

**CCCL Permit Application No MI-493 Bathtub Beach, Martin County
Response to RAI #2: Characteristics of Placed Sand**

In response to erosion threatening essential county infrastructure at Bathtub Beach, Martin County placed 8,745cy of sand on Bathtub Beach in the fall of 2008. 1,620cy (18.5%) of this volume came from Sailfish Point and the remaining 7,125cy (81.5%) came from Stewart Mine and Sunshine Land. At the time of the emergency, the beach was under water and the County could not collect beach samples for comparison. We provide comparison information for Martin County beach sand as part of the sand characteristics evaluation presented below.

Sediment characteristics of five sand samples that characterize these two sources indicate that the sand was of generally appropriate quality in terms of grain size and color (Table 1).

Table 1 Source Location Sand Sample Characteristics

Sample Reference	Source Location	Mean Grain Size (phi)	Mean Grain Size (mm)	Standard Deviation (phi)	% Fines	Dry Munsell Color
sm-btb0825	Stewart Mine	1.274	0.413	1.45	0.35	10YR 7/2
sm-btb0826	Stewart Mine	1.256	0.419	1.51	0.44	10YR 7/2
SFPstock_Std	Sailfish Point	2.886	0.135	1.46	0.91	10YR 6/2
SM-SFP0826	Sailfish Point	1.121	0.460	1.44	3.12	10YR 7/2
SunshineLand_STD	Stewart Mine	1.634	0.322	1.56	0.37	10YR 7/2

In order to assess the influence of the Sailfish Point sand on the composite sand characteristics, Engineering calculated the composite of these five samples by assigning a percentage contribution to each and summing the resulting weighted sieve data. Table 2 shows the percentage contribution of each sample and Table 3 presents the composite statistics.

Table 2 Sample Percentage Contributions

Sample Reference	Source Location	Percentage Contribution
sm-btb0825	Stewart Mine	27.2%
sm-btb0826	Stewart Mine	27.2%
SFPstock_Std	Sailfish Point	9.3%
SM-SFP0826	Sailfish Point	9.3%
SunshineLand_STD	Sunshine Land	27.2%

Table 3 Placed Sand Composite Statistics

Mean Grain Size (phi)	Mean Grain Size (mm)	Standard Deviation (phi)	% Fines	Dry Munsell Color
1.502	0.353	1.57	0.69	10YR 7/2

Figure 1 shows that the placed sand composite grain size distribution closely resembles the Martin County 2007 beach composite, and is similar to the St. Lucie Inlet flood shoal 2008 composite and the Jupiter Island sand trap 2003 composite. For details concerning those comparisons, see the report “Comparison of Sediments in Martin County, December 2008” developed in response to a request for additional information for the Martin County Bathtub Beach JCP application File Number: 0163447-002-JC, Martin County (2008). We have included that earlier report with this report as part of Attachment F of this RAI response package.

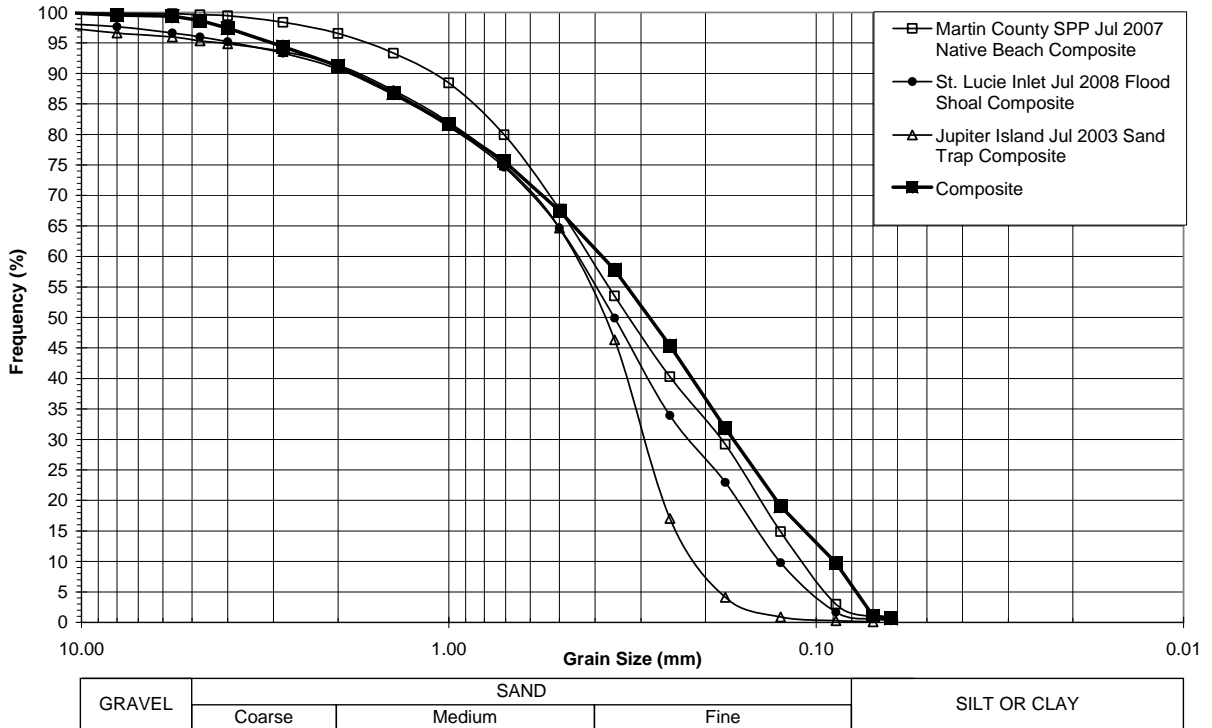


Figure 1 Composite Grain Size Cumulative Frequency Curves