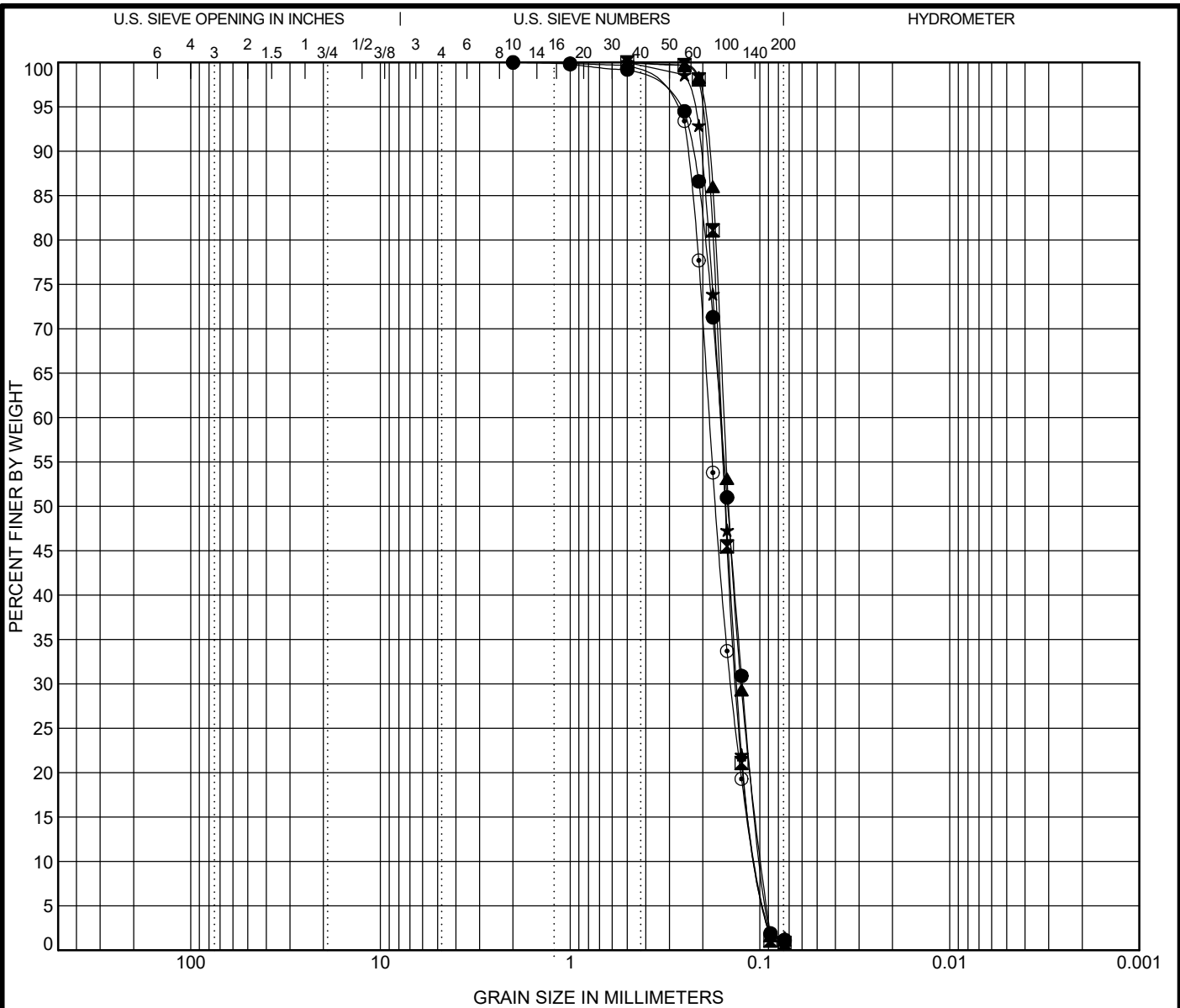
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 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIS-T1-Second Bar	0.0'	POORLY GRADED SAND				0.98	1.66
☒ MIS-T2-Toe of Dune	0.0'	POORLY GRADED SAND				1.08	1.55
▲ MIS-T2-Mid Berm	0.0'	POORLY GRADED SAND				1.04	1.58
★ MIS-T2-Swash Zone	0.0'	POORLY GRADED SAND				1.06	1.59
⊙ MIS-T2-First Bar	0.0'	POORLY GRADED SAND				1.06	1.78

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIS-T1-Second Bar	0.0'	2	0.161	0.124	0.097	0.0			
☒ MIS-T2-Toe of Dune	0.0'	0.5	0.16	0.133	0.103	0.0			
▲ MIS-T2-Mid Berm	0.0'	0.5	0.154	0.126	0.098	0.0			
★ MIS-T2-Swash Zone	0.0'	0.5	0.162	0.132	0.102	0.0			
⊙ MIS-T2-First Bar	0.0'	2	0.185	0.142	0.104	0.0			

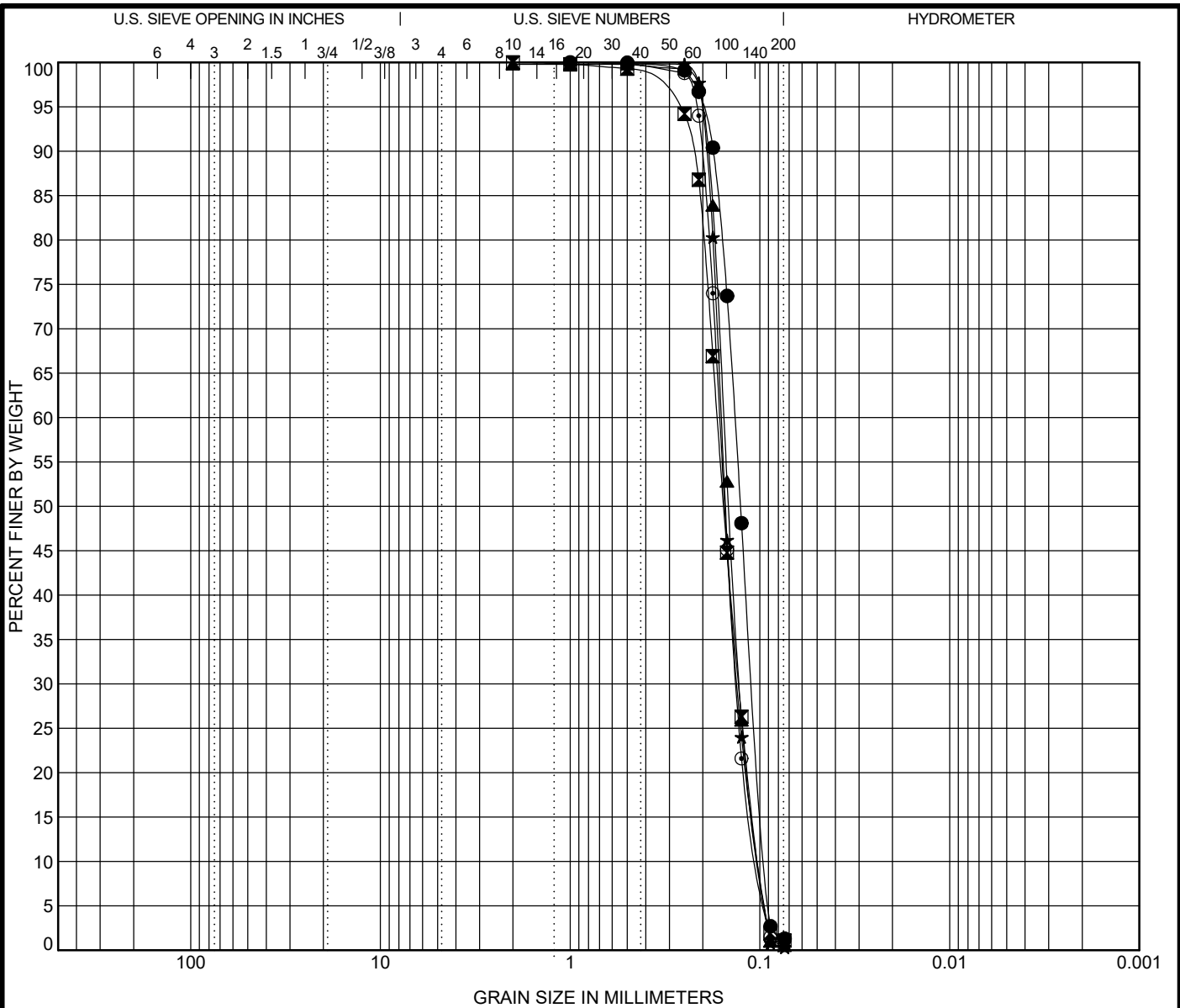
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GRAIN SIZE DISTRIBUTION

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIS-T2-Trough	0.0'	POORLY GRADED SAND				0.94	1.46
☒ MIS-T2-Second Bar	0.0'	POORLY GRADED SAND				1.01	1.70
▲ MIS-T3-Toe of Dune	0.0'	POORLY GRADED SAND				1.06	1.55
★ MIS-T3-Mid Berm	0.0'	POORLY GRADED SAND				1.06	1.58
◎ MIS-T3-Swash Zone	0.0'	POORLY GRADED SAND				1.07	1.60

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIS-T2-Trough	0.0'	1	0.136	0.109	0.093	0.0			
☒ MIS-T2-Second Bar	0.0'	2	0.168	0.129	0.099	0.0			
▲ MIS-T3-Toe of Dune	0.0'	2	0.155	0.128	0.1	0.0			
★ MIS-T3-Mid Berm	0.0'	0.5	0.16	0.131	0.101	0.0			
◎ MIS-T3-Swash Zone	0.0'	0.5	0.163	0.133	0.102	0.0			

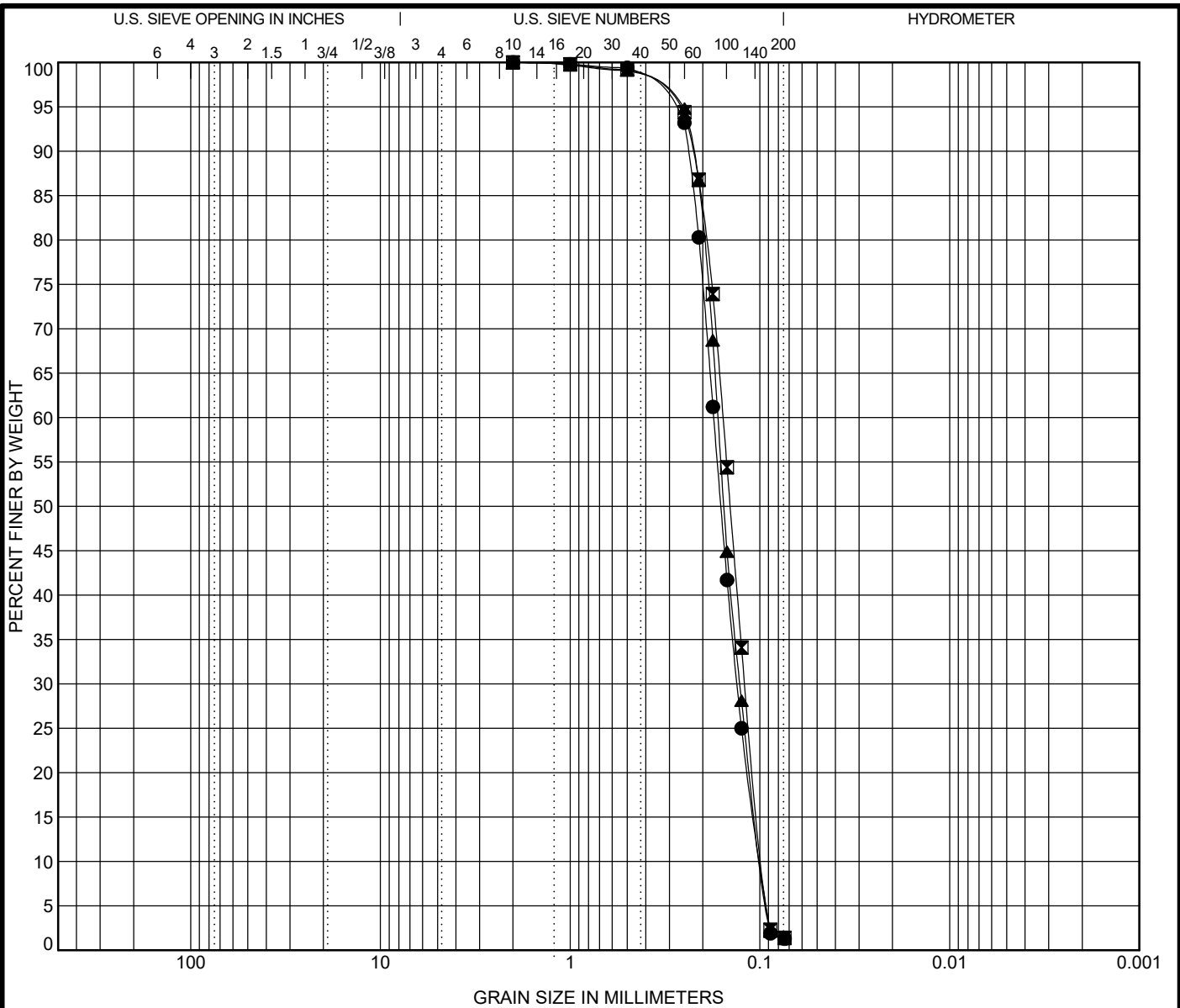
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 Location: Mustang Island South, Texas
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● MIS-T3-First Bar	0.0'	POORLY GRADED SAND				1.00	1.76
☒ MIS-T3-Trough	0.0'	POORLY GRADED SAND				0.95	1.63
▲ MIS-T3-Second Bar	0.0'	POORLY GRADED SAND				1.00	1.70

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● MIS-T3-First Bar	0.0'	2	0.175	0.132	0.1	0.0			
☒ MIS-T3-Trough	0.0'	2	0.157	0.119	0.096	0.0			
▲ MIS-T3-Second Bar	0.0'	2	0.166	0.128	0.098	0.0			

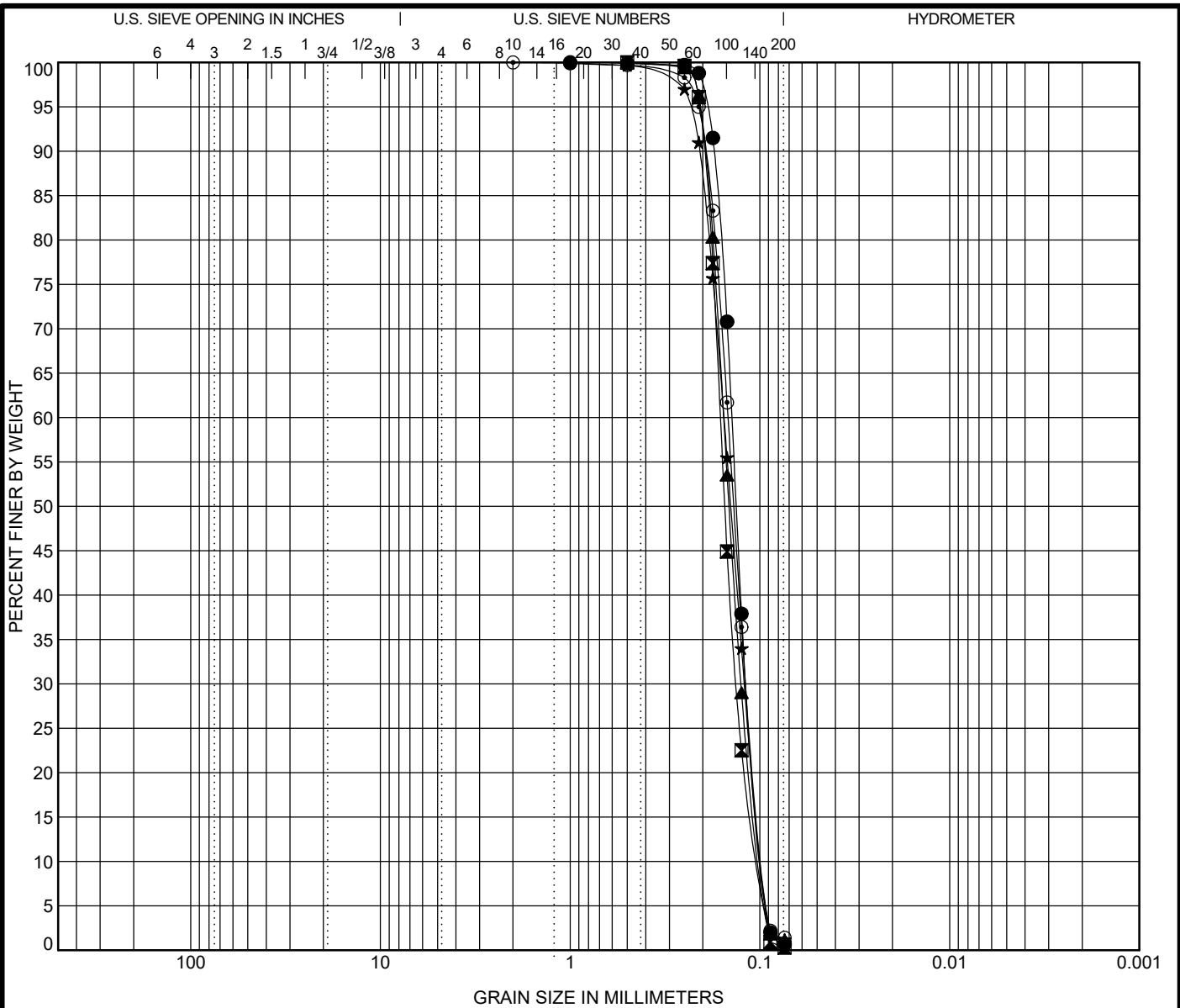


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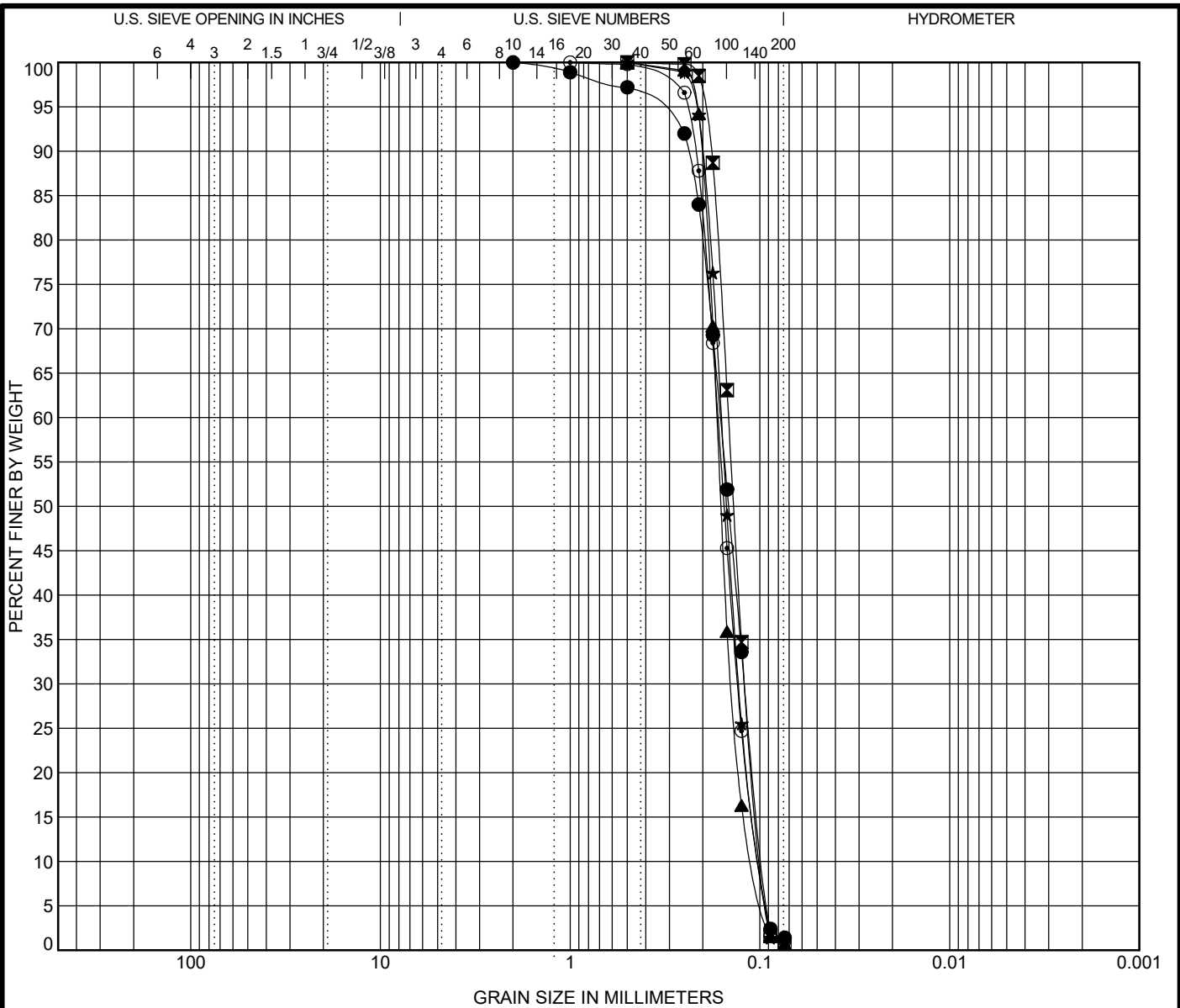
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● PI-T1-Toe of Dune	0.0'	POORLY GRADED SAND				1.00	1.48
⊠ PI-T1-Mid Berm	0.0'	POORLY GRADED SAND				1.07	1.58
▲ PI-T1-Swash Zone	0.0'	POORLY GRADED SAND				1.04	1.59
★ PI-T1-First Bar	0.0'	POORLY GRADED SAND				0.96	1.61
⊙ PI-T1-Trough	0.0'	POORLY GRADED SAND				0.98	1.54

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● PI-T1-Toe of Dune	0.0'	1	0.141	0.116	0.095	0.0			
⊠ PI-T1-Mid Berm	0.0'	0.5	0.161	0.133	0.102	0.0			
▲ PI-T1-Swash Zone	0.0'	0.5	0.155	0.126	0.098	0.0			
★ PI-T1-First Bar	0.0'	1	0.155	0.12	0.096	0.0			
⊙ PI-T1-Trough	0.0'	2	0.147	0.117	0.095	0.0			

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● PI-T1-Second Bar	0.0'	POORLY GRADED SAND				0.93	1.68
☒ PI-T2-Toe of Dune	0.0'	POORLY GRADED SAND				1.01	1.52
▲ PI-T2-Mid Berm	0.0'	POORLY GRADED SAND				1.10	1.56
★ PI-T2-Swash Zone	0.0'	POORLY GRADED SAND				1.05	1.60
◎ PI-T2-First Bar	0.0'	POORLY GRADED SAND				1.03	1.66

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● PI-T1-Second Bar	0.0'	2	0.161	0.12	0.096	0.0			
☒ PI-T2-Toe of Dune	0.0'	0.5	0.146	0.119	0.096	0.0			
▲ PI-T2-Mid Berm	0.0'	0.5	0.168	0.141	0.108	0.0			
★ PI-T2-Swash Zone	0.0'	0.5	0.16	0.129	0.1	0.0			
◎ PI-T2-First Bar	0.0'	1	0.166	0.131	0.1	0.0			

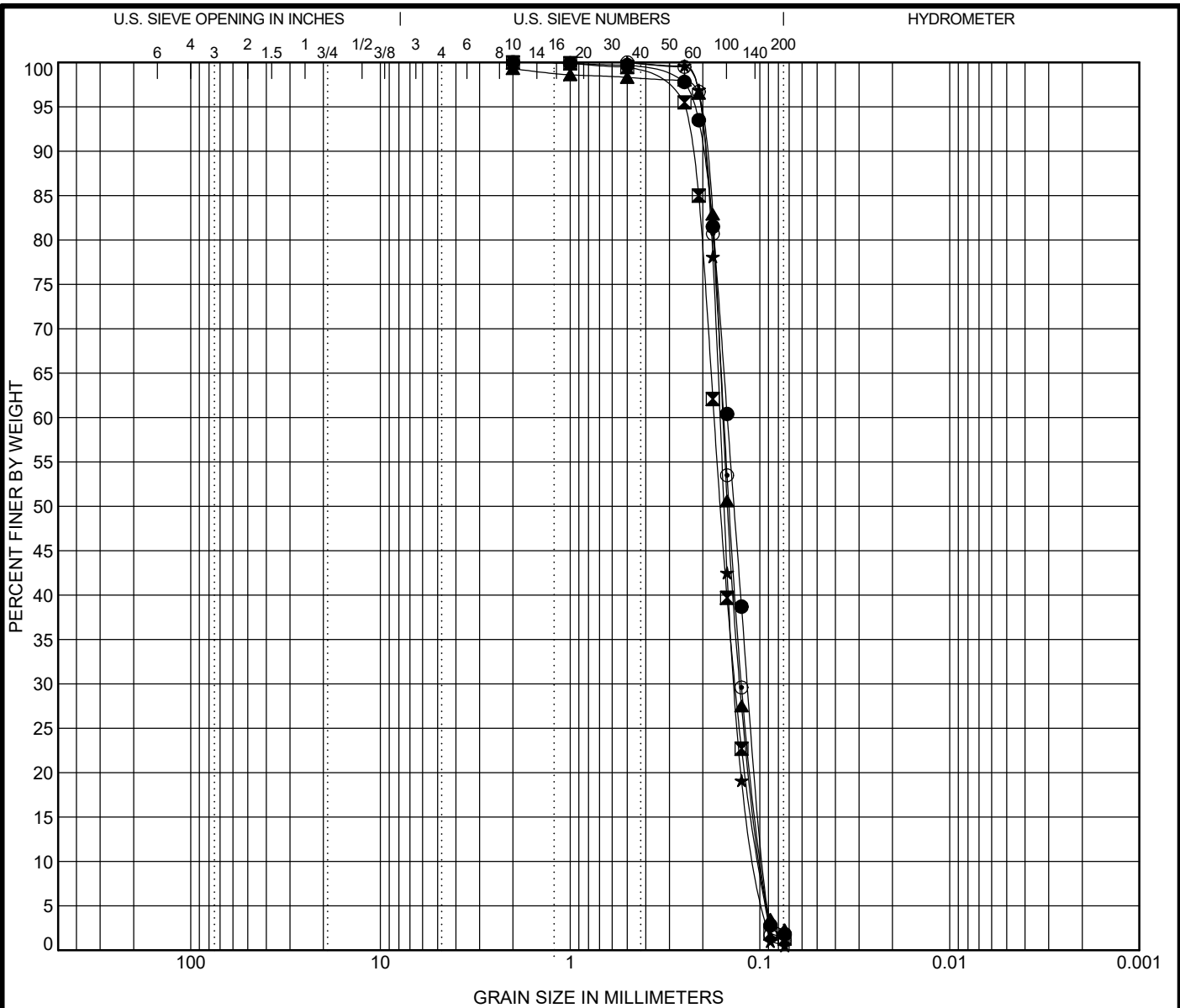


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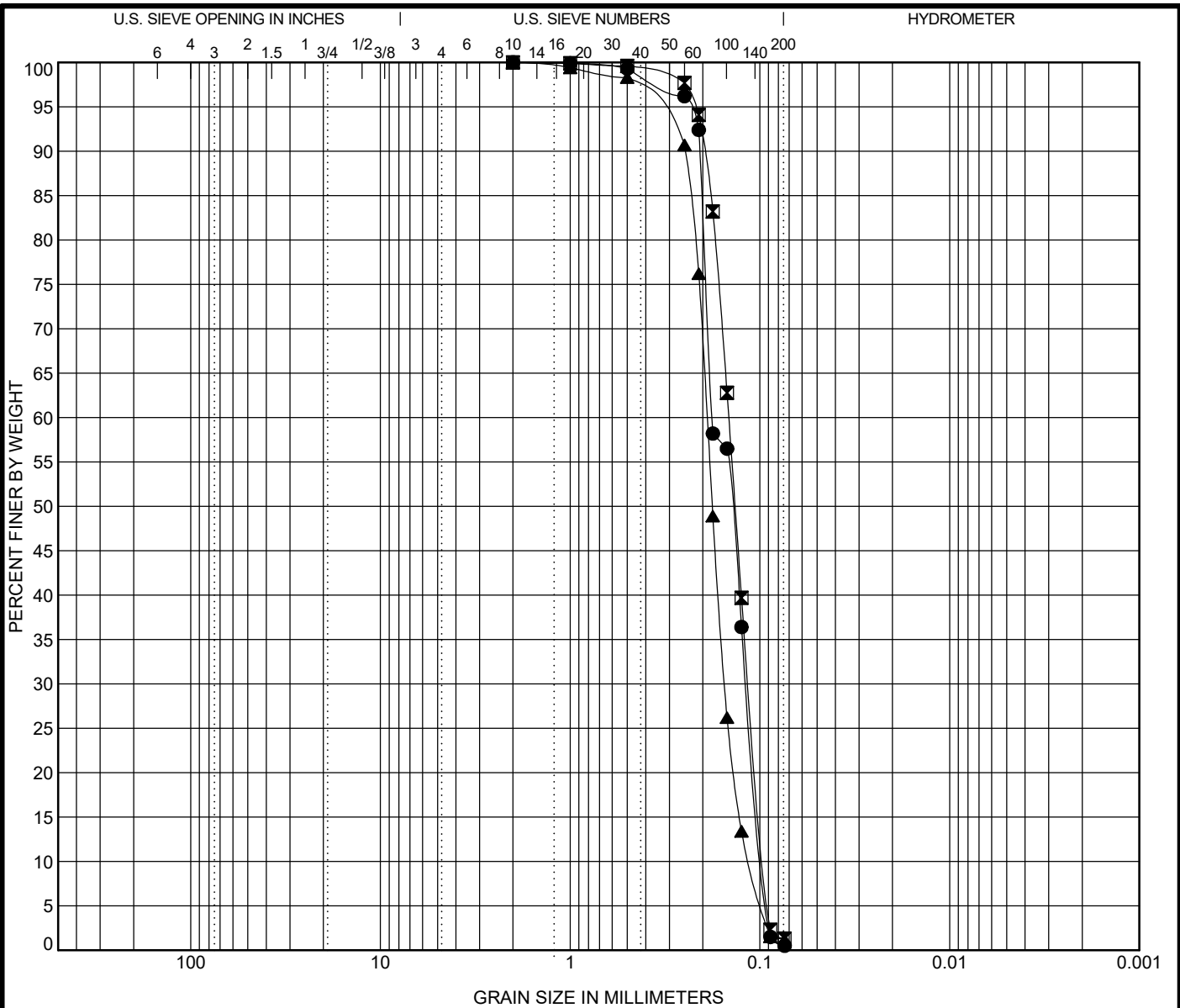
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● PI-T2-Trough	0.0'	POORLY GRADED SAND				0.94	1.57
☒ PI-T2-Second Bar	0.0'	POORLY GRADED SAND				1.03	1.73
▲ PI-T3-Toe of Dune	0.0'	POORLY GRADED SAND				1.07	1.62
★ PI-T3-Mid Berm	0.0'	POORLY GRADED SAND				1.08	1.55
◎ PI-T3-Swash Zone	0.0'	POORLY GRADED SAND				1.04	1.59

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● PI-T2-Trough	0.0'	2	0.149	0.115	0.094	0.0			
☒ PI-T2-Second Bar	0.0'	2	0.174	0.135	0.101	0.0			
▲ PI-T3-Toe of Dune	0.0'	2	0.157	0.127	0.097	0.0			
★ PI-T3-Mid Berm	0.0'	0.5	0.162	0.136	0.105	0.0			
◎ PI-T3-Swash Zone	0.0'	0.5	0.155	0.125	0.098	0.0			

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● PI-T3-First Bar	0.0'	POORLY GRADED SAND				0.80	1.86
⊠ PI-T3-Trough	0.0'	POORLY GRADED SAND				0.94	1.54
▲ PI-T3-Second Bar	0.0'	POORLY GRADED SAND				1.10	1.68

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● PI-T3-First Bar	0.0'	2	0.179	0.117	0.096	0.0			
⊠ PI-T3-Trough	0.0'	2	0.146	0.114	0.095	0.0			
▲ PI-T3-Second Bar	0.0'	2	0.19	0.153	0.113	0.0			

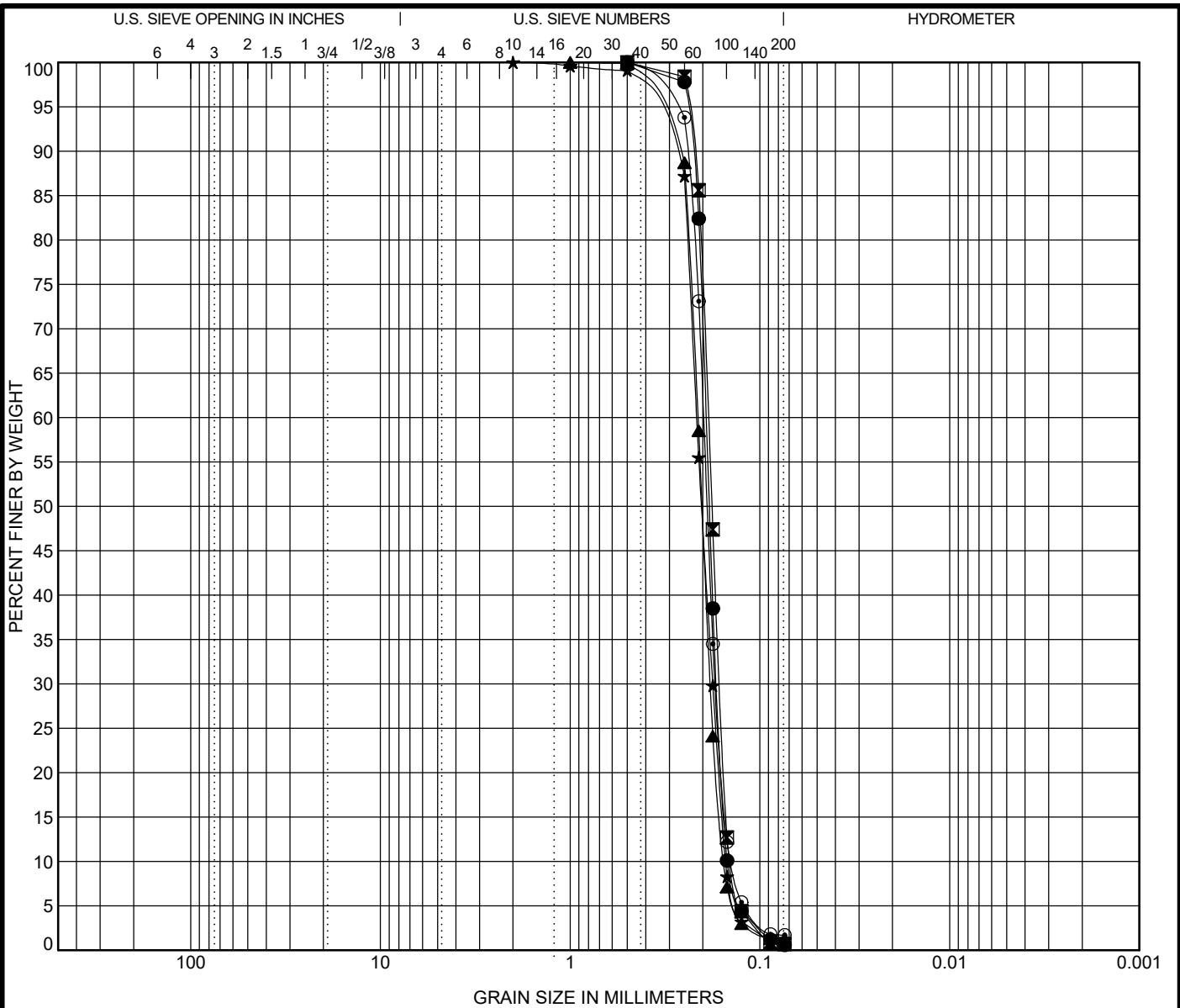
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 Location: Padre Island, Texas
 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● SPI-T1-Toe of Dune	0.0'	POORLY GRADED SAND				0.99	1.30
☒ SPI-T1-Mid Berm	0.0'	POORLY GRADED SAND				1.00	1.33
▲ SPI-T1-Swash Zone	0.0'	POORLY GRADED SAND				1.02	1.38
★ SPI-T1-First Bar	0.0'	POORLY GRADED SAND				0.97	1.43
◎ SPI-T1-Trough	0.0'	POORLY GRADED SAND				1.05	1.41

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SPI-T1-Toe of Dune	0.0'	0.5	0.192	0.168	0.149	0.0			
☒ SPI-T1-Mid Berm	0.0'	0.5	0.187	0.162	0.141	0.0			
▲ SPI-T1-Swash Zone	0.0'	1	0.212	0.182	0.153	0.0			
★ SPI-T1-First Bar	0.0'	2	0.215	0.177	0.151	0.0			
◎ SPI-T1-Trough	0.0'	0.5	0.198	0.171	0.141	0.0			

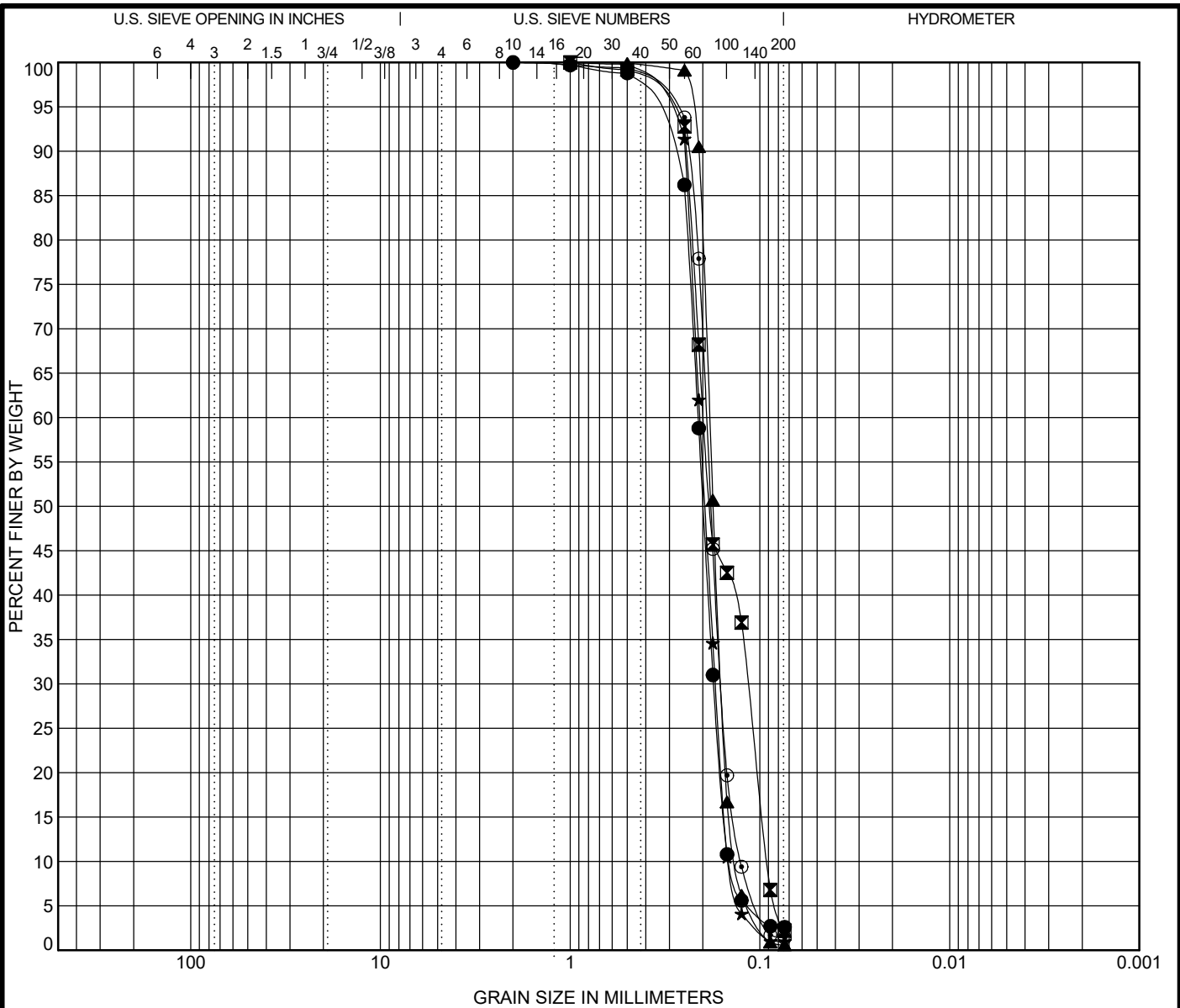


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Project: Beach Sediment Analysis
 Location: South Padre Island, Texas
 Number: G122361

US GRAIN SIZE 12 G122361 SPI.GPJ US LAB.GDT 8/22/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● SPI-T1-Second Bar	0.0'	POORLY GRADED SAND				1.00	1.46
☒ SPI-T2-Toe of Dune	0.0'	POORLY GRADED SAND				0.74	2.16
▲ SPI-T2-Mid Berm	0.0'	POORLY GRADED SAND				1.04	1.38
★ SPI-T2-Swash Zone	0.0'	POORLY GRADED SAND				0.96	1.41
◎ SPI-T2-First Bar	0.0'	POORLY GRADED SAND				1.06	1.51

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SPI-T1-Second Bar	0.0'	2	0.212	0.175	0.145	0.0			
☒ SPI-T2-Toe of Dune	0.0'	1	0.197	0.115	0.091	0.0			
▲ SPI-T2-Mid Berm	0.0'	1	0.184	0.159	0.133	0.0			
★ SPI-T2-Swash Zone	0.0'	1	0.207	0.171	0.147	0.0			
◎ SPI-T2-First Bar	0.0'	2	0.191	0.16	0.126	0.0			

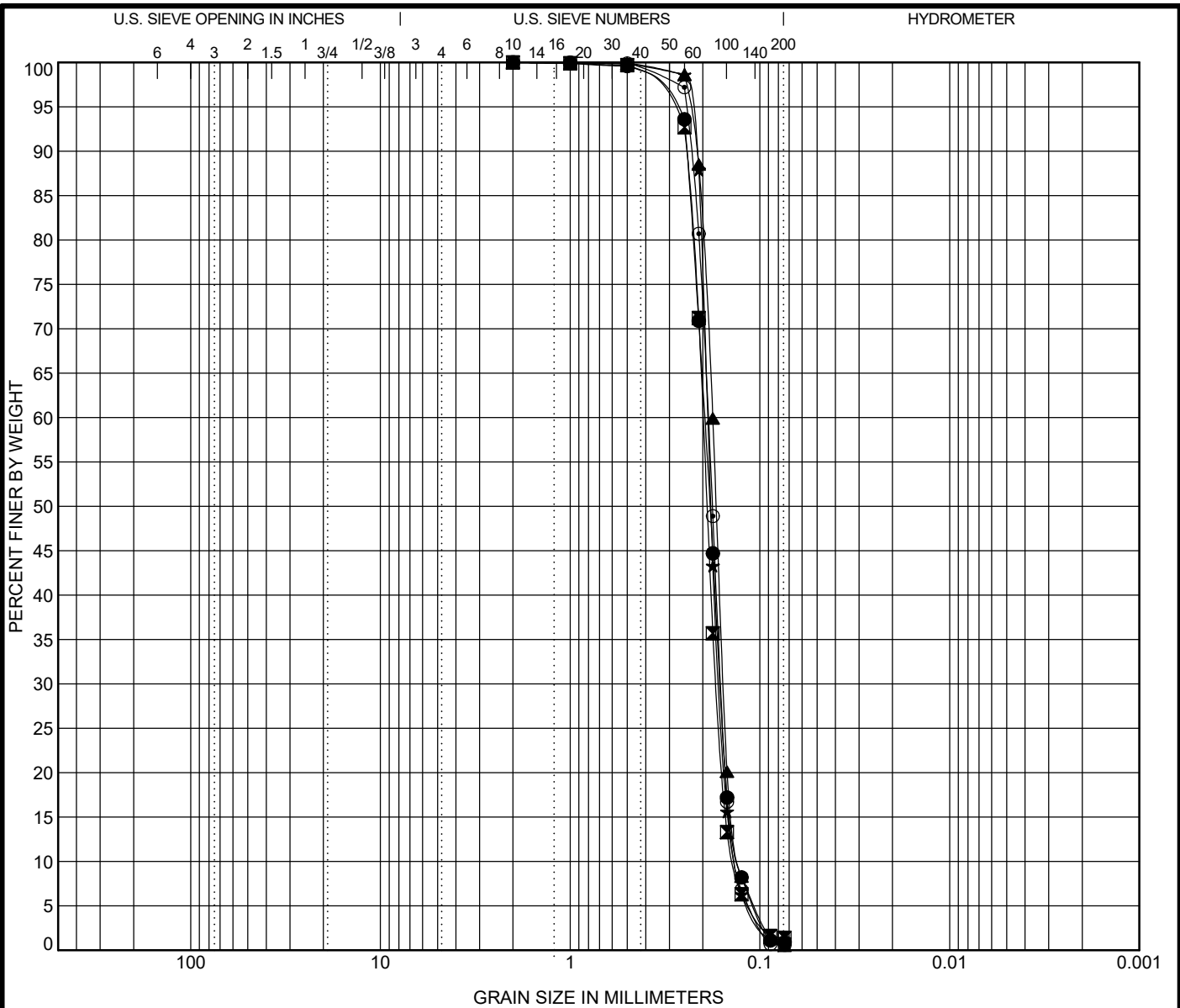


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 Location: South Padre Island, Texas
 Texas Number: G122361

US GRAIN SIZE 12 G122361 SPI.GPJ US LAB.GDT 8/22/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● SPI-T2-Trough	0.0'	POORLY GRADED SAND				1.03	1.51
☒ SPI-T2-Second Bar	0.0'	POORLY GRADED SAND				1.05	1.45
▲ SPI-T3-Toe of Dune	0.0'	POORLY GRADED SAND				1.07	1.38
★ SPI-T3-Mid Berm	0.0'	POORLY GRADED SAND				1.05	1.41
◎ SPI-T3-Swash Zone	0.0'	POORLY GRADED SAND				1.03	1.42

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SPI-T2-Trough	0.0'	2	0.196	0.161	0.129	0.0			
☒ SPI-T2-Second Bar	0.0'	2	0.199	0.169	0.137	0.0			
▲ SPI-T3-Toe of Dune	0.0'	2	0.177	0.156	0.128	0.0			
★ SPI-T3-Mid Berm	0.0'	2	0.189	0.163	0.134	0.0			
◎ SPI-T3-Swash Zone	0.0'	1	0.188	0.16	0.132	0.0			

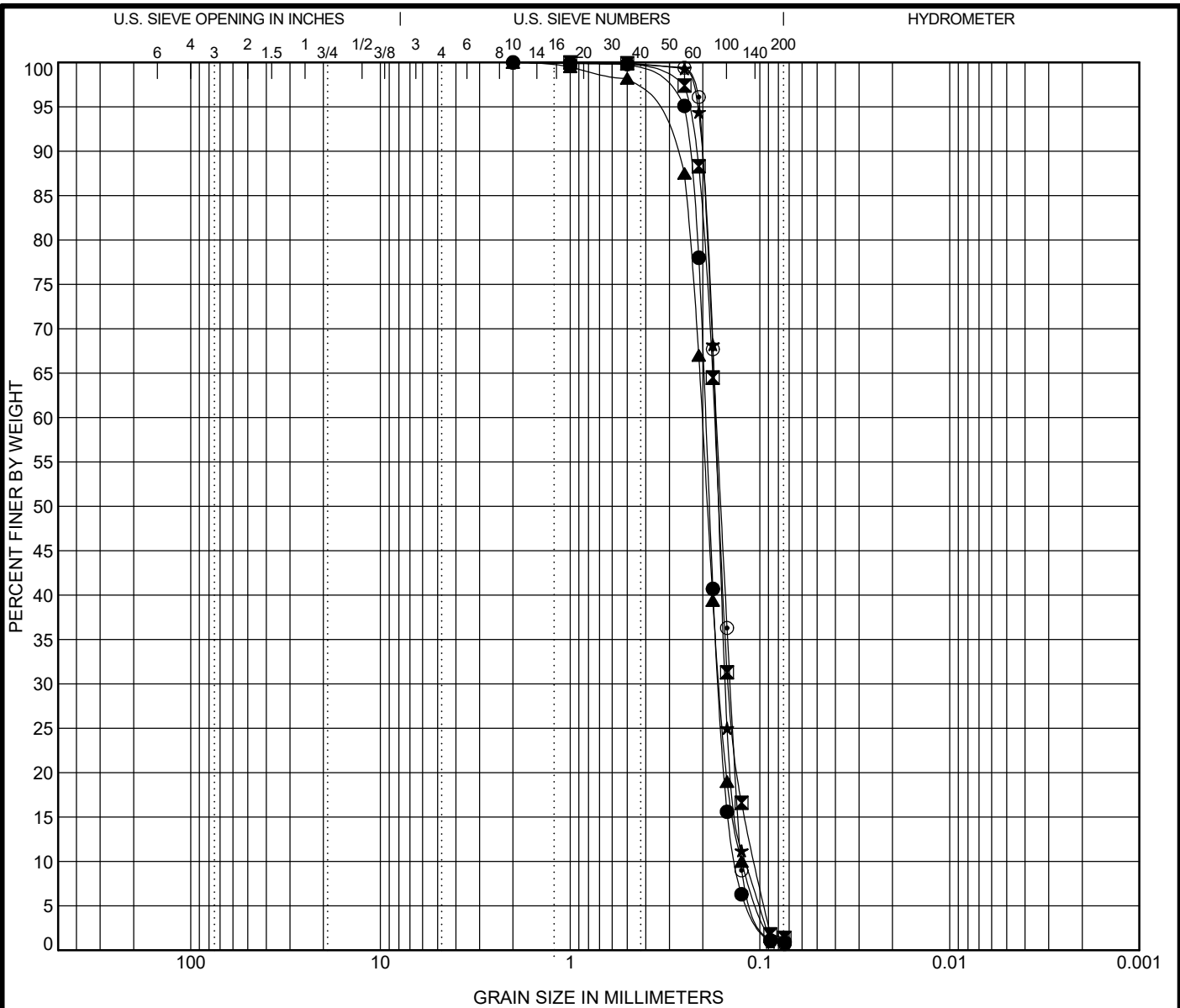


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● SPI-T3-First Bar	0.0'	POORLY GRADED SAND				1.04	1.44
☒ SPI-T3-Trough	0.0'	POORLY GRADED SAND				1.16	1.62
▲ SPI-T3-Second Bar	0.0'	POORLY GRADED SAND				1.06	1.61
★ SPI-T4-Toe of Dune	0.0'	POORLY GRADED SAND				1.12	1.43
◎ SPI-T4-Mid Berm	0.0'	POORLY GRADED SAND				0.96	1.35

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SPI-T3-First Bar	0.0'	2	0.193	0.164	0.134	0.0			
☒ SPI-T3-Trough	0.0'	1	0.173	0.147	0.107	0.0			
▲ SPI-T3-Second Bar	0.0'	2	0.201	0.163	0.125	0.0			
★ SPI-T4-Toe of Dune	0.0'	2	0.171	0.152	0.12	0.0			
◎ SPI-T4-Mid Berm	0.0'	2	0.17	0.143	0.126	0.0			

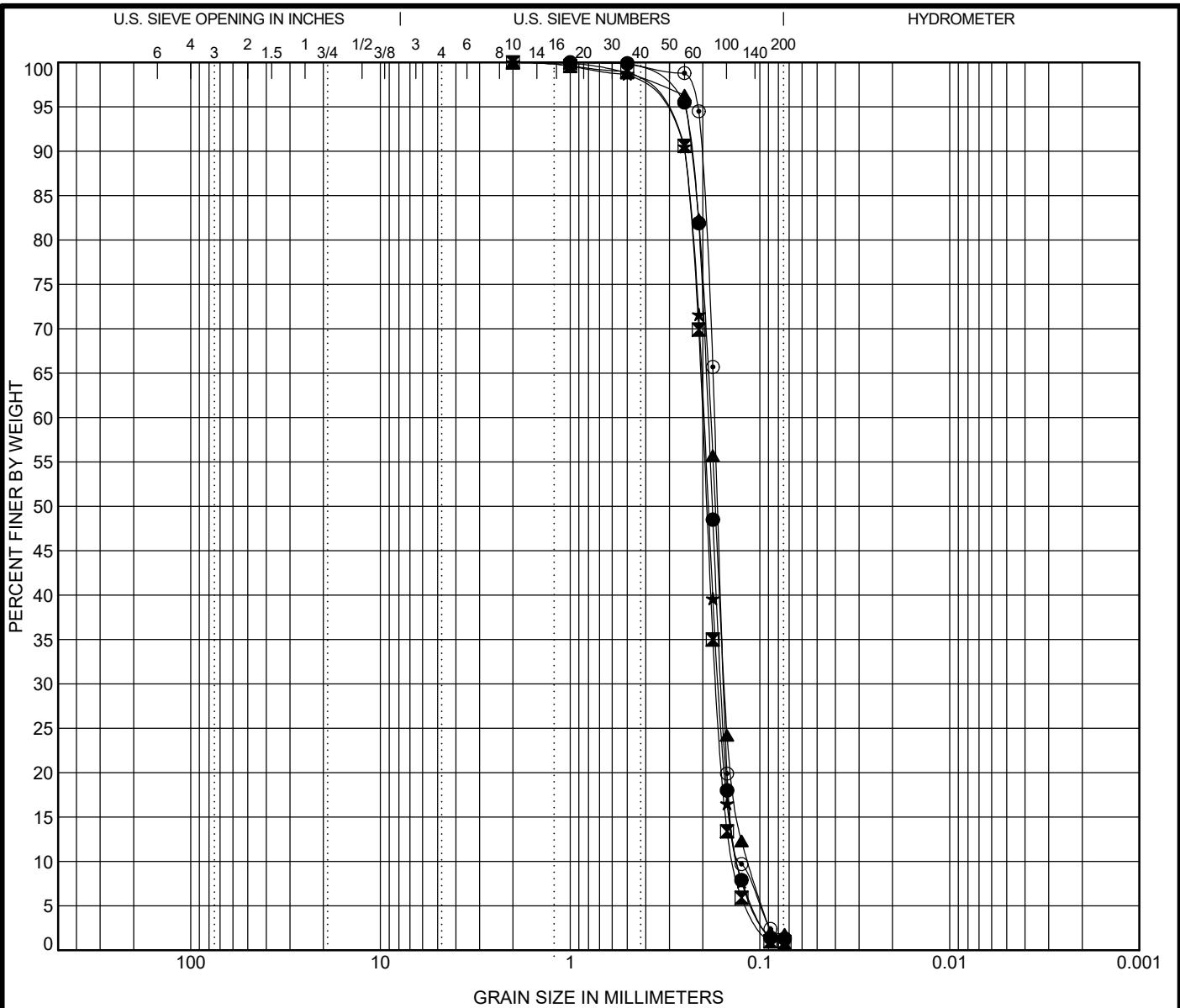


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● SPI-T4-Swash Zone	0.0'	POORLY GRADED SAND				1.04	1.45
☒ SPI-T4-First Bar	0.0'	POORLY GRADED SAND				1.05	1.45
▲ SPI-T4-Trough	0.0'	POORLY GRADED SAND				1.12	1.57
★ SPI-T4-Second Bar	0.0'	POORLY GRADED SAND				1.05	1.51
◎ SPI-T5-Toe of Dune	0.0'	POORLY GRADED SAND				1.10	1.38

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SPI-T4-Swash Zone	0.0'	1	0.188	0.159	0.13	0.0			
☒ SPI-T4-First Bar	0.0'	2	0.2	0.17	0.138	0.0			
▲ SPI-T4-Trough	0.0'	2	0.182	0.154	0.116	0.0			
★ SPI-T4-Second Bar	0.0'	2	0.197	0.165	0.131	0.0			
◎ SPI-T5-Toe of Dune	0.0'	1	0.173	0.155	0.126	0.0			

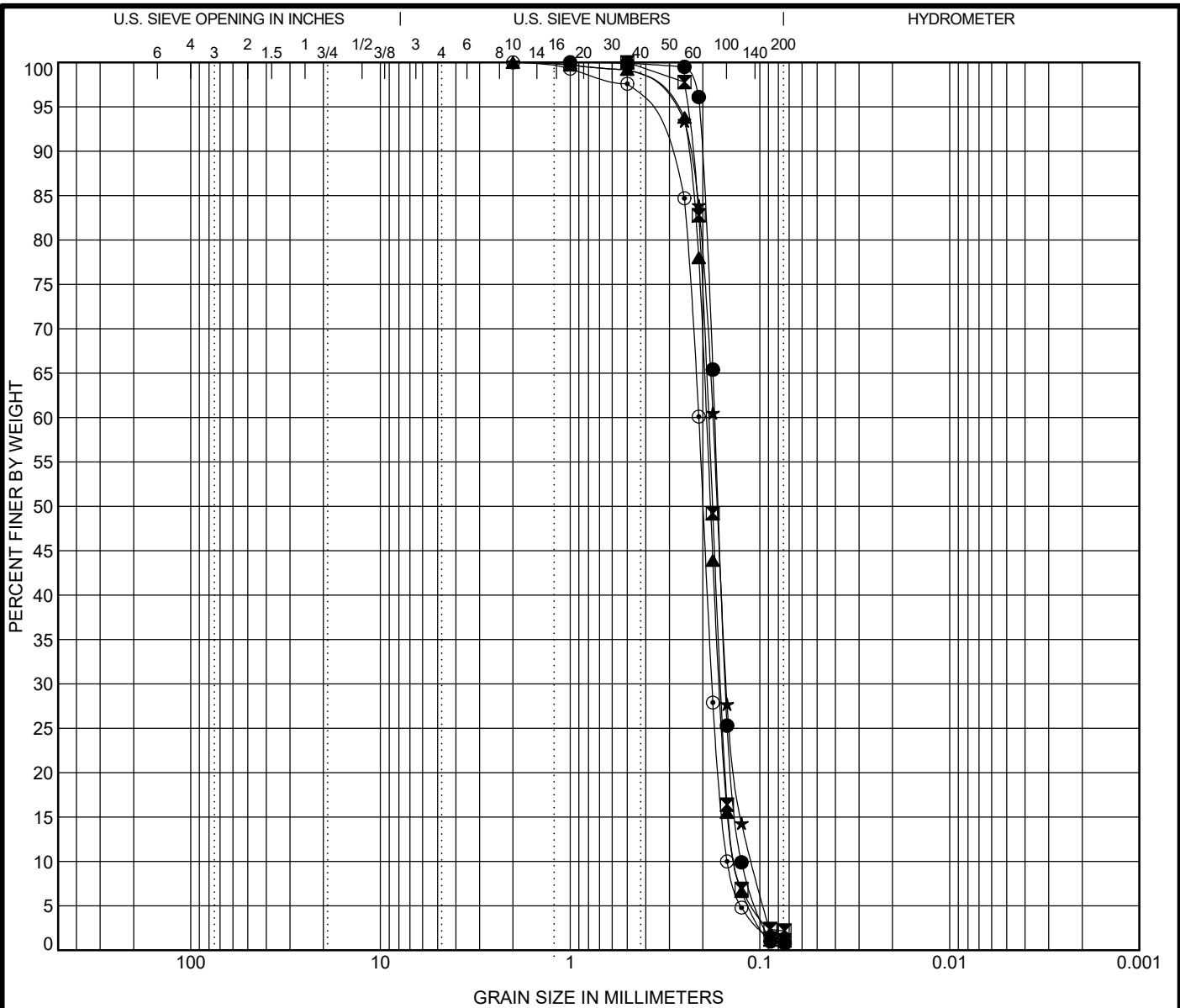
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 Location: South Padre Island, Texas
 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● SPI-T5-Mid Berm	0.0'	POORLY GRADED SAND				1.07	1.38
☒ SPI-T5-Swash Zone	0.0'	POORLY GRADED SAND				1.03	1.41
▲ SPI-T5-First Bar	0.0'	POORLY GRADED SAND				1.03	1.44
★ SPI-T5-Trough	0.0'	POORLY GRADED SAND				1.16	1.60
◎ SPI-T5-Second Bar	0.0'	POORLY GRADED SAND				1.02	1.41

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SPI-T5-Mid Berm	0.0'	1	0.173	0.152	0.125	0.0			
☒ SPI-T5-Swash Zone	0.0'	0.5	0.187	0.16	0.132	0.0			
▲ SPI-T5-First Bar	0.0'	2	0.192	0.163	0.134	0.0			
★ SPI-T5-Trough	0.0'	2	0.177	0.151	0.111	0.0			
◎ SPI-T5-Second Bar	0.0'	2	0.21	0.179	0.149	0.0			

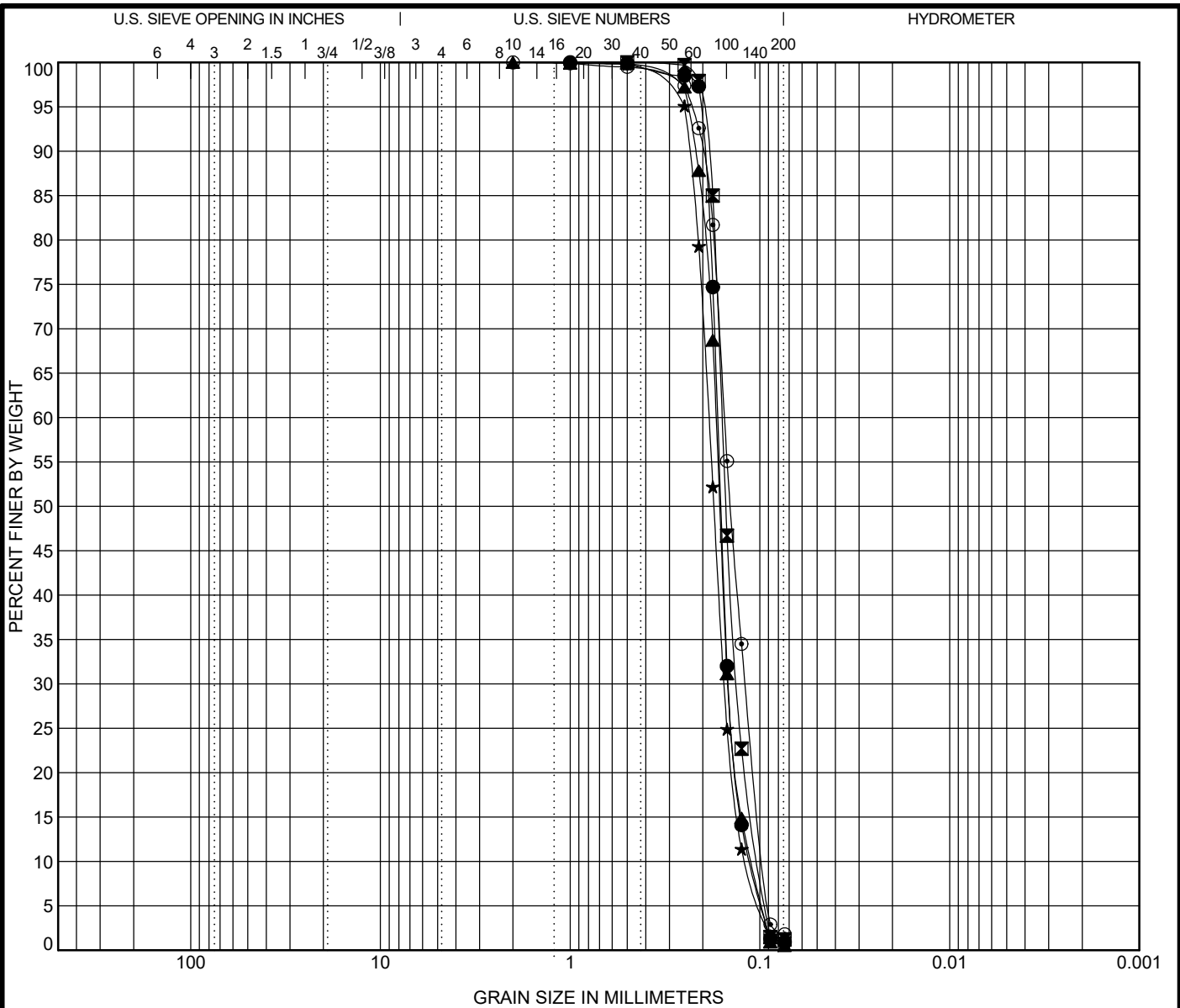


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Location: South Padre Island, Texas
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BCP-T1-Toe of Dune	0.0'	POORLY GRADED SAND				1.15	1.49
☒ BCP-T1-Mid Berm	0.0'	POORLY GRADED SAND				1.09	1.56
▲ BCP-T1-Swash Zone	0.0'	POORLY GRADED SAND				1.15	1.54
★ BCP-T1-First Bar	0.0'	POORLY GRADED SAND				1.07	1.56
◎ BCP-T1-Trough	0.0'	POORLY GRADED SAND				0.97	1.62

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BCP-T1-Toe of Dune	0.0'	1	0.167	0.146	0.112	0.0			
☒ BCP-T1-Mid Berm	0.0'	0.5	0.158	0.132	0.101	0.0			
▲ BCP-T1-Swash Zone	0.0'	2	0.17	0.147	0.111	0.0			
★ BCP-T1-First Bar	0.0'	1	0.186	0.154	0.119	0.0			
◎ BCP-T1-Trough	0.0'	2	0.154	0.119	0.095	0.0			

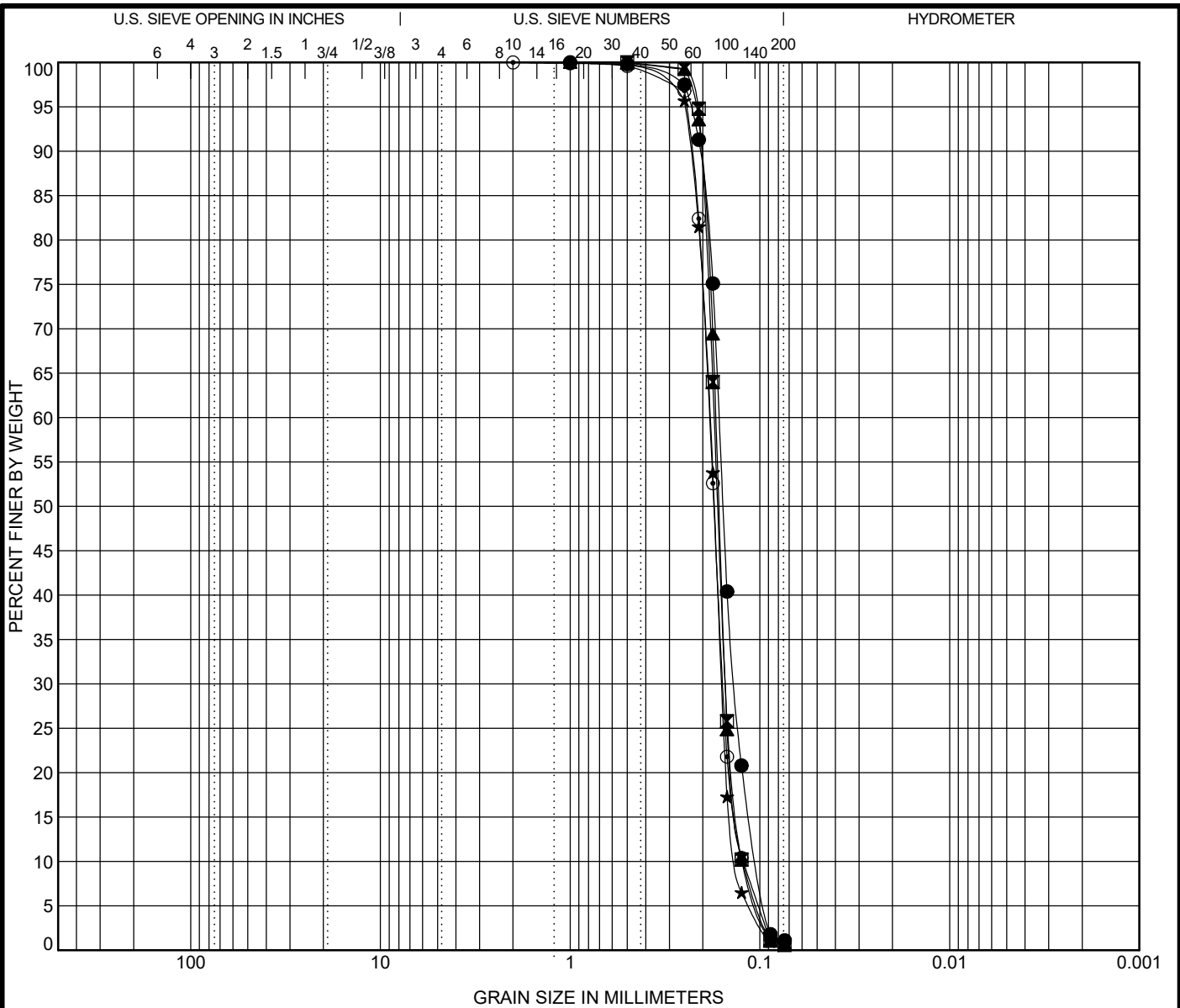
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Project: Beach Sediment Analysis
 Location: Boca Chica Peninsula, Texas
 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BCP-T1-Second Bar	0.0'	POORLY GRADED SAND				1.10	1.60
☒ BCP-T2-Toe of Dune	0.0'	POORLY GRADED SAND				1.07	1.40
▲ BCP-T2-Mid Berm	0.0'	POORLY GRADED SAND				1.10	1.39
★ BCP-T2-Swash Zone	0.0'	POORLY GRADED SAND				1.03	1.39
◎ BCP-T2-First Bar	0.0'	POORLY GRADED SAND				1.07	1.50

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BCP-T1-Second Bar	0.0'	1	0.164	0.136	0.102	0.0			
☒ BCP-T2-Toe of Dune	0.0'	0.5	0.174	0.152	0.124	0.0			
▲ BCP-T2-Mid Berm	0.0'	1	0.171	0.152	0.123	0.0			
★ BCP-T2-Swash Zone	0.0'	1	0.184	0.158	0.132	0.0			
◎ BCP-T2-First Bar	0.0'	2	0.185	0.156	0.123	0.0			

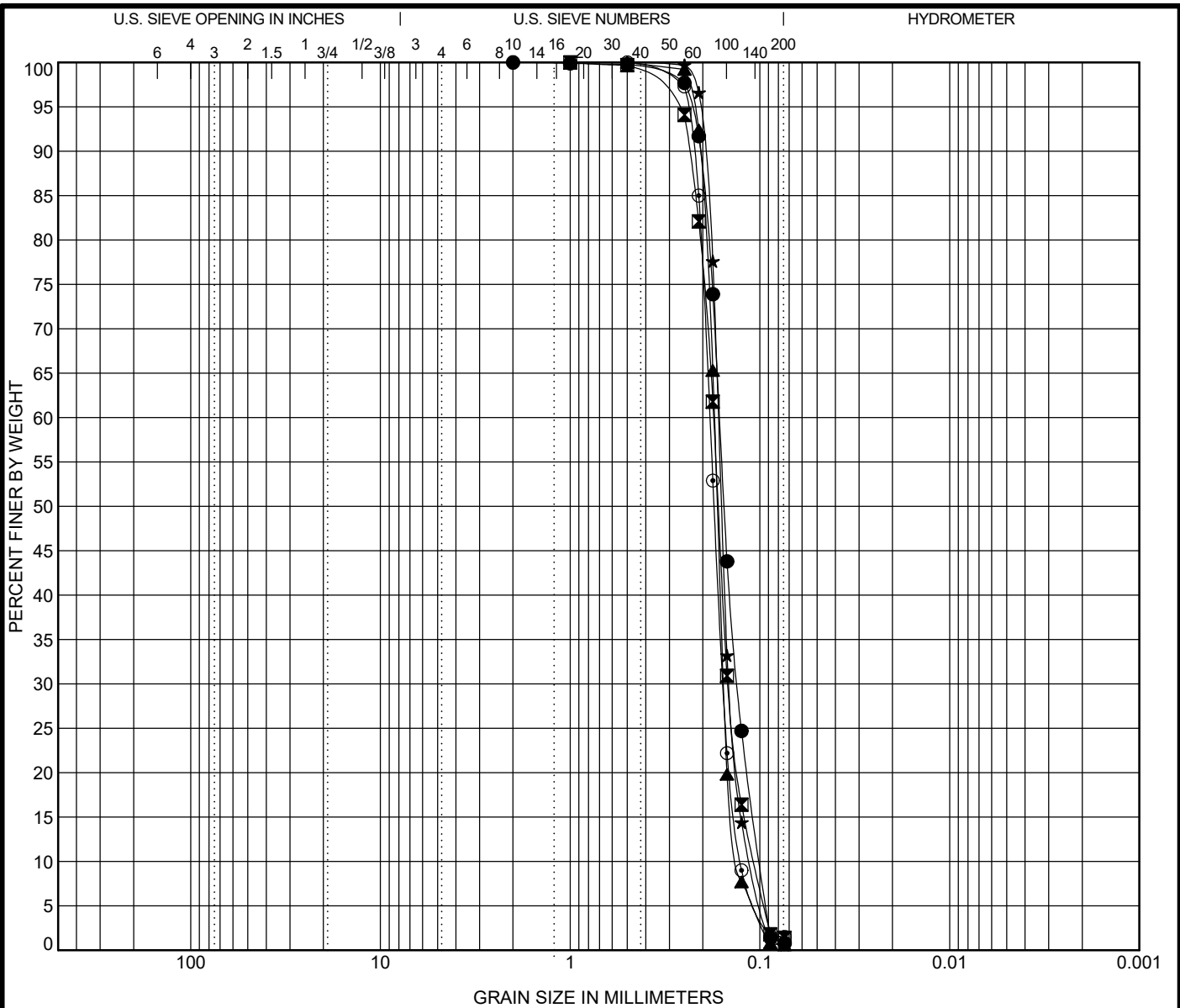


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Project: Beach Sediment Analysis
 Location: Boca Chica Peninsula, Texas
 Number: G122361

US GRAIN SIZE 13 G122361 BCP.GPJ US LAB.GDT 8/22/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● BCP-T2-Trough	0.0'	POORLY GRADED SAND							1.05	1.63
☒ BCP-T2-Second Bar	0.0'	POORLY GRADED SAND							1.16	1.64
▲ BCP-T3-Toe of Dune	0.0'	POORLY GRADED SAND							1.07	1.34
★ BCP-T3-Mid Berm	0.0'	POORLY GRADED SAND							1.14	1.49
⊙ BCP-T3-Swash Zone	0.0'	POORLY GRADED SAND							1.04	1.45
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● BCP-T2-Trough	0.0'	2	0.163	0.131	0.1	0.0				
☒ BCP-T2-Second Bar	0.0'	1	0.175	0.147	0.107	0.0				
▲ BCP-T3-Toe of Dune	0.0'	0.5	0.173	0.155	0.129	0.0				
★ BCP-T3-Mid Berm	0.0'	0.5	0.165	0.145	0.111	0.0				
⊙ BCP-T3-Swash Zone	0.0'	0.5	0.184	0.156	0.127	0.0				

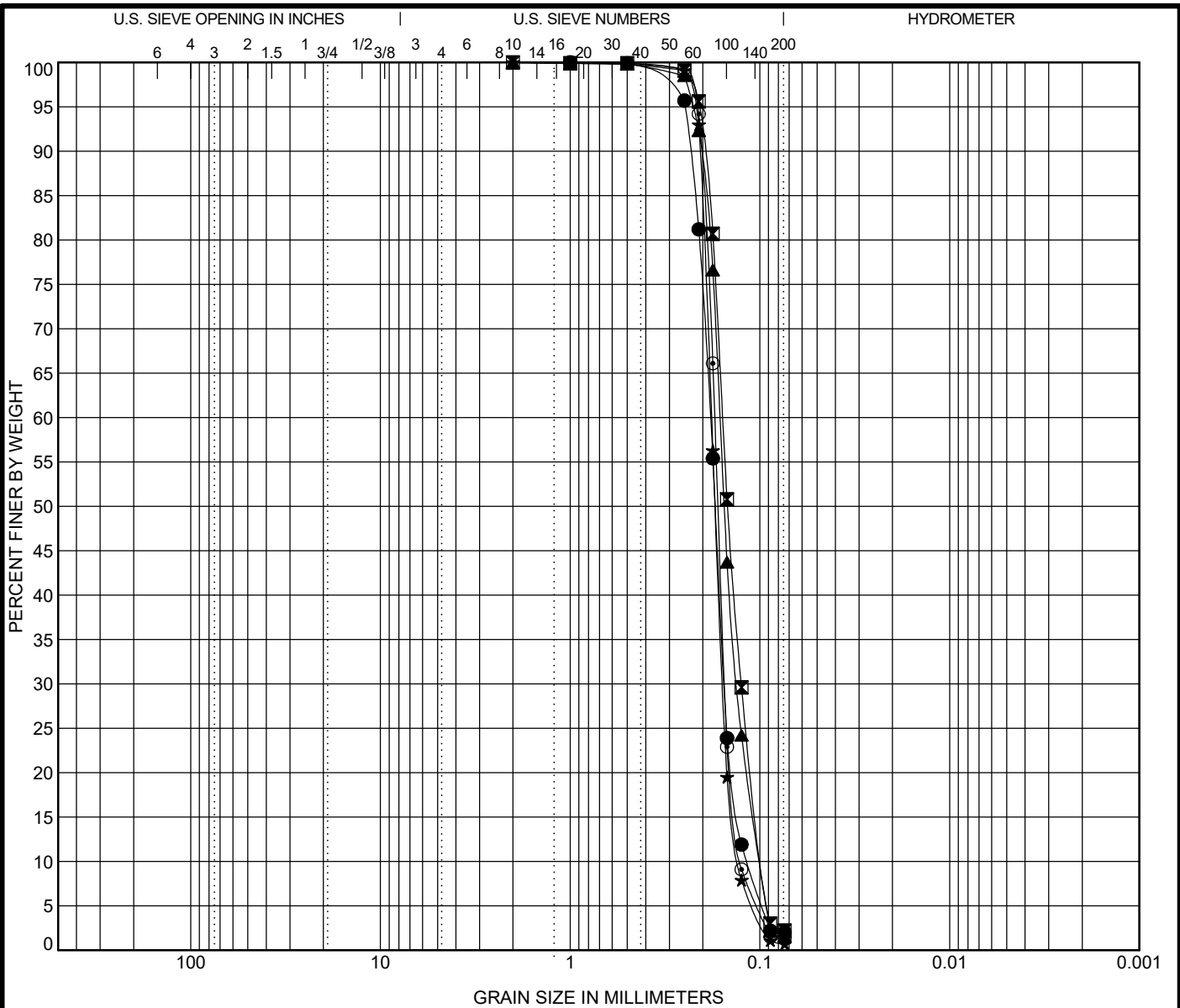
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 Number: G122361



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BCP-T3-First Bar	0.0'	POORLY GRADED SAND				1.11	1.56
☒ BCP-T3-Trough	0.0'	POORLY GRADED SAND				1.04	1.63
▲ BCP-T3-Second Bar	0.0'	POORLY GRADED SAND				1.07	1.63
★ BCP-T4-Toe of Dune	0.0'	POORLY GRADED SAND				1.05	1.40
◎ BCP-T4-Mid Berm	0.0'	POORLY GRADED SAND				1.08	1.37

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BCP-T3-First Bar	0.0'	1	0.182	0.154	0.117	0.0			
☒ BCP-T3-Trough	0.0'	2	0.157	0.125	0.097	0.0			
▲ BCP-T3-Second Bar	0.0'	2	0.162	0.132	0.1	0.0			
★ BCP-T4-Toe of Dune	0.0'	2	0.18	0.157	0.129	0.0			
◎ BCP-T4-Mid Berm	0.0'	1	0.173	0.153	0.126	0.0			

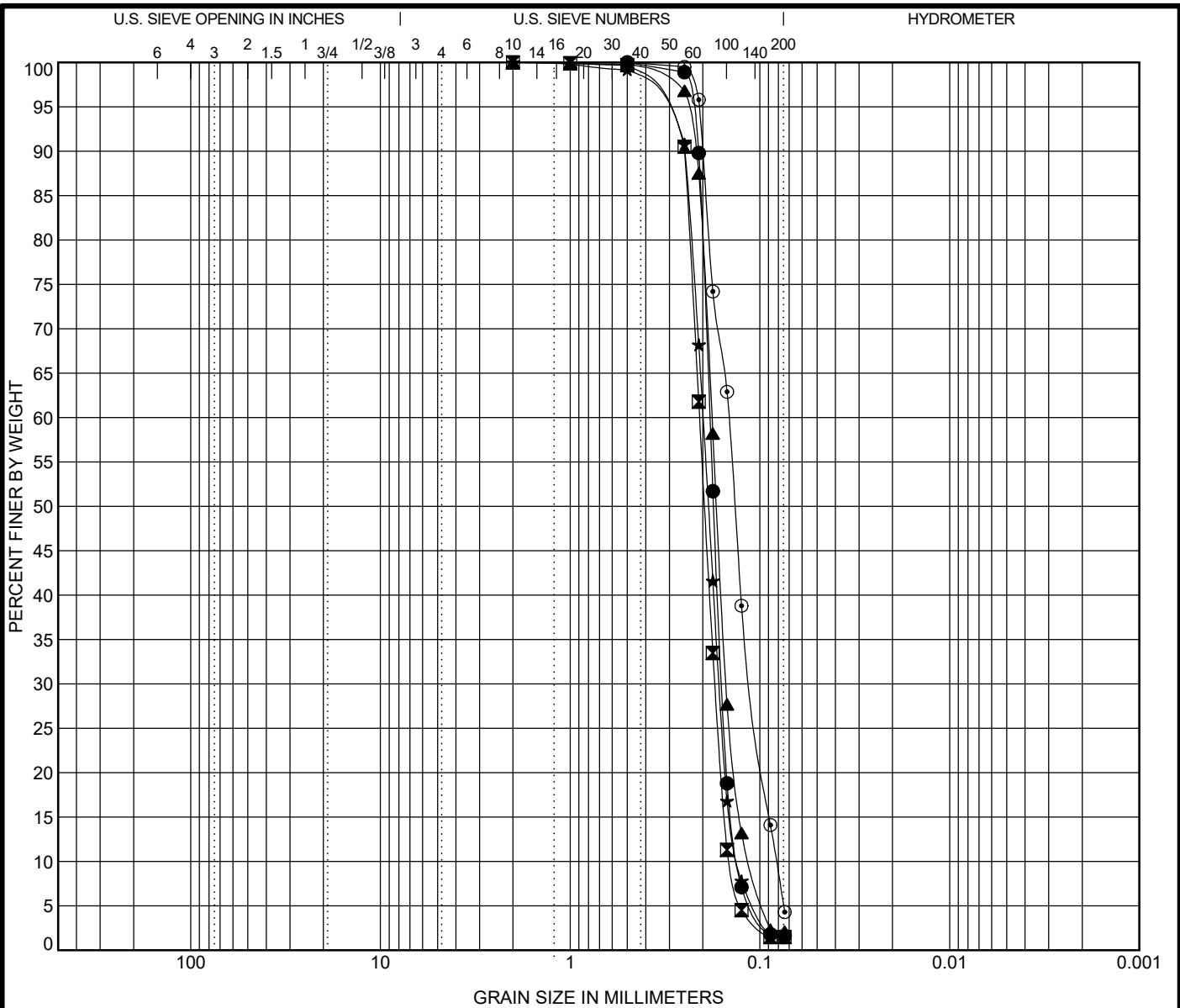


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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification				LL	PL	PI	Cc	Cu
● BCP-T4-Swash Zone	0.0'	POORLY GRADED SAND							1.04	1.41
☒ BCP-T4-First Bar	0.0'	POORLY GRADED SAND							0.99	1.44
▲ BCP-T4-Trough	0.0'	POORLY GRADED SAND							1.13	1.59
★ BCP-T4-Second Bar	0.0'	POORLY GRADED SAND							1.03	1.53
◎ BCP-T5-Toe of Dune	0.0'	POORLY GRADED SAND							1.02	1.78
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● BCP-T4-Swash Zone	0.0'	0.5	0.184	0.158	0.131	0.0				
☒ BCP-T4-First Bar	0.0'	2	0.208	0.172	0.144	0.0				
▲ BCP-T4-Trough	0.0'	2	0.179	0.151	0.113	0.0				
★ BCP-T4-Second Bar	0.0'	2	0.199	0.163	0.13	0.0				
◎ BCP-T5-Toe of Dune	0.0'	0.5	0.146	0.11	0.082	0.0				

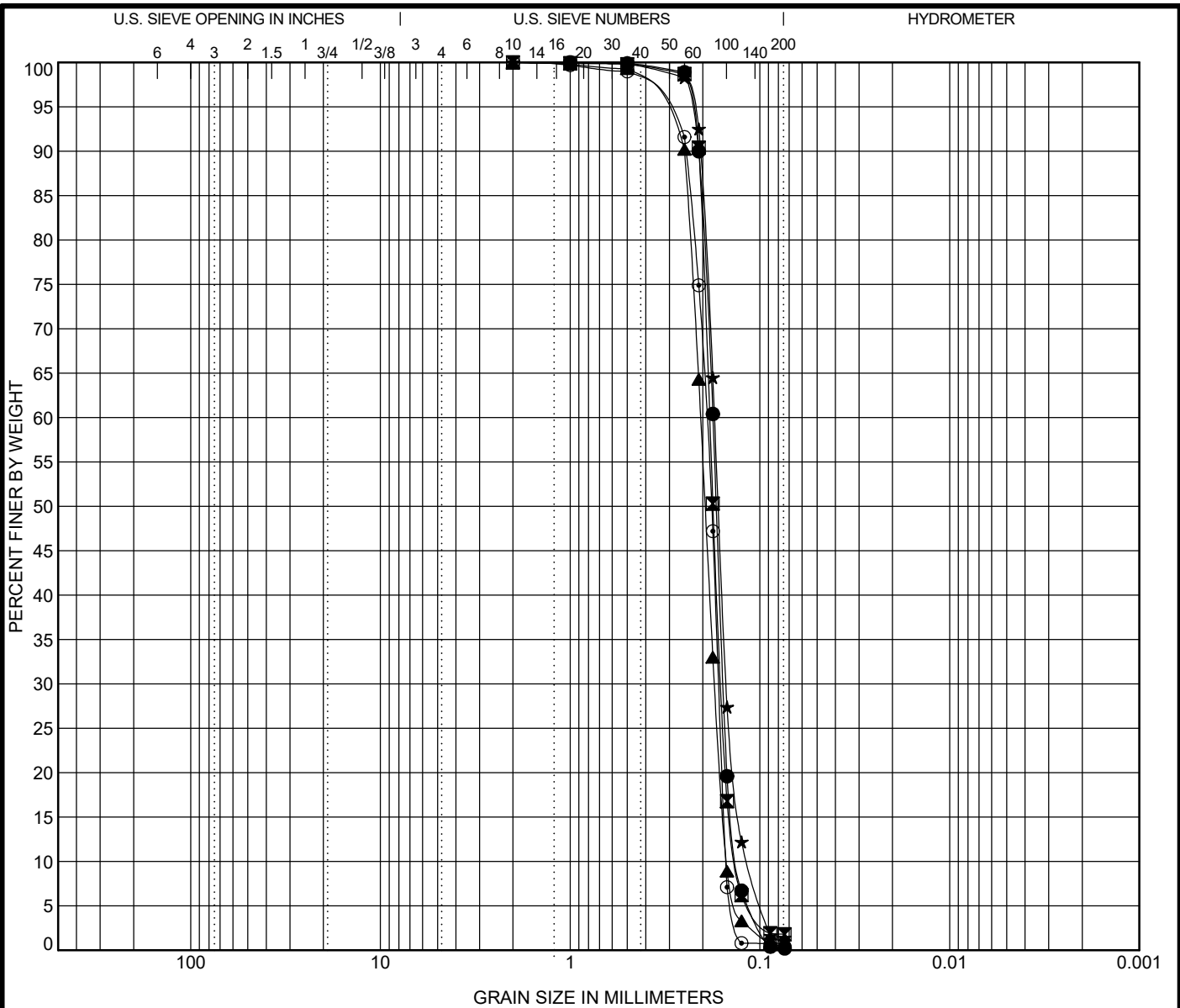
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BCP-T5-Mid Berm	0.0'	POORLY GRADED SAND				1.05	1.35
☒ BCP-T5-Swash Zone	0.0'	POORLY GRADED SAND				1.04	1.39
▲ BCP-T5-First Bar	0.0'	POORLY GRADED SAND				0.97	1.37
★ BCP-T5-Trough	0.0'	POORLY GRADED SAND				1.13	1.49
◎ BCP-T5-Second Bar	0.0'	POORLY GRADED SAND				0.94	1.27

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BCP-T5-Mid Berm	0.0'	1	0.177	0.156	0.131	0.0			
☒ BCP-T5-Swash Zone	0.0'	2	0.184	0.159	0.133	0.0			
▲ BCP-T5-First Bar	0.0'	2	0.205	0.173	0.15	0.0			
★ BCP-T5-Trough	0.0'	2	0.173	0.151	0.116	0.0			
◎ BCP-T5-Second Bar	0.0'	2	0.192	0.164	0.151	0.0			

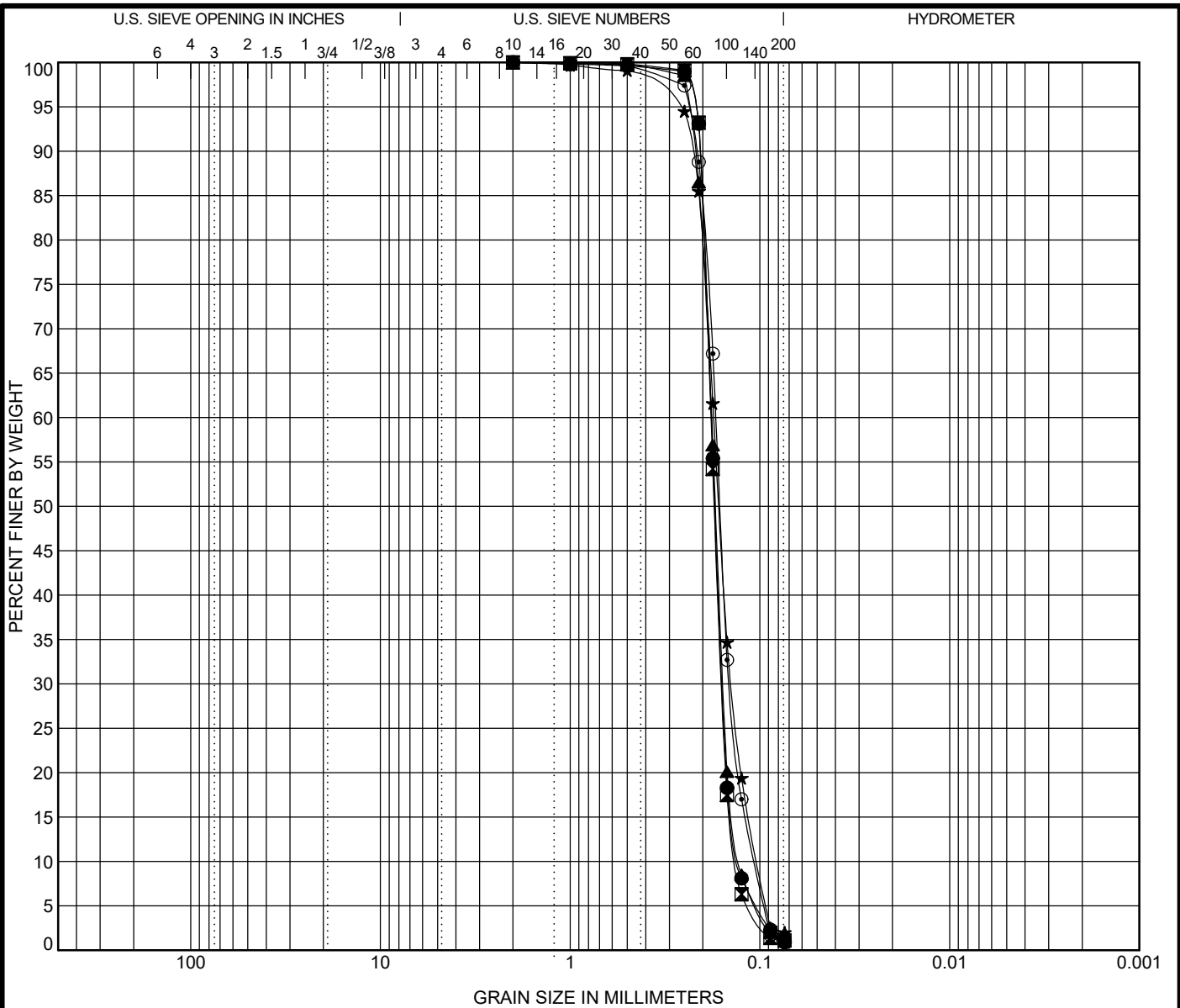
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BCP-T6-Toe of Dune	0.0'	POORLY GRADED SAND				1.06	1.40
☒ BCP-T6-Mid Berm	0.0'	POORLY GRADED SAND				1.04	1.37
▲ BCP-T6-Swash Zone	0.0'	POORLY GRADED SAND				1.06	1.41
★ BCP-T6-First Bar	0.0'	POORLY GRADED SAND				1.11	1.70
◎ BCP-T6-Trough	0.0'	POORLY GRADED SAND				1.15	1.60

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BCP-T6-Toe of Dune	0.0'	2	0.181	0.157	0.129	0.0			
☒ BCP-T6-Mid Berm	0.0'	2	0.182	0.158	0.132	0.0			
▲ BCP-T6-Swash Zone	0.0'	1	0.18	0.156	0.128	0.0			
★ BCP-T6-First Bar	0.0'	2	0.175	0.141	0.103	0.0			
◎ BCP-T6-Trough	0.0'	2	0.171	0.145	0.106	0.0			

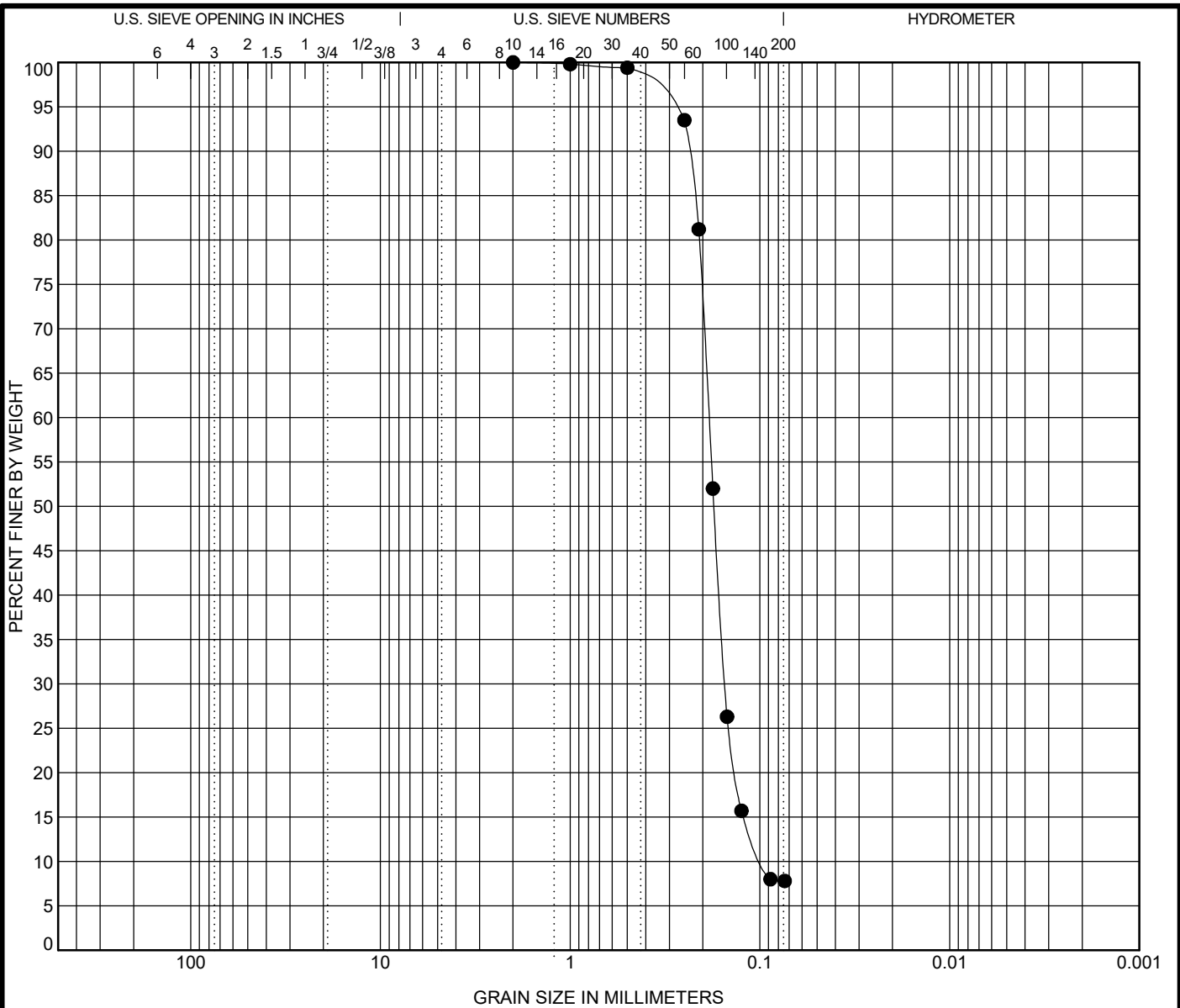


Rock Engineering & Testing Lab. LLC.
6817 Leopard Street
Corpus Christi, Texas 78409 Telephone:
361-883-4555
Fax: 361-883-4711

GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
Location: Boca Chica Peninsula, Texas
Number: G122361

US GRAIN SIZE 13 G122361 BCP.GPJ US LAB.GDT 8/22/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● BCP-T6-Second Bar	0.0'	POORLY GRADED SAND with SILT				1.30	1.92

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BCP-T6-Second Bar	0.0'	2	0.185	0.153	0.096	0.0			

US GRAIN SIZE 13 G122361 BCP.GPJ US LAB.GDT 8/22/22



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 Corpus Christi, Texas 78409 Telephone:
 361-883-4555
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GRAIN SIZE DISTRIBUTION

Project: Beach Sediment Analysis
 Location: Boca Chica Peninsula, Texas
 Number: G122361



Appendix 3

Munsell Color Graphs





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1. SUMMARY

This appendix supplements the geotechnical report provided by Rock Engineering and Testing Laboratory, LLC. (RETL 2022) for this project. As part of the geotechnical investigation performed by RETL, the Munsell color classification for each sediment sample was determined. The Munsell color system refers to a standardized method used to identify the specific color of a given object. The system is based on a hierarchy approach of naming colors by the following attributes: Hue (red, green, blue, etc.), Value (the brightness of the color), and Chroma (the intensity or saturation of the color). A visual description of this system is shown in Figure 1.

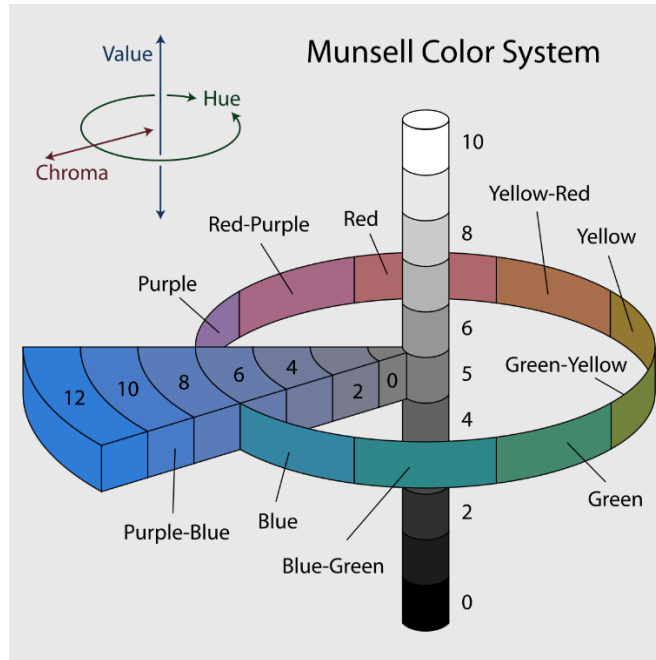


Figure 1. Munsell Color System Graphic (Wikipedia)

For geotechnical applications, a Munsell Soil-Color Chart is used to determine the color(s) of the soil. Soil color provides information on the composition of the sample and can provide insight on the environmental conditions and physical forces that are present where the sample was collected. The color of beach sand plays an important role in the aesthetics and tourism appeal of a beach. Sea turtle nesting and other habitat can be also affected by sand color. For example, sand color can affect sea turtle nest temperatures, which in turn can influence the gender of hatchlings.

The color classifications were organized in pie graphs to display the range and occurrence of sediment color within each reach. A Munsell Soil-Color Chart was referenced to color the corresponding values in each pie graph. The colors measured across all reaches ranged between the Yellow-Red and Yellow hues (abbreviated as YR and Y respectively). An example of one of the Yellow-Red diagrams from the 2009 Munsell Soil-Color Chart is provided in Figure 2. Pie graphs of the Munsell color classifications that were identified in each reach are shown in Figure 3 through Figure 15.

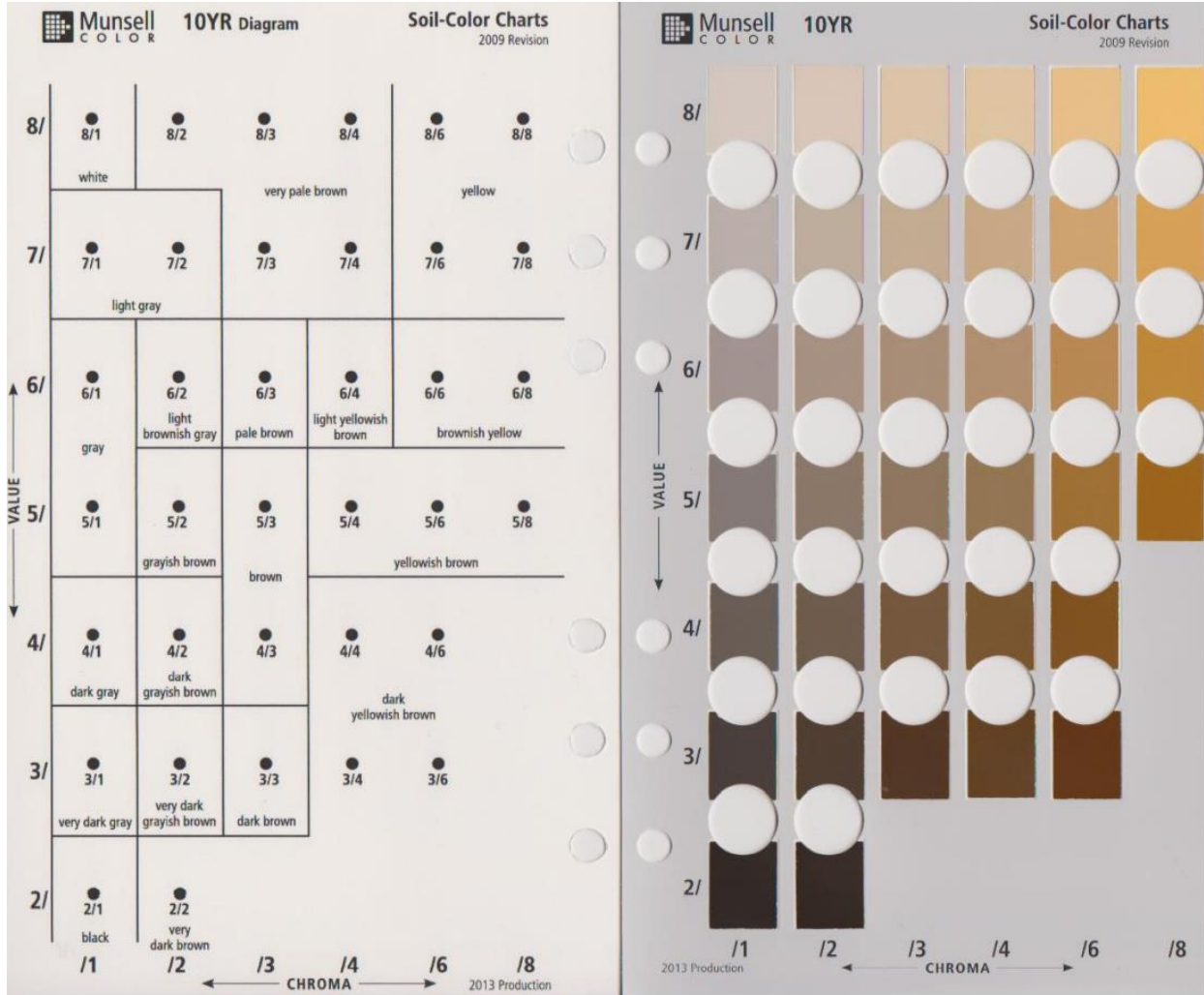


Figure 2. Diagram of Yellow-Red Sediments from Munsell Soil-Color Charts

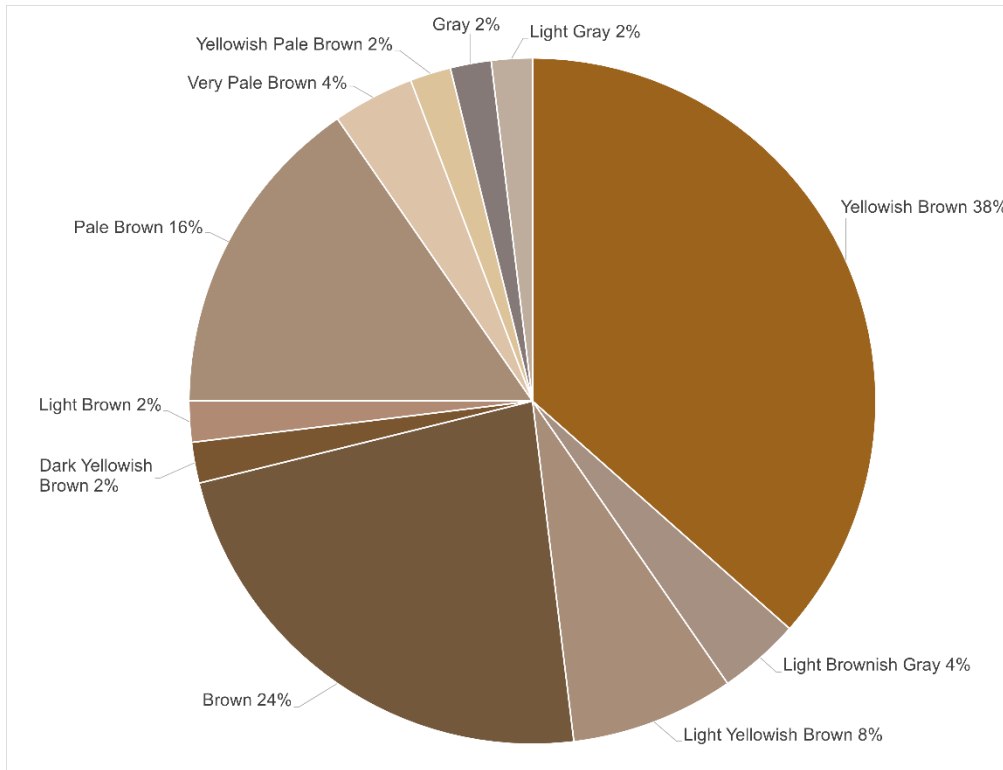


Figure 3. Bolivar Peninsula East Sediment Color Range

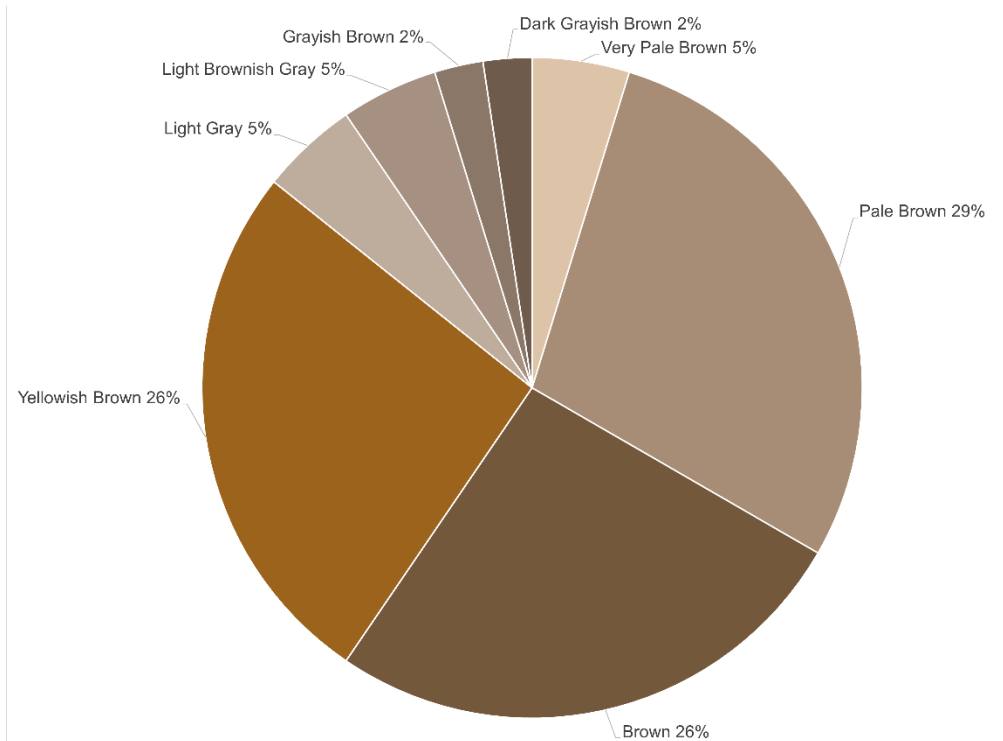


Figure 4. Bolivar Peninsula Central Sediment Color Range

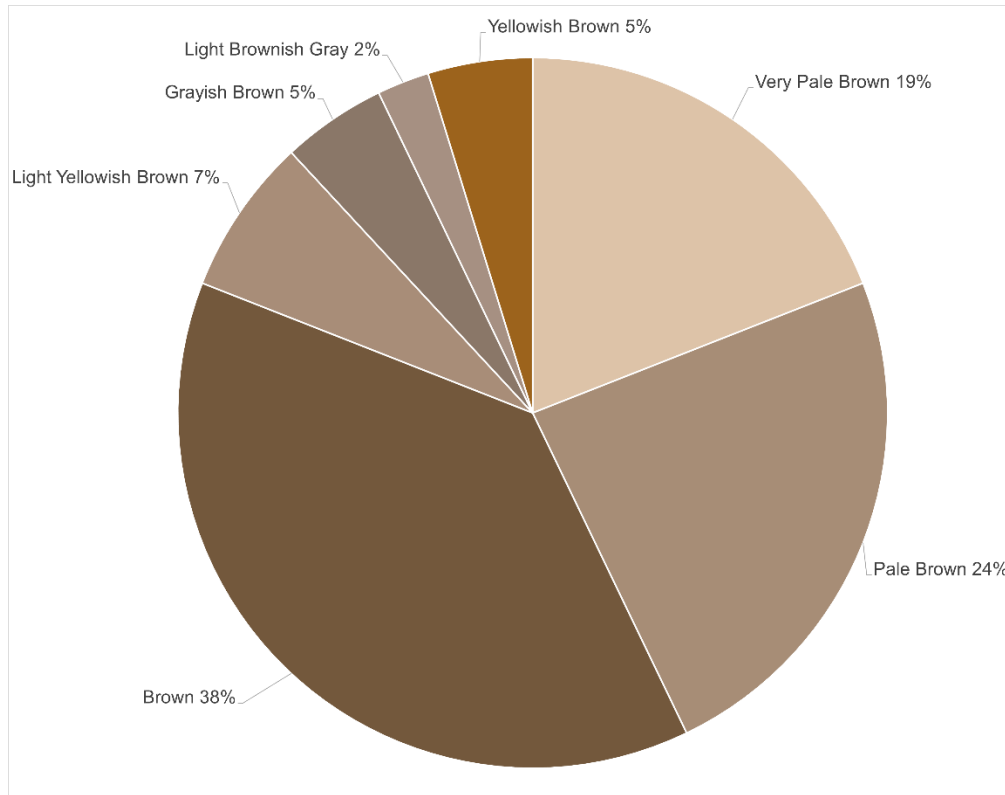


Figure 5. Bolivar Peninsula West Sediment Color Range

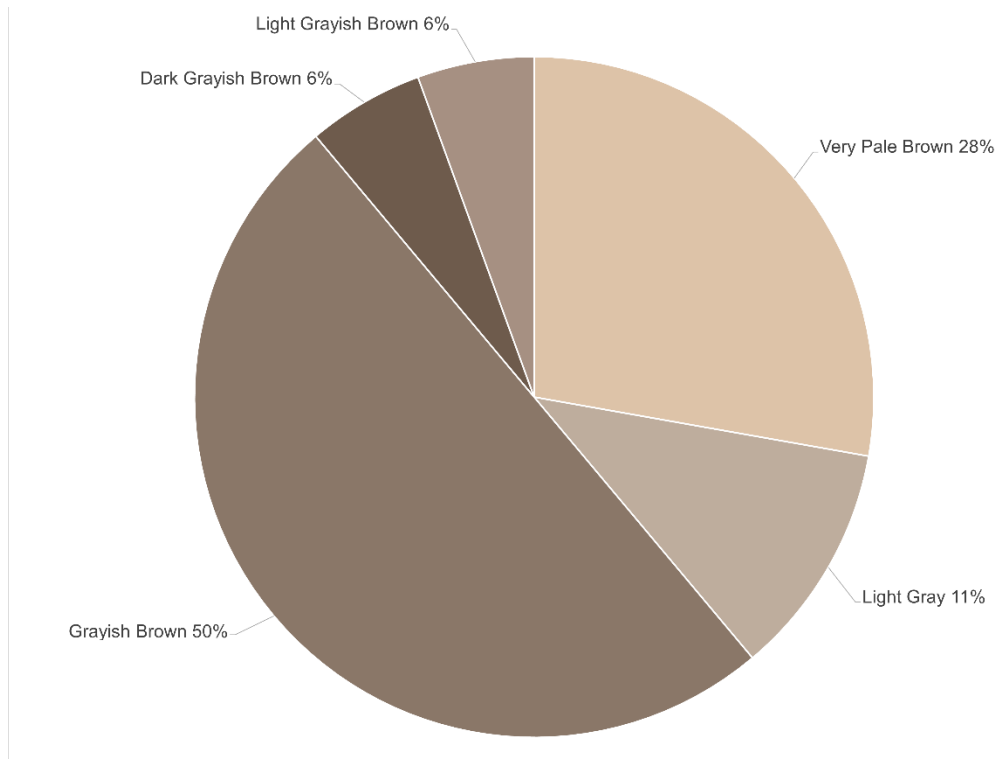


Figure 6. Galveston Island State Park Sediment Color Range

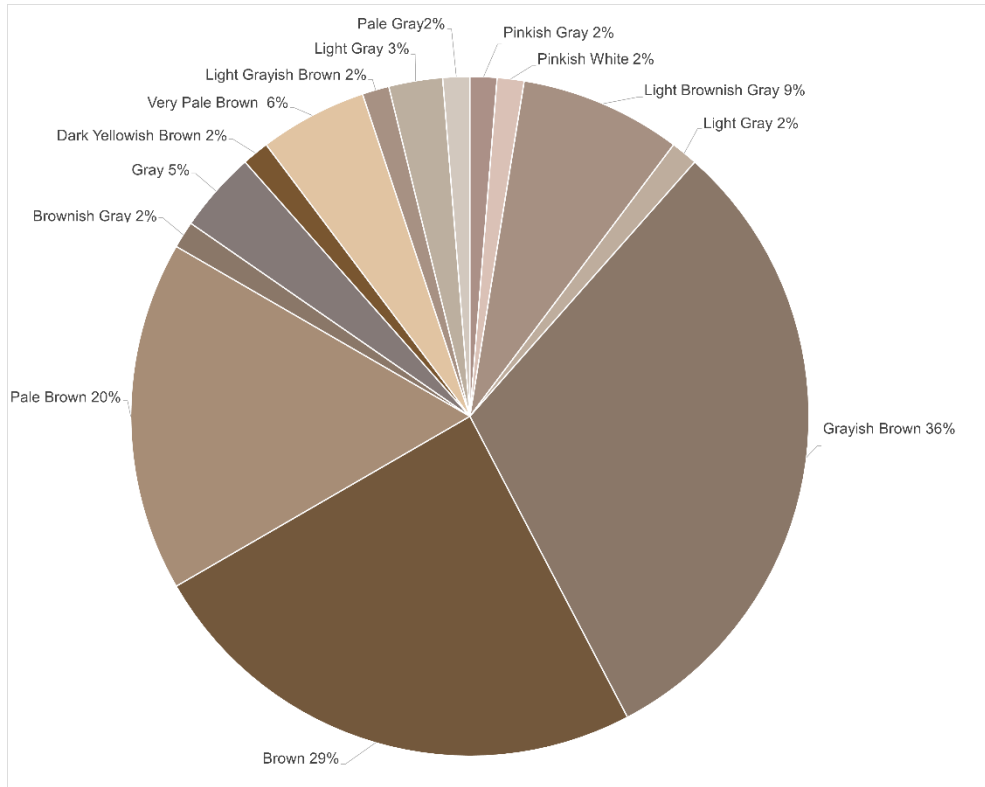


Figure 7. Follets Island Sediment Color Range

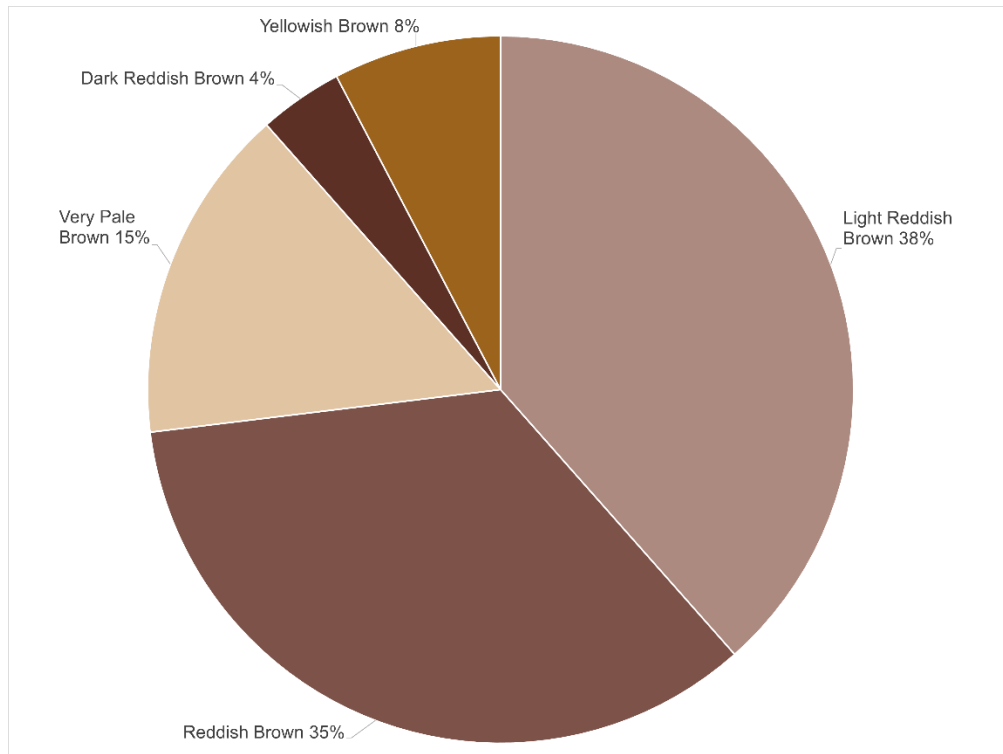


Figure 8. Sargent Beach Sediment Color Range

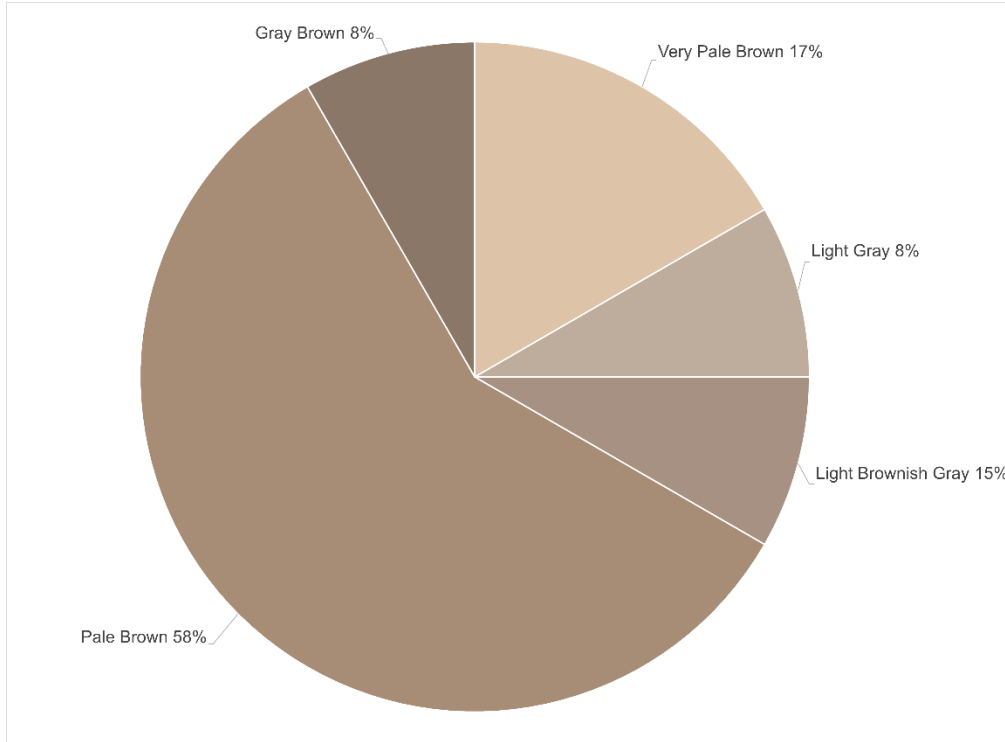


Figure 9. Matagorda Peninsula Sediment Color Range

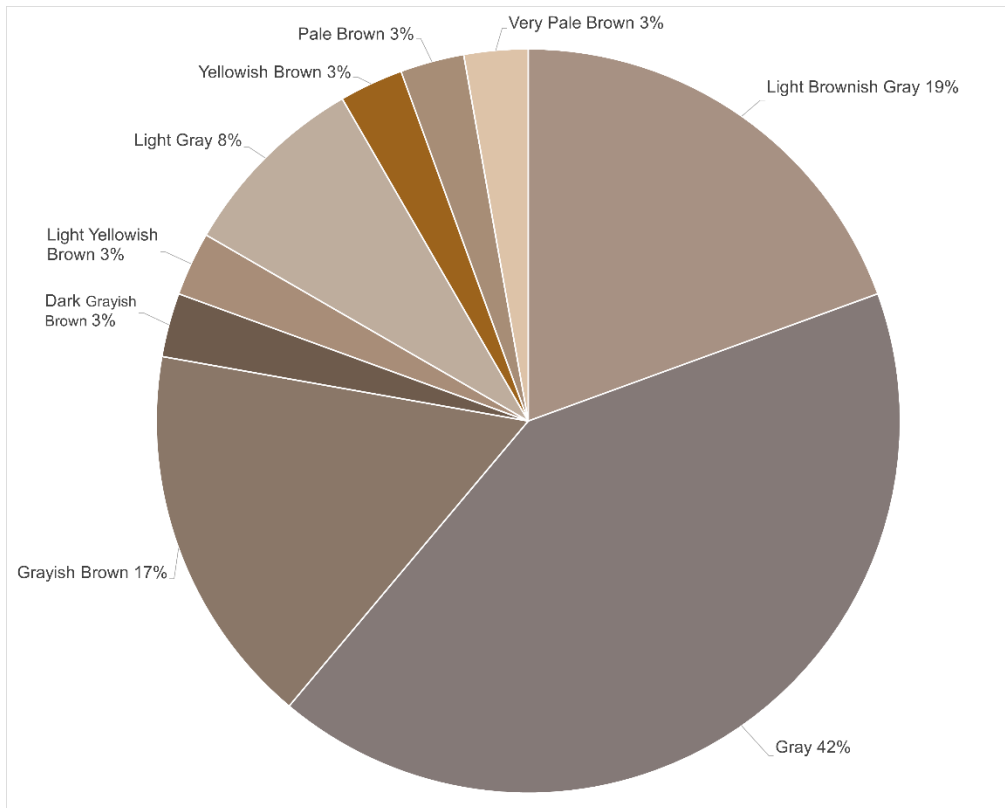


Figure 10 Mustang Island North Sediment Color Range

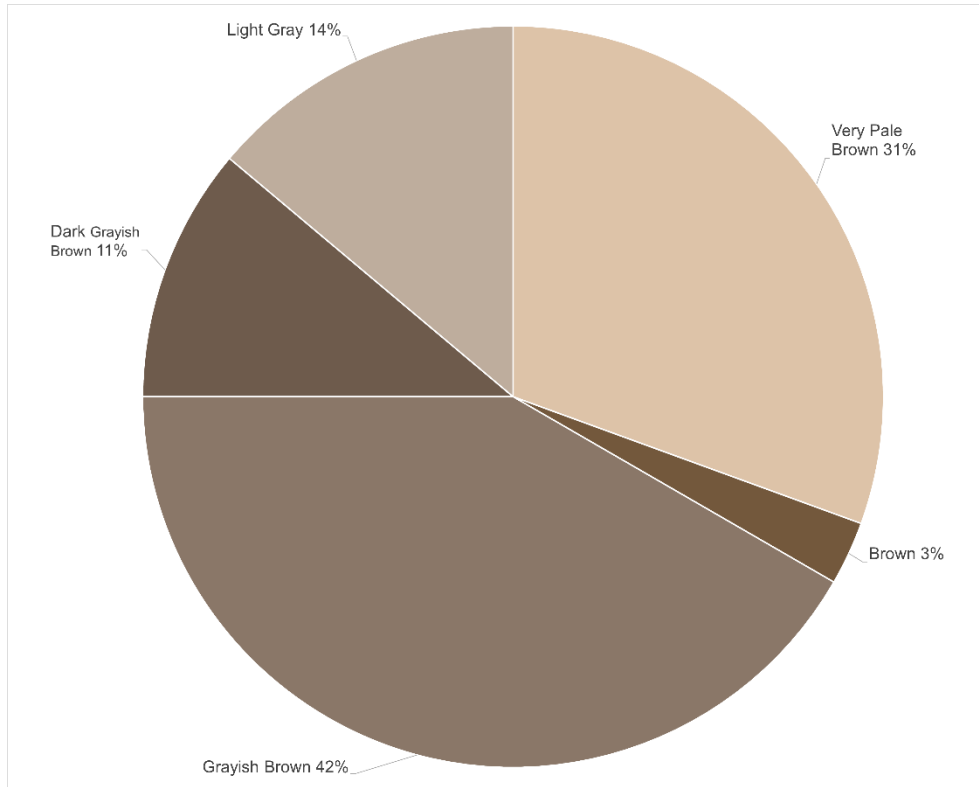


Figure 11. Mustang Island Central Sediment Color Range

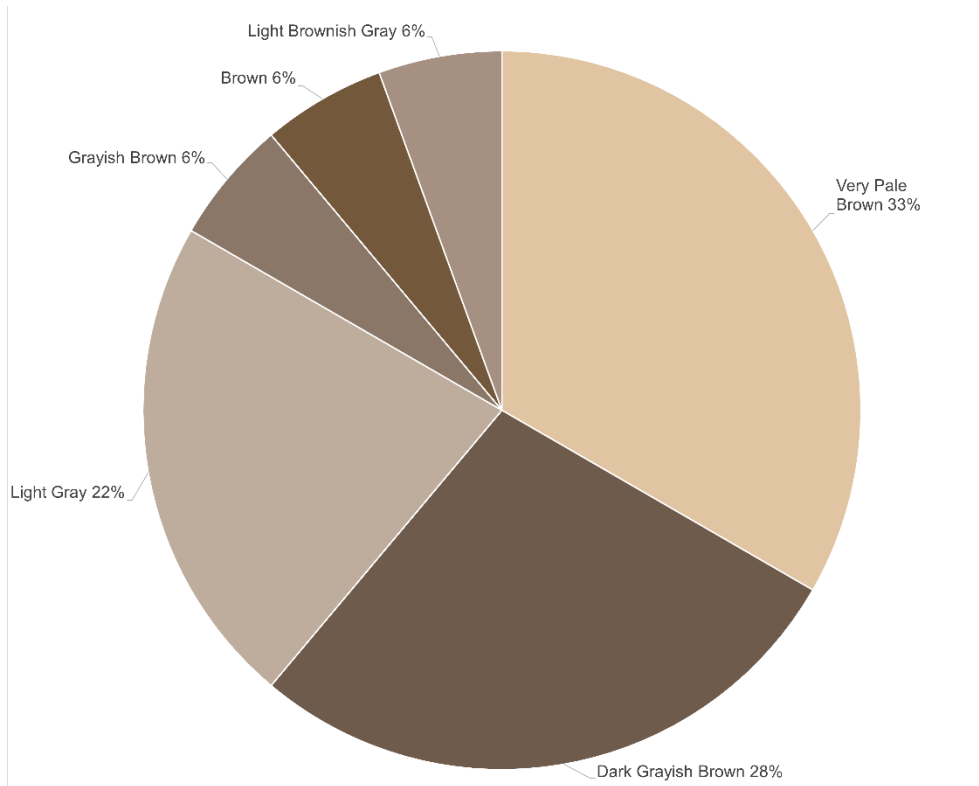


Figure 12. Mustang Island South Sediment Color Range

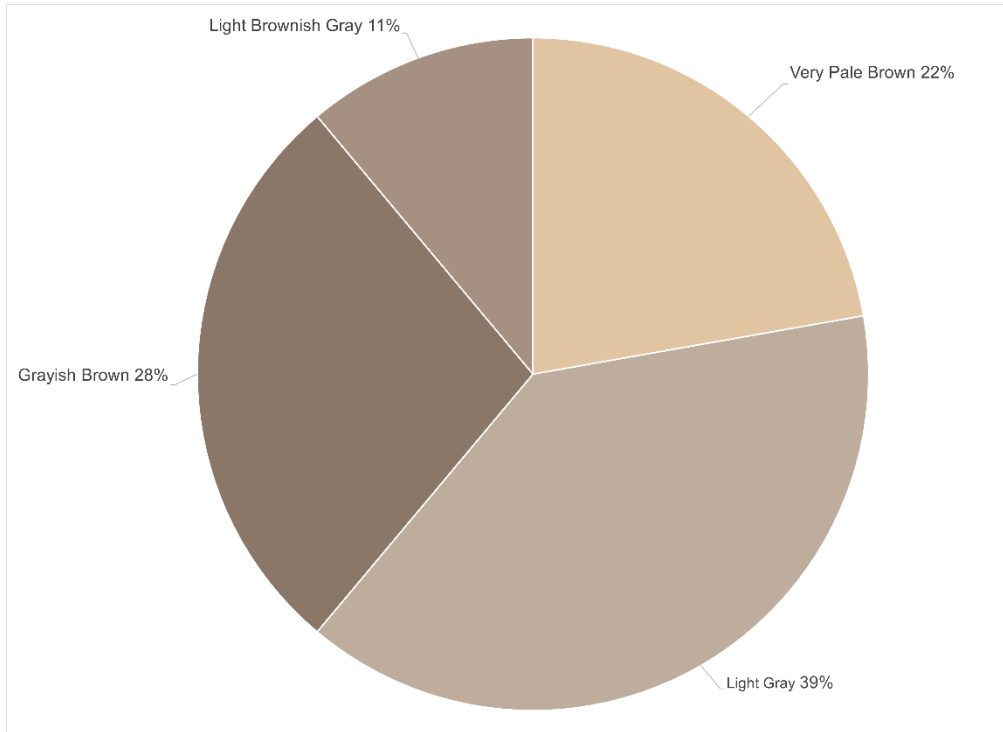


Figure 13. North Padre Island Sediment Color Range

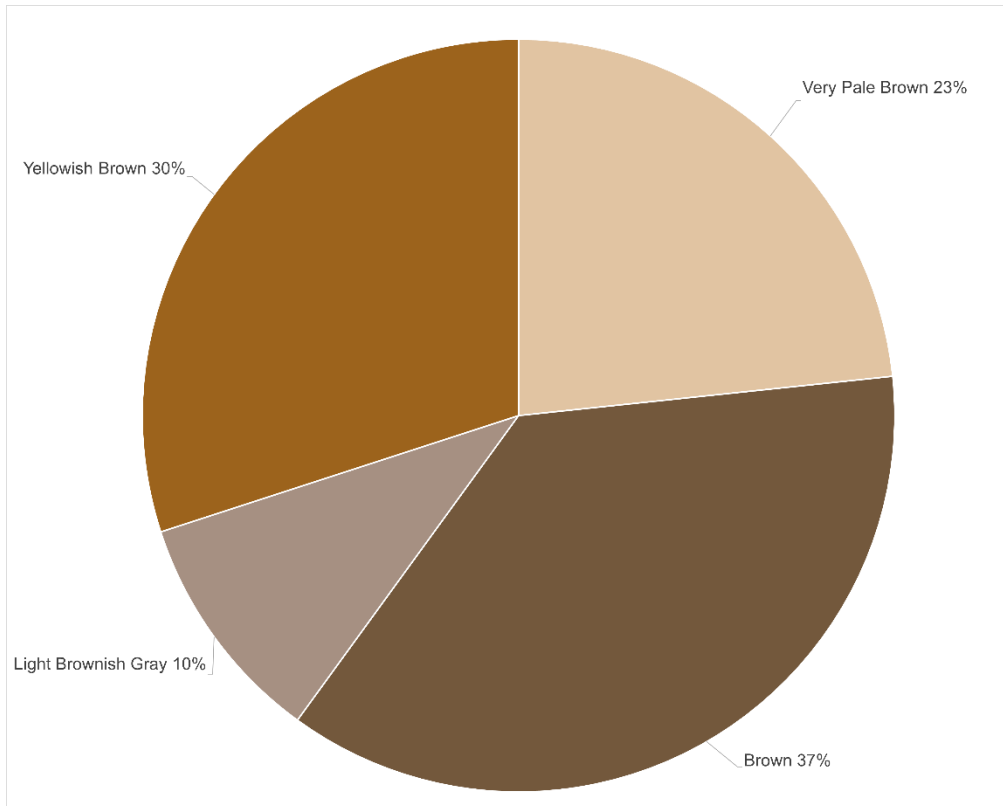


Figure 14. South Padre Island Sediment Color Range

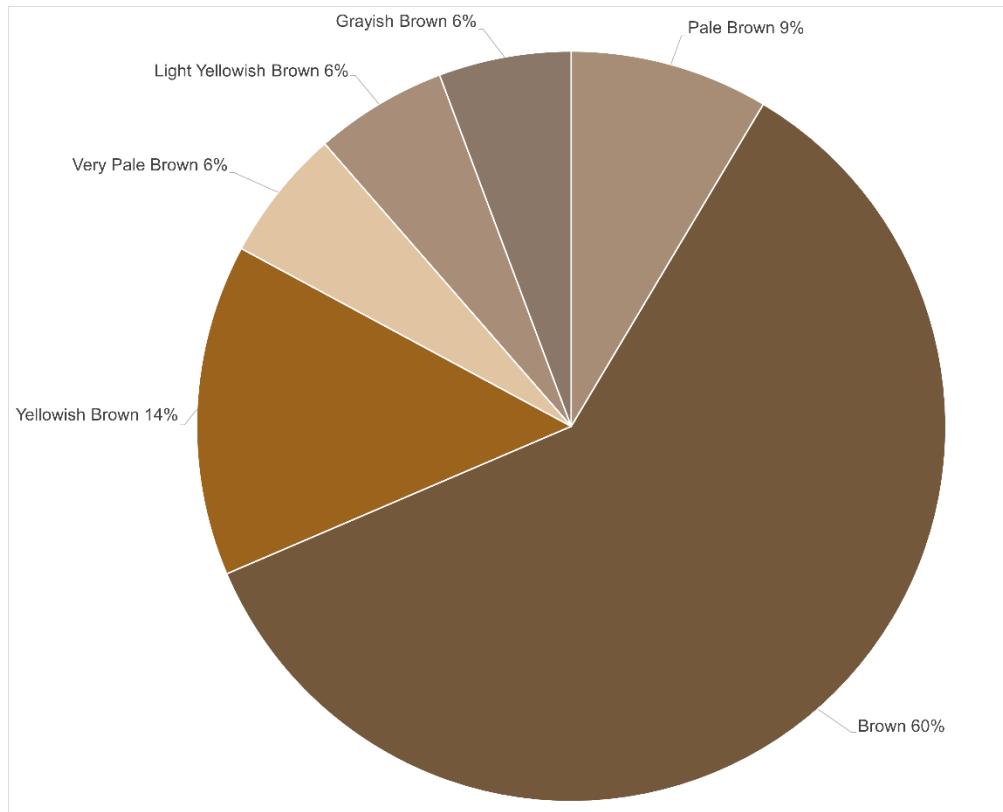


Figure 15. Boca Chica Sediment Color Range



Appendix 4

Transect Grain Size Curves





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BOLIVAR PENINSULA EAST TRANSECT GRAIN SIZE CURVES

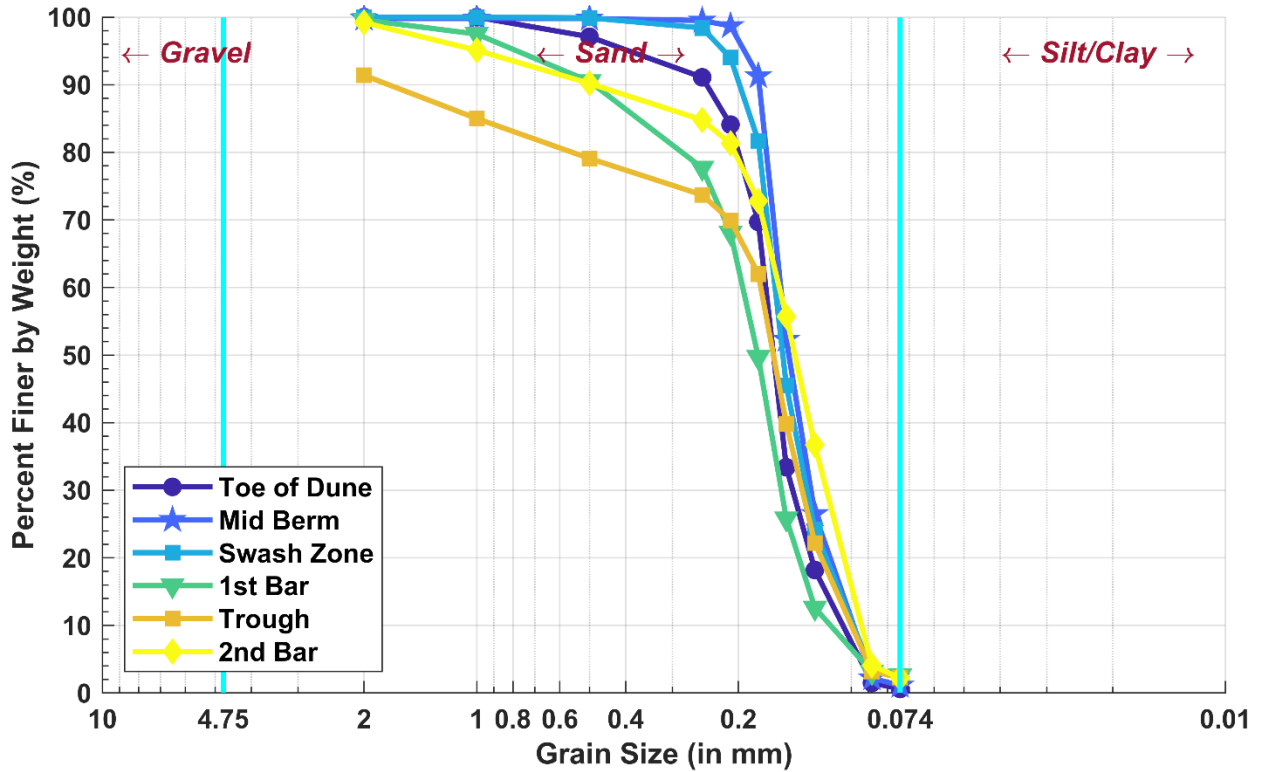


Figure 1. Bolivar Peninsula West - Transect 1

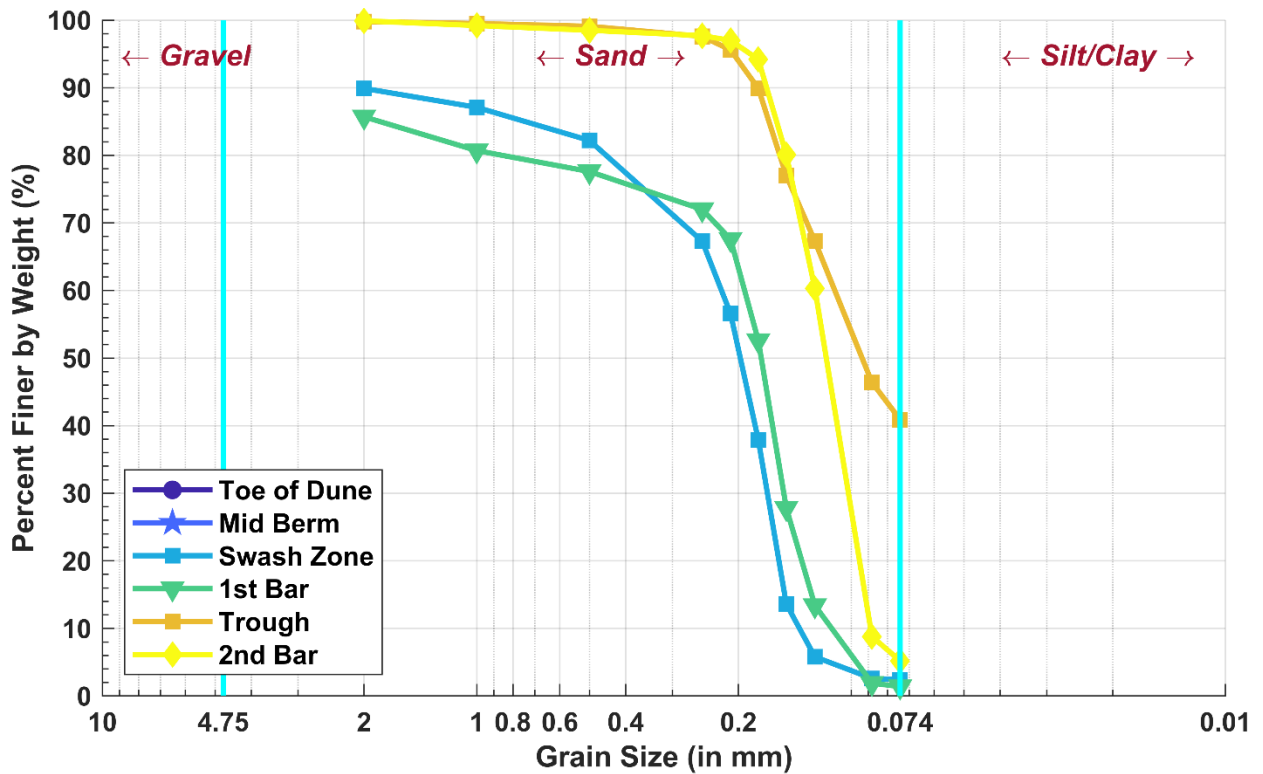


Figure 2. Bolivar Peninsula West - Transect 2

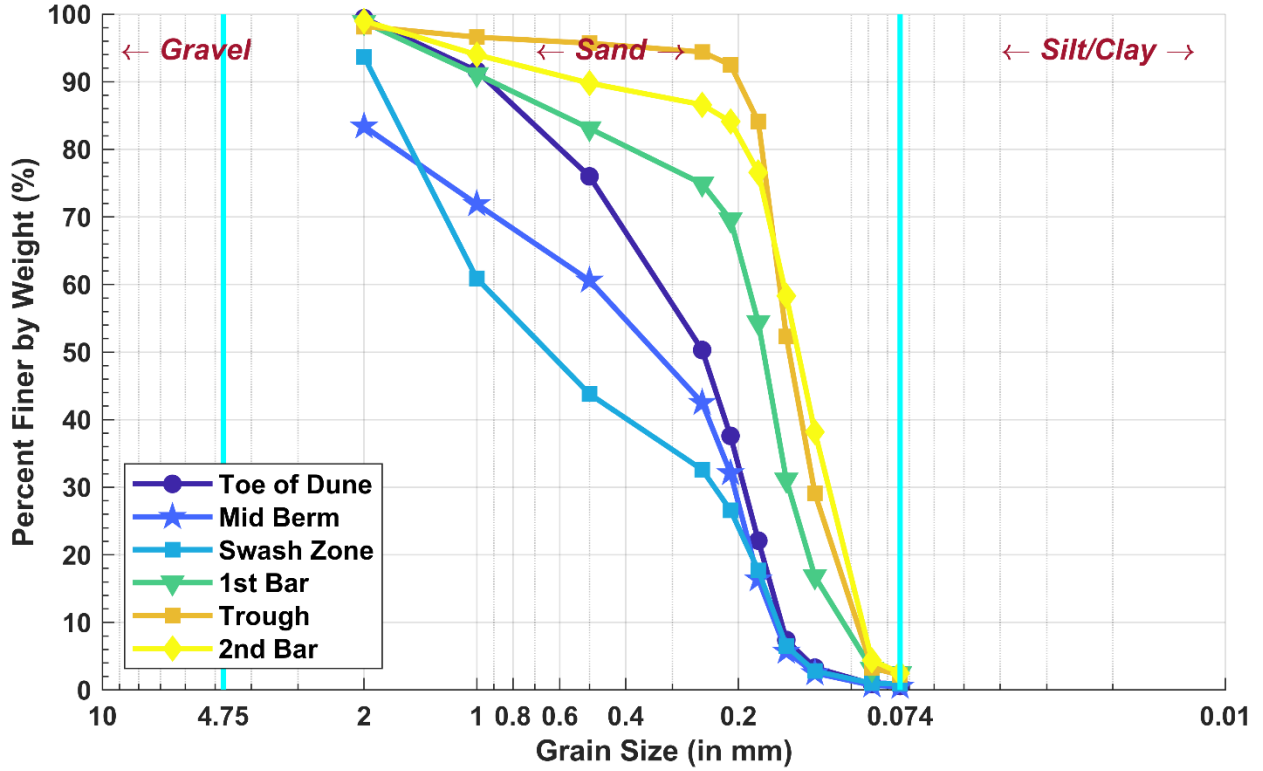


Figure 3. Bolivar Peninsula West - Transect 3

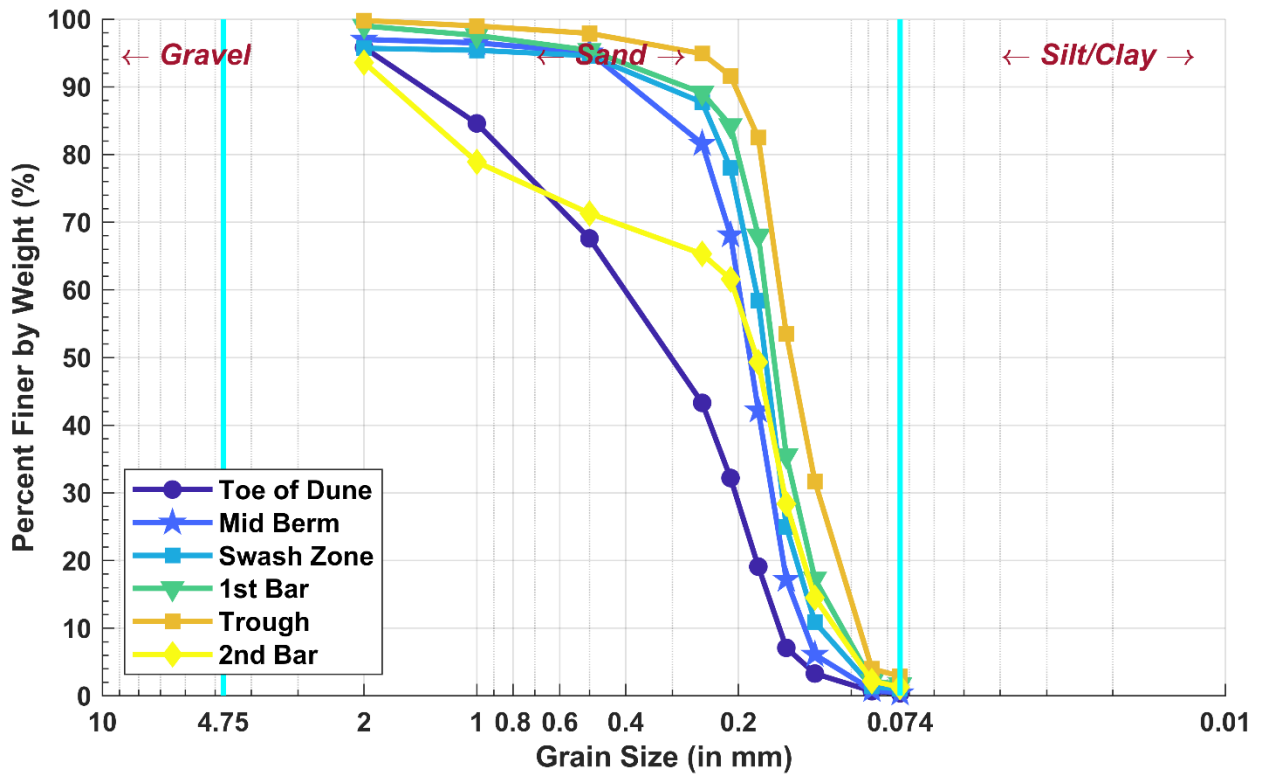


Figure 4. Bolivar Peninsula West - Transect 4

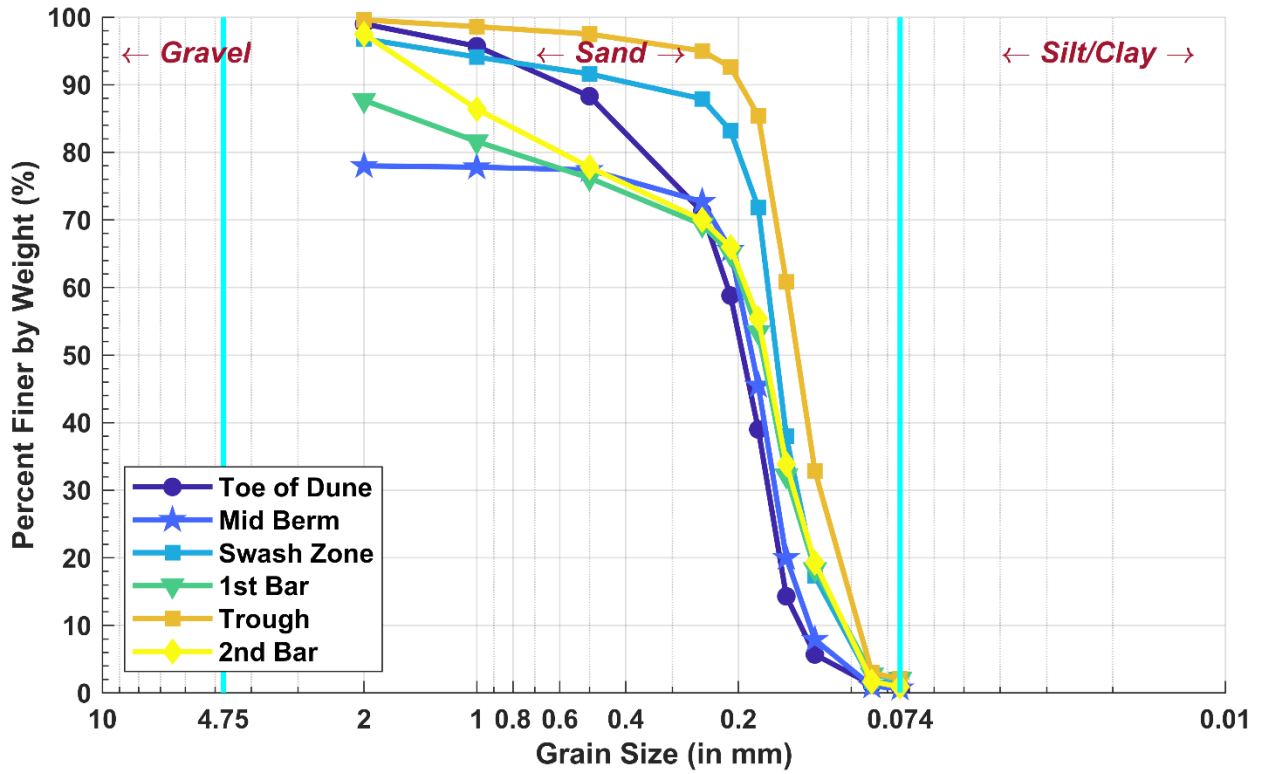


Figure 5. Bolivar Peninsula West - Transect 5

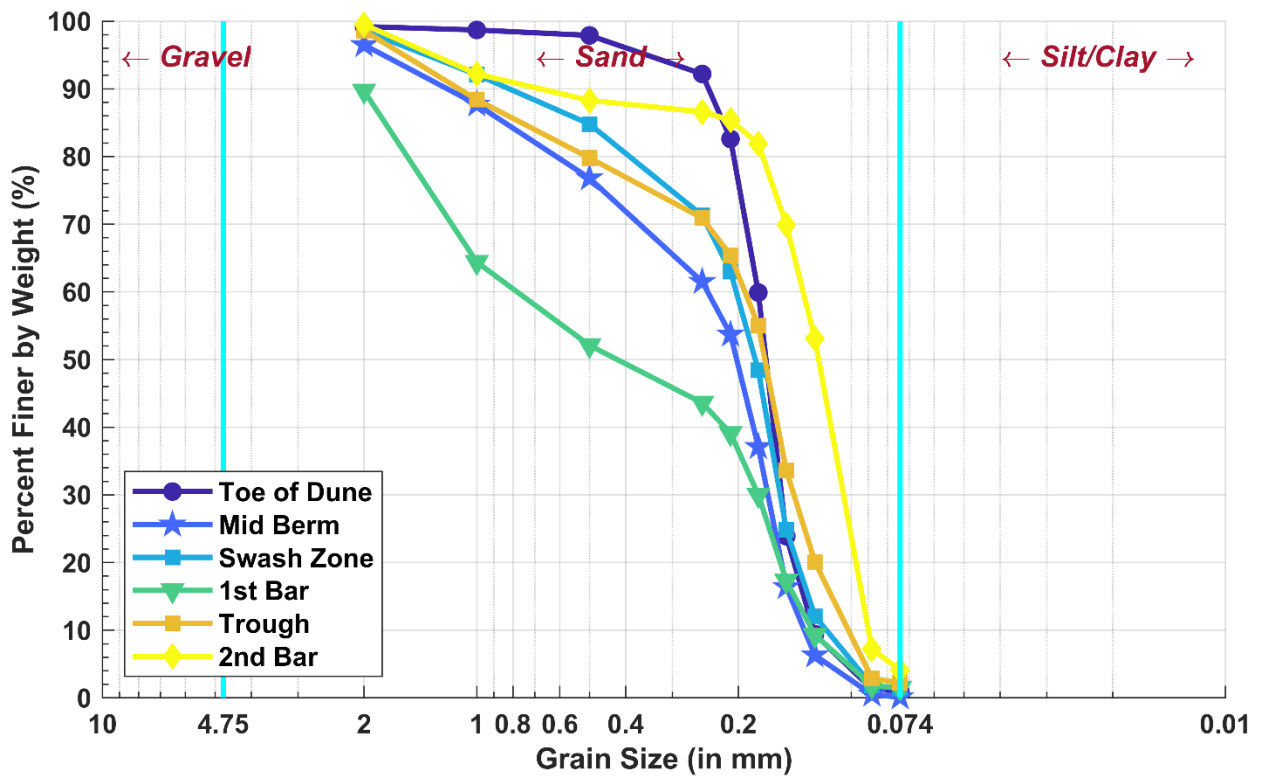


Figure 6. Bolivar Peninsula West - Transect 6

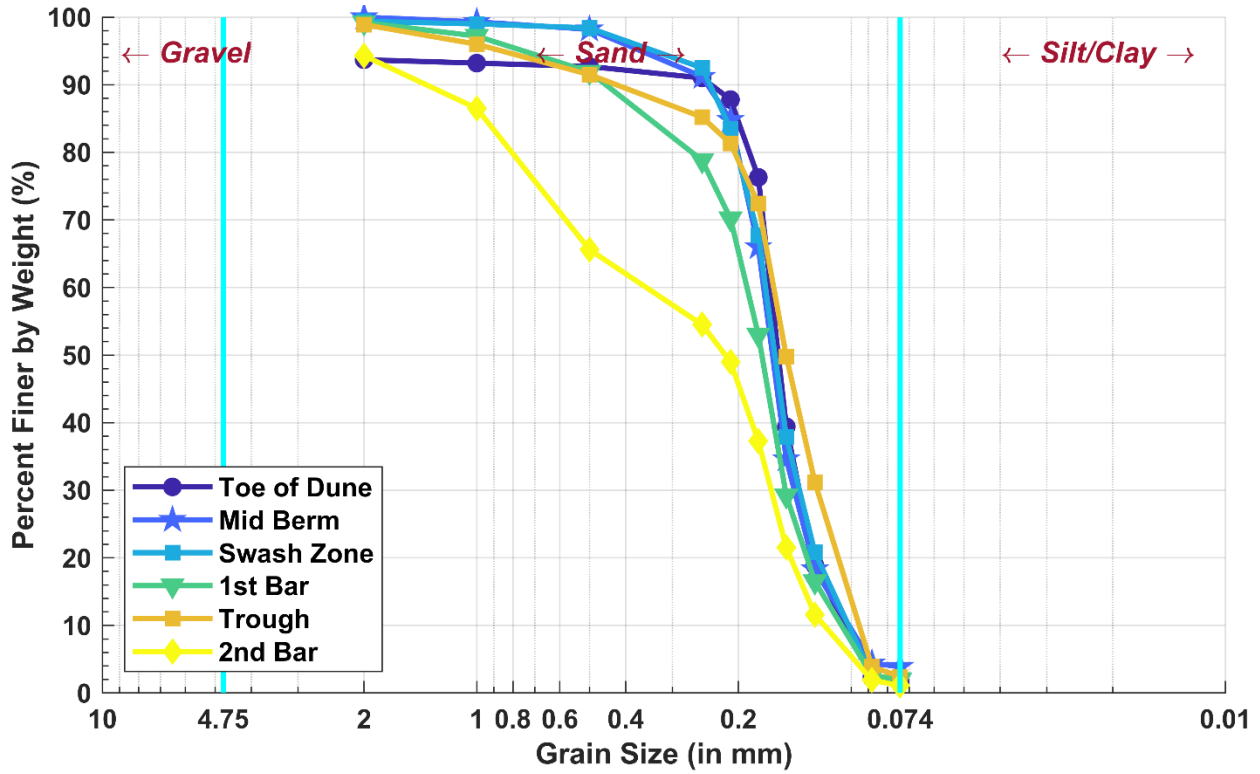


Figure 7. Bolivar Peninsula West - Transect 7

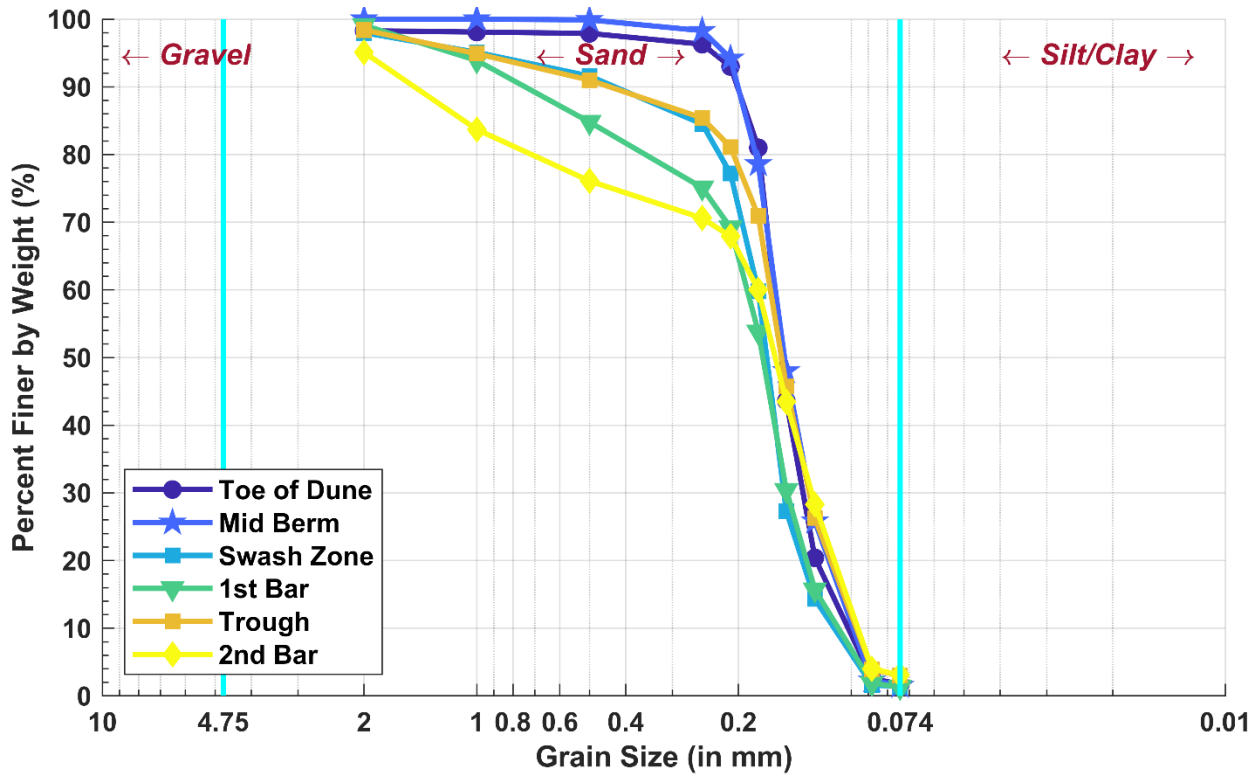


Figure 8. Bolivar Peninsula West - Transect 8

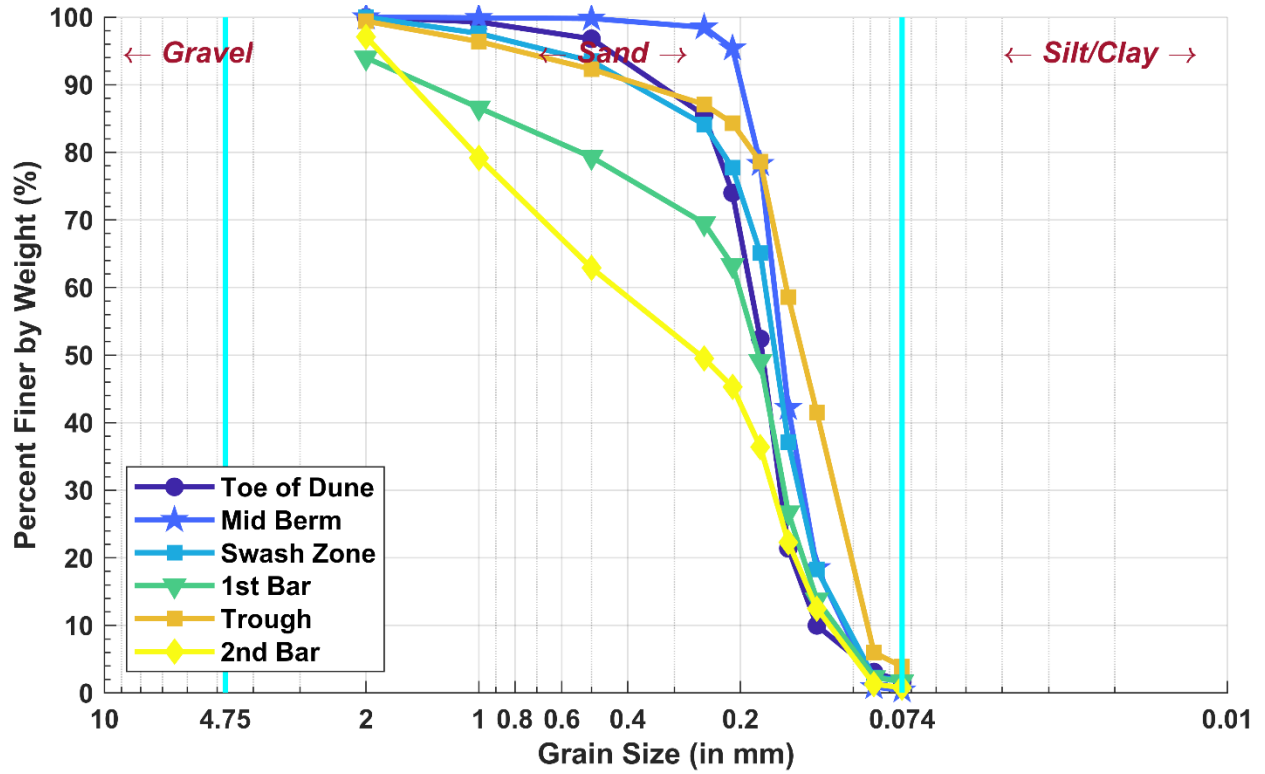


Figure 9. Bolivar Peninsula West - Transect 9



BOLIVAR PENINSULA CENTRAL TRANSECT GRAIN SIZE CURVES

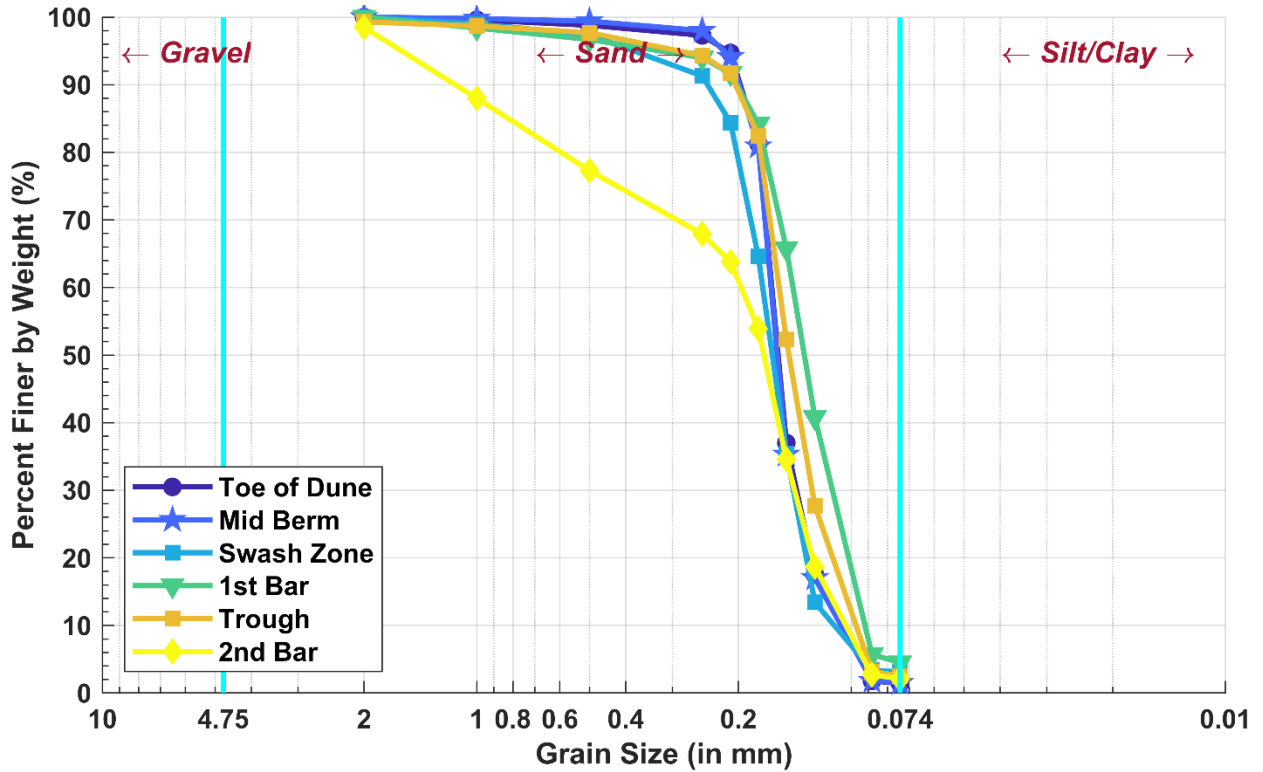


Figure 10. Bolivar Peninsula Central - Transect 1

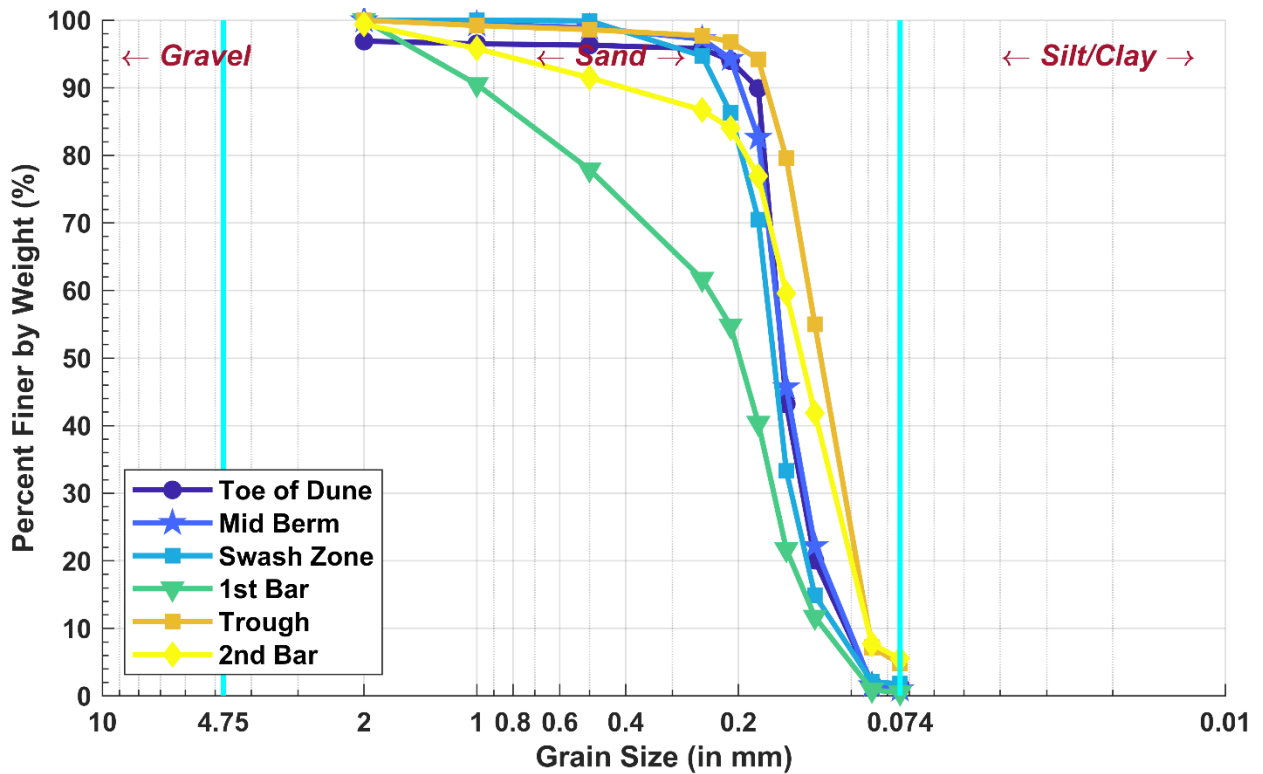


Figure 11. Bolivar Peninsula Central - Transect 2

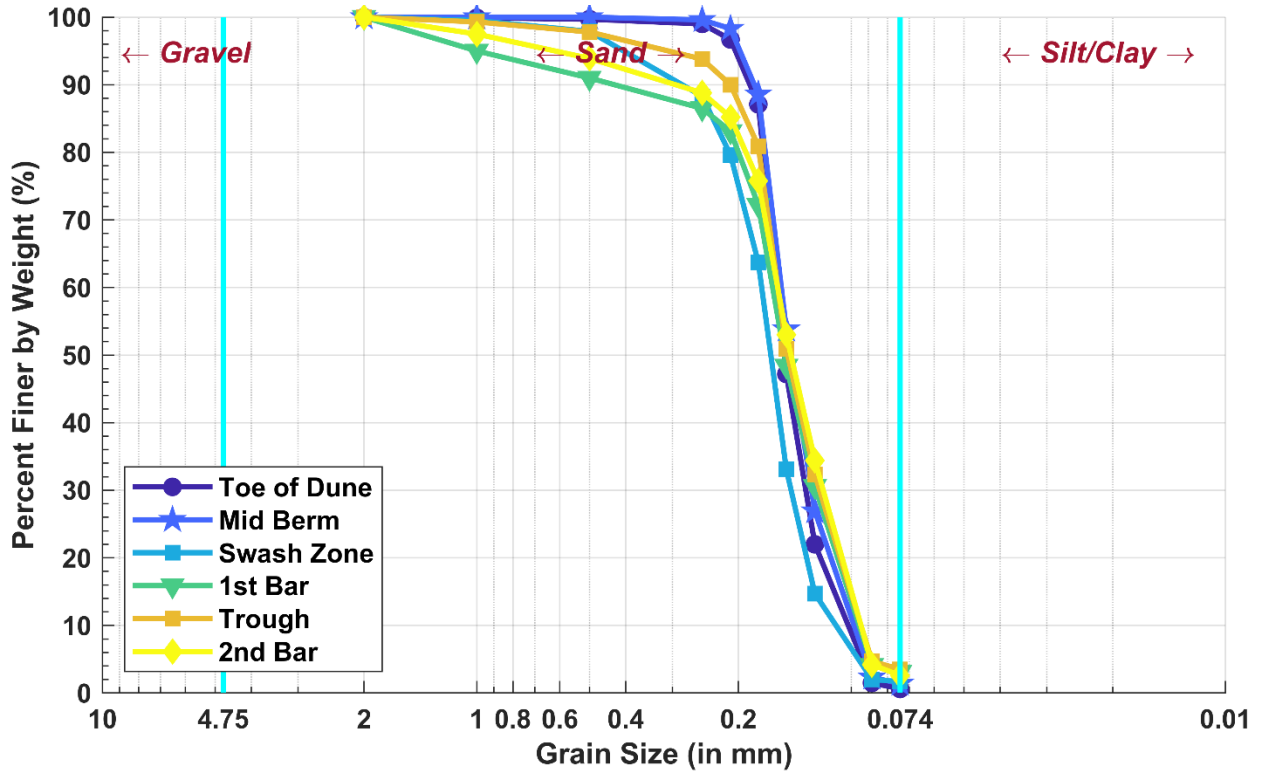


Figure 12. Bolivar Peninsula Central - Transect 3

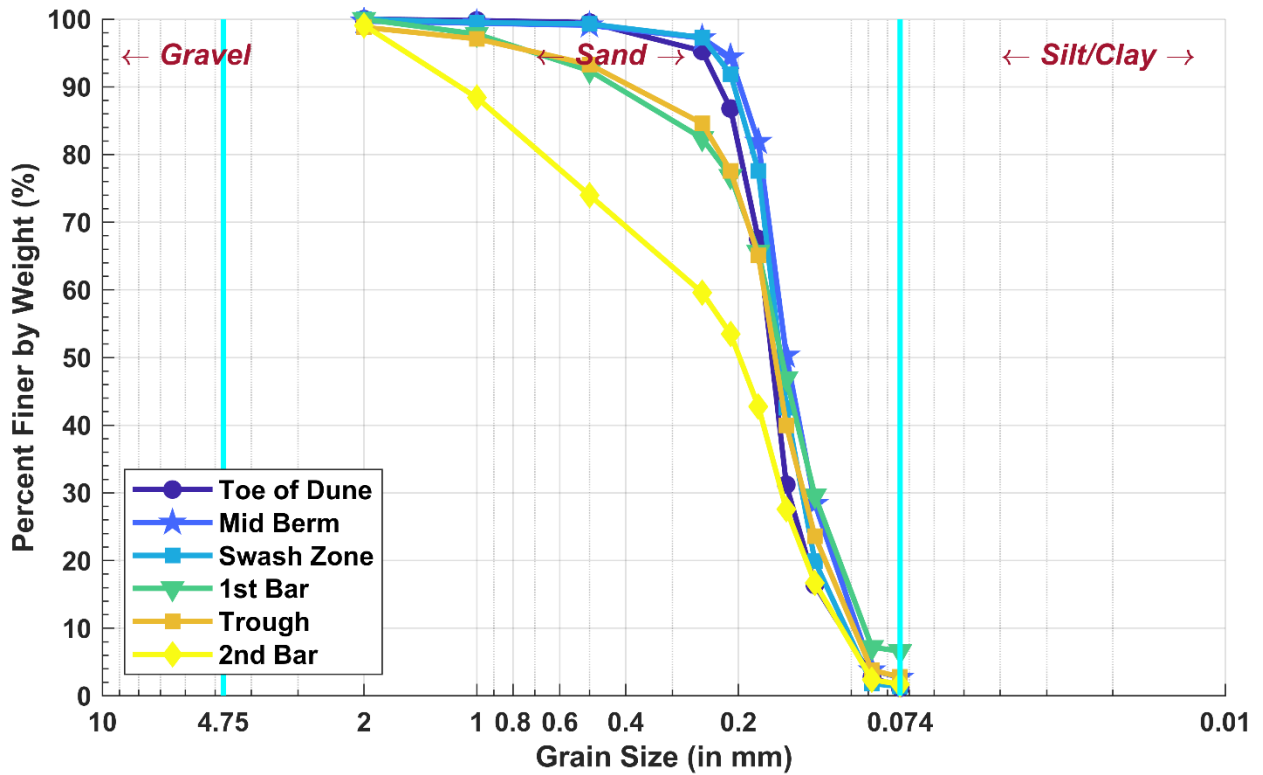


Figure 13. Bolivar Peninsula Central - Transect 4

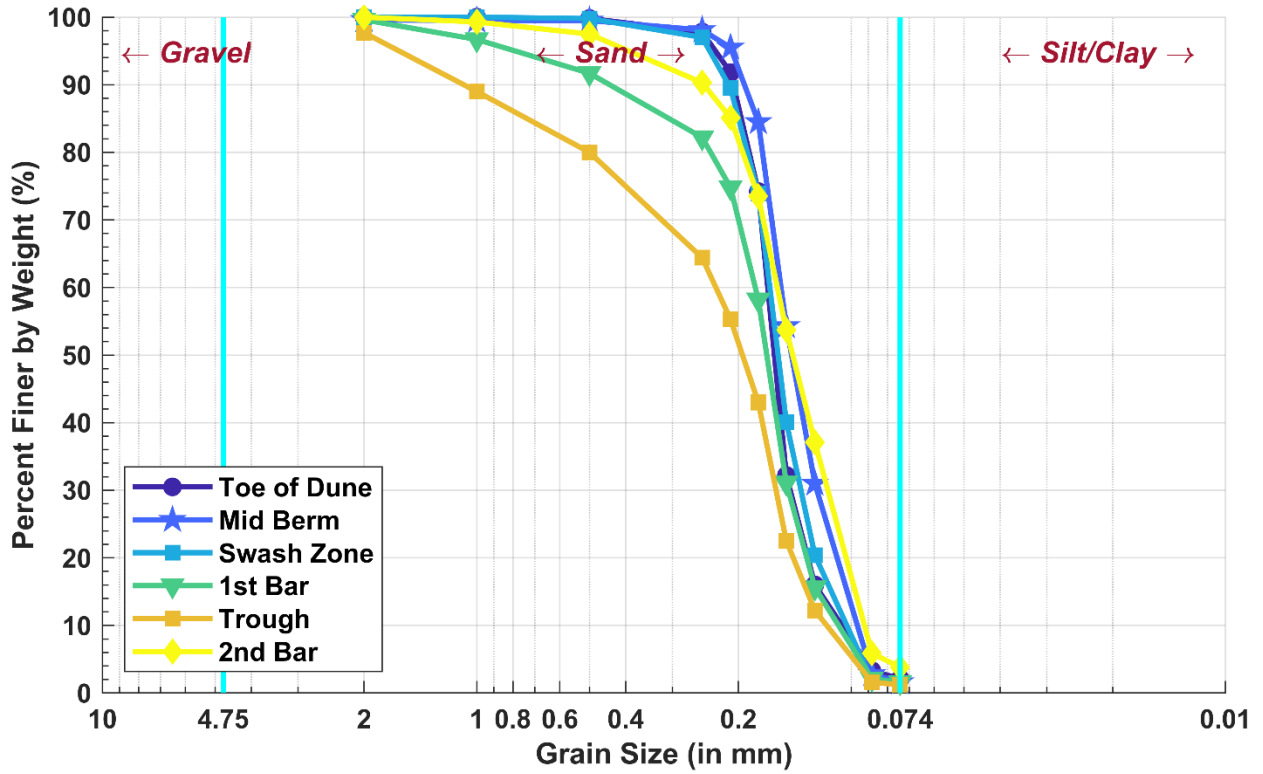


Figure 14. Bolivar Peninsula Central - Transect 5

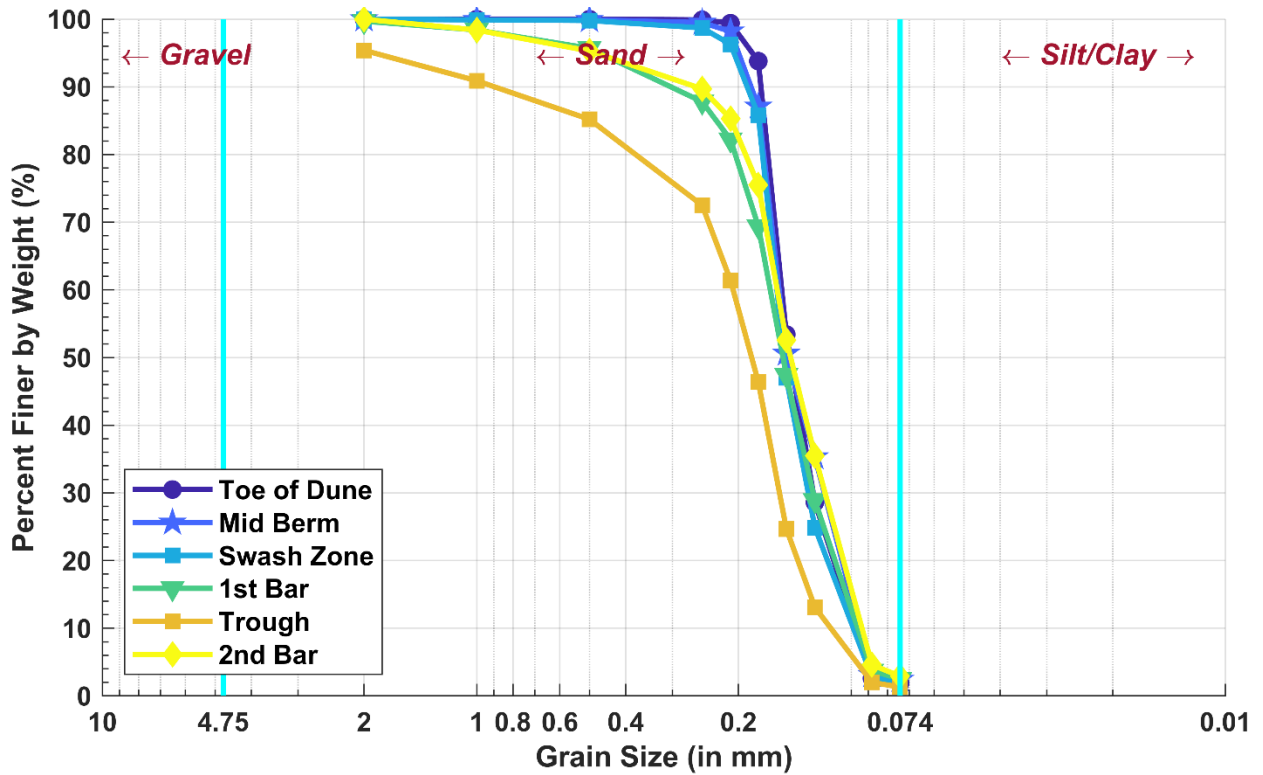


Figure 15. Bolivar Peninsula Central - Transect 6

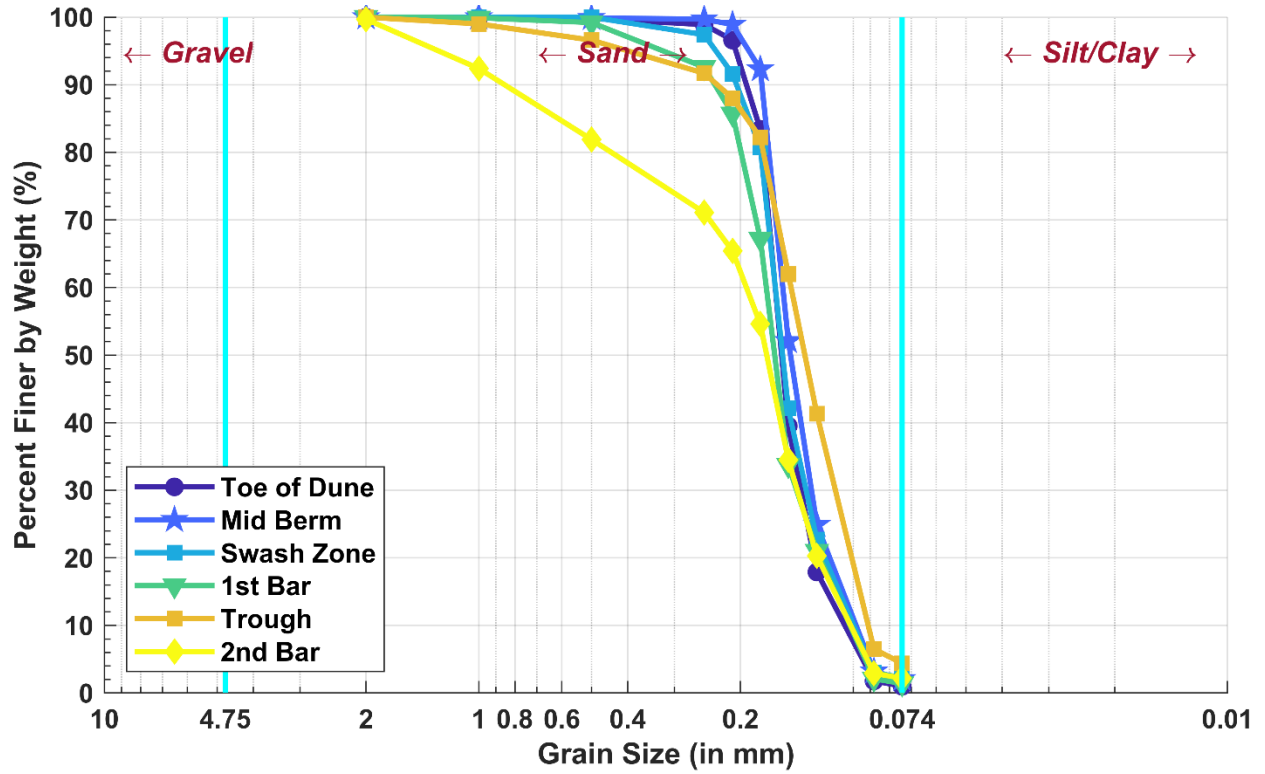


Figure 16. Bolivar Peninsula Central - Transect 7



BOLIVAR PENINSULA WEST TRANSECT GRAIN SIZE CURVES

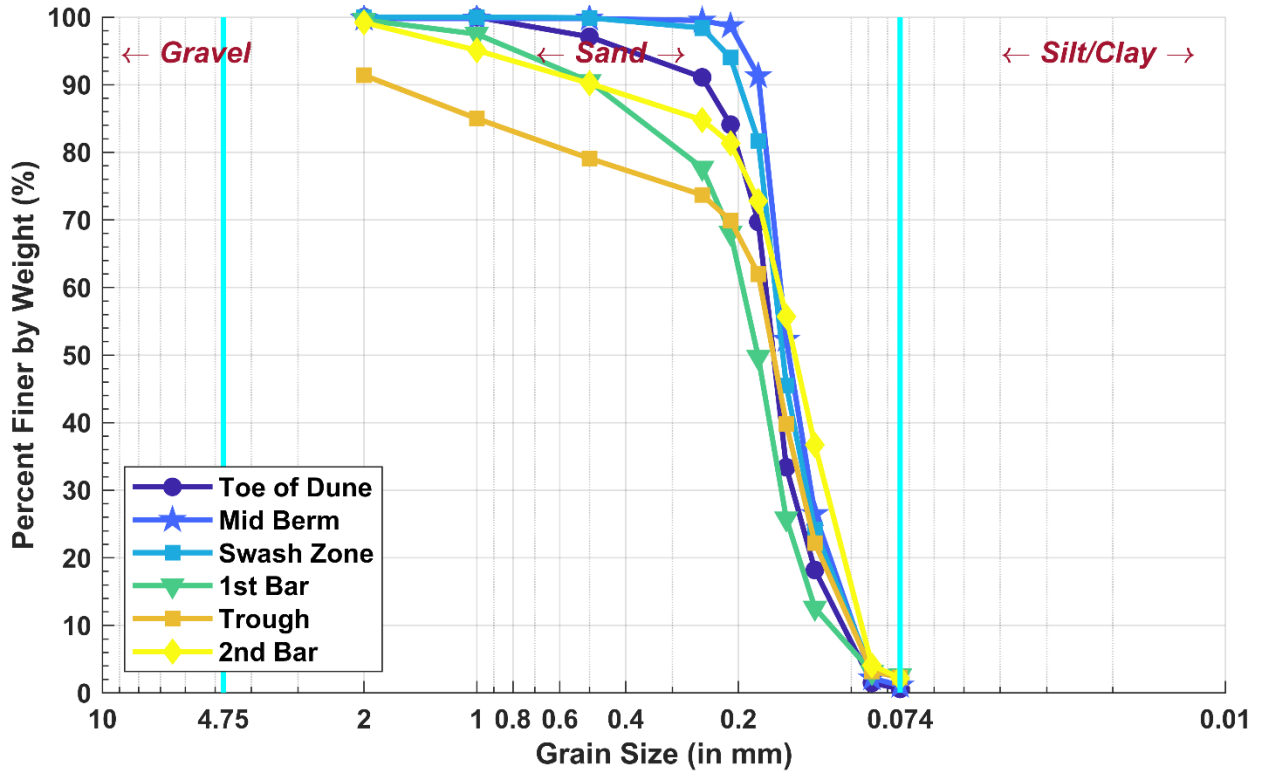


Figure 17. Bolivar Peninsula West - Transect 1

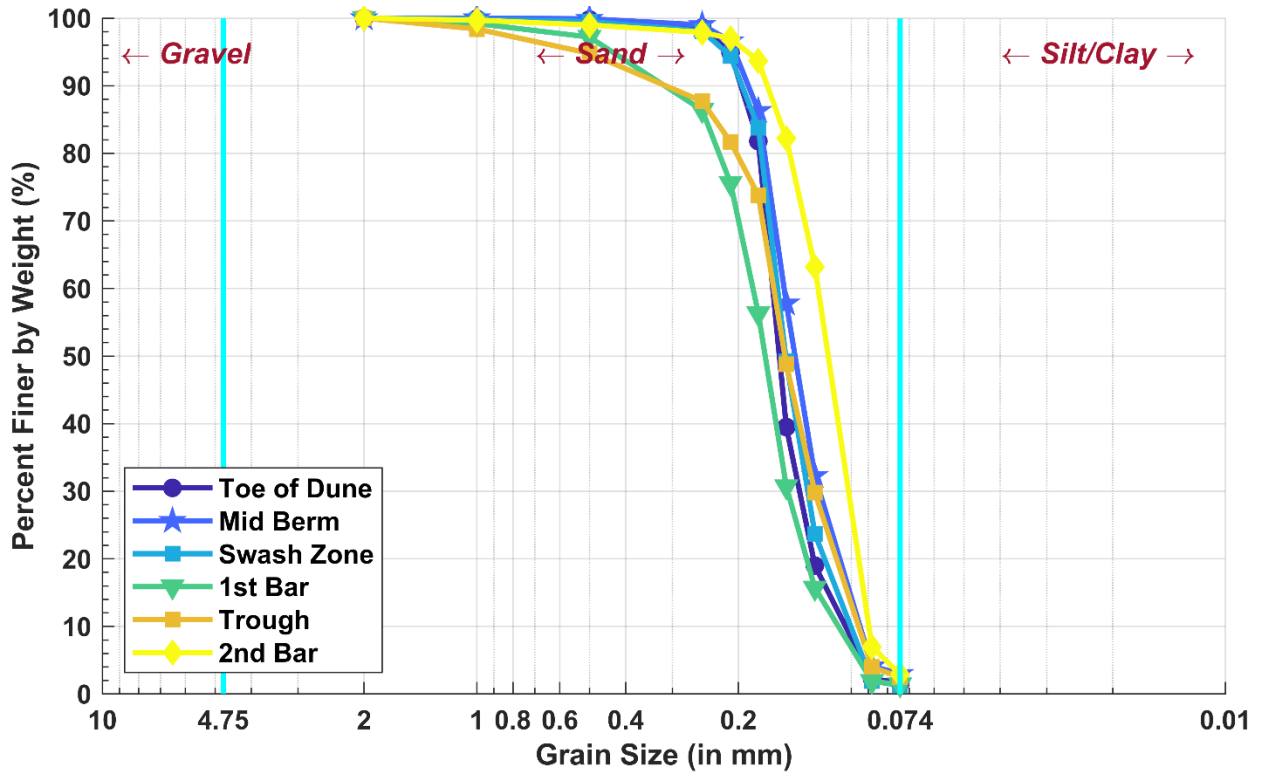


Figure 18. Bolivar Peninsula West - Transect 2

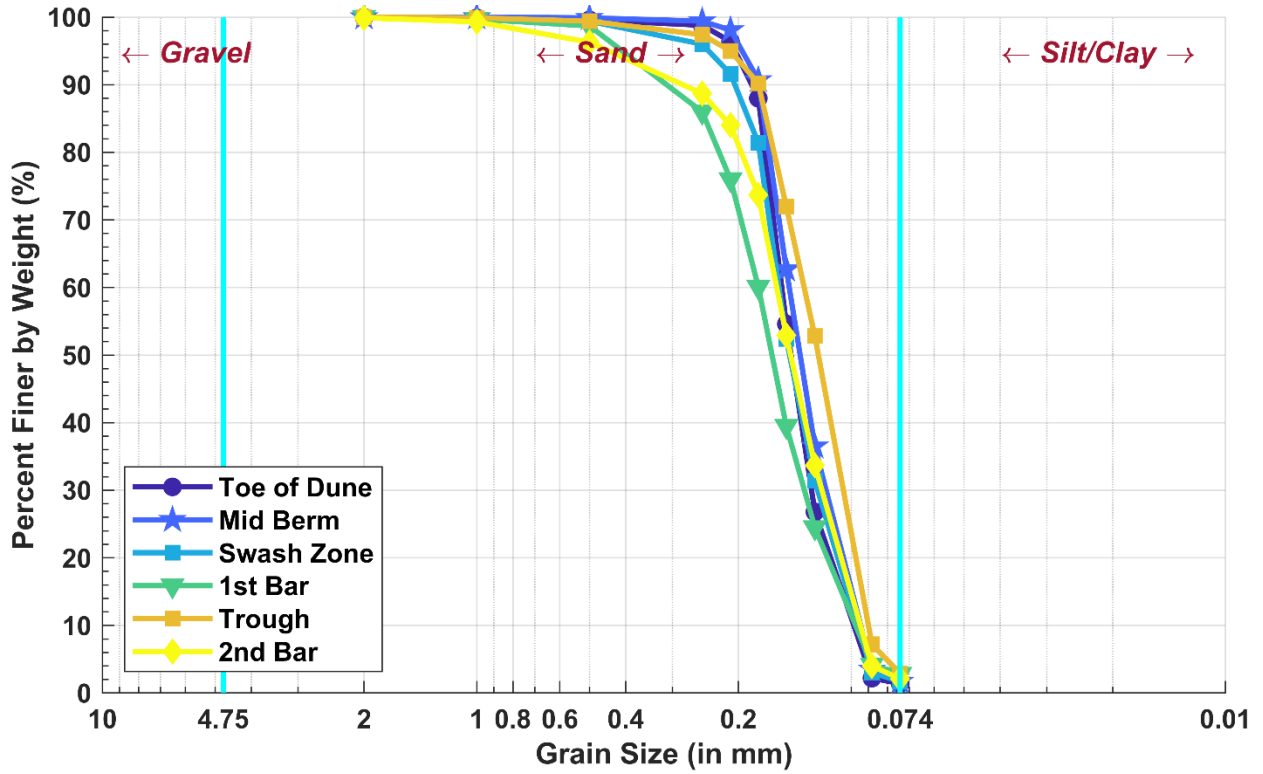


Figure 19. Bolivar Peninsula West - Transect 3

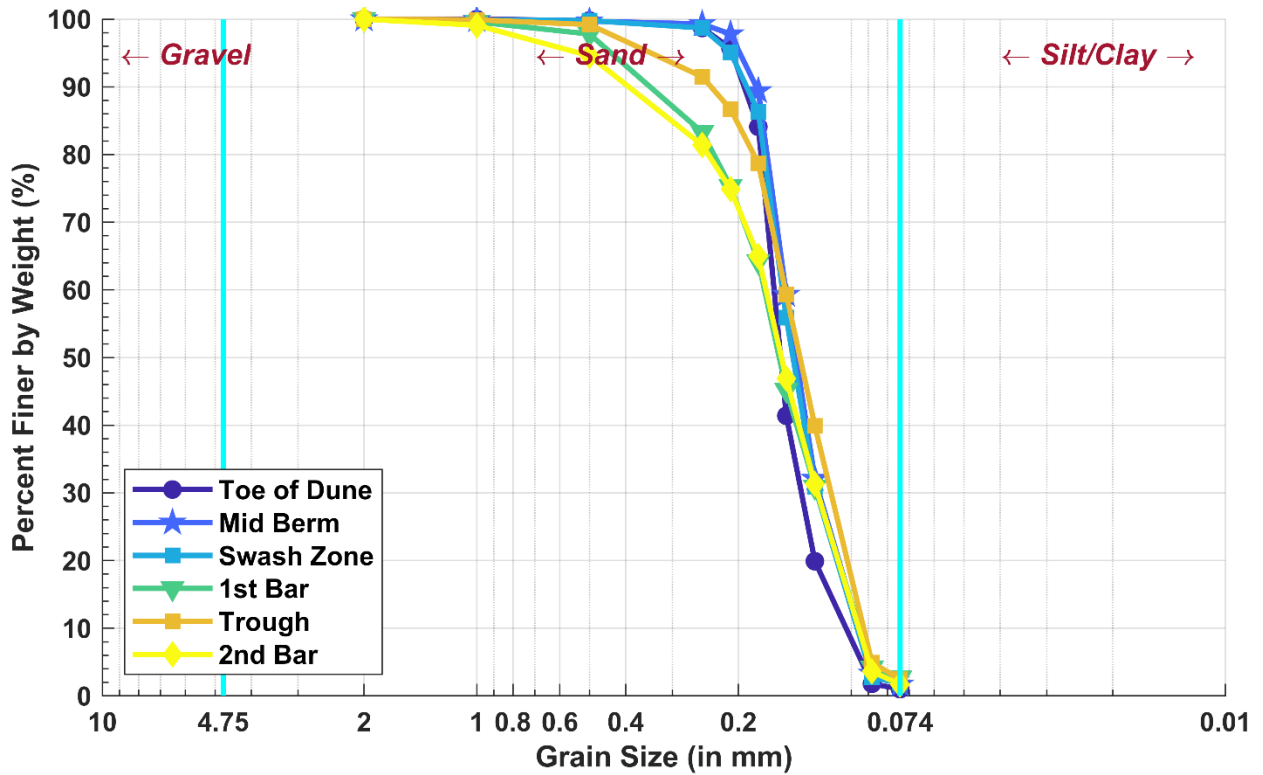


Figure 20. Bolivar Peninsula West - Transect 4

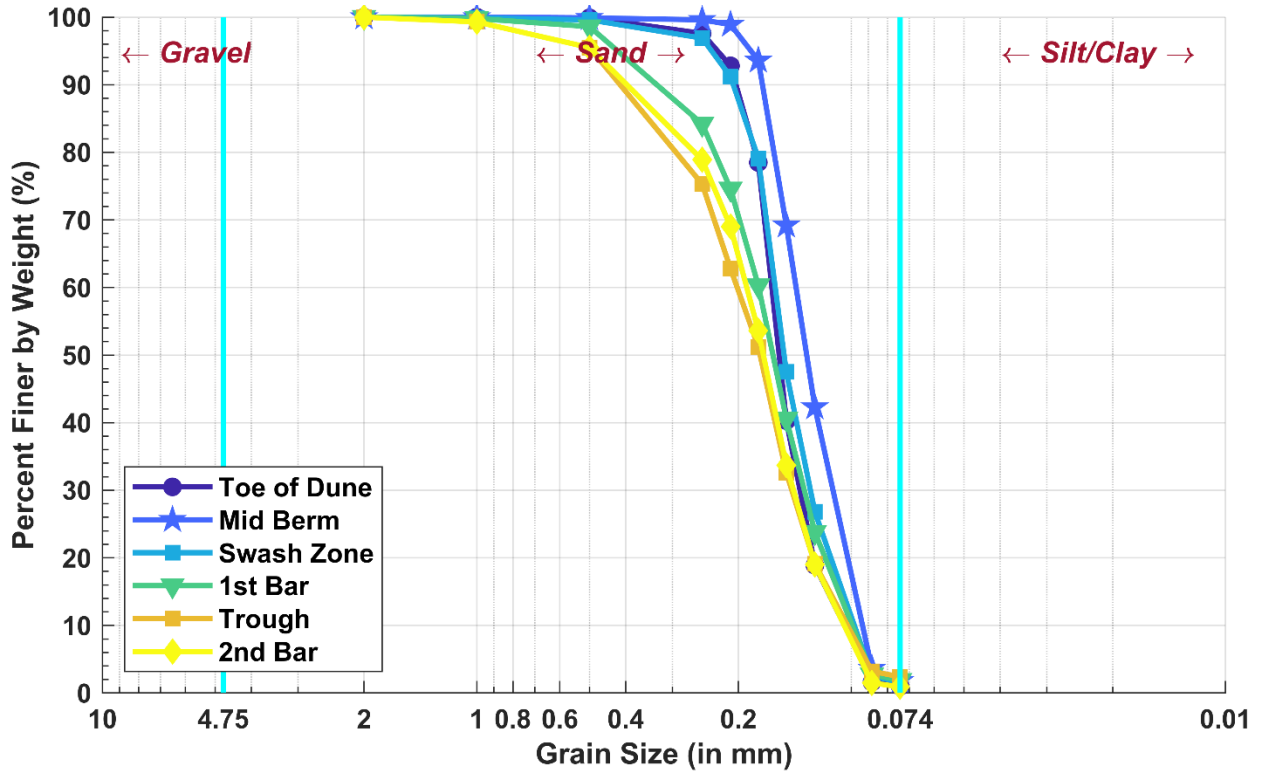


Figure 21. Bolivar Peninsula West - Transect 5

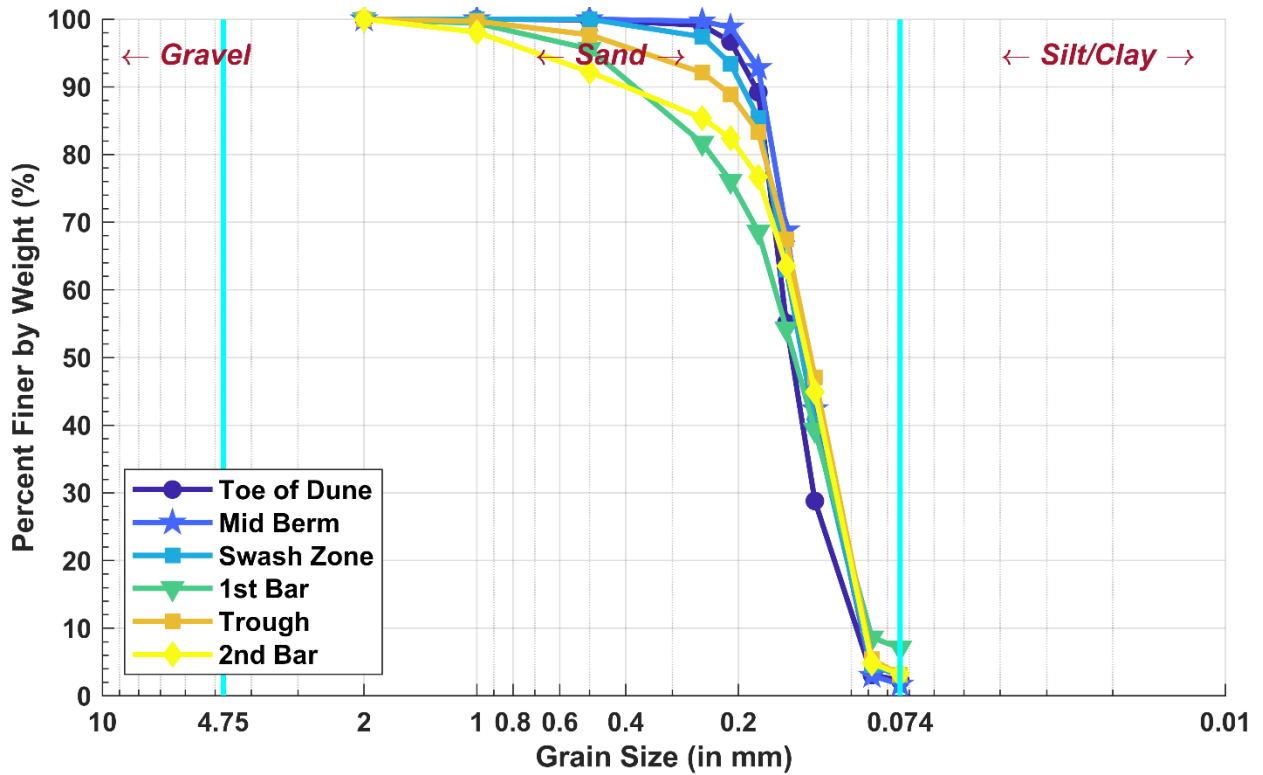


Figure 22. Bolivar Peninsula West - Transect 6

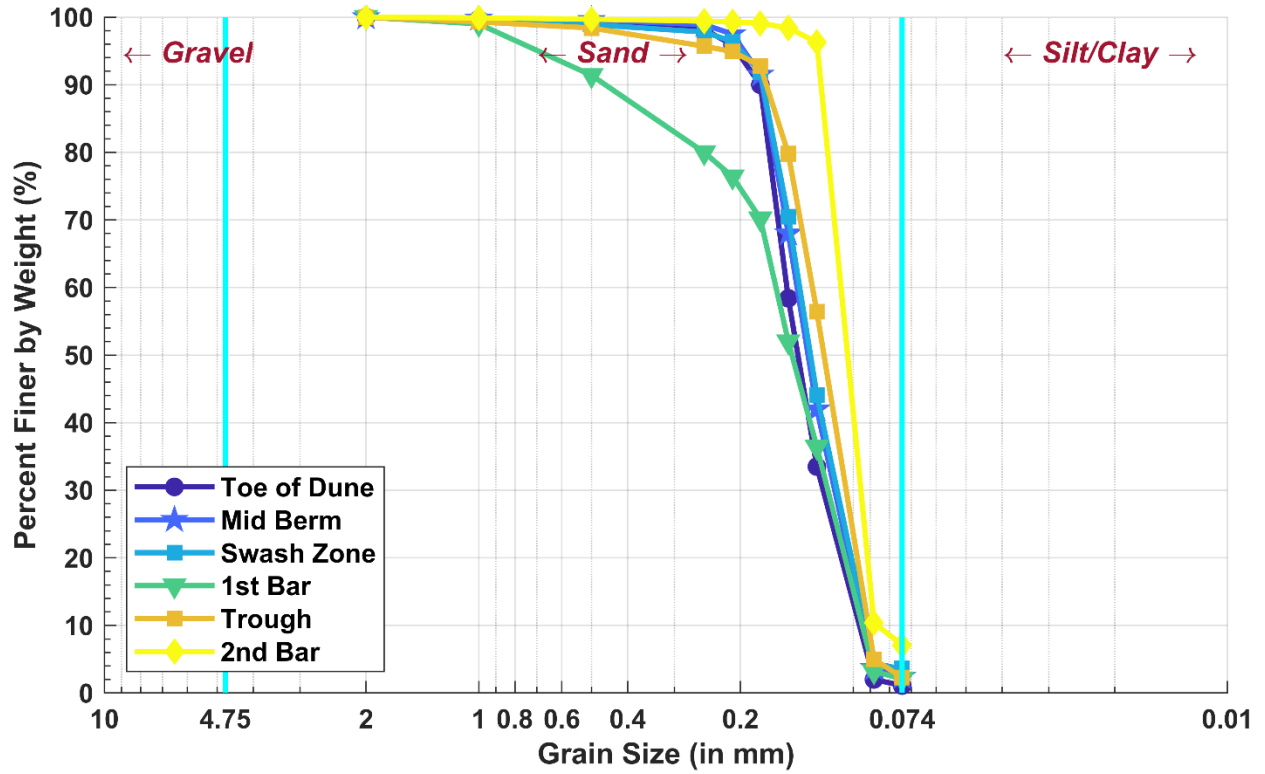


Figure 23. Bolivar Peninsula West - Transect 7



GALVESTON ISLAND STATE PARK TRANSECT GRAIN SIZE CURVES

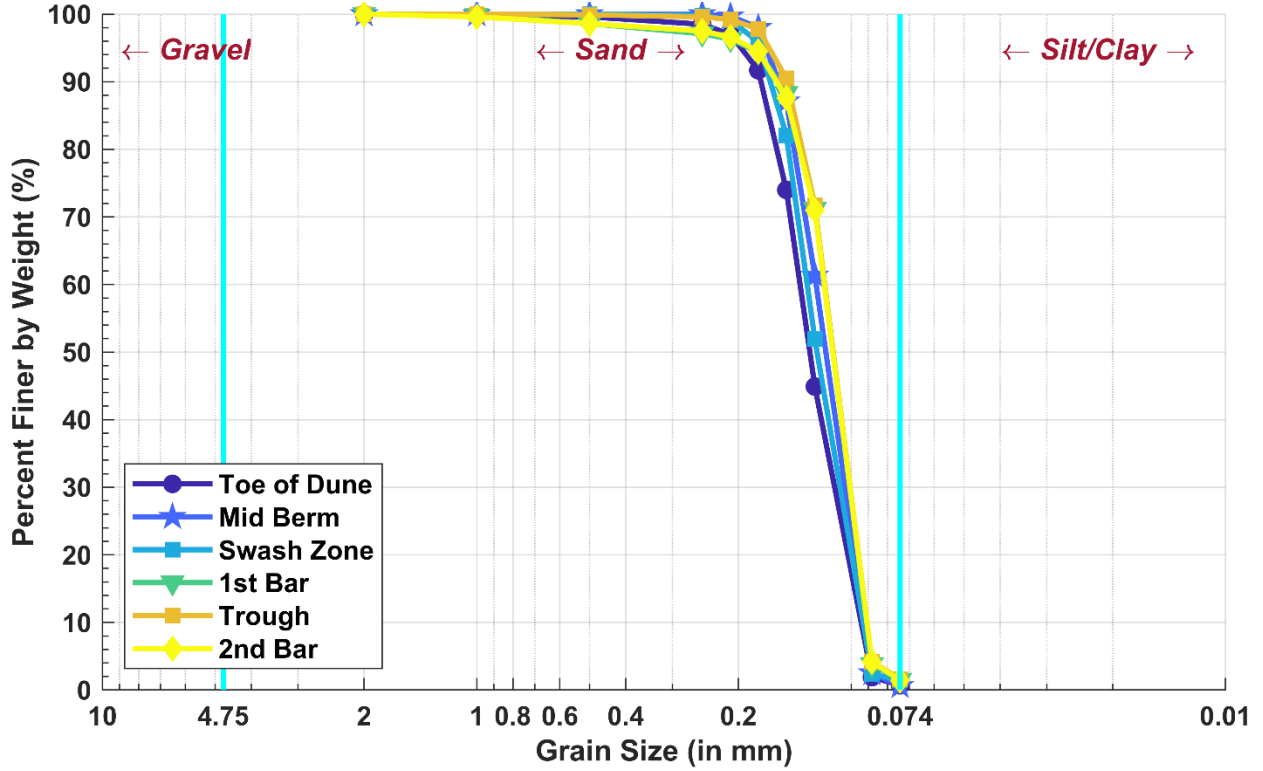


Figure 24. Galveston Island State Park - Transect 1

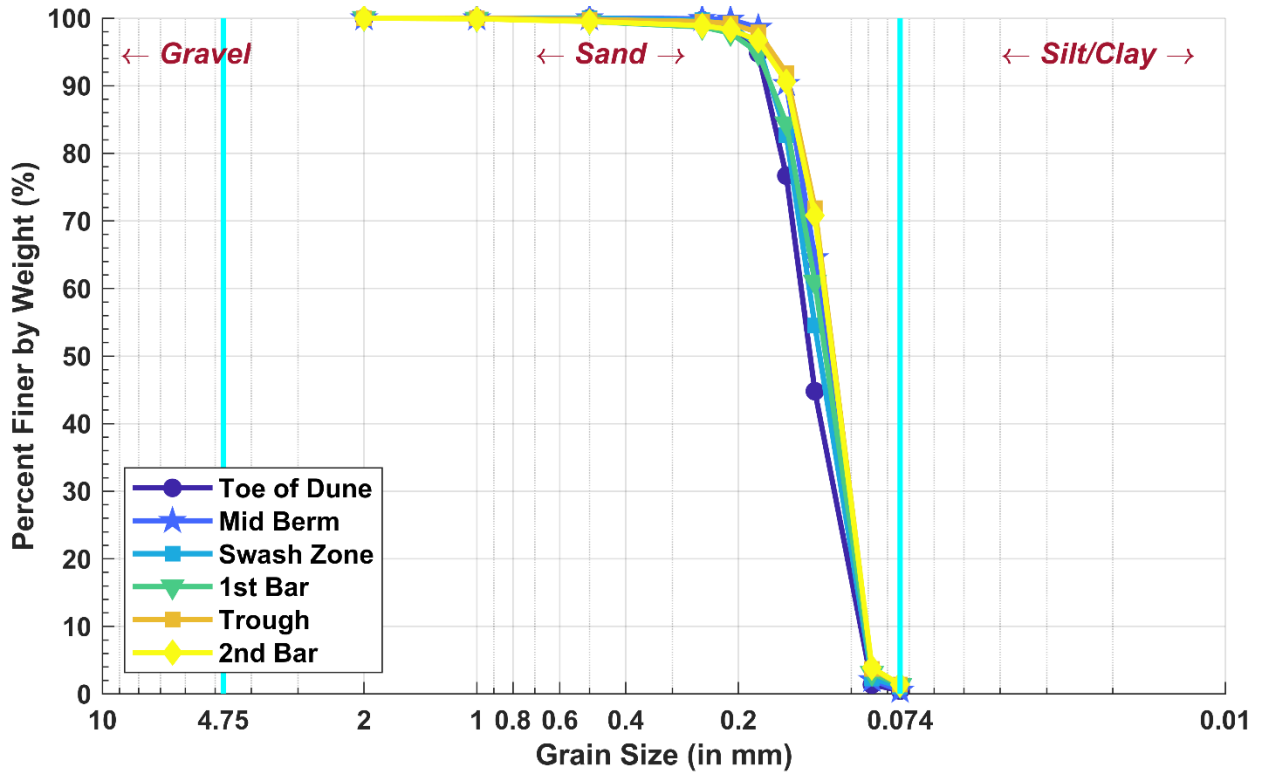


Figure 25. Galveston Island State Park - Transect 2

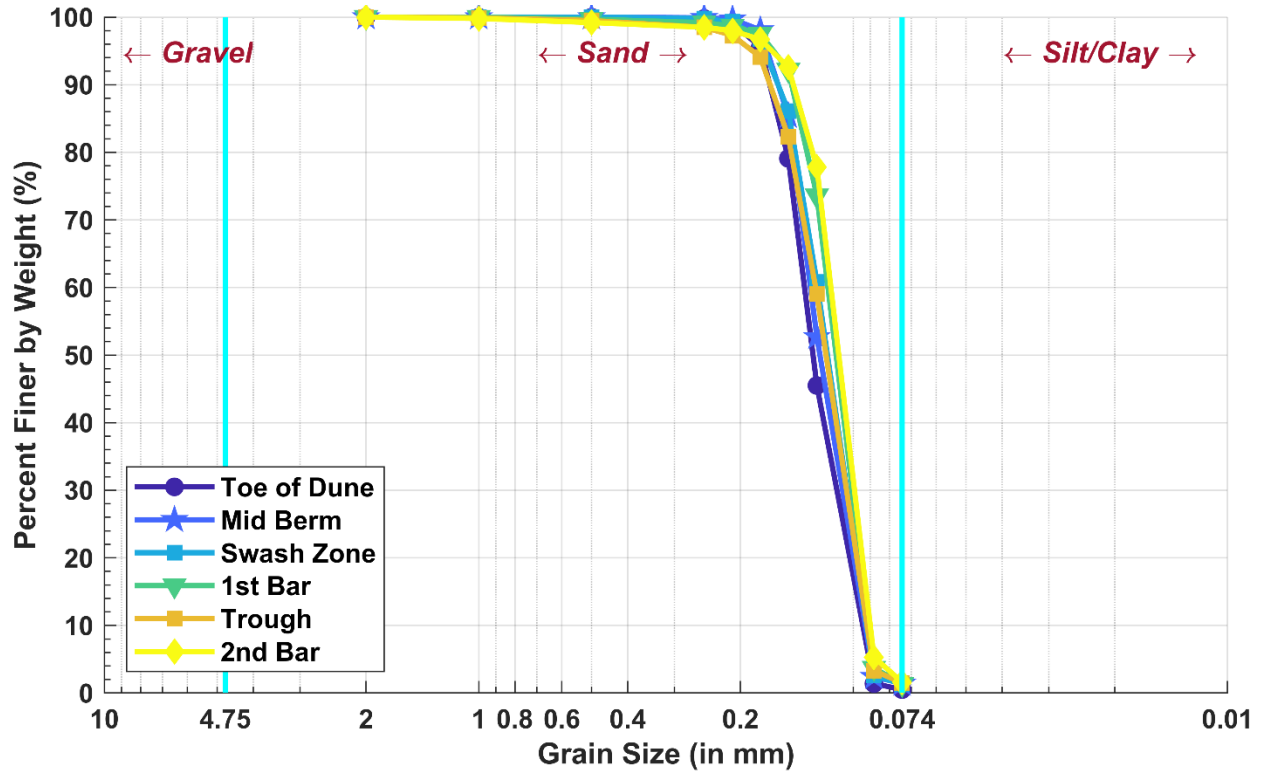


Figure 26. Galveston Island State Park - Transect 3



FOLLETS ISLAND TRANSECT GRAIN SIZE CURVES

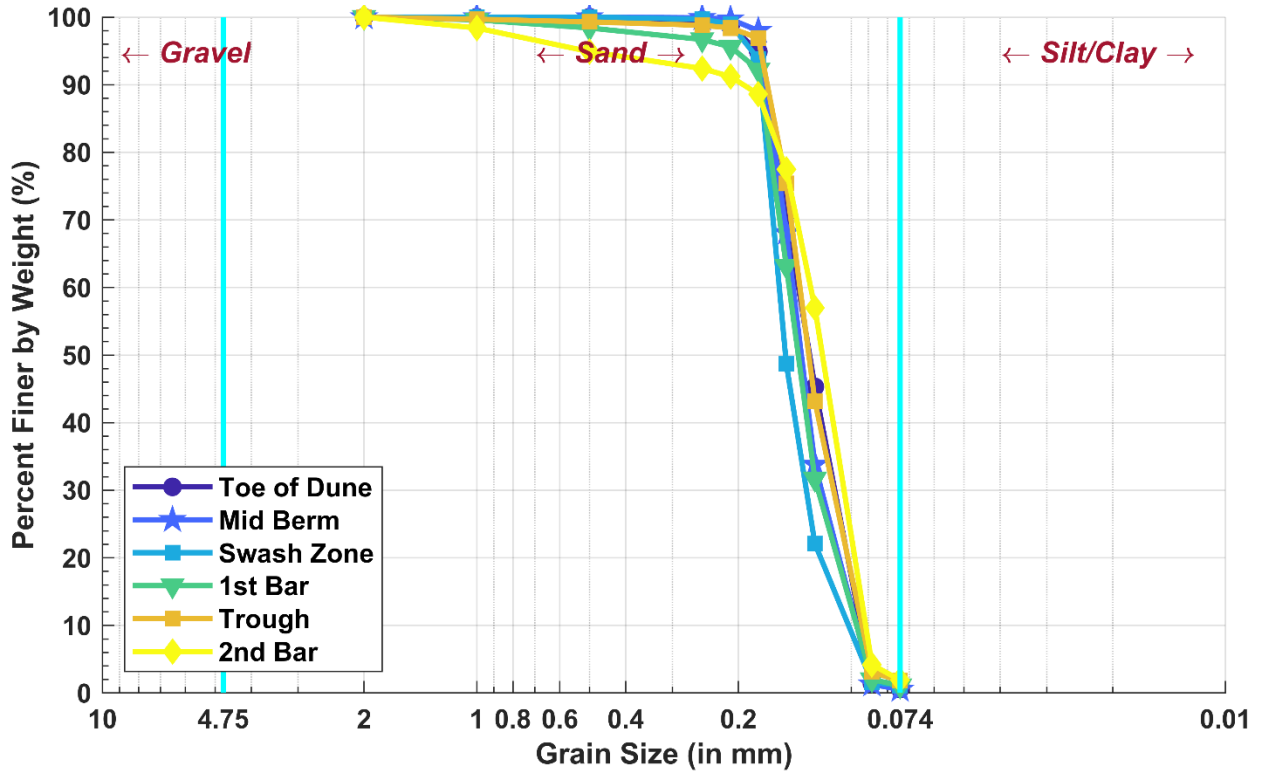


Figure 27. Follets Island - Transect 1

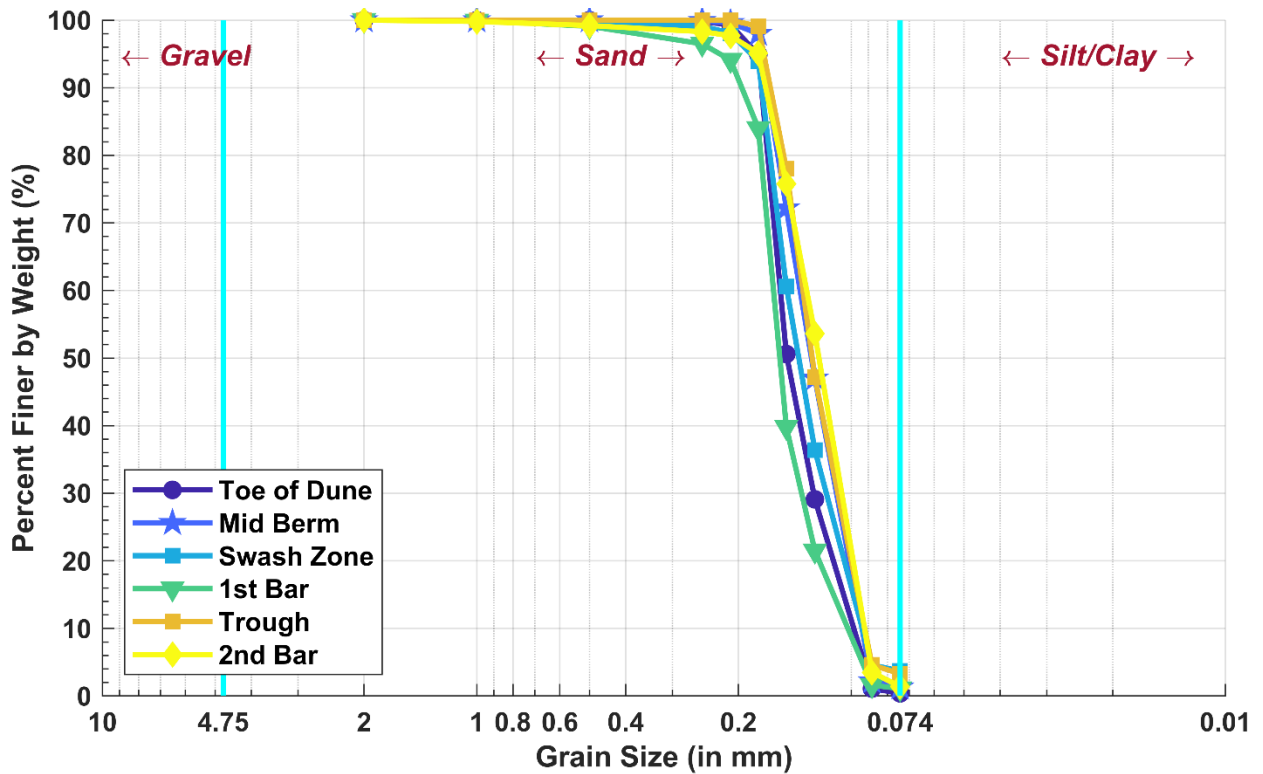


Figure 28. Follets Island - Transect 2

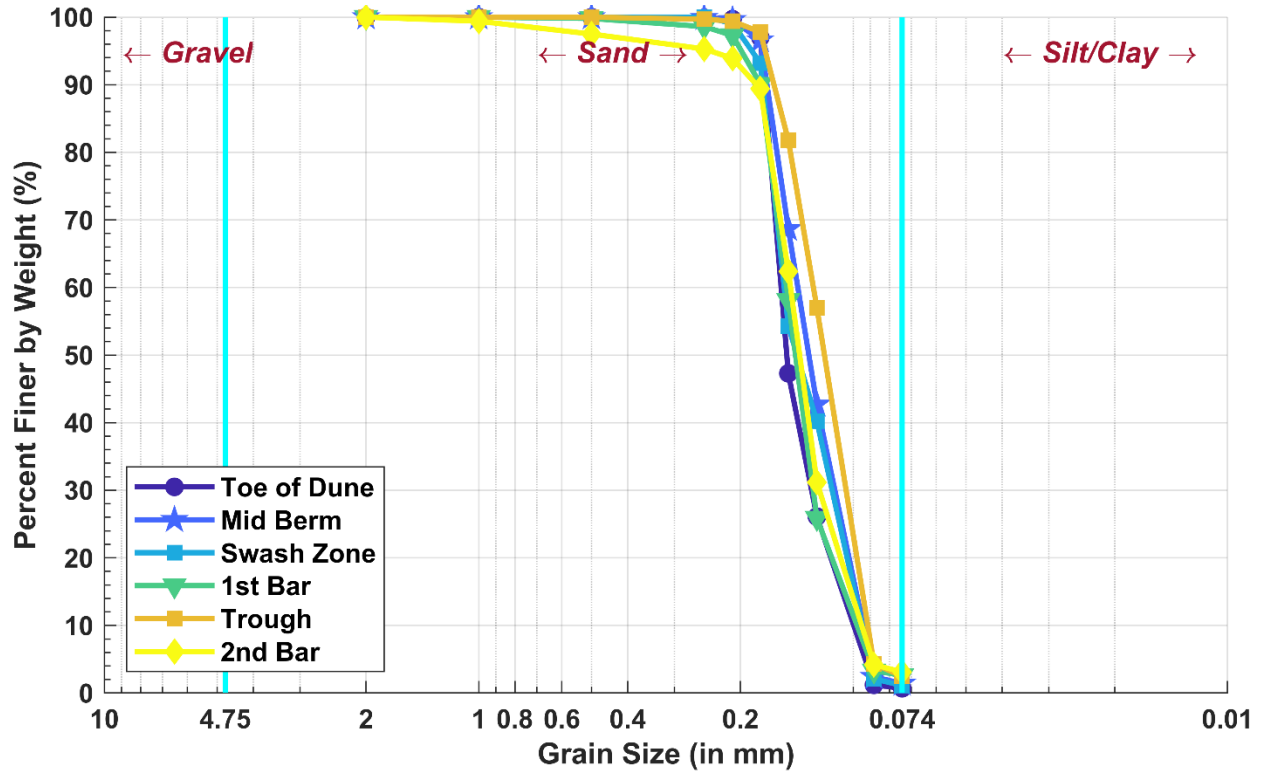


Figure 29. Follets Island - Transect 3

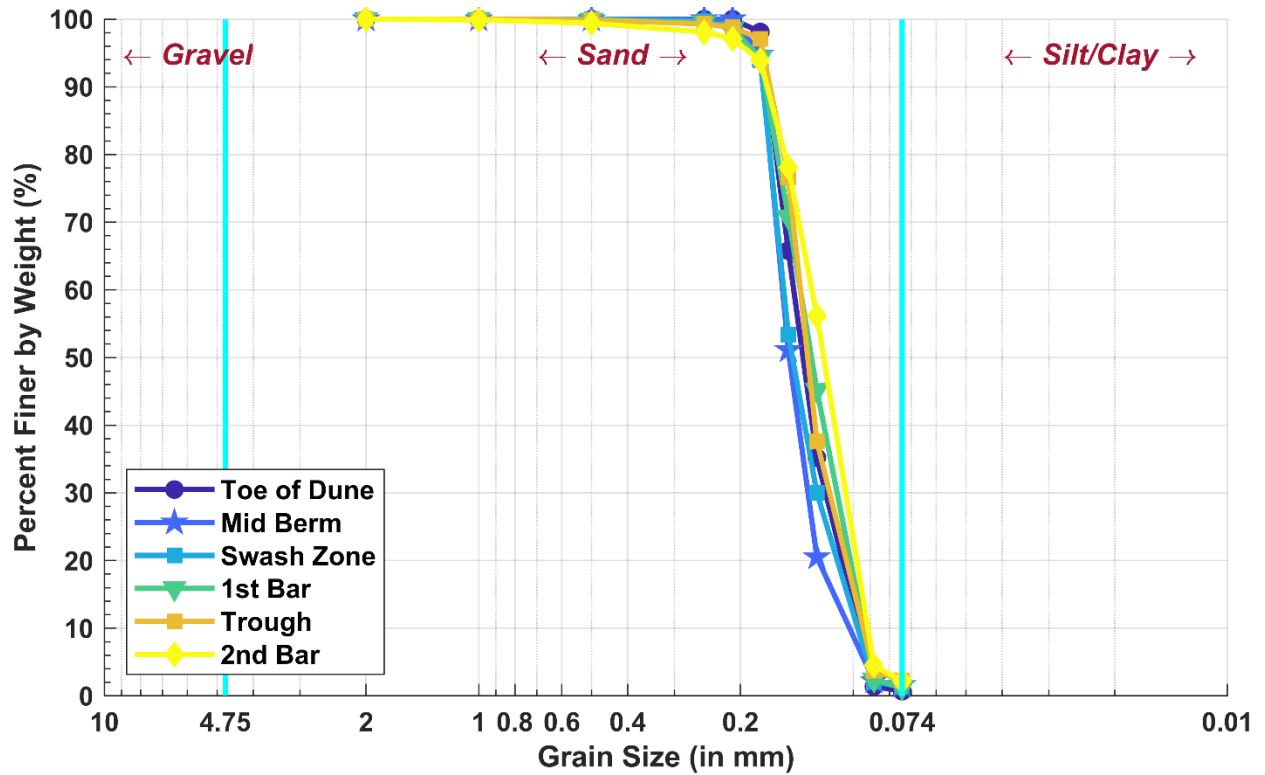


Figure 30. Follets Island - Transect 4

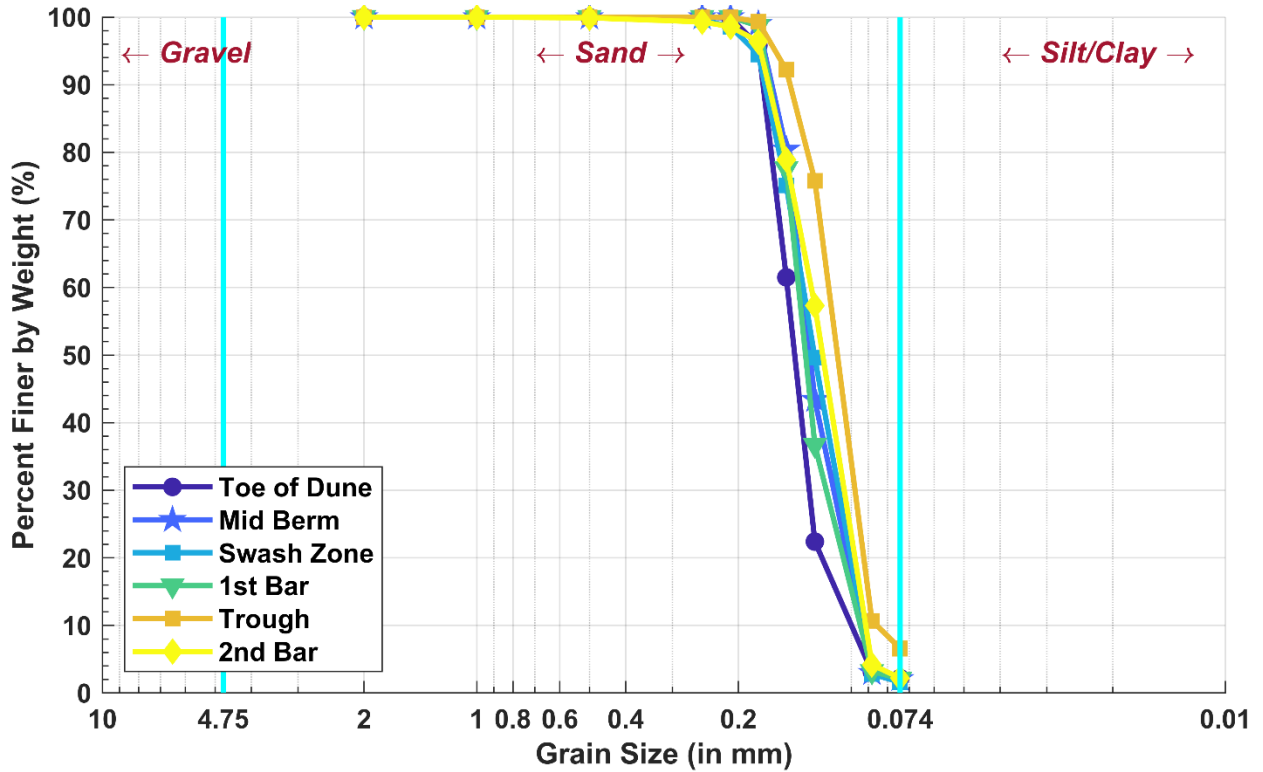


Figure 31. Follets Island - Transect 5

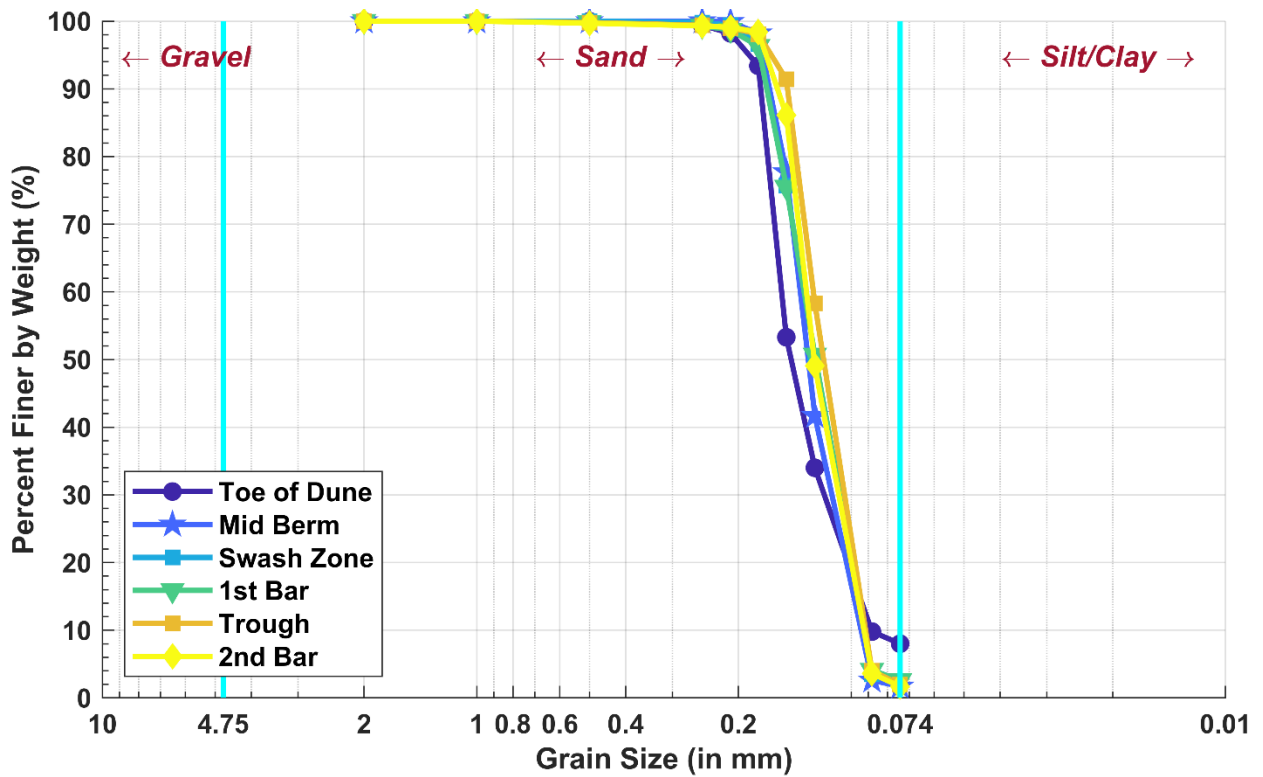


Figure 32. Follets Island - Transect 6

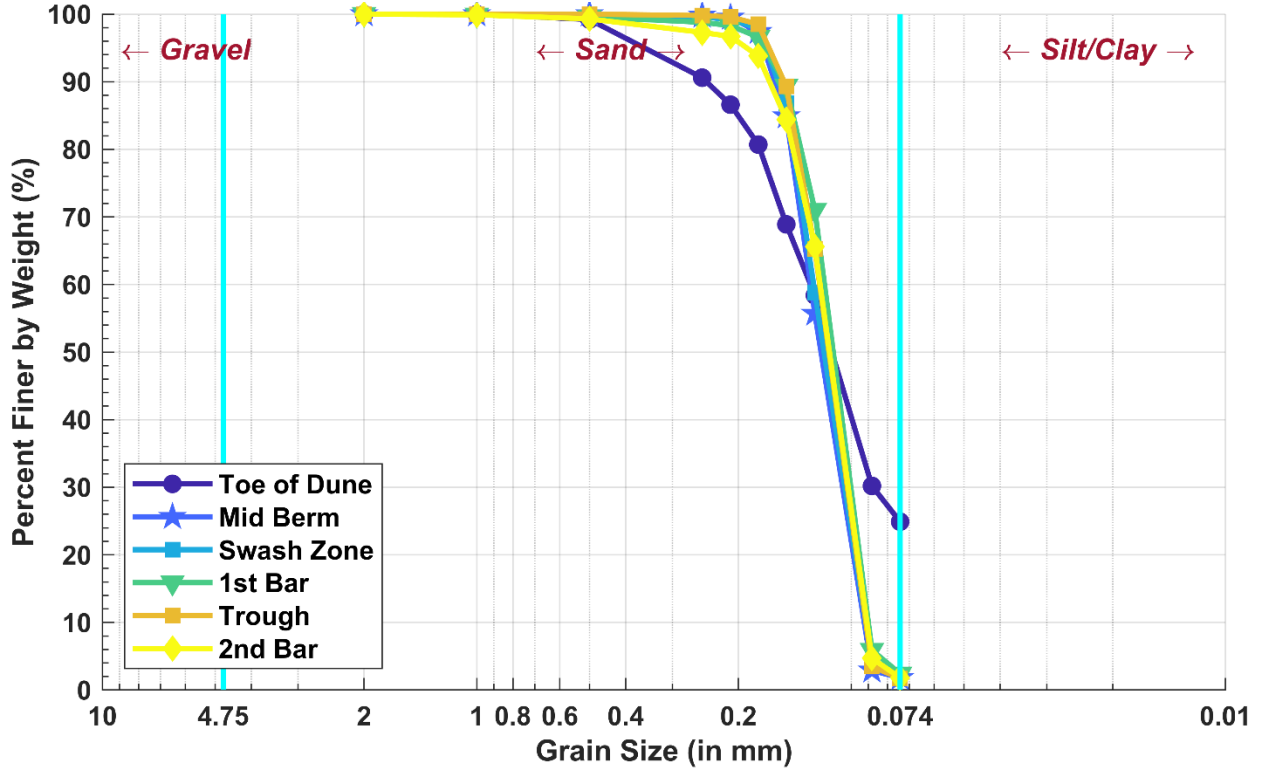


Figure 33. Follets Island - Transect 7

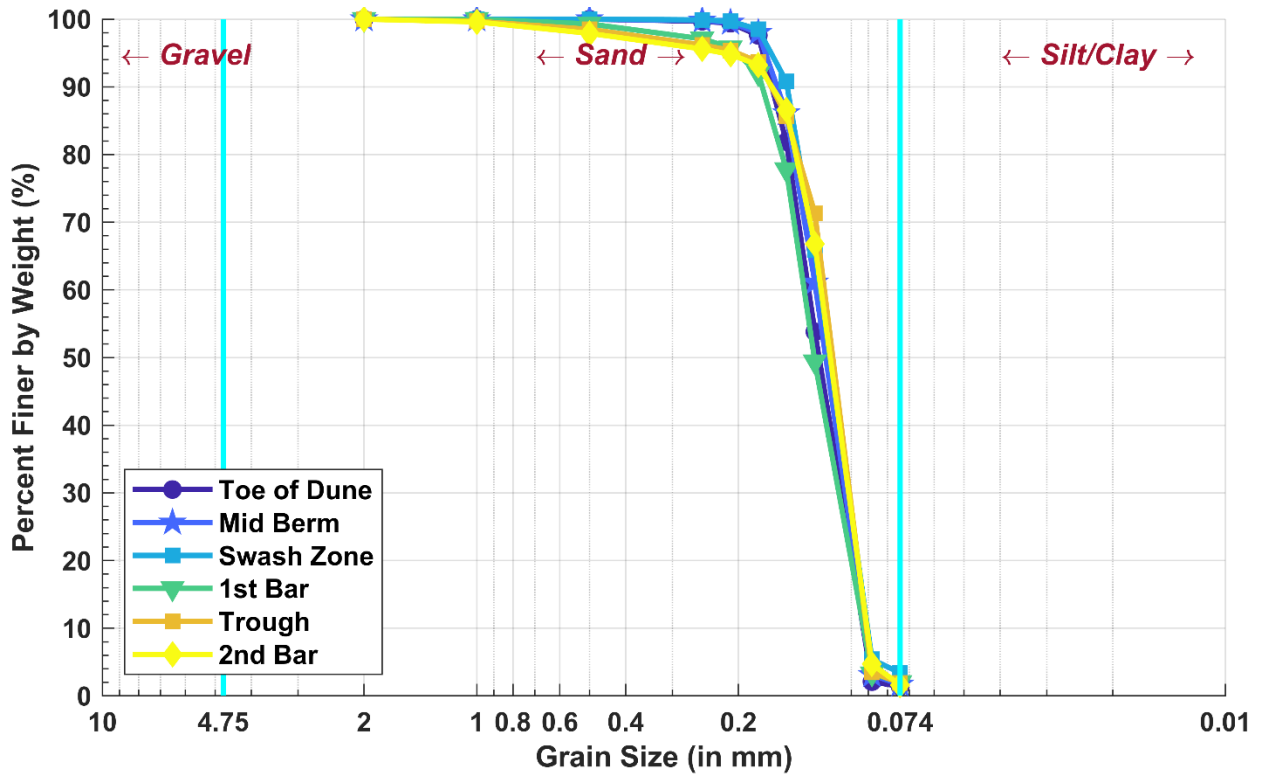


Figure 34. Follets Island - Transect 8

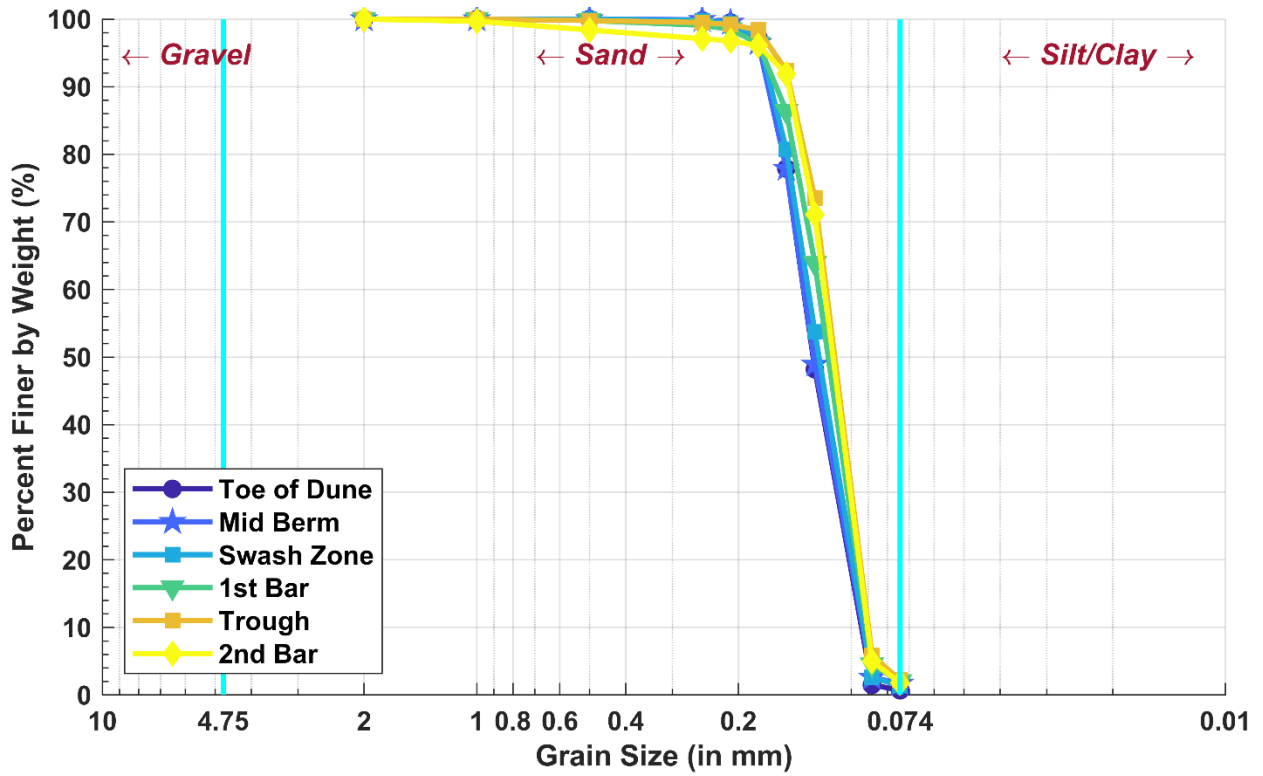


Figure 35. Follets Island - Transect 9

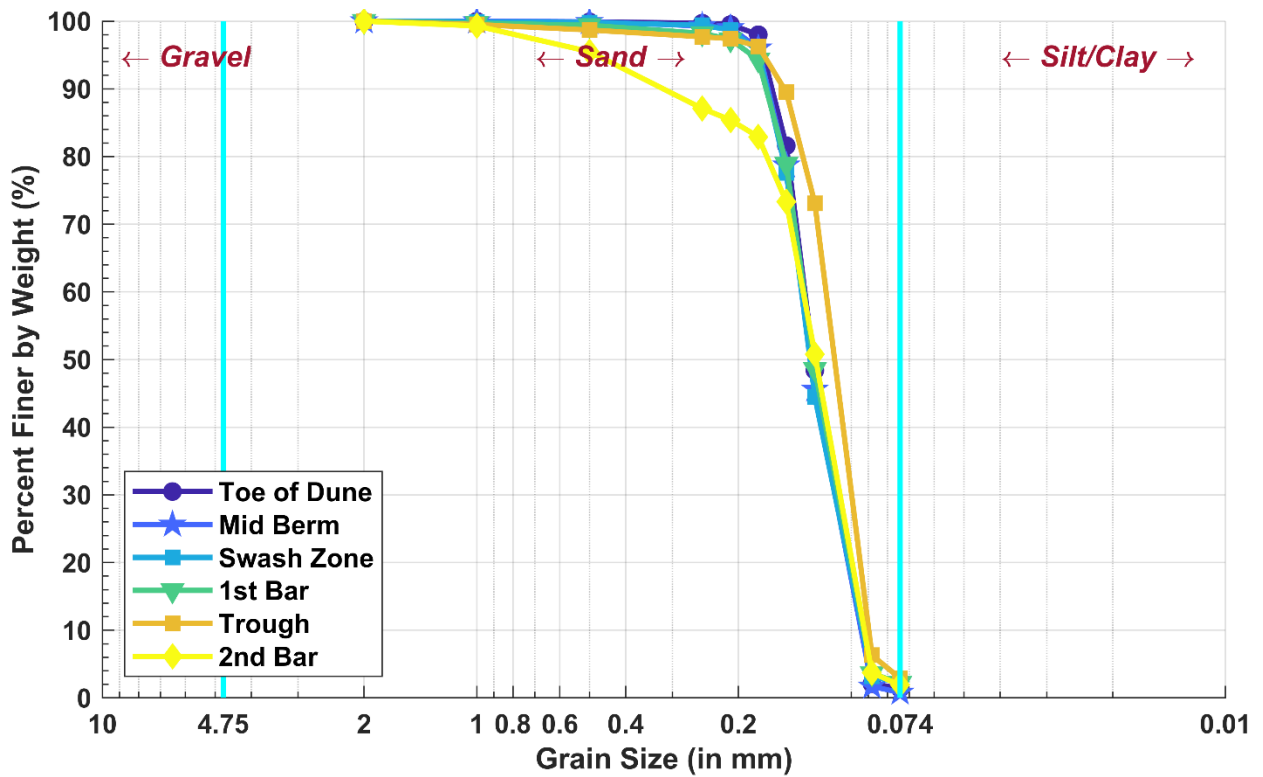


Figure 36. Follets Island - Transect 10

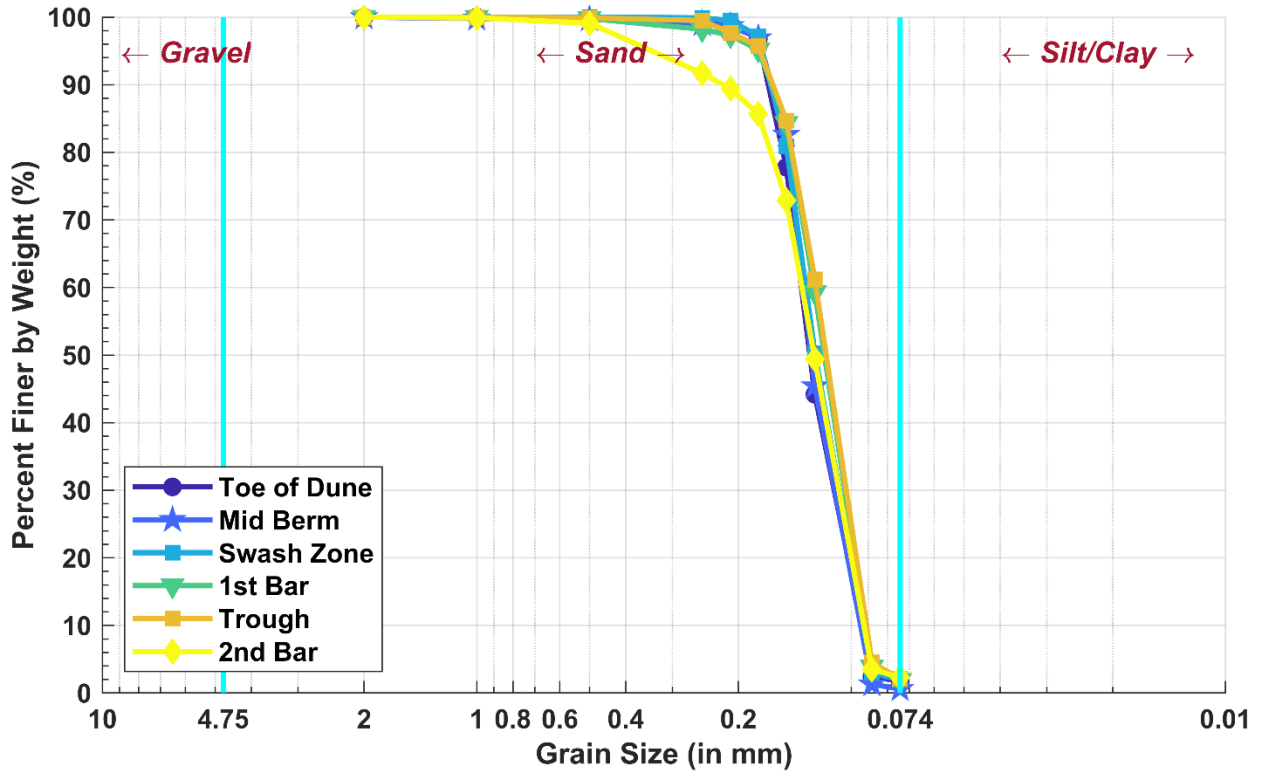


Figure 37. Follets Island - Transect 11

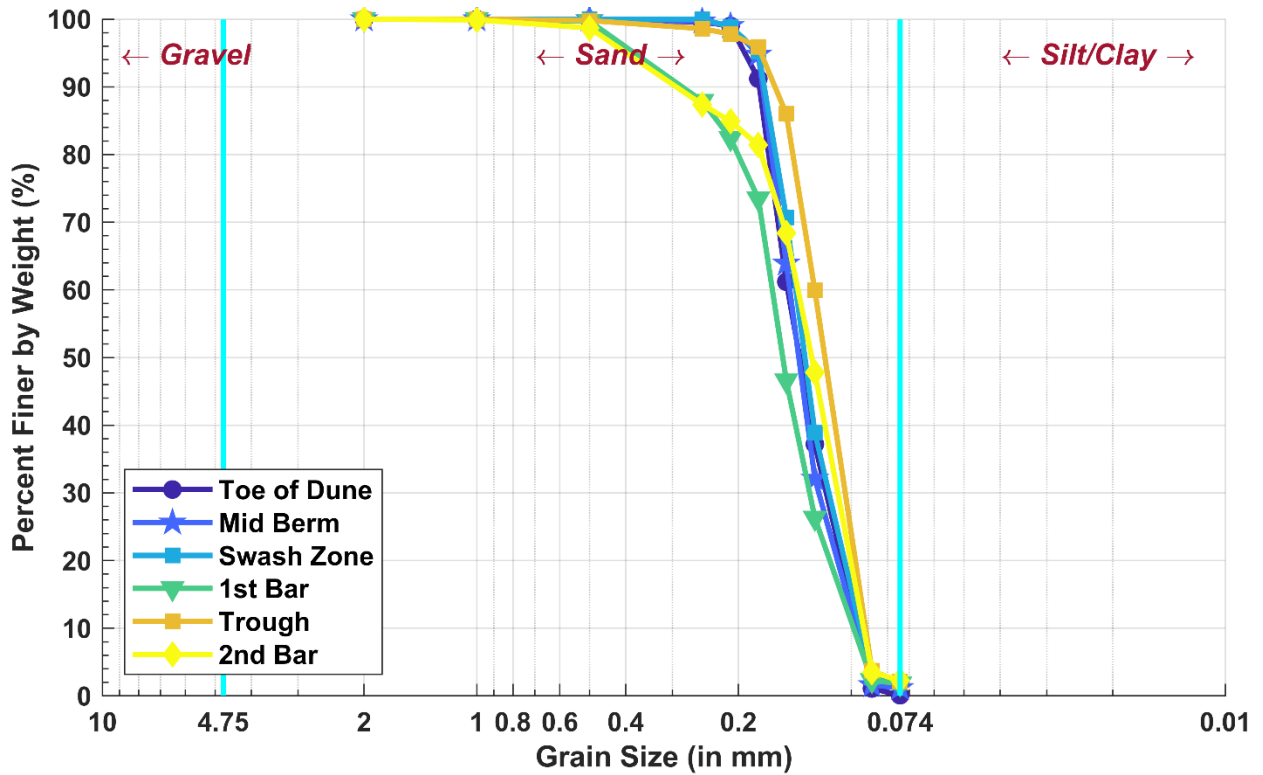


Figure 38. Follets Island - Transect 12

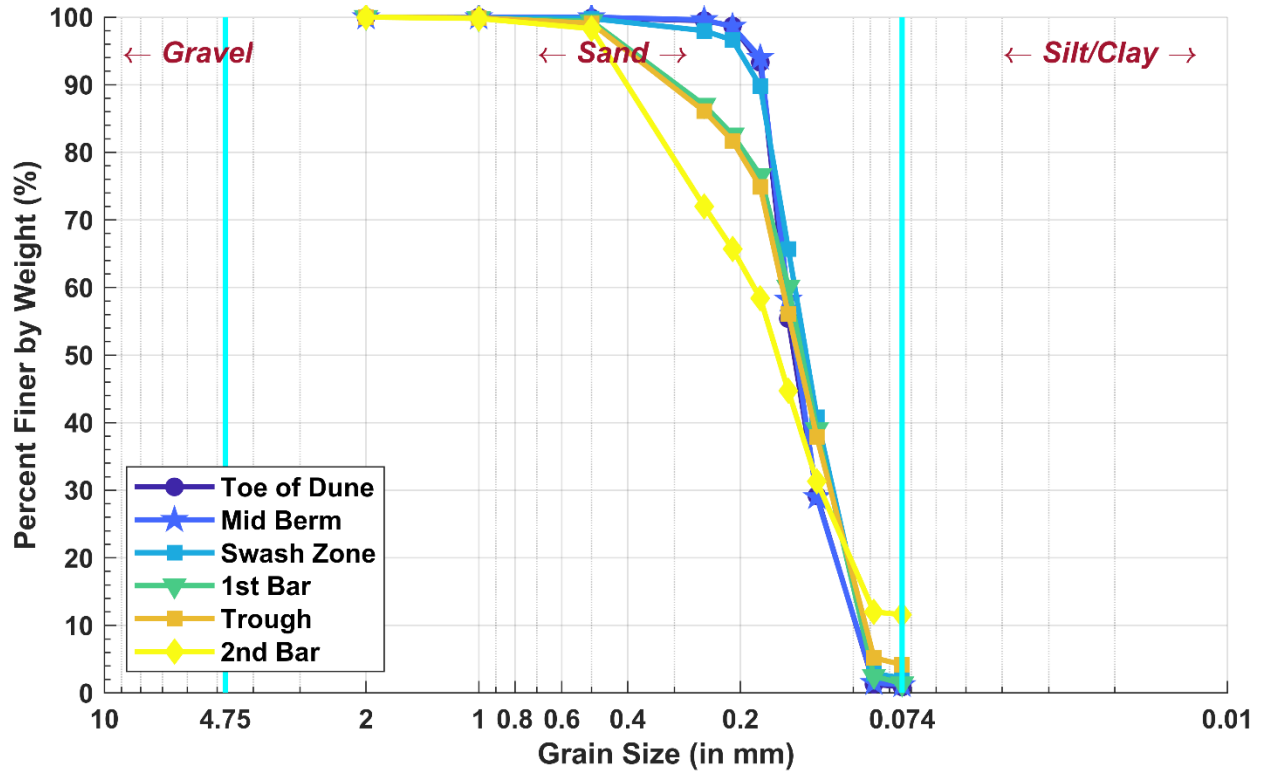


Figure 39. Follets Island - Transect 13



SARGENT BEACH TRANSECT GRAIN SIZE CURVES

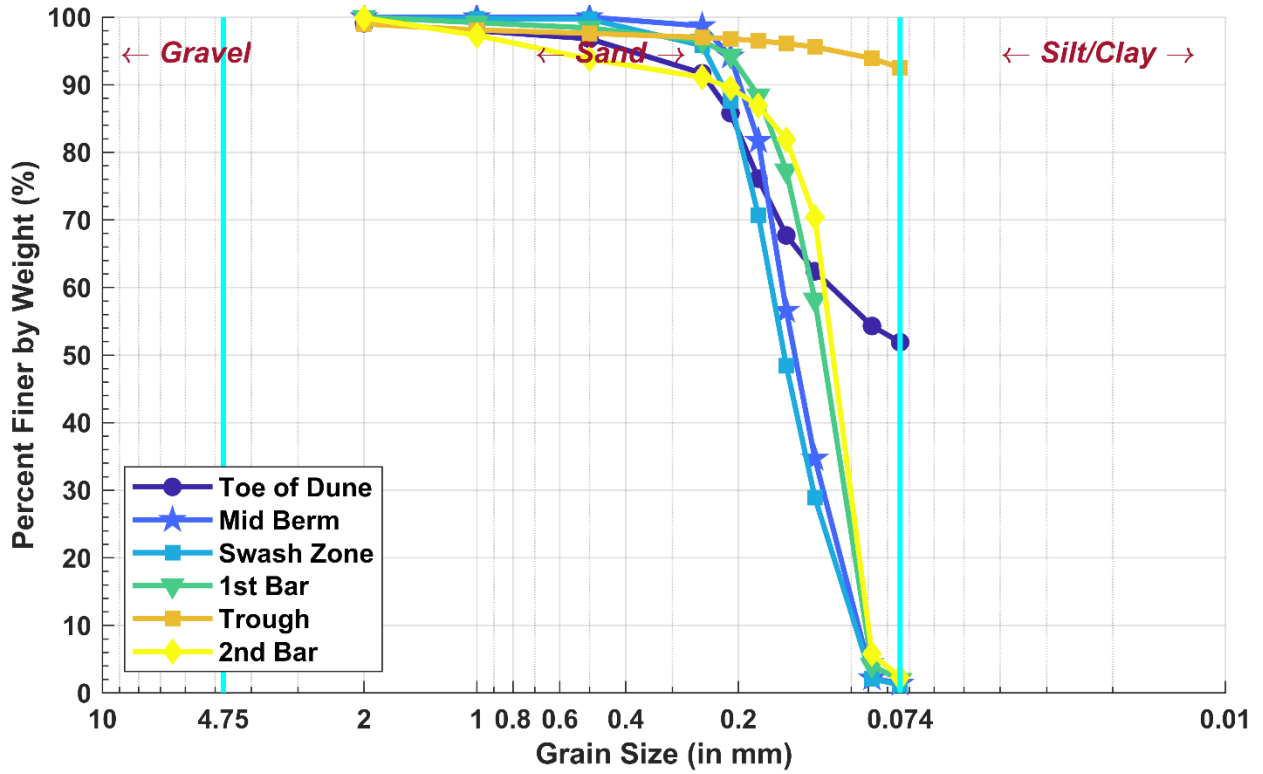


Figure 40. Sargent Beach - Transect 1

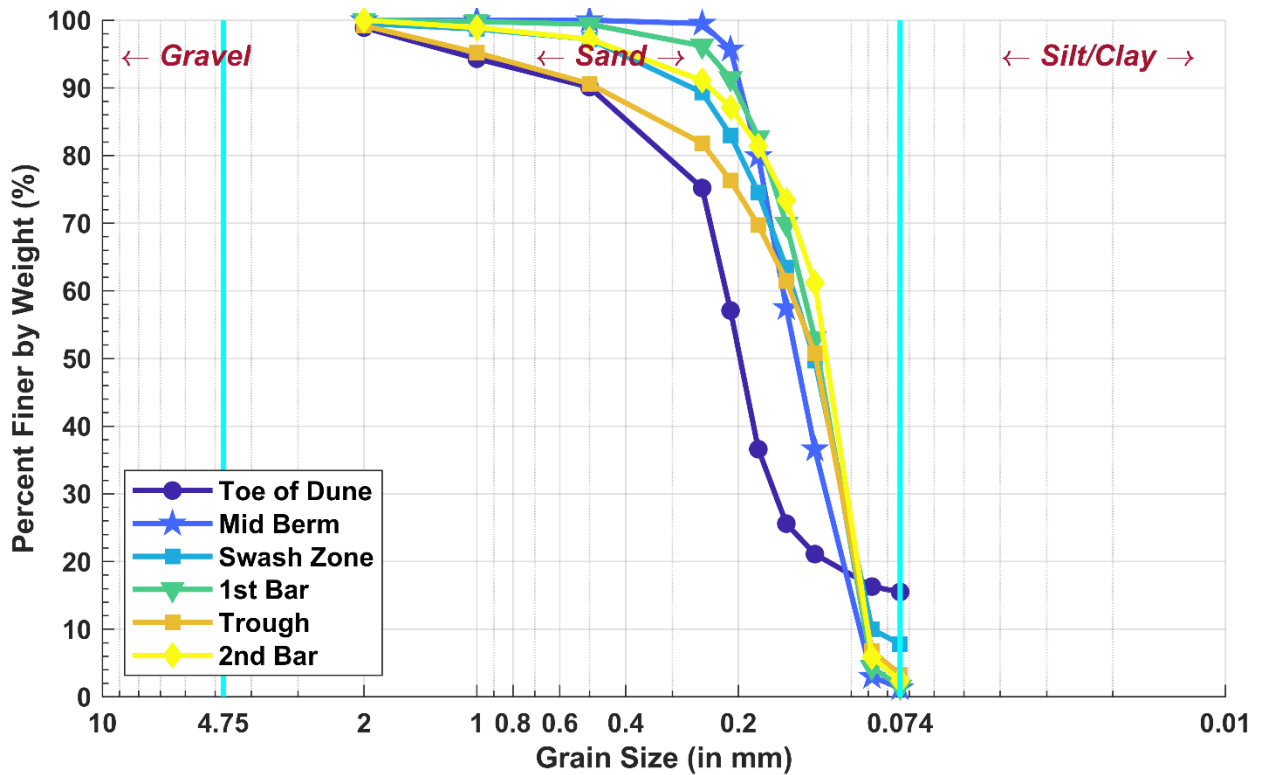


Figure 41. Sargent Beach - Transect 2

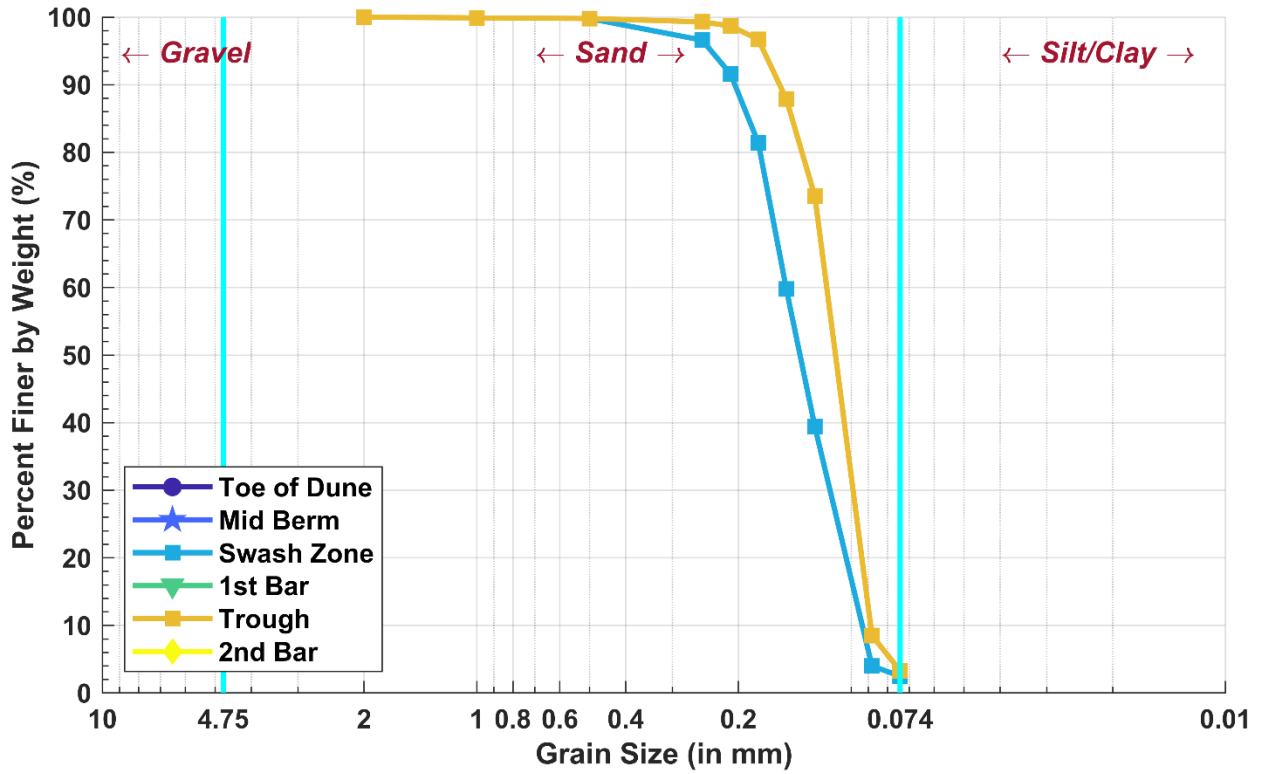


Figure 42. Sargent Beach - Transect 2B

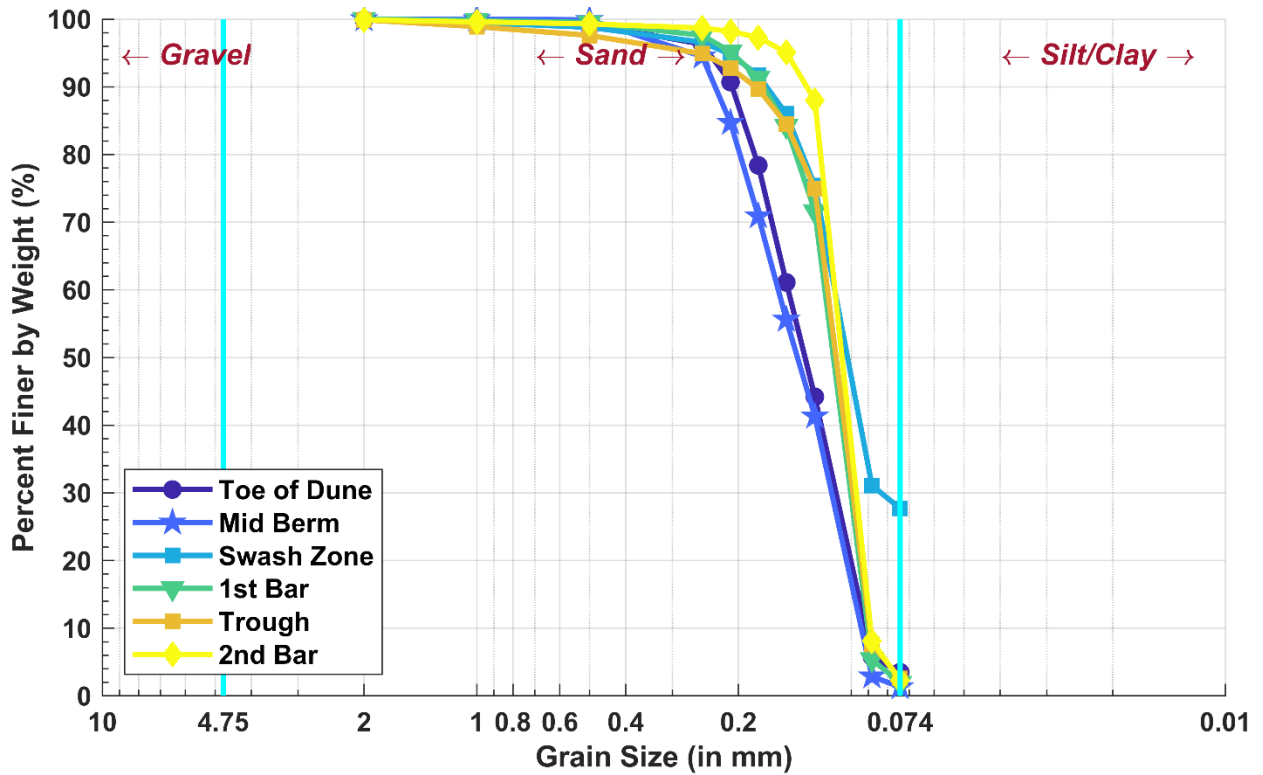


Figure 43. Sargent Beach - Transect 3

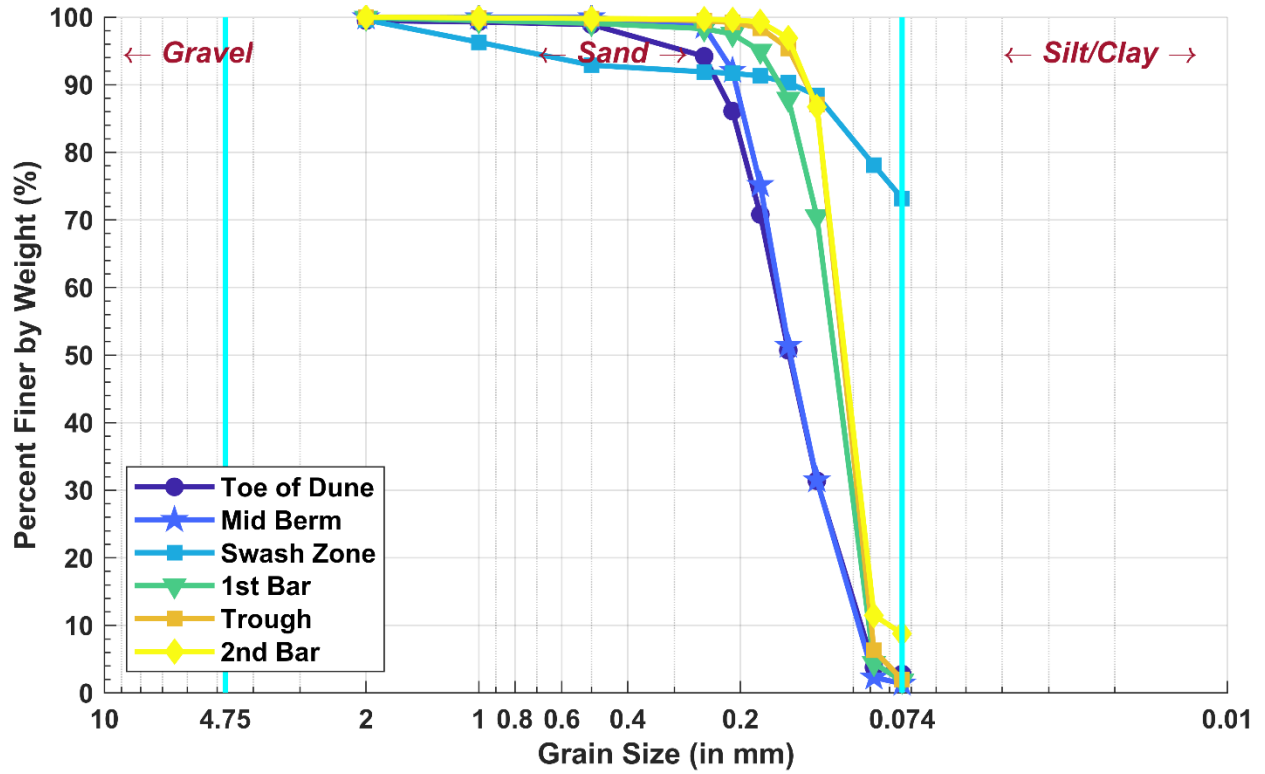


Figure 44. Sargent Beach - Transect 4



MATAGORDA PENINSULA TRANSECT GRAIN SIZE CURVES

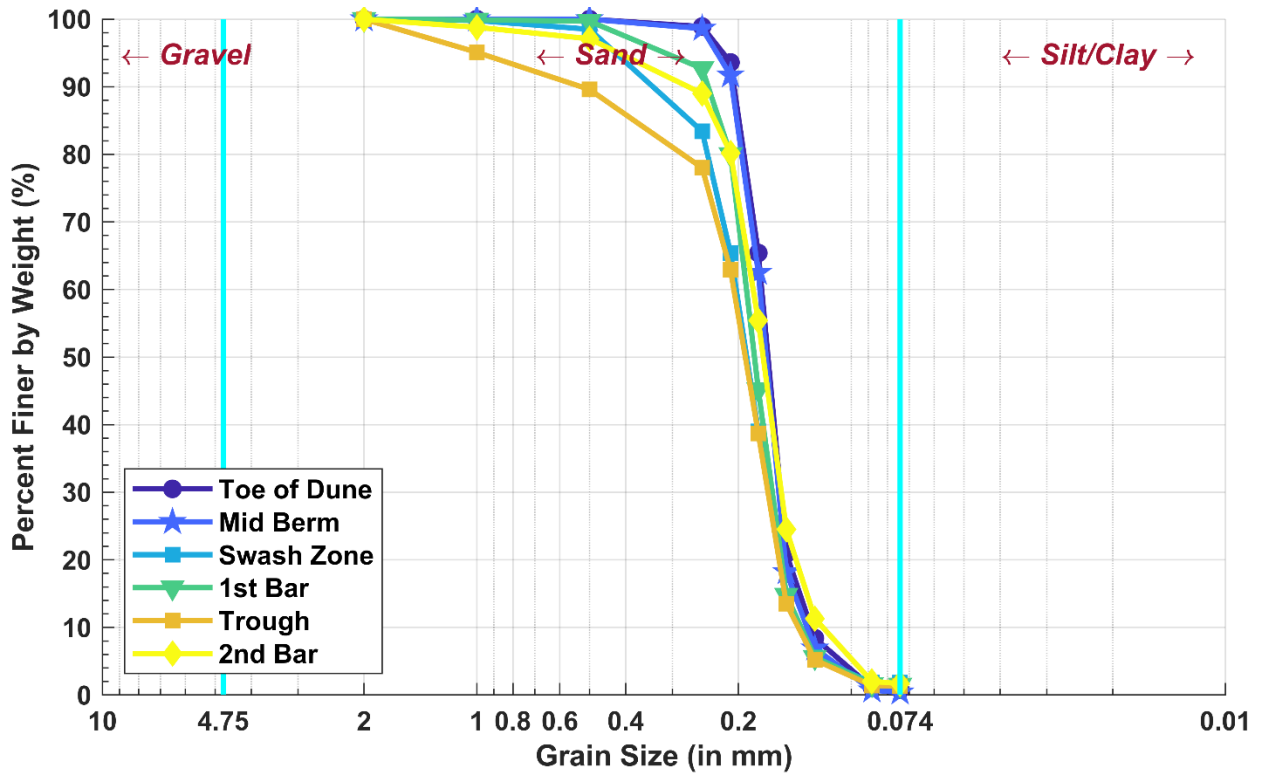


Figure 45. Matagorda Peninsula - Transect 1

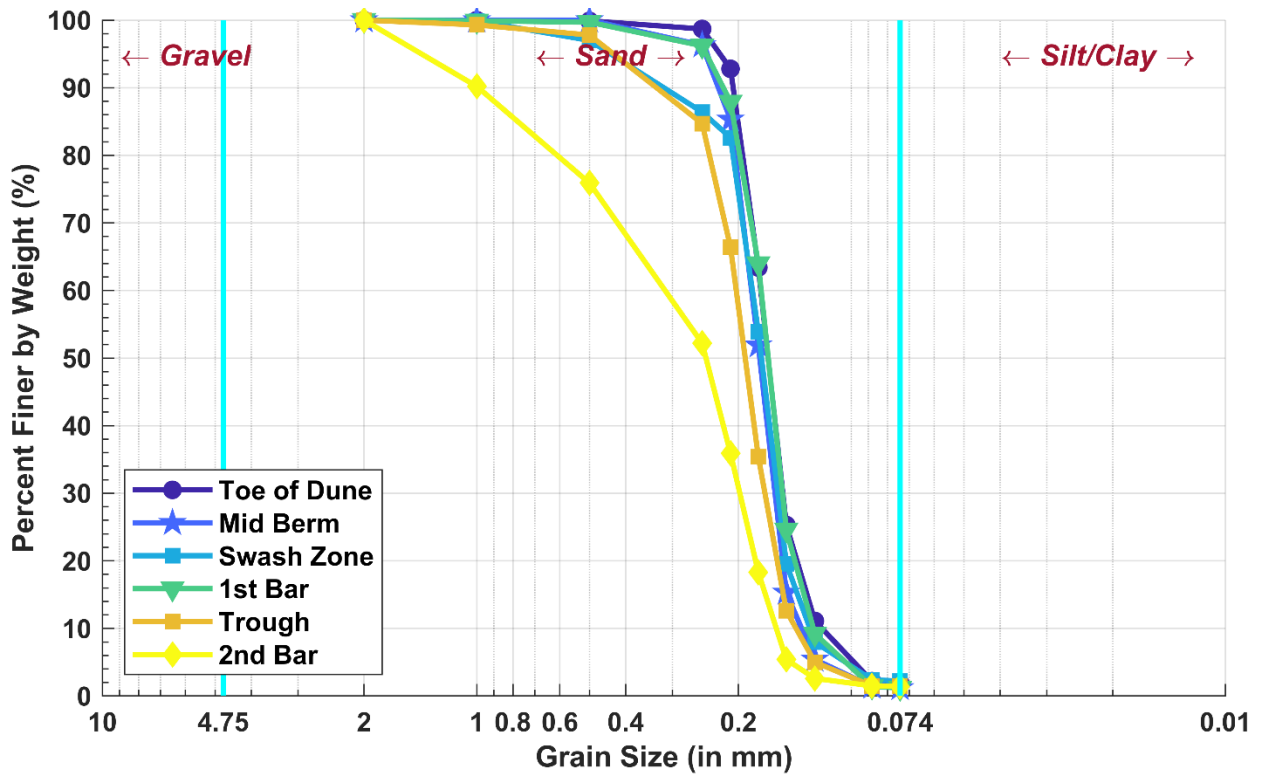


Figure 46. Matagorda Peninsula - Transect 2

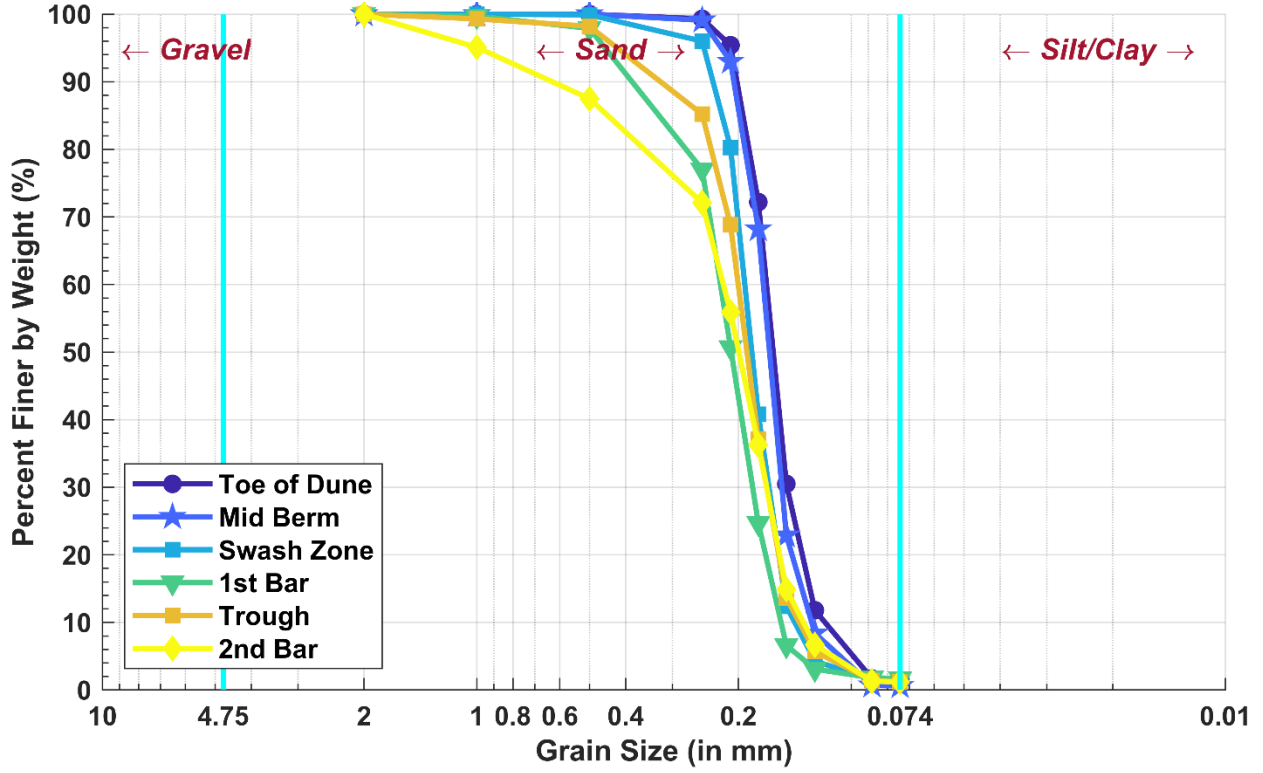


Figure 47. Matagorda Peninsula - Transect 3



MUSTANG ISLAND NORTH TRANSECT GRAIN SIZE CURVES

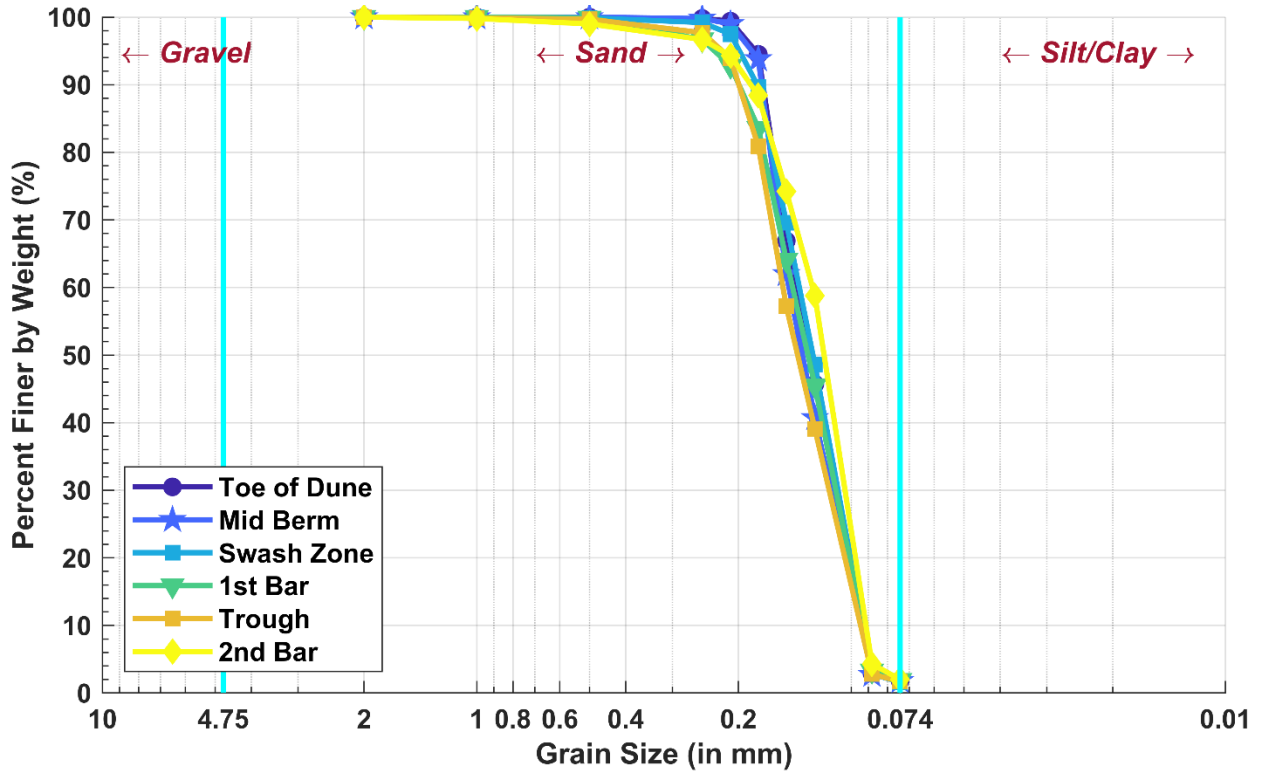


Figure 48. Mustang Island North - Transect 1

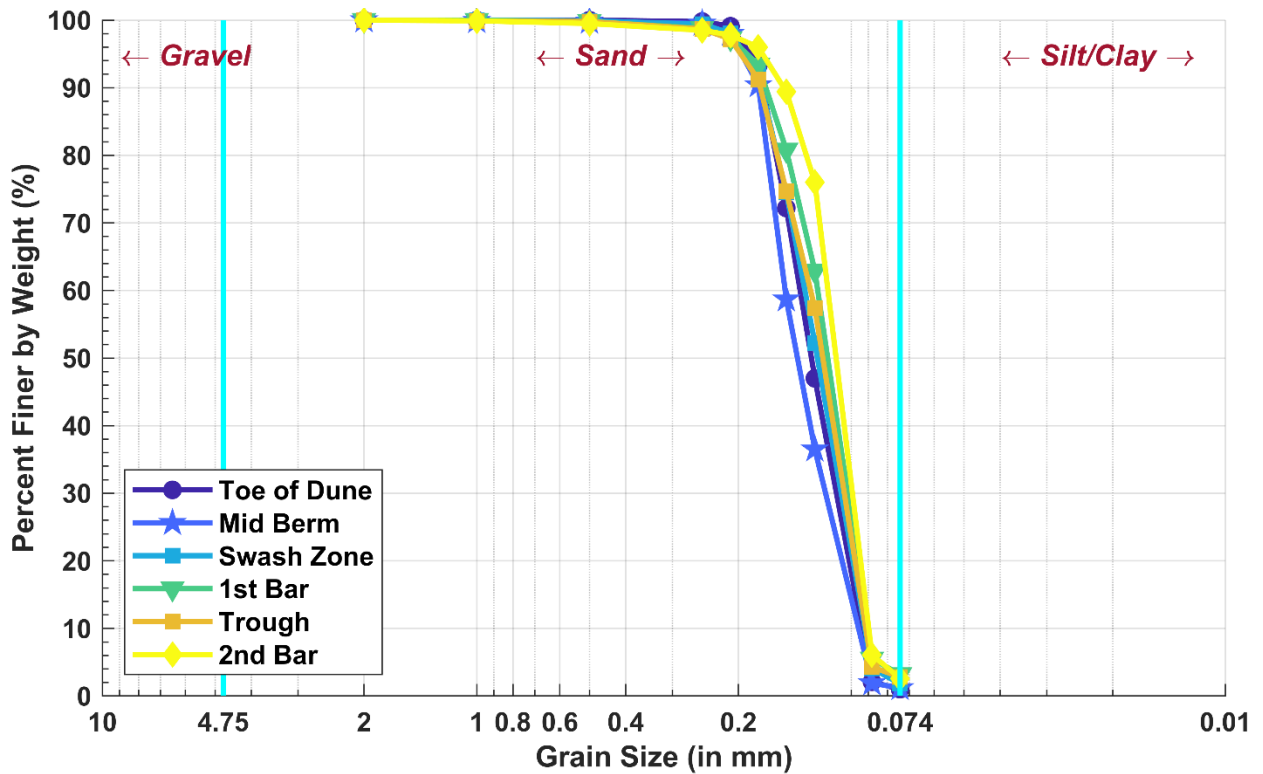


Figure 49. Mustang Island North - Transect 2

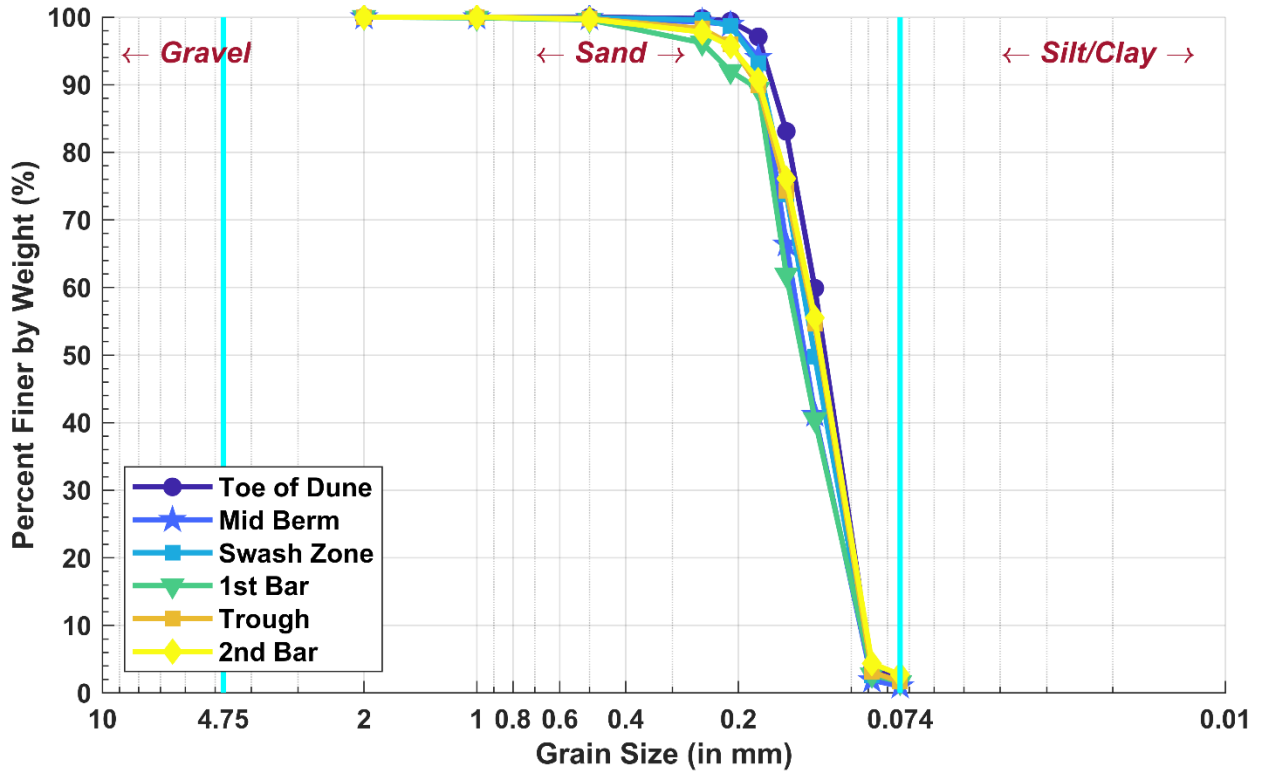


Figure 50. Mustang Island North - Transect 3

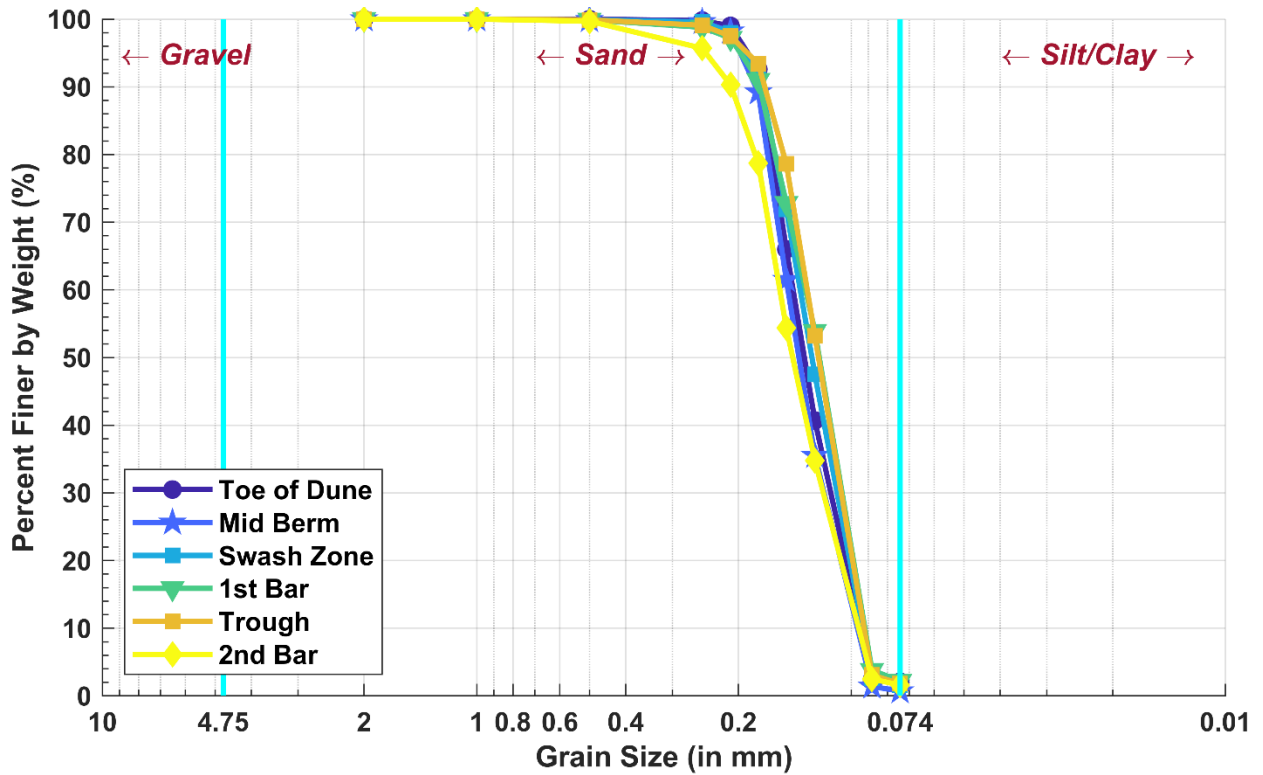


Figure 51. Mustang Island North - Transect 4

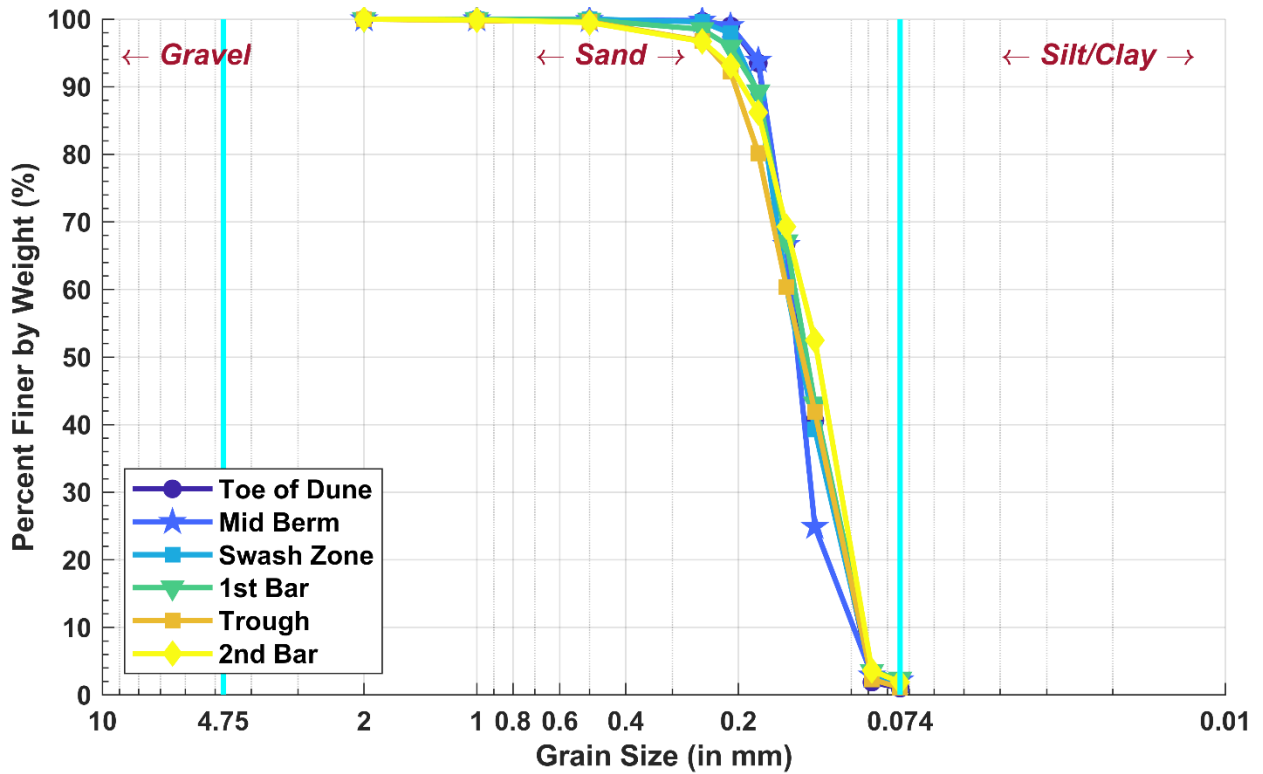


Figure 52. Mustang Island North - Transect 5

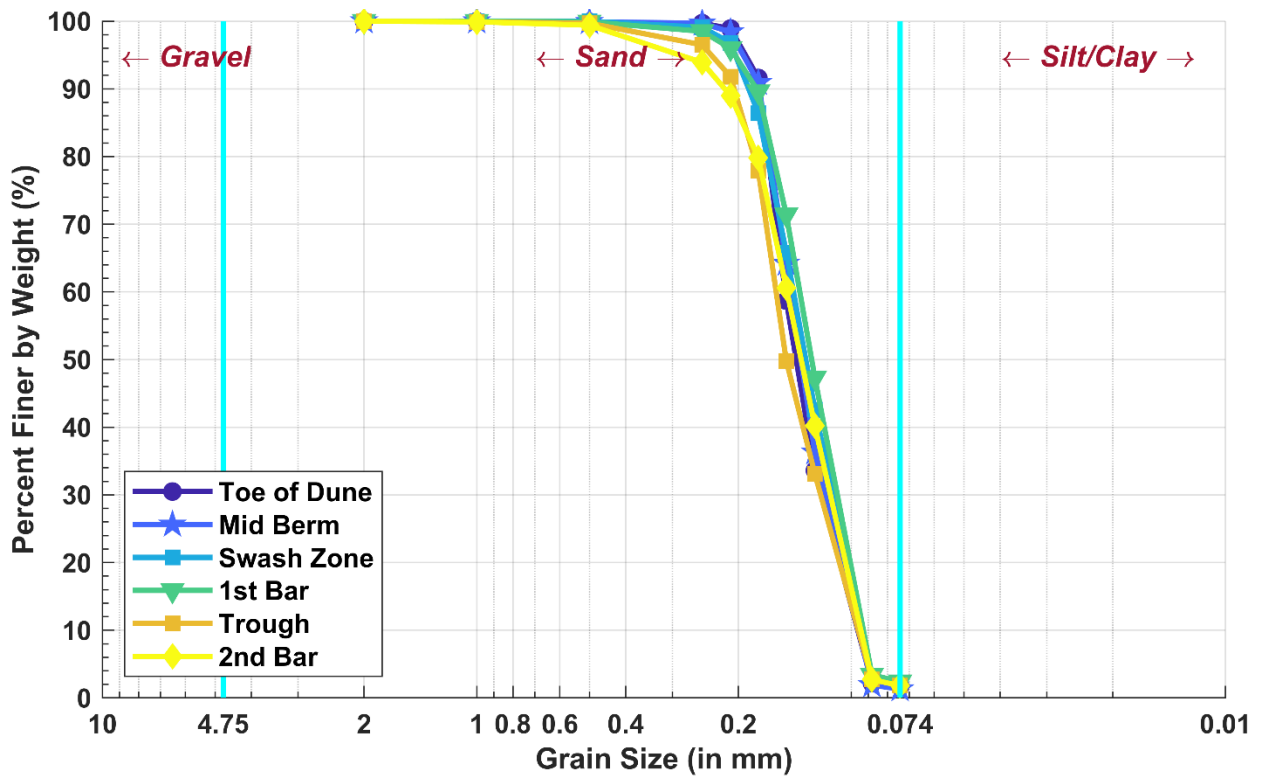


Figure 53. Mustang Island North - Transect 6



MUSTANG ISLAND CENTRAL TRANSECT GRAIN SIZE CURVES

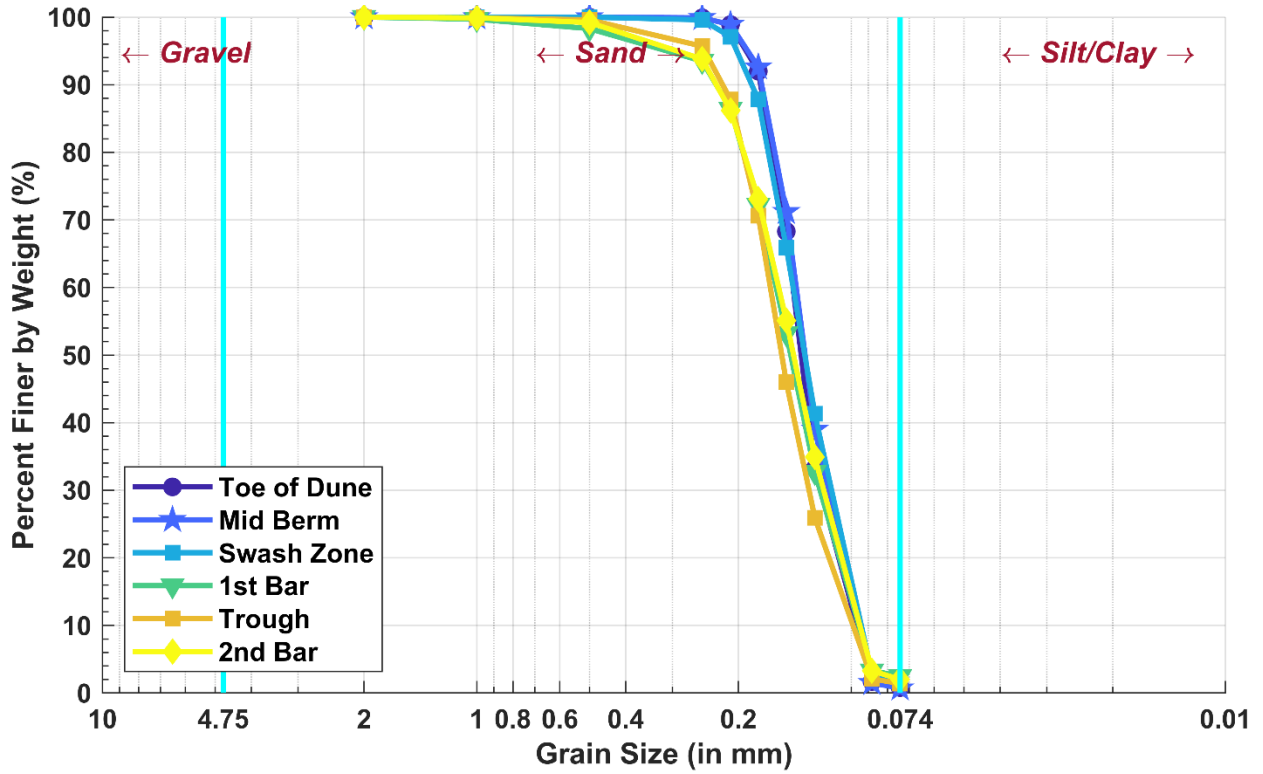


Figure 54. Mustang Island Central - Transect 1

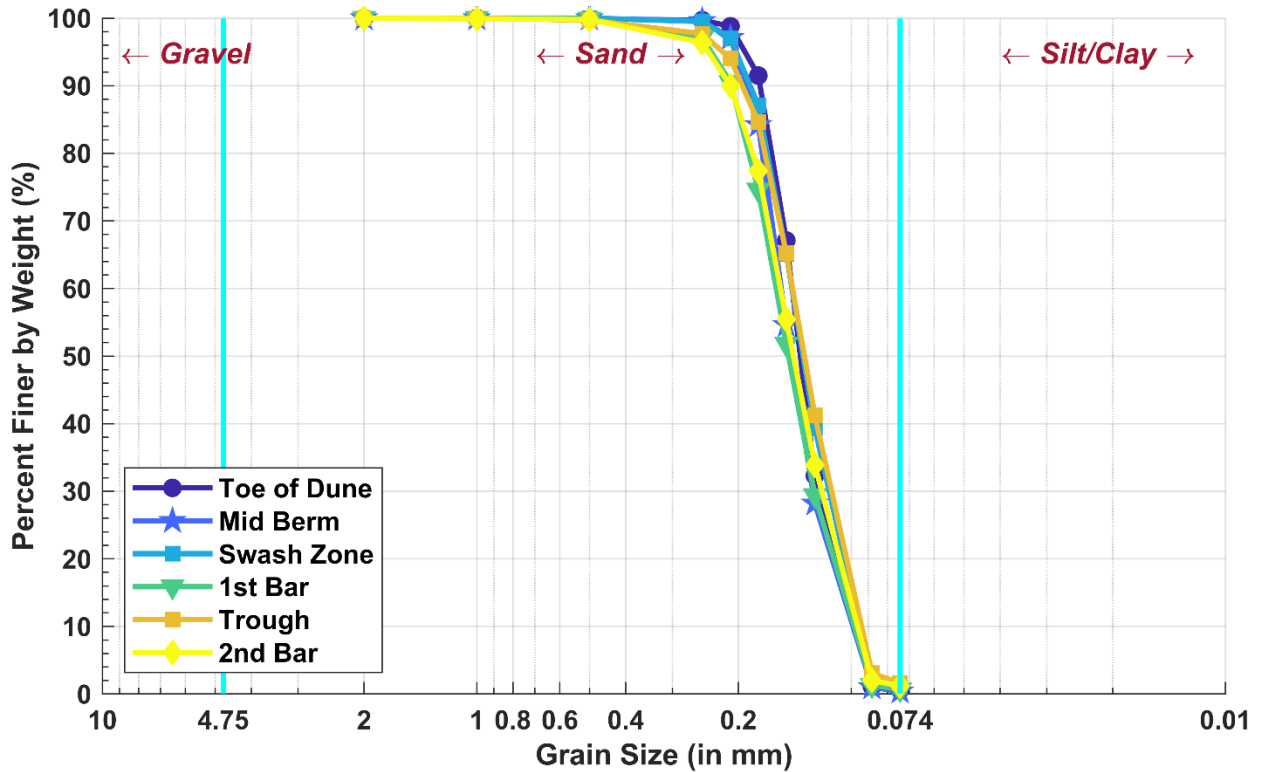


Figure 55. Mustang Island Central - Transect 2

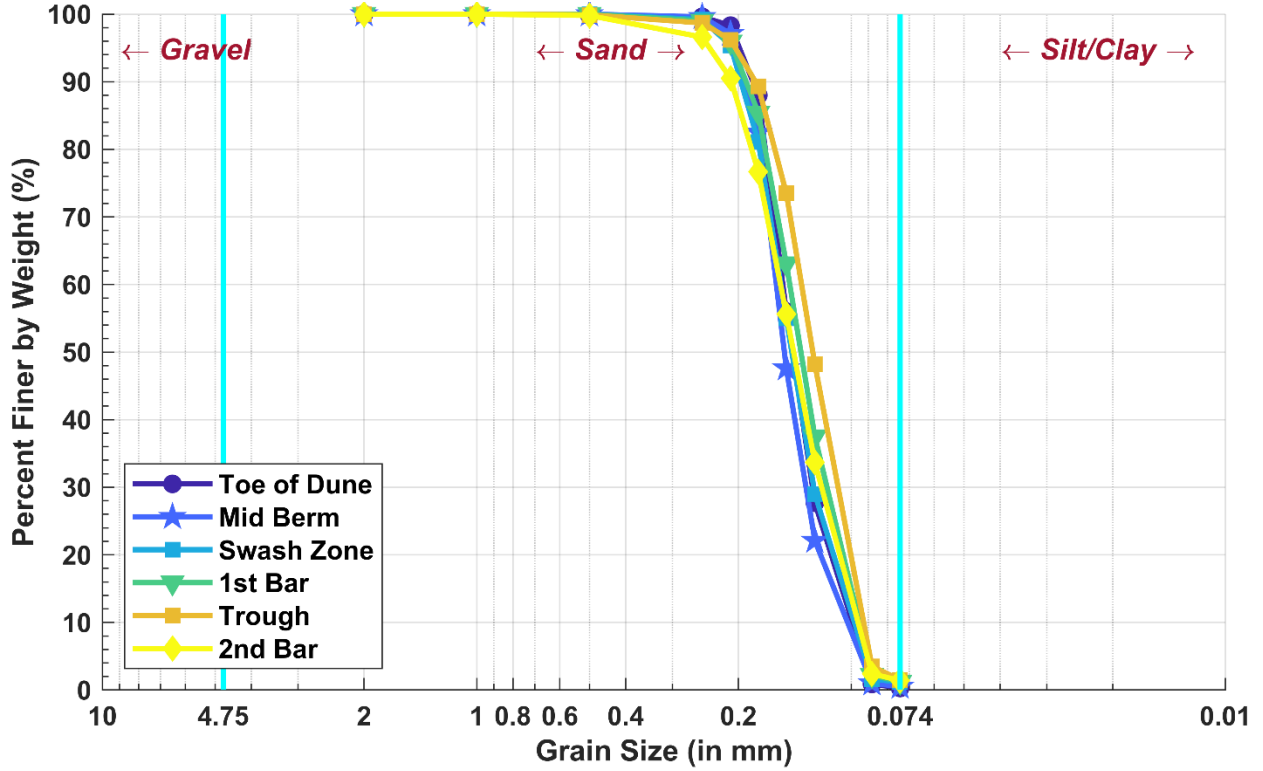


Figure 56. Mustang Island Central - Transect 3

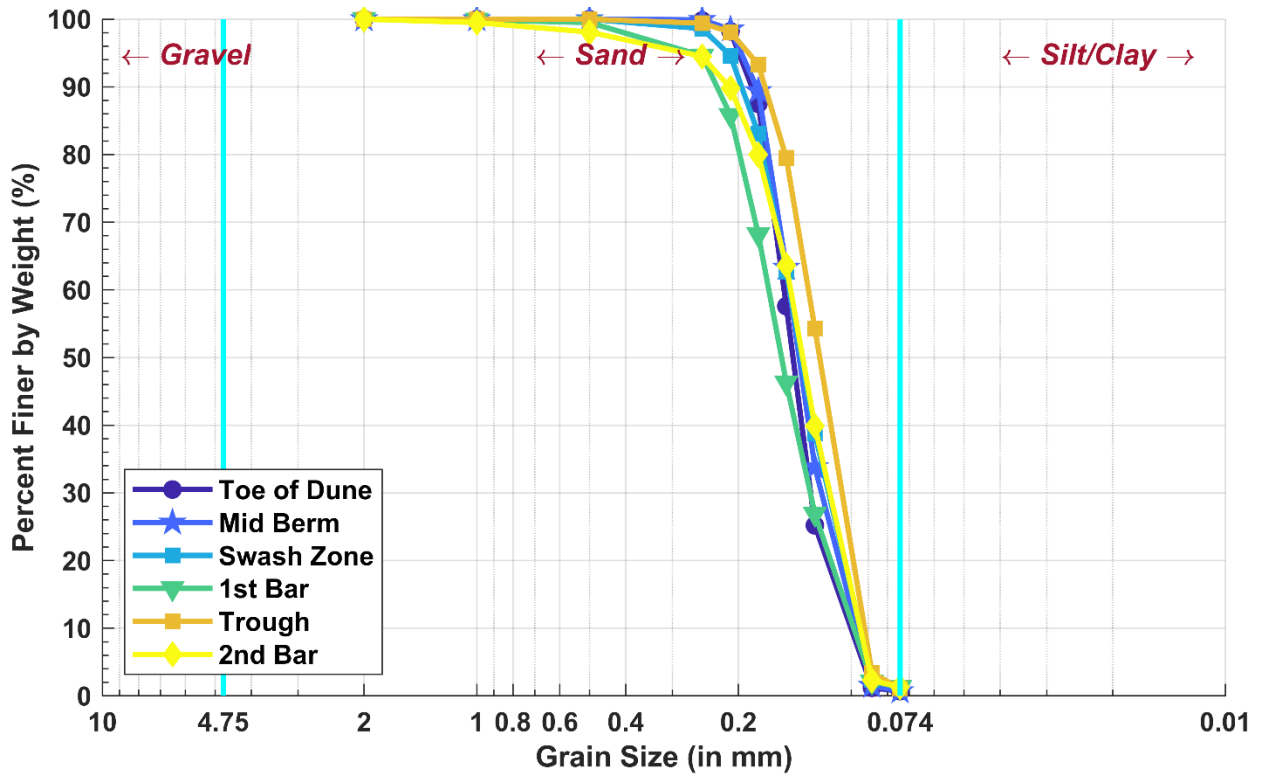


Figure 57. Mustang Island Central - Transect 4

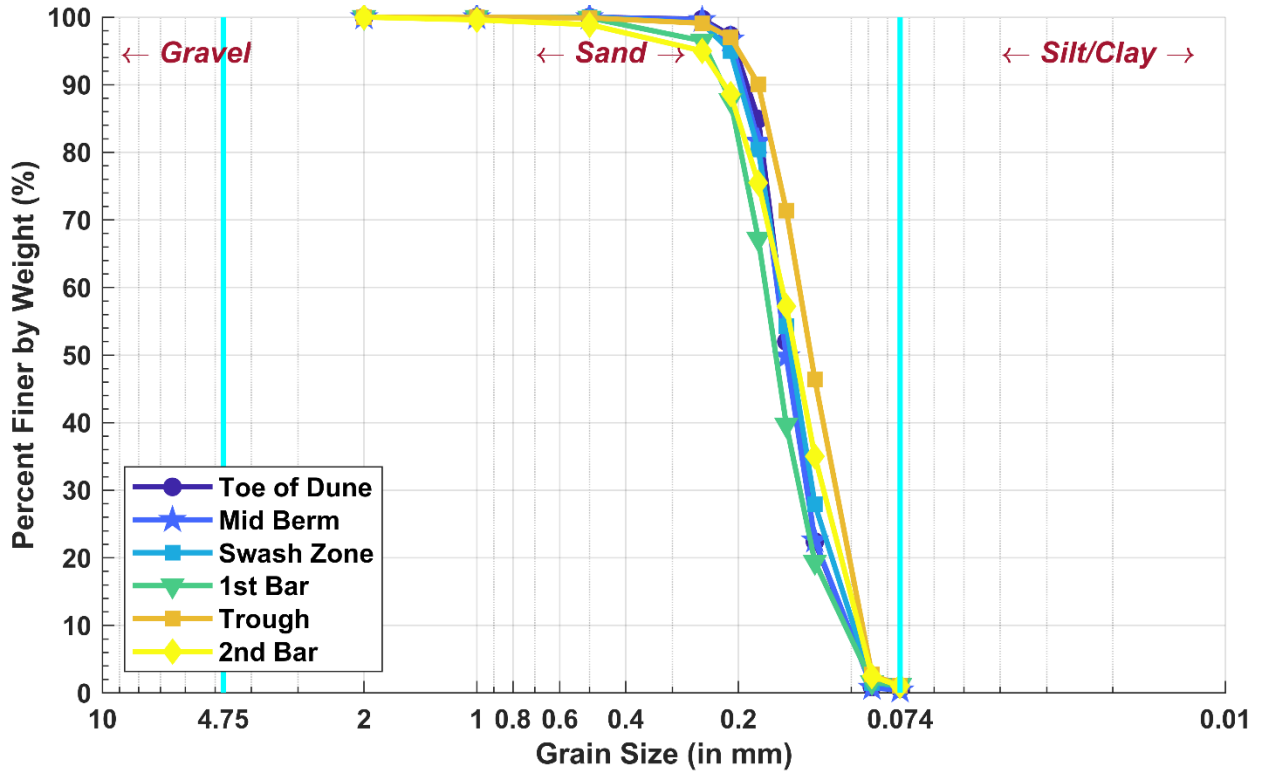


Figure 58. Mustang Island Central - Transect 5

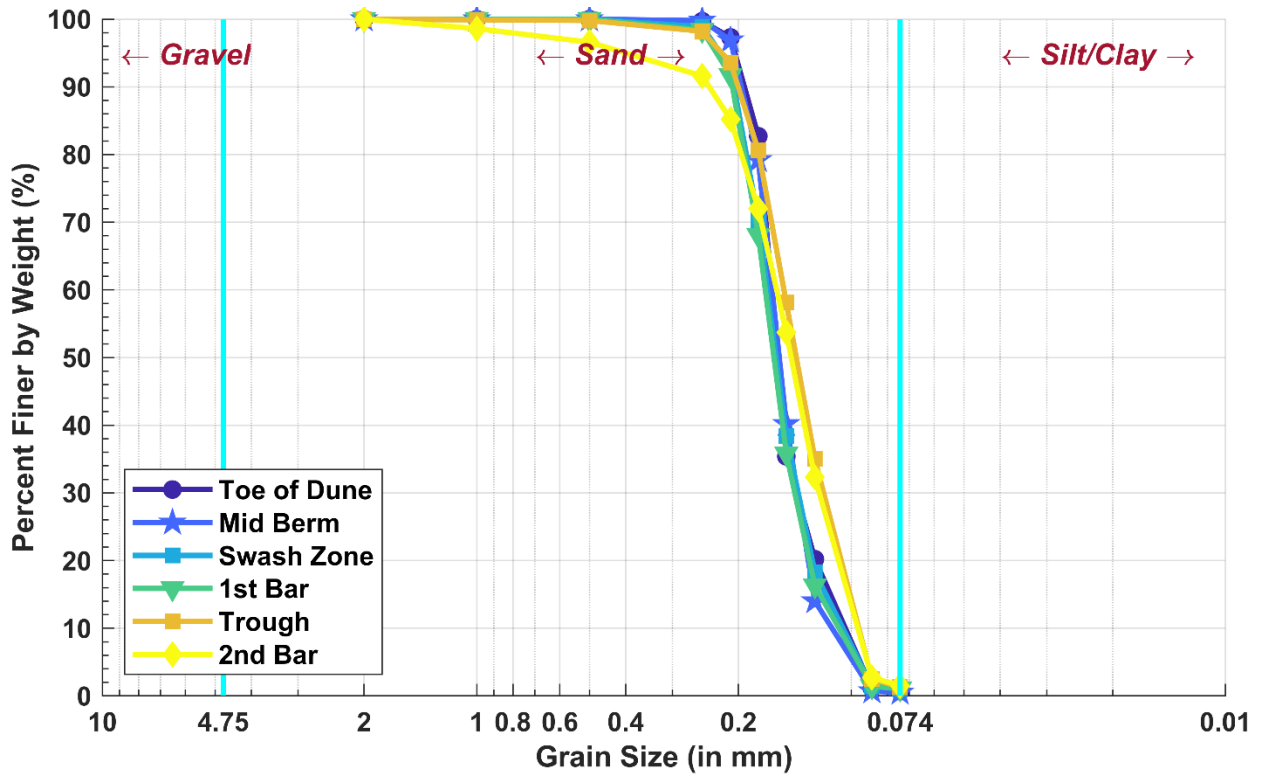


Figure 59. Mustang Island Central - Transect 6



MUSTANG ISLAND SOUTH TRANSECT GRAIN SIZE CURVES

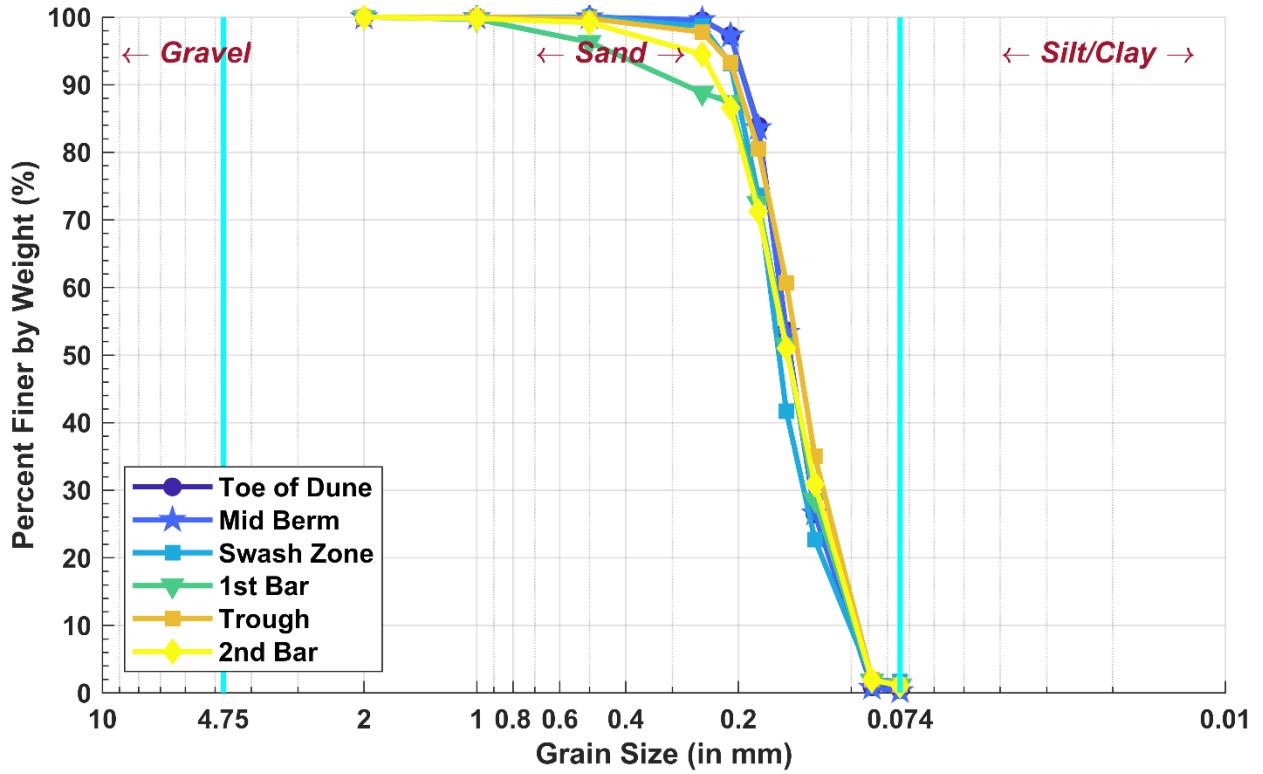


Figure 60. Mustang Island South - Transect 1

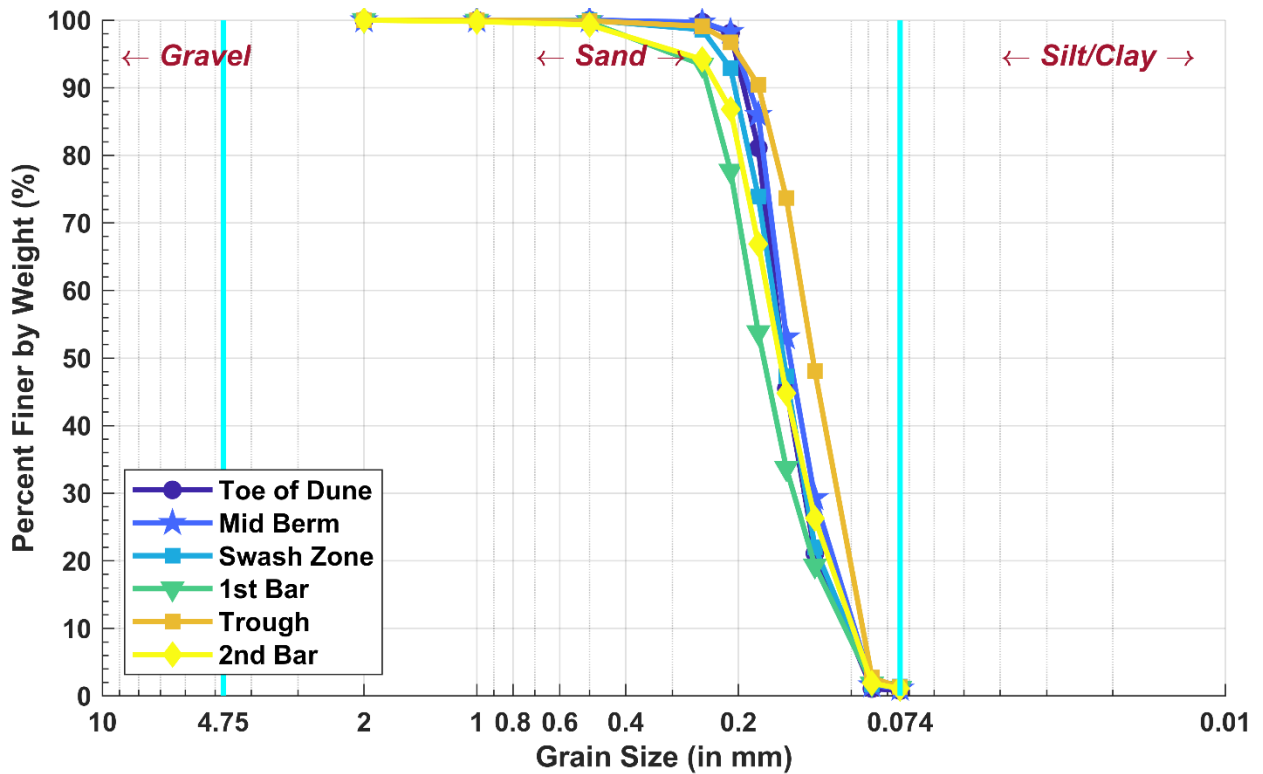


Figure 61. Mustang Island South - Transect 2

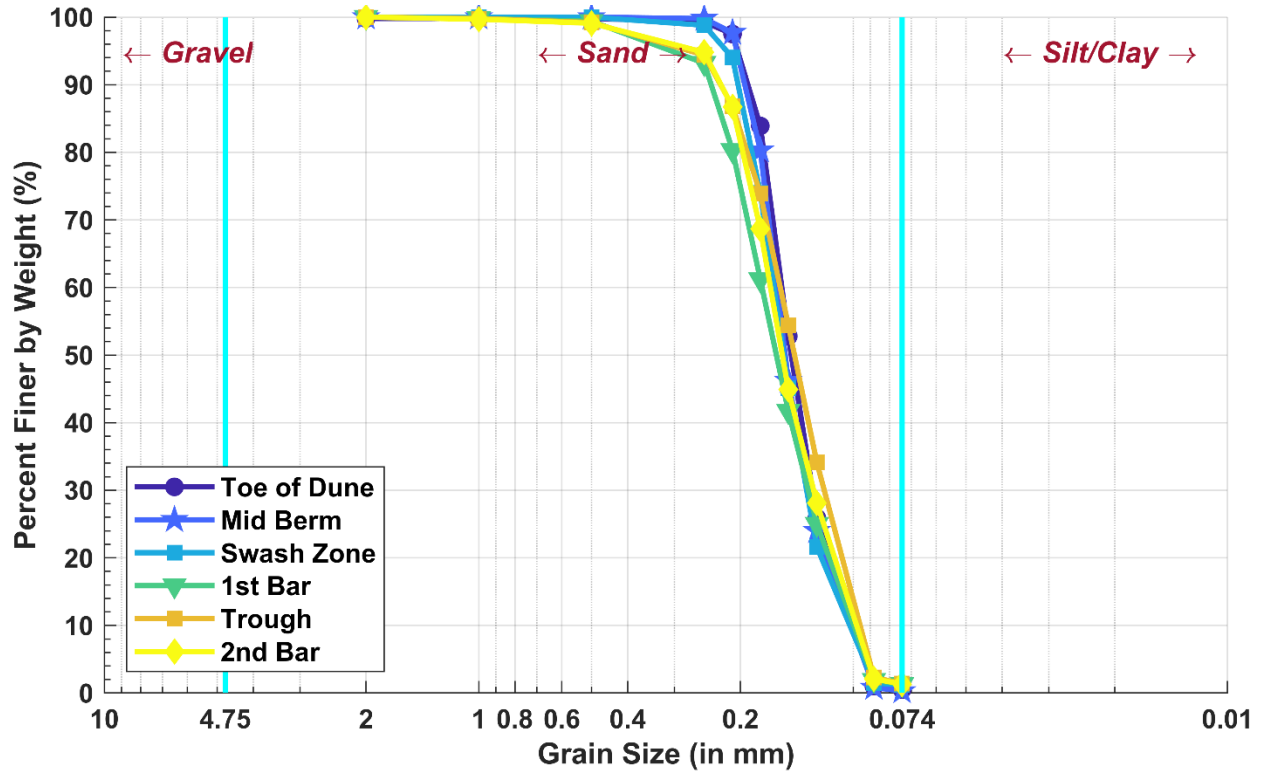


Figure 62. Mustang Island South - Transect 3



NORTH PADRE ISLAND TRANSECT GRAIN SIZE CURVES

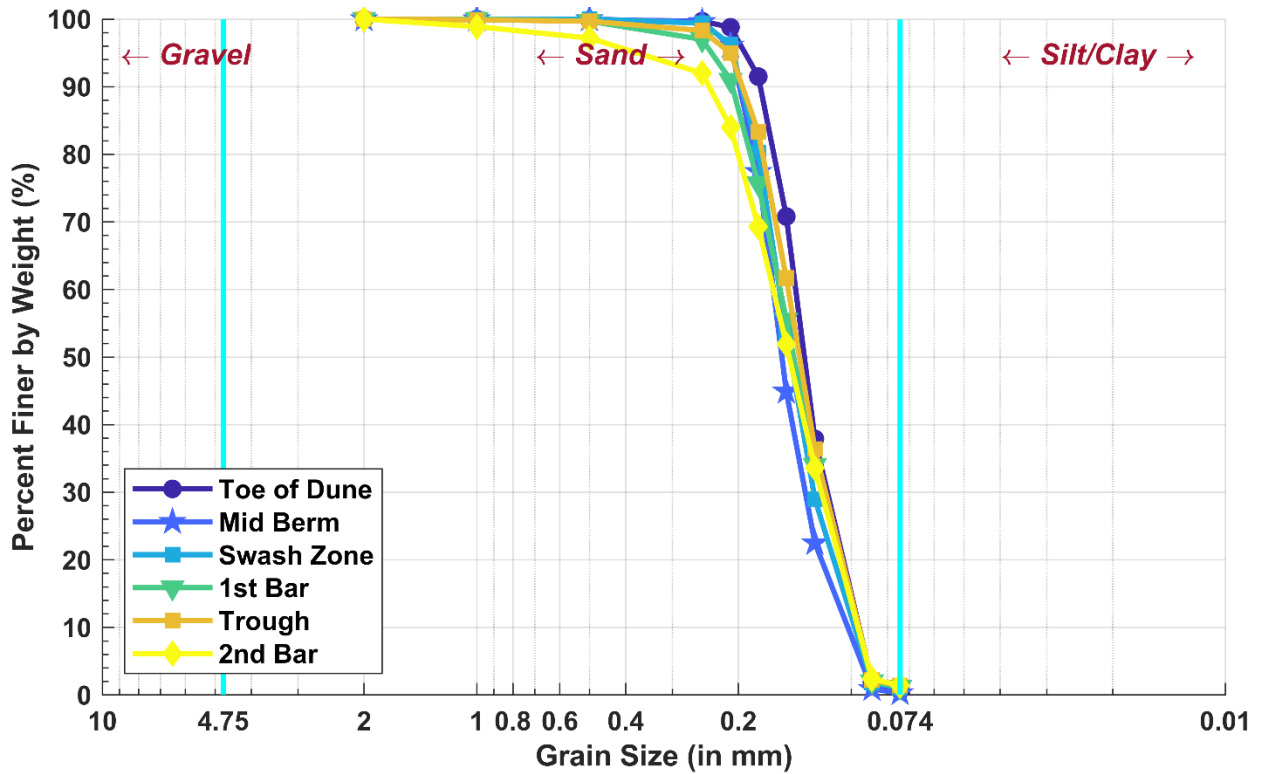


Figure 63. North Padre Island - Transect 1

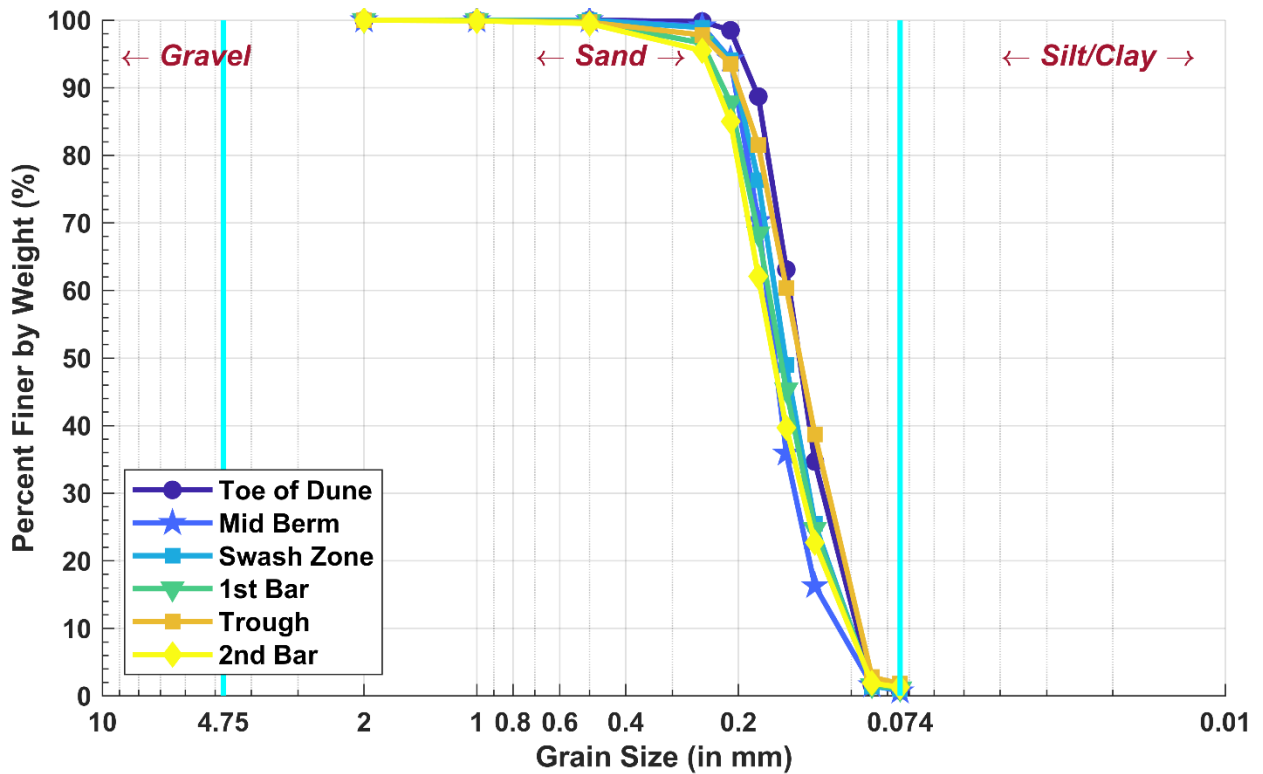


Figure 64. North Padre Island - Transect 2

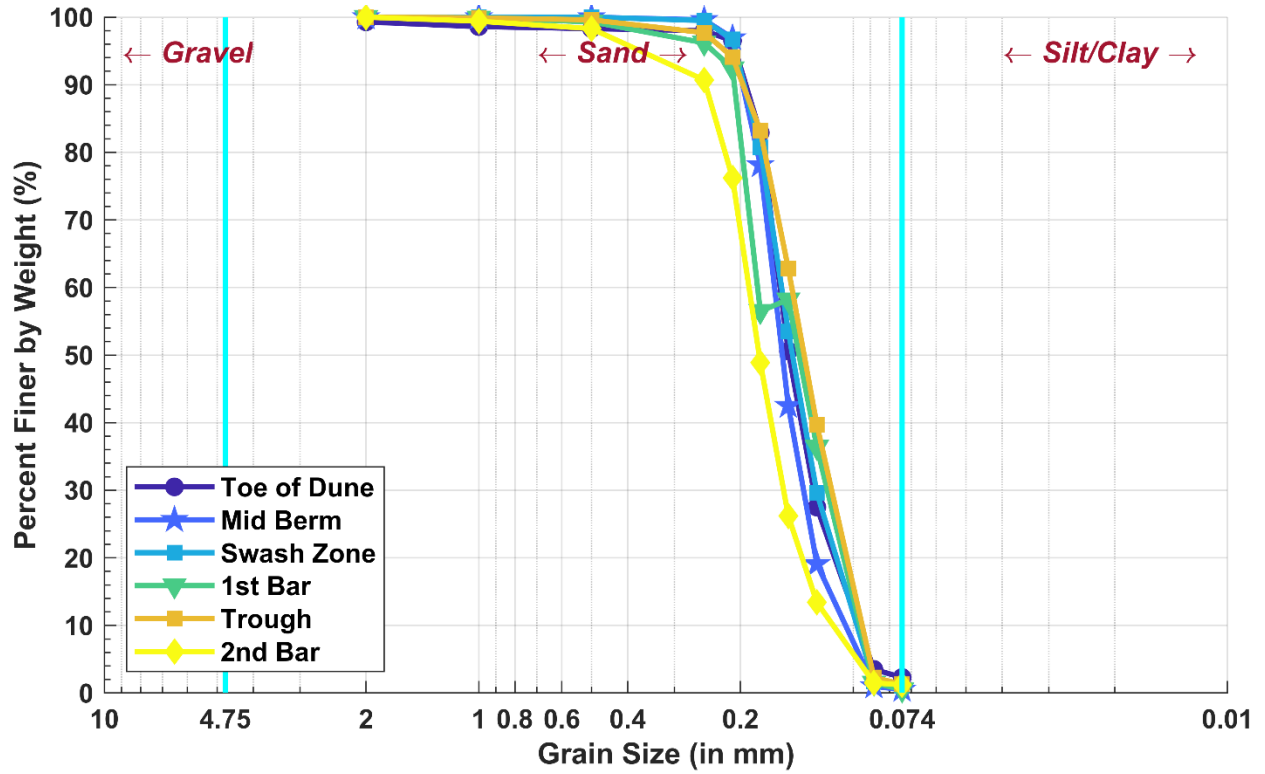


Figure 65. North Padre Island - Transect 3



SOUTH PADRE ISLAND TRANSECT GRAIN SIZE CURVES

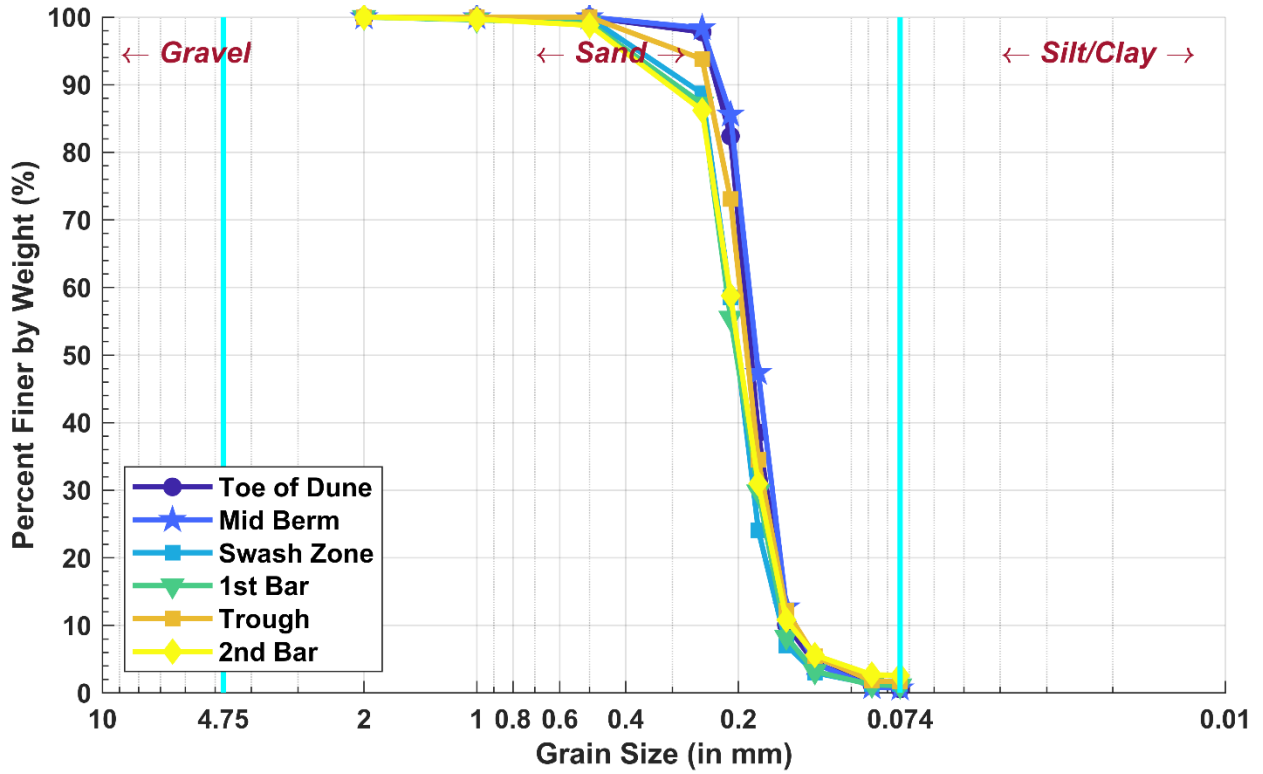


Figure 66. South Padre Island - Transect 1

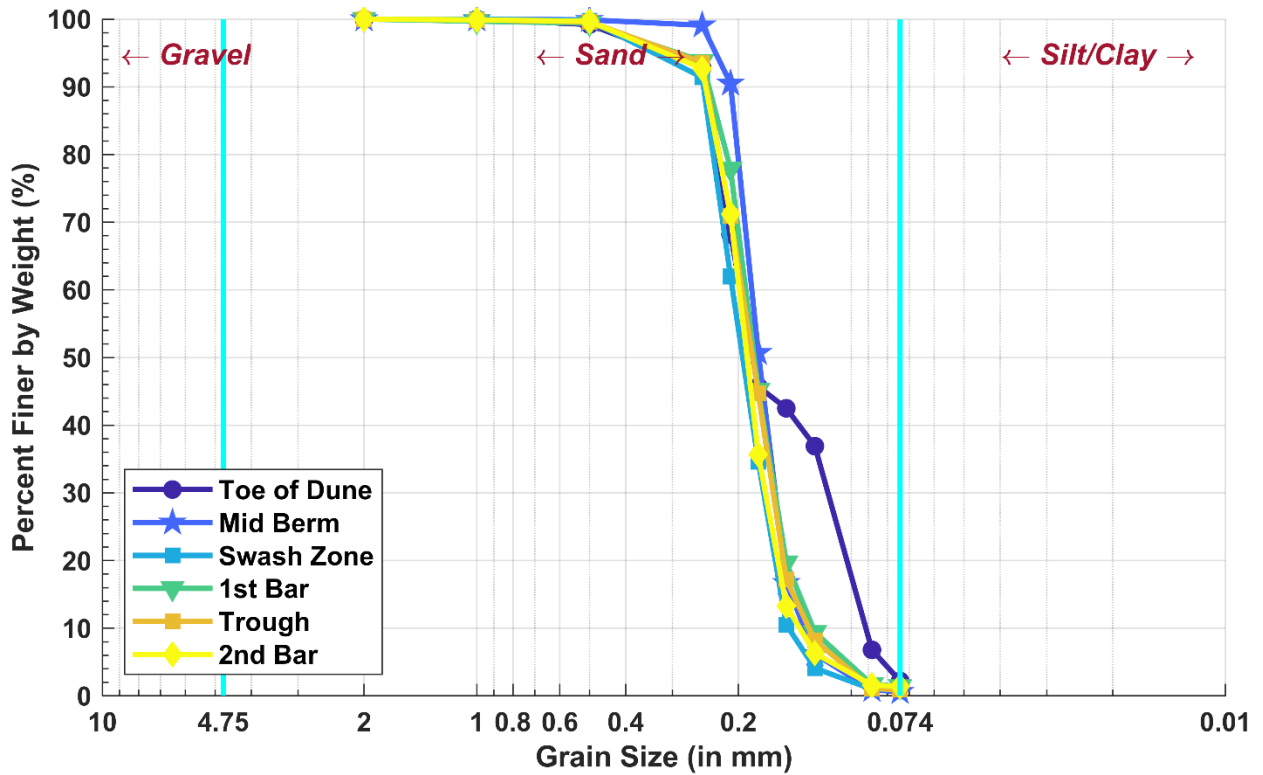


Figure 67. South Padre Island - Transect 2

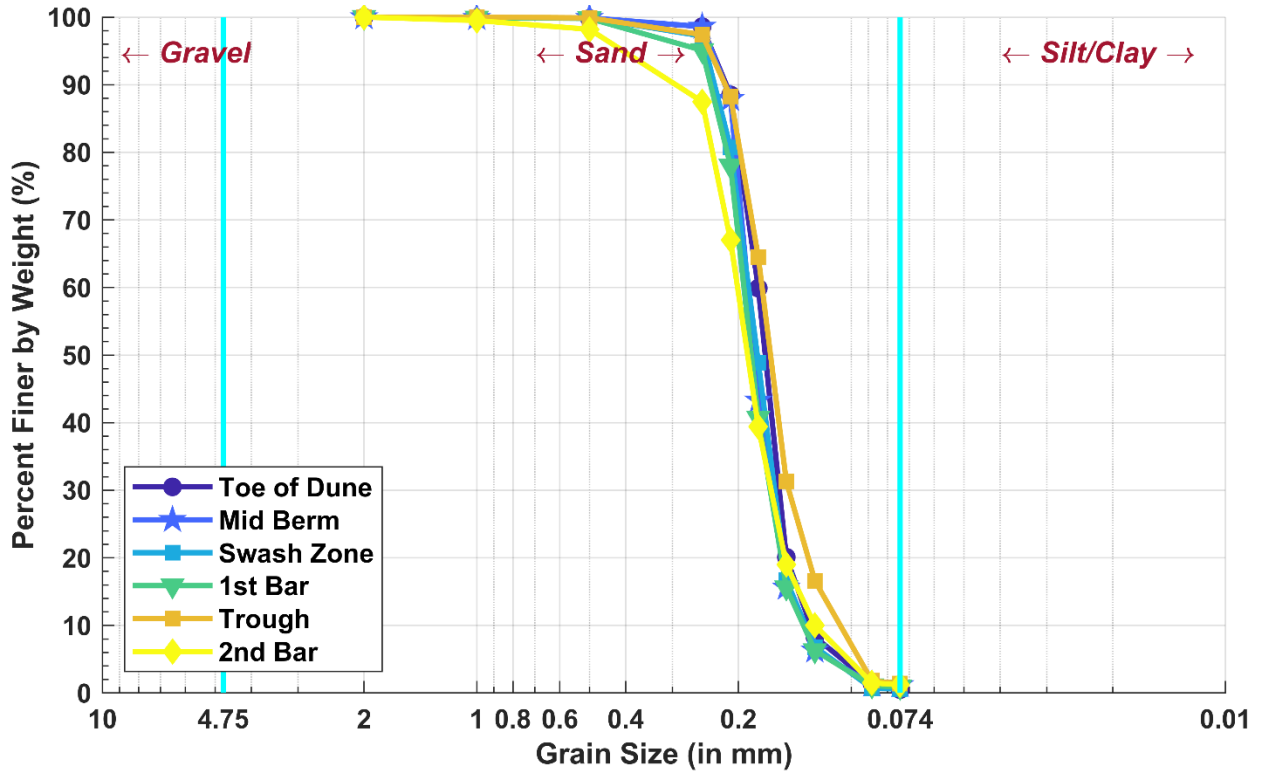


Figure 68. South Padre Island - Transect 3

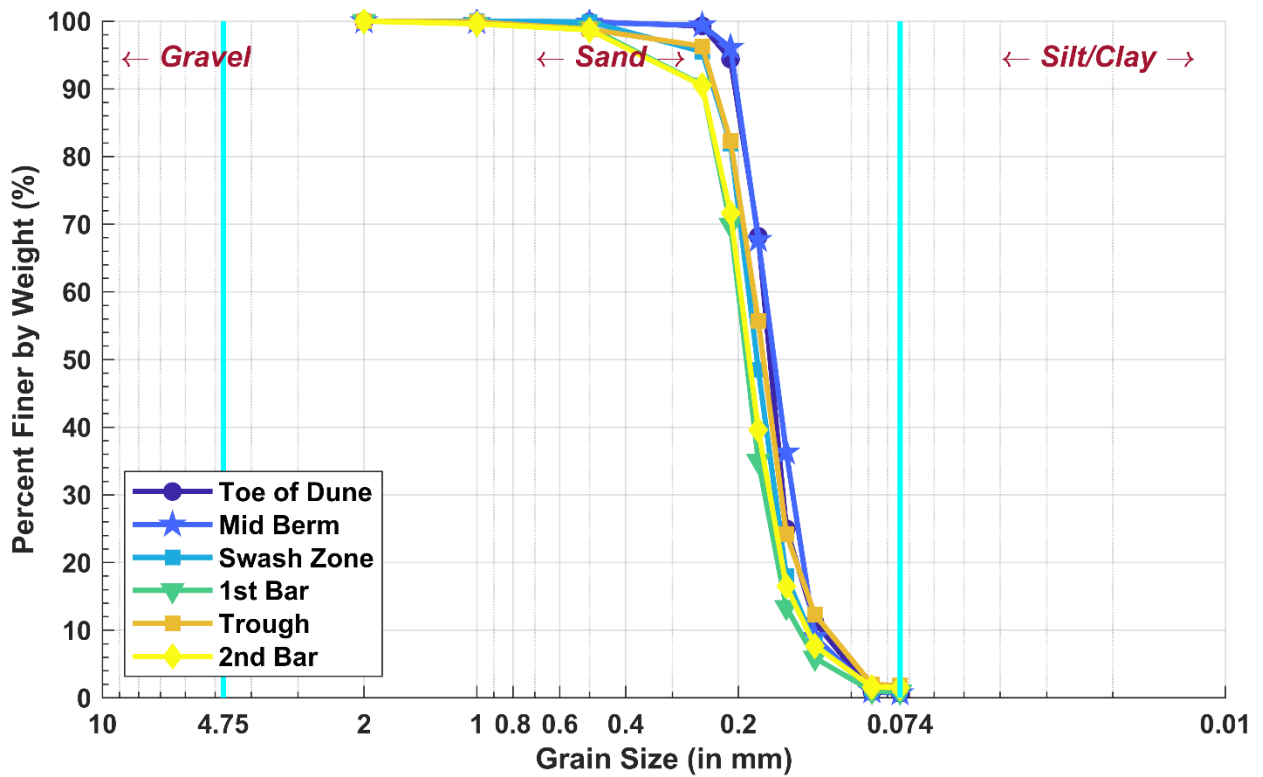


Figure 69. South Padre Island - Transect 4

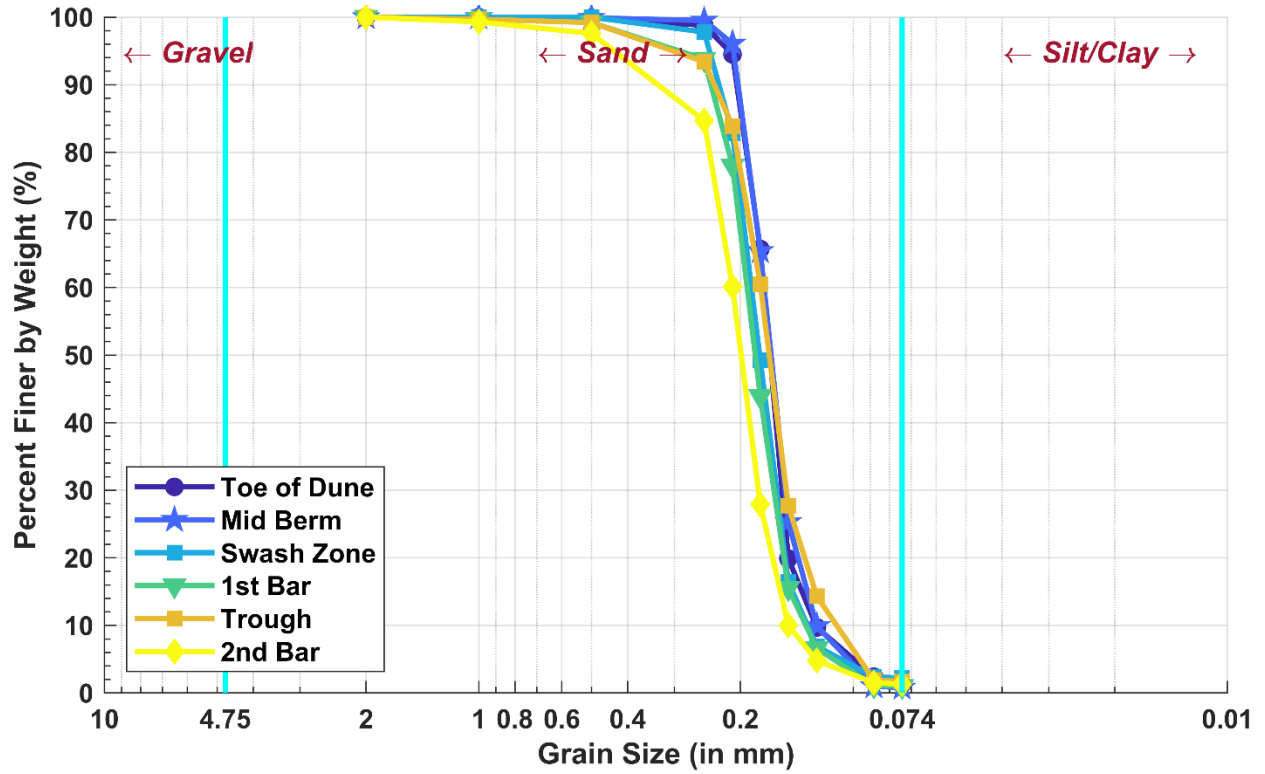


Figure 70. South Padre Island - Transect 5



BOCA CHICA TRANSECT GRAIN SIZE CURVES

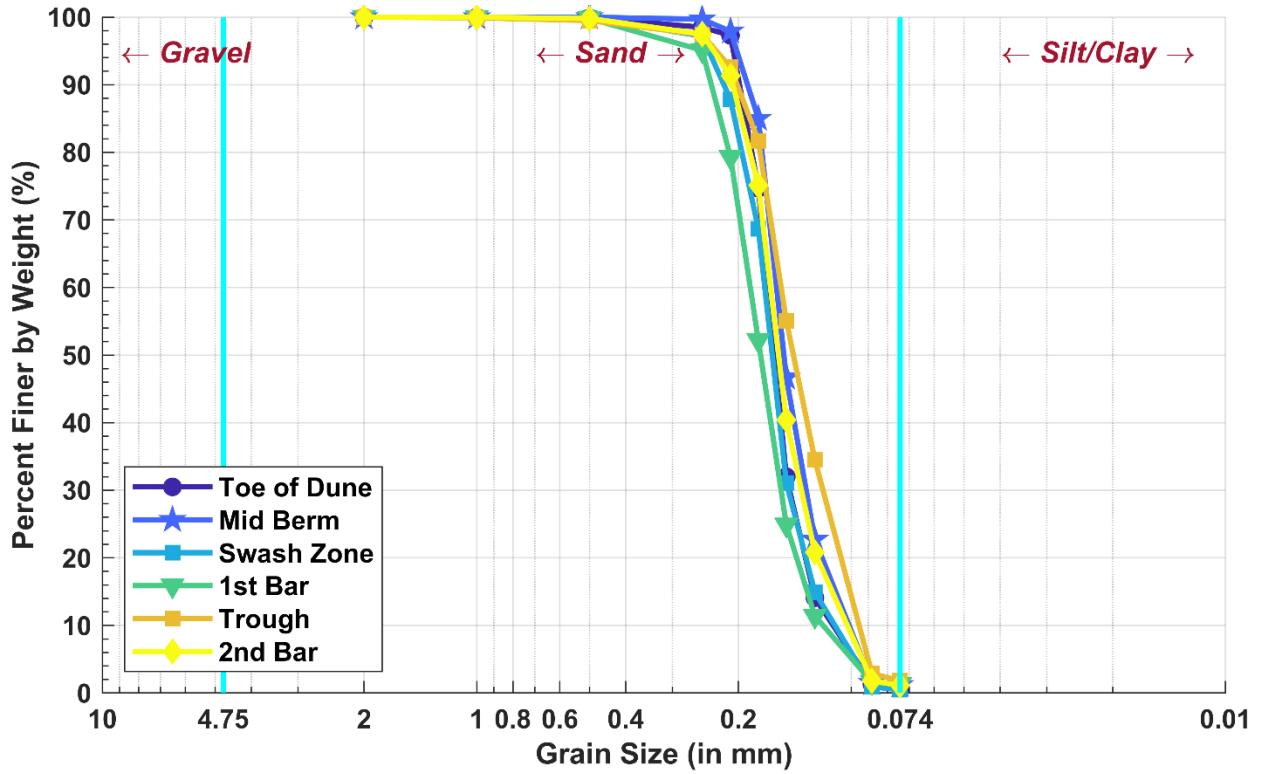


Figure 71. Boca Chica - Transect 1

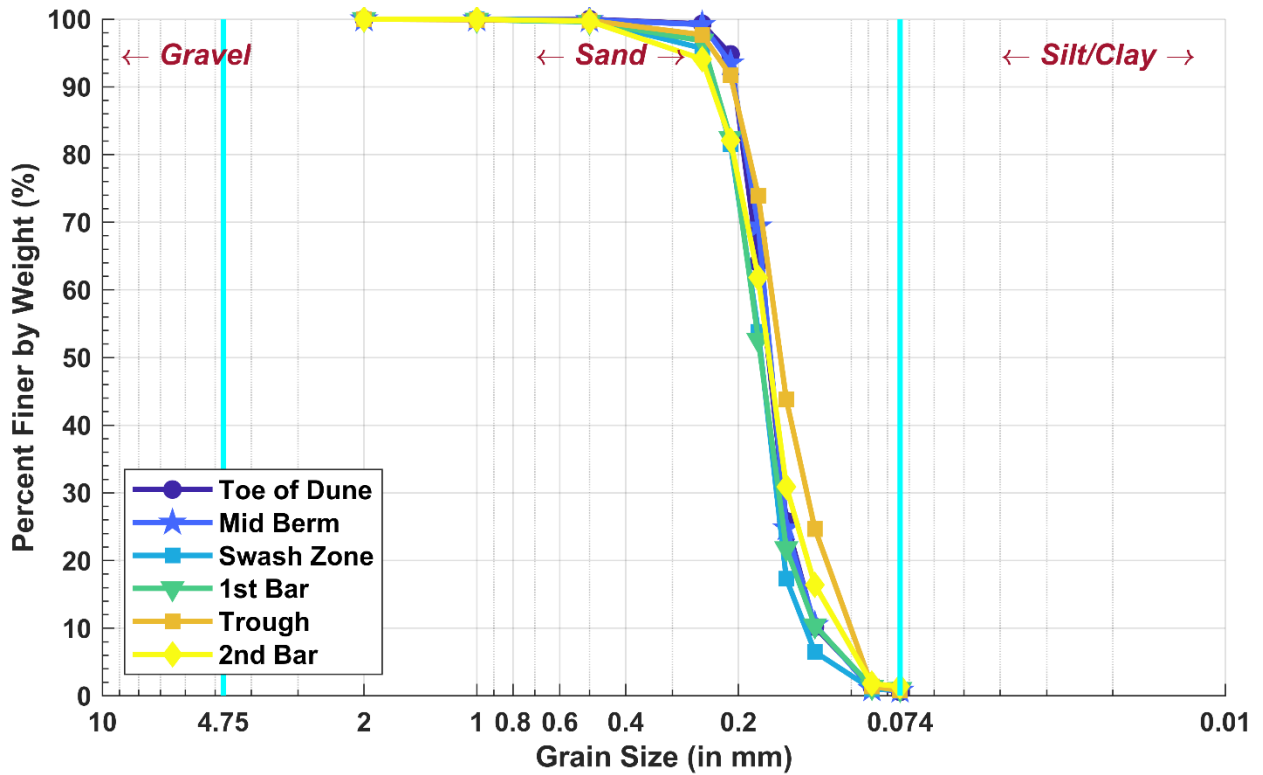


Figure 72. Boca Chica - Transect 2

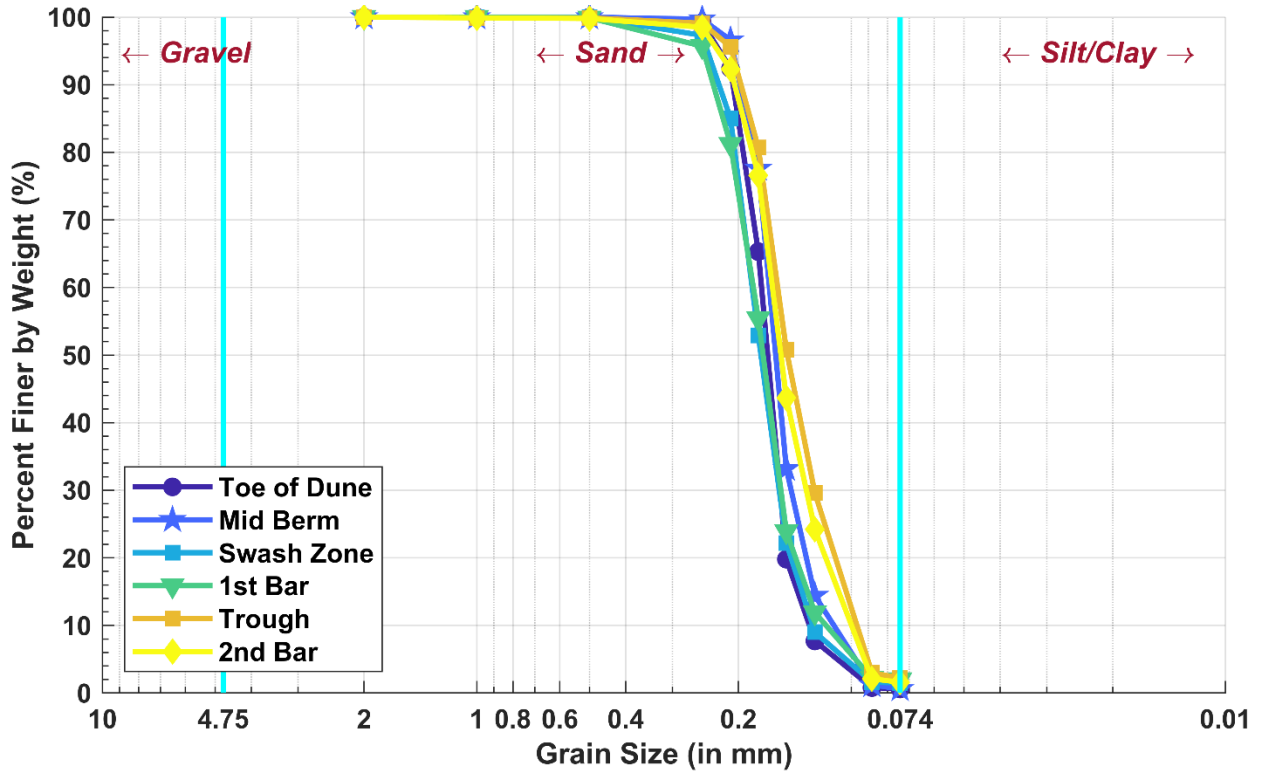


Figure 73. Boca Chica - Transect 3

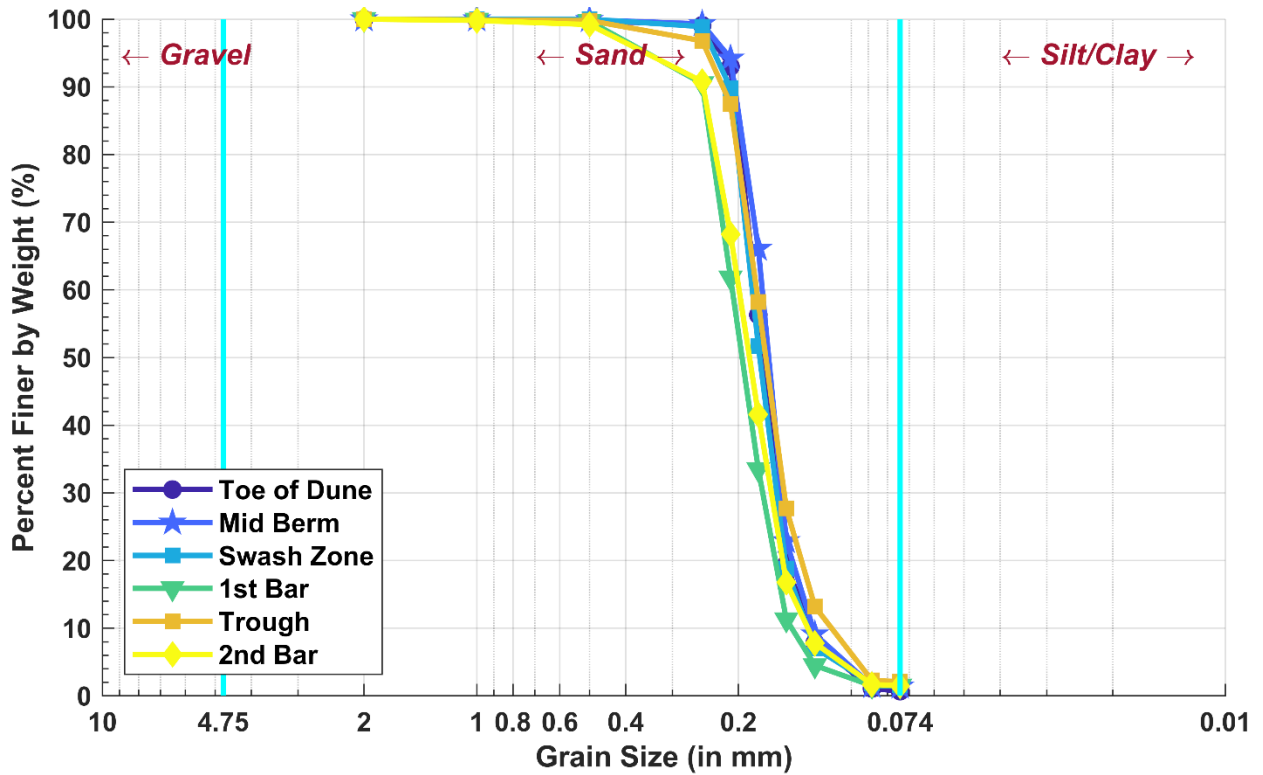


Figure 74. Boca Chica - Transect 4

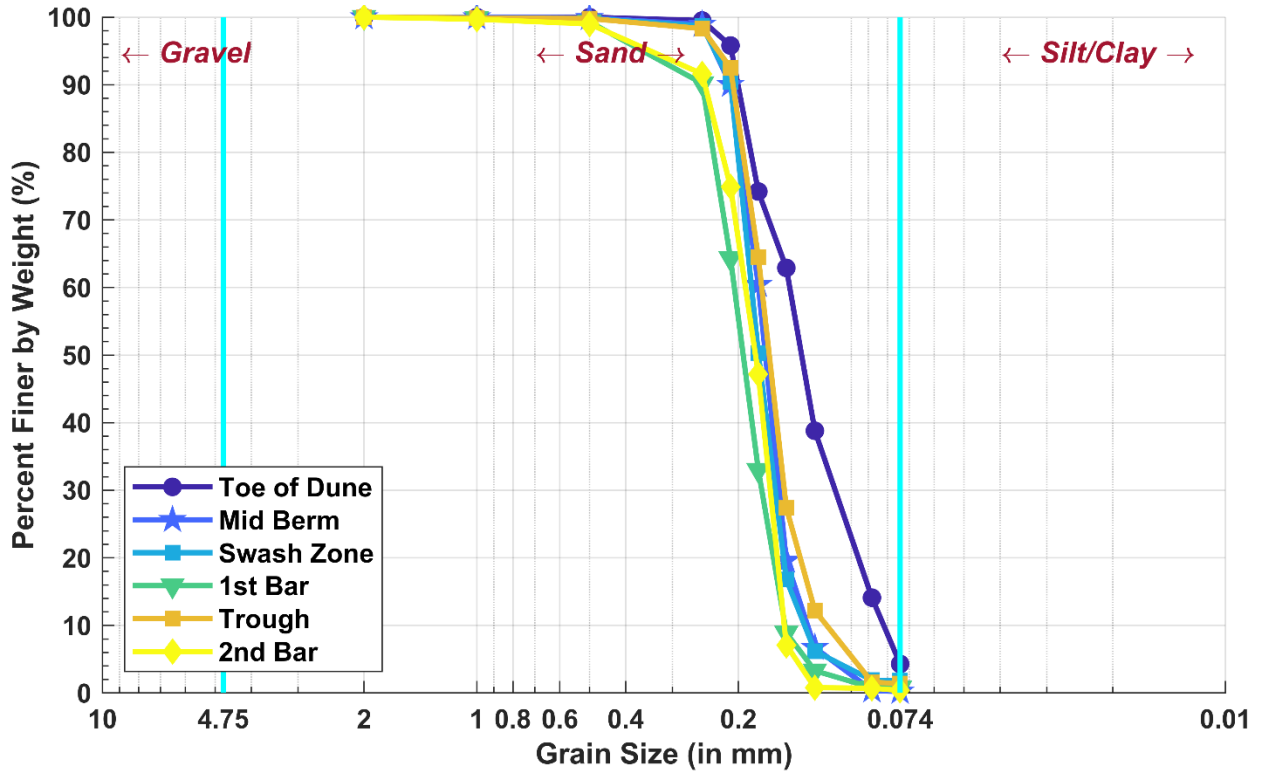


Figure 75. Boca Chica - Transect 5

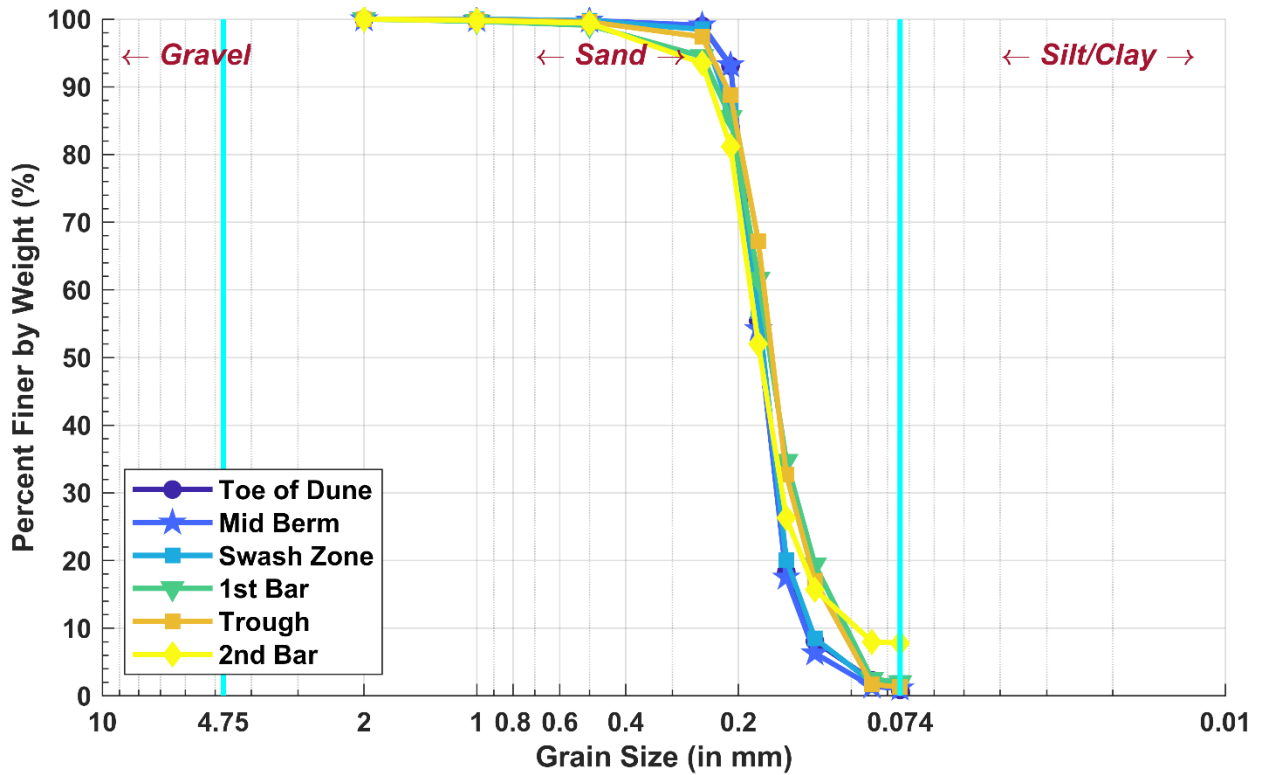


Figure 76. Boca Chica - Transect 6



Appendix 5

Geo-Location Data of Sediment Samples





Latitude and Longitude Coordinates of Project Transect Locations

Bolivar Peninsula East		
Transect	Latitude	Longitude
1	29.551391	-94.383600
2	29.545945	-94.398014
3	29.540536	-94.412520
4	29.535021	-94.426848
5	29.529537	-94.441334
6	29.524056	-94.455749
7	29.518484	-94.470297
8	29.513240	-94.484290
9	29.508020	-94.496948
Bolivar Peninsula Central		
Transect	Latitude	Longitude
1	29.496136	-94.528108
2	29.491096	-94.540894
3	29.484332	-94.557493
4	29.477825	-94.573200
5	29.471376	-94.588461
6	29.464474	-94.604119
7	29.457541	-94.619215
Bolivar Peninsula West		
Transect	Latitude	Longitude
1	29.457112	-94.620108
2	29.450169	-94.634590
3	29.443030	-94.648680
4	29.434454	-94.664870
5	29.426444	-94.678734
6	29.416965	-94.692199
7	29.409588	-94.701064
Galveston Island State Park		
Transect	Latitude	Longitude
1	29.194846	-94.949463
2	29.189084	-94.959193
3	29.183571	-94.968502
Follet's Island		
Transect	Latitude	Longitude
1	29.068658	-95.127203
2	29.062663	-95.135172
3	29.052065	-95.149862
4	29.042999	-95.163123
5	29.035328	-95.174145
6	29.028109	-95.184383
7	29.017290	-95.199722
8	29.008796	-95.211760
9	28.999440	-95.224717
10	28.990517	-95.236460
11	28.981371	-95.248493
12	28.971828	-95.260206
13	28.962443	-95.271255
Sargent Beach		
Transect	Latitude	Longitude
1	28.769208	-95.616770
2	28.761123	-95.633234
2B	28.765338	-95.624549
3	28.757691	-95.640790
4	28.753962	-95.650028
Matagorda Peninsula		
Transect	Latitude	Longitude
1	28.603618	-95.959678
2	28.599867	-95.967618
3	28.596914	-95.973867

Mustang Island North		
Transect	Latitude	Longitude
1	27.791967	-97.085834
2	27.782056	-97.093684
3	27.769328	-97.103623
4	27.758655	-97.111518
5	27.746833	-97.120008
6	27.734195	-97.128895
Mustang Island Central		
Transect	Latitude	Longitude
1	27.726425	-97.134322
2	27.717307	-97.140741
3	27.708827	-97.146486
4	27.700309	-97.152158
5	27.691758	-97.157768
6	27.683140	-97.163243
Mustang Island South		
Transect	Latitude	Longitude
1	27.648222	-97.184186
2	27.640071	-97.189008
3	27.633973	-97.192642
North Padre Island		
Transect	Latitude	Longitude
1	27.597078	-97.212533
2	27.591607	-97.215408
3	27.584007	-97.219098
South Padre Island		
Transect	Latitude	Longitude
1	26.207711	-97.178068
2	26.192016	-97.175987
3	26.176459	-97.173805
4	26.158837	-97.171269
5	26.147069	-97.169632
Boca Chica Peninsula		
Transect	Latitude	Longitude
1	26.059083	-97.151950
2	26.046745	-97.152666
3	26.034231	-97.152640
4	26.021719	-97.152242
5	26.009234	-97.151237
6	25.998338	-97.150453



State Plane Coordinates of Project Transect Locations

Bolivar Peninsula East		
Transect	Latitude	Longitude
1	13,776,988.524	3,435,802.869
2	13,774,829.242	3,431,301.712
3	13,772,682.804	3,426,770.287
4	13,770,500.619	3,422,296.416
5	13,768,328.281	3,417,771.388
6	13,766,158.463	3,413,268.363
7	13,763,954.491	3,408,723.840
8	13,761,877.067	3,404,350.572
9	13,759,825.223	3,400,400.792
Bolivar Peninsula Central		
Transect	Latitude	Longitude
1	13,755,127.016	3,390,662.431
2	13,753,140.482	3,386,668.025
3	13,750,481.879	3,381,484.848
4	13,747,928.120	3,376,581.003
5	13,745,401.438	3,371,817.508
6	13,742,706.021	3,366,933.332
7	13,740,006.683	3,362,227.596
Bolivar Peninsula West		
Transect	Latitude	Longitude
1	13,739,840.163	3,361,949.465
2	13,737,145.116	3,357,438.415
3	13,734,384.042	3,353,054.043
4	13,731,076.565	3,348,020.446
5	13,728,002.780	3,343,718.260
6	13,724,400.397	3,339,561.967
7	13,721,616.061	3,336,840.315
Galveston Island State Park		
Transect	Latitude	Longitude
1	13,640,760.194	3,260,511.866
2	13,638,559.045	3,257,481.867
3	13,636,453.253	3,254,582.641
Follet's Island		
Transect	Latitude	Longitude
1	13,592,983.710	3,205,357.871
2	13,590,720.976	3,202,885.753
3	13,586,714.970	3,198,322.451
4	13,583,281.218	3,194,196.230
5	13,580,378.255	3,190,767.718
6	13,577,648.036	3,187,583.708
7	13,573,556.855	3,182,812.451
8	13,570,345.345	3,179,067.284
9	13,566,811.478	3,175,037.988
10	13,563,447.885	3,171,390.740
11	13,560,000.636	3,167,652.765
12	13,556,412.761	3,164,020.968
13	13,552,889.427	3,160,598.846
Sargent Beach		
Transect	Latitude	Longitude
1	13,479,301.947	3,052,200.510
2	13,476,211.359	3,047,012.912
2B	13,477,823.444	3,049,750.075
3	13,474,894.433	3,044,628.919
4	13,473,454.278	3,041,709.151
Matagorda Peninsula		
Transect	Latitude	Longitude
1	13,416,098.884	2,943,952.949
2	13,414,669.370	2,941,441.420
3	13,413,544.109	2,939,464.651

Mustang Island North		
Transect	Latitude	Longitude
1	17,179,276.630	1,441,473.137
2	17,175,645.202	1,438,975.360
3	17,170,982.367	1,435,812.966
4	17,167,074.140	1,433,302.660
5	17,162,746.273	1,430,603.994
6	17,158,120.562	1,427,779.554
Mustang Island Central		
Transect	Latitude	Longitude
1	17,155,276.854	1,426,054.647
2	17,151,939.724	1,424,013.847
3	17,148,836.980	1,422,188.291
4	17,145,720.765	1,420,386.222
5	17,142,592.856	1,418,604.063
6	17,139,441.140	1,416,865.574
Mustang Island South		
Transect	Latitude	Longitude
1	17,126,676.208	1,410,220.379
2	17,123,696.858	1,408,690.184
3	17,121,467.874	1,407,536.666
North Padre Island		
Transect	Latitude	Longitude
1	17,107,989.463	1,401,233.564
2	17,105,991.150	1,400,322.689
3	17,103,216.246	1,399,155.600
South Padre Island		
Transect	Latitude	Longitude
1	16,603,105.864	1,417,685.647
2	16,597,408.449	1,418,427.792
3	16,591,761.544	1,419,202.722
4	16,585,365.310	1,420,101.864
5	16,581,093.703	1,420,683.906
Boca Chica Peninsula		
Transect	Latitude	Longitude
1	16,549,175.209	1,426,825.974
2	16,544,688.206	1,426,638.793
3	16,540,139.825	1,426,695.893
4	16,535,593.467	1,426,875.153
5	16,531,059.044	1,427,253.699
6	16,527,101.399	1,427,553.548



Latitude and Longitude Coordinates of Upper Coast Sampling Locations

Bolivar Peninsula East												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	29.551383	-94.383653	29.551322	-94.383614	29.551269	-94.383578	29.551226	-94.383558	29.551211	-94.383548	29.551196	-94.383541
2	No Sample	No Sample	No Sample	No Sample	29.545970	-94.398051	29.545857	-94.397976	29.545822	-94.397959	29.545803	-94.397950
3	29.540554	-94.412565	29.540506	-94.412540	29.540459	-94.412511	29.540400	-94.412480	29.540363	-94.412458	29.540335	-94.412442
4	29.535062	-94.426899	29.535004	-94.426868	29.534953	-94.426844	29.534908	-94.426818	29.534878	-94.426800	29.534847	-94.426786
5	29.529692	-94.441440	29.529607	-94.441389	29.529454	-94.441292	29.529324	-94.441211	29.529280	-94.441178	29.529242	-94.441155
6	29.524218	-94.455866	29.524064	-94.455776	29.523926	-94.455670	29.523847	-94.455621	29.523791	-94.455593	29.523730	-94.455552
7	29.518724	-94.470461	29.518509	-94.470315	29.518321	-94.470241	29.518271	-94.470205	29.518226	-94.470184	29.518181	-94.470151
8	29.513442	-94.484400	29.513240	-94.484290	29.513003	-94.484191	29.512952	-94.484170	29.512910	-94.484146	29.512854	-94.484123
9	29.508428	-94.497182	29.508266	-94.497111	29.508073	-94.497002	29.507974	-94.496947	29.507923	-94.496918	29.507858	-94.496883

Bolivar Peninsula Central												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	29.496483	-94.528348	29.496297	-94.528228	29.496155	-94.528157	29.496006	-94.528063	29.495972	-94.528031	29.495868	-94.527957
2	29.491365	-94.541063	29.491191	-94.540968	29.490951	-94.540827	29.490849	-94.540771	29.490789	-94.540735	29.490733	-94.540702
3	29.484618	-94.557660	29.484332	-94.557493	29.484112	-94.557362	29.484069	-94.557336	29.484031	-94.557309	29.483981	-94.557281
4	29.478137	-94.573365	29.477869	-94.573227	29.477612	-94.573085	29.477564	-94.573059	29.477514	-94.573037	29.477474	-94.573018
5	29.471655	-94.588676	29.471394	-94.588474	29.471130	-94.588323	29.471093	-94.588310	29.471060	-94.588291	29.471022	-94.588270
6	29.464727	-94.604286	29.464494	-94.604136	29.464275	-94.604016	29.464239	-94.603993	29.464212	-94.603969	29.464174	-94.603950
7	29.457890	-94.619416	29.457656	-94.619285	29.457394	-94.619140	29.457353	-94.619112	29.457314	-94.619087	29.457281	-94.619062

Bolivar Peninsula West												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	29.457530	-94.620373	29.457220	-94.620183	29.456953	-94.620024	29.456919	-94.620002	29.456889	-94.619983	29.456852	-94.619959
2	29.450569	-94.634852	29.450350	-94.634721	29.450128	-94.634559	29.450039	-94.634500	29.449985	-94.634457	29.449933	-94.634415
3	29.443443	-94.648974	29.443131	-94.648746	29.442911	-94.648598	29.442878	-94.648574	29.442842	-94.648547	29.442801	-94.648520
4	29.434751	-94.665107	29.434454	-94.664870	29.434209	-94.664666	29.434163	-94.664636	29.434094	-94.664603	29.434041	-94.664565
5	29.426535	-94.678833	29.426248	-94.678589	29.426042	-94.678393	29.425968	-94.678337	29.425917	-94.678296	29.425882	-94.678268
6	29.417066	-94.692337	29.416877	-94.692150	29.416700	-94.691996	29.416642	-94.691925	29.416547	-94.691836	29.416441	-94.691747
7	29.409730	-94.701288	29.409588	-94.701064	29.409338	-94.700785	29.409252	-94.700669	29.409189	-94.700580	29.409061	-94.700452

Galveston Island State Park												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	29.195099	-94.949656	29.194957	-94.949539	29.194560	-94.949292	29.194401	-94.949172	29.194337	-94.949127	29.194269	-94.949094
2	29.189338	-94.959400	29.189168	-94.959288	29.188889	-94.959061	29.188840	-94.959017	29.188771	-94.958974	29.188655	-94.958910
3	29.183822	-94.968730	29.183616	-94.968567	29.183290	-94.968319	29.183232	-94.968277	29.183157	-94.968221	29.183085	-94.968125

Follet's Island												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	29.068853	-95.127429	29.068682	-95.127261	29.068478	-95.127079	29.068396	-95.127011	29.068314	-95.126933	29.068229	-95.126851
2	29.063005	-95.135434	29.062781	-95.135261	29.062589	-95.135118	29.062464	-95.135027	29.062415	-95.134983	29.062353	-95.134934
3	29.052335	-95.150068	29.052173	-95.149955	29.052002	-95.149820	29.051932	-95.149750	29.051829	-95.149678	29.051760	-95.149615
4	29.043185	-95.163256	29.042999	-95.163123	29.042797	-95.162963	29.042707	-95.162904	29.042635	-95.162845	29.042561	-95.162782
5	29.035577	-95.174401	29.035370	-95.174206	29.035189	-95.173999	29.035129	-95.173932	29.035044	-95.173849	29.034972	-95.173763
6	29.028430	-95.184748	29.028186	-95.184485	29.027986	-95.184252	29.027940	-95.184192	29.027881	-95.184148	29.027812	-95.184092
7	29.017648	-95.200024	29.017404	-95.199835	29.017143	-95.199589	29.017077	-95.199516	29.017000	-95.199451	29.016925	-95.199392
8	29.009162	-95.212018	29.008813	-95.211778	29.008510	-95.211547	29.008425	-95.211480	29.008344	-95.211421	29.008237	-95.211323
9	28.999582	-95.224868	28.999382	-95.224672	28.999131	-95.224400	28.999057	-95.224320	28.999006	-95.224275	28.998910	-95.224197
10	28.990688	-95.236637	28.990498	-95.236446	28.990200	-95.236197	28.990115	-95.236125	28.990036	-95.236058	28.989958	-95.235988
11	28.981410	-95.248536	28.981183	-95.248322	28.980953	-95.248133	28.980896	-95.248078	28.980833	-95.248032	28.980772	-95.247976
12	28.971878	-95.260272	28.971707	-95.260081	28.971494	-95.259845	28.971453	-95.259804	28.971416	-95.259749	28.971353	-95.259660
13	28.962550	-95.271385	28.962365	-95.271189	28.962186	-95.271013	28.962129	-95.270959	28.962048	-95.270885	28.961965	-95.270792

Sargent Beach												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	28.769271	-95.616811	28.769200	-95.616770	28.769168	-95.616751	28.769030	-95.616663	28.768989	-95.616635	28.768956	-95.616616
2	28.761656	-95.633543	28.761392	-95.633420	28.761173	-95.633282	28.761053	-95.633206	28.761022	-95.633185	28.760974	-95.633153
2B	No Sample	No Sample	No Sample	No Sample	28.765246	-95.624506	No Sample	No Sample	28.765164	-95.624452	No Sample	No Sample
3	28.758049	-95.641032	28.757906	-95.640935	28.757757	-95.640864	28.757691	-95.640790	28.757582	-95.640728	28.757510	-95.640677
4	28.754671	-95.650246	28.754460	-95.650178	28.754191	-95.650102	28.754062	-95.650059	28.753973	-95.650037	28.753900	-95.650010

Matagorda Peninsula												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	28.603759	-95.959828	28.603554	-95.959667	28.603183	-95.959408	28.603007	-95.959309	28.602908	-95.959251	28.602832	-95.959207
2	28.600137	-95.967779	28.599771	-95.967579	28.599357	-95.967359	28.599176	-95.967225	28.599075	-95.967169	28.598962	-95.967101
3	28.596989	-95.973927	28.596708	-95.973734	28.596378	-95.973439	28.596239	-95.973323	28.596144	-95.973270	28.596068	-95.973215



State Plane Coordinates of Upper Coast Sampling Locations

Bolivar Peninsula East													
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar		
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	
1	13,776,984.930	3,435,786.141	13,776,963.260	3,435,799.405	13,776,944.450	3,435,811.602	13,776,929.080	3,435,818.573	13,776,923.760	3,435,821.965	13,776,918.400	3,435,824.404	
2	No Sample	No Sample	No Sample	No Sample	13,774,837.840	3,431,289.593	13,774,797.730	3,431,315.037	13,774,785.220	3,431,320.939	13,774,778.430	3,431,324.070	
3	13,772,688.760	3,426,755.727	13,772,671.640	3,426,764.355	13,772,654.920	3,426,774.239	13,772,633.870	3,426,784.929	13,772,620.700	3,426,792.447	13,772,610.730	3,426,797.929	
4	13,770,514.860	3,422,279.623	13,770,494.180	3,422,290.297	13,770,475.940	3,422,298.648	13,770,459.920	3,422,307.549	13,770,449.240	3,422,313.694	13,770,438.150	3,422,318.583	
5	13,768,383.270	3,417,735.504	13,768,353.010	3,417,752.913	13,768,298.630	3,417,785.904	13,768,252.400	3,417,813.484	13,768,236.820	3,417,824.593	13,768,223.300	3,417,832.440	
6	13,766,215.860	3,413,228.889	13,766,161.020	3,413,259.664	13,766,112.190	3,413,295.297	13,766,084.090	3,413,311.984	13,766,064.090	3,413,321.673	13,766,042.430	3,413,335.563	
7	13,764,039.660	3,408,668.337	13,763,963.330	3,408,717.762	13,763,895.940	3,408,743.926	13,763,878.210	3,408,756.070	13,763,862.120	3,408,763.977	13,763,846.180	3,408,774.498	
8	13,761,949.090	3,404,312.772	13,761,877.050	3,404,350.567	13,761,792.150	3,404,385.356	13,761,773.880	3,404,392.746	13,761,758.910	3,404,400.963	13,761,738.850	3,404,409.059	
9	13,759,970.580	3,400,320.704	13,759,912.590	3,400,345.537	13,759,843.800	3,400,382.881	13,759,808.500	3,400,401.748	13,759,790.330	3,400,411.679	13,759,767.140	3,400,423.712	

Bolivar Peninsula Central													
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar		
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	
1	13,755,250.160	3,390,581.313	13,755,184.040	3,390,622.043	13,755,133.300	3,390,646.585	13,755,080.310	3,390,678.536	13,755,068.340	3,390,689.180	13,755,031.460	3,390,714.148	
2	13,753,236.160	3,386,610.568	13,753,174.080	3,386,643.178	13,753,088.590	3,386,691.327	13,753,052.210	3,386,710.542	13,753,030.840	3,386,722.818	13,753,010.900	3,386,734.084	
3	13,750,583.760	3,381,427.803	13,750,481.860	3,381,484.842	13,750,403.510	3,381,529.526	13,750,368.200	3,381,538.386	13,750,374.720	3,381,547.494	13,750,356.890	3,381,557.086	
4	13,748,039.480	3,376,524.246	13,747,943.760	3,376,571.808	13,747,852.090	3,376,620.490	13,747,834.970	3,376,629.417	13,747,817.060	3,376,637.099	13,747,802.430	3,376,643.690	
5	13,745,500.210	3,371,745.317	13,745,407.800	3,371,813.122	13,745,313.690	3,371,864.753	13,745,300.400	3,371,869.393	13,745,288.640	3,371,875.887	13,745,275.080	3,371,883.085	
6	13,742,795.930	3,366,876.768	13,742,713.070	3,366,927.647	13,742,634.930	3,366,968.797	13,742,622.120	3,366,976.602	13,742,612.600	3,366,984.602	13,742,599.020	3,366,991.163	
7	13,740,131.080	3,362,158.920	13,740,047.620	3,362,203.764	13,739,954.150	3,362,253.441	13,739,939.580	3,362,262.904	13,739,925.710	3,362,271.385	13,739,914.020	3,362,279.784	

Bolivar Peninsula West													
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar		
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	
1	13,739,988.888	3,361,859.505	13,739,878.490	3,361,924.139	13,739,783.370	3,361,978.336	13,739,771.280	3,361,985.795	13,739,760.610	3,361,992.245	13,739,747.450	3,362,000.381	
2	13,737,287.330	3,357,349.660	13,737,209.310	3,357,394.292	13,737,130.570	3,357,448.824	13,737,098.930	3,357,468.795	13,737,079.820	3,357,483.203	13,737,061.420	3,357,497.265	
3	13,734,530.610	3,352,954.946	13,734,419.940	3,353,031.680	13,734,341.750	3,353,081.727	13,734,330.050	3,353,089.806	13,734,317.290	3,353,098.880	13,734,302.710	3,353,108.022	
4	13,731,181.670	3,347,941.055	13,731,076.550	3,348,020.440	13,730,989.930	3,348,088.628	13,730,973.570	3,348,098.790	13,730,948.890	3,348,110.217	13,730,930.080	3,348,123.018	
5	13,728,034.660	3,343,685.540	13,727,933.250	3,343,767.011	13,727,860.700	3,343,832.126	13,727,834.470	3,343,850.934	13,727,816.420	3,343,864.661	13,727,804.030	3,343,874.038	
6	13,724,435.460	3,339,516.707	13,724,368.980	3,339,578.728	13,724,306.470	3,339,630.090	13,724,286.230	3,339,653.454	13,724,252.750	3,339,683.040	13,724,215.280	3,339,712.773	
7	13,721,665.020	3,336,767.145	13,721,616.040	3,336,840.309	13,721,528.470	3,336,932.414	13,721,498.580	3,336,970.470	13,721,476.730	3,336,999.627	13,721,431.710	3,337,042.062	

Galveston Island State Park													
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar		
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	
1	13,640,849.996	3,202,797.989	13,640,799.689	3,202,856.236	13,640,658.157	3,202,869.990	13,640,601.706	3,202,810.253	13,640,578.947	3,202,625.407	13,640,554.602	3,202,636.785	
2	13,638,649.061	3,257,412.672	13,638,588.521	3,257,450.520	13,638,489.641	3,257,526.407	13,638,472.320	3,257,541.052	13,638,447.721	3,257,555.630	13,638,406.274	3,257,577.495	
3	13,636,541.954	3,254,506.791	13,636,468.891	3,254,561.350	13,636,353.156	3,254,644.518	13,636,332.542	3,254,658.638	13,636,305.904	3,254,677.435	13,636,280.797	3,254,708.950	

Follet's Island													
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar		
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	
1	13,593,052.160	3,205,283.366	13,592,991.800	3,205,339.059	13,592,919.590	3,205,399.619	13,592,890.510	3,205,422.316	13,592,861.540	3,205,448.205	13,592,831.520	3,205,475.407	
2	13,590,842.470	3,202,797.989	13,590,762.900	3,202,855.914	13,590,694.640	3,202,903.876	13,590,650.170	3,202,934.432	13,590,632.830	3,202,949.069	13,590,610.820	3,202,965.458	
3	13,586,810.900	3,198,253.437	13,586,753.220	3,198,291.457	13,586,692.500	3,198,336.610	13,586,667.800	3,198,359.799	13,586,631.130	3,198,384.022	13,586,606.710	3,198,404.964	
4	13,583,347.400	3,194,151.534	13,583,281.200	3,194,196.224	13,583,209.470	3,194,249.727	13,583,177.380	3,194,269.642	13,583,151.840	3,194,289.342	13,583,125.610	3,194,310.342	
5	13,580,466.050	3,190,682.995	13,580,392.860	3,190,747.732	13,580,329.250	3,190,815.992	13,580,308.150	3,190,838.103	13,580,278.130	3,190,865.621	13,580,252.860	3,190,893.942	
6	13,577,760.860	3,187,463.319	13,577,674.940	3,187,550.211	13,577,604.680	3,187,627.000	13,577,588.590	3,187,646.709	13,577,567.610	3,187,661.461	13,577,543.120	3,187,680.166	
7	13,573,683.800	3,182,711.751	13,573,597.090	3,182,775.004	13,573,504.800	3,182,856.664	13,573,481.570	3,182,880.761	13,573,454.270	3,182,902.433	13,573,427.620	3,182,922.165	
8	13,570,475.660	3,178,980.552	13,570,351.320	3,179,061.328	13,570,243.600	3,179,138.689	13,570,213.400	3,179,161.093	13,570,184.580	3,179,180.894	13,570,146.710	3,179,213.460	
9	13,566,861.510	3,174,988.075	13,566,790.850	3,175,053.039	13,566,702.440	3,175,142.883	13,566,676.370	3,175,169.310	13,566,658.300	3,175,184.285	13,566,624.220	3,175,210.331	
10	13,563,508.190	3,171,332.181	13,563,441.110	3,171,395.430	13,563,335.370	3,171,478.473	13,563,305.220	3,171,502.472	13,563,277.210	3,171,524.804	13,563,249.580	3,171,548.082	
11	13,560,014.350	3,167,638.564	13,559,934.050	3,167,709.592	13,559,852.410	3,167,772.666	13,559,832.260	3,167,790.906	13,559,809.830	3,167,806.339	13,559,788.240	3,167,824.945	
12	13,556,430.240	3,163,999.290	13,556,370.050	3,164,062.315	13,556,295.060	3,164,140.209	13,556,280.580	3,164,153.788	13,556,267.690	3,164,171.794	13,556,245.710	3,164,200.968	
13	13,552,926.970	3,160,556.053	13,552,861.740	3,160,620.838	13,552,798.480	3,160,679.162	13,552,778.320	3,160,697.081	13,552,749.630	3,160,721.670	13,552,720.420	3,160,752.355	

Sargent Beach													
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar		
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	
1	13,479,324.446	3,052,186.712	13,479,299.022	3,052,200.588	13,479,287.568	3,052,207.009	13,479,238.229	3,052,236.640	13,479,223.587	3,052,246.038	13,479,211.770	3,052,252.469	
2	13,476,402.203	3,046,908.370	13,476,307.390	3,046,950.524	13,476,229.069	3,046,997.010	13,476,186.158	3,047,022.605	13,476,175.085	3,047,029.655	13,476,157.935	3,047,040.406	
2B	No Sample	No Sample	No Sample	No Sample	13,477,790.387	3,049,764.805	No Sample	No Sample	13,477,761.084	3,049,782.958	No Sample	No Sample	
3	13,475,022.299	3,044,547.672	13,474,971.219	3,044,580.230	13,474,917.720	3,044,604.525	13,474,894.414	3,044,628.913	13,474,855.370	3,044,649.908	13,474,829.672	3,044,666.993	
4	13,473,709.938	3,041,631.943	13,473,633.876	3,041,655.918	13,473,536.808	3,041,683.060	13,473,490.319	3,041,698.175	13,473,458.175	3,041,706.148	13,473,431.891	3,041,715.556	

Matagorda Peninsula													
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar		
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	
1	13,416,148.860	2,943,903.495	13,416,075.700	2,943,957.076	13,415,943.010	2,944,023.661	13,415,879.860	2,944,077.081	13,415,844.360	2,944,096.621	13,415,817.110	2,944,111.454	
2	13,414,766.150	2,941,387.223	13,414,634.780	2,941,454.829	13,414,486.140	2,941,529.303	13,414,421.460	2,941,573.994					



Latitude and Longitude Coordinates of Lower Coast Sampling Locations

Mustang Island North												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	27.791967	-97.085834	27.791706	-97.085439	27.791529	-97.085103	27.791432	-97.084939	27.791325	-97.084808	27.791206	-97.084636
2	27.782178	-97.093990	27.782037	-97.093729	27.781858	-97.093411	27.781680	-97.093149	27.781627	-97.093076	27.781557	-97.092949
3	27.769549	-97.103959	27.769330	-97.103645	27.769199	-97.103435	27.769121	-97.103346	27.769082	-97.103294	27.769046	-97.103237
4	27.758897	-97.111900	27.758748	-97.111654	27.758628	-97.111483	27.758520	-97.111318	27.758482	-97.111267	27.758423	-97.111187
5	27.747046	-97.120432	27.746932	-97.120222	27.746839	-97.120056	27.746734	-97.119871	27.746666	-97.119786	27.746590	-97.119661
6	27.734466	-97.129357	27.734339	-97.129124	27.734195	-97.128895	27.734158	-97.128841	27.734116	-97.128761	27.734067	-97.128689

Mustang Island Central												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	27.726689	-97.134749	27.726560	-97.134553	27.726501	-97.134430	27.726393	-97.134274	27.726359	-97.134219	27.726319	-97.134162
2	27.717478	-97.141056	27.717358	-97.140849	27.717281	-97.140703	27.717205	-97.140568	27.717168	-97.140521	27.717121	-97.140444
3	27.708985	-97.146792	27.708874	-97.146572	27.708770	-97.146379	27.708695	-97.146248	27.708657	-97.146191	27.708613	-97.146132
4	27.700446	-97.152466	27.700331	-97.152279	27.700226	-97.152044	27.700178	-97.151980	27.700135	-97.151914	27.700101	-97.151854
5	27.691914	-97.158031	27.691781	-97.157802	27.691642	-97.157585	27.691580	-97.157487	27.691543	-97.157431	27.691505	-97.157374
6	27.683194	-97.163375	27.683065	-97.163100	27.682964	-97.162918	27.682859	-97.162726	27.682802	-97.162652	27.682743	-97.162552

Mustang Island South												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	27.648361	-97.184448	27.648264	-97.184246	27.648133	-97.184058	27.648022	-97.183852	27.647977	-97.183762	27.647939	-97.183678
2	27.640155	-97.189239	27.640071	-97.189008	27.639992	-97.188752	27.639944	-97.188631	27.639880	-97.188461	27.639837	-97.188373
3	27.634027	-97.192805	27.633933	-97.192557	27.633846	-97.192301	27.633781	-97.192157	27.633736	-97.192033	27.633674	-97.191923

North Padre Island												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	27.597126	-97.212624	27.597014	-97.212413	27.596888	-97.212180	27.596838	-97.212042	27.596800	-97.211954	27.596751	-97.211859
2	27.591604	-97.215436	27.591547	-97.215297	27.591441	-97.215052	27.591401	-97.214971	27.591359	-97.214881	27.591312	-97.214760
3	27.584154	-97.219481	27.584007	-97.219098	27.583844	-97.218727	27.583811	-97.218660	27.583768	-97.218583	27.583725	-97.218473

South Padre Island												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	26.207702	-97.178301	26.207720	-97.178128	26.207722	-97.177948	26.207731	-97.177804	26.207736	-97.177718	26.207738	-97.177636
2	26.192010	-97.176059	26.192001	-97.175922	26.191995	-97.175768	26.191995	-97.175675	26.192007	-97.175542	26.192013	-97.175428
3	26.176415	-97.174105	26.176436	-97.173920	26.176463	-97.173688	26.176471	-97.173548	26.176475	-97.173466	26.176482	-97.173385
4	26.158807	-97.171662	26.158812	-97.171357	26.158840	-97.171077	26.158843	-97.170905	26.158850	-97.170791	26.158853	-97.170697
5	26.147057	-97.169756	26.147082	-97.169531	26.147109	-97.169346	26.147124	-97.169177	26.147127	-97.169111	26.147138	-97.169033

Boca Chica Peninsula												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
1	26.059018	-97.151770	26.058989	-97.151672	26.058962	-97.151566	26.058930	-97.151432	26.058906	-97.151346	26.058874	-97.151234
2	26.046724	-97.153033	26.046726	-97.152833	26.046735	-97.152602	26.046735	-97.152437	26.046733	-97.152359	26.046735	-97.152267
3	26.034222	-97.153128	26.034222	-97.152848	26.034222	-97.152610	26.034203	-97.152480	26.034203	-97.152396	26.034203	-97.152310
4	26.021714	-97.152641	26.021723	-97.152408	26.021719	-97.152242	26.021706	-97.152062	26.021708	-97.151989	26.021712	-97.151911
5	26.009176	-97.151682	26.009192	-97.151574	26.009202	-97.151496	26.009208	-97.151388	26.009218	-97.151265	26.009233	-97.151181
6	25.998316	-97.150738	25.998326	-97.150585	25.998331	-97.150473	25.998337	-97.150388	25.998341	-97.150317	25.998350	-97.150241



State Plane Coordinates of Lower Coast Sampling Locations

Mustang Island North												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting
1	17,179,276.610	1,441,473.131	17,179,183.160	1,441,601.899	17,179,120.030	1,441,711.250	17,179,085.360	1,441,764.668	17,179,046.940	1,441,807.457	17,179,004.300	1,441,863.550
2	17,175,688.430	1,438,875.921	17,175,638.110	1,438,960.881	17,175,574.190	1,439,064.426	17,175,510.420	1,439,149.861	17,175,491.420	1,439,173.679	17,175,466.430	1,439,215.026
3	17,171,061.490	1,435,703.419	17,170,983.000	1,435,805.837	17,170,936.130	1,435,874.272	17,170,908.090	1,435,903.366	17,170,894.100	1,435,920.338	17,170,881.210	1,435,938.915
4	17,167,160.740	1,433,178.148	17,167,107.450	1,433,258.300	17,167,064.430	1,433,314.081	17,167,025.760	1,433,367.874	17,167,012.120	1,433,384.520	17,166,990.960	1,433,410.628
5	17,162,822.190	1,430,466.005	17,162,781.490	1,430,534.380	17,162,748.270	1,430,588.439	17,162,710.750	1,430,648.692	17,162,686.330	1,430,676.454	17,162,659.140	1,430,717.186
6	17,158,217.440	1,427,629.034	17,158,172.090	1,427,704.904	17,158,120.540	1,427,779.547	17,158,107.280	1,427,797.161	17,158,092.300	1,427,823.205	17,158,074.740	1,427,846.688

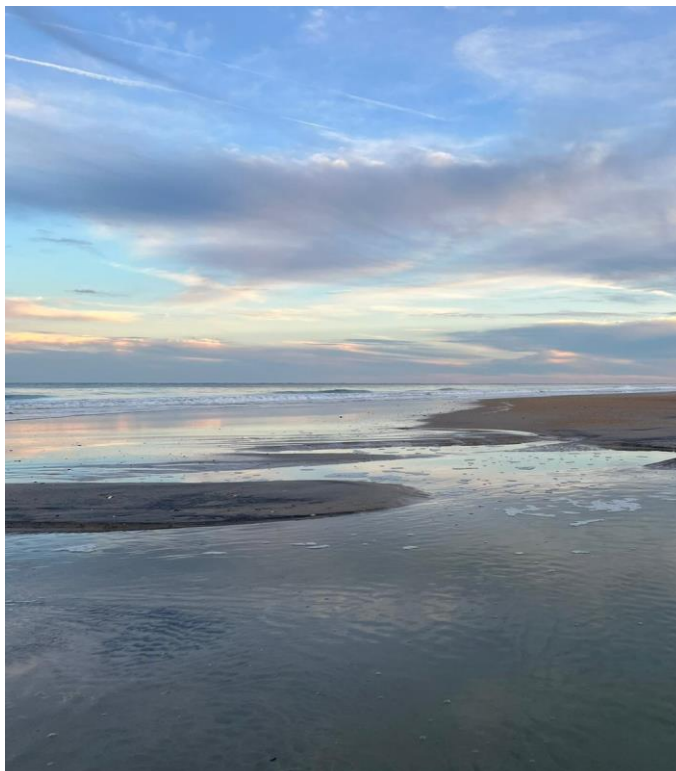
Mustang Island Central												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting
1	17,155,364.040	1,425,915.550	17,155,325.100	1,425,979.383	17,155,304.090	1,426,019.404	17,155,265.370	1,426,070.294	17,155,253.200	1,426,088.220	17,155,238.860	1,426,106.817
2	17,152,000.770	1,423,911.263	17,151,957.870	1,423,978.701	17,151,930.390	1,424,026.237	17,151,903.230	1,424,070.209	17,151,889.940	1,424,085.560	17,151,873.120	1,424,110.655
3	17,148,893.340	1,422,088.665	17,148,853.750	1,422,160.277	17,148,816.610	1,422,223.127	17,148,789.800	1,422,265.803	17,148,776.190	1,422,284.394	17,148,760.390	1,422,303.654
4	17,145,769.490	1,420,286.025	17,145,728.330	1,420,346.978	17,145,690.970	1,420,423.425	17,145,673.740	1,420,444.320	17,145,658.340	1,420,465.842	17,145,646.180	1,420,485.388
5	17,142,648.640	1,418,518.349	17,142,601.080	1,418,592.966	17,142,551.300	1,418,663.723	17,142,529.100	1,418,695.675	17,142,515.840	1,418,713.940	17,142,502.220	1,418,732.532
6	17,139,460.300	1,416,822.642	17,139,414.350	1,416,912.134	17,139,378.260	1,416,971.422	17,139,340.740	1,417,033.961	17,139,320.280	1,417,058.129	17,139,299.170	1,417,090.718

Mustang Island South												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting
1	17,126,725.840	1,410,135.031	17,126,691.250	1,410,200.790	17,126,644.270	1,410,262.146	17,126,604.610	1,410,329.253	17,126,588.560	1,410,358.559	17,126,575.030	1,410,385.895
2	17,123,726.600	1,408,615.076	17,123,696.840	1,408,690.178	17,123,668.980	1,408,773.355	17,123,651.940	1,408,812.709	17,123,629.250	1,408,867.987	17,123,613.890	1,408,895.021
3	17,121,486.940	1,407,483.684	17,121,453.600	1,407,564.330	17,121,422.830	1,407,647.541	17,121,399.690	1,407,694.407	17,121,383.740	1,407,734.723	17,121,361.570	1,407,770.571

North Padre Island												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting
1	17,108,006.590	1,401,203.908	17,107,966.580	1,401,272.659	17,107,921.540	1,401,348.588	17,107,903.820	1,401,393.467	17,107,890.300	1,401,422.109	17,107,872.800	1,401,453.058
2	17,105,989.950	1,400,313.625	17,105,969.690	1,400,358.856	17,105,931.960	1,400,438.600	17,105,917.690	1,400,464.983	17,105,902.720	1,400,494.288	17,105,886.030	1,400,533.652
3	17,103,268.410	1,399,030.996	17,103,216.230	1,399,155.594	17,103,158.190	1,399,276.365	17,103,146.420	1,399,298.188	17,103,131.040	1,399,323.288	17,103,115.770	1,399,359.076

South Padre Island												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting
1	16,603,101.770	1,417,609.282	16,603,108.910	1,417,665.935	16,603,110.260	1,417,724.944	16,603,114.020	1,417,772.122	16,603,116.130	1,417,800.300	16,603,117.140	1,417,827.178
2	16,597,406.000	1,418,404.199	16,597,403.200	1,418,449.158	16,597,401.550	1,418,499.679	16,597,401.870	1,418,530.175	16,597,406.690	1,418,573.742	16,597,409.260	1,418,611.101
3	16,591,744.500	1,419,104.497	16,591,752.770	1,419,165.089	16,591,763.380	1,419,241.072	16,591,766.770	1,419,286.956	16,591,768.510	1,419,313.833	16,591,771.330	1,419,340.371
4	16,585,353.030	1,419,973.065	16,585,355.900	1,420,073.088	16,585,367.050	1,420,164.824	16,585,368.730	1,420,221.230	16,585,371.670	1,420,258.596	16,585,373.080	1,420,289.417
5	16,581,088.890	1,420,643.268	16,581,098.760	1,420,716.982	16,581,109.210	1,420,777.567	16,581,115.250	1,420,832.948	16,581,116.570	1,420,854.588	16,581,120.840	1,420,880.133

Boca Chica Peninsula												
Transect	Toe of Dune		Mid Berm		Swash Zone		1st Bar		Trough		2nd Bar	
	Northing	Easting	Easting	Northing	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting
1	16,549,152.200	1,426,885.313	16,549,142.000	1,426,917.599	16,549,132.560	1,426,952.503	16,549,121.400	1,426,996.619	16,549,112.980	1,427,024.946	16,549,101.740	1,427,061.840
2	16,544,679.270	1,426,518.371	16,544,680.700	1,426,584.029	16,544,684.780	1,426,659.839	16,544,685.360	1,426,714.014	16,544,684.900	1,426,739.631	16,544,685.950	1,426,769.830
3	16,540,134.820	1,426,535.678	16,540,135.810	1,426,627.621	16,540,136.640	1,426,705.773	16,540,130.190	1,426,748.534	16,540,130.490	1,426,776.117	16,540,130.790	1,426,804.357
4	16,535,590.230	1,426,744.133	16,535,594.320	1,426,820.616	16,535,593.450	1,426,875.147	16,535,589.350	1,426,934.310	16,535,590.340	1,426,958.275	16,535,592.070	1,426,983.875
5	16,531,036.380	1,427,107.763	16,531,042.580	1,427,143.172	16,531,046.490	1,427,168.752	16,531,049.050	1,427,204.200	16,531,053.110	1,427,244.559	16,531,058.860	1,427,272.089
6	16,527,092.380	1,427,460.014	16,527,096.560	1,427,510.231	16,527,098.770	1,427,547.000	16,527,101.250	1,427,574.897	16,527,102.950	1,427,598.203	16,527,106.490	1,427,623.131



Appendix 6
Sediment Sieve
Analysis Tables (Shell Excluded)





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AVERAGED SIEVE ANALYSIS RESULTS PER REACH

Table 1. Upper Coast – Averaged Sieve Analysis Results Per Reach

Summary of Upper Coast Reaches							
Reaches	BPE	BPC	BPW	GISP	FI	SB	MP
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)							
Median Grain Size (mm)	0.167	0.155	0.144	0.116	0.128	0.115	0.179
Mean Grain Size (mm)	0.205	0.153	0.143	0.119	0.128	0.123	0.183
Sorting Index	1.120	0.587	0.521	0.286	0.334	--	0.456
Sediment Composition (Excluding Shell and Other Granule-sized Particles)¹							
Granule/Shell (%)	3.45	0.40	0.24	0.00	0.00	0.23	0.00
Sand (%)	92.86	97.29	97.46	98.83	97.65	87.53	98.64
Fines (%)	3.69	2.32	2.30	1.17	2.35	12.23	1.36

¹ Removal of shell and other granule-sized particles was performed using one pass through a #10 (2 mm) sieve. Residual shell and granule-sized particles remained in some samples after passing through the #10 sieve. These residual percentages are included in the tables in this appendix.



Table 2. Lower Coast – Averaged Sieve Analysis Results Per Reach

Summary of Lower Coast Reaches						
Reaches	MIN	MIC	MIS	PI	SPI	BC
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.129	0.143	0.149	0.147	0.181	0.168
Mean Grain Size (mm)	0.130	0.141	0.147	0.146	0.180	0.165
Sorting Index	0.359	0.371	0.395	0.392	0.339	0.357
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granule/Shell (%)	0.00	0.00	0.01	0.04	0.00	0.00
Sand (%)	98.17	98.94	98.94	98.87	98.78	98.51
Fines (%)	1.83	1.06	1.04	1.09	1.22	1.49



SIEVE ANALYSIS RESULTS – BOLIVAR PENINSULA EAST

Table 3. Bolivar Peninsula East – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	6.9	13.8	16.2	0.1	0.9	0.3
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	98.2	100.0	90.6	100.0	98.3	99.2
#18	90.2	86.8	85.8	99.9	98.1	97.8
#35	75.4	74.2	80.0	99.9	97.6	97.1
#60	47.6	55.5	73.4	99.5	94.8	96.4
#70	35.6	43.6	69.6	98.9	90.8	95.7
#80	20.6	24.9	57.1	95.9	79.4	91.6
#100	7.3	9.2	24.4	86.3	49.2	74.9
#120	4.0	4.5	8.7	75.8	27.1	51.8
#170	2.1	1.3	1.4	62.7	4.1	7.5
#200	1.7	0.7	1.2	60.8	2.9	4.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.261	0.228	0.170	--	0.150	0.123
Mean Grain Size (mm)	0.317	0.317	0.266	--	0.146	0.125
Sorting Index	1.057	1.150	--	--	0.417	0.395
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	1.80	0.00	9.40	0.00	1.70	0.80
Sand (%)	96.50	99.30	89.40	39.20	95.40	95.00
Fines (%)	1.70	0.70	1.20	60.80	2.90	4.20

Table 4. Bolivar Peninsula East – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	No Sample	No Sample	6.2	6.5	0.2	0.5
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	No Sample	No Sample	89.9	85.7	99.8	99.9
#18	No Sample	No Sample	87.1	80.7	99.5	99.2
#35	No Sample	No Sample	82.2	77.6	99.1	98.5
#60	No Sample	No Sample	67.3	72.0	97.6	97.7
#70	No Sample	No Sample	56.6	67.6	95.6	97.0
#80	No Sample	No Sample	37.9	52.6	89.9	94.2
#100	No Sample	No Sample	13.6	27.8	77.0	80.1
#120	No Sample	No Sample	5.8	13.4	67.3	60.3
#170	No Sample	No Sample	2.6	1.9	46.4	8.8
#200	No Sample	No Sample	2.4	1.4	40.9	5.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	No Sample	No Sample	0.197	0.174	0.095	0.116
Mean Grain Size (mm)	No Sample	No Sample	0.263	0.333	--	0.120
Sorting Index	No Sample	No Sample	--	--	--	0.375
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	No Sample	No Sample	10.10	14.30	0.20	0.10
Sand (%)	No Sample	No Sample	87.50	84.30	58.90	94.70
Fines (%)	No Sample	No Sample	2.40	1.40	40.90	5.20

Table 5. Bolivar Peninsula East – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	6.1	20.5	15.6	3.9	1.5	3.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.4	83.4	93.7	98.8	98.2	99.0
#18	91.6	71.9	60.9	91.1	96.6	94.0
#35	76.0	60.6	43.8	83.1	95.7	89.8
#60	50.3	42.5	32.6	74.9	94.4	86.6
#70	37.6	32.1	26.6	69.6	92.5	84.1
#80	22.1	16.4	17.7	54.4	84.1	76.6
#100	7.4	5.7	6.5	31.1	52.3	58.3
#120	3.3	2.5	2.8	16.8	29.1	38.2
#170	0.9	0.7	1.0	3.1	3.3	4.4
#200	0.6	0.5	0.9	2.5	2.2	2.5
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.249	0.322	0.672	0.171	0.147	0.139
Mean Grain Size (mm)	0.305	--	0.581	0.225	0.142	0.144
Sorting Index	1.010	--	--	1.123	0.448	0.819
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.60	16.60	6.30	1.20	1.80	1.00
Sand (%)	98.80	82.90	92.80	96.30	96.00	96.50
Fines (%)	0.60	0.50	0.90	2.50	2.20	2.50

Table 6. Bolivar Peninsula East – Transect 4

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	13.5	4.6	2.1	7.1	2.3	12.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	95.8	97.0	95.7	99.0	99.8	93.6
#18	84.6	96.5	95.4	97.6	99.0	78.9
#35	67.6	95.1	94.6	95.4	97.9	71.3
#60	43.3	81.6	87.7	89.1	94.9	65.3
#70	32.2	68.1	78.0	84.3	91.6	61.6
#80	19.1	42.2	58.4	68.0	82.5	49.3
#100	7.1	17.2	25.0	35.5	53.5	28.4
#120	3.3	6.1	10.9	17.3	31.7	14.5
#170	0.7	0.9	1.4	2.2	4.0	2.2
#200	0.4	0.4	1.0	1.7	2.9	1.3
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.295	0.186	0.169	0.162	0.145	0.178
Mean Grain Size (mm)	0.366	0.195	0.174	0.161	0.141	0.313
Sorting Index	1.206	0.526	0.597	0.540	0.413	--
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	4.20	3.00	4.30	1.00	0.20	6.40
Sand (%)	95.40	96.60	94.70	97.30	96.90	92.30
Fines (%)	0.40	0.40	1.00	1.70	2.90	1.30

Table 7. Bolivar Peninsula East – Transect 5

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	2.0	15.7	14.8	14.6	1.2	17.7
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.0	78.0	96.8	87.7	99.6	97.5
#18	95.7	77.8	94.1	81.6	98.6	86.4
#35	88.3	77.4	91.6	76.2	97.5	77.8
#60	71.2	72.7	87.9	69.3	95.0	70.0
#70	58.8	65.6	83.2	65.0	92.6	66.0
#80	39.0	45.5	71.8	53.4	85.4	55.4
#100	14.3	20.0	38.0	32.2	60.8	33.9
#120	5.7	7.9	17.3	18.3	32.9	19.3
#170	1.2	1.0	1.7	2.7	3.0	1.7
#200	0.8	0.7	1.4	2.1	2.1	0.9
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.194	0.183	0.159	0.172	0.140	0.170
Mean Grain Size (mm)	0.232	--	0.161	0.303	0.138	0.257
Sorting Index	0.815	--	0.757	--	0.396	1.335
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	1.00	22.00	3.20	12.30	0.40	2.50
Sand (%)	98.20	77.30	95.40	85.60	97.50	96.60
Fines (%)	0.80	0.70	1.40	2.10	2.10	0.90

Table 8. Bolivar Peninsula East – Transect 6

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.1	12.0	8.2	30.5	9.5	3.3
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.2	96.5	98.6	89.7	98.6	99.5
#18	98.7	87.7	92.1	64.4	88.4	92.2
#35	97.9	76.8	84.8	52.1	79.8	88.3
#60	92.2	61.5	71.3	43.6	70.9	86.6
#70	82.6	53.7	63.0	39.1	65.4	85.4
#80	59.9	37.1	48.4	30.0	55.0	81.9
#100	23.9	16.4	24.9	17.3	33.6	69.9
#120	9.4	6.3	12.1	9.3	20.1	53.1
#170	1.3	0.5	1.8	1.8	2.9	7.2
#200	1.0	0.1	1.4	1.5	2.2	4.1
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.169	0.202	0.180	0.425	0.170	0.121
Mean Grain Size (mm)	0.170	0.286	0.225	0.479	0.242	0.132
Sorting Index	0.402	1.192	1.029	--	1.266	0.871
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.80	3.50	1.40	10.30	1.40	0.50
Sand (%)	98.20	96.40	97.20	88.20	96.40	95.40
Fines (%)	1.00	0.10	1.40	1.50	2.20	4.10

Table 9. Bolivar Peninsula East – Transect 7

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	15.5	2.0	6.8	4.3	19.8
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	93.7	100.0	99.4	99.2	98.9	94.3
#18	93.2	99.3	99.0	97.2	96.0	86.5
#35	92.7	98.2	98.4	91.9	91.5	65.6
#60	91.0	91.2	92.5	78.8	85.2	54.5
#70	87.8	84.8	83.5	70.2	81.3	49.0
#80	76.3	66.0	67.7	53.0	72.4	37.3
#100	39.4	34.6	37.9	29.2	49.8	21.5
#120	18.9	18.3	20.8	16.5	31.2	11.6
#170	2.4	4.4	2.5	2.6	3.9	1.9
#200	1.7	3.9	1.9	2.0	2.4	1.1
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.158	0.163	0.161	0.173	0.149	0.214
Mean Grain Size (mm)	0.156	0.160	0.159	0.190	0.155	0.300
Sorting Index	--	0.494	0.474	0.781	0.777	--
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	6.30	0.00	0.60	0.80	1.10	5.70
Sand (%)	92.00	96.10	97.50	97.20	96.50	93.20
Fines (%)	1.70	3.90	1.90	2.00	2.40	1.10

Table 10. Bolivar Peninsula East – Transect 8

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	1.3	0.3	8.4	4.8	6.5	20.2
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	98.3	100.0	98.0	99.1	98.4	95.1
#18	98.1	100.0	95.1	93.9	94.9	83.7
#35	97.9	99.9	91.6	84.8	91.0	76.1
#60	96.3	98.3	84.5	75.1	85.4	70.6
#70	93.0	94.2	77.2	69.2	81.1	67.9
#80	81.0	78.6	59.8	53.8	70.9	60.0
#100	43.6	48.0	27.3	30.4	45.7	43.5
#120	20.4	25.8	14.3	15.7	26.3	28.3
#170	2.6	2.3	1.6	1.9	3.9	4.0
#200	1.7	1.5	1.4	1.3	3.0	3.1
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.154	0.151	0.168	0.172	0.154	0.160
Mean Grain Size (mm)	0.150	0.147	0.175	0.217	0.159	0.260
Sorting Index	0.348	0.360	0.733	1.012	0.798	1.488
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	1.70	0.00	2.00	0.90	1.60	4.90
Sand (%)	96.60	98.50	96.60	97.80	95.40	92.00
Fines (%)	1.70	1.50	1.40	1.30	3.00	3.10

Table 11. Bolivar Peninsula East – Transect 9

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.1	0.3	3.5	15.5	2.4	18.5
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	94.0	99.4	97.1
#18	99.3	99.9	97.6	86.6	96.4	79.2
#35	96.8	99.8	93.5	79.3	92.3	62.9
#60	85.5	98.5	84.1	69.5	87.1	49.5
#70	74.0	95.4	77.7	63.3	84.3	45.3
#80	52.4	78.3	65.1	49.1	78.6	36.4
#100	21.4	42.2	37.1	26.7	58.6	22.3
#120	10.0	18.5	18.3	13.8	41.5	12.5
#170	3.1	0.9	2.3	2.3	6.0	1.3
#200	1.7	0.4	2.0	1.7	3.9	0.8
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.174	0.156	0.162	0.178	0.137	0.256
Mean Grain Size (mm)	0.181	0.152	0.170	0.262	0.142	0.346
Sorting Index	0.530	0.312	0.662	--	0.752	1.428
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.00	0.00	0.00	6.00	0.60	2.90
Sand (%)	98.30	99.60	98.00	92.30	95.50	96.30
Fines (%)	1.70	0.40	2.00	1.70	3.90	0.80



SIEVE ANALYSIS RESULTS – BOLIVAR PENINSULA CENTRAL

Table 12. Bolivar Peninsula Central – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.4	0.2	5.3	2.4	3.0	12.3
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	98.2	100.0	90.6	100.0	98.3	99.2
#18	90.2	86.8	85.8	99.9	98.1	97.8
#35	75.4	74.2	80.0	99.9	97.6	97.1
#60	47.6	55.5	73.4	99.5	94.8	96.4
#70	35.6	43.6	69.6	98.9	90.8	95.7
#80	20.6	24.9	57.1	95.9	79.4	91.6
#100	7.3	9.2	24.4	86.3	49.2	74.9
#120	4.0	4.5	8.7	75.8	27.1	51.8
#170	2.1	1.3	1.4	62.7	4.1	7.5
#200	1.7	0.7	1.2	60.8	2.9	4.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.159	0.160	0.163	0.134	0.147	0.171
Mean Grain Size (mm)	0.152	0.153	0.163	0.134	0.143	0.252
Sorting Index	0.306	0.309	0.472	0.491	0.414	1.291
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.7	1.5
Sand (%)	98.6	98.5	96.9	95.5	96.8	96.4
Fines (%)	1.4	1.5	3.1	4.5	2.5	2.1

Table 13. Bolivar Peninsula Central – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.9	0.0	14.9	1.3	3.5
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.3	98.5
#18	99.6	99.8	99.0	98.4	98.7	88.0
#35	98.8	99.4	97.4	96.7	97.7	77.3
#60	97.3	98.0	91.3	94.0	94.3	67.9
#70	94.7	94.1	84.4	91.7	91.7	63.8
#80	81.3	80.9	64.6	84.2	82.4	53.9
#100	37.0	35.3	35.4	65.8	52.3	34.6
#120	17.5	17.0	13.4	40.8	27.7	18.7
#170	1.8	1.8	3.4	5.7	3.2	2.7
#200	1.4	1.5	3.1	4.5	2.5	2.1
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.155	0.153	0.162	0.198	0.121	0.136
Mean Grain Size (mm)	0.147	0.147	0.161	0.264	0.122	0.141
Sorting Index	0.319	0.328	0.377	1.148	0.364	0.824
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	3.1	0.0	0.0	0.0	0.0	0.6
Sand (%)	95.4	99.0	98.2	99.5	95.2	93.9
Fines (%)	1.5	1.0	1.8	0.5	4.8	5.5

Table 14. Bolivar Peninsula Central – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.5	16.4	1.2	2.7
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	96.9	100.0	100.0	100.0	100.0	99.4
#18	96.5	99.4	100.0	90.5	99.2	95.8
#35	96.3	98.9	99.9	77.9	98.6	91.5
#60	95.8	97.2	94.7	61.7	97.7	86.7
#70	94.0	94.3	86.3	54.8	96.8	84.0
#80	89.9	82.6	70.5	40.4	94.2	76.9
#100	43.2	45.7	33.3	21.7	79.6	59.6
#120	20.1	22.2	14.9	11.7	55.0	41.9
#170	1.9	1.6	2.1	0.9	7.2	7.7
#200	1.5	1.0	1.8	0.5	4.8	5.5
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.151	0.146	0.164	0.151	0.148	0.145
Mean Grain Size (mm)	0.146	0.142	0.168	0.151	0.142	0.146
Sorting Index	0.305	0.318	0.517	0.781	0.464	0.660
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.4	98.6	98.3	96.9	96.5	97.4
Fines (%)	0.6	1.4	1.7	3.1	3.5	2.6

Table 15. Bolivar Peninsula Central – Transect 4

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.1	1.4	0.0	6.0	4.8	13.2
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	100.0	99.5	95.0	99.3	97.5
#35	99.7	100.0	97.9	91.0	97.8	93.9
#60	99.0	99.6	88.3	86.5	93.8	88.8
#70	96.7	98.3	79.6	83.1	90.0	85.2
#80	87.1	88.6	63.7	72.2	80.9	75.8
#100	47.2	53.8	33.1	48.4	50.9	53.0
#120	22.0	26.9	14.7	30.6	32.3	34.4
#170	1.5	2.3	2.0	4.1	4.7	4.2
#200	0.6	1.4	1.7	3.1	3.5	2.6
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.164	0.149	0.155	0.153	0.160	0.198
Mean Grain Size (mm)	0.161	0.143	0.152	0.163	0.165	0.270
Sorting Index	0.389	0.368	0.352	--	0.709	1.284
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.3	0.0	0.0	1.2	0.9
Sand (%)	98.8	97.0	98.6	93.4	96.0	97.4
Fines (%)	1.2	2.7	1.4	6.6	2.8	1.7

Table 16. Bolivar Peninsula Central – Transect 5

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.2	0.3	4.5	29.7	0.9
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.7	100.0	100.0	98.8	99.1
#18	99.8	99.4	99.5	97.8	97.1	88.4
#35	99.5	99.1	99.3	92.4	93.3	74.0
#60	95.3	97.2	97.3	82.4	84.6	59.6
#70	86.8	94.4	91.9	76.8	77.6	53.5
#80	67.5	81.9	77.6	65.6	65.1	42.8
#100	31.2	50.3	42.6	46.9	40.0	27.6
#120	16.4	28.4	19.9	29.6	23.6	16.7
#170	2.8	3.8	1.8	7.2	3.8	2.4
#200	1.2	2.7	1.4	6.6	2.8	1.7
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.162	0.145	0.158	0.168	0.194	0.144
Mean Grain Size (mm)	0.158	0.140	0.155	0.179	0.259	0.145
Sorting Index	0.349	0.356	0.379	0.729	1.181	0.592
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.4	0.0	0.4	2.3	0.0
Sand (%)	97.9	98.0	98.8	98.0	96.5	96.2
Fines (%)	2.1	1.6	1.2	1.6	1.2	3.8

Table 17. Bolivar Peninsula Central – Transect 6

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	1.2	3.0	12.3	1.5
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.6	100.0	99.6	97.7	100.0
#18	100.0	99.5	100.0	96.7	89.0	99.3
#35	99.8	99.5	99.8	91.7	80.0	97.5
#60	97.8	98.1	97.0	82.2	64.4	90.3
#70	91.8	95.5	89.5	74.8	55.3	85.1
#80	74.2	84.5	73.9	58.2	43.0	73.5
#100	32.2	54.3	40.1	31.1	22.5	53.7
#120	16.0	31.0	20.4	15.6	12.2	37.1
#170	3.3	2.8	1.8	2.1	1.6	5.9
#200	2.1	1.6	1.2	1.6	1.2	3.8
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.146	0.148	0.152	0.152	0.184	0.145
Mean Grain Size (mm)	0.140	0.139	0.145	0.153	0.225	0.146
Sorting Index	0.301	0.355	0.331	0.615	1.100	0.617
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.3	4.6	0.0
Sand (%)	98.1	97.6	98.0	97.2	94.1	97.1
Fines (%)	1.9	2.4	2.0	2.5	1.3	2.9

Table 18. Bolivar Peninsula Central – Transect 7

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.6	0.0	0.0	0.4	1.7	8.9
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.7	95.4	100.0
#18	100.0	99.9	99.9	98.4	90.9	98.4
#35	100.0	99.9	99.8	95.7	85.2	95.3
#60	99.9	99.5	98.7	87.8	72.5	89.7
#70	99.4	98.2	96.3	82.2	61.4	85.3
#80	93.8	87.1	85.8	69.4	46.4	75.5
#100	53.4	50.6	47.0	47.4	24.7	52.6
#120	28.6	35.3	24.9	28.9	13.1	35.5
#170	2.6	3.1	2.8	3.7	2.0	4.6
#200	1.9	2.4	2.0	2.5	1.3	2.9
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.157	0.147	0.156	0.164	0.135	0.170
Mean Grain Size (mm)	0.151	0.142	0.149	0.158	0.135	0.225
Sorting Index	0.296	0.301	0.366	0.465	0.573	1.135
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.3
Sand (%)	99.0	97.9	97.7	98.6	95.6	97.5
Fines (%)	1.0	2.1	2.3	1.4	4.4	2.2



SIEVE ANALYSIS RESULTS – BOLIVAR PENINSULA WEST

Table 19. Bolivar Peninsula West – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	1.3	9.9	5.5
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.8	100.0	99.6	91.4	99.2
#18	100.0	99.8	100.0	97.5	85.0	95.1
#35	97.1	99.8	99.9	90.5	79.1	90.2
#60	91.1	99.5	98.4	77.7	73.7	84.8
#70	84.1	98.7	94.0	68.1	69.9	81.3
#80	69.7	91.3	81.7	49.7	62.0	72.8
#100	33.4	52.3	45.5	25.8	39.8	55.7
#120	18.2	26.5	24.2	12.6	22.2	36.7
#170	1.5	2.2	3.1	3.1	3.2	4.1
#200	0.6	1.1	2.5	2.6	2.3	2.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.163	0.147	0.153	0.177	0.161	0.142
Mean Grain Size (mm)	0.161	0.142	0.147	0.201	0.256	0.152
Sorting Index	0.503	0.306	0.350	0.796	--	0.826
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.2	0.0	0.4	8.6	0.8
Sand (%)	99.4	98.7	97.5	97.0	89.1	97.0
Fines (%)	0.6	1.1	2.5	2.6	2.3	2.2



Table 20. Bolivar Peninsula West – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	1.1	2.2	0.2
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	100.0	99.8	99.2	98.4	99.7
#35	99.8	99.9	99.5	97.2	94.8	99.0
#60	98.6	99.0	98.1	86.4	87.7	97.9
#70	94.9	96.6	94.4	75.6	81.7	97.0
#80	81.8	86.3	83.8	56.3	73.8	93.7
#100	39.5	57.8	49.2	30.7	48.8	82.2
#120	19.0	32.3	23.7	15.7	29.8	63.2
#170	2.3	4.1	1.9	1.9	4.0	7.0
#200	1.6	3.0	1.3	1.4	2.5	2.9
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.157	0.142	0.150	0.170	0.150	0.115
Mean Grain Size (mm)	0.151	0.138	0.145	0.172	0.153	0.119
Sorting Index	0.315	0.357	0.330	0.558	0.642	0.341
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.4	97.0	98.7	98.6	97.5	97.1
Fines (%)	1.6	3.0	1.3	1.4	2.5	2.9

Table 21. Bolivar Peninsula West – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.1	0.0	1.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	99.9
#18	99.9	100.0	99.7	99.7	99.9	99.3
#35	99.6	99.9	99.4	98.7	99.4	96.3
#60	98.8	99.4	96.0	86.0	97.4	88.7
#70	96.4	98.1	91.6	76.0	95.0	84.0
#80	88.0	90.7	81.4	60.1	90.2	73.7
#100	54.6	62.7	52.4	39.5	72.0	52.9
#120	26.8	36.5	31.4	24.5	52.8	33.7
#170	2.2	3.5	3.0	4.2	7.2	4.0
#200	1.4	1.7	1.7	2.8	2.9	2.1
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.145	0.137	0.146	0.163	0.122	0.145
Mean Grain Size (mm)	0.141	0.135	0.142	0.164	0.125	0.147
Sorting Index	0.325	0.341	0.402	0.610	0.398	0.604
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.1
Sand (%)	98.6	98.3	98.3	97.2	97.1	97.8
Fines (%)	1.4	1.7	1.7	2.8	2.9	2.1

Table 22. Bolivar Peninsula West – Transect 4

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.3	0.0	1.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	99.9	99.9	99.6	99.9	99.1
#35	99.8	99.7	99.8	97.8	99.2	94.6
#60	98.7	99.3	98.7	83.3	91.5	81.4
#70	95.7	97.8	95.1	75.3	86.7	74.9
#80	84.1	89.4	86.3	64.2	78.7	65.0
#100	41.4	59.3	55.9	45.2	59.3	46.9
#120	19.9	32.1	30.9	30.9	39.9	31.3
#170	1.8	3.3	2.7	4.2	4.9	3.6
#200	1.0	1.7	1.9	2.7	2.5	1.7
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.156	0.141	0.143	0.156	0.137	0.154
Mean Grain Size (mm)	0.149	0.138	0.140	0.161	0.140	0.166
Sorting Index	0.308	0.338	0.351	0.666	0.532	0.727
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.0	98.3	98.1	97.3	97.5	98.3
Fines (%)	1.0	1.7	1.9	2.7	2.5	1.7

Table 23. Bolivar Peninsula West – Transect 5

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.2	0.5	0.4
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.8	99.3	99.3
#35	99.9	99.9	99.6	98.6	95.5	95.5
#60	97.6	99.6	96.9	84.2	75.3	78.9
#70	92.8	98.9	91.2	74.6	62.8	69.0
#80	78.5	93.6	79.1	60.3	51.2	53.6
#100	40.3	69.2	47.5	40.6	32.6	33.7
#120	18.9	42.3	26.8	23.8	19.1	19.0
#170	1.6	3.6	2.5	2.7	3.2	1.5
#200	1.0	1.8	1.6	1.9	2.4	0.9
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.157	0.132	0.152	0.162	0.175	0.172
Mean Grain Size (mm)	0.153	0.131	0.147	0.166	0.190	0.183
Sorting Index	0.337	0.328	0.390	0.615	0.731	0.683
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.0	98.2	98.4	98.1	97.6	99.1
Fines (%)	1.0	1.8	1.6	1.9	2.4	0.9

Table 24. Bolivar Peninsula West – Transect 6

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.2	0.2	0.3
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.4	99.7	98.1
#35	99.9	100.0	100.0	95.6	97.7	92.2
#60	99.1	99.7	97.4	81.7	92.1	85.4
#70	96.7	98.8	93.4	76.1	88.9	82.4
#80	89.2	92.8	85.4	68.6	83.3	76.7
#100	55.1	68.8	63.0	54.3	67.5	63.5
#120	28.8	42.4	40.2	39.3	47.1	44.9
#170	3.1	3.0	4.5	8.6	5.4	4.8
#200	2.3	1.7	3.0	7.1	3.1	3.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.144	0.132	0.135	0.142	0.128	0.131
Mean Grain Size (mm)	0.140	0.131	0.134	0.157	0.132	0.144
Sorting Index	0.333	0.331	0.396	--	0.520	0.740
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	97.7	98.3	97.0	92.9	96.9	96.8
Fines (%)	2.3	1.7	3.0	7.1	3.1	3.2

Table 25. Bolivar Peninsula West – Transect 7

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.2	0.1	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.7	99.8	99.5	99.0	99.3	99.9
#35	99.2	99.6	98.9	91.4	98.4	99.7
#60	98.2	98.9	97.8	80.0	95.7	99.4
#70	95.9	97.5	96.4	76.4	94.9	99.3
#80	90.0	91.5	91.9	70.2	92.8	99.1
#100	58.4	68.0	70.5	52.0	79.8	98.4
#120	33.5	42.0	44.1	36.4	56.4	96.3
#170	2.0	3.7	4.3	3.2	5.0	10.4
#200	1.1	2.4	3.6	2.1	2.3	7.1
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.141	0.132	0.130	0.146	0.120	0.122
Mean Grain Size (mm)	0.137	0.131	0.130	0.170	0.122	0.112
Sorting Index	0.341	0.346	0.352	0.841	0.359	--
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.9	97.6	96.4	97.9	97.7	92.9
Fines (%)	1.1	2.4	3.6	2.1	2.3	7.1



SIEVE ANALYSIS RESULTS – GALVESTON ISLAND STATE PARK

Table 26. Galveston Island State Park – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	1.3	9.9	5.5
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	100.0	100.0	99.8	100.0	99.6
#35	99.6	100.0	100.0	98.6	99.9	98.6
#60	98.5	100.0	99.8	97.1	99.6	97.5
#70	97.0	99.7	99.1	96.3	99.2	96.6
#80	91.7	98.0	95.9	94.4	97.8	94.5
#100	74.0	87.1	82.1	88.3	90.5	87.6
#120	44.9	61.3	51.9	71.2	71.7	71.0
#170	1.9	2.5	2.4	3.8	4.2	4.2
#200	0.7	0.6	1.4	1.5	1.6	1.4
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.129	0.117	0.124	0.111	0.111	0.111
Mean Grain Size (mm)	0.129	0.119	0.123	0.116	0.115	0.116
Sorting Index	0.333	0.275	0.292	0.288	0.262	0.290
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	99.4	98.6	98.5	98.4	98.6
Fines (%)	0.7	0.6	1.4	1.5	1.6	1.4

Table 27. Galveston Island State Park – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	1.1	2.2	0.2
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.9
#35	100.0	100.0	100.0	99.5	99.8	99.5
#60	99.7	99.9	99.7	98.7	99.5	98.9
#70	98.9	99.8	99.0	97.8	99.2	98.3
#80	94.8	98.6	96.0	94.9	97.9	96.7
#100	76.7	90.3	82.7	84.4	91.9	90.6
#120	44.8	64.5	54.5	61.0	71.9	70.8
#170	1.4	2.1	2.3	3.1	3.7	3.9
#200	0.5	0.5	1.1	1.3	1.4	1.4
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.129	0.115	0.121	0.117	0.112	0.112
Mean Grain Size (mm)	0.128	0.118	0.122	0.120	0.115	0.116
Sorting Index	0.298	0.259	0.290	0.295	0.252	0.265
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.5	99.5	98.9	98.7	98.6	98.6
Fines (%)	0.5	0.5	1.1	1.3	1.4	1.4

Table 28. Galveston Island State Park – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.1	0.0	1.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.8
#35	100.0	100.0	100.0	99.7	99.5	99.2
#60	99.8	99.9	99.8	99.2	98.5	98.5
#70	99.1	99.7	99.3	98.7	97.3	98.0
#80	95.6	98.1	96.8	97.5	94.1	96.7
#100	79.1	85.4	86.1	92.2	82.3	92.6
#120	45.5	52.7	60.8	73.6	59.0	77.8
#170	1.4	2.4	2.6	3.7	3.3	5.3
#200	0.5	1.4	1.3	1.3	1.5	1.6
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.128	0.123	0.117	0.111	0.118	0.111
Mean Grain Size (mm)	0.127	0.122	0.119	0.115	0.121	0.113
Sorting Index	0.289	0.277	0.281	0.247	0.308	0.246
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.5	98.6	98.7	98.7	98.5	98.4
Fines (%)	0.5	1.4	1.3	1.3	1.5	1.6



SIEVE ANALYSIS RESULTS – FOLLETS ISLAND

Table 29. Follets Island – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.1	0.0	0.0	0.1	0.5
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.6	99.7	98.4
#35	100.0	100.0	100.0	98.4	99.3	94.9
#60	99.6	99.9	99.7	96.7	98.8	92.4
#70	98.7	99.7	99.0	95.6	98.4	91.2
#80	94.9	98.0	93.8	92.2	96.9	88.6
#100	71.0	68.1	48.7	63.2	75.4	77.5
#120	45.3	33.8	22.1	31.7	43.2	57.0
#170	1.4	1.3	1.6	2.0	3.1	4.2
#200	0.6	0.5	1.1	1.1	1.8	1.9
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.129	0.136	0.150	0.139	0.130	0.119
Mean Grain Size (mm)	0.129	0.134	0.145	0.137	0.128	0.124
Sorting Index	0.311	0.281	0.271	0.325	0.299	0.562
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.4	99.5	98.9	98.9	98.2	98.1
Fines (%)	0.6	0.5	1.1	1.1	1.8	1.9

Table 30. Follets Island – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.1	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.8
#35	100.0	100.0	99.8	99.1	100.0	99.2
#60	99.8	99.9	99.1	96.5	100.0	98.3
#70	99.3	99.6	98.1	94.1	100.0	97.7
#80	94.9	98.0	93.9	84.0	99.1	95.1
#100	50.6	72.2	60.6	39.8	78.0	75.8
#120	29.1	47.0	36.4	21.5	47.2	53.6
#170	1.1	2.2	4.6	1.6	4.6	3.5
#200	0.4	1.3	3.7	1.1	3.3	1.4
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.148	0.128	0.139	0.158	0.127	0.122
Mean Grain Size (mm)	0.141	0.128	0.134	0.149	0.126	0.125
Sorting Index	0.294	0.306	0.331	0.329	0.302	0.318
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.6	98.7	96.3	98.9	96.7	98.6
Fines (%)	0.4	1.3	3.7	1.1	3.3	1.4

Table 31. Follets Island – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.4
#35	100.0	100.0	100.0	99.8	100.0	97.5
#60	99.9	99.9	100.0	98.6	99.7	95.3
#70	99.7	99.6	99.1	97.3	99.4	93.9
#80	97.0	96.6	93.2	90.1	97.8	89.4
#100	47.3	68.7	54.3	58.1	81.8	62.4
#120	26.1	42.7	40.2	25.9	57.0	31.2
#170	1.2	2.4	2.1	3.3	4.3	4.2
#200	0.7	1.4	1.1	2.6	2.5	3.1
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.152	0.132	0.142	0.143	0.119	0.139
Mean Grain Size (mm)	0.143	0.130	0.136	0.141	0.121	0.137
Sorting Index	0.283	0.312	0.329	0.315	0.299	0.379
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	98.6	98.9	97.4	97.5	96.9
Fines (%)	0.7	1.4	1.1	2.6	2.5	3.1

Table 32. Follets Island – Transect 4

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.9
#35	100.0	100.0	100.0	99.9	99.9	99.4
#60	100.0	100.0	99.7	99.5	99.3	98.1
#70	100.0	100.0	98.9	98.6	98.8	97.1
#80	98.1	94.8	93.9	94.3	97.1	93.9
#100	65.8	51.1	53.4	70.8	76.6	78.1
#120	35.2	20.5	30.0	45.2	37.6	56.2
#170	1.4	2.2	2.1	2.4	3.7	4.5
#200	0.7	1.6	1.3	1.3	2.3	2.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.137	0.148	0.146	0.129	0.133	0.119
Mean Grain Size (mm)	0.134	0.145	0.139	0.129	0.130	0.123
Sorting Index	0.290	0.261	0.304	0.319	0.287	0.329
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	98.4	98.7	98.7	97.7	97.8
Fines (%)	0.7	1.6	1.3	1.3	2.3	2.2

Table 33. Follets Island – Transect 5

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	100.0	100.0	100.0	100.0	100.0	99.9
#60	100.0	100.0	99.6	100.0	100.0	99.3
#70	99.9	100.0	98.6	100.0	100.0	98.6
#80	95.8	99.0	94.5	98.7	99.3	96.4
#100	61.5	80.4	75.1	77.6	92.2	78.9
#120	22.4	43.4	49.6	36.7	75.8	57.3
#170	3.1	3.0	2.8	3.2	10.7	4.2
#200	2.2	2.1	1.6	2.1	6.6	2.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.142	0.129	0.125	0.133	0.110	0.118
Mean Grain Size (mm)	0.141	0.127	0.126	0.130	0.112	0.122
Sorting Index	0.265	0.280	0.316	0.277	--	0.311
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	97.8	97.9	98.4	97.9	93.4	97.8
Fines (%)	2.2	2.1	1.6	2.1	6.6	2.2

Table 34. Follets Island – Transect 6

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	100.0	100.0	100.0	99.8	99.8	99.7
#60	99.4	100.0	99.8	99.3	99.4	99.3
#70	98.2	99.9	99.4	98.7	99.0	99.1
#80	93.4	98.2	96.6	96.3	98.1	98.4
#100	53.3	77.7	75.7	75.5	91.4	86.1
#120	34.0	41.7	50.5	50.7	58.3	49.1
#170	9.8	2.6	3.5	4.1	4.0	3.6
#200	8.0	1.7	2.3	2.6	2.0	1.7
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.145	0.131	0.125	0.124	0.119	0.126
Mean Grain Size (mm)	0.135	0.128	0.126	0.125	0.119	0.123
Sorting Index	--	0.285	0.312	0.316	0.265	0.275
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	92.0	98.3	97.7	97.4	98.0	98.3
Fines (%)	8.0	1.7	2.3	2.6	2.0	1.7

Table 35. Follets Island – Transect 7

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.1	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.9
#35	99.2	100.0	100.0	99.6	100.0	99.3
#60	90.6	99.8	99.6	98.8	99.8	97.3
#70	86.6	99.5	99.2	98.3	99.6	96.7
#80	80.7	97.4	97.9	96.6	98.5	93.8
#100	68.9	84.9	86.8	89.4	89.3	84.4
#120	58.4	55.7	58.8	71.0	65.2	65.6
#170	30.2	2.9	4.0	5.9	3.5	4.7
#200	24.9	1.8	2.0	2.4	1.7	1.8
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.113	0.121	0.119	0.112	0.115	0.113
Mean Grain Size (mm)	--	0.121	0.120	0.115	0.117	0.118
Sorting Index	--	0.284	0.283	0.283	0.269	0.312
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	75.1	98.2	98.0	97.6	98.3	98.2
Fines (%)	24.9	1.8	2.0	2.4	1.7	1.8

Table 36. Follets Island – Transect 8

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.1	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.7	99.6
#35	100.0	100.0	100.0	99.3	98.5	97.9
#60	99.7	99.8	99.9	97.1	96.2	95.6
#70	99.4	99.5	99.7	95.8	95.4	94.8
#80	97.6	98.0	98.5	92.0	93.7	93.2
#100	81.9	86.1	90.8	77.8	85.7	86.6
#120	53.8	61.1	65.9	49.4	71.3	66.8
#170	2.1	3.1	5.4	3.3	3.5	4.7
#200	1.4	1.7	3.4	2.0	1.9	1.6
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.122	0.117	0.114	0.126	0.109	0.114
Mean Grain Size (mm)	0.123	0.119	0.116	0.126	0.117	0.117
Sorting Index	0.287	0.280	0.273	0.342	0.312	0.339
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.6	98.3	96.6	98.0	98.1	98.4
Fines (%)	1.4	1.7	3.4	2.0	1.9	1.6

Table 37. Follets Island – Transect 9

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.7
#35	100.0	100.0	100.0	99.8	99.8	98.4
#60	99.8	99.9	99.8	99.1	99.5	97.1
#70	99.5	99.5	99.4	98.5	99.2	96.8
#80	97.3	96.5	97.4	96.4	98.4	96.1
#100	77.9	77.9	80.7	86.4	92.4	91.9
#120	48.2	48.9	53.7	63.9	73.5	71.1
#170	1.5	2.6	2.6	4.5	5.9	5.0
#200	0.7	1.7	1.4	2.0	2.2	1.8
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.126	0.126	0.122	0.115	0.112	0.113
Mean Grain Size (mm)	0.126	0.126	0.123	0.118	0.114	0.115
Sorting Index	0.293	0.301	0.294	0.290	0.258	0.268
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	98.3	98.6	98.0	97.8	98.2
Fines (%)	0.7	1.7	1.4	2.0	2.2	1.8

Table 38. Follets Island – Transect 10

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.1	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.7	99.5	99.3
#35	99.9	99.9	99.8	99.4	98.7	95.5
#60	99.7	99.3	99.4	98.2	97.7	87.1
#70	99.5	99.0	98.7	97.3	97.4	85.4
#80	98.0	96.0	95.6	94.3	96.3	82.9
#100	81.6	78.7	77.6	78.9	89.5	73.3
#120	48.4	45.6	44.5	48.6	73.1	50.8
#170	2.1	1.7	3.2	3.6	6.3	3.7
#200	1.4	0.8	2.2	2.2	2.9	1.9
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.126	0.128	0.129	0.126	0.111	0.124
Mean Grain Size (mm)	0.125	0.127	0.127	0.125	0.115	0.133
Sorting Index	0.282	0.291	0.300	0.312	0.286	0.595
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.6	99.2	97.8	97.8	97.1	98.1
Fines (%)	1.4	0.8	2.2	2.2	2.9	1.9

Table 39. Follets Island – Transect 11

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	99.8	100.0	100.0	100.0	99.9
#35	99.7	99.7	100.0	99.8	99.9	99.1
#60	99.3	99.0	99.9	98.2	99.5	91.7
#70	99.0	98.7	99.5	97.3	97.7	89.4
#80	96.8	96.9	97.2	95.2	95.7	85.7
#100	77.8	82.6	80.9	84.3	84.7	72.9
#120	44.2	45.4	50.3	59.3	61.2	49.4
#170	2.4	1.3	3.0	3.9	4.5	3.5
#200	1.8	0.6	1.9	1.9	2.1	2.3
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.129	0.128	0.125	0.118	0.117	0.126
Mean Grain Size (mm)	0.127	0.126	0.124	0.120	0.119	0.129
Sorting Index	0.291	0.272	0.293	0.297	0.297	0.488
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.2	99.4	98.1	98.1	97.9	97.7
Fines (%)	1.8	0.6	1.9	1.9	2.1	2.3

Table 40. Follets Island – Transect 12

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.9
#35	99.9	100.0	100.0	99.7	99.8	98.7
#60	99.6	99.7	100.0	87.9	98.6	87.4
#70	99.0	99.0	98.9	82.4	97.8	84.9
#80	91.2	94.8	95.2	73.5	95.9	81.4
#100	61.2	63.9	70.7	46.6	86.0	68.4
#120	37.2	32.1	38.9	26.3	59.9	47.8
#170	1.1	1.6	2.7	2.3	3.7	3.5
#200	0.1	1.2	1.9	1.8	2.1	2.3
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.138	0.138	0.133	0.153	0.118	0.127
Mean Grain Size (mm)	0.135	0.136	0.131	0.155	0.119	0.137
Sorting Index	0.328	0.291	0.303	0.551	0.290	0.578
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.9	98.8	98.1	98.2	97.9	97.7
Fines (%)	0.1	1.2	1.9	1.8	2.1	2.3

Table 41. Follets Island – Transect 13

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.2	0.2	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.8	99.9	99.8
#35	99.9	100.0	99.8	99.4	99.1	98.3
#60	99.5	99.6	98.0	87.0	86.1	72.0
#70	98.7	98.6	96.6	82.6	81.7	65.7
#80	93.3	94.0	89.8	76.6	74.9	58.4
#100	55.4	58.2	65.7	60.1	56.1	44.7
#120	29.2	29.0	40.8	39.0	37.9	31.3
#170	1.3	1.5	2.9	2.5	5.2	12.0
#200	0.9	1.2	2.2	1.4	4.2	11.6
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.144	0.142	0.134	0.137	0.141	0.159
Mean Grain Size (mm)	0.140	0.139	0.133	0.147	0.149	0.176
Sorting Index	0.298	0.291	0.354	0.591	0.630	--
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.1	98.8	97.8	98.6	95.8	88.4
Fines (%)	0.9	1.2	2.2	1.4	4.2	11.6



SIEVE ANALYSIS RESULTS – SARGENT BEACH

Table 42. Sargent Beach – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.6	0.7	0.1	0.6	0.9	0.7
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.1	100.0	99.8	100.0	99.0	99.9
#18	98.0	100.0	99.8	99.2	98.1	97.3
#35	96.8	100.0	99.7	98.4	97.6	93.8
#60	91.7	98.7	95.8	96.5	97.0	91.1
#70	85.8	94.2	87.6	94.3	96.8	89.5
#80	76.1	81.7	70.7	88.4	96.5	86.9
#100	67.7	56.6	48.4	77.3	96.1	81.9
#120	62.4	34.7	28.9	58.2	95.6	70.4
#170	54.3	2.2	2.1	4.1	93.9	5.8
#200	51.9	1.4	1.2	1.9	92.5	2.3
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	--	0.142	0.151	0.117	--	0.111
Mean Grain Size (mm)	--	0.139	0.150	0.124	--	0.120
Sorting Index	--	0.377	0.434	0.378	--	0.607
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.9	0.0	0.2	0.0	1.0	0.1
Sand (%)	47.2	98.6	98.6	98.1	6.5	97.6
Fines (%)	51.9	1.4	1.2	1.9	92.5	2.3

Table 43. Sargent Beach – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	15.1	0.2	1.0	0.3	2.0	0.8
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	98.9	100.0	99.5	100.0	99.2	100.0
#18	94.3	100.0	98.7	99.8	95.2	98.9
#35	90.1	100.0	97.2	99.4	90.6	97.2
#60	75.2	99.5	89.3	96.2	81.8	91.1
#70	57.1	95.7	83.0	91.4	76.3	87.1
#80	36.6	79.9	74.5	82.7	69.7	81.4
#100	25.6	57.5	63.4	69.9	61.5	73.4
#120	21.1	36.6	49.7	53.0	50.8	61.2
#170	16.3	3.0	10.0	4.4	6.8	5.9
#200	15.5	1.3	7.8	1.5	3.3	2.4
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.199	0.140	0.125	0.122	0.124	0.114
Mean Grain Size (mm)	0.181	0.139	0.137	0.130	0.152	0.129
Sorting Index	--	0.386	--	0.431	0.920	0.565
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	1.1	0.0	0.5	0.0	0.8	0.0
Sand (%)	83.4	98.7	91.7	98.5	95.9	97.6
Fines (%)	15.5	1.3	7.8	1.5	3.3	2.4

Table 44. Sargent Beach – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	2.6	0.0	0.9	0.3	0.6	0.2
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.9	100.0	99.9	100.0	99.9	99.9
#18	99.7	100.0	99.5	99.8	98.9	99.6
#35	99.3	99.9	98.8	99.5	97.6	99.3
#60	96.3	94.5	96.6	97.6	94.9	98.7
#70	90.7	84.7	94.8	95.2	92.8	98.2
#80	78.4	70.9	91.7	91.3	89.7	97.3
#100	61.1	55.6	86.0	84.2	84.5	95.1
#120	44.2	41.3	75.4	71.6	75.0	88.0
#170	5.8	2.9	31.1	5.4	7.6	8.1
#200	3.5	1.3	27.7	1.9	2.6	2.3
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.133	0.139	0.106	0.109	0.109	0.111
Mean Grain Size (mm)	0.136	0.144	--	0.117	0.116	0.110
Sorting Index	0.458	0.480	--	0.338	0.396	0.211
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.1	0.0	0.1	0.0	0.1	0.1
Sand (%)	96.4	98.7	72.2	98.1	97.3	97.6
Fines (%)	3.5	1.3	27.7	1.9	2.6	2.3

Table 45. Sargent Beach – Transect 4

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	1.9	0.0	2.0	0.2	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.5	100.0	99.6	99.9	100.0	100.0
#18	99.3	100.0	96.3	99.5	99.9	99.9
#35	98.9	100.0	92.9	99.1	99.8	99.8
#60	94.2	98.6	91.9	98.3	99.5	99.7
#70	86.1	92.1	91.7	97.5	99.2	99.6
#80	70.8	75.2	91.3	95.0	98.4	99.3
#100	50.7	51.4	90.3	87.9	95.4	96.9
#120	31.4	31.5	88.4	70.5	87.1	86.7
#170	3.8	2.3	78.1	4.4	6.3	11.5
#200	2.8	1.4	73.2	1.8	2.0	8.8
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.148	0.147	--	0.111	0.110	0.110
Mean Grain Size (mm)	0.148	0.145	--	0.116	0.110	0.108
Sorting Index	0.472	0.404	--	0.286	0.194	--
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.5	0.0	0.4	0.1	0.0	0.0
Sand (%)	96.7	98.6	26.4	98.1	98.0	91.2
Fines (%)	2.8	1.4	73.2	1.8	2.0	8.8

Table 46. Sargent Beach – Transect 2B

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	No Sample	No Sample	0.1	No Sample	0.0	No Sample
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	No Sample	No Sample	100.0	No Sample	100.0	No Sample
#18	No Sample	No Sample	99.9	No Sample	99.9	No Sample
#35	No Sample	No Sample	99.8	No Sample	99.8	No Sample
#60	No Sample	No Sample	96.6	No Sample	99.3	No Sample
#70	No Sample	No Sample	91.6	No Sample	98.7	No Sample
#80	No Sample	No Sample	81.4	No Sample	96.7	No Sample
#100	No Sample	No Sample	59.8	No Sample	87.9	No Sample
#120	No Sample	No Sample	39.4	No Sample	73.5	No Sample
#170	No Sample	No Sample	4.0	No Sample	8.5	No Sample
#200	No Sample	No Sample	2.5	No Sample	3.3	No Sample
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	No Sample	No Sample	0.137	No Sample	0.110	No Sample
Mean Grain Size (mm)	No Sample	No Sample	0.137	No Sample	0.114	No Sample
Sorting Index	No Sample	No Sample	0.420	No Sample	0.310	No Sample
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	No Sample	No Sample	0.0	No Sample	0.0	No Sample
Sand (%)	No Sample	No Sample	97.5	No Sample	96.7	No Sample
Fines (%)	No Sample	No Sample	2.5	No Sample	3.3	No Sample



SIEVE ANALYSIS RESULTS – MATAGORDA PENINSULA

Table 47. Matagorda Peninsula – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.6	2.7	1.3	3.2	2.6
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.8	99.9	95.1	98.8
#35	100.0	100.0	98.5	99.7	89.6	97.1
#60	98.9	98.6	83.4	92.7	78.0	89.0
#70	93.6	91.7	65.4	80.0	62.9	80.2
#80	65.4	62.5	39.0	45.2	38.7	55.4
#100	20.9	18.2	13.7	14.8	13.5	24.5
#120	8.4	6.9	5.6	5.6	5.2	11.3
#170	1.1	0.7	1.8	1.6	1.4	2.0
#200	0.8	0.4	1.8	1.5	1.3	1.7
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.167	0.169	0.190	0.181	0.192	0.172
Mean Grain Size (mm)	0.167	0.170	0.194	0.181	0.215	0.173
Sorting Index	0.262	0.255	0.458	0.326	0.746	0.484
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.2	99.6	98.2	98.5	98.7	98.3
Fines (%)	0.8	0.4	1.8	1.5	1.3	1.7

Table 48. Matagorda Peninsula – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.4	1.7	14.8
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.9	99.3	90.2
#35	99.9	100.0	97.0	99.7	97.8	75.9
#60	98.7	96.3	86.4	96.2	84.7	52.2
#70	92.8	85.3	82.6	87.9	66.4	35.9
#80	63.4	51.9	53.9	64.0	35.4	18.3
#100	25.3	15.3	19.6	24.6	12.6	5.4
#120	11.1	5.4	8.0	9.2	5.0	2.6
#170	2.2	1.4	2.4	1.4	1.5	1.5
#200	1.9	1.2	2.2	1.2	1.5	1.4
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.167	0.175	0.174	0.167	0.193	0.244
Mean Grain Size (mm)	0.165	0.176	0.176	0.167	0.194	0.312
Sorting Index	0.307	0.269	0.460	0.317	0.444	1.009
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.1	98.8	97.8	98.8	98.5	98.6
Fines (%)	1.9	1.2	2.2	1.2	1.5	1.4

Table 49. Matagorda Peninsula – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.2	0.1	0.4	1.2	7.3
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.7	99.3	95.1
#35	100.0	100.0	99.9	97.9	98.2	87.5
#60	99.3	99.1	96.0	77.0	85.2	72.1
#70	95.4	93.0	80.3	50.7	68.8	55.9
#80	72.2	68.2	40.8	24.7	37.1	36.3
#100	30.5	22.9	12.4	6.6	13.6	14.9
#120	11.8	8.4	4.3	3.1	5.7	6.7
#170	1.7	0.7	1.5	1.8	1.4	1.3
#200	1.4	0.6	1.4	1.7	1.2	1.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.163	0.166	0.185	0.209	0.191	0.200
Mean Grain Size (mm)	0.160	0.166	0.183	0.218	0.193	0.234
Sorting Index	0.290	0.267	0.269	0.475	0.443	0.841
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.6	99.4	98.6	98.3	98.8	98.8
Fines (%)	1.4	0.6	1.4	1.7	1.2	1.2



SIEVE ANALYSIS RESULTS – MUSTANG ISLAND NORTH

Table 50. Mustang Island North – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.2	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.8
#35	100.0	100.0	99.9	99.9	99.7	99.0
#60	99.8	99.8	99.2	96.7	97.7	96.7
#70	99.4	99.0	97.5	92.8	93.9	94.3
#80	94.5	93.8	89.7	83.6	80.9	88.4
#100	66.9	62.0	69.6	64.1	57.2	74.2
#120	45.7	40.7	48.6	45.5	39.1	58.8
#170	2.9	2.7	2.8	3.3	2.8	4.3
#200	1.8	1.8	1.6	1.9	1.7	2.0
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.130	0.136	0.127	0.131	0.140	0.115
Mean Grain Size (mm)	0.130	0.133	0.129	0.133	0.138	0.124
Sorting Index	0.325	0.327	0.355	0.406	0.394	0.384
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.2	98.2	98.4	98.1	98.3	98.0
Fines (%)	1.8	1.8	1.6	1.9	1.7	2.0

Table 51. Mustang Island North – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	99.9	100.0	100.0	99.9	99.9
#35	100.0	99.8	99.9	99.8	99.8	99.5
#60	99.8	99.5	99.4	98.8	98.7	98.5
#70	99.1	98.0	98.1	97.3	97.2	97.8
#80	93.3	90.4	92.0	93.4	91.2	96.0
#100	72.2	58.7	74.5	80.8	74.7	89.4
#120	47.0	36.5	52.2	62.9	57.4	76.0
#170	2.1	1.9	4.1	5.5	4.3	6.1
#200	1.0	1.2	1.8	3.2	2.8	2.6
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.128	0.140	0.123	0.114	0.117	0.109
Mean Grain Size (mm)	0.129	0.136	0.126	0.120	0.124	0.114
Sorting Index	0.324	0.338	0.344	0.333	0.353	0.278
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.0	98.8	98.2	96.8	97.2	97.4
Fines (%)	1.0	1.2	1.8	3.2	2.8	2.6

Table 52. Mustang Island North – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.9	100.0	100.0
#35	100.0	99.9	99.9	99.6	99.8	99.7
#60	99.8	99.3	99.6	96.2	98.3	97.8
#70	99.4	98.9	98.7	92.0	96.0	95.7
#80	97.1	94.0	93.2	89.4	89.9	90.7
#100	83.1	66.4	73.8	61.9	74.3	76.1
#120	59.9	41.2	49.8	40.5	54.6	55.5
#170	3.3	1.9	2.6	2.7	3.1	4.4
#200	2.2	1.0	1.8	1.6	1.7	2.7
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.117	0.133	0.125	0.136	0.120	0.120
Mean Grain Size (mm)	0.120	0.132	0.127	0.133	0.126	0.124
Sorting Index	0.292	0.319	0.327	0.388	0.358	0.361
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	97.8	99.0	98.2	98.4	98.3	97.3
Fines (%)	2.2	1.0	1.8	1.6	1.7	2.7

Table 53. Mustang Island North – Transect 4

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	100.0	99.9	99.9	99.9	99.9	99.7
#60	99.8	99.6	99.6	98.8	99.1	95.7
#70	99.0	98.2	98.0	97.2	97.5	90.3
#80	92.6	89.2	92.0	91.0	93.4	78.7
#100	66.0	61.5	71.9	72.8	78.6	54.4
#120	40.7	35.5	47.5	53.9	53.2	34.8
#170	2.4	1.4	2.6	3.8	3.1	2.5
#200	2.1	0.7	1.6	2.2	1.8	1.6
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.134	0.138	0.127	0.121	0.122	0.144
Mean Grain Size (mm)	0.132	0.136	0.129	0.126	0.124	0.142
Sorting Index	0.329	0.334	0.337	0.354	0.322	0.425
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	97.9	99.3	98.4	97.8	98.2	98.4
Fines (%)	2.1	0.7	1.6	2.2	1.8	1.6

Table 54. Mustang Island North – Transect 5

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.1	0.0	0.0	0.0	0.1	0.2
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.8	99.9
#35	99.9	99.9	100.0	99.9	99.6	99.5
#60	99.7	99.8	99.6	98.5	96.8	96.7
#70	99.0	99.0	97.9	95.9	92.2	93.1
#80	93.5	93.9	89.0	89.3	80.2	86.2
#100	66.8	66.6	60.4	67.1	60.4	69.3
#120	40.6	24.9	39.3	43.1	41.9	52.5
#170	1.9	2.9	2.6	3.5	2.3	3.6
#200	1.0	2.2	2.0	2.4	1.1	1.9
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.134	0.139	0.137	0.132	0.135	0.122
Mean Grain Size (mm)	0.132	0.138	0.135	0.131	0.137	0.128
Sorting Index	0.320	0.276	0.351	0.364	0.414	0.400
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.0	97.8	98.0	97.6	98.9	98.1
Fines (%)	1.0	2.2	2.0	2.4	1.1	1.9

Table 55. Mustang Island North – Transect 6

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.1	0.0	0.1	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.9
#35	99.9	99.9	100.0	99.9	99.7	99.4
#60	99.7	99.7	99.1	98.5	96.5	93.9
#70	98.9	98.4	96.8	96.0	91.8	89.0
#80	91.6	90.9	86.4	89.6	77.9	79.8
#100	58.7	64.2	65.8	71.4	49.8	60.6
#120	33.6	36.3	42.6	47.3	33.1	40.2
#170	2.2	1.9	2.9	3.4	2.7	2.7
#200	1.7	1.3	2.0	2.4	1.8	1.8
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.141	0.137	0.133	0.128	0.149	0.136
Mean Grain Size (mm)	0.137	0.135	0.133	0.129	0.144	0.139
Sorting Index	0.323	0.328	0.367	0.361	0.414	0.459
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.3	98.7	98.0	97.6	98.2	98.2
Fines (%)	1.7	1.3	2.0	2.4	1.8	1.8



SIEVE ANALYSIS RESULTS – MUSTANG ISLAND CENTRAL

Table 56. Mustang Island Central – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.4	0.1	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.7	99.9	99.9
#35	100.0	100.0	100.0	98.3	99.6	99.2
#60	99.9	99.9	99.6	93.5	95.7	93.8
#70	98.9	98.9	97.1	86.4	87.8	86.2
#80	92.0	92.6	87.8	72.2	70.6	73.1
#100	68.3	71.2	65.9	53.2	46.0	55.1
#120	33.2	39.0	41.3	32.7	25.9	34.9
#170	1.7	1.5	2.8	3.3	2.1	3.3
#200	0.8	0.7	1.6	2.5	1.4	2.0
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.136	0.133	0.133	0.145	0.154	0.143
Mean Grain Size (mm)	0.135	0.132	0.133	0.146	0.152	0.145
Sorting Index	0.307	0.313	0.360	0.492	0.422	0.483
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.2	99.3	98.4	97.5	98.6	98.0
Fines (%)	0.8	0.7	1.6	2.5	1.4	2.0

Table 57. Mustang Island Central – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.1	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.9
#35	99.9	100.0	100.0	99.9	99.7	99.8
#60	99.7	99.6	99.5	97.1	97.7	96.4
#70	98.8	97.1	97.0	90.5	94.0	90.0
#80	91.5	84.2	87.1	74.6	84.6	77.4
#100	67.1	54.6	65.1	51.8	65.2	55.4
#120	32.3	28.2	39.3	29.4	41.2	33.9
#170	1.1	1.0	2.2	1.3	3.1	2.0
#200	0.6	0.4	1.0	0.7	1.6	1.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.137	0.145	0.135	0.147	0.134	0.143
Mean Grain Size (mm)	0.136	0.142	0.134	0.147	0.134	0.143
Sorting Index	0.305	0.331	0.356	0.406	0.386	0.422
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.4	99.6	99.0	99.3	98.4	98.8
Fines (%)	0.6	0.4	1.0	0.7	1.6	1.2

Table 58. Mustang Island Central – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	99.8	100.0	100.0	100.0	99.9	99.8
#60	99.6	99.6	99.2	99.0	98.7	96.6
#70	98.3	97.1	95.4	95.9	96.2	90.5
#80	88.0	82.5	81.1	85.4	89.3	76.7
#100	56.0	47.6	55.0	63.1	73.5	55.6
#120	27.7	22.1	29.0	37.5	48.2	33.7
#170	0.9	1.0	1.6	2.2	3.5	2.4
#200	0.3	0.5	1.2	1.2	1.5	1.4
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.144	0.151	0.144	0.137	0.127	0.143
Mean Grain Size (mm)	0.141	0.147	0.143	0.136	0.128	0.143
Sorting Index	0.314	0.312	0.352	0.362	0.361	0.422
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.7	99.5	98.8	98.8	98.5	98.6
Fines (%)	0.3	0.5	1.2	1.2	1.5	1.4

Table 59. Mustang Island Central – Transect 4

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.5
#35	100.0	100.0	100.0	99.5	100.0	98.1
#60	99.8	99.9	98.6	94.6	99.4	94.5
#70	98.2	98.5	94.6	85.8	98.1	89.8
#80	87.5	89.4	83.1	68.2	93.3	80.0
#100	57.6	63.3	62.7	46.3	79.5	63.6
#120	25.2	33.8	38.8	26.9	54.3	39.9
#170	1.2	1.5	2.4	2.1	3.4	2.3
#200	0.7	0.7	1.1	1.3	1.1	1.3
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.143	0.138	0.136	0.154	0.121	0.135
Mean Grain Size (mm)	0.142	0.137	0.136	0.152	0.123	0.138
Sorting Index	0.306	0.326	0.379	0.442	0.321	0.446
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	99.3	98.9	98.7	98.9	98.7
Fines (%)	0.7	0.7	1.1	1.3	1.1	1.3

Table 60. Mustang Island Central – Transect 5

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.6
#35	100.0	100.0	100.0	99.9	99.9	98.9
#60	99.7	99.6	99.1	96.5	99.1	95.0
#70	97.3	96.7	95.0	87.7	97.0	88.6
#80	84.9	81.6	80.4	67.2	90.1	75.5
#100	52.0	49.8	54.3	39.7	71.4	57.2
#120	22.4	22.6	27.9	19.4	46.4	35.0
#170	0.9	0.8	1.5	1.6	2.7	2.5
#200	0.6	0.4	1.0	1.2	1.1	1.0
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.147	0.149	0.145	0.160	0.128	0.141
Mean Grain Size (mm)	0.145	0.147	0.144	0.158	0.129	0.143
Sorting Index	0.304	0.317	0.351	0.388	0.351	0.445
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.4	99.6	99.0	98.8	98.9	99.0
Fines (%)	0.6	0.4	1.0	1.2	1.1	1.0

Table 61. Mustang Island Central – Transect 6

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.1	0.3
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	98.6
#35	100.0	100.0	100.0	100.0	99.8	96.6
#60	99.7	99.8	98.9	98.4	98.2	91.6
#70	97.3	96.9	92.9	91.7	93.6	85.2
#80	82.7	79.2	70.3	68.1	80.6	72.0
#100	35.4	40.2	38.4	35.8	58.1	53.7
#120	20.2	14.0	18.3	16.3	35.0	32.3
#170	1.1	0.7	1.4	1.4	2.5	2.7
#200	0.7	0.5	1.0	1.1	1.3	1.5
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.161	0.156	0.160	0.162	0.140	0.145
Mean Grain Size (mm)	0.150	0.154	0.156	0.159	0.140	0.147
Sorting Index	0.309	0.281	0.346	0.345	0.388	0.557
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	99.5	99.0	98.9	98.7	98.5
Fines (%)	0.7	0.5	1.0	1.1	1.3	1.5



SIEVE ANALYSIS RESULTS – MUSTANG ISLAND SOUTH

Table 62. Mustang Island South – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.1	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.7	100.0	99.8
#35	100.0	100.0	100.0	96.3	99.8	99.2
#60	99.5	99.6	98.7	88.8	97.8	94.5
#70	97.3	97.3	93.1	87.4	93.3	86.6
#80	83.9	83.6	73.6	72.5	80.5	71.3
#100	53.6	53.3	41.7	51.5	60.7	51.0
#120	26.5	26.6	22.7	28.6	35.0	30.9
#170	0.9	0.8	2.0	1.8	2.0	1.9
#200	0.5	0.3	1.7	1.1	1.2	1.1
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.146	0.146	0.157	0.147	0.139	0.148
Mean Grain Size (mm)	0.143	0.143	0.152	0.148	0.139	0.148
Sorting Index	0.325	0.326	0.366	0.556	0.388	0.451
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.5	99.7	98.3	98.9	98.8	98.9
Fines (%)	0.5	0.3	1.7	1.1	1.2	1.1

Table 63. Mustang Island South – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.1	0.0	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.8
#35	100.0	100.0	100.0	99.7	99.9	99.3
#60	99.7	99.7	98.6	93.4	99.1	94.2
#70	98.1	98.3	92.9	77.7	96.7	86.8
#80	81.1	86.0	73.9	53.8	90.4	66.9
#100	45.5	53.1	47.3	33.7	73.7	44.8
#120	21.1	29.3	22.0	19.3	48.1	26.3
#170	1.1	1.6	1.7	1.8	2.7	1.9
#200	0.8	1.1	1.4	1.2	1.3	1.1
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.153	0.146	0.152	0.172	0.127	0.156
Mean Grain Size (mm)	0.149	0.141	0.151	0.166	0.128	0.153
Sorting Index	0.310	0.331	0.359	0.456	0.349	0.444
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.2	98.9	98.6	98.8	98.7	98.9
Fines (%)	0.8	1.1	1.4	1.2	1.3	1.1

Table 64. Mustang Island South – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.2	0.1	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.8	100.0	100.0	100.0	100.0	100.0
#18	99.8	100.0	100.0	99.8	99.8	99.7
#35	99.8	100.0	100.0	99.4	99.2	99.1
#60	99.3	99.8	98.8	93.2	94.4	94.8
#70	97.5	97.7	94.0	80.3	86.8	86.7
#80	83.9	80.3	74.0	61.2	73.9	68.7
#100	52.8	46.2	45.1	41.7	54.4	44.9
#120	25.9	24.0	21.6	25.0	34.1	28.1
#170	1.0	0.8	1.5	1.9	2.3	2.1
#200	0.5	0.3	1.2	1.3	1.4	1.3
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.146	0.153	0.154	0.161	0.144	0.155
Mean Grain Size (mm)	0.144	0.147	0.152	0.158	0.145	0.152
Sorting Index	0.322	0.327	0.349	0.482	0.460	0.443
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.2	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	99.7	98.8	98.7	98.6	98.7
Fines (%)	0.5	0.3	1.2	1.3	1.4	1.3



SIEVE ANALYSIS RESULTS – PADRE ISLAND

Table 65. Padre Island – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.4	0.1	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	98.9
#35	99.9	100.0	100.0	99.7	99.7	97.2
#60	99.7	99.6	99.4	97.0	98.3	92.0
#70	98.8	96.1	96.3	91.0	95.0	84.0
#80	91.5	77.4	80.3	75.7	83.3	69.3
#100	70.8	44.9	53.5	55.5	61.7	51.9
#120	37.9	22.5	29.0	34.0	36.4	33.6
#170	2.0	0.9	1.8	2.0	2.2	2.4
#200	0.7	0.3	1.1	1.2	1.4	1.4
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.134	0.154	0.146	0.143	0.138	0.146
Mean Grain Size (mm)	0.133	0.150	0.143	0.143	0.137	0.148
Sorting Index	0.320	0.334	0.354	0.419	0.369	0.546
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	99.7	98.9	98.8	98.6	98.6
Fines (%)	0.7	0.3	1.1	1.2	1.4	1.4

Table 66. Padre Island – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.1	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.9
#35	100.0	100.0	100.0	99.8	99.7	99.5
#60	99.8	99.1	98.9	96.6	97.8	95.5
#70	98.5	94.2	94.1	87.8	93.5	85.0
#80	88.7	70.3	76.3	68.4	81.5	62.1
#100	63.1	35.9	49.0	45.3	60.4	39.7
#120	34.7	16.3	25.5	24.7	38.7	22.7
#170	1.6	1.6	1.4	1.6	2.8	1.9
#200	0.8	0.7	1.0	1.1	1.8	1.3
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.138	0.161	0.150	0.155	0.137	0.162
Mean Grain Size (mm)	0.136	0.157	0.148	0.153	0.137	0.157
Sorting Index	0.332	0.327	0.360	0.412	0.395	0.423
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.2	99.3	99.0	98.9	98.2	98.7
Fines (%)	0.8	0.7	1.0	1.1	1.8	1.3

Table 67. Padre Island – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.3	100.0	100.0	100.0	100.0	100.0
#18	98.6	100.0	100.0	99.9	99.9	99.4
#35	98.3	100.0	100.0	99.3	99.6	98.3
#60	98.0	99.6	99.5	96.2	97.7	90.7
#70	96.5	96.9	96.7	92.4	94.1	76.2
#80	82.9	78.1	80.7	56.5	83.2	48.9
#100	50.6	42.5	53.5	58.2	62.8	26.2
#120	27.5	19.1	29.6	36.4	39.7	13.4
#170	3.5	1.0	1.7	1.5	2.3	1.5
#200	2.3	0.5	1.1	0.5	1.3	1.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.148	0.155	0.145	0.166	0.136	0.178
Mean Grain Size (mm)	0.143	0.152	0.143	0.146	0.136	0.174
Sorting Index	0.350	0.312	0.353	0.381	0.383	0.477
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.7	0.0	0.0	0.0	0.0	0.0
Sand (%)	97.0	99.5	98.9	99.5	98.7	98.8
Fines (%)	2.3	0.5	1.1	0.5	1.3	1.2



SIEVE ANALYSIS RESULTS – SOUTH PADRE ISLAND

Table 68. South Padre Island – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.2	0.2
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.6	100.0	99.7
#35	100.0	100.0	99.9	99.1	100.0	98.8
#60	97.8	98.4	88.7	87.2	93.8	86.2
#70	82.4	85.6	58.5	55.5	73.1	58.8
#80	38.5	47.4	24.1	29.8	34.5	31.0
#100	10.1	12.7	7.1	8.3	12.2	10.8
#120	4.4	4.4	3.0	3.2	5.4	5.6
#170	1.2	0.9	1.3	1.2	1.8	2.7
#200	0.6	0.7	1.3	1.1	1.7	2.6
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.186	0.179	0.202	0.203	0.191	0.200
Mean Grain Size (mm)	0.183	0.178	0.201	0.200	0.189	0.198
Sorting Index	0.250	0.251	0.351	0.382	0.308	0.426
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.4	99.3	98.7	98.9	98.3	97.4
Fines (%)	0.6	0.7	1.3	1.1	1.7	2.6

Table 69. South Padre Island – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.8	0.0	0.0	0.2	0.5	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.7	99.9	99.9
#35	99.2	99.9	99.8	99.4	99.6	99.7
#60	92.8	99.1	91.4	93.8	93.6	92.7
#70	68.2	90.5	62.0	77.9	70.9	71.2
#80	45.7	50.7	34.6	45.2	44.7	35.7
#100	42.5	16.7	10.5	19.7	17.2	13.3
#120	36.9	6.2	4.1	9.4	8.2	6.3
#170	6.8	0.9	1.0	1.7	1.1	1.6
#200	2.2	0.6	1.0	1.4	0.9	1.4
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.186	0.176	0.196	0.182	0.183	0.191
Mean Grain Size (mm)	0.165	0.175	0.194	0.179	0.184	0.189
Sorting Index	0.582	0.254	0.357	0.359	0.358	0.347
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	97.8	99.4	99.0	98.6	99.1	98.6
Fines (%)	2.2	0.6	1.0	1.4	0.9	1.4

Table 70. South Padre Island – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	99.9	100.0	99.9	100.0	99.5
#35	99.8	99.9	99.9	99.8	99.9	98.2
#60	98.6	98.6	97.2	95.1	97.4	87.5
#70	88.5	87.9	80.7	78.0	88.3	67.0
#80	59.9	43.3	48.9	40.7	64.5	39.4
#100	20.1	15.6	16.7	15.6	31.3	19.0
#120	8.3	6.3	6.8	6.3	16.6	10.0
#170	1.4	1.3	0.7	1.1	1.8	1.5
#200	0.5	1.2	0.6	0.9	1.4	1.2
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.170	0.183	0.178	0.186	0.165	0.190
Mean Grain Size (mm)	0.171	0.178	0.178	0.183	0.161	0.187
Sorting Index	0.291	0.264	0.293	0.301	0.372	0.483
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.5	98.8	99.4	99.1	98.6	98.8
Fines (%)	0.5	1.2	0.6	0.9	1.4	1.2

Table 71. South Padre Island – Transect 4

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.4	0.0	0.2	0.6	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	99.9	100.0	99.6	99.9	99.6
#35	99.9	99.8	99.9	99.0	98.8	98.7
#60	99.3	99.4	95.5	90.6	96.3	90.5
#70	94.4	96.1	81.9	69.9	82.3	71.6
#80	68.2	67.7	48.5	35.0	55.7	39.6
#100	25.0	36.3	18.0	13.4	24.2	16.5
#120	11.2	9.0	7.9	5.9	12.3	7.7
#170	0.9	1.0	1.4	1.0	2.0	1.6
#200	0.7	0.7	1.3	0.9	1.8	1.5
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.166	0.161	0.178	0.192	0.172	0.188
Mean Grain Size (mm)	0.163	0.160	0.177	0.190	0.169	0.187
Sorting Index	0.285	0.278	0.308	0.383	0.360	0.414
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	99.3	98.7	99.1	98.2	98.5
Fines (%)	0.7	0.7	1.3	0.9	1.8	1.5

Table 72. South Padre Island – Transect 5

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.9	0.0	0.0	2.8	0.2	0.2
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.7	99.7	99.3
#35	99.9	99.9	100.0	99.2	99.2	97.6
#60	98.8	99.5	97.8	93.8	93.4	84.7
#70	94.5	96.1	82.8	78.0	83.9	60.1
#80	65.7	65.4	49.2	43.9	60.5	27.9
#100	19.9	25.3	16.4	15.5	27.7	10.0
#120	9.7	9.9	6.9	6.6	14.3	4.8
#170	2.4	1.0	2.4	1.1	1.9	1.5
#200	1.3	0.8	2.2	1.0	1.7	1.3
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.168	0.167	0.178	0.183	0.168	0.200
Mean Grain Size (mm)	0.168	0.164	0.177	0.182	0.165	0.200
Sorting Index	0.271	0.273	0.290	0.322	0.404	0.431
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.7	99.2	97.8	99.0	98.3	98.7
Fines (%)	1.3	0.8	2.2	1.0	1.7	1.3



SIEVE ANALYSIS RESULTS – BOCA CHICA

Table 73. Boca Chica – Transect 1

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.4	0.1	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	100.0	99.9	100.0
#35	99.9	100.0	99.9	99.8	99.5	99.8
#60	98.5	99.7	97.2	95.1	97.4	97.5
#70	97.3	97.9	87.8	79.3	92.6	91.3
#80	74.7	85.0	68.7	52.2	81.7	75.1
#100	32.0	46.7	31.1	24.9	55.1	40.4
#120	14.1	22.7	14.9	11.4	34.5	20.8
#170	1.3	1.5	0.9	1.6	2.9	1.8
#200	0.9	1.2	0.5	1.3	1.8	1.1
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.162	0.152	0.163	0.175	0.143	0.158
Mean Grain Size (mm)	0.135	0.132	0.133	0.146	0.152	0.145
Sorting Index	0.292	0.309	0.356	0.367	0.395	0.368
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.1	98.8	99.5	98.7	98.2	98.9
Fines (%)	0.9	1.2	0.5	1.3	1.8	1.1

Table 74. Boca Chica – Transect 2

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.2	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	99.9	100.0
#35	100.0	99.9	99.8	99.6	99.8	99.7
#60	99.3	99.2	95.7	96.8	97.7	94.1
#70	94.8	93.5	81.5	82.4	91.7	82.1
#80	64.0	69.4	53.8	52.6	73.9	61.8
#100	25.8	24.8	17.3	21.8	43.8	30.9
#120	10.2	10.5	6.5	10.4	24.7	16.4
#170	1.3	1.0	1.0	1.3	1.4	1.8
#200	0.6	0.8	0.9	1.0	0.8	1.4
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.167	0.165	0.174	0.174	0.155	0.166
Mean Grain Size (mm)	0.136	0.142	0.134	0.147	0.134	0.143
Sorting Index	0.283	0.284	0.295	0.335	0.384	0.411
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.4	99.2	99.1	99.0	99.2	98.6
Fines (%)	0.6	0.8	0.9	1.0	0.8	1.4

Table 75. Boca Chica – Transect 3

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.0	0.0
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.9
#35	100.0	100.0	100.0	99.9	99.9	99.8
#60	99.2	99.7	97.3	95.7	99.1	98.5
#70	92.4	96.6	85.0	81.2	95.6	92.3
#80	65.3	77.6	52.9	55.4	80.7	76.6
#100	19.8	33.2	22.2	23.9	50.8	43.7
#120	7.7	14.4	9.0	11.9	29.6	24.2
#170	0.8	1.2	1.6	2.2	3.0	2.1
#200	0.6	0.6	1.5	2.0	2.2	1.6
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.167	0.161	0.174	0.172	0.148	0.155
Mean Grain Size (mm)	0.141	0.147	0.143	0.136	0.128	0.143
Sorting Index	0.259	0.290	0.318	0.364	0.365	0.373
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.4	99.4	98.5	98.0	97.8	98.4
Fines (%)	0.6	0.6	1.5	2.0	2.2	1.6

Table 76. Boca Chica – Transect 4

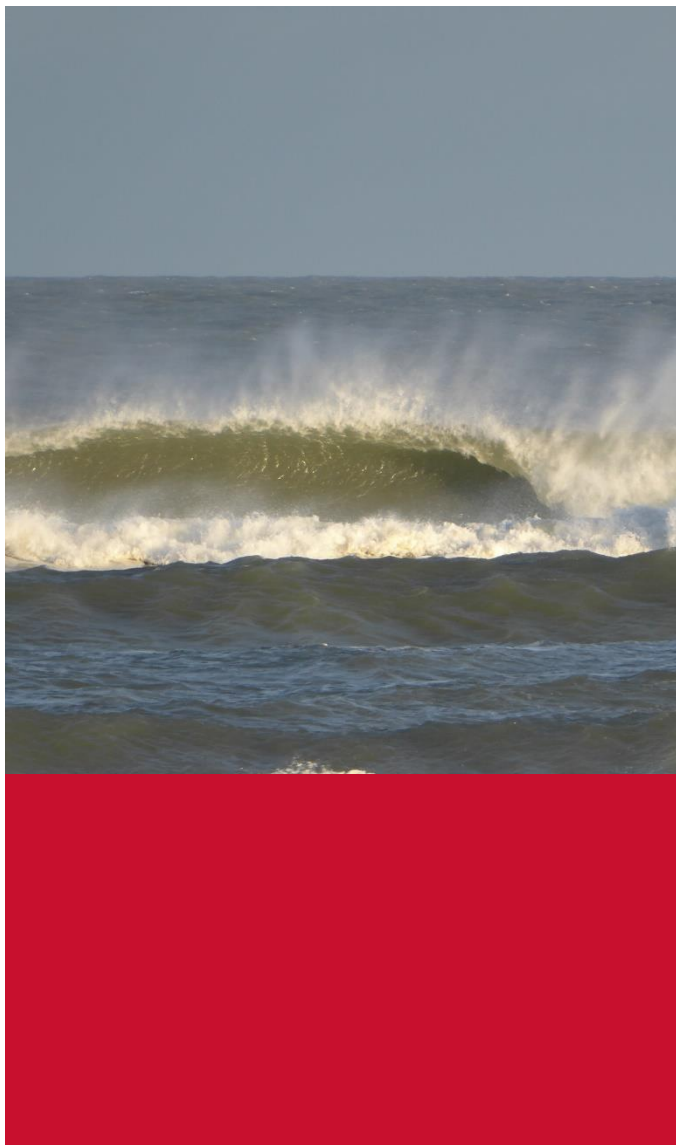
ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.1	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.9	100.0	100.0	99.9	99.9	99.8
#35	99.8	99.9	100.0	99.7	99.8	99.2
#60	99.1	99.3	98.9	90.5	96.8	90.8
#70	93.0	94.2	89.8	61.8	87.5	68.2
#80	56.3	66.1	51.7	33.5	58.2	41.6
#100	19.5	22.9	18.8	11.3	27.7	16.8
#120	7.9	9.1	7.1	4.5	13.2	7.8
#170	1.1	1.5	1.8	1.5	2.3	1.7
#200	0.7	1.4	1.6	1.5	2.1	1.5
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.172	0.167	0.176	0.196	0.170	0.187
Mean Grain Size (mm)	0.142	0.137	0.136	0.152	0.123	0.138
Sorting Index	0.263	0.270	0.274	0.369	0.357	0.412
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	98.6	98.4	98.5	97.9	98.5
Fines (%)	0.7	1.4	1.6	1.5	2.1	1.5

Table 77. Boca Chica – Transect 5

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.4	0.0	0.2
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.8	99.9	99.7
#35	100.0	99.9	99.8	99.3	99.8	99.0
#60	99.5	98.9	98.7	90.2	98.3	91.6
#70	95.8	90.0	90.4	64.3	92.5	74.9
#80	74.2	60.4	50.3	33.0	64.5	47.2
#100	62.9	19.6	16.8	8.9	27.4	7.1
#120	38.8	6.7	6.2	3.3	12.2	0.8
#170	14.1	0.4	1.9	0.8	1.6	0.7
#200	4.3	0.2	1.8	0.8	1.4	0.4
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.136	0.169	0.177	0.195	0.166	0.180
Mean Grain Size (mm)	0.145	0.147	0.144	0.158	0.129	0.143
Sorting Index	0.498	0.265	0.258	0.360	0.316	0.319
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	95.7	99.8	98.2	99.2	98.6	99.6
Fines (%)	4.3	0.2	1.8	0.8	1.4	0.4

Table 78. Boca Chica – Transect 6

ASTM Mesh	Percent Shell and Other Granule-sized Particles (Based on #10 Sieve)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
Retained by #10	0.0	0.0	0.0	0.0	0.1	0.1
ASTM Mesh	% Finer By Weight (Excluding Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	99.8	99.9	100.0	99.7	99.9	99.8
#35	99.6	99.8	99.8	99.1	99.6	99.4
#60	99.0	99.1	98.5	94.5	97.4	93.5
#70	93.1	93.2	86.5	85.5	88.8	81.2
#80	55.4	54.2	56.9	61.6	67.2	52.0
#100	18.3	17.5	20.1	34.7	32.7	26.3
#120	8.1	6.3	8.5	19.4	17.0	15.7
#170	2.3	1.4	2.0	2.5	1.7	8.0
#200	0.9	1.1	1.9	2.0	1.3	7.8
Grain Size Statistics (Excluding Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.173	0.174	0.171	0.165	0.164	0.175
Mean Grain Size (mm)	0.150	0.154	0.156	0.159	0.140	0.147
Sorting Index	0.269	0.244	0.302	0.417	0.370	--
Sediment Composition (Excluding Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.1	98.9	98.1	98.0	98.7	92.2
Fines (%)	0.9	1.1	1.9	2.0	1.3	7.8



Appendix 7
Sediment Sieve
Analysis Tables (Shell Included)





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AVERAGED SIEVE ANALYSIS RESULTS PER REACH



Table 1. Upper Coast – Averaged Sieve Analysis Results Per Reach

Summary of Upper Coast Reaches							
Reaches	BPE	BPC	BPW	GISP	FI	SB	MP
Grain Size Statistics (Including Shell and Other Granule-sized Particles)							
Median Grain Size (mm)	0.170	0.157	0.145	0.116	0.128	0.115	0.179
Mean Grain Size (mm)	0.266	0.157	0.144	0.119	0.128	0.124	0.185
Sorting Index	--	0.822	0.541	0.286	0.334	--	0.496
Sediment Composition (Including Shell and Other Granule-sized Particles)							
Granule/Shell (%)	10.76	4.06	0.81	0.03	0.02	1.45	2.03
Sand (%)	85.66	93.70	96.90	98.81	97.63	86.53	96.64
Fines (%)	3.57	2.24	2.29	1.17	2.35	12.02	1.33



Table 2. Lower Coast – Averaged Sieve Analysis Results Per Reach

Summary of Lower Coast Reaches						
Reaches	MIN	MIC	MIS	PI	SPI	BC
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.129	0.143	0.149	0.148	0.181	0.168
Mean Grain Size (mm)	0.130	0.141	0.147	0.146	0.180	0.165
Sorting Index	0.360	0.371	0.395	0.394	0.344	0.358
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granule/Shell (%)	0.03	0.03	0.06	0.19	0.25	0.05
Sand (%)	98.14	98.91	98.90	98.72	98.54	98.47
Fines (%)	1.83	1.06	1.04	1.09	1.21	1.49



SIEVE ANALYSIS RESULTS – BOLIVAR PENINSULA EAST

Table 3. Bolivar Peninsula East – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	91.4	86.2	75.9	99.9	97.4	98.9
#18	84.0	74.8	71.9	99.8	97.2	97.5
#35	70.2	64.0	67.0	99.8	96.7	96.8
#60	44.3	47.8	61.5	99.4	93.9	96.1
#70	33.1	37.6	58.3	98.8	90.0	95.4
#80	19.2	21.5	47.8	95.8	78.7	91.3
#100	6.8	7.9	20.4	86.2	48.8	74.7
#120	3.7	3.9	7.3	75.7	26.9	51.6
#170	2.0	1.1	1.2	62.6	4.1	7.5
#200	1.6	0.6	1.0	60.7	2.9	4.2
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.284	0.265	0.181	--	0.150	0.123
Mean Grain Size (mm)	0.364	0.428	--	--	0.147	0.125
Sorting Index	--	--	--	--	0.463	0.399
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	8.6	13.8	24.1	0.1	2.6	1.1
Sand (%)	89.8	85.6	74.9	39.2	94.5	94.7
Fines (%)	1.6	0.6	1.0	60.7	2.9	4.2

Table 4. Bolivar Peninsula East – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	No Sample	No Sample	84.3	80.1	99.6	99.4
#18	No Sample	No Sample	81.7	75.5	99.3	98.7
#35	No Sample	No Sample	77.1	72.6	98.9	98.0
#60	No Sample	No Sample	63.1	67.3	97.4	97.2
#70	No Sample	No Sample	53.1	63.2	95.4	96.5
#80	No Sample	No Sample	35.6	49.2	89.7	93.7
#100	No Sample	No Sample	12.8	26.0	76.8	79.7
#120	No Sample	No Sample	5.4	12.5	67.2	60.0
#170	No Sample	No Sample	2.4	1.8	46.3	8.8
#200	No Sample	No Sample	2.3	1.3	40.8	5.2
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	No Sample	No Sample	0.204	0.178	0.095	0.116
Mean Grain Size (mm)	No Sample	No Sample	0.386	--	--	0.120
Sorting Index	No Sample	No Sample	--	--	--	0.383
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	No Sample	No Sample	15.7	19.9	0.4	0.6
Sand (%)	No Sample	No Sample	82.1	78.8	58.8	94.2
Fines (%)	No Sample	No Sample	2.3	1.3	40.8	5.2

Table 5. Bolivar Peninsula East – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	93.3	66.3	79.1	94.9	96.7	95.9
#18	86.0	57.2	51.4	87.5	95.2	91.1
#35	71.4	48.2	37.0	79.9	94.3	87.0
#60	47.2	33.8	27.5	72.0	93.0	83.9
#70	35.3	25.5	22.5	66.9	91.1	81.5
#80	20.8	13.0	14.9	52.3	82.8	74.2
#100	6.9	4.5	5.5	29.9	51.5	56.5
#120	3.1	2.0	2.4	16.1	28.7	37.0
#170	0.8	0.6	0.8	3.0	3.3	4.3
#200	0.6	0.4	0.8	2.4	2.2	2.4
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.264	0.559	0.950	0.174	0.147	0.141
Mean Grain Size (mm)	0.342	--	--	0.251	0.143	0.154
Sorting Index	--	--	--	--	0.678	0.977
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	6.7	33.7	20.9	5.1	3.3	4.1
Sand (%)	92.8	65.9	78.3	92.5	94.6	93.5
Fines (%)	0.6	0.4	0.8	2.4	2.2	2.4

Table 6. Bolivar Peninsula East – Transect 4

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	82.9	92.5	93.7	92.0	97.5	82.3
#18	73.2	92.1	93.4	90.7	96.7	69.4
#35	58.5	90.7	92.6	88.6	95.6	62.7
#60	37.5	77.8	85.9	82.8	92.7	57.4
#70	27.9	65.0	76.4	78.3	89.5	54.1
#80	16.5	40.3	57.2	63.2	80.6	43.3
#100	6.1	16.4	24.5	33.0	52.3	25.0
#120	2.9	5.8	10.7	16.1	31.0	12.7
#170	0.6	0.9	1.4	2.0	3.9	1.9
#200	0.3	0.4	1.0	1.6	2.8	1.1
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.378	0.189	0.170	0.165	0.147	0.195
Mean Grain Size (mm)	--	0.212	0.177	0.178	0.143	--
Sorting Index	--	--	--	--	0.539	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	17.1	7.5	6.3	8.0	2.5	17.7
Sand (%)	82.5	92.2	92.7	90.4	94.7	81.1
Fines (%)	0.3	0.4	1.0	1.6	2.8	1.1

Table 7. Bolivar Peninsula East – Transect 5

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	97.0	65.8	82.5	74.9	98.4	80.2
#18	93.8	65.6	80.2	69.7	97.4	71.1
#35	86.5	65.2	78.0	65.1	96.3	64.0
#60	69.8	61.3	74.9	59.2	93.9	57.6
#70	57.6	55.3	70.9	55.5	91.5	54.3
#80	38.2	38.4	61.2	45.6	84.4	45.6
#100	14.0	16.9	32.4	27.5	60.1	27.9
#120	5.6	6.7	14.7	15.6	32.5	15.9
#170	1.2	0.8	1.4	2.3	3.0	1.4
#200	0.8	0.6	1.2	1.8	2.1	0.7
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.196	0.199	0.166	0.189	0.140	0.191
Mean Grain Size (mm)	0.238	--	--	--	0.139	--
Sorting Index	0.904	--	--	--	0.457	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	3.0	34.2	17.5	25.1	1.6	19.8
Sand (%)	96.2	65.2	81.3	73.1	96.3	79.5
Fines (%)	0.8	0.6	1.2	1.8	2.1	0.7

Table 8. Bolivar Peninsula East – Transect 6

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.1	84.9	90.5	62.3	89.2	96.2
#18	98.6	77.2	84.5	44.8	80.0	89.2
#35	97.8	67.6	77.8	36.2	72.2	85.4
#60	92.1	54.1	65.5	30.3	64.2	83.7
#70	82.5	47.3	57.8	27.2	59.2	82.6
#80	59.8	32.6	44.4	20.9	49.8	79.2
#100	23.9	14.4	22.9	12.0	30.4	67.6
#120	9.4	5.5	11.1	6.5	18.2	51.3
#170	1.3	0.4	1.7	1.3	2.6	7.0
#200	1.0	0.1	1.3	1.0	2.0	4.0
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.169	0.222	0.189	1.301	0.177	0.123
Mean Grain Size (mm)	0.170	0.397	0.289	--	0.309	0.149
Sorting Index	0.406	--	--	--	--	1.052
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.9	15.1	9.5	37.7	10.8	3.8
Sand (%)	98.1	84.8	89.2	61.3	87.2	92.3
Fines (%)	1.0	0.1	1.3	1.0	2.0	4.0

Table 9. Bolivar Peninsula East – Transect 7

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	93.7	84.5	97.4	92.5	94.6	75.6
#18	93.2	83.9	97.0	90.6	91.9	69.4
#35	92.7	83.0	96.4	85.7	87.6	52.6
#60	91.0	77.1	90.7	73.4	81.5	43.7
#70	87.8	71.7	81.8	65.4	77.8	39.3
#80	76.3	55.8	66.3	49.4	69.3	29.9
#100	39.4	29.2	37.1	27.2	47.7	17.2
#120	18.9	15.5	20.4	15.4	29.9	9.3
#170	2.4	3.7	2.4	2.4	3.7	1.5
#200	1.7	3.3	1.9	1.9	2.3	0.9
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.158	0.171	0.162	0.178	0.152	0.419
Mean Grain Size (mm)	0.156	0.286	0.161	0.218	0.174	--
Sorting Index	--	--	0.542	--	--	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	6.3	15.5	2.6	7.5	5.4	24.4
Sand (%)	92.0	81.2	95.6	90.6	92.4	74.7
Fines (%)	1.7	3.3	1.9	1.9	2.3	0.9

Table 10. Bolivar Peninsula East – Transect 8

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	97.0	99.7	89.8	94.3	92.0	75.9
#18	96.8	99.7	87.1	89.4	88.7	66.8
#35	96.6	99.6	83.9	80.7	85.1	60.7
#60	95.0	98.0	77.4	71.5	79.8	56.3
#70	91.8	93.9	70.7	65.9	75.8	54.2
#80	79.9	78.4	54.8	51.2	66.3	47.9
#100	43.0	47.9	25.0	28.9	42.7	34.7
#120	20.1	25.7	13.1	14.9	24.6	22.6
#170	2.6	2.3	1.5	1.8	3.6	3.2
#200	1.7	1.5	1.3	1.2	2.8	2.5
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.155	0.151	0.172	0.175	0.158	0.185
Mean Grain Size (mm)	0.151	0.147	0.225	0.242	0.197	--
Sorting Index	0.368	0.363	--	--	--	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	3.0	0.3	10.2	5.7	8.0	24.1
Sand (%)	95.3	98.2	88.5	93.1	89.2	73.4
Fines (%)	1.7	1.5	1.3	1.2	2.8	2.5

Table 11. Bolivar Peninsula East – Transect 9

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.9	99.7	96.5	79.4	97.0	79.1
#18	99.2	99.6	94.2	73.2	94.1	64.5
#35	96.7	99.5	90.2	67.0	90.1	51.3
#60	85.4	98.2	81.2	58.7	85.0	40.3
#70	73.9	95.1	75.0	53.5	82.3	36.9
#80	52.3	78.1	62.8	41.5	76.7	29.7
#100	21.4	42.1	35.8	22.6	57.2	18.2
#120	10.0	18.4	17.7	11.7	40.5	10.2
#170	3.1	0.9	2.2	1.9	5.9	1.1
#200	1.7	0.4	1.9	1.4	3.8	0.7
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.174	0.156	0.163	0.199	0.139	0.466
Mean Grain Size (mm)	0.181	0.152	0.181	--	0.148	--
Sorting Index	0.531	0.314	0.878	--	0.885	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.1	0.3	3.5	20.6	3.0	20.9
Sand (%)	98.2	99.3	94.6	78.0	93.2	78.5
Fines (%)	1.7	0.4	1.9	1.4	3.8	0.7



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Table 12. Bolivar Peninsula Central – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.6	99.8	94.7	97.6	96.3	86.4
#18	99.2	99.6	93.8	96.0	95.7	77.2
#35	98.4	99.2	92.2	94.4	94.8	67.8
#60	96.9	97.8	86.5	91.7	91.5	59.5
#70	94.3	93.9	79.9	89.5	88.9	56.0
#80	81.0	80.7	61.2	82.2	79.9	47.3
#100	36.9	35.2	33.5	64.2	50.7	30.3
#120	17.4	17.0	12.7	39.8	26.9	16.4
#170	1.8	1.8	3.2	5.6	3.1	2.4
#200	1.4	1.5	2.9	4.4	2.4	1.8
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.159	0.160	0.165	0.135	0.148	0.184
Mean Grain Size (mm)	0.153	0.153	0.170	0.136	0.146	0.339
Sorting Index	0.311	0.311	--	0.653	0.580	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.4	0.2	5.3	2.4	3.7	13.6
Sand (%)	98.2	98.3	91.8	93.2	93.9	84.5
Fines (%)	1.4	1.5	2.9	4.4	2.4	1.8

Table 13. Bolivar Peninsula Central – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	96.9	99.1	100.0	85.1	98.7	95.9
#18	96.5	98.5	100.0	77.0	97.9	92.4
#35	96.3	98.0	99.9	66.3	97.3	88.3
#60	95.8	96.3	94.7	52.5	96.4	83.7
#70	94.0	93.5	86.3	46.6	95.5	81.1
#80	89.9	81.9	70.5	34.4	93.0	74.2
#100	43.2	45.3	33.3	18.5	78.6	57.5
#120	20.1	22.0	14.9	10.0	54.3	40.4
#170	1.9	1.6	2.1	0.8	7.1	7.4
#200	1.5	1.0	1.8	0.4	4.7	5.3
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.155	0.153	0.162	0.230	0.121	0.138
Mean Grain Size (mm)	0.147	0.148	0.161	0.392	0.123	0.153
Sorting Index	0.319	0.342	0.377	--	0.387	1.033
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	3.1	0.9	0.0	14.9	1.3	4.1
Sand (%)	95.4	98.1	98.2	84.7	94.0	90.6
Fines (%)	1.5	1.0	1.8	0.4	4.7	5.3

Table 14. Bolivar Peninsula Central – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	99.5	83.6	98.8	97.3
#18	99.9	100.0	99.0	79.4	98.1	94.9
#35	99.7	100.0	97.4	76.1	96.6	91.4
#60	99.0	99.6	87.9	72.3	92.7	86.4
#70	96.7	98.3	79.2	69.5	88.9	82.9
#80	87.1	88.6	63.4	60.4	79.9	73.8
#100	47.2	53.8	32.9	40.5	50.3	51.6
#120	22.0	26.9	14.6	25.6	31.9	33.5
#170	1.5	2.3	2.0	3.4	4.6	4.1
#200	0.6	1.4	1.7	2.6	3.5	2.5
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.151	0.146	0.164	0.162	0.149	0.147
Mean Grain Size (mm)	0.146	0.142	0.168	--	0.144	0.150
Sorting Index	0.305	0.318	0.529	--	0.522	0.798
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.5	16.4	1.2	2.7
Sand (%)	99.4	98.6	97.8	81.0	95.3	94.8
Fines (%)	0.6	1.4	1.7	2.6	3.5	2.5

Table 15. Bolivar Peninsula Central – Transect 4

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.9	98.3	100.0	94.0	94.1	86.0
#18	99.7	98.0	99.5	91.9	92.4	76.7
#35	99.4	97.7	99.3	86.9	88.8	64.2
#60	95.2	95.8	97.3	77.5	80.5	51.7
#70	86.7	93.1	91.9	72.2	73.9	46.4
#80	67.4	80.8	77.6	61.7	62.0	37.2
#100	31.2	49.6	42.6	44.1	38.1	24.0
#120	16.4	28.0	19.9	27.8	22.5	14.5
#170	2.8	3.7	1.8	6.8	3.6	2.1
#200	1.2	2.7	1.4	6.2	2.7	1.5
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.164	0.149	0.155	0.158	0.163	0.234
Mean Grain Size (mm)	0.161	0.144	0.152	0.190	0.182	0.374
Sorting Index	0.389	0.392	0.352	--	--	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.1	1.7	0.0	6.0	5.9	14.0
Sand (%)	98.7	95.6	98.6	87.8	91.4	84.5
Fines (%)	1.2	2.7	1.4	6.2	2.7	1.5

Table 16. Bolivar Peninsula Central – Transect 5

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.4	99.7	95.1	68.7	99.1
#18	100.0	99.3	99.7	92.3	62.6	98.4
#35	99.8	99.3	99.5	87.6	56.2	96.6
#60	97.8	97.9	96.7	78.5	45.3	89.5
#70	91.8	95.3	89.2	71.4	38.9	84.3
#80	74.2	84.3	73.7	55.6	30.2	72.8
#100	32.2	54.2	40.0	29.7	15.8	53.2
#120	16.0	30.9	20.3	14.9	8.6	36.8
#170	3.3	2.8	1.8	2.0	1.1	5.8
#200	2.1	1.6	1.2	1.5	0.8	3.8
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.162	0.145	0.158	0.170	0.326	0.144
Mean Grain Size (mm)	0.158	0.140	0.155	0.201	--	0.145
Sorting Index	0.349	0.356	0.382	1.042	--	0.615
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.6	0.3	4.9	31.3	0.9
Sand (%)	97.9	97.8	98.5	93.6	67.8	95.3
Fines (%)	2.1	1.6	1.2	1.5	0.8	3.8

Table 17. Bolivar Peninsula Central – Transect 6

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	98.8	96.7	83.7	98.5
#18	100.0	99.9	98.7	95.4	79.7	96.9
#35	100.0	99.9	98.6	92.8	74.7	93.9
#60	99.9	99.5	97.5	85.2	63.6	88.4
#70	99.4	98.2	95.1	79.7	53.8	84.0
#80	93.8	87.1	84.8	67.3	40.7	74.4
#100	53.4	50.6	46.4	46.0	21.7	51.8
#120	28.6	35.3	24.6	28.0	11.5	35.0
#170	2.6	3.1	2.8	3.6	1.8	4.5
#200	1.9	2.4	2.0	2.4	1.1	2.9
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.146	0.148	0.152	0.154	0.200	0.146
Mean Grain Size (mm)	0.140	0.139	0.145	0.159	--	0.147
Sorting Index	0.301	0.355	0.335	0.781	--	0.678
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	1.2	3.3	16.3	1.5
Sand (%)	98.1	97.6	96.8	94.3	82.5	95.6
Fines (%)	1.9	2.4	2.0	2.4	1.1	2.9

Table 18. Bolivar Peninsula Central – Transect 7

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.4	100.0	100.0	99.6	98.3	90.8
#18	99.3	100.0	100.0	99.5	97.3	84.2
#35	99.2	99.9	100.0	98.8	95.0	74.6
#60	98.3	99.7	97.4	92.2	90.1	64.8
#70	96.0	98.9	91.6	85.4	86.5	59.6
#80	82.9	92.3	80.7	66.9	80.8	49.7
#100	39.3	52.1	42.1	33.6	60.9	31.4
#120	17.8	24.9	22.7	20.9	40.6	18.5
#170	1.8	3.2	3.0	2.1	6.4	2.6
#200	1.0	2.1	2.3	1.4	4.3	2.0
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.157	0.147	0.156	0.164	0.136	0.177
Mean Grain Size (mm)	0.151	0.142	0.149	0.158	0.138	0.276
Sorting Index	0.298	0.301	0.366	0.476	0.637	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.6	0.0	0.0	0.4	1.7	9.2
Sand (%)	98.4	97.9	97.7	98.2	94.0	88.8
Fines (%)	1.0	2.1	2.3	1.4	4.3	2.0



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Table 19. Bolivar Peninsula West – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.8	100.0	98.3	82.4	93.7
#18	100.0	99.8	100.0	96.2	76.6	89.9
#35	97.1	99.8	99.9	89.3	71.3	85.2
#60	91.1	99.5	98.4	76.7	66.4	80.1
#70	84.1	98.7	94.0	67.2	63.0	76.8
#80	69.7	91.3	81.7	49.1	55.9	68.8
#100	33.4	52.3	45.5	25.5	35.9	52.6
#120	18.2	26.5	24.2	12.4	20.0	34.7
#170	1.5	2.2	3.1	3.1	2.9	3.9
#200	0.6	1.1	2.5	2.6	2.1	2.1
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.163	0.147	0.153	0.178	0.168	0.145
Mean Grain Size (mm)	0.161	0.142	0.147	0.206	--	0.186
Sorting Index	0.503	0.306	0.350	0.851	--	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.2	0.0	1.7	17.6	6.3
Sand (%)	99.4	98.7	97.5	95.7	80.3	91.7
Fines (%)	0.6	1.1	2.5	2.6	2.1	2.1

Table 20. Bolivar Peninsula West – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	98.9	97.8	99.8
#18	99.9	100.0	99.8	98.1	96.2	99.5
#35	99.8	99.9	99.5	96.1	92.7	98.8
#60	98.6	99.0	98.1	85.4	85.8	97.7
#70	94.9	96.6	94.4	74.8	79.9	96.8
#80	81.8	86.3	83.8	55.7	72.2	93.5
#100	39.5	57.8	49.2	30.4	47.7	82.0
#120	19.0	32.3	23.7	15.5	29.1	63.1
#170	2.3	4.1	1.9	1.9	3.9	7.0
#200	1.6	3.0	1.3	1.4	2.4	2.9
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.157	0.142	0.150	0.170	0.152	0.115
Mean Grain Size (mm)	0.151	0.138	0.145	0.174	0.157	0.119
Sorting Index	0.315	0.357	0.330	0.578	0.749	0.344
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	1.1	2.2	0.2
Sand (%)	98.4	97.0	98.7	97.5	95.4	96.9
Fines (%)	1.6	3.0	1.3	1.4	2.4	2.9

Table 21. Bolivar Peninsula West – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.9	100.0	98.9
#18	99.9	100.0	99.7	99.6	99.9	98.3
#35	99.6	99.9	99.4	98.6	99.4	95.3
#60	98.8	99.4	96.0	85.9	97.4	87.8
#70	96.4	98.1	91.6	75.9	95.0	83.2
#80	88.0	90.7	81.4	60.0	90.2	73.0
#100	54.6	62.7	52.4	39.5	72.0	52.4
#120	26.8	36.5	31.4	24.5	52.8	33.4
#170	2.2	3.5	3.0	4.2	7.2	4.0
#200	1.4	1.7	1.7	2.8	2.9	2.1
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.145	0.137	0.146	0.163	0.122	0.146
Mean Grain Size (mm)	0.141	0.135	0.142	0.164	0.125	0.149
Sorting Index	0.325	0.341	0.402	0.612	0.398	0.628
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.1	0.0	1.1
Sand (%)	98.6	98.3	98.3	97.1	97.1	96.8
Fines (%)	1.4	1.7	1.7	2.8	2.9	2.1

Table 22. Bolivar Peninsula West – Transect 4

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.7	100.0	98.9
#18	100.0	99.9	99.9	99.3	99.9	98.0
#35	99.8	99.7	99.8	97.5	99.2	93.6
#60	98.7	99.3	98.7	83.1	91.5	80.5
#70	95.7	97.8	95.1	75.1	86.7	74.1
#80	84.1	89.4	86.3	64.0	78.7	64.3
#100	41.4	59.3	55.9	45.1	59.3	46.4
#120	19.9	32.1	30.9	30.8	39.9	31.0
#170	1.8	3.3	2.7	4.2	4.9	3.6
#200	1.0	1.7	1.9	2.7	2.5	1.7
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.156	0.141	0.143	0.156	0.137	0.154
Mean Grain Size (mm)	0.149	0.138	0.140	0.162	0.140	0.169
Sorting Index	0.308	0.338	0.351	0.671	0.532	0.772
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.3	0.0	1.1
Sand (%)	99.0	98.3	98.1	97.0	97.5	97.2
Fines (%)	1.0	1.7	1.9	2.7	2.5	1.7

Table 23. Bolivar Peninsula West – Transect 5

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.8	99.5	99.6
#18	100.0	100.0	99.9	99.6	98.8	98.9
#35	99.9	99.9	99.6	98.4	95.0	95.1
#60	97.6	99.6	96.9	84.0	74.9	78.6
#70	92.8	98.9	91.2	74.5	62.5	68.7
#80	78.5	93.6	79.1	60.2	50.9	53.4
#100	40.3	69.2	47.5	40.5	32.4	33.6
#120	18.9	42.3	26.8	23.8	19.0	18.9
#170	1.6	3.6	2.5	2.7	3.2	1.5
#200	1.0	1.8	1.6	1.9	2.4	0.9
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.157	0.132	0.152	0.162	0.175	0.172
Mean Grain Size (mm)	0.153	0.131	0.147	0.166	0.192	0.184
Sorting Index	0.337	0.328	0.390	0.618	0.739	0.691
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.2	0.5	0.4
Sand (%)	99.0	98.2	98.4	97.9	97.1	98.7
Fines (%)	1.0	1.8	1.6	1.9	2.4	0.9

Table 24. Bolivar Peninsula West – Transect 6

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.8	99.8	99.7
#18	100.0	100.0	100.0	99.2	99.5	97.8
#35	99.9	100.0	100.0	95.4	97.5	91.9
#60	99.1	99.7	97.4	81.5	91.9	85.1
#70	96.7	98.8	93.4	75.9	88.7	82.2
#80	89.2	92.8	85.4	68.5	83.1	76.5
#100	55.1	68.8	63.0	54.2	67.4	63.3
#120	28.8	42.4	40.2	39.2	47.0	44.8
#170	3.1	3.0	4.5	8.6	5.4	4.8
#200	2.3	1.7	3.0	7.1	3.1	3.2
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.144	0.132	0.135	0.142	0.128	0.131
Mean Grain Size (mm)	0.140	0.131	0.134	0.157	0.132	0.145
Sorting Index	0.333	0.331	0.396	--	0.528	0.753
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.2	0.2	0.3
Sand (%)	97.7	98.3	97.0	92.7	96.7	96.5
Fines (%)	2.3	1.7	3.0	7.1	3.1	3.2

Table 25. Bolivar Peninsula West – Transect 7

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.8	99.9	100.0
#18	99.7	99.8	99.5	98.8	99.2	99.9
#35	99.2	99.6	98.9	91.2	98.3	99.7
#60	98.2	98.9	97.8	79.8	95.6	99.4
#70	95.9	97.5	96.4	76.2	94.8	99.3
#80	90.0	91.5	91.9	70.1	92.7	99.1
#100	58.4	68.0	70.5	51.9	79.7	98.4
#120	33.5	42.0	44.1	36.3	56.3	96.3
#170	2.0	3.7	4.3	3.2	5.0	10.4
#200	1.1	2.4	3.6	2.1	2.3	7.1
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.141	0.132	0.130	0.146	0.120	0.122
Mean Grain Size (mm)	0.137	0.131	0.130	0.170	0.122	0.112
Sorting Index	0.341	0.346	0.352	0.849	0.363	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.2	0.1	0.0
Sand (%)	98.9	97.6	96.4	97.7	97.6	92.9
Fines (%)	1.1	2.4	3.6	2.1	2.3	7.1



SIEVE ANALYSIS RESULTS – GALVESTON ISLAND STATE PARK

Table 26. Galveston Island State Park – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	99.8	100.0	100.0	99.9
#18	99.9	100.0	99.8	99.8	100.0	99.5
#35	99.6	100.0	99.8	98.6	99.9	98.5
#60	98.5	100.0	99.6	97.1	99.6	97.4
#70	97.0	99.7	98.9	96.3	99.2	96.5
#80	91.7	98.0	95.7	94.4	97.8	94.4
#100	74.0	87.1	81.9	88.3	90.5	87.5
#120	44.9	61.3	51.8	71.2	71.7	70.9
#170	1.9	2.5	2.4	3.8	4.2	4.2
#200	0.7	0.6	1.4	1.5	1.6	1.4
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.129	0.117	0.124	0.111	0.111	0.111
Mean Grain Size (mm)	0.129	0.119	0.123	0.116	0.115	0.116
Sorting Index	0.333	0.275	0.293	0.288	0.262	0.292
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.2	0.0	0.0	0.1
Sand (%)	99.3	99.4	98.4	98.5	98.4	98.5
Fines (%)	0.7	0.6	1.4	1.5	1.6	1.4

Table 27. Galveston Island State Park – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.9	100.0
#18	100.0	100.0	100.0	99.9	99.9	99.9
#35	100.0	100.0	100.0	99.5	99.7	99.5
#60	99.7	99.9	99.7	98.7	99.4	98.9
#70	98.9	99.8	99.0	97.8	99.1	98.3
#80	94.8	98.6	96.0	94.9	97.8	96.7
#100	76.7	90.3	82.7	84.4	91.8	90.6
#120	44.8	64.5	54.5	61.0	71.8	70.8
#170	1.4	2.1	2.3	3.1	3.7	3.9
#200	0.5	0.5	1.1	1.3	1.4	1.4
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.129	0.115	0.121	0.117	0.112	0.112
Mean Grain Size (mm)	0.128	0.118	0.122	0.120	0.115	0.116
Sorting Index	0.298	0.259	0.290	0.295	0.253	0.265
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.1	0.0
Sand (%)	99.5	99.5	98.9	98.7	98.5	98.6
Fines (%)	0.5	0.5	1.1	1.3	1.4	1.4

Table 28. Galveston Island State Park – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.9	100.0
#18	100.0	100.0	100.0	100.0	99.8	99.8
#35	100.0	100.0	100.0	99.7	99.4	99.2
#60	99.8	99.9	99.8	99.2	98.4	98.5
#70	99.1	99.7	99.3	98.7	97.2	98.0
#80	95.6	98.1	96.8	97.5	94.0	96.7
#100	79.1	85.4	86.1	92.2	82.2	92.6
#120	45.5	52.7	60.8	73.6	58.9	77.8
#170	1.4	2.4	2.6	3.7	3.3	5.3
#200	0.5	1.4	1.3	1.3	1.5	1.6
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.128	0.123	0.117	0.111	0.118	0.111
Mean Grain Size (mm)	0.127	0.122	0.119	0.115	0.121	0.113
Sorting Index	0.289	0.277	0.281	0.247	0.309	0.246
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.1	0.0
Sand (%)	99.5	98.6	98.7	98.7	98.4	98.4
Fines (%)	0.5	1.4	1.3	1.3	1.5	1.6



SIEVE ANALYSIS RESULTS – FOLLETS ISLAND

Table 29. Follets Island – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.9	100.0	100.0	99.9	99.5
#18	100.0	99.9	100.0	99.6	99.6	97.9
#35	100.0	99.9	100.0	98.4	99.2	94.4
#60	99.6	99.8	99.7	96.7	98.7	91.9
#70	98.7	99.6	99.0	95.6	98.3	90.7
#80	94.9	97.9	93.8	92.2	96.8	88.2
#100	71.0	68.0	48.7	63.2	75.3	77.1
#120	45.3	33.8	22.1	31.7	43.2	56.7
#170	1.4	1.3	1.6	2.0	3.1	4.2
#200	0.6	0.5	1.1	1.1	1.8	1.9
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.129	0.136	0.150	0.139	0.130	0.119
Mean Grain Size (mm)	0.129	0.134	0.145	0.137	0.128	0.125
Sorting Index	0.311	0.281	0.271	0.325	0.299	0.585
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.1	0.0	0.0	0.1	0.5
Sand (%)	99.4	99.4	98.9	98.9	98.1	97.6
Fines (%)	0.6	0.5	1.1	1.1	1.8	1.9

Table 30. Follets Island – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.9	100.0	100.0	100.0	100.0	100.0
#18	99.9	100.0	100.0	99.9	100.0	99.8
#35	99.9	100.0	99.8	99.1	100.0	99.2
#60	99.7	99.9	99.1	96.5	100.0	98.3
#70	99.2	99.6	98.1	94.1	100.0	97.7
#80	94.8	98.0	93.9	84.0	99.1	95.1
#100	50.5	72.2	60.6	39.8	78.0	75.8
#120	29.1	47.0	36.4	21.5	47.2	53.6
#170	1.1	2.2	4.6	1.6	4.6	3.5
#200	0.4	1.3	3.7	1.1	3.3	1.4
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.1	0.1	0.139	0.158	0.127	0.122
Mean Grain Size (mm)	0.1	0.1	0.134	0.149	0.126	0.125
Sorting Index	0.3	0.3	0.331	0.329	0.302	0.318
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.1	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.5	98.7	96.3	98.9	96.7	98.6
Fines (%)	0.4	1.3	3.7	1.1	3.3	1.4

Table 31. Follets Island – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.4
#35	100.0	100.0	100.0	99.8	100.0	97.5
#60	99.9	99.9	100.0	98.6	99.7	95.3
#70	99.7	99.6	99.1	97.3	99.4	93.9
#80	97.0	96.6	93.2	90.1	97.8	89.4
#100	47.3	68.7	54.3	58.1	81.8	62.4
#120	26.1	42.7	40.2	25.9	57.0	31.2
#170	1.2	2.4	2.1	3.3	4.3	4.2
#200	0.7	1.4	1.1	2.6	2.5	3.1
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.152	0.132	0.142	0.143	0.119	0.139
Mean Grain Size (mm)	0.143	0.130	0.136	0.141	0.121	0.137
Sorting Index	0.283	0.312	0.329	0.315	0.299	0.379
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	98.6	98.9	97.4	97.5	96.9
Fines (%)	0.7	1.4	1.1	2.6	2.5	3.1

Table 32. Follets Island – Transect 4

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.9
#35	100.0	100.0	100.0	99.9	99.9	99.4
#60	100.0	100.0	99.7	99.5	99.3	98.1
#70	100.0	100.0	98.9	98.6	98.8	97.1
#80	98.1	94.8	93.9	94.3	97.1	93.9
#100	65.8	51.1	53.4	70.8	76.6	78.1
#120	35.2	20.5	30.0	45.2	37.6	56.2
#170	1.4	2.2	2.1	2.4	3.7	4.5
#200	0.7	1.6	1.3	1.3	2.3	2.2
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.137	0.148	0.146	0.129	0.133	0.119
Mean Grain Size (mm)	0.134	0.145	0.139	0.129	0.130	0.123
Sorting Index	0.290	0.261	0.304	0.319	0.287	0.329
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	98.4	98.7	98.7	97.7	97.8
Fines (%)	0.7	1.6	1.3	1.3	2.3	2.2

Table 33. Follets Island – Transect 5

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	100.0	100.0	100.0	100.0	100.0	99.9
#60	100.0	100.0	99.6	100.0	100.0	99.3
#70	99.9	100.0	98.6	100.0	100.0	98.6
#80	95.8	99.0	94.5	98.7	99.3	96.4
#100	61.5	80.4	75.1	77.6	92.2	78.9
#120	22.4	43.4	49.6	36.7	75.8	57.3
#170	3.1	3.0	2.8	3.2	10.7	4.2
#200	2.2	2.1	1.6	2.1	6.6	2.2
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.142	0.129	0.125	0.133	0.110	0.118
Mean Grain Size (mm)	0.141	0.127	0.126	0.130	0.112	0.122
Sorting Index	0.265	0.280	0.316	0.277	--	0.311
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	97.8	97.9	98.4	97.9	93.4	97.8
Fines (%)	2.2	2.1	1.6	2.1	6.6	2.2

Table 34. Follets Island – Transect 6

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	100.0	100.0	100.0	99.8	99.8	99.7
#60	99.4	100.0	99.8	99.3	99.4	99.3
#70	98.2	99.9	99.4	98.7	99.0	99.1
#80	93.4	98.2	96.6	96.3	98.1	98.4
#100	53.3	77.7	75.7	75.5	91.4	86.1
#120	34.0	41.7	50.5	50.7	58.3	49.1
#170	9.8	2.6	3.5	4.1	4.0	3.6
#200	8.0	1.7	2.3	2.6	2.0	1.7
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.145	0.131	0.125	0.124	0.119	0.126
Mean Grain Size (mm)	0.135	0.128	0.126	0.125	0.119	0.123
Sorting Index	--	0.285	0.312	0.316	0.265	0.275
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	92.0	98.3	97.7	97.4	98.0	98.3
Fines (%)	8.0	1.7	2.3	2.6	2.0	1.7

Table 35. Follets Island – Transect 7

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.9	100.0	100.0	100.0	100.0	100.0
#18	99.9	100.0	100.0	99.9	100.0	99.9
#35	99.1	100.0	100.0	99.6	100.0	99.3
#60	90.5	99.8	99.6	98.8	99.8	97.3
#70	86.5	99.5	99.2	98.3	99.6	96.7
#80	80.6	97.4	97.9	96.6	98.5	93.8
#100	68.8	84.9	86.8	89.4	89.3	84.4
#120	58.3	55.7	58.8	71.0	65.2	65.6
#170	30.2	2.9	4.0	5.9	3.5	4.7
#200	24.9	1.8	2.0	2.4	1.7	1.8
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.113	0.121	0.119	0.112	0.115	0.113
Mean Grain Size (mm)	--	0.121	0.120	0.115	0.117	0.118
Sorting Index	--	0.284	0.283	0.283	0.269	0.312
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.1	0.0	0.0	0.0	0.0	0.0
Sand (%)	75.0	98.2	98.0	97.6	98.3	98.2
Fines (%)	24.9	1.8	2.0	2.4	1.7	1.8

Table 36. Follets Island – Transect 8

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.9	100.0
#18	100.0	100.0	100.0	100.0	99.6	99.6
#35	100.0	100.0	100.0	99.3	98.4	97.9
#60	99.7	99.8	99.9	97.1	96.1	95.6
#70	99.4	99.5	99.7	95.8	95.3	94.8
#80	97.6	98.0	98.5	92.0	93.6	93.2
#100	81.9	86.1	90.8	77.8	85.6	86.6
#120	53.8	61.1	65.9	49.4	71.2	66.8
#170	2.1	3.1	5.4	3.3	3.5	4.7
#200	1.4	1.7	3.4	2.0	1.9	1.6
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.122	0.117	0.114	0.126	0.109	0.114
Mean Grain Size (mm)	0.123	0.119	0.116	0.126	0.117	0.117
Sorting Index	0.287	0.280	0.273	0.342	0.315	0.339
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.1	0.0
Sand (%)	98.6	98.3	96.6	98.0	98.0	98.4
Fines (%)	1.4	1.7	3.4	2.0	1.9	1.6

Table 37. Follets Island – Transect 9

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	99.9
#18	100.0	100.0	100.0	100.0	100.0	99.6
#35	100.0	100.0	100.0	99.8	99.8	98.3
#60	99.8	99.9	99.8	99.1	99.5	97.0
#70	99.5	99.5	99.4	98.5	99.2	96.7
#80	97.3	96.5	97.4	96.4	98.4	96.0
#100	77.9	77.9	80.7	86.4	92.4	91.8
#120	48.2	48.9	53.7	63.9	73.5	71.0
#170	1.5	2.6	2.6	4.5	5.9	5.0
#200	0.7	1.7	1.4	2.0	2.2	1.8
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.126	0.126	0.122	0.115	0.112	0.113
Mean Grain Size (mm)	0.126	0.126	0.123	0.118	0.114	0.115
Sorting Index	0.293	0.301	0.294	0.290	0.258	0.269
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.1
Sand (%)	99.3	98.3	98.6	98.0	97.8	98.1
Fines (%)	0.7	1.7	1.4	2.0	2.2	1.8

Table 38. Follets Island – Transect 10

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.9	100.0	100.0
#18	100.0	100.0	99.9	99.6	99.5	99.3
#35	99.9	99.9	99.8	99.3	98.7	95.5
#60	99.7	99.3	99.4	98.1	97.7	87.1
#70	99.5	99.0	98.7	97.2	97.4	85.4
#80	98.0	96.0	95.6	94.2	96.3	82.9
#100	81.6	78.7	77.6	78.8	89.5	73.3
#120	48.4	45.6	44.5	48.6	73.1	50.8
#170	2.1	1.7	3.2	3.6	6.3	3.7
#200	1.4	0.8	2.2	2.2	2.9	1.9
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.126	0.128	0.129	0.126	0.111	0.124
Mean Grain Size (mm)	0.125	0.127	0.127	0.125	0.115	0.133
Sorting Index	0.282	0.291	0.300	0.313	0.286	0.595
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.1	0.0	0.0
Sand (%)	98.6	99.2	97.8	97.7	97.1	98.1
Fines (%)	1.4	0.8	2.2	2.2	2.9	1.9

Table 39. Follets Island – Transect 11

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	99.8	100.0	100.0	100.0	99.9
#35	99.7	99.7	100.0	99.8	99.9	99.1
#60	99.3	99.0	99.9	98.2	99.5	91.7
#70	99.0	98.7	99.5	97.3	97.7	89.4
#80	96.8	96.9	97.2	95.2	95.7	85.7
#100	77.8	82.6	80.9	84.3	84.7	72.9
#120	44.2	45.4	50.3	59.3	61.2	49.4
#170	2.4	1.3	3.0	3.9	4.5	3.5
#200	1.8	0.6	1.9	1.9	2.1	2.3
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.129	0.128	0.125	0.118	0.117	0.126
Mean Grain Size (mm)	0.127	0.126	0.124	0.120	0.119	0.129
Sorting Index	0.291	0.272	0.293	0.297	0.297	0.488
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	98.2	99.4	98.1	98.1	97.9	97.7
Fines (%)	1.8	0.6	1.9	1.9	2.1	2.3

Table 40. Follets Island – Transect 12

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.9
#35	99.9	100.0	100.0	99.7	99.8	98.7
#60	99.6	99.7	100.0	87.9	98.6	87.4
#70	99.0	99.0	98.9	82.4	97.8	84.9
#80	91.2	94.8	95.2	73.5	95.9	81.4
#100	61.2	63.9	70.7	46.6	86.0	68.4
#120	37.2	32.1	38.9	26.3	59.9	47.8
#170	1.1	1.6	2.7	2.3	3.7	3.5
#200	0.1	1.2	1.9	1.8	2.1	2.3
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.138	0.138	0.133	0.153	0.118	0.127
Mean Grain Size (mm)	0.135	0.136	0.131	0.155	0.119	0.137
Sorting Index	0.328	0.291	0.303	0.551	0.290	0.578
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.9	98.8	98.1	98.2	97.9	97.7
Fines (%)	0.1	1.2	1.9	1.8	2.1	2.3

Table 41. Follets Island – Transect 13

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.8	99.8	99.9
#18	100.0	100.0	99.9	99.6	99.7	99.7
#35	99.9	100.0	99.8	99.2	98.9	98.2
#60	99.5	99.6	98.0	86.8	85.9	71.9
#70	98.7	98.6	96.6	82.4	81.5	65.6
#80	93.3	94.0	89.8	76.4	74.8	58.3
#100	55.4	58.2	65.7	60.0	56.0	44.7
#120	29.2	29.0	40.8	38.9	37.8	31.3
#170	1.3	1.5	2.9	2.5	5.2	12.0
#200	0.9	1.2	2.2	1.4	4.2	11.6
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.144	0.142	0.134	0.137	0.141	0.159
Mean Grain Size (mm)	0.140	0.139	0.133	0.147	0.149	0.176
Sorting Index	0.298	0.291	0.354	0.595	0.635	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.2	0.2	0.1
Sand (%)	99.1	98.8	97.8	98.4	95.6	88.3
Fines (%)	0.9	1.2	2.2	1.4	4.2	11.6



SIEVE ANALYSIS RESULTS – SARGENT BEACH

Table 42. Sargent Beach – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	98.5	99.3	99.7	99.4	98.1	99.2
#18	97.4	99.3	99.7	98.6	97.2	96.6
#35	96.2	99.3	99.6	97.8	96.7	93.1
#60	91.1	98.0	95.7	95.9	96.1	90.5
#70	85.3	93.5	87.5	93.7	95.9	88.9
#80	75.6	81.1	70.6	87.9	95.6	86.3
#100	67.3	56.2	48.4	76.8	95.2	81.3
#120	62.0	34.5	28.9	57.9	94.7	69.9
#170	54.0	2.2	2.1	4.1	93.1	5.8
#200	51.6	1.4	1.2	1.9	91.7	2.3
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	--	0.142	0.151	0.118	--	0.111
Mean Grain Size (mm)	--	0.140	0.150	0.125	--	0.121
Sorting Index	--	0.384	0.434	0.392	--	0.643
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	1.5	0.7	0.3	0.6	1.9	0.8
Sand (%)	46.9	97.9	98.5	97.5	6.4	96.9
Fines (%)	51.6	1.4	1.2	1.9	91.7	2.3

Table 43. Sargent Beach – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	84.0	99.8	98.5	99.7	97.2	99.2
#18	80.1	99.8	97.7	99.5	93.3	98.1
#35	76.5	99.8	96.2	99.1	88.8	96.4
#60	63.8	99.3	88.4	95.9	80.2	90.4
#70	48.5	95.5	82.2	91.1	74.8	86.4
#80	31.1	79.7	73.8	82.5	68.3	80.7
#100	21.7	57.4	62.8	69.7	60.3	72.8
#120	17.9	36.5	49.2	52.8	49.8	60.7
#170	13.8	3.0	9.9	4.4	6.7	5.9
#200	13.2	1.3	7.7	1.5	3.2	2.4
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.2	0.1	0.126	0.122	0.125	0.114
Mean Grain Size (mm)	--	0.1	0.139	0.130	0.160	0.130
Sorting Index	--	0.4	--	0.435	1.043	0.593
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	16.0	0.2	1.5	0.3	2.8	0.8
Sand (%)	70.8	98.5	90.8	98.2	94.0	96.8
Fines (%)	13.2	1.3	7.7	1.5	3.2	2.4

Table 44. Sargent Beach – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	97.3	100.0	99.0	99.7	99.3	99.7
#18	97.1	100.0	98.6	99.5	98.3	99.4
#35	96.7	99.9	97.9	99.2	97.0	99.1
#60	93.8	94.5	95.7	97.3	94.3	98.5
#70	88.3	84.7	93.9	94.9	92.2	98.0
#80	76.4	70.9	90.9	91.0	89.2	97.1
#100	59.5	55.6	85.2	83.9	84.0	94.9
#120	43.1	41.3	74.7	71.4	74.6	87.8
#170	5.6	2.9	30.8	5.4	7.6	8.1
#200	3.4	1.3	27.5	1.9	2.6	2.3
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.135	0.139	0.106	0.109	0.109	0.111
Mean Grain Size (mm)	0.139	0.144	--	0.117	0.116	0.110
Sorting Index	0.527	0.480	--	0.342	0.424	0.213
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	2.7	0.0	1.0	0.3	0.7	0.3
Sand (%)	93.9	98.7	71.6	97.8	96.7	97.4
Fines (%)	3.4	1.3	27.5	1.9	2.6	2.3

Table 45. Sargent Beach – Transect 4

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	97.6	100.0	97.6	99.7	100.0	100.0
#18	97.4	100.0	94.4	99.3	99.9	99.9
#35	97.0	100.0	91.0	98.9	99.8	99.8
#60	92.4	98.6	90.1	98.1	99.5	99.7
#70	84.5	92.1	89.9	97.3	99.2	99.6
#80	69.5	75.2	89.5	94.8	98.4	99.3
#100	49.7	51.4	88.5	87.7	95.4	96.9
#120	30.8	31.5	86.6	70.4	87.1	86.7
#170	3.7	2.3	76.5	4.4	6.3	11.5
#200	2.7	1.4	71.7	1.8	2.0	8.8
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.149	0.147	--	0.111	0.110	0.110
Mean Grain Size (mm)	0.149	0.145	--	0.116	0.110	0.108
Sorting Index	0.542	0.404	--	0.287	0.194	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	2.4	0.0	2.4	0.3	0.0	0.0
Sand (%)	94.9	98.6	25.9	97.9	98.0	91.2
Fines (%)	2.7	1.4	71.7	1.8	2.0	8.8

Table 46. Sargent Beach – Transect 2B

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	No Sample	No Sample	99.9	No Sample	100.0	No Sample
#18	No Sample	No Sample	99.8	No Sample	99.9	No Sample
#35	No Sample	No Sample	99.7	No Sample	99.8	No Sample
#60	No Sample	No Sample	96.5	No Sample	99.3	No Sample
#70	No Sample	No Sample	91.5	No Sample	98.7	No Sample
#80	No Sample	No Sample	81.3	No Sample	96.7	No Sample
#100	No Sample	No Sample	59.7	No Sample	87.9	No Sample
#120	No Sample	No Sample	39.4	No Sample	73.5	No Sample
#170	No Sample	No Sample	4.0	No Sample	8.5	No Sample
#200	No Sample	No Sample	2.5	No Sample	3.3	No Sample
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	No Sample	No Sample	0.137	No Sample	0.110	No Sample
Mean Grain Size (mm)	No Sample	No Sample	0.137	No Sample	0.114	No Sample
Sorting Index	No Sample	No Sample	0.421	No Sample	0.310	No Sample
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	No Sample	No Sample	0.1	No Sample	0.0	No Sample
Sand (%)	No Sample	No Sample	97.4	No Sample	96.7	No Sample
Fines (%)	No Sample	No Sample	2.5	No Sample	3.3	No Sample



SIEVE ANALYSIS RESULTS – MATAGORDA PENINSULA

Table 47. Matagorda Peninsula – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.4	97.3	98.7	96.8	97.4
#18	100.0	99.4	97.1	98.6	92.1	96.2
#35	100.0	99.4	95.8	98.4	86.7	94.6
#60	98.9	98.0	81.1	91.5	75.5	86.7
#70	93.6	91.1	63.6	79.0	60.9	78.1
#80	65.4	62.1	37.9	44.6	37.5	54.0
#100	20.9	18.1	13.3	14.6	13.1	23.9
#120	8.4	6.9	5.4	5.5	5.0	11.0
#170	1.1	0.7	1.8	1.6	1.4	1.9
#200	0.8	0.4	1.8	1.5	1.3	1.7
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.167	0.169	0.192	0.182	0.194	0.173
Mean Grain Size (mm)	0.167	0.171	0.199	0.183	0.231	0.177
Sorting Index	0.262	0.259	0.507	0.363	0.914	0.565
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.6	2.7	1.3	3.2	2.6
Sand (%)	99.2	99.0	95.5	97.2	95.5	95.7
Fines (%)	0.8	0.4	1.8	1.5	1.3	1.7

Table 48. Matagorda Peninsula – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.6	98.3	85.2
#18	100.0	100.0	99.9	99.5	97.6	76.9
#35	99.9	100.0	97.0	99.3	96.1	64.7
#60	98.7	96.3	86.4	95.8	83.3	44.5
#70	92.8	85.3	82.6	87.5	65.3	30.6
#80	63.4	51.9	53.9	63.7	34.8	15.6
#100	25.3	15.3	19.6	24.5	12.4	4.6
#120	11.1	5.4	8.0	9.2	4.9	2.2
#170	2.2	1.4	2.4	1.4	1.5	1.3
#200	1.9	1.2	2.2	1.2	1.5	1.2
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.167	0.175	0.174	0.167	0.194	0.289
Mean Grain Size (mm)	0.165	0.176	0.176	0.167	0.196	0.454
Sorting Index	0.307	0.269	0.460	0.320	0.469	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.4	1.7	14.8
Sand (%)	98.1	98.8	97.8	98.4	96.8	84.0
Fines (%)	1.9	1.2	2.2	1.2	1.5	1.2

Table 49. Matagorda Peninsula – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.8	99.9	99.6	98.8	92.7
#18	100.0	99.8	99.9	99.3	98.1	88.2
#35	100.0	99.8	99.8	97.5	97.0	81.1
#60	99.3	98.9	95.9	76.7	84.2	66.8
#70	95.4	92.8	80.2	50.5	68.0	51.8
#80	72.2	68.1	40.8	24.6	36.7	33.7
#100	30.5	22.9	12.4	6.6	13.4	13.8
#120	11.8	8.4	4.3	3.1	5.6	6.2
#170	1.7	0.7	1.5	1.8	1.4	1.2
#200	1.4	0.6	1.4	1.7	1.2	1.1
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.163	0.166	0.185	0.209	0.191	0.207
Mean Grain Size (mm)	0.160	0.166	0.183	0.219	0.194	0.272
Sorting Index	0.290	0.268	0.270	0.482	0.461	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.2	0.1	0.4	1.2	7.3
Sand (%)	98.6	99.2	98.5	97.9	97.6	91.6
Fines (%)	1.4	0.6	1.4	1.7	1.2	1.1



SIEVE ANALYSIS RESULTS – MUSTANG ISLAND NORTH

Table 50. Mustang Island North – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.8	99.9
#18	100.0	100.0	100.0	100.0	99.7	99.7
#35	100.0	100.0	99.9	99.9	99.5	98.9
#60	99.8	99.8	99.2	96.7	97.5	96.6
#70	99.4	99.0	97.5	92.8	93.7	94.2
#80	94.5	93.8	89.7	83.6	80.7	88.3
#100	66.9	62.0	69.6	64.1	57.1	74.1
#120	45.7	40.7	48.6	45.5	39.0	58.7
#170	2.9	2.7	2.8	3.3	2.8	4.3
#200	1.8	1.8	1.6	1.9	1.7	2.0
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.159	0.160	0.165	0.135	0.148	0.184
Mean Grain Size (mm)	0.153	0.153	0.170	0.136	0.146	0.339
Sorting Index	0.311	0.311	--	0.653	0.580	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.4	0.2	5.3	2.4	3.7	13.6
Sand (%)	98.2	98.3	91.8	93.2	93.9	84.5
Fines (%)	1.4	1.5	2.9	4.4	2.4	1.8

Table 51. Mustang Island North – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	99.9	100.0	100.0	99.9	99.9
#35	100.0	99.8	99.9	99.8	99.8	99.5
#60	99.8	99.5	99.4	98.8	98.7	98.5
#70	99.1	98.0	98.1	97.3	97.2	97.8
#80	93.3	90.4	92.0	93.4	91.2	96.0
#100	72.2	58.7	74.5	80.8	74.7	89.4
#120	47.0	36.5	52.2	62.9	57.4	76.0
#170	2.1	1.9	4.1	5.5	4.3	6.1
#200	1.0	1.2	1.8	3.2	2.8	2.6
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.155	0.153	0.162	0.230	0.121	0.138
Mean Grain Size (mm)	0.147	0.148	0.161	0.392	0.123	0.153
Sorting Index	0.319	0.342	0.377	--	0.387	1.033
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	3.1	0.9	0.0	14.9	1.3	4.1
Sand (%)	95.4	98.1	98.2	84.7	94.0	90.6
Fines (%)	1.5	1.0	1.8	0.4	4.7	5.3

Table 52. Mustang Island North – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	99.9	99.9	100.0	100.0
#35	100.0	99.9	99.9	99.6	99.8	99.7
#60	99.8	99.3	99.6	96.2	98.3	97.8
#70	99.4	98.9	98.7	92.0	96.0	95.7
#80	97.1	94.0	93.2	89.4	89.9	90.7
#100	83.1	66.4	73.8	61.9	74.3	76.1
#120	59.9	41.2	49.8	40.5	54.6	55.5
#170	3.3	1.9	2.6	2.7	3.1	4.4
#200	2.2	1.0	1.8	1.6	1.7	2.7
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.151	0.146	0.164	0.162	0.149	0.147
Mean Grain Size (mm)	0.146	0.142	0.168	--	0.144	0.150
Sorting Index	0.305	0.318	0.529	--	0.522	0.798
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.5	16.4	1.2	2.7
Sand (%)	99.4	98.6	97.8	81.0	95.3	94.8
Fines (%)	0.6	1.4	1.7	2.6	3.5	2.5

Table 53. Mustang Island North – Transect 4

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	100.0	99.9	99.9	99.9	99.9	99.7
#60	99.8	99.6	99.6	98.8	99.1	95.7
#70	99.0	98.2	98.0	97.2	97.5	90.3
#80	92.6	89.2	92.0	91.0	93.4	78.7
#100	66.0	61.5	71.9	72.8	78.6	54.4
#120	40.7	35.5	47.5	53.9	53.2	34.8
#170	2.4	1.4	2.6	3.8	3.1	2.5
#200	2.1	0.7	1.6	2.2	1.8	1.6
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.164	0.149	0.155	0.158	0.163	0.234
Mean Grain Size (mm)	0.161	0.144	0.152	0.190	0.182	0.374
Sorting Index	0.389	0.392	0.352	--	--	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.1	1.7	0.0	6.0	5.9	14.0
Sand (%)	98.7	95.6	98.6	87.8	91.4	84.5
Fines (%)	1.2	2.7	1.4	6.2	2.7	1.5

Table 54. Mustang Island North – Transect 5

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.9	100.0	100.0	100.0	99.9	99.8
#18	99.9	100.0	100.0	100.0	99.7	99.7
#35	99.8	99.9	100.0	99.9	99.5	99.3
#60	99.6	99.8	99.6	98.5	96.7	96.5
#70	98.9	99.0	97.9	95.9	92.1	92.9
#80	93.4	93.9	89.0	89.3	80.1	86.0
#100	66.7	66.6	60.4	67.1	60.3	69.2
#120	40.6	24.9	39.3	43.1	41.9	52.4
#170	1.9	2.9	2.6	3.5	2.3	3.6
#200	1.0	2.2	2.0	2.4	1.1	1.9
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.162	0.145	0.158	0.170	0.326	0.144
Mean Grain Size (mm)	0.158	0.140	0.155	0.201	--	0.145
Sorting Index	0.349	0.356	0.382	1.042	--	0.615
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.6	0.3	4.9	31.3	0.9
Sand (%)	97.9	97.8	98.5	93.6	67.8	95.3
Fines (%)	2.1	1.6	1.2	1.5	0.8	3.8

Table 55. Mustang Island North – Transect 6

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	99.9	100.0	99.9	99.9
#18	100.0	100.0	99.9	100.0	99.8	99.8
#35	99.9	99.9	99.9	99.9	99.6	99.3
#60	99.7	99.7	99.0	98.5	96.4	93.8
#70	98.9	98.4	96.7	96.0	91.7	88.9
#80	91.6	90.9	86.3	89.6	77.8	79.7
#100	58.7	64.2	65.7	71.4	49.8	60.5
#120	33.6	36.3	42.6	47.3	33.1	40.2
#170	2.2	1.9	2.9	3.4	2.7	2.7
#200	1.7	1.3	2.0	2.4	1.8	1.8
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.146	0.148	0.152	0.154	0.200	0.146
Mean Grain Size (mm)	0.140	0.139	0.145	0.159	--	0.147
Sorting Index	0.301	0.355	0.335	0.781	--	0.678
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	1.2	3.3	16.3	1.5
Sand (%)	98.1	97.6	96.8	94.3	82.5	95.6
Fines (%)	1.9	2.4	2.0	2.4	1.1	2.9



SIEVE ANALYSIS RESULTS – MUSTANG ISLAND CENTRAL

Table 56. Mustang Island Central – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.6	99.9	99.9
#18	100.0	100.0	100.0	99.3	99.8	99.8
#35	100.0	100.0	100.0	97.9	99.5	99.1
#60	99.9	99.9	99.6	93.1	95.6	93.7
#70	98.9	98.9	97.1	86.1	87.7	86.1
#80	92.0	92.6	87.8	71.9	70.5	73.0
#100	68.3	71.2	65.9	53.0	46.0	55.0
#120	33.2	39.0	41.3	32.6	25.9	34.9
#170	1.7	1.5	2.8	3.3	2.1	3.3
#200	0.8	0.7	1.6	2.5	1.4	2.0
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.136	0.133	0.133	0.145	0.154	0.143
Mean Grain Size (mm)	0.135	0.132	0.133	0.147	0.152	0.145
Sorting Index	0.307	0.313	0.360	0.507	0.423	0.486
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.4	0.1	0.1
Sand (%)	99.2	99.3	98.4	97.1	98.5	97.9
Fines (%)	0.8	0.7	1.6	2.5	1.4	2.0

Table 57. Mustang Island Central – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.9	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.9
#35	99.9	100.0	100.0	99.9	99.6	99.8
#60	99.7	99.6	99.5	97.1	97.6	96.4
#70	98.8	97.1	97.0	90.5	93.9	90.0
#80	91.5	84.2	87.1	74.6	84.5	77.4
#100	67.1	54.6	65.1	51.8	65.1	55.4
#120	32.3	28.2	39.3	29.4	41.2	33.9
#170	1.1	1.0	2.2	1.3	3.1	2.0
#200	0.6	0.4	1.0	0.7	1.6	1.2
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.137	0.145	0.135	0.147	0.134	0.143
Mean Grain Size (mm)	0.136	0.142	0.134	0.147	0.134	0.143
Sorting Index	0.305	0.331	0.356	0.406	0.387	0.422
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.1	0.0
Sand (%)	99.4	99.6	99.0	99.3	98.3	98.8
Fines (%)	0.6	0.4	1.0	0.7	1.6	1.2

Table 58. Mustang Island Central – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	100.0
#35	99.8	100.0	100.0	100.0	99.9	99.8
#60	99.6	99.6	99.2	99.0	98.7	96.6
#70	98.3	97.1	95.4	95.9	96.2	90.5
#80	88.0	82.5	81.1	85.4	89.3	76.7
#100	56.0	47.6	55.0	63.1	73.5	55.6
#120	27.7	22.1	29.0	37.5	48.2	33.7
#170	0.9	1.0	1.6	2.2	3.5	2.4
#200	0.3	0.5	1.2	1.2	1.5	1.4
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.144	0.151	0.144	0.137	0.127	0.143
Mean Grain Size (mm)	0.141	0.147	0.143	0.136	0.128	0.143
Sorting Index	0.314	0.312	0.352	0.362	0.361	0.422
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.7	99.5	98.8	98.8	98.5	98.6
Fines (%)	0.3	0.5	1.2	1.2	1.5	1.4

Table 59. Mustang Island Central – Transect 4

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	99.9	100.0	99.5
#35	100.0	100.0	100.0	99.5	100.0	98.1
#60	99.8	99.9	98.6	94.6	99.4	94.5
#70	98.2	98.5	94.6	85.8	98.1	89.8
#80	87.5	89.4	83.1	68.2	93.3	80.0
#100	57.6	63.3	62.7	46.3	79.5	63.6
#120	25.2	33.8	38.8	26.9	54.3	39.9
#170	1.2	1.5	2.4	2.1	3.4	2.3
#200	0.7	0.7	1.1	1.3	1.1	1.3
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.143	0.138	0.136	0.154	0.121	0.135
Mean Grain Size (mm)	0.142	0.137	0.136	0.152	0.123	0.138
Sorting Index	0.306	0.326	0.379	0.442	0.321	0.446
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.3	99.3	98.9	98.7	98.9	98.7
Fines (%)	0.7	0.7	1.1	1.3	1.1	1.3

Table 60. Mustang Island Central – Transect 5

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	100.0	99.6
#35	100.0	100.0	100.0	99.9	99.9	98.9
#60	99.7	99.6	99.1	96.5	99.1	95.0
#70	97.3	96.7	95.0	87.7	97.0	88.6
#80	84.9	81.6	80.4	67.2	90.1	75.5
#100	52.0	49.8	54.3	39.7	71.4	57.2
#120	22.4	22.6	27.9	19.4	46.4	35.0
#170	0.9	0.8	1.5	1.6	2.7	2.5
#200	0.6	0.4	1.0	1.2	1.1	1.0
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.147	0.149	0.145	0.160	0.128	0.141
Mean Grain Size (mm)	0.145	0.147	0.144	0.158	0.129	0.143
Sorting Index	0.304	0.317	0.351	0.388	0.351	0.445
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.4	99.6	99.0	98.8	98.9	99.0
Fines (%)	0.6	0.4	1.0	1.2	1.1	1.0

Table 61. Mustang Island Central – Transect 6

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.9	99.7
#18	100.0	100.0	100.0	100.0	99.8	98.3
#35	100.0	100.0	100.0	100.0	99.7	96.3
#60	99.7	99.8	98.9	98.4	98.1	91.3
#70	97.3	96.9	92.9	91.7	93.5	84.9
#80	82.7	79.2	70.3	68.1	80.5	71.8
#100	35.4	40.2	38.4	35.8	58.0	53.5
#120	20.2	14.0	18.3	16.3	35.0	32.2
#170	1.1	0.7	1.4	1.4	2.5	2.7
#200	0.7	0.5	1.0	1.1	1.3	1.5
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.161	0.156	0.160	0.162	0.140	0.145
Mean Grain Size (mm)	0.150	0.154	0.156	0.159	0.140	0.148
Sorting Index	0.309	0.281	0.346	0.345	0.389	0.568
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.1	0.3
Sand (%)	99.3	99.5	99.0	98.9	98.6	98.2
Fines (%)	0.7	0.5	1.0	1.1	1.3	1.5



SIEVE ANALYSIS RESULTS – MUSTANG ISLAND SOUTH

Table 62. Mustang Island South – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.9	99.9
#18	100.0	100.0	100.0	99.7	99.9	99.7
#35	100.0	100.0	100.0	96.3	99.7	99.1
#60	99.5	99.6	98.7	88.8	97.7	94.4
#70	97.3	97.3	93.1	87.4	93.2	86.5
#80	83.9	83.6	73.6	72.5	80.4	71.2
#100	53.6	53.3	41.7	51.5	60.6	50.9
#120	26.5	26.6	22.7	28.6	35.0	30.9
#170	0.9	0.8	2.0	1.8	2.0	1.9
#200	0.5	0.3	1.7	1.1	1.2	1.1
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.146	0.146	0.157	0.147	0.139	0.148
Mean Grain Size (mm)	0.143	0.143	0.152	0.148	0.140	0.148
Sorting Index	0.325	0.326	0.366	0.556	0.389	0.453
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.1	0.1
Sand (%)	99.5	99.7	98.3	98.9	98.7	98.8
Fines (%)	0.5	0.3	1.7	1.1	1.2	1.1

Table 63. Mustang Island South – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.9	100.0	99.9
#18	100.0	100.0	100.0	99.8	100.0	99.7
#35	100.0	100.0	100.0	99.6	99.9	99.2
#60	99.7	99.7	98.6	93.3	99.1	94.1
#70	98.1	98.3	92.9	77.6	96.7	86.7
#80	81.1	86.0	73.9	53.7	90.4	66.8
#100	45.5	53.1	47.3	33.7	73.7	44.8
#120	21.1	29.3	22.0	19.3	48.1	26.3
#170	1.1	1.6	1.7	1.8	2.7	1.9
#200	0.8	1.1	1.4	1.2	1.3	1.1
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.153	0.146	0.152	0.172	0.127	0.156
Mean Grain Size (mm)	0.149	0.141	0.151	0.166	0.128	0.153
Sorting Index	0.310	0.331	0.359	0.459	0.349	0.447
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.1	0.0	0.1
Sand (%)	99.2	98.9	98.6	98.7	98.7	98.8
Fines (%)	0.8	1.1	1.4	1.2	1.3	1.1

Table 64. Mustang Island South – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.8	100.0	100.0	99.8	99.9	99.9
#18	99.8	100.0	100.0	99.6	99.7	99.6
#35	99.8	100.0	100.0	99.2	99.1	99.0
#60	99.3	99.8	98.8	93.0	94.3	94.7
#70	97.5	97.7	94.0	80.1	86.7	86.6
#80	83.9	80.3	74.0	61.1	73.8	68.6
#100	52.8	46.2	45.1	41.6	54.3	44.9
#120	25.9	24.0	21.6	25.0	34.1	28.1
#170	1.0	0.8	1.5	1.9	2.3	2.1
#200	0.5	0.3	1.2	1.3	1.4	1.3
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.146	0.153	0.154	0.161	0.144	0.155
Mean Grain Size (mm)	0.144	0.147	0.152	0.158	0.145	0.152
Sorting Index	0.322	0.327	0.349	0.487	0.462	0.445
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.2	0.0	0.0	0.2	0.1	0.1
Sand (%)	99.3	99.7	98.8	98.5	98.5	98.6
Fines (%)	0.5	0.3	1.2	1.3	1.4	1.3



SIEVE ANALYSIS RESULTS – PADRE ISLAND

Table 65. Padre Island – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.9	99.6
#18	100.0	100.0	100.0	100.0	99.8	98.5
#35	99.9	100.0	100.0	99.7	99.6	96.8
#60	99.7	99.6	99.4	97.0	98.2	91.6
#70	98.8	96.1	96.3	91.0	94.9	83.7
#80	91.5	77.4	80.3	75.7	83.2	69.0
#100	70.8	44.9	53.5	55.5	61.6	51.7
#120	37.9	22.5	29.0	34.0	36.4	33.5
#170	2.0	0.9	1.8	2.0	2.2	2.4
#200	0.7	0.3	1.1	1.2	1.4	1.4
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.134	0.154	0.146	0.143	0.138	0.147
Mean Grain Size (mm)	0.133	0.150	0.143	0.143	0.137	0.149
Sorting Index	0.320	0.334	0.354	0.419	0.370	0.560
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.1	0.4
Sand (%)	99.3	99.7	98.9	98.8	98.5	98.2
Fines (%)	0.7	0.3	1.1	1.2	1.4	1.4

Table 66. Padre Island – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.3	99.9
#18	100.0	100.0	100.0	100.0	99.2	99.8
#35	100.0	100.0	100.0	99.8	99.0	99.4
#60	99.8	99.1	98.9	96.6	97.1	95.4
#70	98.5	94.2	94.1	87.8	92.8	84.9
#80	88.7	70.3	76.3	68.4	80.9	62.0
#100	63.1	35.9	49.0	45.3	60.0	39.7
#120	34.7	16.3	25.5	24.7	38.4	22.7
#170	1.6	1.6	1.4	1.6	2.8	1.9
#200	0.8	0.7	1.0	1.1	1.8	1.3
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.138	0.161	0.150	0.155	0.138	0.162
Mean Grain Size (mm)	0.136	0.157	0.148	0.153	0.138	0.157
Sorting Index	0.332	0.327	0.360	0.412	0.404	0.423
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.7	0.1
Sand (%)	99.2	99.3	99.0	98.9	97.5	98.6
Fines (%)	0.8	0.7	1.0	1.1	1.8	1.3

Table 67. Padre Island – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	98.3	100.0	100.0	99.9	99.9	99.8
#18	97.6	100.0	100.0	99.8	99.8	99.2
#35	97.3	100.0	100.0	99.2	99.5	98.1
#60	97.0	99.6	99.5	96.1	97.6	90.5
#70	95.5	96.9	96.7	92.3	94.0	76.0
#80	82.1	78.1	80.7	56.4	83.1	48.8
#100	50.1	42.5	53.5	58.1	62.7	26.1
#120	27.2	19.1	29.6	36.4	39.7	13.4
#170	3.5	1.0	1.7	1.5	2.3	1.5
#200	2.3	0.5	1.1	0.5	1.3	1.2
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.149	0.155	0.145	0.166	0.136	0.178
Mean Grain Size (mm)	0.144	0.152	0.143	0.146	0.136	0.175
Sorting Index	0.355	0.312	0.353	0.382	0.385	0.483
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	1.7	0.0	0.0	0.1	0.1	0.2
Sand (%)	96.0	99.5	98.9	99.4	98.6	98.6
Fines (%)	2.3	0.5	1.1	0.5	1.3	1.2



SIEVE ANALYSIS RESULTS – SOUTH PADRE ISLAND

Table 68. South Padre Island – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.8	99.8
#18	100.0	100.0	100.0	99.6	99.8	99.5
#35	100.0	100.0	99.9	99.1	99.8	98.6
#60	97.8	98.4	88.7	87.2	93.6	86.0
#70	82.4	85.6	58.5	55.5	73.0	58.7
#80	38.5	47.4	24.1	29.8	34.4	30.9
#100	10.1	12.7	7.1	8.3	12.2	10.8
#120	4.4	4.4	3.0	3.2	5.4	5.6
#170	1.2	0.9	1.3	1.2	1.8	2.7
#200	0.6	0.7	1.3	1.1	1.7	2.6
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.186	0.179	0.202	0.203	0.191	0.200
Mean Grain Size (mm)	0.183	0.178	0.201	0.200	0.189	0.198
Sorting Index	0.250	0.251	0.351	0.382	0.312	0.429
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.2	0.2
Sand (%)	99.4	99.3	98.7	98.9	98.1	97.2
Fines (%)	0.6	0.7	1.3	1.1	1.7	2.6

Table 69. South Padre Island – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.2	100.0	100.0	99.8	99.5	99.9
#18	99.2	100.0	100.0	99.5	99.4	99.8
#35	98.4	99.9	99.8	99.2	99.1	99.6
#60	92.1	99.1	91.4	93.6	93.1	92.6
#70	67.7	90.5	62.0	77.7	70.5	71.1
#80	45.3	50.7	34.6	45.1	44.5	35.7
#100	42.2	16.7	10.5	19.7	17.1	13.3
#120	36.6	6.2	4.1	9.4	8.2	6.3
#170	6.7	0.9	1.0	1.7	1.1	1.6
#200	2.2	0.6	1.0	1.4	0.9	1.4
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.187	0.176	0.196	0.182	0.184	0.191
Mean Grain Size (mm)	0.165	0.175	0.194	0.179	0.185	0.189
Sorting Index	0.606	0.254	0.357	0.363	0.372	0.350
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.8	0.0	0.0	0.2	0.5	0.1
Sand (%)	97.0	99.4	99.0	98.4	98.6	98.5
Fines (%)	2.2	0.6	1.0	1.4	0.9	1.4

Table 70. South Padre Island – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	99.9
#18	99.9	99.9	100.0	99.9	100.0	99.4
#35	99.8	99.9	99.9	99.8	99.9	98.1
#60	98.6	98.6	97.2	95.1	97.4	87.4
#70	88.5	87.9	80.7	78.0	88.3	66.9
#80	59.9	43.3	48.9	40.7	64.5	39.4
#100	20.1	15.6	16.7	15.6	31.3	19.0
#120	8.3	6.3	6.8	6.3	16.6	10.0
#170	1.4	1.3	0.7	1.1	1.8	1.5
#200	0.5	1.2	0.6	0.9	1.4	1.2
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.170	0.183	0.178	0.186	0.165	0.190
Mean Grain Size (mm)	0.171	0.178	0.178	0.183	0.161	0.187
Sorting Index	0.291	0.264	0.293	0.301	0.372	0.485
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.1
Sand (%)	99.5	98.8	99.4	99.1	98.6	98.7
Fines (%)	0.5	1.2	0.6	0.9	1.4	1.2

Table 71. South Padre Island – Transect 4

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	99.6	100.0	99.8	99.4	100.0
#18	99.9	99.5	100.0	99.4	99.3	99.6
#35	99.9	99.4	99.9	98.8	98.2	98.7
#60	99.3	99.0	95.5	90.4	95.7	90.5
#70	94.4	95.7	81.9	69.8	81.8	71.6
#80	68.2	67.4	48.5	34.9	55.4	39.6
#100	25.0	36.2	18.0	13.4	24.1	16.5
#120	11.2	9.0	7.9	5.9	12.2	7.7
#170	0.9	1.0	1.4	1.0	2.0	1.6
#200	0.7	0.7	1.3	0.9	1.8	1.5
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.166	0.161	0.178	0.192	0.172	0.188
Mean Grain Size (mm)	0.163	0.161	0.177	0.191	0.170	0.187
Sorting Index	0.285	0.279	0.308	0.387	0.363	0.414
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.4	0.0	0.2	0.6	0.0
Sand (%)	99.3	98.9	98.7	98.9	97.6	98.5
Fines (%)	0.7	0.7	1.3	0.9	1.8	1.5

Table 72. South Padre Island – Transect 5

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.1	100.0	100.0	97.2	99.8	99.8
#18	99.1	100.0	100.0	96.9	99.5	99.1
#35	99.0	99.9	100.0	96.4	99.0	97.4
#60	97.9	99.5	97.8	91.2	93.2	84.5
#70	93.6	96.1	82.8	75.8	83.7	60.0
#80	65.1	65.4	49.2	42.7	60.4	27.8
#100	19.7	25.3	16.4	15.1	27.6	10.0
#120	9.6	9.9	6.9	6.4	14.3	4.8
#170	2.4	1.0	2.4	1.1	1.9	1.5
#200	1.3	0.8	2.2	1.0	1.7	1.3
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.168	0.167	0.178	0.184	0.168	0.200
Mean Grain Size (mm)	0.168	0.164	0.177	0.185	0.166	0.200
Sorting Index	0.278	0.273	0.290	0.420	0.410	0.433
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.9	0.0	0.0	2.8	0.2	0.2
Sand (%)	97.8	99.2	97.8	96.2	98.1	98.5
Fines (%)	1.3	0.8	2.2	1.0	1.7	1.3



SIEVE ANALYSIS RESULTS – BOCA CHICA

Table 73. Boca Chica – Transect 1

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.6	99.9	100.0	100.0	100.0	100.0
#18	99.6	99.9	99.9	100.0	99.9	100.0
#35	99.5	99.9	99.9	99.8	99.5	99.8
#60	98.1	99.6	97.2	95.1	97.4	97.5
#70	96.9	97.8	87.8	79.3	92.6	91.3
#80	74.4	84.9	68.7	52.2	81.7	75.1
#100	31.9	46.7	31.1	24.9	55.1	40.4
#120	14.0	22.7	14.9	11.4	34.5	20.8
#170	1.3	1.5	0.9	1.6	2.9	1.8
#200	0.9	1.2	0.5	1.3	1.8	1.1
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.162	0.152	0.163	0.175	0.143	0.158
Mean Grain Size (mm)	0.157	0.146	0.161	0.172	0.140	0.153
Sorting Index	0.293	0.310	0.356	0.367	0.395	0.368
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.4	0.1	0.0	0.0	0.0	0.0
Sand (%)	98.7	98.7	99.5	98.7	98.2	98.9
Fines (%)	0.9	1.2	0.5	1.3	1.8	1.1

Table 74. Boca Chica – Transect 2

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	99.8	100.0	100.0	100.0	100.0	100.0
#18	99.8	100.0	100.0	99.9	99.9	100.0
#35	99.8	99.9	99.8	99.6	99.8	99.7
#60	99.1	99.2	95.7	96.8	97.7	94.1
#70	94.6	93.5	81.5	82.4	91.7	82.1
#80	63.9	69.4	53.8	52.6	73.9	61.8
#100	25.7	24.8	17.3	21.8	43.8	30.9
#120	10.2	10.5	6.5	10.4	24.7	16.4
#170	1.3	1.0	1.0	1.3	1.4	1.8
#200	0.6	0.8	0.9	1.0	0.8	1.4
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.167	0.165	0.174	0.174	0.155	0.166
Mean Grain Size (mm)	0.165	0.164	0.176	0.172	0.151	0.164
Sorting Index	0.284	0.284	0.295	0.335	0.384	0.411
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.2	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.2	99.2	99.1	99.0	99.2	98.6
Fines (%)	0.6	0.8	0.9	1.0	0.8	1.4

Table 75. Boca Chica – Transect 3

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	100.0	100.0
#18	100.0	100.0	100.0	100.0	99.9	99.9
#35	100.0	100.0	100.0	99.9	99.9	99.8
#60	99.2	99.7	97.3	95.7	99.1	98.5
#70	92.4	96.6	85.0	81.2	95.6	92.3
#80	65.3	77.6	52.9	55.4	80.7	76.6
#100	19.8	33.2	22.2	23.9	50.8	43.7
#120	7.7	14.4	9.0	11.9	29.6	24.2
#170	0.8	1.2	1.6	2.2	3.0	2.1
#200	0.6	0.6	1.5	2.0	2.2	1.6
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.167	0.161	0.174	0.172	0.148	0.155
Mean Grain Size (mm)	0.168	0.156	0.172	0.170	0.143	0.150
Sorting Index	0.259	0.290	0.318	0.364	0.365	0.373
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.0	0.0
Sand (%)	99.4	99.4	98.5	98.0	97.8	98.4
Fines (%)	0.6	0.6	1.5	2.0	2.2	1.6

Table 76. Boca Chica – Transect 4

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.9	99.9
#18	99.9	100.0	100.0	99.9	99.8	99.7
#35	99.8	99.9	100.0	99.7	99.7	99.1
#60	99.1	99.3	98.9	90.5	96.7	90.7
#70	93.0	94.2	89.8	61.8	87.4	68.1
#80	56.3	66.1	51.7	33.5	58.1	41.6
#100	19.5	22.9	18.8	11.3	27.7	16.8
#120	7.9	9.1	7.1	4.5	13.2	7.8
#170	1.1	1.5	1.8	1.5	2.3	1.7
#200	0.7	1.4	1.6	1.5	2.1	1.5
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.172	0.167	0.176	0.196	0.170	0.187
Mean Grain Size (mm)	0.171	0.166	0.173	0.194	0.166	0.187
Sorting Index	0.263	0.270	0.274	0.369	0.358	0.415
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.1	0.1
Sand (%)	99.3	98.6	98.4	98.5	97.8	98.4
Fines (%)	0.7	1.4	1.6	1.5	2.1	1.5

Table 77. Boca Chica – Transect 5

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	99.6	100.0	99.8
#18	100.0	100.0	99.9	99.4	99.9	99.5
#35	100.0	99.9	99.8	98.9	99.8	98.8
#60	99.5	98.9	98.7	89.8	98.3	91.4
#70	95.8	90.0	90.4	64.0	92.5	74.8
#80	74.2	60.4	50.3	32.9	64.5	47.1
#100	62.9	19.6	16.8	8.9	27.4	7.1
#120	38.8	6.7	6.2	3.3	12.2	0.8
#170	14.1	0.4	1.9	0.8	1.6	0.7
#200	4.3	0.2	1.8	0.8	1.4	0.4
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.136	0.169	0.177	0.195	0.166	0.180
Mean Grain Size (mm)	0.134	0.171	0.175	0.195	0.163	0.186
Sorting Index	0.498	0.265	0.258	0.368	0.316	0.325
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.4	0.0	0.2
Sand (%)	95.7	99.8	98.2	98.8	98.6	99.4
Fines (%)	4.3	0.2	1.8	0.8	1.4	0.4

Table 78. Boca Chica – Transect 6

ASTM Mesh	% Finer By Weight (Including Shell and Other Granule-sized Particles)					
	Toe of Dune	Mid Berm	Swash Zone	First Bar	Trough	Second Bar
#10	100.0	100.0	100.0	100.0	99.9	99.9
#18	99.8	99.9	100.0	99.7	99.8	99.7
#35	99.6	99.8	99.8	99.1	99.5	99.3
#60	99.0	99.1	98.5	94.5	97.3	93.4
#70	93.1	93.2	86.5	85.5	88.7	81.1
#80	55.4	54.2	56.9	61.6	67.1	51.9
#100	18.3	17.5	20.1	34.7	32.7	26.3
#120	8.1	6.3	8.5	19.4	17.0	15.7
#170	2.3	1.4	2.0	2.5	1.7	8.0
#200	0.9	1.1	1.9	2.0	1.3	7.8
Grain Size Statistics (Including Shell and Other Granule-sized Particles)						
Median Grain Size (mm)	0.173	0.174	0.171	0.165	0.164	0.175
Mean Grain Size (mm)	0.172	0.173	0.172	0.160	0.160	0.168
Sorting Index	0.269	0.244	0.302	0.417	0.370	--
Sediment Composition (Including Shell and Other Granule-sized Particles)						
Granular/Shell (%)	0.0	0.0	0.0	0.0	0.1	0.1
Sand (%)	99.1	98.9	98.1	98.0	98.6	92.1
Fines (%)	0.9	1.1	1.9	2.0	1.3	7.8