Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-13 @ 1 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
666,850	1,903,160	State Plane, FLE (U.S. Ft.)	-58.8 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10Y 5/1	#200 - 1.38 #230 - 1.30		15.67	11

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.01	0.01
#4	-2.25	4.75	0.07	0.08
#5	-2.00	4.00	0.12	0.20
#7	-1.50	2.80	0.17	0.37
#10	-1.00	2.00	0.71	1.07
#14	-0.50	1.40	1.11	2.18
#18	0.00	1.00	1.29	3.47
#25	0.50	0.71	2.17	5.64
#35	1.00	0.50	6.12	11.75
#45	1.50	0.36	11.95	23.71
#60	2.00	0.25	20.34	44.05
#80	2.50	0.18	37.09	81.14
#120	3.00	0.13	16.36	97.50
#170	3.50	0.09	1.06	98.56
#200	3.75	0.08	0.06	98.62
#230	4.00	0.06	0.08	98.70

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few fine to medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.92	2.59	2.42	2.08	1.53	1.18	0.35

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.88	0.27	2.08	0.24	0.81	-1.55	6.55

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-13 @ 5 ft

Analysis Date: 3/29/2019

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
666,850	1,903,160	State Plane, FLE (U.S. Ft.)	-62.8 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	10Y 5/1	#200 - 2.05 #230 - 2.03			20.3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.11	0.11
#4	-2.25	4.75	0.21	0.31
#5	-2.00	4.00	0.52	0.83
#7	-1.50	2.80	0.28	1.11
#10	-1.00	2.00	0.77	1.88
#14	-0.50	1.40	0.95	2.83
#18	0.00	1.00	1.05	3.88
#25	0.50	0.71	1.40	5.28
#35	1.00	0.50	3.52	8.81
#45	1.50	0.36	8.01	16.82
#60	2.00	0.25	17.59	34.40
#80	2.50	0.18	38.37	72.77
#120	3.00	0.13	23.11	95.89
#170	3.50	0.09	1.92	97.80
#200	3.75	0.08	0.14	97.95
#230	4.00	0.06	0.02	97.97

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.98	2.74	2.55	2.20	1.73	1.45	0.40

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.00	0.25	2.20	0.22	0.87	-2.21	9.77

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-14 @ 2 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
667,502	1,903,875	State Plane, FLE (U.S. Ft.)	-56.1 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	10Y 6/1	#200 - 1.54 #230 - 1.48		18.86	15.7

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.20	0.20
#5	-2.00	4.00	0.07	0.27
#7	-1.50	2.80	0.37	0.63
#10	-1.00	2.00	0.47	1.10
#14	-0.50	1.40	1.63	2.73
#18	0.00	1.00	1.94	4.67
#25	0.50	0.71	2.99	7.66
#35	1.00	0.50	6.87	14.53
#45	1.50	0.36	11.70	26.23
#60	2.00	0.25	20.25	46.48
#80	2.50	0.18	35.25	81.73
#120	3.00	0.13	15.42	97.15
#170	3.50	0.09	1.15	98.31
#200	3.75	0.08	0.16	98.46
#230	4.00	0.06	0.05	98.52

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little fine to medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.93	2.57	2.40	2.05	1.45	1.06	0.06

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.81	0.29	2.05	0.24	0.87	-1.45	5.85

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-15 @ 1 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,152	1,904,661	State Plane, FLE (U.S. Ft.)	-54.3 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	10Y 6/1	#200 - 1.55 #230 - 1.50			23

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.05	0.05
#5	-2.00	4.00	0.14	0.18
#7	-1.50	2.80	0.43	0.61
#10	-1.00	2.00	0.92	1.53
#14	-0.50	1.40	1.73	3.26
#18	0.00	1.00	2.78	6.04
#25	0.50	0.71	3.94	9.98
#35	1.00	0.50	7.04	17.01
#45	1.50	0.36	11.29	28.31
#60	2.00	0.25	20.63	48.94
#80	2.50	0.18	35.17	84.11
#120	3.00	0.13	13.55	97.66
#170	3.50	0.09	0.54	98.21
#200	3.75	0.08	0.24	98.45
#230	4.00	0.06	0.05	98.50

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.90	2.50	2.37	2.02	1.35	0.93	-0.19

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.74	0.30	2.02	0.25	0.91	-1.36	5.05

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-15 @ 4 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,152	1,904,661	State Plane, FLE (U.S. Ft.)	-57.3 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	10Y 6/1	#200 - 1.89 #230 - 1.86		23.97	26.6

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.22	0.22
#4	-2.25	4.75	0.51	0.73
#5	-2.00	4.00	0.18	0.92
#7	-1.50	2.80	0.34	1.26
#10	-1.00	2.00	1.03	2.29
#14	-0.50	1.40	1.93	4.22
#18	0.00	1.00	2.61	6.82
#25	0.50	0.71	4.07	10.89
#35	1.00	0.50	6.80	17.69
#45	1.50	0.36	10.40	28.09
#60	2.00	0.25	18.44	46.52
#80	2.50	0.18	35.44	81.96
#120	3.00	0.13	15.32	97.28
#170	3.50	0.09	0.74	98.02
#200	3.75	0.08	0.09	98.11
#230	4.00	0.06	0.03	98.14

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.93	2.57	2.40	2.05	1.35	0.88	-0.35

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.73	0.30	2.05	0.24	0.99	-1.61	6.07

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-15 @ 8 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,152	1,904,661	State Plane, FLE (U.S. Ft.)	-61.3 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	10Y 6/1	#200 - 1.52 #230 - 1.47			25.5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.11	0.11
#4	-2.25	4.75	0.18	0.29
#5	-2.00	4.00	0.24	0.53
#7	-1.50	2.80	0.40	0.93
#10	-1.00	2.00	0.83	1.76
#14	-0.50	1.40	1.34	3.10
#18	0.00	1.00	2.00	5.10
#25	0.50	0.71	2.90	8.00
#35	1.00	0.50	6.51	14.50
#45	1.50	0.36	10.40	24.90
#60	2.00	0.25	19.25	44.15
#80	2.50	0.18	39.72	83.87
#120	3.00	0.13	13.49	97.36
#170	3.50	0.09	0.98	98.34
#200	3.75	0.08	0.14	98.48
#230	4.00	0.06	0.05	98.53

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.91	2.50	2.39	2.07	1.50	1.07	-0.02

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.81	0.29	2.07	0.24	0.9	-1.71	6.89

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-15 @ 11 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,152	1,904,661	State Plane, FLE (U.S. Ft.)	-64.3 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10Y 4/1	#200 - 3.52 #230 - 3.37			12.6

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.13	0.13
#4	-2.25	4.75	0.07	0.20
#5	-2.00	4.00	0.04	0.24
#7	-1.50	2.80	0.13	0.37
#10	-1.00	2.00	0.19	0.56
#14	-0.50	1.40	0.23	0.79
#18	0.00	1.00	0.33	1.12
#25	0.50	0.71	0.39	1.52
#35	1.00	0.50	0.56	2.07
#45	1.50	0.36	1.11	3.19
#60	2.00	0.25	4.64	7.82
#80	2.50	0.18	30.51	38.33
#120	3.00	0.13	50.36	88.69
#170	3.50	0.09	6.88	95.57
#200	3.75	0.08	0.91	96.48
#230	4.00	0.06	0.16	96.63

SAND, poorly-graded, mostly fine-grained sand-sized quartz, few fine to medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.46	2.95	2.86	2.62	2.28	2.13	1.70

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.50	0.18	2.62	0.16	0.6	-3.57	25.42

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-18 @ 1 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
667,607	1,902,489	State Plane, FLE (U.S. Ft.)	-57.5 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	10Y 6/1	#200 - 1.30 #230 - 1.29			25.9

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.08	0.08
#5	-2.00	4.00	0.22	0.30
#7	-1.50	2.80	0.39	0.68
#10	-1.00	2.00	1.13	1.81
#14	-0.50	1.40	1.70	3.51
#18	0.00	1.00	1.84	5.35
#25	0.50	0.71	3.29	8.64
#35	1.00	0.50	7.68	16.32
#45	1.50	0.36	11.08	27.40
#60	2.00	0.25	17.88	45.28
#80	2.50	0.18	35.26	80.53
#120	3.00	0.13	16.93	97.47
#170	3.50	0.09	1.08	98.55
#200	3.75	0.08	0.15	98.70
#230	4.00	0.06	0.01	98.71

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.93	2.60	2.42	2.07	1.39	0.98	-0.10

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.80	0.29	2.07	0.24	0.92	-1.45	5.45

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-18 @ 6 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
667,607	1,902,489	State Plane, FLE (U.S. Ft.)	-62.5 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	10Y 6/1	#200 - 1.31 #230 - 1.26		16.69	20.5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.42	0.42
#3.5	-2.50	5.60	0.10	0.52
#4	-2.25	4.75	0.06	0.58
#5	-2.00	4.00	0.05	0.62
#7	-1.50	2.80	0.36	0.98
#10	-1.00	2.00	0.64	1.62
#14	-0.50	1.40	0.91	2.54
#18	0.00	1.00	1.07	3.61
#25	0.50	0.71	1.66	5.27
#35	1.00	0.50	4.01	9.28
#45	1.50	0.36	8.33	17.60
#60	2.00	0.25	17.49	35.09
#80	2.50	0.18	43.14	78.23
#120	3.00	0.13	18.63	96.86
#170	3.50	0.09	1.64	98.50
#200	3.75	0.08	0.19	98.69
#230	4.00	0.06	0.05	98.74

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.95	2.65	2.46	2.17	1.71	1.40	0.42

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.97	0.26	2.17	0.22	0.88	-2.6	13.59

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-19 @ 2 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,260	1,903,257	State Plane, FLE (U.S. Ft.)	-56.2 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	10Y 6/1	#200 - 2.03			19.9

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.38	0.38
#3.5	-2.50	5.60	0.00	0.38
#4	-2.25	4.75	0.04	0.43
#5	-2.00	4.00	0.05	0.48
#7	-1.50	2.80	0.42	0.89
#10	-1.00	2.00	0.68	1.57
#14	-0.50	1.40	1.25	2.82
#18	0.00	1.00	1.77	4.59
#25	0.50	0.71	2.56	7.15
#35	1.00	0.50	4.98	12.13
#45	1.50	0.36	9.15	21.28
#60	2.00	0.25	19.34	40.62
#80	2.50	0.18	40.74	81.36
#120	3.00	0.13	15.13	96.49
#170	3.50	0.09	1.27	97.77
#200	3.75	0.08	0.20	97.97

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.95	2.59	2.42	2.12	1.60	1.21	0.08

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.87	0.27	2.12	0.23	0.9	-2.19	10.54

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-20 @ 1 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,944	1,904,009	State Plane, FLE (U.S. Ft.)	-56.4 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	5Y 6/1	#200 - 1.87 #230 - 1.80		15.18	20.4

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.05	0.05
#4	-2.25	4.75	0.00	0.05
#5	-2.00	4.00	0.03	0.08
#7	-1.50	2.80	0.03	0.11
#10	-1.00	2.00	0.13	0.24
#14	-0.50	1.40	0.42	0.65
#18	0.00	1.00	0.90	1.55
#25	0.50	0.71	1.64	3.19
#35	1.00	0.50	3.06	6.25
#45	1.50	0.36	6.13	12.38
#60	2.00	0.25	16.90	29.28
#80	2.50	0.18	45.19	74.47
#120	3.00	0.13	22.07	96.54
#170	3.50	0.09	1.42	97.96
#200	3.75	0.08	0.17	98.13
#230	4.00	0.06	0.06	98.20

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.97	2.72	2.51	2.23	1.87	1.61	0.80

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.11	0.23	2.23	0.21	0.66	-1.79	8.71

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-20 @ 4 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,944	1,904,009	State Plane, FLE (U.S. Ft.)	-59.4 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	5Y 6/1	#200 - 1.63 #230 - 1.59			13.4

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.04	0.05
#5	-2.00	4.00	0.09	0.14
#7	-1.50	2.80	0.27	0.41
#10	-1.00	2.00	0.69	1.10
#14	-0.50	1.40	1.27	2.38
#18	0.00	1.00	1.60	3.97
#25	0.50	0.71	2.41	6.39
#35	1.00	0.50	4.48	10.87
#45	1.50	0.36	8.26	19.12
#60	2.00	0.25	19.97	39.09
#80	2.50	0.18	46.04	85.13
#120	3.00	0.13	11.66	96.80
#170	3.50	0.09	1.36	98.16
#200	3.75	0.08	0.22	98.37
#230	4.00	0.06	0.03	98.41

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.92	2.49	2.39	2.12	1.65	1.31	0.21

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.90	0.27	2.12	0.23	0.8	-1.8	7.35

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-20 @ 8 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,944	1,904,009	State Plane, FLE (U.S. Ft.)	-63.4 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	10Y 6/1	#200 - 1.96 #230 - 1.90			12.3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.22	0.22
#4	-2.25	4.75	0.26	0.48
#5	-2.00	4.00	0.33	0.81
#7	-1.50	2.80	0.60	1.40
#10	-1.00	2.00	0.78	2.18
#14	-0.50	1.40	1.25	3.43
#18	0.00	1.00	1.48	4.91
#25	0.50	0.71	2.19	7.10
#35	1.00	0.50	4.02	11.12
#45	1.50	0.36	7.12	18.24
#60	2.00	0.25	16.20	34.44
#80	2.50	0.18	43.58	78.02
#120	3.00	0.13	18.22	96.23
#170	3.50	0.09	1.53	97.76
#200	3.75	0.08	0.28	98.04
#230	4.00	0.06	0.06	98.10

SAND, poorly-graded, mostly fine-grained sand-sized quartz, few fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.97	2.66	2.47	2.18	1.71	1.34	0.02

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.94	0.26	2.18	0.22	0.92	-2.15	8.9

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-23 @ 1 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,366	1,901,850	State Plane, FLE (U.S. Ft.)	-53.5 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	5Y 6/1	#200 - 1.37 #230 - 1.35		13.83	19.2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.48	0.48
#4	-2.25	4.75	0.16	0.64
#5	-2.00	4.00	0.35	0.99
#7	-1.50	2.80	0.31	1.30
#10	-1.00	2.00	0.61	1.91
#14	-0.50	1.40	1.23	3.14
#18	0.00	1.00	1.66	4.80
#25	0.50	0.71	2.53	7.32
#35	1.00	0.50	4.75	12.08
#45	1.50	0.36	8.48	20.56
#60	2.00	0.25	17.87	38.43
#80	2.50	0.18	39.93	78.36
#120	3.00	0.13	18.97	97.33
#170	3.50	0.09	1.15	98.48
#200	3.75	0.08	0.15	98.63
#230	4.00	0.06	0.02	98.65

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	2.65	2.46	2.14	1.62	1.23	0.04

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.90	0.27	2.14	0.23	0.93	-2.11	9

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-23 @ 5 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,366	1,901,850	State Plane, FLE (U.S. Ft.)	-57.5 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	5Y 6/1	#200 - 0.88 #230 - 0.82			24.8

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.51	0.51
#3.5	-2.50	5.60	0.24	0.76
#4	-2.25	4.75	0.19	0.94
#5	-2.00	4.00	0.03	0.98
#7	-1.50	2.80	0.27	1.25
#10	-1.00	2.00	0.58	1.83
#14	-0.50	1.40	1.30	3.13
#18	0.00	1.00	1.52	4.65
#25	0.50	0.71	2.31	6.96
#35	1.00	0.50	4.52	11.48
#45	1.50	0.36	7.99	19.47
#60	2.00	0.25	17.69	37.16
#80	2.50	0.18	44.63	81.79
#120	3.00	0.13	16.04	97.83
#170	3.50	0.09	1.17	98.99
#200	3.75	0.08	0.13	99.12
#230	4.00	0.06	0.06	99.18

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.91	2.57	2.42	2.14	1.66	1.28	0.08

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.90	0.27	2.14	0.23	0.94	-2.56	12.53

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-23 @ 10 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,366	1,901,850	State Plane, FLE (U.S. Ft.)	-62.5 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	5Y 6/1	#200 - 1.79 #230 - 1.69			23.9

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.48	0.48
#4	-2.25	4.75	0.00	0.48
#5	-2.00	4.00	0.23	0.71
#7	-1.50	2.80	0.10	0.81
#10	-1.00	2.00	0.55	1.36
#14	-0.50	1.40	0.99	2.35
#18	0.00	1.00	1.57	3.92
#25	0.50	0.71	2.39	6.31
#35	1.00	0.50	5.16	11.47
#45	1.50	0.36	8.83	20.30
#60	2.00	0.25	18.26	38.56
#80	2.50	0.18	39.16	77.72
#120	3.00	0.13	18.81	96.53
#170	3.50	0.09	1.44	97.98
#200	3.75	0.08	0.24	98.21
#230	4.00	0.06	0.10	98.31

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.67	2.47	2.15	1.63	1.26	0.23

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.93	0.26	2.15	0.23	0.87	-2	9.14

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-24 @ 1 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,987	1,902,578	State Plane, FLE (U.S. Ft.)	-53.6 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	10YR 6/1	#200 - 2.04 #230 - 1.99			26.5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.37	0.37
#4	-2.25	4.75	0.13	0.50
#5	-2.00	4.00	0.02	0.52
#7	-1.50	2.80	0.21	0.73
#10	-1.00	2.00	0.59	1.32
#14	-0.50	1.40	1.22	2.55
#18	0.00	1.00	1.86	4.41
#25	0.50	0.71	3.16	7.57
#35	1.00	0.50	6.20	13.77
#45	1.50	0.36	9.88	23.65
#60	2.00	0.25	19.58	43.22
#80	2.50	0.18	41.21	84.44
#120	3.00	0.13	12.56	97.00
#170	3.50	0.09	0.84	97.84
#200	3.75	0.08	0.12	97.96
#230	4.00	0.06	0.05	98.01

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.92	2.49	2.39	2.08	1.53	1.11	0.09

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.82	0.28	2.08	0.24	0.87	-1.84	7.97

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-24 @ 5 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
668,987	1,902,578	State Plane, FLE (U.S. Ft.)	-57.6 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 2.17 #230 - 2.14		16.02	21.4

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.12	0.12
#4	-2.25	4.75	0.08	0.20
#5	-2.00	4.00	0.05	0.25
#7	-1.50	2.80	0.13	0.38
#10	-1.00	2.00	0.56	0.94
#14	-0.50	1.40	1.10	2.04
#18	0.00	1.00	1.55	3.60
#25	0.50	0.71	2.66	6.25
#35	1.00	0.50	5.63	11.89
#45	1.50	0.36	9.69	21.57
#60	2.00	0.25	19.44	41.01
#80	2.50	0.18	41.83	82.84
#120	3.00	0.13	13.88	96.72
#170	3.50	0.09	1.00	97.72
#200	3.75	0.08	0.11	97.83
#230	4.00	0.06	0.03	97.86

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	2.54	2.41	2.11	1.59	1.21	0.26

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.88	0.27	2.11	0.23	0.81	-1.72	7.35

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-25 @ 1 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
669,671	1,903,365	State Plane, FLE (U.S. Ft.)	-58.1 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	5Y 6/1	#200 - 1.42 #230 - 1.37			35.2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	1.89	1.89
#4	-2.25	4.75	0.00	1.89
#5	-2.00	4.00	0.18	2.07
#7	-1.50	2.80	1.22	3.29
#10	-1.00	2.00	1.54	4.84
#14	-0.50	1.40	2.52	7.36
#18	0.00	1.00	3.32	10.67
#25	0.50	0.71	5.21	15.88
#35	1.00	0.50	8.36	24.24
#45	1.50	0.36	9.40	33.64
#60	2.00	0.25	14.39	48.03
#80	2.50	0.18	34.70	82.73
#120	3.00	0.13	14.64	97.37
#170	3.50	0.09	1.05	98.42
#200	3.75	0.08	0.16	98.58
#230	4.00	0.06	0.05	98.63

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, some fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.92	2.54	2.39	2.03	1.04	0.51	-0.97

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.57	0.34	2.03	0.24	1.22	-1.56	5.47

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-25 @ 5 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
669,671	1,903,365	State Plane, FLE (U.S. Ft.)	-62.1 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	5Y 6/1	#200 - 2.08 #230 - 2.07		23.26	26.1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.55	0.55
#4	-2.25	4.75	0.00	0.55
#5	-2.00	4.00	0.26	0.80
#7	-1.50	2.80	0.56	1.36
#10	-1.00	2.00	1.00	2.36
#14	-0.50	1.40	1.92	4.28
#18	0.00	1.00	2.13	6.41
#25	0.50	0.71	2.65	9.07
#35	1.00	0.50	3.91	12.97
#45	1.50	0.36	6.10	19.07
#60	2.00	0.25	13.74	32.81
#80	2.50	0.18	42.86	75.67
#120	3.00	0.13	20.56	96.23
#170	3.50	0.09	1.50	97.72
#200	3.75	0.08	0.19	97.92
#230	4.00	0.06	0.01	97.93

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.97	2.70	2.49	2.20	1.72	1.25	-0.33

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.91	0.27	2.20	0.22	0.99	-2.06	7.93

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-28 @ 1 ft

Analysis Date: 3/29/2019

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
669,111	1,901,275	State Plane, FLE (U.S. Ft.)	-62.6 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	5Y 7/1	#200 - 1.22 #230 - 1.19			22.6

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.11	0.11
#3.5	-2.50	5.60	0.74	0.86
#4	-2.25	4.75	0.19	1.04
#5	-2.00	4.00	0.43	1.47
#7	-1.50	2.80	0.58	2.05
#10	-1.00	2.00	1.18	3.24
#14	-0.50	1.40	1.62	4.86
#18	0.00	1.00	1.92	6.78
#25	0.50	0.71	2.69	9.47
#35	1.00	0.50	5.26	14.73
#45	1.50	0.36	8.33	23.06
#60	2.00	0.25	16.69	39.75
#80	2.50	0.18	37.11	76.86
#120	3.00	0.13	20.34	97.20
#170	3.50	0.09	1.39	98.59
#200	3.75	0.08	0.19	98.78
#230	4.00	0.06	0.03	98.81

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.95	2.68	2.47	2.14	1.56	1.08	-0.46

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.83	0.28	2.14	0.23	1.06	-2.04	8.02

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19

Granularmetric Report

Project Name: Flagler HSDR
Flagler HSDR

Sample Name: VB-FC18-29 @ 1 ft

Analysis Date: 3/29/2019

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
669,747	1,901,972	State Plane, FLE (U.S. Ft.)	-59.7 NAVD88

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SW	5Y 5/1	#200 - 1.48 #230 - 1.44		19.52	17.3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.36	0.36
#3.5	-2.50	5.60	0.44	0.80
#4	-2.25	4.75	0.17	0.97
#5	-2.00	4.00	0.31	1.28
#7	-1.50	2.80	0.68	1.96
#10	-1.00	2.00	3.01	4.97
#14	-0.50	1.40	0.05	5.03
#18	0.00	1.00	1.87	6.89
#25	0.50	0.71	2.72	9.62
#35	1.00	0.50	5.13	14.75
#45	1.50	0.36	8.79	23.54
#60	2.00	0.25	17.65	41.18
#80	2.50	0.18	37.39	78.57
#120	3.00	0.13	18.62	97.19
#170	3.50	0.09	1.18	98.37
#200	3.75	0.08	0.15	98.52
#230	4.00	0.06	0.04	98.56

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	2.65	2.45	2.12	1.54	1.07	-0.75

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.80	0.29	2.12	0.23	1.08	-2.1	8.29

GRANULARMETRIC REPORT % FLAGLER HSDR - NAVD88 - WORKING.GPJ CESAJ 20171021.GDT 7/1/19