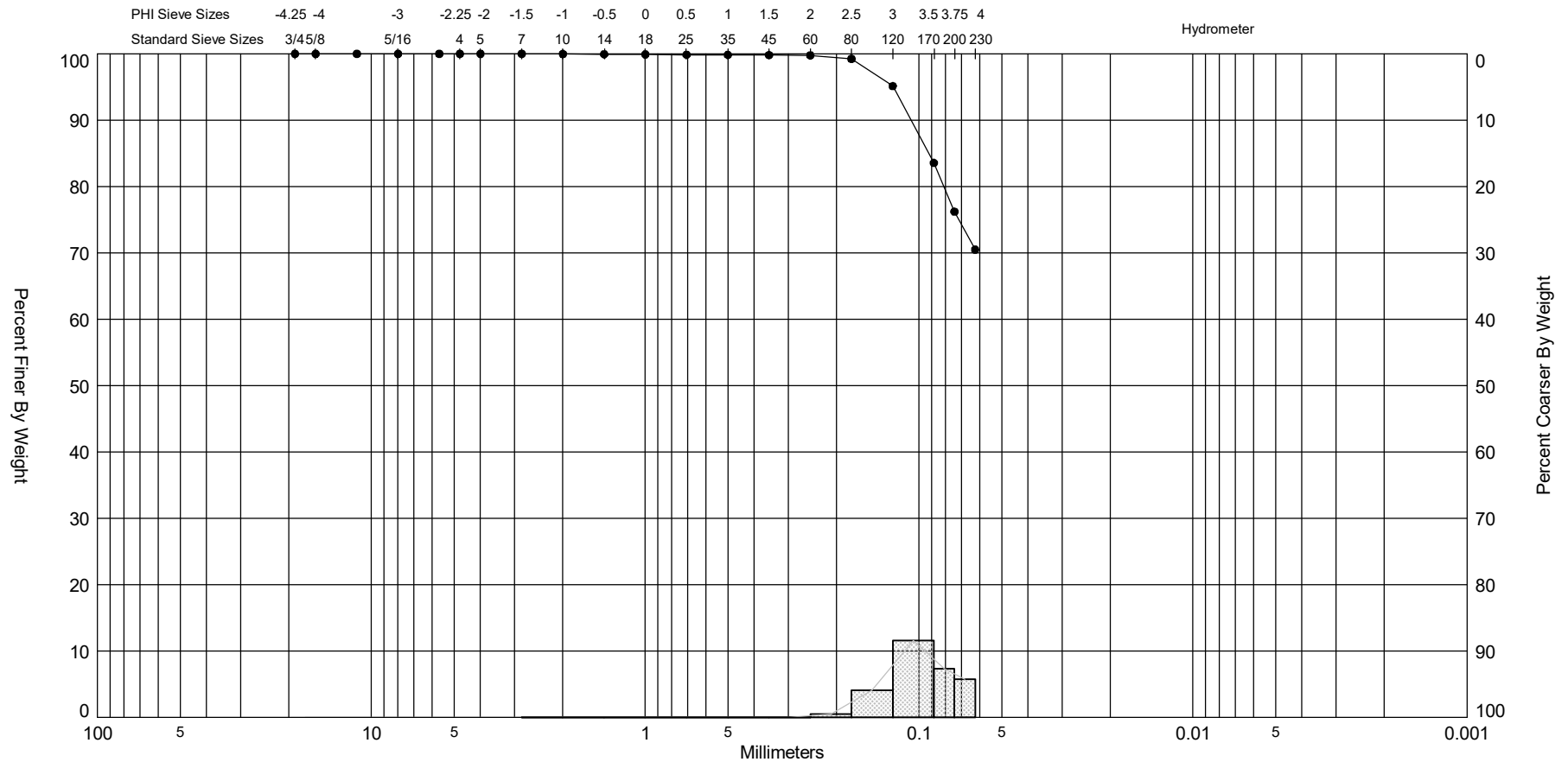


DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT McFaddin NWR Beach Ridge Restoration Jefferson County, Texas			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION JCVC-18-25			10. COORDINATE SYSTEM/DATUM Texas South Central	
3. DRILLING AGENCY APTIM			11. MANUFACTURER'S DESIGNATION OF DRILL APTIM SEAS VC-700 Vibracore	
4. NAME OF DRILLER Francis Stankiewicz			☐ AUTO HAMMER ☐ MANUAL HAMMER	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED			12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD)	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			13. TOTAL NUMBER CORE BOXES	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			14. ELEVATION GROUND WATER	
8. TOTAL DEPTH OF BORING 14.2 Ft.			15. DATE BORING 05-18-18 11:48 COMPLETED 05-18-18 11:58	
			16. ELEVATION TOP OF BORING -26.2 Ft.	
			17. TOTAL RECOVERY FOR BORING 18.5 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
-26.2	0.0					
-27.8	1.6		CLAY, some sand, trace organics, trace shell hash, olive brown (2.5Y-4/4), (CL).		1	Sample #1, Depth = 0.8' Mean (mm): 0.10, Phi Sorting: 0.48 Fines (230): 70.49% (CL)
-31.4	5.2		Sandy SILT, trace clay, trace organics, light olive brown (2.5Y-5/3), (ML).		2	Sample #2, Depth = 3.3' Mean (mm): 0.10, Phi Sorting: 0.64 Fines (230): 62.32% (ML)
-32.5	6.3		Clayey SAND, fine grained, quartz, trace organics, olive gray (5Y-5/2), (SC).		3	Sample #3, Depth = 5.7' Mean (mm): 0.11, Phi Sorting: 0.42 Fines (230): 36.82% (SC)
-36.5	10.3		Sandy CLAY, trace organics, light olive brown (2.5Y-5/3), (CL).		4	Sample #4, Depth = 8.5' Mean (mm): 0.10, Phi Sorting: 0.66 Fines (230): 65.49% (CL)
-37.9	11.7		Clayey SAND, fine grained, quartz, grayish brown (2.5Y-5/2), (CL).		5	Sample #5, Depth = 11.0' Mean (mm): 0.10, Phi Sorting: 0.50 Fines (230): 48.64% (CL)
-43.5	17.3		CLAY, trace organics, (1.25" x 1.0") rock @ 13.4", dark greenish gray (10Y-4/1), (CL).		T1	Sample #T1, Depth = 14.5' Ave. Field Vane (tsf): 0.90
-44.3	18.1		CLAY, trace shell hash, greenish gray (10Y-5/1), (CL).		T2	Sample #T2, Depth = 17.7' Ave. Field Vane (tsf): 1.00
-44.7	18.5		CLAY, soft, trace rock, trace shell hash, rocks up to 1.25", Bit Sample, greenish gray (10Y-6/1), (CL).			
			End of Boring			

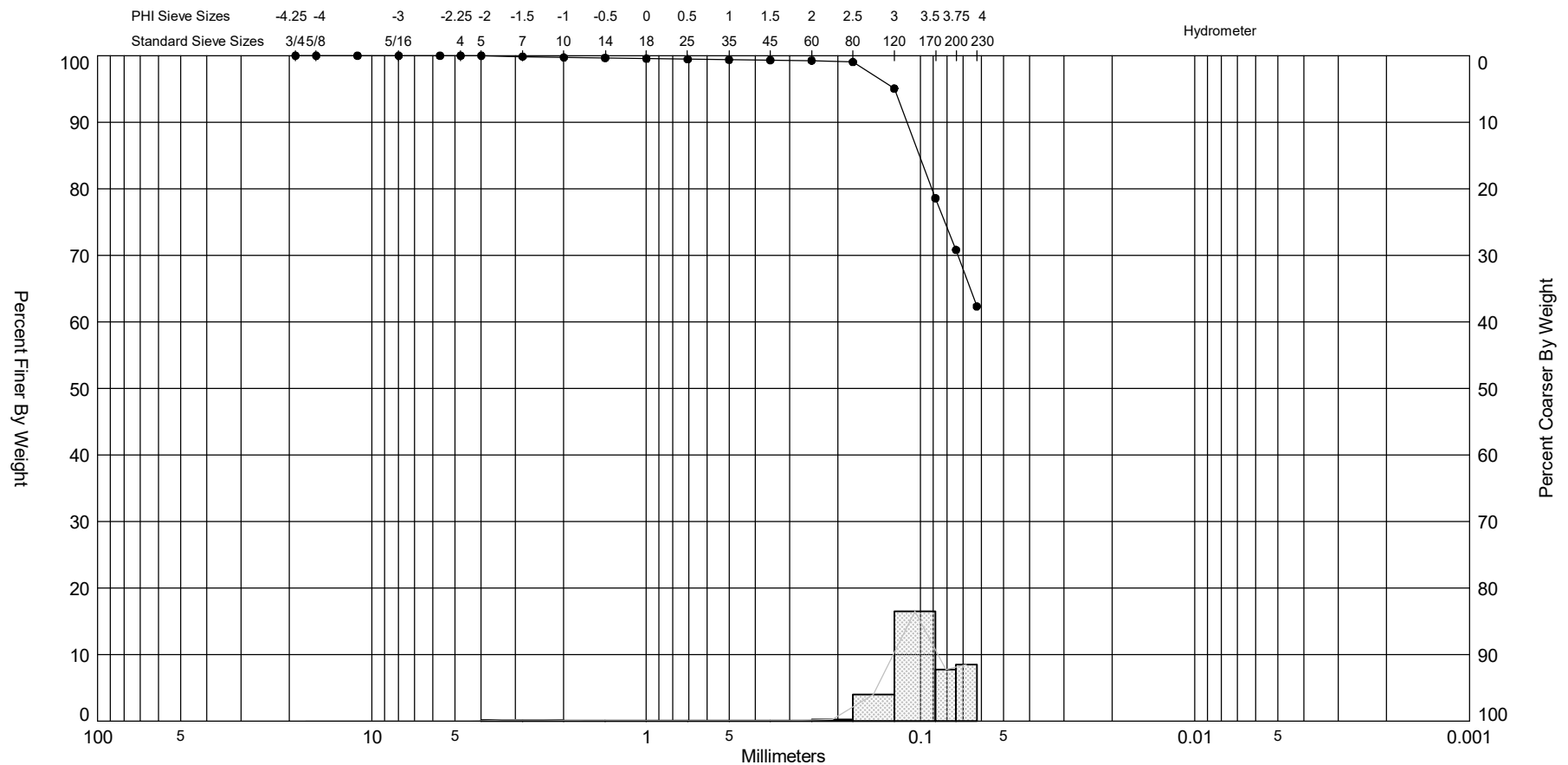
MCFADDIN 2018 VC.GPJ 8/3/18

MCFADDIN_2018_VC.GPJ 8/14/18



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

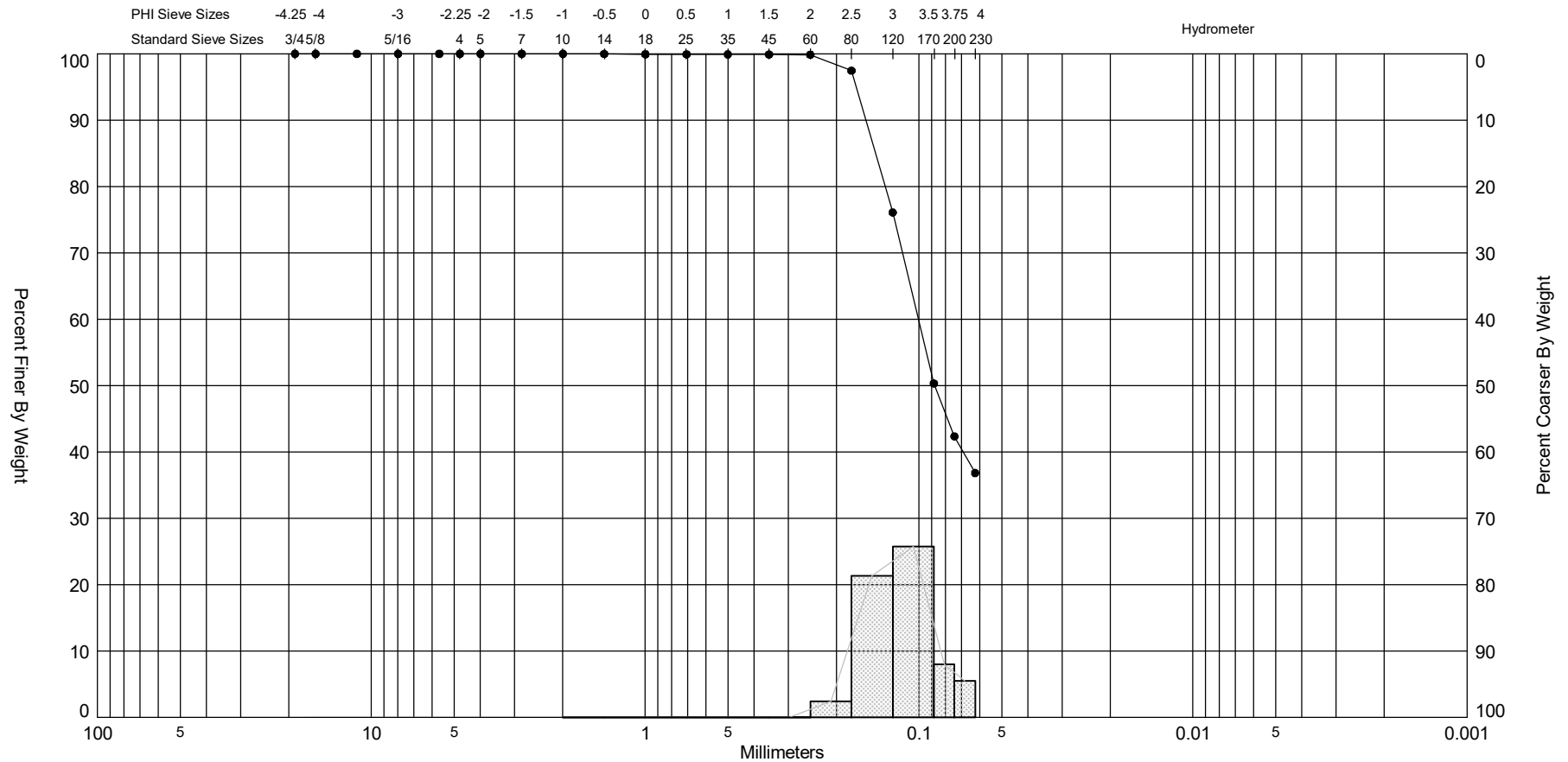
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-25 #1	—●—	-27.0	CL	#200 - 76.21 #230 - 70.49				3.35	-2.91	22.8	0.48	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-22-18
Depths and elevations based on measured values												Analyzed By:	SMT
							APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102					Easting (X, ft):	3,473,845
												Northing (Y, ft):	13,785,210
												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-18-25 #2	—●—	-29.5	ML	#200 - 70.81 #230 - 62.32				3.34	-4.51	31.53	0.64	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-22-18
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):	3,473,845
												Northing (Y, ft):	13,785,210
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88

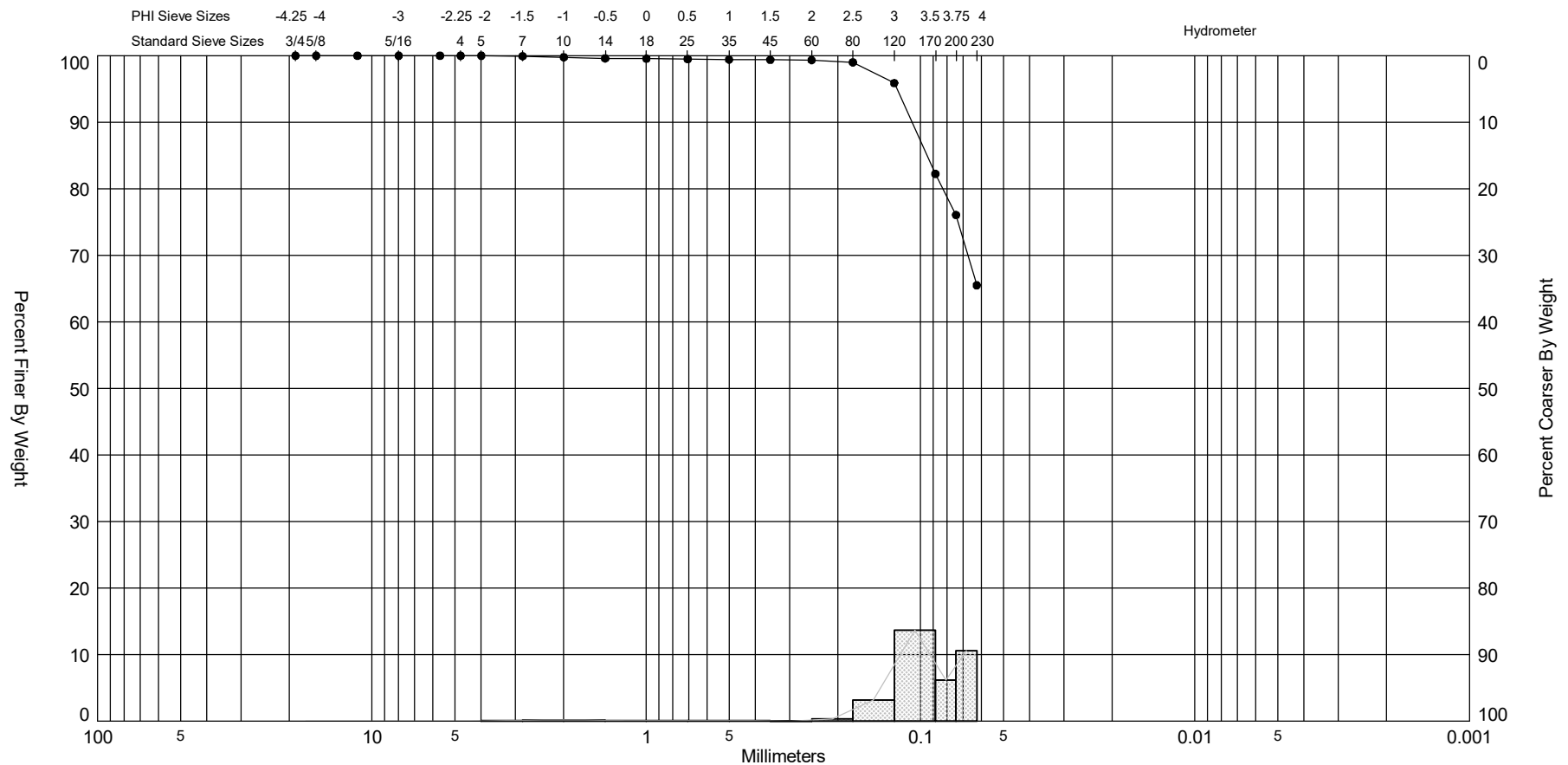
MCFADDIN_2018_VC.GPJ 8/14/18



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-18-25 #3	—●—	-31.9	SC	#200 - 42.35 #230 - 36.82			3.51	3.14	-0.63	7.24	0.42	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-22-18
Depths and elevations based on measured values												Analyzed By:	SMT
												Easting (X, ft):	3,473,845
												Northing (Y, ft):	13,785,210
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88

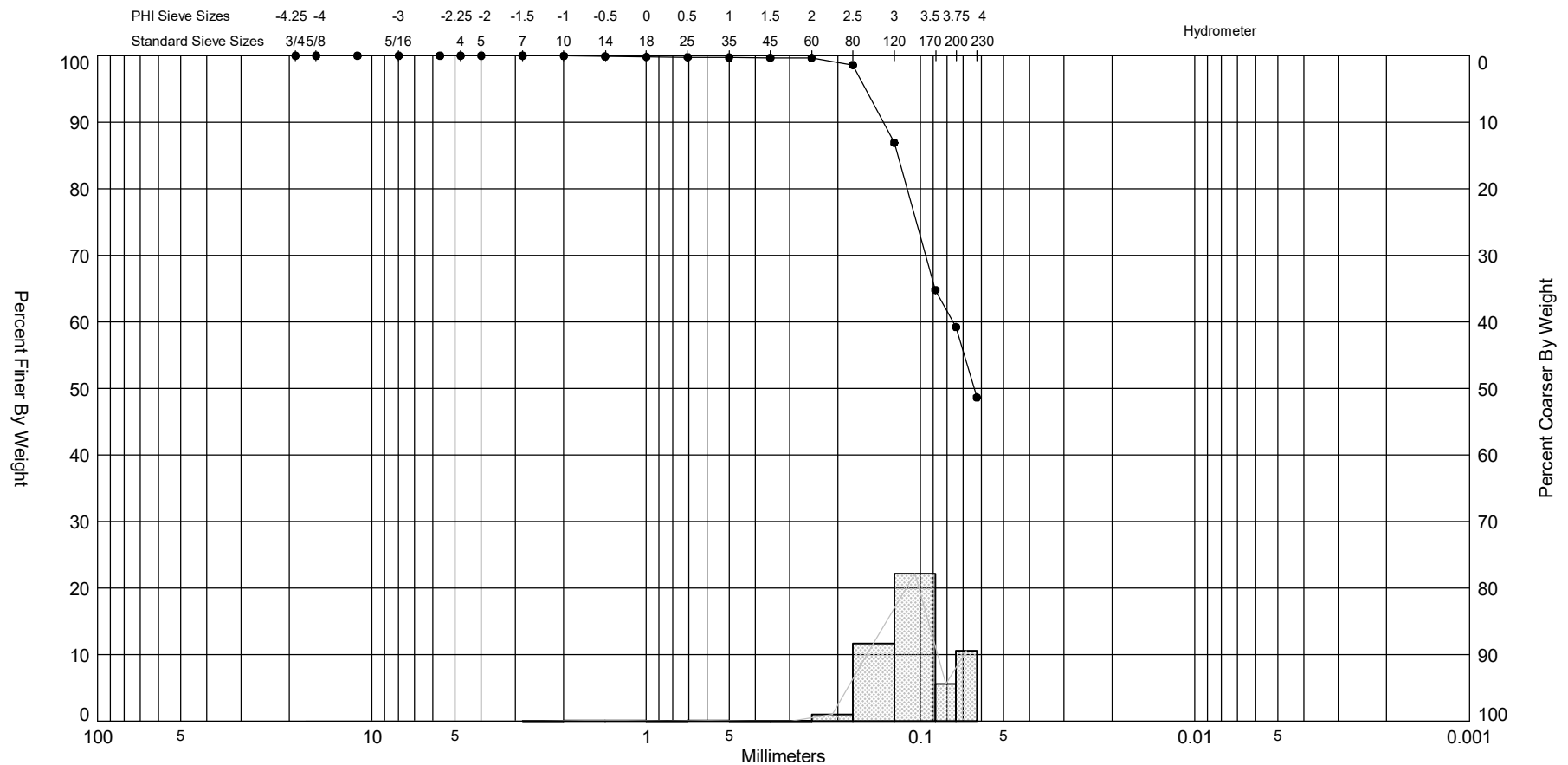
APTIM
2481 NW Boca Raton Blvd.
Boca Raton, FL 33431
ph (561) 391-8102



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-18-25 #4	—●—	-34.7	CL	#200 - 76.06 #230 - 65.49				3.38	-4.34	29.12	0.66	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-22-18
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):	3,473,845
												Northing (Y, ft):	13,785,210
												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-18-25 #5	—●—	-37.2	SC	#200 - 59.21 #230 - 48.64			3.97	3.26	-2.23	18.08	0.5	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-22-18
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):	3,473,845
												Northing (Y, ft):	13,785,210
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88

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-18-25 #1							
Analysis Date: 06-22-18							
Analyzed By: SMT							
Easting (ft): 3,473,845		Northing (ft): 13,785,210		Coordinate System: Texas South Central		Elevation (ft): -27.0 NAVD88	
USCS: CL		Munsell: Wet - 2.5Y-4/4 Dry - 2.5Y-6/4 Washed - 2.5Y-7/2		Comments:			
Dry Weight (g): 92.69	Wash Weight (g): 33.31	Pan Retained (g): 5.88	Sieve Loss (%): 0.08	Fines (%): #200 - 76.21 #230 - 70.49	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	0.03	0.03	0.03	0.03	
14	-0.50	1.41	0.02	0.02	0.05	0.05	
18	0.00	1.00	0.04	0.04	0.09	0.09	
25	0.50	0.71	0.04	0.04	0.13	0.13	
35	1.00	0.50	0.02	0.02	0.15	0.15	
45	1.50	0.35	0.03	0.03	0.18	0.18	
60	2.00	0.25	0.04	0.04	0.22	0.22	
80	2.50	0.18	0.49	0.53	0.71	0.75	
120	3.00	0.13	3.82	4.12	4.53	4.87	
170	3.50	0.09	10.73	11.58	15.26	16.45	
200	3.75	0.07	6.80	7.34	22.06	23.79	
230	4.00	0.06	5.30	5.72	27.36	29.51	
Phi 5		Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
					3.80	3.48	3.01
Moment	Mean Phi		Mean mm	Sorting	Skewness		Kurtosis
Statistics	3.35		0.10	0.48	-2.91		22.8

MCFADDIN_2018_VC.GPJ 8/14/18

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-18-25 #2							
Analysis Date: 06-22-18							
Analyzed By: SP							
Easting (ft): 3,473,845		Northing (ft): 13,785,210		Coordinate System: Texas South Central		Elevation (ft): -29.5 NAVD88	
USCS: ML		Munsell: Wet - 2.5Y-5/3 Dry - 2.5Y-6/3 Washed - 2.5Y-7/2		Comments:			
Dry Weight (g): 98.87	Wash Weight (g): 49.03	Pan Retained (g): 11.75	Sieve Loss (%): 0.03	Fines (%): #200 - 70.81 #230 - 62.32	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	0.13	0.13	0.13	0.13	
10	-1.00	2.00	0.14	0.14	0.27	0.27	
14	-0.50	1.41	0.07	0.07	0.34	0.34	
18	0.00	1.00	0.11	0.11	0.45	0.45	
25	0.50	0.71	0.09	0.09	0.54	0.54	
35	1.00	0.50	0.07	0.07	0.61	0.61	
45	1.50	0.35	0.06	0.06	0.67	0.67	
60	2.00	0.25	0.05	0.05	0.72	0.72	
80	2.50	0.18	0.23	0.23	0.95	0.95	
120	3.00	0.13	3.95	4.00	4.90	4.95	
170	3.50	0.09	16.27	16.46	21.17	21.41	
200	3.75	0.07	7.69	7.78	28.86	29.19	
230	4.00	0.06	8.39	8.49	37.25	37.68	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
				3.62	3.34	3.00	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.34	0.10	0.64	-4.51	31.53		

MCFADDIN_2018_VC.GPJ 8/14/18

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-18-25 #3							
Analysis Date: 06-22-18							
Analyzed By: SMT							
Easting (ft): 3,473,845		Northing (ft): 13,785,210		Coordinate System: Texas South Central		Elevation (ft): -31.9 NAVD88	
USCS: SC		Munsell: Wet - 5Y-5/2 Dry - 2.5Y-6/4 Washed - 2.5Y-7/2		Comments:			
Dry Weight (g): 95.73	Wash Weight (g): 64.75	Pan Retained (g): 4.19	Sieve Loss (%): 0.07	Fines (%): #200 - 42.35 #230 - 36.82	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	0.02	0.02	0.02	0.02	
18	0.00	1.00	0.03	0.03	0.05	0.05	
25	0.50	0.71	0.01	0.01	0.06	0.06	
35	1.00	0.50	0.02	0.02	0.08	0.08	
45	1.50	0.35	0.02	0.02	0.10	0.10	
60	2.00	0.25	0.03	0.03	0.13	0.13	
80	2.50	0.18	2.31	2.41	2.44	2.54	
120	3.00	0.13	20.45	21.36	22.89	23.90	
170	3.50	0.09	24.68	25.78	47.57	49.68	
200	3.75	0.07	7.63	7.97	55.20	57.65	
230	4.00	0.06	5.29	5.53	60.49	63.18	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
			3.51	3.02	2.82	2.56	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.14	0.11	0.42	-0.63	7.24		

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-18-25 #4							
Analysis Date: 06-22-18							
Analyzed By: SP							
Easting (ft): 3,473,845		Northing (ft): 13,785,210		Coordinate System: Texas South Central		Elevation (ft): -34.7 NAVD88	
USCS: CL		Munsell: Wet - 2.5Y-5/3 Dry - 2.5Y-7/3 Washed - 2.5Y-7/2		Comments:			
Dry Weight (g): 95.32	Wash Weight (g): 39.80	Pan Retained (g): 6.90	Sieve Loss (%): 0.00	Fines (%): #200 - 76.06 #230 - 65.49	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	0.06	0.06	0.06	0.06	
10	-1.00	2.00	0.15	0.16	0.21	0.22	
14	-0.50	1.41	0.16	0.17	0.37	0.39	
18	0.00	1.00	0.05	0.05	0.42	0.44	
25	0.50	0.71	0.06	0.06	0.48	0.50	
35	1.00	0.50	0.07	0.07	0.55	0.57	
45	1.50	0.35	0.05	0.05	0.60	0.62	
60	2.00	0.25	0.03	0.03	0.63	0.65	
80	2.50	0.18	0.32	0.34	0.95	0.99	
120	3.00	0.13	2.98	3.13	3.93	4.12	
170	3.50	0.09	13.00	13.64	16.93	17.76	
200	3.75	0.07	5.89	6.18	22.82	23.94	
230	4.00	0.06	10.08	10.57	32.90	34.51	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
				3.78	3.44	3.03	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.38	0.10	0.66	-4.34	29.12		

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-18-25 #5							
Analysis Date: 06-22-18							
Analyzed By: SMT							
Easting (ft): 3,473,845		Northing (ft): 13,785,210		Coordinate System: Texas South Central		Elevation (ft): -37.2 NAVD88	
USCS: SC		Munsell: Wet - 2.5Y-5/2 Dry - 2.5Y-7/2 Washed - 2.5Y-7/1		Comments:			
Dry Weight (g): 97.16	Wash Weight (g): 62.91	Pan Retained (g): 12.89	Sieve Loss (%): 0.11	Fines (%): #200 - 59.21 #230 - 48.64	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	0.04	0.04	0.04	0.04	
14	-0.50	1.41	0.07	0.07	0.11	0.11	
18	0.00	1.00	0.07	0.07	0.18	0.18	
25	0.50	0.71	0.04	0.04	0.22	0.22	
35	1.00	0.50	0.06	0.06	0.28	0.28	
45	1.50	0.35	0.04	0.04	0.32	0.32	
60	2.00	0.25	0.03	0.03	0.35	0.35	
80	2.50	0.18	1.01	1.04	1.36	1.39	
120	3.00	0.13	11.33	11.66	12.69	13.05	
170	3.50	0.09	21.53	22.16	34.22	35.21	
200	3.75	0.07	5.42	5.58	39.64	40.79	
230	4.00	0.06	10.27	10.57	49.91	51.36	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
			3.97	3.27	3.07	2.65	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.26	0.10	0.5	-2.23	18.08		



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-25
0.0' - 2.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-25
2.0' - 4.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-25
4.0' - 6.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-25
6.0' - 8.0'

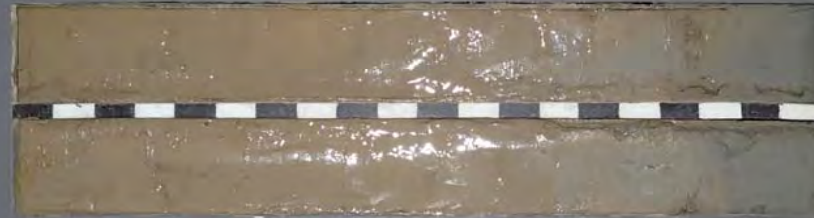




MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-25
8.0'-10.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-25
10.0'-12.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-25
12.0'-14.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-25
14.0'-16.0'





MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-25
16.0'-18.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-25
18.0'-18.5'

