

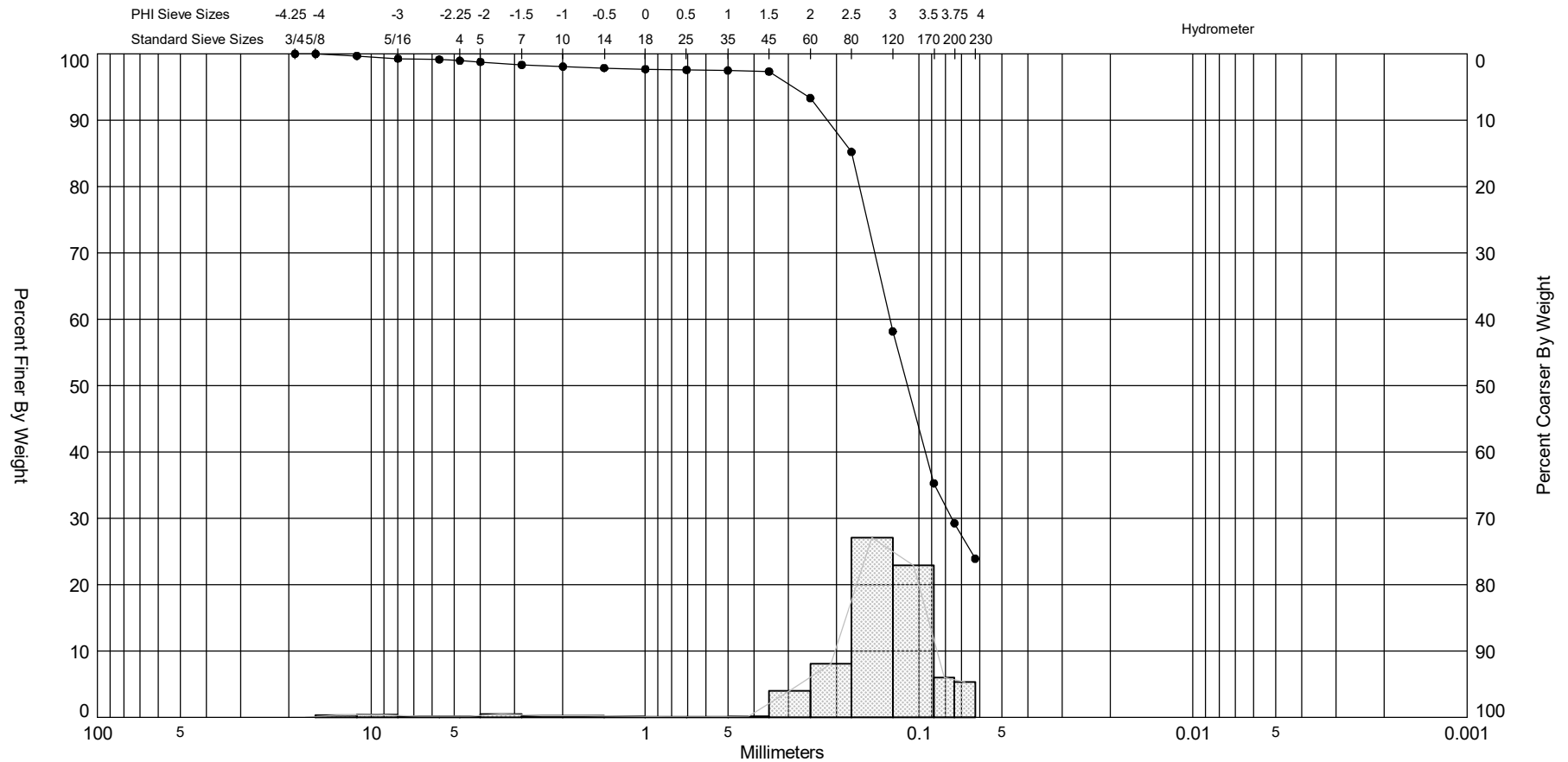
DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT McFaddin NWR Beach Ridge Restoration Jefferson County, Texas			9. SIZE AND TYPE OF BIT 3.0 In. 10. COORDINATE SYSTEM/DATUM Texas South Central HORIZONTAL NAD 1983 VERTICAL NAVD88	
2. BORING DESIGNATION JCVC-18-08		LOCATION COORDINATES (ft) X = 3,482,479 Y = 13,787,086	11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER APTIM SEAS VC-700 Vibracore ☐ MANUAL HAMMER	
3. DRILLING AGENCY APTIM		CONTRACTOR FILE NO.	12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD)	
4. NAME OF DRILLER Francis Stankiewicz			13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED			14. ELEVATION GROUND WATER	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			15. DATE BORING STARTED 05-23-18 18:20 COMPLETED 05-23-18 18:38	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			16. ELEVATION TOP OF BORING -28.5 Ft.	
8. TOTAL DEPTH OF BORING 19.0 Ft.			17. TOTAL RECOVERY FOR BORING 19.1 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR KM	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-28.5	0.0					
-33.0	4.5		CLAY, some rock, trace organics, rocks up to (0.5" x 0.25"), (1.25" x 0.75") rock @ 1.6', light olive brown (2.5Y-5/4), (CL).		T1	Sample #T1, Depth = 2.2' Ave. Field Vane (tsf): 0.67
-34.6	6.1		SAND, fine grained, quartz, trace clay, 1.5" clayey pocket @ 6.0', light olive brown (2.5Y-5/4), (SC).		1	Sample #1, Depth = 5.3' Mean (mm): 0.12, Phi Sorting: 0.38 Fines (230): 9.68% (SC)
-35.7	7.2		SAND, fine grained, quartz, some clay, little shell hash, trace shell fragments, shell fragments up to 1.0", (1.5" x 1.0") shell fragment @ 6.6', olive gray (5Y-5/2), (SC).		2	Sample #2, Depth = 6.6' Mean (mm): 0.19, Phi Sorting: 1.41 Fines (230): 32.59% (SC)
-37.9	9.4		Sandy CLAY, trace rock, rocks up to (0.5" x 0.25"), (1.25" x 0.75") rock @ 8.0', light olive brown (2.5Y-5/4), (CL).		3	Sample #3, Depth = 8.3' Mean (mm): 0.23, Phi Sorting: 2.37 Fines (230): 52.56% (CL)
-39.9	11.4		SAND, fine grained, quartz, some clay, light olive brown (2.5Y-5/3), (SC).		4	Sample #4, Depth = 10.4' Mean (mm): 0.13, Phi Sorting: 0.52 Fines (230): 21.82% (SC)
-41.2	12.7		SAND, fine grained, quartz, some clay, trace rock, trace shell hash, trace silt, rocks up to 0.5", olive brown (2.5Y-4/3), (SC).		5	Sample #5, Depth = 12.1' Mean (mm): 0.13, Phi Sorting: 1.32 Fines (230): 33.04% (SC)
-43.0	14.5		SAND, fine grained, quartz, trace clay, dark grayish brown (2.5Y-4/2), (SP-SC).		6	Sample #6, Depth = 13.6' Mean (mm): 0.18, Phi Sorting: 0.56 Fines (230): 5.97% (SP-SC)
-44.5	16.0		SAND, fine grained, quartz, little clay, dark grayish brown (2.5Y-4/2), (SC).		7	Sample #7, Depth = 15.2' Mean (mm): 0.12, Phi Sorting: 0.37 Fines (230): 13.99% (SC)
-47.1	18.6		SAND, fine grained, quartz, little clay, (0.5" x 0.25") shell fragment @ 16.5', clay increases with depth, dark grayish brown (2.5Y-4/2), (SC).		8	Sample #8, Depth = 17.3' Mean (mm): 0.13, Phi Sorting: 0.40 Fines (230): 19.77% (SC)
-47.6	19.1		Sandy CLAY, Bit Sample, dark grayish brown (2.5Y-4/2), (CL).			

MCFADDIN 2018 VC.GPJ 8/3/18

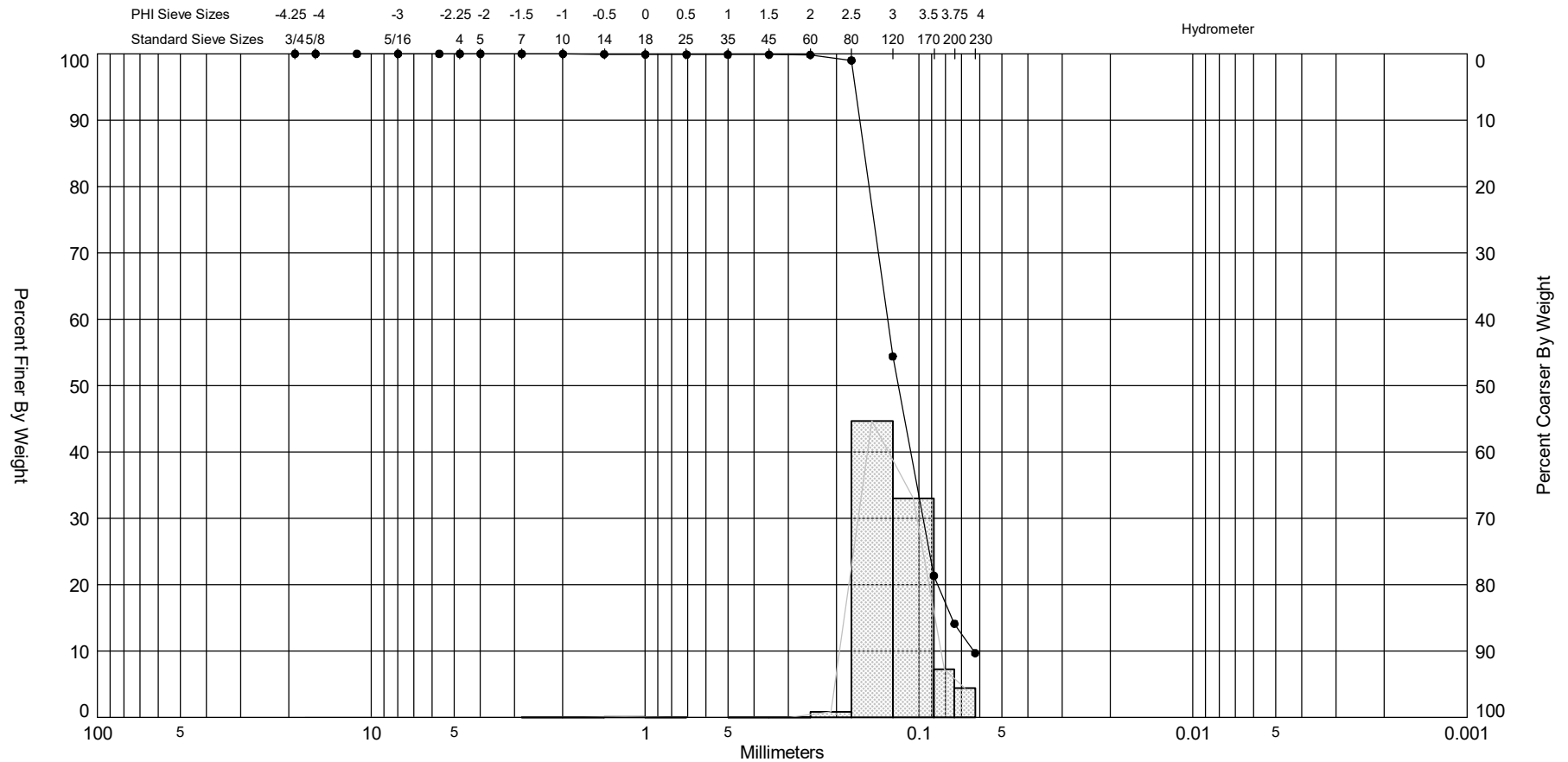
Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-08 COMP							
Analysis Date: 10-05-18							
Analyzed By: BF							
Easting (ft): 3,482,479		Northing (ft): 13,787,086		Coordinate System: Texas South Central		Elevation (ft):	
USCS: SC		Munsell:		Comments: COMPOSITE			
Dry Weight (g): 100.00	Wash Weight (g): 100.00	Pan Retained (g): 23.83	Sieve Loss (%): 0.08	Fines (%): #200 - 29.26 #230 - 23.91	Organics (%):	Carbonates (%):	Shell Hash (%):
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	0.30	0.30	0.30	0.30	
5/16"	-3.00	8.00	0.41	0.41	0.71	0.71	
3.5	-2.50	5.66	0.14	0.14	0.85	0.85	
4	-2.25	4.76	0.18	0.18	1.03	1.03	
5	-2.00	4.00	0.18	0.18	1.21	1.21	
7	-1.50	2.83	0.46	0.46	1.67	1.67	
10	-1.00	2.00	0.25	0.25	1.92	1.92	
14	-0.50	1.41	0.21	0.21	2.13	2.13	
18	0.00	1.00	0.17	0.17	2.30	2.30	
25	0.50	0.71	0.12	0.12	2.42	2.42	
35	1.00	0.50	0.09	0.09	2.51	2.51	
45	1.50	0.35	0.16	0.16	2.67	2.67	
60	2.00	0.25	4.00	4.00	6.67	6.67	
80	2.50	0.18	8.11	8.11	14.78	14.78	
120	3.00	0.13	27.05	27.05	41.83	41.83	
170	3.50	0.09	22.89	22.89	64.72	64.72	
200	3.75	0.07	6.02	6.02	70.74	70.74	
230	4.00	0.06	5.35	5.35	76.09	76.09	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
		3.95	3.18	2.69	2.52	1.79	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.78	0.15	1.04	-3.64	19.93		

MCFADDIN_COMPOSITE_20181008.GPJ 11/19/18



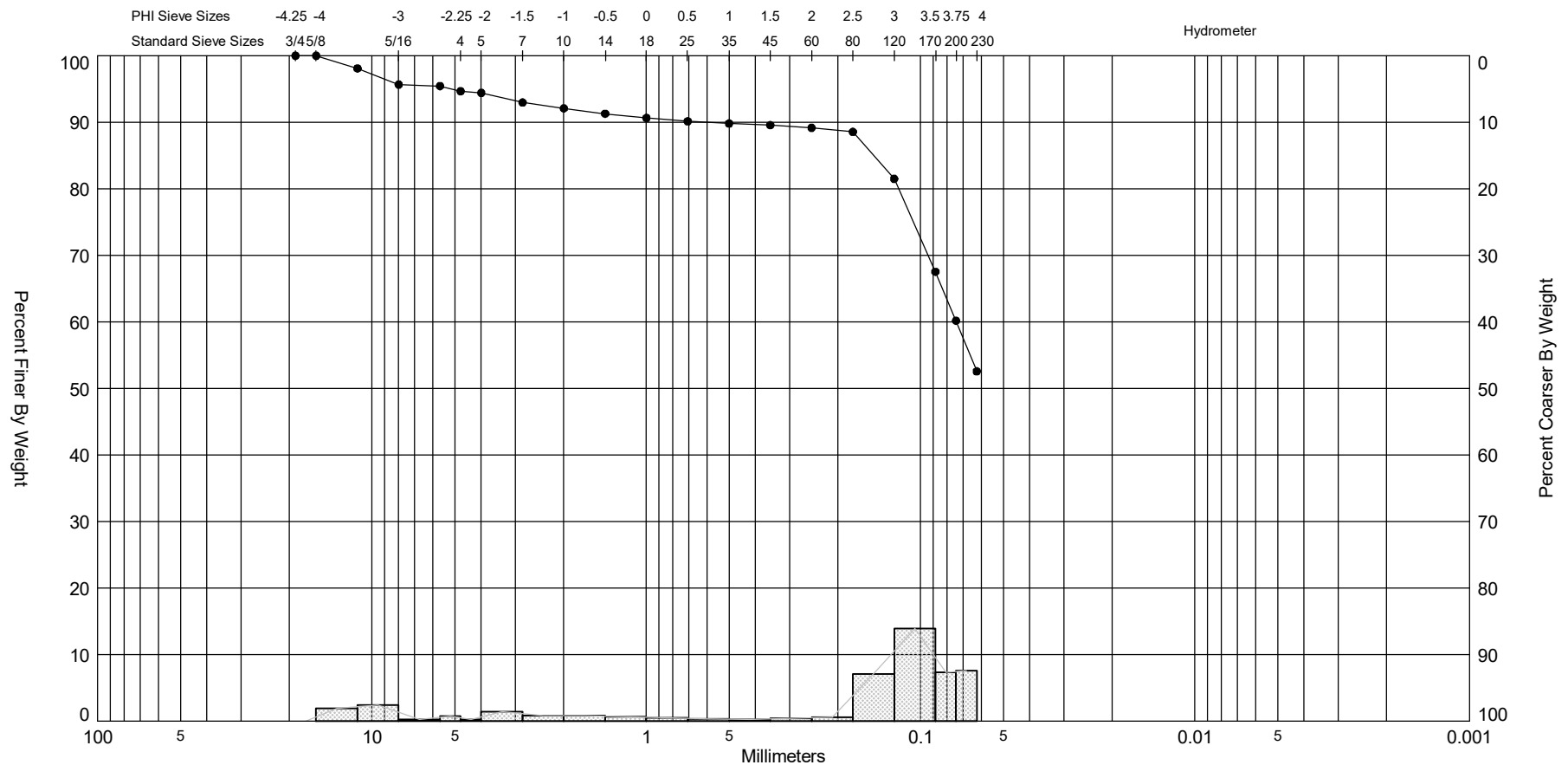
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-08 COMP	—●—		SC	#200 - 29.26 #230 - 23.91			3.18	2.78	-3.64	19.93	1.04	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments: COMPOSITE												Analysis Date:	10-05-18
Depths and elevations based on measured values												Analyzed By:	BF
						APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102						Easting (X, ft):	3,482,479
												Northing (Y, ft):	13,787,086
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD 88



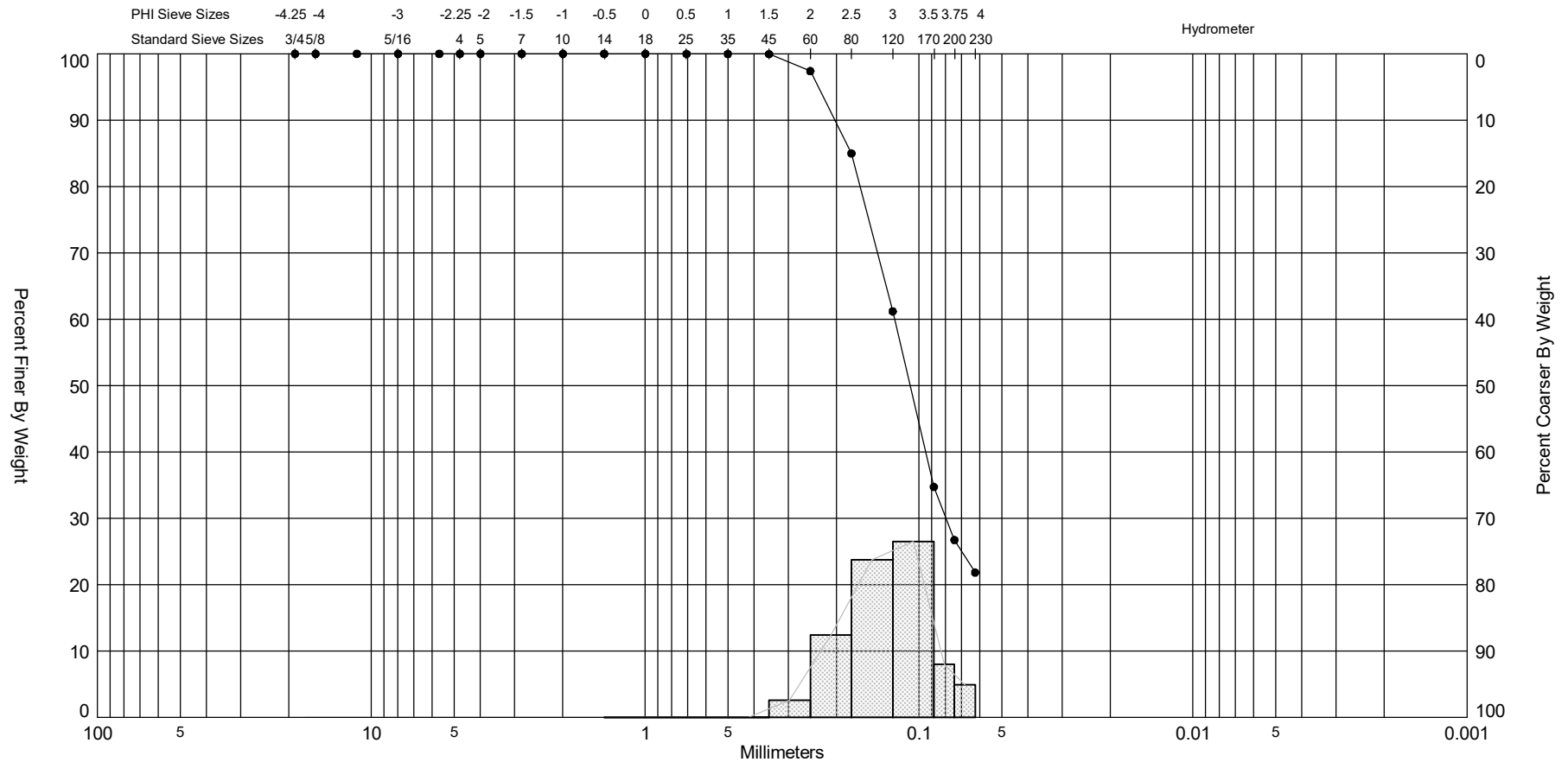
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-08 #1	—●—	-33.8	SC	#200 - 14.11 #230 - 9.68			3.07	3.05	-0.62	13.19	0.38	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-26-18
Depths and elevations based on measured values												Analyzed By:	SMT
							APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102					Easting (X, ft):	3,482,479
												Northing (Y, ft):	13,787,086
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

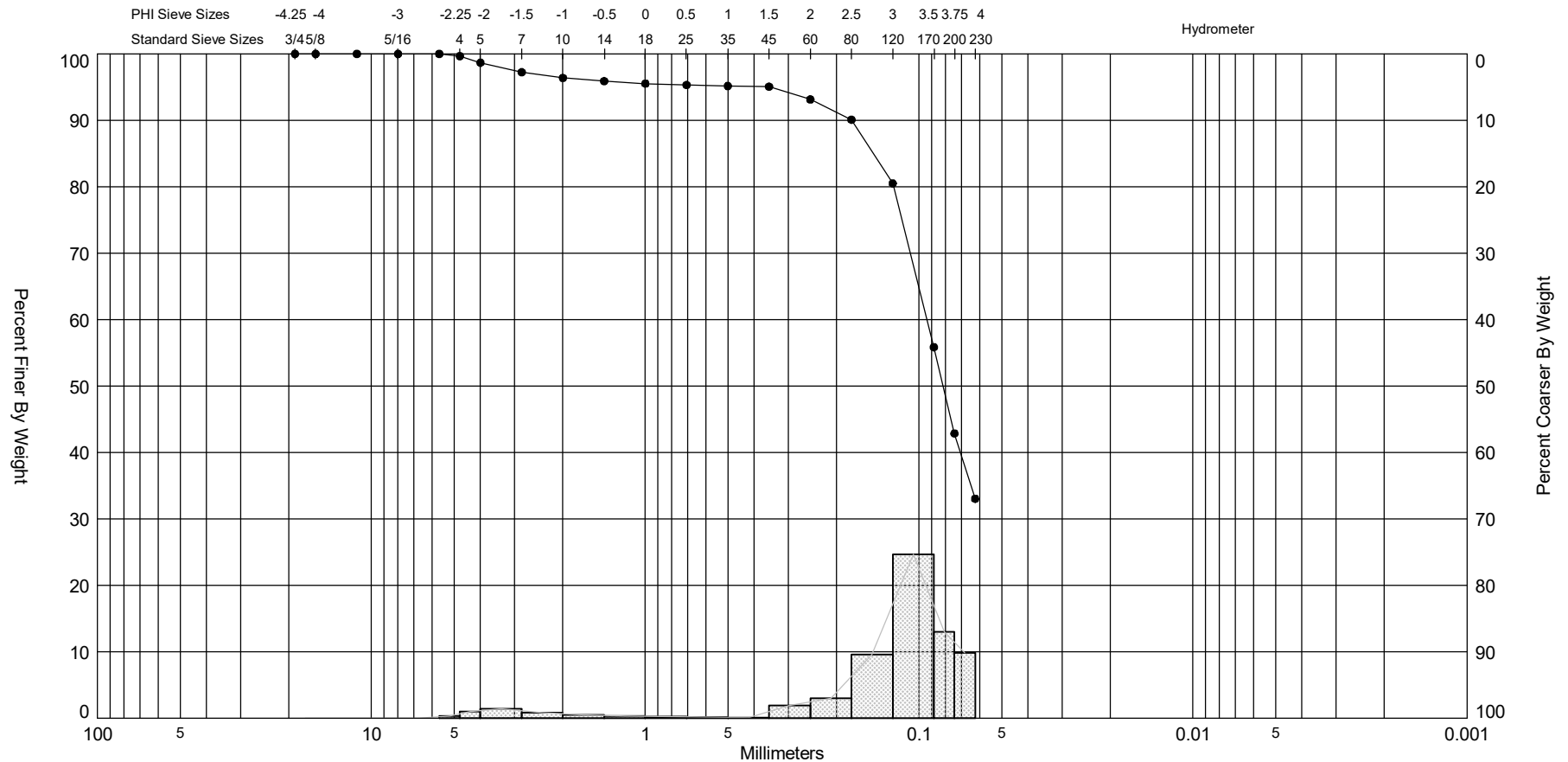
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-08 #3		-36.8	CL	#200 - 60.18 #230 - 52.56				2.13	-1.5	3.68	2.37	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-26-18
Depths and elevations based on measured values												Analyzed By:	RMH
						APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102						Easting (X, ft):	3,482,479
												Northing (Y, ft):	13,787,086
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

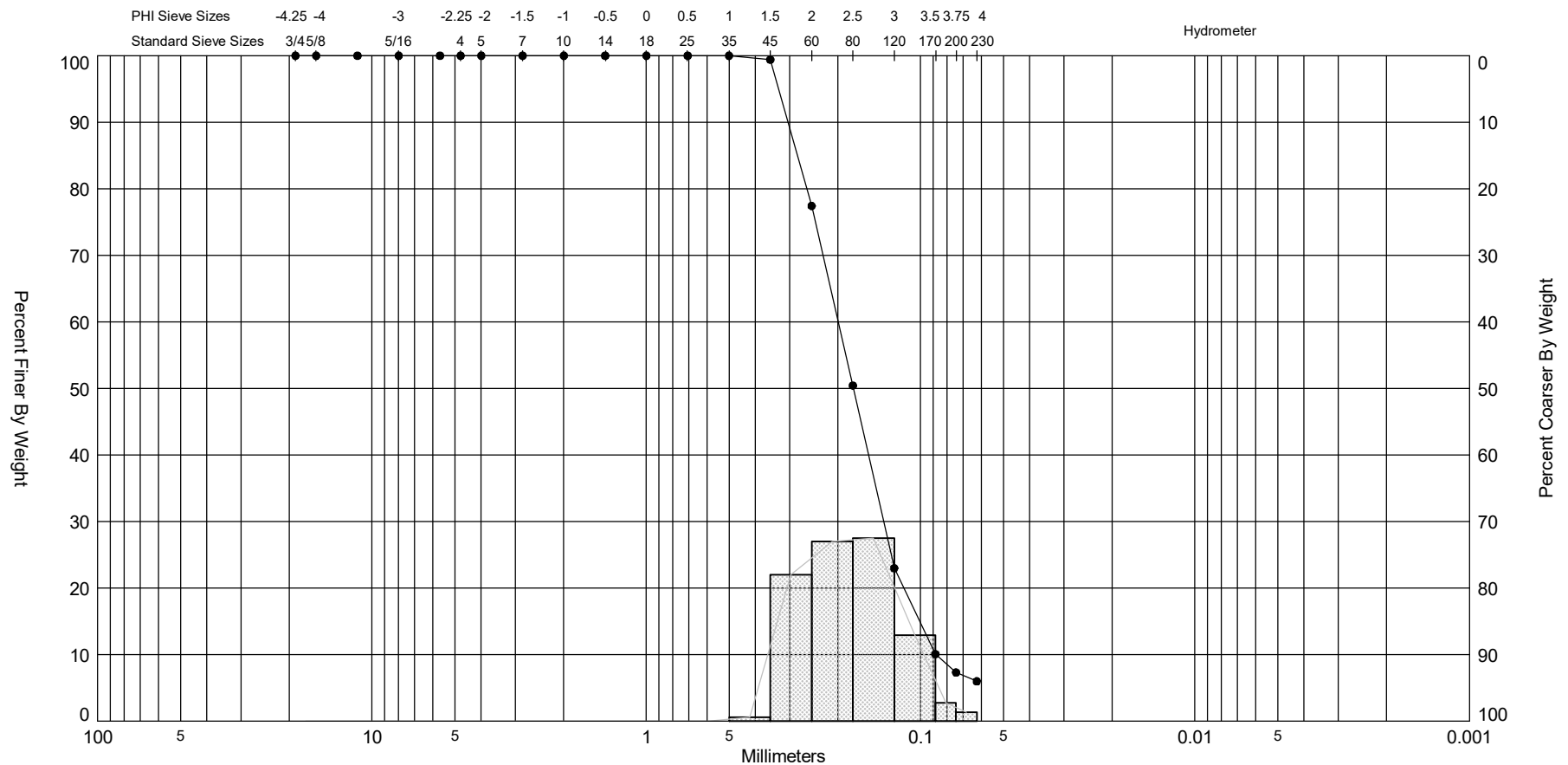
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-08 #4	—●—	-38.9	SC	#200 - 26.72 #230 - 21.82			3.21	2.97	-0.32	2.78	0.52	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-26-18
Depths and elevations based on measured values												Analyzed By:	SMT
							APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102					Easting (X, ft):	3,482,479
												Northing (Y, ft):	13,787,086
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88

MCFADDIN_2018_VC.GPJ 8/14/18



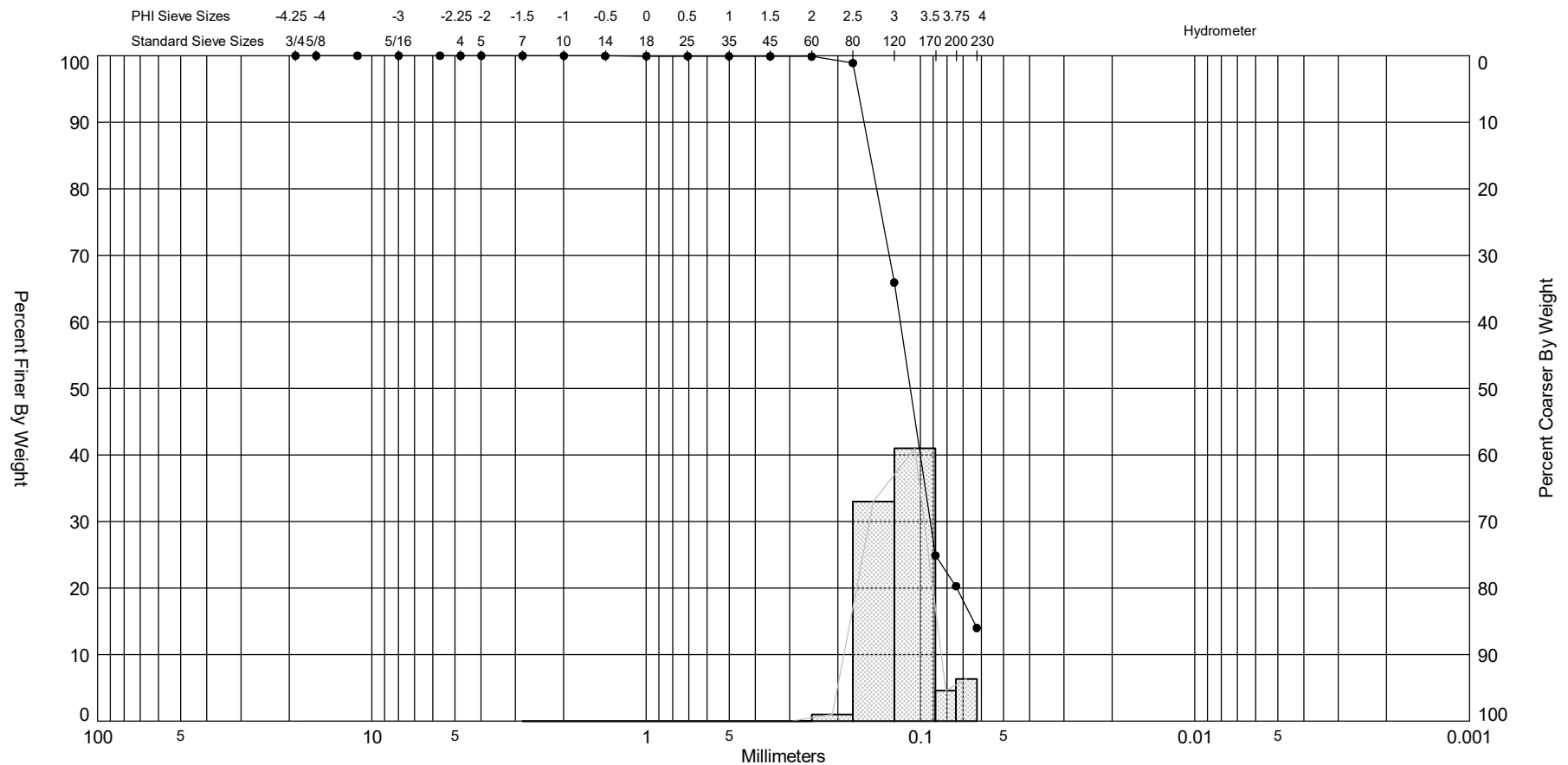
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-08 #5	—●—	-40.6	SC	#200 - 42.87 #230 - 33.04			3.61	2.91	-2.72	9.92	1.32	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-26-18
Depths and elevations based on measured values												Analyzed By:	SP
							APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102					Easting (X, ft):	3,482,479
												Northing (Y, ft):	13,787,086
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

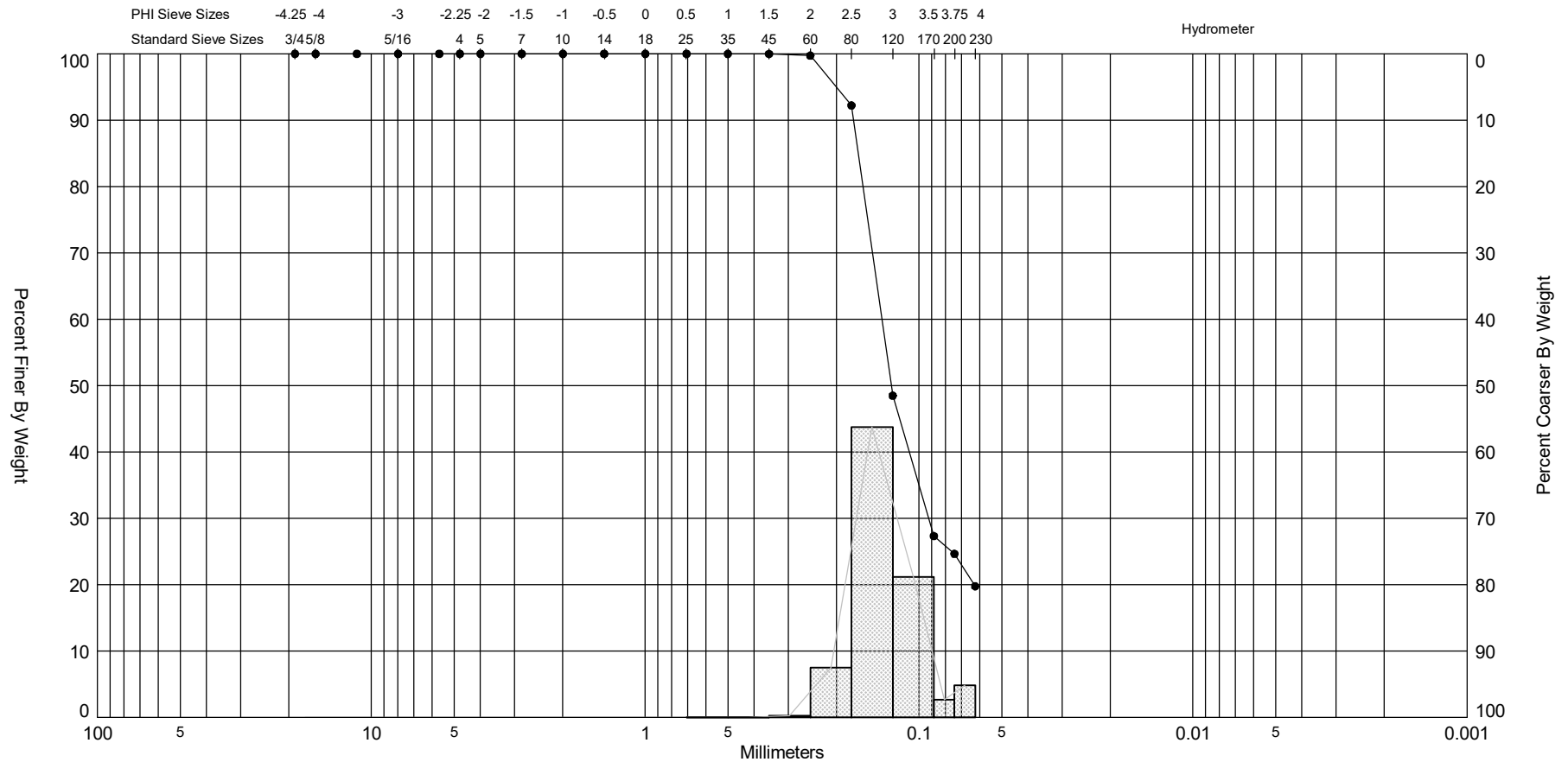
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-08 #6	—●—	-42.1	SP-SC	#200 - 7.30 #230 - 5.97			2.51	2.47	0.28	2.34	0.56	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-26-18
Depths and elevations based on measured values												Analyzed By:	SP
												Easting (X, ft):	3,482,479
												Northing (Y, ft):	13,787,086
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-08 #7	—●—	-43.7	SC	#200 - 20.29 #230 - 13.99			3.19	3.11	-0.59	11.64	0.37	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-26-18
Depths and elevations based on measured values												Analyzed By:	SMT
							APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102					Easting (X, ft):	3,482,479
												Northing (Y, ft):	13,787,086
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88

MCFADDIN_2018_VC.GPJ 8/14/18



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-08 #8	—●—	-45.8	SC	#200 - 24.64 #230 - 19.77			2.98	2.93	0.48	3.36	0.4	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-26-18
Depths and elevations based on measured values												Analyzed By:	SP
												Easting (X, ft):	3,482,479
												Northing (Y, ft):	13,787,086
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88

APTIM
2481 NW Boca Raton Blvd.
Boca Raton, FL 33431
ph (561) 391-8102

Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-08 #1							
Analysis Date: 06-26-18							
Analyzed By: SMT							
Easting (ft): 3,482,479		Northing (ft): 13,787,086		Coordinate System: Texas South Central		Elevation (ft): -33.8 NAVD88	
USCS: SC		Munsell: Wet - 2.5Y-5/4 Dry - 2.5Y-7/3 Washed - 2.5Y-7/2		Comments:			
Dry Weight (g): 96.88	Wash Weight (g): 90.47	Pan Retained (g): 2.90	Sieve Loss (%): 0.07	Fines (%): #200 - 14.11 #230 - 9.68	Organics (%):	Carbonates (%):	Shell Hash (%):
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	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.00	0.00	0.00	0.00	
5	-2.00	4.00	0.00	0.00	0.00	0.00	
7	-1.50	2.83	0.00	0.00	0.00	0.00	
10	-1.00	2.00	0.02	0.02	0.02	0.02	
14	-0.50	1.41	0.03	0.03	0.05	0.05	
18	0.00	1.00	0.05	0.05	0.10	0.10	
25	0.50	0.71	0.01	0.01	0.11	0.11	
35	1.00	0.50	0.00	0.00	0.11	0.11	
45	1.50	0.35	0.01	0.01	0.12	0.12	
60	2.00	0.25	0.03	0.03	0.15	0.15	
80	2.50	0.18	0.81	0.84	0.96	0.99	
120	3.00	0.13	43.24	44.63	44.20	45.62	
170	3.50	0.09	32.01	33.04	76.21	78.66	
200	3.75	0.07	7.00	7.23	83.21	85.89	
230	4.00	0.06	4.29	4.43	87.50	90.32	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	3.68	3.44	3.07	2.77	2.67	2.54	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.05	0.12	0.38	-0.62	13.19		

Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-08 #2							
Analysis Date: 06-26-18							
Analyzed By: SMT							
Easting (ft): 3,482,479		Northing (ft): 13,787,086		Coordinate System: Texas South Central		Elevation (ft): -35.1 NAVD88	
USCS: SC		Munsell: Wet - 5Y-5/2 Dry - 5Y-7/1 Washed - 5Y-7/1		Comments:			
Dry Weight (g): 93.20	Wash Weight (g): 66.33	Pan Retained (g): 3.38	Sieve Loss (%): 0.12	Fines (%): #200 - 36.68 #230 - 32.59	Organics (%):	Carbonates (%):	Shell Hash (%):
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	0.34	0.36	0.34	0.36	
3.5	-2.50	5.66	1.30	1.39	1.64	1.75	
4	-2.25	4.76	0.29	0.31	1.93	2.06	
5	-2.00	4.00	0.57	0.61	2.50	2.67	
7	-1.50	2.83	1.13	1.21	3.63	3.88	
10	-1.00	2.00	0.39	0.42	4.02	4.30	
14	-0.50	1.41	0.37	0.40	4.39	4.70	
18	0.00	1.00	0.30	0.32	4.69	5.02	
25	0.50	0.71	0.25	0.27	4.94	5.29	
35	1.00	0.50	0.18	0.19	5.12	5.48	
45	1.50	0.35	0.41	0.44	5.53	5.92	
60	2.00	0.25	6.04	6.48	11.57	12.40	
80	2.50	0.18	11.21	12.03	22.78	24.43	
120	3.00	0.13	19.83	21.28	42.61	45.71	
170	3.50	0.09	12.12	13.00	54.73	58.71	
200	3.75	0.07	4.30	4.61	59.03	63.32	
230	4.00	0.06	3.81	4.09	62.84	67.41	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
			3.17	2.51	2.15	-0.03	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.41	0.19	1.41	-2.39	8.71		

Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-08 #3							
Analysis Date: 06-26-18							
Analyzed By: RMH							
Easting (ft): 3,482,479		Northing (ft): 13,787,086		Coordinate System: Texas South Central		Elevation (ft): -36.8 NAVD88	
USCS: CL		Munsell: Wet - 2.5Y-5/4 Dry - 2.5Y-6/4 Washed - 2.5Y-7/2		Comments:			
Dry Weight (g): 93.49	Wash Weight (g): 50.02	Pan Retained (g): 5.56	Sieve Loss (%): 0.12	Fines (%): #200 - 60.18 #230 - 52.56	Organics (%):	Carbonates (%):	Shell Hash (%):
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	1.78	1.90	1.78	1.90	
5/16"	-3.00	8.00	2.28	2.44	4.06	4.34	
3.5	-2.50	5.66	0.20	0.21	4.26	4.55	
4	-2.25	4.76	0.73	0.78	4.99	5.33	
5	-2.00	4.00	0.24	0.26	5.23	5.59	
7	-1.50	2.83	1.35	1.44	6.58	7.03	
10	-1.00	2.00	0.81	0.87	7.39	7.90	
14	-0.50	1.41	0.76	0.81	8.15	8.71	
18	0.00	1.00	0.61	0.65	8.76	9.36	
25	0.50	0.71	0.47	0.50	9.23	9.86	
35	1.00	0.50	0.32	0.34	9.55	10.20	
45	1.50	0.35	0.22	0.24	9.77	10.44	
60	2.00	0.25	0.36	0.39	10.13	10.83	
80	2.50	0.18	0.58	0.62	10.71	11.45	
120	3.00	0.13	6.60	7.06	17.31	18.51	
170	3.50	0.09	13.04	13.95	30.35	32.46	
200	3.75	0.07	6.88	7.36	37.23	39.82	
230	4.00	0.06	7.12	7.62	44.35	47.44	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
				3.23	2.82	-2.36	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.13	0.23	2.37	-1.5	3.68		

Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-08 #4							
Analysis Date: 06-26-18							
Analyzed By: SMT							
Easting (ft): 3,482,479		Northing (ft): 13,787,086		Coordinate System: Texas South Central		Elevation (ft): -38.9 NAVD88	
USCS: SC		Munsell: Wet - 2.5Y-5/3 Dry - 2.5Y-6/3 Washed - 2.5Y-7/2		Comments:			
Dry Weight (g): 94.62	Wash Weight (g): 75.70	Pan Retained (g): 1.59	Sieve Loss (%): 0.14	Fines (%): #200 - 26.72 #230 - 21.82	Organics (%):	Carbonates (%):	Shell Hash (%):
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	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.00	0.00	0.00	0.00	
5	-2.00	4.00	0.00	0.00	0.00	0.00	
7	-1.50	2.83	0.00	0.00	0.00	0.00	
10	-1.00	2.00	0.00	0.00	0.00	0.00	
14	-0.50	1.41	0.00	0.00	0.00	0.00	
18	0.00	1.00	0.01	0.01	0.01	0.01	
25	0.50	0.71	0.01	0.01	0.02	0.02	
35	1.00	0.50	0.01	0.01	0.03	0.03	
45	1.50	0.35	0.01	0.01	0.04	0.04	
60	2.00	0.25	2.43	2.57	2.47	2.61	
80	2.50	0.18	11.74	12.41	14.21	15.02	
120	3.00	0.13	22.51	23.79	36.72	38.81	
170	3.50	0.09	25.05	26.47	61.77	65.28	
200	3.75	0.07	7.57	8.00	69.34	73.28	
230	4.00	0.06	4.64	4.90	73.98	78.18	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
		3.84	3.21	2.71	2.52	2.10	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.97	0.13	0.52	-0.32	2.78		

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Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-08 #5							
Analysis Date: 06-26-18							
Analyzed By: SP							
Easting (ft): 3,482,479		Northing (ft): 13,787,086		Coordinate System: Texas South Central		Elevation (ft): -40.6 NAVD88	
USCS: SC		Munsell: Wet - 2.5Y-4/3 Dry - 2.5Y-6/3 Washed - 2.5Y-7/2		Comments:			
Dry Weight (g): 93.67	Wash Weight (g): 70.46	Pan Retained (g): 7.66	Sieve Loss (%): 0.06	Fines (%): #200 - 42.87 #230 - 33.04	Organics (%):	Carbonates (%):	Shell Hash (%):
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	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.31	0.33	0.31	0.33	
5	-2.00	4.00	0.93	0.99	1.24	1.32	
7	-1.50	2.83	1.35	1.44	2.59	2.76	
10	-1.00	2.00	0.81	0.86	3.40	3.62	
14	-0.50	1.41	0.45	0.48	3.85	4.10	
18	0.00	1.00	0.34	0.36	4.19	4.46	
25	0.50	0.71	0.21	0.22	4.40	4.68	
35	1.00	0.50	0.14	0.15	4.54	4.83	
45	1.50	0.35	0.10	0.11	4.64	4.94	
60	2.00	0.25	1.80	1.92	6.44	6.86	
80	2.50	0.18	2.85	3.04	9.29	9.90	
120	3.00	0.13	8.97	9.58	18.26	19.48	
170	3.50	0.09	23.10	24.66	41.36	44.14	
200	3.75	0.07	12.17	12.99	53.53	57.13	
230	4.00	0.06	9.21	9.83	62.74	66.96	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
			3.61	3.11	2.82	1.52	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.91	0.13	1.32	-2.72	9.92		

Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-08 #6							
Analysis Date: 06-26-18							
Analyzed By: SP							
Easting (ft): 3,482,479		Northing (ft): 13,787,086		Coordinate System: Texas South Central		Elevation (ft): -42.1 NAVD88	
USCS: SP-SC		Munsell: Wet - 2.5Y-4/2 Dry - 2.5Y-6/2 Washed - 2.5Y-7/2		Comments:			
Dry Weight (g): 96.84	Wash Weight (g): 91.24	Pan Retained (g): 0.16	Sieve Loss (%): 0.02	Fines (%): #200 - 7.30 #230 - 5.97	Organics (%):	Carbonates (%):	Shell Hash (%):
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	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.00	0.00	0.00	0.00	
5	-2.00	4.00	0.00	0.00	0.00	0.00	
7	-1.50	2.83	0.00	0.00	0.00	0.00	
10	-1.00	2.00	0.00	0.00	0.00	0.00	
14	-0.50	1.41	0.00	0.00	0.00	0.00	
18	0.00	1.00	0.00	0.00	0.00	0.00	
25	0.50	0.71	0.00	0.00	0.00	0.00	
35	1.00	0.50	0.00	0.00	0.00	0.00	
45	1.50	0.35	0.58	0.60	0.58	0.60	
60	2.00	0.25	21.28	21.97	21.86	22.57	
80	2.50	0.18	26.14	26.99	48.00	49.56	
120	3.00	0.13	26.60	27.47	74.60	77.03	
170	3.50	0.09	12.50	12.91	87.10	89.94	
200	3.75	0.07	2.67	2.76	89.77	92.70	
230	4.00	0.06	1.29	1.33	91.06	94.03	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	3.27	2.96	2.51	2.05	1.85	1.60	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.47	0.18	0.56	0.28	2.34		

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Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-08 #7							
Analysis Date: 06-26-18							
Analyzed By: SMT							
Easting (ft): 3,482,479		Northing (ft): 13,787,086		Coordinate System: Texas South Central		Elevation (ft): -43.7 NAVD88	
USCS: SC		Munsell: Wet - 2.5Y-4/2 Dry - 2.5Y-6/2 Washed - 2.5Y-7/1		Comments:			
Dry Weight (g): 92.11	Wash Weight (g): 80.63	Pan Retained (g): 1.31	Sieve Loss (%): 0.10	Fines (%): #200 - 20.29 #230 - 13.99	Organics (%):	Carbonates (%):	Shell Hash (%):
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	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.00	0.00	0.00	0.00	
5	-2.00	4.00	0.00	0.00	0.00	0.00	
7	-1.50	2.83	0.00	0.00	0.00	0.00	
10	-1.00	2.00	0.02	0.02	0.02	0.02	
14	-0.50	1.41	0.02	0.02	0.04	0.04	
18	0.00	1.00	0.01	0.01	0.05	0.05	
25	0.50	0.71	0.01	0.01	0.06	0.06	
35	1.00	0.50	0.01	0.01	0.07	0.07	
45	1.50	0.35	0.01	0.01	0.08	0.08	
60	2.00	0.25	0.04	0.04	0.12	0.12	
80	2.50	0.18	0.90	0.98	1.02	1.10	
120	3.00	0.13	30.39	32.99	31.41	34.09	
170	3.50	0.09	37.77	41.01	69.18	75.10	
200	3.75	0.07	4.25	4.61	73.43	79.71	
230	4.00	0.06	5.80	6.30	79.23	86.01	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	3.92	3.50	3.19	2.86	2.73	2.56	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.11	0.12	0.37	-0.59	11.64		

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Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-08 #8							
Analysis Date: 06-26-18							
Analyzed By: SP							
Easting (ft): 3,482,479		Northing (ft): 13,787,086		Coordinate System: Texas South Central		Elevation (ft): -45.8 NAVD88	
USCS: SC		Munsell: Wet - 2.5Y-4/2 Dry - 2.5Y-6/2 Washed - 2.5Y-7/2		Comments:			
Dry Weight (g): 95.97	Wash Weight (g): 78.74	Pan Retained (g): 1.69	Sieve Loss (%): 0.05	Fines (%): #200 - 24.64 #230 - 19.77	Organics (%):	Carbonates (%):	Shell Hash (%):
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	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.00	0.00	0.00	0.00	
5	-2.00	4.00	0.00	0.00	0.00	0.00	
7	-1.50	2.83	0.00	0.00	0.00	0.00	
10	-1.00	2.00	0.00	0.00	0.00	0.00	
14	-0.50	1.41	0.00	0.00	0.00	0.00	
18	0.00	1.00	0.00	0.00	0.00	0.00	
25	0.50	0.71	0.00	0.00	0.00	0.00	
35	1.00	0.50	0.01	0.01	0.01	0.01	
45	1.50	0.35	0.01	0.01	0.02	0.02	
60	2.00	0.25	0.25	0.26	0.27	0.28	
80	2.50	0.18	7.20	7.50	7.47	7.78	
120	3.00	0.13	41.99	43.75	49.46	51.53	
170	3.50	0.09	20.30	21.15	69.76	72.68	
200	3.75	0.07	2.57	2.68	72.33	75.36	
230	4.00	0.06	4.67	4.87	77.00	80.23	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
		3.72	2.98	2.70	2.59	2.31	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.93	0.13	0.4	0.48	3.36		

MCFADDIN_2018_VC.GPJ 8/14/18



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-08
0.0' - 2.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-08
2.0' - 4.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-08
4.0' - 6.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-08
6.0' - 8.0'





MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-08
8.0'-10.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-08
10.0'-12.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-08
12.0'-14.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-08
14.0'-16.0'





MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-08
16.0'-18.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-08
18.0'-19.1'

