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|--|------------------|---|-----------------|---|---------------------|----------------------|-----------------|
| Granularmetric Report Depths and elevations based on measured values | | | |  CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102 | | | |
| Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration | | | | | | | |
| Sand Sources on the Atlantic OCS | | | | | | | |
| Sample Name: FL-BOEM-2015-VC08 #1 | | | | | | | |
| Analysis Date: 10-27-15 | | | | | | | |
| Analyzed By: SMT | | Northing (m): | | Coordinate System: | | Elevation (ft): | |
| 524,496 | | 3,210,546 | | UTM 17 | | -63.0 NAVD88 | |
| USCS: | | Munsell: | | Comments: | | | |
| SP | | Wet - 5Y-5/1 Dry - 5Y-6/1 Washed - 5Y-8/1 | | | | | |
| Dry Weight (g): | Wash Weight (g): | Pan Retained (g): | Sieve Loss (%): | Fines (%): | Organics (%): | Carbonates (%): | Shell Hash (%): |
| 98.62 | 97.37 | 0.01 | 0.00 | #200 - 1.39 #230 - 1.29 | | 8 | |
| Sieve Number | Sieve Size (Phi) | Sieve Size (Millimeters) | Grams Retained | % Weight Retained | Cum. Grams Retained | C. % Weight Retained | |
| 3/4" | -4.25 | 19.03 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5/8" | -4.00 | 16.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7/16" | -3.50 | 11.31 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5/16" | -3.00 | 8.00 | 0.32 | 0.32 | 0.32 | 0.32 | |
| 3.5 | -2.50 | 5.66 | 0.00 | 0.00 | 0.32 | 0.32 | |
| 4 | -2.25 | 4.76 | 0.00 | 0.00 | 0.32 | 0.32 | |
| 5 | -2.00 | 4.00 | 0.05 | 0.05 | 0.37 | 0.37 | |
| 7 | -1.50 | 2.83 | 0.30 | 0.30 | 0.67 | 0.67 | |
| 10 | -1.00 | 2.00 | 0.54 | 0.55 | 1.21 | 1.22 | |
| 14 | -0.50 | 1.41 | 0.76 | 0.77 | 1.97 | 1.99 | |
| 18 | 0.00 | 1.00 | 0.62 | 0.63 | 2.59 | 2.62 | |
| 25 | 0.50 | 0.71 | 0.68 | 0.69 | 3.27 | 3.31 | |
| 35 | 1.00 | 0.50 | 1.16 | 1.18 | 4.43 | 4.49 | |
| 45 | 1.50 | 0.35 | 3.22 | 3.27 | 7.65 | 7.76 | |
| 60 | 2.00 | 0.25 | 13.81 | 14.00 | 21.46 | 21.76 | |
| 80 | 2.50 | 0.18 | 59.20 | 60.03 | 80.66 | 81.79 | |
| 120 | 3.00 | 0.13 | 14.60 | 14.80 | 95.26 | 96.59 | |
| 170 | 3.50 | 0.09 | 1.72 | 1.74 | 96.98 | 98.33 | |
| 200 | 3.75 | 0.07 | 0.28 | 0.28 | 97.26 | 98.61 | |
| 230 | 4.00 | 0.06 | 0.10 | 0.10 | 97.36 | 98.71 | |
| | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| 2.95 | 2.57 | 2.44 | 2.24 | 2.03 | 1.79 | 1.08 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 2.12 | 0.23 | 0.71 | -3.43 | 20.53 | | |

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|--|------------------|---|-----------------|---|---------------------|----------------------|-----------------|
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| Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration | | | | | | | |
| Sand Sources on the Atlantic OCS | | | | | | | |
| Sample Name: FL-BOEM-2015-VC08 #2 | | | | | | | |
| Analysis Date: 10-28-15 | | | | | | | |
| Analyzed By: SMT | | Northing (m): | | Coordinate System: | | Elevation (ft): | |
| Easting (m): | | | | | | | |
| 524,496 | | 3,210,546 | | UTM 17 | | -67.0 NAVD88 | |
| USCS: | | Munsell: | | Comments: | | | |
| SP | | Wet - 5Y-4/1 Dry - 5Y-5/1 Washed - 5Y-8/1 | | | | | |
| Dry Weight (g): | Wash Weight (g): | Pan Retained (g): | Sieve Loss (%): | Fines (%): | Organics (%): | Carbonates (%): | Shell Hash (%): |
| 100.11 | 96.10 | 0.01 | 0.04 | #200 - 4.27 #230 - 4.05 | | 7 | |
| Sieve Number | Sieve Size (Phi) | Sieve Size (Millimeters) | Grams Retained | % Weight Retained | Cum. Grams Retained | C. % Weight Retained | |
| 3/4" | -4.25 | 19.03 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5/8" | -4.00 | 16.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7/16" | -3.50 | 11.31 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5/16" | -3.00 | 8.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3.5 | -2.50 | 5.66 | 0.11 | 0.11 | 0.11 | 0.11 | |
| 4 | -2.25 | 4.76 | 0.00 | 0.00 | 0.11 | 0.11 | |
| 5 | -2.00 | 4.00 | 0.00 | 0.00 | 0.11 | 0.11 | |
| 7 | -1.50 | 2.83 | 0.14 | 0.14 | 0.25 | 0.25 | |
| 10 | -1.00 | 2.00 | 0.17 | 0.17 | 0.42 | 0.42 | |
| 14 | -0.50 | 1.41 | 0.37 | 0.37 | 0.79 | 0.79 | |
| 18 | 0.00 | 1.00 | 0.46 | 0.46 | 1.25 | 1.25 | |
| 25 | 0.50 | 0.71 | 0.35 | 0.35 | 1.60 | 1.60 | |
| 35 | 1.00 | 0.50 | 0.59 | 0.59 | 2.19 | 2.19 | |
| 45 | 1.50 | 0.35 | 1.52 | 1.52 | 3.71 | 3.71 | |
| 60 | 2.00 | 0.25 | 8.01 | 8.00 | 11.72 | 11.71 | |
| 80 | 2.50 | 0.18 | 50.83 | 50.77 | 62.55 | 62.48 | |
| 120 | 3.00 | 0.13 | 29.41 | 29.38 | 91.96 | 91.86 | |
| 170 | 3.50 | 0.09 | 3.13 | 3.13 | 95.09 | 94.99 | |
| 200 | 3.75 | 0.07 | 0.74 | 0.74 | 95.83 | 95.73 | |
| 230 | 4.00 | 0.06 | 0.22 | 0.22 | 96.05 | 95.95 | |
| | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| 3.50 | 2.87 | 2.71 | 2.38 | 2.13 | 2.04 | 1.58 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 2.33 | 0.20 | 0.57 | -2.96 | 21.01 | | |

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| Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration | | | | | | | |
| Sand Sources on the Atlantic OCS | | | | | | | |
| Sample Name: FL-BOEM-2015-VC08 #3 | | | | | | | |
| Analysis Date: 10-28-15 | | | | | | | |
| Analyzed By: SMT | | Northing (m): | | Coordinate System: | | Elevation (ft): | |
| 524,496 | | 3,210,546 | | UTM 17 | | -69.4 NAVD88 | |
| USCS: SP-SM | | Munsell: Wet - 5Y-4/1 Dry - 5Y-5/2 Washed - 5Y-7/1 | | Comments: | | | |
| Dry Weight (g): | Wash Weight (g): | Pan Retained (g): | Sieve Loss (%): | Fines (%): | Organics (%): | Carbonates (%): | Shell Hash (%): |
| 93.09 | 85.92 | 0.05 | 0.00 | #200 - 8.15 #230 - 7.74 | | 10 | |
| Sieve Number | Sieve Size (Phi) | Sieve Size (Millimeters) | Grams Retained | % Weight Retained | Cum. Grams Retained | C. % Weight Retained | |
| 3/4" | -4.25 | 19.03 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5/8" | -4.00 | 16.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7/16" | -3.50 | 11.31 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5/16" | -3.00 | 8.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3.5 | -2.50 | 5.66 | 0.64 | 0.69 | 0.64 | 0.69 | |
| 4 | -2.25 | 4.76 | 0.00 | 0.00 | 0.64 | 0.69 | |
| 5 | -2.00 | 4.00 | 0.17 | 0.18 | 0.81 | 0.87 | |
| 7 | -1.50 | 2.83 | 0.27 | 0.29 | 1.08 | 1.16 | |
| 10 | -1.00 | 2.00 | 0.49 | 0.53 | 1.57 | 1.69 | |
| 14 | -0.50 | 1.41 | 0.52 | 0.56 | 2.09 | 2.25 | |
| 18 | 0.00 | 1.00 | 0.53 | 0.57 | 2.62 | 2.82 | |
| 25 | 0.50 | 0.71 | 0.46 | 0.49 | 3.08 | 3.31 | |
| 35 | 1.00 | 0.50 | 0.57 | 0.61 | 3.65 | 3.92 | |
| 45 | 1.50 | 0.35 | 1.14 | 1.22 | 4.79 | 5.14 | |
| 60 | 2.00 | 0.25 | 4.65 | 5.00 | 9.44 | 10.14 | |
| 80 | 2.50 | 0.18 | 49.51 | 53.19 | 58.95 | 63.33 | |
| 120 | 3.00 | 0.13 | 21.95 | 23.58 | 80.90 | 86.91 | |
| 170 | 3.50 | 0.09 | 3.84 | 4.13 | 84.74 | 91.04 | |
| 200 | 3.75 | 0.07 | 0.75 | 0.81 | 85.49 | 91.85 | |
| 230 | 4.00 | 0.06 | 0.38 | 0.41 | 85.87 | 92.26 | |
| | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| | 2.94 | 2.75 | 2.37 | 2.14 | 2.06 | 1.44 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 2.27 | 0.21 | 0.8 | -3.55 | 20.12 | | |

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| Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration | | | | | | | |
| Sand Sources on the Atlantic OCS | | | | | | | |
| Sample Name: FL-BOEM-2015-VC08 #4 | | | | | | | |
| Analysis Date: 10-28-15 | | | | | | | |
| Analyzed By: SMT | | Northing (m): | | Coordinate System: | | Elevation (ft): | |
| 524,496 | | 3,210,546 | | UTM 17 | | -72.4 NAVD88 | |
| USCS: | | Munsell: | | Comments: | | | |
| SW-SM | | Wet - 5Y-4/1 Dry - 5Y-5/2 Washed - 5Y-8/1 | | | | | |
| Dry Weight (g): | Wash Weight (g): | Pan Retained (g): | Sieve Loss (%): | Fines (%): | Organics (%): | Carbonates (%): | Shell Hash (%): |
| 92.17 | 82.22 | 0.03 | 0.03 | #200 - 11.26 #230 - 10.87 | | 22 | |
| Sieve Number | Sieve Size (Phi) | Sieve Size (Millimeters) | Grams Retained | % Weight Retained | Cum. Grams Retained | C. % Weight Retained | |
| 3/4" | -4.25 | 19.03 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5/8" | -4.00 | 16.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7/16" | -3.50 | 11.31 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5/16" | -3.00 | 8.00 | 1.33 | 1.44 | 1.33 | 1.44 | |
| 3.5 | -2.50 | 5.66 | 2.47 | 2.68 | 3.80 | 4.12 | |
| 4 | -2.25 | 4.76 | 0.50 | 0.54 | 4.30 | 4.66 | |
| 5 | -2.00 | 4.00 | 1.07 | 1.16 | 5.37 | 5.82 | |
| 7 | -1.50 | 2.83 | 1.90 | 2.06 | 7.27 | 7.88 | |
| 10 | -1.00 | 2.00 | 1.34 | 1.45 | 8.61 | 9.33 | |
| 14 | -0.50 | 1.41 | 1.42 | 1.54 | 10.03 | 10.87 | |
| 18 | 0.00 | 1.00 | 1.07 | 1.16 | 11.10 | 12.03 | |
| 25 | 0.50 | 0.71 | 0.93 | 1.01 | 12.03 | 13.04 | |
| 35 | 1.00 | 0.50 | 1.60 | 1.74 | 13.63 | 14.78 | |
| 45 | 1.50 | 0.35 | 3.07 | 3.33 | 16.70 | 18.11 | |
| 60 | 2.00 | 0.25 | 6.09 | 6.61 | 22.79 | 24.72 | |
| 80 | 2.50 | 0.18 | 20.68 | 22.44 | 43.47 | 47.16 | |
| 120 | 3.00 | 0.13 | 30.50 | 33.09 | 73.97 | 80.25 | |
| 170 | 3.50 | 0.09 | 6.64 | 7.20 | 80.61 | 87.45 | |
| 200 | 3.75 | 0.07 | 1.19 | 1.29 | 81.80 | 88.74 | |
| 230 | 4.00 | 0.06 | 0.36 | 0.39 | 82.16 | 89.13 | |
| | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| | 3.26 | 2.92 | 2.54 | 2.01 | 1.18 | -2.18 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 1.86 | 0.28 | 1.62 | -1.84 | 5.37 | | |

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|--|------------------|--|-----------------|---|---------------------|----------------------|-----------------|
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| Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration | | | | | | | |
| Sand Sources on the Atlantic OCS | | | | | | | |
| Sample Name: FL-BOEM-2015-VC08 #5 | | | | | | | |
| Analysis Date: 10-28-15 | | | | | | | |
| Analyzed By: SMT | | Northing (m): | | Coordinate System: | | Elevation (ft): | |
| Easting (m): | | | | | | | |
| 524,496 | | 3,210,546 | | UTM 17 | | -77.6 NAVD88 | |
| USCS: | | Munsell: Wet - 5Y-5/1 Dry - 5Y-6/1 Washed - 5Y-7/1 | | Comments: | | | |
| SW-SM | | | | | | | |
| Dry Weight (g): | Wash Weight (g): | Pan Retained (g): | Sieve Loss (%): | Fines (%): #200 - 6.09 #230 - 5.85 | Organics (%): | Carbonates (%): | Shell Hash (%): |
| 93.13 | 87.71 | 0.03 | 0.00 | | | 40 | |
| Sieve Number | Sieve Size (Phi) | Sieve Size (Millimeters) | Grams Retained | % Weight Retained | Cum. Grams Retained | C. % Weight Retained | |
| 3/4" | -4.25 | 19.03 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5/8" | -4.00 | 16.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7/16" | -3.50 | 11.31 | 1.46 | 1.57 | 1.46 | 1.57 | |
| 5/16" | -3.00 | 8.00 | 0.52 | 0.56 | 1.98 | 2.13 | |
| 3.5 | -2.50 | 5.66 | 1.43 | 1.54 | 3.41 | 3.67 | |
| 4 | -2.25 | 4.76 | 0.73 | 0.78 | 4.14 | 4.45 | |
| 5 | -2.00 | 4.00 | 0.23 | 0.25 | 4.37 | 4.70 | |
| 7 | -1.50 | 2.83 | 0.94 | 1.01 | 5.31 | 5.71 | |
| 10 | -1.00 | 2.00 | 1.04 | 1.12 | 6.35 | 6.83 | |
| 14 | -0.50 | 1.41 | 1.13 | 1.21 | 7.48 | 8.04 | |
| 18 | 0.00 | 1.00 | 1.23 | 1.32 | 8.71 | 9.36 | |
| 25 | 0.50 | 0.71 | 1.52 | 1.63 | 10.23 | 10.99 | |
| 35 | 1.00 | 0.50 | 2.79 | 3.00 | 13.02 | 13.99 | |
| 45 | 1.50 | 0.35 | 6.21 | 6.67 | 19.23 | 20.66 | |
| 60 | 2.00 | 0.25 | 12.11 | 13.00 | 31.34 | 33.66 | |
| 80 | 2.50 | 0.18 | 29.46 | 31.63 | 60.80 | 65.29 | |
| 120 | 3.00 | 0.13 | 22.38 | 24.03 | 83.18 | 89.32 | |
| 170 | 3.50 | 0.09 | 3.84 | 4.12 | 87.02 | 93.44 | |
| 200 | 3.75 | 0.07 | 0.44 | 0.47 | 87.46 | 93.91 | |
| 230 | 4.00 | 0.06 | 0.22 | 0.24 | 87.68 | 94.15 | |
| | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| | 2.89 | 2.70 | 2.26 | 1.67 | 1.15 | -1.85 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 1.79 | 0.29 | 1.45 | -2.2 | 7.69 | | |

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| Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration | | | | | | | |
| Sand Sources on the Atlantic OCS | | | | | | | |
| Sample Name: FL-BOEM-2015-VC08 #6 | | | | | | | |
| Analysis Date: 10-28-15 | | | | | | | |
| Analyzed By: SMT | | Northing (m): | | Coordinate System: | | Elevation (ft): | |
| Easting (m): | | | | | | | |
| 524,496 | | 3,210,546 | | UTM 17 | | -79.7 NAVD88 | |
| USCS: | | Munsell: | | Comments: | | | |
| SW | | Wet - 5Y-4/1 Dry - 5Y-5/1 Washed - 5Y-6/1 | | | | | |
| Dry Weight (g): | Wash Weight (g): | Pan Retained (g): | Sieve Loss (%): | Fines (%): | Organics (%): | Carbonates (%): | Shell Hash (%): |
| 99.02 | 95.79 | 0.03 | 0.02 | #200 - 3.50 #230 - 3.33 | | 65 | |
| Sieve Number | Sieve Size (Phi) | Sieve Size (Millimeters) | Grams Retained | % Weight Retained | Cum. Grams Retained | C. % Weight Retained | |
| 3/4" | -4.25 | 19.03 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5/8" | -4.00 | 16.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7/16" | -3.50 | 11.31 | 1.41 | 1.42 | 1.41 | 1.42 | |
| 5/16" | -3.00 | 8.00 | 2.14 | 2.16 | 3.55 | 3.58 | |
| 3.5 | -2.50 | 5.66 | 2.05 | 2.07 | 5.60 | 5.65 | |
| 4 | -2.25 | 4.76 | 1.03 | 1.04 | 6.63 | 6.69 | |
| 5 | -2.00 | 4.00 | 1.00 | 1.01 | 7.63 | 7.70 | |
| 7 | -1.50 | 2.83 | 3.35 | 3.38 | 10.98 | 11.08 | |
| 10 | -1.00 | 2.00 | 5.13 | 5.18 | 16.11 | 16.26 | |
| 14 | -0.50 | 1.41 | 7.85 | 7.93 | 23.96 | 24.19 | |
| 18 | 0.00 | 1.00 | 7.81 | 7.89 | 31.77 | 32.08 | |
| 25 | 0.50 | 0.71 | 6.01 | 6.07 | 37.78 | 38.15 | |
| 35 | 1.00 | 0.50 | 6.39 | 6.45 | 44.17 | 44.60 | |
| 45 | 1.50 | 0.35 | 8.95 | 9.04 | 53.12 | 53.64 | |
| 60 | 2.00 | 0.25 | 11.36 | 11.47 | 64.48 | 65.11 | |
| 80 | 2.50 | 0.18 | 15.35 | 15.50 | 79.83 | 80.61 | |
| 120 | 3.00 | 0.13 | 12.52 | 12.64 | 92.35 | 93.25 | |
| 170 | 3.50 | 0.09 | 2.88 | 2.91 | 95.23 | 96.16 | |
| 200 | 3.75 | 0.07 | 0.34 | 0.34 | 95.57 | 96.50 | |
| 230 | 4.00 | 0.06 | 0.17 | 0.17 | 95.74 | 96.67 | |
| | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| 3.30 | 2.63 | 2.32 | 1.30 | -0.45 | -1.03 | -2.66 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 0.78 | 0.58 | 1.76 | -0.66 | 2.58 | | |