APPENDIX 1-F

2005 CPE INDIVIDUAL VIBRACORE GRANULARMETRIC REPORTS

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-08 #1

Analysis Date: 02-28-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,793	1,157,117	Florida State Plane West	-17.0 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
85.18	83.99	0.01	0.54	#200 - 2.07 #230 - 1.94		7	0

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
11/16"	-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	0.12	0.14	0.12	0.14
7	-1.50	2.83	0.09	0.11	0.21	0.25
10	-1.00	2.00	0.15	0.18	0.36	0.43
14	-0.50	1.41	0.33	0.39	0.69	0.82
18	0.00	1.00	0.35	0.41	1.04	1.23
25	0.50	0.71	0.56	0.66	1.60	1.89
35	1.00	0.50	0.97	1.14	2.57	3.03
45	1.50	0.35	1.16	1.36	3.73	4.39
60	2.00	0.25	2.87	3.37	6.60	7.76
80	2.50	0.18	15.45	18.14	22.05	25.90
120	3.00	0.13	53.70	63.04	75.75	88.94
170	3.50	0.09	7.53	8.84	83.28	97.78
200	3.75	0.07	0.13	0.15	83.41	97.93
230	4.00	0.06	0.11	0.13	83.52	98.06

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.34	2.96	2.89	2.69	2.48	2.23	1.59

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.56	0.17	0.6	-3.41	19.77

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-08 #2

Analysis Date: 02-28-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,793	1,157,117	Florida State Plane West	-18.2 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-5/1 Dry - 5Y-6/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
72.29	70.43	0.04	0.69	#200 - 3.57 #230 - 3.33		49	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
11/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	4.00	5.53	4.00	5.53
3.5	-2.50	5.66	2.13	2.95	6.13	8.48
4	-2.25	4.76	1.29	1.78	7.42	10.26
5	-2.00	4.00	1.81	2.50	9.23	12.76
7	-1.50	2.83	5.41	7.48	14.64	20.24
10	-1.00	2.00	6.65	9.20	21.29	29.44
14	-0.50	1.41	8.17	11.30	29.46	40.74
18	0.00	1.00	6.01	8.31	35.47	49.05
25	0.50	0.71	5.60	7.75	41.07	56.80
35	1.00	0.50	4.69	6.49	45.76	63.29
45	1.50	0.35	3.89	5.38	49.65	68.67
60	2.00	0.25	3.03	4.19	52.68	72.86
80	2.50	0.18	4.43	6.13	57.11	78.99
120	3.00	0.13	10.09	13.96	67.20	92.95
170	3.50	0.09	2.10	2.90	69.30	95.85
200	3.75	0.07	0.42	0.58	69.72	96.43
230	4.00	0.06	0.17	0.24	69.89	96.67

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.35	2.68	2.17	0.06	-1.24	-1.78	-3.12

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.15	0.90	1.9	0.02	1.93

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-08 #3

Analysis Date: 03-08-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,793	1,157,117	Florida State Plane West	-19.0 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-7/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
73.36	71.98	0.02	0.10	#200 - 2.12 #230 - 2.01		7	0

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
11/16"	-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	0.14	0.19	0.14	0.19
10	-1.00	2.00	0.10	0.14	0.24	0.33
14	-0.50	1.41	0.22	0.30	0.46	0.63
18	0.00	1.00	0.19	0.26	0.65	0.89
25	0.50	0.71	0.31	0.42	0.96	1.31
35	1.00	0.50	0.32	0.44	1.28	1.75
45	1.50	0.35	0.33	0.45	1.61	2.20
60	2.00	0.25	1.11	1.51	2.72	3.71
80	2.50	0.18	10.05	13.70	12.77	17.41
120	3.00	0.13	48.94	66.71	61.71	84.12
170	3.50	0.09	9.62	13.11	71.33	97.23
200	3.75	0.07	0.48	0.65	71.81	97.88
230	4.00	0.06	0.08	0.11	71.89	97.99

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	3.00	2.93	2.74	2.56	2.45	2.05

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.68	0.16	0.51	-4	28.36

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-08 #4

Analysis Date: 02-28-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,793	1,157,117	Florida State Plane West	-21.0 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-8/1 Dry - 5Y-7/1 Washed - 2.5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
88.85	87.26	0.04	0.32	#200 - 2.34 #230 - 2.14		11	1

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
11/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.98	1.10	0.98	1.10
3.5	-2.50	5.66	0.62	0.70	1.60	1.80
4	-2.25	4.76	0.22	0.25	1.82	2.05
5	-2.00	4.00	0.64	0.72	2.46	2.77
7	-1.50	2.83	1.32	1.49	3.78	4.26
10	-1.00	2.00	1.42	1.60	5.20	5.86
14	-0.50	1.41	1.53	1.72	6.73	7.58
18	0.00	1.00	1.09	1.23	7.82	8.81
25	0.50	0.71	1.00	1.13	8.82	9.94
35	1.00	0.50	0.87	0.98	9.69	10.92
45	1.50	0.35	0.90	1.01	10.59	11.93
60	2.00	0.25	1.97	2.22	12.56	14.15
80	2.50	0.18	9.17	10.32	21.73	24.47
120	3.00	0.13	52.36	58.93	74.09	83.40
170	3.50	0.09	12.54	14.11	86.63	97.51
200	3.75	0.07	0.13	0.15	86.76	97.66
230	4.00	0.06	0.18	0.20	86.94	97.86

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	3.02	2.93	2.72	2.50	2.09	-1.27

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.3	0.20	1.33	-2.59	8.99

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-08 #5

Analysis Date: 03-07-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,793	1,157,117	Florida State Plane West	-23.0 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-6/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
73.01	70.53	0.09	0.14	#200 - 3.88 #230 - 3.66			11

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
11/16"	-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	0.22	0.30	0.22	0.30
5	-2.00	4.00	0.19	0.26	0.41	0.56
7	-1.50	2.83	0.89	1.22	1.30	1.78
10	-1.00	2.00	1.24	1.70	2.54	3.48
14	-0.50	1.41	1.14	1.56	3.68	5.04
18	0.00	1.00	0.76	1.04	4.44	6.08
25	0.50	0.71	0.88	1.21	5.32	7.29
35	1.00	0.50	0.76	1.04	6.08	8.33
45	1.50	0.35	0.63	0.86	6.71	9.19
60	2.00	0.25	1.32	1.81	8.03	11.00
80	2.50	0.18	3.86	5.29	11.89	16.29
120	3.00	0.13	40.72	55.77	52.61	72.06
170	3.50	0.09	16.57	22.70	69.18	94.75
200	3.75	0.07	1.00	1.37	70.18	96.12
230	4.00	0.06	0.16	0.22	70.34	96.34

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.55	3.26	3.06	2.80	2.58	2.47	-0.51

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.52	0.17	1.08	-2.74	10.07

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-08 #6

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,793	1,157,117	Florida State Plane West	-25.5 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-6/1 Dry - 5Y-6/1 Washed - 2.5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
85.92	83.00	0.05	0.24	#200 - 3.95 #230 - 3.70			1

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
11/16"	-3.50	11.31	6.80	7.91	6.80	7.91
5/16"	-3.00	8.00	3.78	4.40	10.58	12.31
3.5	-2.50	5.66	3.59	4.18	14.17	16.49
4	-2.25	4.76	1.26	1.47	15.43	17.96
5	-2.00	4.00	1.62	1.89	17.05	19.84
7	-1.50	2.83	1.80	2.09	18.85	21.94
10	-1.00	2.00	1.41	1.64	20.26	23.58
14	-0.50	1.41	1.61	1.87	21.87	25.45
18	0.00	1.00	1.37	1.59	23.24	27.05
25	0.50	0.71	1.46	1.70	24.70	28.75
35	1.00	0.50	1.81	2.11	26.51	30.85
45	1.50	0.35	2.65	3.08	29.16	33.94
60	2.00	0.25	6.57	7.65	35.73	41.59
80	2.50	0.18	23.98	27.91	59.71	69.49
120	3.00	0.13	20.94	24.37	80.65	93.87
170	3.50	0.09	1.78	2.07	82.43	95.94
200	3.75	0.07	0.10	0.12	82.53	96.05
230	4.00	0.06	0.21	0.24	82.74	96.30

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.27	2.80	2.61	2.15	-0.62	-2.56	-3.78

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.9	0.54	2.32	-1.01	2.38

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-09 #1

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,365	1,157,436	Florida State Plane West	-19.6 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-6/1 Dry - 5Y-7/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
85.30	82.98	0.04	0.39	#200 - 3.36 #230 - 3.14		44	2

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
11/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.20	0.23	0.20	0.23
3.5	-2.50	5.66	0.32	0.38	0.52	0.61
4	-2.25	4.76	0.09	0.11	0.61	0.72
5	-2.00	4.00	0.47	0.55	1.08	1.27
7	-1.50	2.83	1.87	2.19	2.95	3.46
10	-1.00	2.00	2.60	3.05	5.55	6.51
14	-0.50	1.41	4.13	4.84	9.68	11.35
18	0.00	1.00	4.17	4.89	13.85	16.24
25	0.50	0.71	4.30	5.04	18.15	21.28
35	1.00	0.50	4.56	5.35	22.71	26.63
45	1.50	0.35	3.28	3.85	25.99	30.48
60	2.00	0.25	3.63	4.26	29.62	34.74
80	2.50	0.18	11.48	13.46	41.10	48.20
120	3.00	0.13	35.15	41.21	76.25	89.41
170	3.50	0.09	5.77	6.76	82.02	96.17
200	3.75	0.07	0.40	0.47	82.42	96.64
230	4.00	0.06	0.19	0.22	82.61	96.86

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	2.93	2.83	2.52	0.85	-0.02	-1.25

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.75	0.30	1.46	-1.15	3.19

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-09 #2

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,365	1,157,436	Florida State Plane West	-21.1 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/2 Dry - 5Y-7/2 Washed - 2.5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
79.44	77.81	0.02	0.04	#200 - 2.25 #230 - 2.11		10	1

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
11/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.30	0.38	0.30	0.38
3.5	-2.50	5.66	0.00	0.00	0.30	0.38
4	-2.25	4.76	0.16	0.20	0.46	0.58
5	-2.00	4.00	0.33	0.42	0.79	1.00
7	-1.50	2.83	0.41	0.52	1.20	1.52
10	-1.00	2.00	0.51	0.64	1.71	2.16
14	-0.50	1.41	0.86	1.08	2.57	3.24
18	0.00	1.00	0.66	0.83	3.23	4.07
25	0.50	0.71	0.75	0.94	3.98	5.01
35	1.00	0.50	0.70	0.88	4.68	5.89
45	1.50	0.35	0.69	0.87	5.37	6.76
60	2.00	0.25	1.69	2.13	7.06	8.89
80	2.50	0.18	6.38	8.03	13.44	16.92
120	3.00	0.13	48.22	60.70	61.66	77.62
170	3.50	0.09	15.57	19.60	77.23	97.22
200	3.75	0.07	0.42	0.53	77.65	97.75
230	4.00	0.06	0.11	0.14	77.76	97.89

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.44	3.16	2.98	2.77	2.57	2.44	0.49

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.57	0.17	0.95	-3.48	16.44

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-09 #3

Analysis Date: 03-05-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,365	1,157,436	Florida State Plane West	-24.6 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/2 Dry - 5Y-7/2 Washed - 2.5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
93.33	91.71	0.04	0.10	#200 - 1.90 #230 - 1.88			1

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
11/16"	-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	0.09	0.10	0.09	0.10
5	-2.00	4.00	0.07	0.08	0.16	0.17
7	-1.50	2.83	0.12	0.13	0.28	0.30
10	-1.00	2.00	0.18	0.19	0.46	0.49
14	-0.50	1.41	0.11	0.12	0.57	0.61
18	0.00	1.00	0.16	0.17	0.73	0.78
25	0.50	0.71	0.16	0.17	0.89	0.95
35	1.00	0.50	0.18	0.19	1.07	1.15
45	1.50	0.35	0.25	0.27	1.32	1.41
60	2.00	0.25	0.58	0.62	1.90	2.04
80	2.50	0.18	6.48	6.94	8.38	8.98
120	3.00	0.13	61.46	65.85	69.84	74.83
170	3.50	0.09	20.41	21.87	90.25	96.70
200	3.75	0.07	1.31	1.40	91.56	98.10
230	4.00	0.06	0.02	0.02	91.58	98.12

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.46	3.21	3.00	2.81	2.62	2.55	2.21

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.79	0.14	0.5	-5.08	44.51

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-09 #4

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,365	1,157,436	Florida State Plane West	-26.1 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/1 Dry - 5Y-7/1 Washed - 2.5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
102.57	98.53	0.08	0.09	#200 - 4.40 #230 - 4.10			1

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
11/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	2.70	2.63	2.70	2.63
3.5	-2.50	5.66	2.72	2.65	5.42	5.28
4	-2.25	4.76	0.98	0.96	6.40	6.24
5	-2.00	4.00	0.43	0.42	6.83	6.66
7	-1.50	2.83	1.31	1.28	8.14	7.94
10	-1.00	2.00	0.90	0.88	9.04	8.81
14	-0.50	1.41	0.82	0.80	9.86	9.61
18	0.00	1.00	1.57	1.53	11.43	11.14
25	0.50	0.71	2.07	2.02	13.50	13.16
35	1.00	0.50	1.37	1.34	14.87	14.50
45	1.50	0.35	1.60	1.56	16.47	16.06
60	2.00	0.25	3.54	3.45	20.01	19.51
80	2.50	0.18	24.97	24.34	44.98	43.85
120	3.00	0.13	46.64	45.47	91.62	89.32
170	3.50	0.09	6.04	5.89	97.66	95.21
200	3.75	0.07	0.40	0.39	98.06	95.60
230	4.00	0.06	0.30	0.29	98.36	95.90

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.48	2.94	2.84	2.57	2.11	1.48	-2.55

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.96	0.26	1.6	-2.16	6.58

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-09 #5

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,365	1,157,436	Florida State Plane West	-28.1 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-7/1 Dry - 5Y-7/1 Washed - 2.5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
91.01	86.36	0.10	0.12	#200 - 5.72 #230 - 5.34			1

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
11/16"	-3.50	11.31	9.28	10.20	9.28	10.20
5/16"	-3.00	8.00	4.22	4.64	13.50	14.83
3.5	-2.50	5.66	2.01	2.21	15.51	17.04
4	-2.25	4.76	0.88	0.97	16.39	18.01
5	-2.00	4.00	0.80	0.88	17.19	18.89
7	-1.50	2.83	2.19	2.41	19.38	21.29
10	-1.00	2.00	1.80	1.98	21.18	23.27
14	-0.50	1.41	1.38	1.52	22.56	24.79
18	0.00	1.00	1.37	1.51	23.93	26.29
25	0.50	0.71	1.34	1.47	25.27	27.77
35	1.00	0.50	2.00	2.20	27.27	29.96
45	1.50	0.35	1.29	1.42	28.56	31.38
60	2.00	0.25	3.42	3.76	31.98	35.14
80	2.50	0.18	16.72	18.37	48.70	53.51
120	3.00	0.13	31.60	34.72	80.30	88.23
170	3.50	0.09	5.08	5.58	85.38	93.81
200	3.75	0.07	0.42	0.46	85.80	94.28
230	4.00	0.06	0.35	0.38	86.15	94.66

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.94	2.81	2.40	-0.43	-2.74	-3.88

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.02	0.49	2.46	-1.03	2.38

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-09 #6

Analysis Date: 03-07-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,365	1,157,436	Florida State Plane West	-32.1 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-7/3 Dry - 5Y-7/3 Washed - 5Y-7/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
82.83	78.89	0.13	0.12	#200 - 5.26 #230 - 5.03			55

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	13.56	16.37	13.56	16.37
11/16"	-3.50	11.31	7.90	9.54	21.46	25.91
5/16"	-3.00	8.00	3.05	3.68	24.51	29.59
3.5	-2.50	5.66	4.25	5.13	28.76	34.72
4	-2.25	4.76	2.54	3.07	31.30	37.79
5	-2.00	4.00	1.47	1.77	32.77	39.56
7	-1.50	2.83	3.12	3.77	35.89	43.33
10	-1.00	2.00	2.77	3.34	38.66	46.67
14	-0.50	1.41	3.41	4.12	42.07	50.79
18	0.00	1.00	2.73	3.30	44.80	54.09
25	0.50	0.71	2.39	2.89	47.19	56.97
35	1.00	0.50	2.05	2.47	49.24	59.45
45	1.50	0.35	1.64	1.98	50.88	61.43
60	2.00	0.25	2.36	2.85	53.24	64.28
80	2.50	0.18	4.22	5.09	57.46	69.37
120	3.00	0.13	12.23	14.77	69.69	84.14
170	3.50	0.09	7.86	9.49	77.55	93.63
200	3.75	0.07	0.92	1.11	78.47	94.74
230	4.00	0.06	0.19	0.23	78.66	94.97

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.00	2.69	-0.60	-3.55	-4.01	-4.17

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	-0.6	1.52	2.85	0.1	1.39

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-11 #1

Analysis Date: 02-28-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,677	1,156,316	Florida State Plane West	-19.7 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-6/1 Dry - 5Y-8/1 Washed - 2.5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
90.10	88.71	0.00	0.33	#200 - 2.03 #230 - 1.87		5	0

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
11/16"	-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	0.18	0.20	0.18	0.20
4	-2.25	4.76	0.00	0.00	0.18	0.20
5	-2.00	4.00	0.00	0.00	0.18	0.20
7	-1.50	2.83	0.13	0.14	0.31	0.34
10	-1.00	2.00	0.12	0.13	0.43	0.47
14	-0.50	1.41	0.20	0.22	0.63	0.69
18	0.00	1.00	0.22	0.24	0.85	0.93
25	0.50	0.71	0.24	0.27	1.09	1.20
35	1.00	0.50	0.38	0.42	1.47	1.62
45	1.50	0.35	0.63	0.70	2.10	2.32
60	2.00	0.25	2.33	2.59	4.43	4.91
80	2.50	0.18	16.53	18.35	20.96	23.26
120	3.00	0.13	55.68	61.80	76.64	85.06
170	3.50	0.09	11.40	12.65	88.04	97.71
200	3.75	0.07	0.23	0.26	88.27	97.97
230	4.00	0.06	0.14	0.16	88.41	98.13

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.39	2.99	2.92	2.72	2.51	2.30	2.00

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.63	0.16	0.56	-4.33	33.93

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-11 #2

Analysis Date: 02-28-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,677	1,156,316	Florida State Plane West	-21.7 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-6/1 Dry - 5Y-7/2 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
85.82	84.44	0.00	0.40	#200 - 2.08 #230 - 2.00		7	0

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
11/16"	-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	0.05	0.06	0.05	0.06
4	-2.25	4.76	0.00	0.00	0.05	0.06
5	-2.00	4.00	0.05	0.06	0.10	0.12
7	-1.50	2.83	0.35	0.41	0.45	0.53
10	-1.00	2.00	0.40	0.47	0.85	1.00
14	-0.50	1.41	0.53	0.62	1.38	1.62
18	0.00	1.00	0.32	0.37	1.70	1.99
25	0.50	0.71	0.54	0.63	2.24	2.62
35	1.00	0.50	0.82	0.96	3.06	3.58
45	1.50	0.35	1.03	1.20	4.09	4.78
60	2.00	0.25	3.44	4.01	7.53	8.79
80	2.50	0.18	18.72	21.81	26.25	30.60
120	3.00	0.13	49.89	58.13	76.14	88.73
170	3.50	0.09	3.87	4.51	80.01	93.24
200	3.75	0.07	4.02	4.68	84.03	97.92
230	4.00	0.06	0.07	0.08	84.10	98.00

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.59	2.96	2.88	2.67	2.37	2.17	1.53

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.53	0.17	0.71	-3.12	17.3

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-11 #3

Analysis Date: 02-28-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,677	1,156,316	Florida State Plane West	-22.7 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-5/1 Dry - 5Y-6/2 Washed - 5Y-6/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
83.26	81.20	0.05	0.12	#200 - 3.40 #230 - 2.66		80	11

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
11/16"	-3.50	11.31	8.67	10.41	8.67	10.41
5/16"	-3.00	8.00	3.44	4.13	12.11	14.54
3.5	-2.50	5.66	4.50	5.40	16.61	19.94
4	-2.25	4.76	3.18	3.82	19.79	23.76
5	-2.00	4.00	3.69	4.43	23.48	28.19
7	-1.50	2.83	8.69	10.44	32.17	38.63
10	-1.00	2.00	7.88	9.46	40.05	48.09
14	-0.50	1.41	7.66	9.20	47.71	57.29
18	0.00	1.00	5.56	6.68	53.27	63.97
25	0.50	0.71	4.53	5.44	57.80	69.41
35	1.00	0.50	3.37	4.05	61.17	73.46
45	1.50	0.35	2.38	2.86	63.55	76.32
60	2.00	0.25	2.20	2.64	65.75	78.96
80	2.50	0.18	3.81	4.58	69.56	83.54
120	3.00	0.13	9.15	10.99	78.71	94.53
170	3.50	0.09	1.68	2.02	80.39	96.55
200	3.75	0.07	0.04	0.05	80.43	96.60
230	4.00	0.06	0.62	0.74	81.05	97.34

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.12	2.52	1.27	-0.90	-2.18	-2.86	-3.89

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	-0.63	1.55	2.13	0.33	2.03

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-11 #4

Analysis Date: 03-05-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,677	1,156,316	Florida State Plane West	-23.3 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 2.5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
89.94	88.52	0.00	0.00	#200 - 1.60 #230 - 1.58			1

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
11/16"	-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	0.03	0.03	0.03	0.03
4	-2.25	4.76	0.00	0.00	0.03	0.03
5	-2.00	4.00	0.06	0.07	0.09	0.10
7	-1.50	2.83	0.11	0.12	0.20	0.22
10	-1.00	2.00	0.20	0.22	0.40	0.44
14	-0.50	1.41	0.26	0.29	0.66	0.73
18	0.00	1.00	0.25	0.28	0.91	1.01
25	0.50	0.71	0.27	0.30	1.18	1.31
35	1.00	0.50	0.37	0.41	1.55	1.72
45	1.50	0.35	0.47	0.52	2.02	2.25
60	2.00	0.25	1.51	1.68	3.53	3.92
80	2.50	0.18	12.08	13.43	15.61	17.36
120	3.00	0.13	61.90	68.82	77.51	86.18
170	3.50	0.09	10.77	11.97	88.28	98.15
200	3.75	0.07	0.22	0.24	88.50	98.40
230	4.00	0.06	0.02	0.02	88.52	98.42

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.37	2.98	2.92	2.74	2.56	2.45	2.04

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.67	0.16	0.52	-4.48	33.03

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-11 #5

Analysis Date: 03-07-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,677	1,156,316	Florida State Plane West	-27.9 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
71.02	67.60	0.11	0.44	#200 - 5.69 #230 - 5.41			2

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
11/16"	-3.50	11.31	3.57	5.03	3.57	5.03
5/16"	-3.00	8.00	0.00	0.00	3.57	5.03
3.5	-2.50	5.66	0.61	0.86	4.18	5.89
4	-2.25	4.76	0.19	0.27	4.37	6.15
5	-2.00	4.00	0.13	0.18	4.50	6.34
7	-1.50	2.83	0.10	0.14	4.60	6.48
10	-1.00	2.00	0.26	0.37	4.86	6.84
14	-0.50	1.41	0.33	0.46	5.19	7.31
18	0.00	1.00	0.34	0.48	5.53	7.79
25	0.50	0.71	0.41	0.58	5.94	8.36
35	1.00	0.50	0.51	0.72	6.45	9.08
45	1.50	0.35	0.57	0.80	7.02	9.88
60	2.00	0.25	1.29	1.82	8.31	11.70
80	2.50	0.18	15.02	21.15	23.33	32.85
120	3.00	0.13	36.61	51.55	59.94	84.40
170	3.50	0.09	6.62	9.32	66.56	93.72
200	3.75	0.07	0.42	0.59	66.98	94.31
230	4.00	0.06	0.20	0.28	67.18	94.59

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.00	2.91	2.67	2.31	2.10	-3.01

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.16	0.22	1.64	-2.88	10.22

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-11 #6

Analysis Date: 03-07-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,677	1,156,316	Florida State Plane West	-29.6 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-8/1 Dry - 5Y-7/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
73.09	69.56	0.16	0.31	#200 - 5.65 #230 - 5.36			13

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
11/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	1.08	1.48	1.08	1.48
3.5	-2.50	5.66	0.00	0.00	1.08	1.48
4	-2.25	4.76	0.00	0.00	1.08	1.48
5	-2.00	4.00	0.00	0.00	1.08	1.48
7	-1.50	2.83	0.06	0.08	1.14	1.56
10	-1.00	2.00	0.40	0.55	1.54	2.11
14	-0.50	1.41	0.55	0.75	2.09	2.86
18	0.00	1.00	0.50	0.68	2.59	3.54
25	0.50	0.71	0.77	1.05	3.36	4.60
35	1.00	0.50	1.18	1.61	4.54	6.21
45	1.50	0.35	1.09	1.49	5.63	7.70
60	2.00	0.25	1.67	2.28	7.30	9.99
80	2.50	0.18	10.58	14.48	17.88	24.46
120	3.00	0.13	41.49	56.77	59.37	81.23
170	3.50	0.09	8.99	12.30	68.36	93.53
200	3.75	0.07	0.60	0.82	68.96	94.35
230	4.00	0.06	0.21	0.29	69.17	94.64

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.11	2.95	2.72	2.50	2.21	0.62

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.47	0.18	1.02	-3.65	18.57

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-13 #1

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,983	1,155,942	Florida State Plane West	-19.3 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-6/1 Dry - 5Y-7/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
83.46	82.27	0.00	0.14	#200 - 1.61 #230 - 1.56		17	0

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
11/16"	-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	0.03	0.04	0.03	0.04
7	-1.50	2.83	0.28	0.34	0.31	0.38
10	-1.00	2.00	0.53	0.64	0.84	1.02
14	-0.50	1.41	0.98	1.17	1.82	2.19
18	0.00	1.00	1.02	1.22	2.84	3.41
25	0.50	0.71	1.26	1.51	4.10	4.92
35	1.00	0.50	1.76	2.11	5.86	7.03
45	1.50	0.35	2.07	2.48	7.93	9.51
60	2.00	0.25	4.34	5.20	12.27	14.71
80	2.50	0.18	15.51	18.58	27.78	33.29
120	3.00	0.13	45.77	54.84	73.55	88.13
170	3.50	0.09	8.33	9.98	81.88	98.11
200	3.75	0.07	0.23	0.28	82.11	98.39
230	4.00	0.06	0.04	0.05	82.15	98.44

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.34	2.96	2.88	2.65	2.28	2.03	0.52

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.42	0.19	0.83	-2.49	9.97

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-13 #2

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,983	1,155,942	Florida State Plane West	-20.8 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/1 Dry - 5Y-7/2 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
77.04	75.66	0.03	0.23	#200 - 2.15 #230 - 2.05		55	1

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
11/16"	-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	0.15	0.19	0.15	0.19
4	-2.25	4.76	0.41	0.53	0.56	0.72
5	-2.00	4.00	0.19	0.25	0.75	0.97
7	-1.50	2.83	1.14	1.48	1.89	2.45
10	-1.00	2.00	1.43	1.86	3.32	4.31
14	-0.50	1.41	1.94	2.52	5.26	6.83
18	0.00	1.00	1.95	2.53	7.21	9.36
25	0.50	0.71	2.77	3.60	9.98	12.96
35	1.00	0.50	2.94	3.82	12.92	16.78
45	1.50	0.35	2.74	3.56	15.66	20.34
60	2.00	0.25	4.13	5.36	19.79	25.70
80	2.50	0.18	13.06	16.95	32.85	42.65
120	3.00	0.13	34.66	44.99	67.51	87.64
170	3.50	0.09	7.57	9.83	75.08	97.47
200	3.75	0.07	0.29	0.38	75.37	97.85
230	4.00	0.06	0.08	0.10	75.45	97.95

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.37	2.96	2.86	2.58	1.93	0.90	-0.86

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.08	0.24	1.25	-1.72	5.26

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-13 #3

Analysis Date: 03-05-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,983	1,155,942	Florida State Plane West	-22.3 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-7/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
89.66	87.05	0.04	0.07	#200 - 3.20 #230 - 3.03		10	0

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
11/16"	-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	0.19	0.21	0.19	0.21
4	-2.25	4.76	0.08	0.09	0.27	0.30
5	-2.00	4.00	0.03	0.03	0.30	0.33
7	-1.50	2.83	0.21	0.23	0.51	0.56
10	-1.00	2.00	0.32	0.36	0.83	0.92
14	-0.50	1.41	0.43	0.48	1.26	1.40
18	0.00	1.00	0.43	0.48	1.69	1.88
25	0.50	0.71	0.52	0.58	2.21	2.46
35	1.00	0.50	0.49	0.55	2.70	3.01
45	1.50	0.35	0.53	0.59	3.23	3.60
60	2.00	0.25	0.99	1.10	4.22	4.70
80	2.50	0.18	6.30	7.03	10.52	11.73
120	3.00	0.13	57.26	63.86	67.78	75.59
170	3.50	0.09	18.38	20.50	86.16	96.09
200	3.75	0.07	0.64	0.71	86.80	96.80
230	4.00	0.06	0.15	0.17	86.95	96.97

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.47	3.21	3.00	2.80	2.60	2.53	2.02

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.7	0.15	0.69	-4.33	26.96

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-13 #4

Analysis Date: 03-05-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,983	1,155,942	Florida State Plane West	-24.5 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
102.19	100.76	0.07	0.07	#200 - 1.60 #230 - 1.55		4	0

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
11/16"	-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	0.19	0.19	0.19	0.19
10	-1.00	2.00	0.17	0.17	0.36	0.36
14	-0.50	1.41	0.27	0.26	0.63	0.62
18	0.00	1.00	0.28	0.27	0.91	0.89
25	0.50	0.71	0.27	0.26	1.18	1.15
35	1.00	0.50	0.35	0.34	1.53	1.49
45	1.50	0.35	0.48	0.47	2.01	1.96
60	2.00	0.25	4.19	4.10	6.20	6.06
80	2.50	0.18	28.77	28.15	34.97	34.21
120	3.00	0.13	55.45	54.26	90.42	88.47
170	3.50	0.09	9.77	9.56	100.19	98.03
200	3.75	0.07	0.38	0.37	100.57	98.40
230	4.00	0.06	0.05	0.05	100.62	98.45

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.34	2.96	2.88	2.65	2.34	2.18	1.87

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.56	0.17	0.52	-3.27	23

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-13 #7

Analysis Date: 08-18-08

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,983	1,155,942	Florida State Plane West	-25.3 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-6/3 Dry - 5Y-7/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
97.79	95.25	0.39	0.16	#200 - 3.37 #230 - 3.16		52	6

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	7.41	7.58	7.41	7.58
7/16"	-3.50	11.31	7.87	8.05	15.28	15.63
5/16"	-3.00	8.00	3.71	3.79	18.99	19.42
3.5	-2.50	5.66	4.18	4.27	23.17	23.69
4	-2.25	4.76	2.44	2.50	25.61	26.19
5	-2.00	4.00	3.04	3.11	28.65	29.30
7	-1.50	2.83	4.46	4.56	33.11	33.86
10	-1.00	2.00	5.00	5.11	38.11	38.97
14	-0.50	1.41	5.24	5.36	43.35	44.33
18	0.00	1.00	4.34	4.44	47.69	48.77
25	0.50	0.71	4.66	4.77	52.35	53.54
35	1.00	0.50	3.59	3.67	55.94	57.21
45	1.50	0.35	3.40	3.48	59.34	60.69
60	2.00	0.25	3.09	3.16	62.43	63.85
80	2.50	0.18	5.26	5.38	67.69	69.23
120	3.00	0.13	17.90	18.30	85.59	87.53
170	3.50	0.09	8.45	8.64	94.04	96.17
200	3.75	0.07	0.45	0.46	94.49	96.63
230	4.00	0.06	0.21	0.21	94.70	96.84

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.43	2.90	2.66	0.13	-2.37	-3.45	-4.09

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	-0.11	1.08	2.59	-0.15	1.56

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-13 #5

Analysis Date: 03-07-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,983	1,155,942	Florida State Plane West	-26.8 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/2 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
87.05	84.01	0.18	0.23	#200 - 4.23 #230 - 3.93			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	23.63	27.15	23.63	27.15
11/16"	-3.50	11.31	1.67	1.92	25.30	29.06
5/16"	-3.00	8.00	2.17	2.49	27.47	31.56
3.5	-2.50	5.66	0.21	0.24	27.68	31.80
4	-2.25	4.76	0.00	0.00	27.68	31.80
5	-2.00	4.00	0.17	0.20	27.85	31.99
7	-1.50	2.83	0.31	0.36	28.16	32.35
10	-1.00	2.00	0.55	0.63	28.71	32.98
14	-0.50	1.41	0.45	0.52	29.16	33.50
18	0.00	1.00	0.30	0.34	29.46	33.84
25	0.50	0.71	0.36	0.41	29.82	34.26
35	1.00	0.50	0.42	0.48	30.24	34.74
45	1.50	0.35	0.52	0.60	30.76	35.34
60	2.00	0.25	0.93	1.07	31.69	36.40
80	2.50	0.18	8.04	9.24	39.73	45.64
120	3.00	0.13	34.16	39.24	73.89	84.88
170	3.50	0.09	8.74	10.04	82.63	94.92
200	3.75	0.07	0.74	0.85	83.37	95.77
230	4.00	0.06	0.26	0.30	83.63	96.07

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.52	2.99	2.87	2.56	-4.02	-4.10	-4.20

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.4	0.76	3.19	-0.63	1.47

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-13 #6

Analysis Date: 03-07-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,983	1,155,942	Florida State Plane West	-30.1 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/2 Dry - 5Y-7/2 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
65.26	62.84	0.19	0.21	#200 - 4.51 #230 - 4.21			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
11/16"	-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	0.12	0.18	0.12	0.18
10	-1.00	2.00	0.16	0.25	0.28	0.43
14	-0.50	1.41	0.26	0.40	0.54	0.83
18	0.00	1.00	0.27	0.41	0.81	1.24
25	0.50	0.71	0.49	0.75	1.30	1.99
35	1.00	0.50	0.67	1.03	1.97	3.02
45	1.50	0.35	0.63	0.97	2.60	3.98
60	2.00	0.25	1.10	1.69	3.70	5.67
80	2.50	0.18	6.45	9.88	10.15	15.55
120	3.00	0.13	41.10	62.98	51.25	78.53
170	3.50	0.09	10.32	15.81	61.57	94.35
200	3.75	0.07	0.75	1.15	62.32	95.49
230	4.00	0.06	0.19	0.29	62.51	95.79

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.64	3.17	2.97	2.77	2.58	2.50	1.80

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.67	0.16	0.61	-3.41	19.37

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-14 #1

Analysis Date: 03-05-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,680	1,156,488	Florida State Plane West	-17.6 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
95.78	94.66	0.01	0.07	#200 - 1.27 #230 - 1.26		5	0

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
11/16"	-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	0.07	0.07	0.07	0.07
7	-1.50	2.83	0.11	0.11	0.18	0.18
10	-1.00	2.00	0.20	0.21	0.38	0.39
14	-0.50	1.41	0.27	0.28	0.65	0.67
18	0.00	1.00	0.30	0.31	0.95	0.98
25	0.50	0.71	0.39	0.41	1.34	1.39
35	1.00	0.50	0.66	0.69	2.00	2.08
45	1.50	0.35	0.95	0.99	2.95	3.07
60	2.00	0.25	5.15	5.38	8.10	8.45
80	2.50	0.18	31.23	32.61	39.33	41.06
120	3.00	0.13	50.69	52.92	90.02	93.98
170	3.50	0.09	4.44	4.64	94.46	98.62
200	3.75	0.07	0.11	0.11	94.57	98.73
230	4.00	0.06	0.01	0.01	94.58	98.74

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.11	2.91	2.82	2.58	2.25	2.12	1.68

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.48	0.18	0.54	-3.32	21.54

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-14 #2

Analysis Date: 03-05-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,680	1,156,488	Florida State Plane West	-20.1 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/1 Dry - 5Y-7/2 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
88.35	86.98	0.02	0.01	#200 - 1.64 #230 - 1.59		10	0

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
11/16"	-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	0.06	0.07	0.06	0.07
7	-1.50	2.83	0.10	0.11	0.16	0.18
10	-1.00	2.00	0.31	0.35	0.47	0.53
14	-0.50	1.41	0.55	0.62	1.02	1.15
18	0.00	1.00	0.81	0.92	1.83	2.07
25	0.50	0.71	1.03	1.17	2.86	3.24
35	1.00	0.50	1.16	1.31	4.02	4.55
45	1.50	0.35	1.47	1.66	5.49	6.21
60	2.00	0.25	3.79	4.29	9.28	10.50
80	2.50	0.18	18.54	20.98	27.82	31.48
120	3.00	0.13	49.23	55.72	77.05	87.20
170	3.50	0.09	9.62	10.89	86.67	98.09
200	3.75	0.07	0.24	0.27	86.91	98.36
230	4.00	0.06	0.04	0.05	86.95	98.41

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.36	2.97	2.89	2.67	2.35	2.13	1.14

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.5	0.18	0.7	-2.8	13.23

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-14 #3

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,680	1,156,488	Florida State Plane West	-21.1 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/1 Dry - 5Y-7/2 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
81.10	79.71	0.00	0.12	#200 - 1.85 #230 - 1.84		14	1

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
11/16"	-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	0.03	0.04	0.03	0.04
4	-2.25	4.76	0.04	0.05	0.07	0.09
5	-2.00	4.00	0.32	0.39	0.39	0.48
7	-1.50	2.83	0.52	0.64	0.91	1.12
10	-1.00	2.00	0.72	0.89	1.63	2.01
14	-0.50	1.41	0.94	1.16	2.57	3.17
18	0.00	1.00	1.21	1.49	3.78	4.66
25	0.50	0.71	1.55	1.91	5.33	6.57
35	1.00	0.50	1.53	1.89	6.86	8.46
45	1.50	0.35	3.25	4.01	10.11	12.47
60	2.00	0.25	15.07	18.58	25.18	31.05
80	2.50	0.18	44.73	55.15	69.91	86.20
120	3.00	0.13	8.18	10.09	78.09	96.29
170	3.50	0.09	1.45	1.79	79.54	98.08
200	3.75	0.07	0.06	0.07	79.60	98.15
230	4.00	0.06	0.01	0.01	79.61	98.16

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	2.48	2.40	2.17	1.84	1.59	0.09

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.96	0.26	0.83	-2.52	10.64

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-14 #4

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,680	1,156,488	Florida State Plane West	-22.8 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/1 Dry - 5Y-6/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
96.30	92.91	0.20	0.02	#200 - 3.98 #230 - 3.76		38	4

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
11/16"	-3.50	11.31	2.60	2.70	2.60	2.70
5/16"	-3.00	8.00	0.91	0.94	3.51	3.64
3.5	-2.50	5.66	1.25	1.30	4.76	4.94
4	-2.25	4.76	0.48	0.50	5.24	5.44
5	-2.00	4.00	1.17	1.21	6.41	6.65
7	-1.50	2.83	3.87	4.02	10.28	10.67
10	-1.00	2.00	6.44	6.69	16.72	17.36
14	-0.50	1.41	9.92	10.30	26.64	27.66
18	0.00	1.00	8.63	8.96	35.27	36.62
25	0.50	0.71	9.12	9.47	44.39	46.09
35	1.00	0.50	5.38	5.59	49.77	51.68
45	1.50	0.35	9.44	9.80	59.21	61.48
60	2.00	0.25	5.52	5.73	64.73	67.21
80	2.50	0.18	7.27	7.55	72.00	74.76
120	3.00	0.13	15.09	15.67	87.09	90.43
170	3.50	0.09	2.15	2.23	89.24	92.66
200	3.75	0.07	3.24	3.36	92.48	96.02
230	4.00	0.06	0.21	0.22	92.69	96.24

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.67	2.79	2.51	0.85	-0.63	-1.10	-2.47

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.66	0.63	1.82	-0.35	2.42

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-14 #5

Analysis Date: 03-05-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,680	1,156,488	Florida State Plane West	-23.6 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/2 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
84.80	82.50	0.02	0.18	#200 - 3.09 #230 - 2.92		8	0

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
11/16"	-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	0.08	0.09	0.08	0.09
4	-2.25	4.76	0.00	0.00	0.08	0.09
5	-2.00	4.00	0.11	0.13	0.19	0.22
7	-1.50	2.83	0.08	0.09	0.27	0.31
10	-1.00	2.00	0.36	0.42	0.63	0.73
14	-0.50	1.41	0.42	0.50	1.05	1.23
18	0.00	1.00	0.45	0.53	1.50	1.76
25	0.50	0.71	0.38	0.45	1.88	2.21
35	1.00	0.50	0.36	0.42	2.24	2.63
45	1.50	0.35	0.29	0.34	2.53	2.97
60	2.00	0.25	0.58	0.68	3.11	3.65
80	2.50	0.18	3.16	3.73	6.27	7.38
120	3.00	0.13	52.96	62.45	59.23	69.83
170	3.50	0.09	22.15	26.12	81.38	95.95
200	3.75	0.07	0.81	0.96	82.19	96.91
230	4.00	0.06	0.14	0.17	82.33	97.08

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.48	3.27	3.10	2.84	2.64	2.57	2.18

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.78	0.15	0.64	-4.46	28.54

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-14 #6

Analysis Date: 03-05-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,680	1,156,488	Florida State Plane West	-25.8 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-7/2 Dry - 5Y-7/2 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
86.08	81.58	0.06	0.05	#200 - 5.55 #230 - 5.35		9	1

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
11/16"	-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	0.25	0.29	0.25	0.29
7	-1.50	2.83	0.32	0.37	0.57	0.66
10	-1.00	2.00	0.56	0.65	1.13	1.31
14	-0.50	1.41	0.65	0.76	1.78	2.07
18	0.00	1.00	0.52	0.60	2.30	2.67
25	0.50	0.71	0.57	0.66	2.87	3.33
35	1.00	0.50	0.53	0.62	3.40	3.95
45	1.50	0.35	0.56	0.65	3.96	4.60
60	2.00	0.25	0.63	0.73	4.59	5.33
80	2.50	0.18	2.87	3.33	7.46	8.66
120	3.00	0.13	57.50	66.80	64.96	75.46
170	3.50	0.09	15.65	18.18	80.61	93.64
200	3.75	0.07	0.70	0.81	81.31	94.45
230	4.00	0.06	0.17	0.20	81.48	94.65

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.23	3.00	2.81	2.62	2.55	1.77

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.68	0.16	0.76	-3.97	20.72

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-14 #7

Analysis Date: 03-07-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,680	1,156,488	Florida State Plane West	-26.7 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-6/3 Dry - 5Y-7/2 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
76.39	74.55	0.06	0.20	#200 - 2.84 #230 - 2.68			34

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
11/16"	-3.50	11.31	2.03	2.66	2.03	2.66
5/16"	-3.00	8.00	0.48	0.63	2.51	3.29
3.5	-2.50	5.66	3.59	4.70	6.10	7.99
4	-2.25	4.76	0.61	0.80	6.71	8.78
5	-2.00	4.00	2.01	2.63	8.72	11.42
7	-1.50	2.83	2.82	3.69	11.54	15.11
10	-1.00	2.00	3.32	4.35	14.86	19.45
14	-0.50	1.41	3.54	4.63	18.40	24.09
18	0.00	1.00	2.48	3.25	20.88	27.33
25	0.50	0.71	2.39	3.13	23.27	30.46
35	1.00	0.50	1.79	2.34	25.06	32.81
45	1.50	0.35	1.35	1.77	26.41	34.57
60	2.00	0.25	2.04	2.67	28.45	37.24
80	2.50	0.18	6.88	9.01	35.33	46.25
120	3.00	0.13	28.24	36.97	63.57	83.22
170	3.50	0.09	10.20	13.35	73.77	96.57
200	3.75	0.07	0.45	0.59	74.22	97.16
230	4.00	0.06	0.12	0.16	74.34	97.32

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.44	3.03	2.89	2.55	-0.36	-1.40	-2.82

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.32	0.40	2.11	-0.97	2.5

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-15 #1

Analysis Date: 03-05-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,034	1,156,701	Florida State Plane West	-19.1 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
80.12	79.07	0.02	0.02	#200 - 1.39 #230 - 1.37		5	0

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
11/16"	-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	0.02	0.02	0.02	0.02
5	-2.00	4.00	0.12	0.15	0.14	0.17
7	-1.50	2.83	0.06	0.07	0.20	0.24
10	-1.00	2.00	0.16	0.20	0.36	0.44
14	-0.50	1.41	0.34	0.42	0.70	0.86
18	0.00	1.00	0.33	0.41	1.03	1.27
25	0.50	0.71	0.37	0.46	1.40	1.73
35	1.00	0.50	0.52	0.65	1.92	2.38
45	1.50	0.35	0.52	0.65	2.44	3.03
60	2.00	0.25	1.81	2.26	4.25	5.29
80	2.50	0.18	15.43	19.26	19.68	24.55
120	3.00	0.13	51.93	64.82	71.61	89.37
170	3.50	0.09	7.21	9.00	78.82	98.37
200	3.75	0.07	0.19	0.24	79.01	98.61
230	4.00	0.06	0.02	0.02	79.03	98.63

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.31	2.96	2.89	2.70	2.50	2.28	1.94

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.59	0.17	0.57	-3.98	25.82

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-15 #2

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,034	1,156,701	Florida State Plane West	-20.4 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/2 Dry - 5Y-8/1 Washed - 5Y-8/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
81.47	79.99	0.05	0.06	#200 - 2.00 #230 - 1.93		15	1

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
11/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.10	0.12	0.10	0.12
3.5	-2.50	5.66	0.11	0.14	0.21	0.26
4	-2.25	4.76	0.00	0.00	0.21	0.26
5	-2.00	4.00	0.14	0.17	0.35	0.43
7	-1.50	2.83	0.47	0.58	0.82	1.01
10	-1.00	2.00	0.90	1.10	1.72	2.11
14	-0.50	1.41	1.38	1.69	3.10	3.80
18	0.00	1.00	1.54	1.89	4.64	5.69
25	0.50	0.71	1.57	1.93	6.21	7.62
35	1.00	0.50	1.79	2.20	8.00	9.82
45	1.50	0.35	1.79	2.20	9.79	12.02
60	2.00	0.25	4.14	5.08	13.93	17.10
80	2.50	0.18	16.22	19.91	30.15	37.01
120	3.00	0.13	41.66	51.14	71.81	88.15
170	3.50	0.09	5.84	7.17	77.65	95.32
200	3.75	0.07	2.18	2.68	79.83	98.00
230	4.00	0.06	0.06	0.07	79.89	98.07

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.48	2.96	2.87	2.63	2.20	1.89	-0.18

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.32	0.20	1.02	-2.3	8.73

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-15 #3

Analysis Date: 03-05-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,034	1,156,701	Florida State Plane West	-22.4 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/2 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
79.66	78.74	0.01	0.03	#200 - 1.23 #230 - 1.18		2	0

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
11/16"	-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	0.02	0.03	0.02	0.03
7	-1.50	2.83	0.11	0.14	0.13	0.17
10	-1.00	2.00	0.06	0.08	0.19	0.25
14	-0.50	1.41	0.16	0.20	0.35	0.45
18	0.00	1.00	0.14	0.18	0.49	0.63
25	0.50	0.71	0.20	0.25	0.69	0.88
35	1.00	0.50	0.20	0.25	0.89	1.13
45	1.50	0.35	0.25	0.31	1.14	1.44
60	2.00	0.25	1.19	1.49	2.33	2.93
80	2.50	0.18	13.12	16.47	15.45	19.40
120	3.00	0.13	53.97	67.75	69.42	87.15
170	3.50	0.09	9.07	11.39	78.49	98.54
200	3.75	0.07	0.18	0.23	78.67	98.77
230	4.00	0.06	0.04	0.05	78.71	98.82

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.34	2.98	2.91	2.73	2.54	2.40	2.06

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.67	0.16	0.45	-4.2	34.72

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-15 #4

Analysis Date: 08-19-08

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,034	1,156,701	Florida State Plane West	-25.2 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-6/1 Dry - 5Y-7/1 Washed - 2.5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
104.44	101.35	0.12	0.03	#200 - 3.35 #230 - 3.11		22	0

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	11.23	10.75	11.23	10.75
7/16"	-3.50	11.31	4.40	4.21	15.63	14.96
5/16"	-3.00	8.00	4.02	3.85	19.65	18.81
3.5	-2.50	5.66	0.71	0.68	20.36	19.49
4	-2.25	4.76	0.92	0.88	21.28	20.37
5	-2.00	4.00	0.66	0.63	21.94	21.00
7	-1.50	2.83	2.43	2.33	24.37	23.33
10	-1.00	2.00	1.47	1.41	25.84	24.74
14	-0.50	1.41	1.47	1.41	27.31	26.15
18	0.00	1.00	1.21	1.16	28.52	27.31
25	0.50	0.71	2.00	1.91	30.52	29.22
35	1.00	0.50	1.60	1.53	32.12	30.75
45	1.50	0.35	1.88	1.80	34.00	32.55
60	2.00	0.25	4.34	4.16	38.34	36.71
80	2.50	0.18	30.86	29.55	69.20	66.26
120	3.00	0.13	28.39	27.18	97.59	93.44
170	3.50	0.09	2.97	2.84	100.56	96.28
200	3.75	0.07	0.39	0.37	100.95	96.65
230	4.00	0.06	0.25	0.24	101.20	96.89

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.27	2.83	2.66	2.22	-0.91	-3.36	-4.13

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.81	0.57	2.59	-1.03	2.35

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-16 #1

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,179	1,156,657	Florida State Plane West	-19.6 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
75.28	74.18	0.01	0.09	#200 - 1.62 #230 - 1.55		15	1

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
11/16"	-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	0.10	0.13	0.10	0.13
4	-2.25	4.76	0.06	0.08	0.16	0.21
5	-2.00	4.00	0.54	0.72	0.70	0.93
7	-1.50	2.83	0.70	0.93	1.40	1.86
10	-1.00	2.00	0.22	0.29	1.62	2.15
14	-0.50	1.41	1.12	1.49	2.74	3.64
18	0.00	1.00	1.12	1.49	3.86	5.13
25	0.50	0.71	1.44	1.91	5.30	7.04
35	1.00	0.50	1.79	2.38	7.09	9.42
45	1.50	0.35	1.83	2.43	8.92	11.85
60	2.00	0.25	3.92	5.21	12.84	17.06
80	2.50	0.18	17.07	22.68	29.91	39.74
120	3.00	0.13	38.57	51.24	68.48	90.98
170	3.50	0.09	5.43	7.21	73.91	98.19
200	3.75	0.07	0.14	0.19	74.05	98.38
230	4.00	0.06	0.05	0.07	74.10	98.45

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.28	2.93	2.84	2.60	2.18	1.90	-0.04

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.29	0.20	0.99	-2.52	9.77

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-16 #2

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,179	1,156,657	Florida State Plane West	-20.5 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-5/1 Dry - 5Y-6/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
78.25	77.77	0.02	0.08	#200 - 0.74 #230 - 0.70		59	6

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
11/16"	-3.50	11.31	0.40	0.51	0.40	0.51
5/16"	-3.00	8.00	1.25	1.60	1.65	2.11
3.5	-2.50	5.66	2.00	2.56	3.65	4.67
4	-2.25	4.76	1.51	1.93	5.16	6.60
5	-2.00	4.00	2.06	2.63	7.22	9.23
7	-1.50	2.83	4.43	5.66	11.65	14.89
10	-1.00	2.00	5.92	7.57	17.57	22.46
14	-0.50	1.41	8.86	11.32	26.43	33.78
18	0.00	1.00	7.94	10.15	34.37	43.93
25	0.50	0.71	8.35	10.67	42.72	54.60
35	1.00	0.50	6.71	8.58	49.43	63.18
45	1.50	0.35	4.68	5.98	54.11	69.16
60	2.00	0.25	5.00	6.39	59.11	75.55
80	2.50	0.18	6.44	8.23	65.55	83.78
120	3.00	0.13	10.35	13.23	75.90	97.01
170	3.50	0.09	1.67	2.13	77.57	99.14
200	3.75	0.07	0.09	0.12	77.66	99.26
230	4.00	0.06	0.03	0.04	77.69	99.30

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.92	2.51	1.96	0.28	-0.89	-1.43	-2.46

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.36	0.78	1.71	-0.1	2.09

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-16 #3

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,179	1,156,657	Florida State Plane West	-21.7 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-6/1 Dry - 5Y-7/1 Washed - 2.5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
74.41	71.64	0.06	0.13	#200 - 4.11 #230 - 3.94		10	1

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
11/16"	-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	0.05	0.07	0.05	0.07
4	-2.25	4.76	0.00	0.00	0.05	0.07
5	-2.00	4.00	0.20	0.27	0.25	0.34
7	-1.50	2.83	0.41	0.55	0.66	0.89
10	-1.00	2.00	0.57	0.77	1.23	1.66
14	-0.50	1.41	0.74	0.99	1.97	2.65
18	0.00	1.00	0.14	0.19	2.11	2.84
25	0.50	0.71	0.31	0.42	2.42	3.26
35	1.00	0.50	1.82	2.45	4.24	5.71
45	1.50	0.35	0.91	1.22	5.15	6.93
60	2.00	0.25	1.72	2.31	6.87	9.24
80	2.50	0.18	7.60	10.21	14.47	19.45
120	3.00	0.13	44.06	59.21	58.53	78.66
170	3.50	0.09	12.32	16.56	70.85	95.22
200	3.75	0.07	0.50	0.67	71.35	95.89
230	4.00	0.06	0.13	0.17	71.48	96.06

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.49	3.16	2.97	2.76	2.55	2.33	0.86

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.57	0.17	0.84	-3.24	15.21

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-16 #4

Analysis Date: 03-04-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,179	1,156,657	Florida State Plane West	-24.8 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-6/1 Dry - 5Y-7/1 Washed - 2.5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
76.72	74.34	0.06	0.08	#200 - 3.50 #230 - 3.28		8	0

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
11/16"	-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	0.05	0.07	0.05	0.07
7	-1.50	2.83	0.18	0.23	0.23	0.30
10	-1.00	2.00	0.30	0.39	0.53	0.69
14	-0.50	1.41	0.30	0.39	0.83	1.08
18	0.00	1.00	0.51	0.66	1.34	1.74
25	0.50	0.71	0.50	0.65	1.84	2.39
35	1.00	0.50	0.50	0.65	2.34	3.04
45	1.50	0.35	0.53	0.69	2.87	3.73
60	2.00	0.25	1.06	1.38	3.93	5.11
80	2.50	0.18	5.75	7.49	9.68	12.60
120	3.00	0.13	46.21	60.23	55.89	72.83
170	3.50	0.09	17.33	22.59	73.22	95.42
200	3.75	0.07	0.83	1.08	74.05	96.50
230	4.00	0.06	0.17	0.22	74.22	96.72

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.49	3.25	3.05	2.81	2.60	2.53	1.96

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.72	0.15	0.65	-3.72	21.18

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-16 #5

Analysis Date: 03-07-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,179	1,156,657	Florida State Plane West	-26.7 NAVD 88

USCS:	Munsell:	Comments:
SW	Wet - 5Y-6/1 Dry - 5Y-6/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
74.18	72.95	0.01	0.32	#200 - 2.01 #230 - 2.00			91

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	1.18	1.59	1.18	1.59
11/16"	-3.50	11.31	1.47	1.98	2.65	3.57
5/16"	-3.00	8.00	5.86	7.90	8.51	11.47
3.5	-2.50	5.66	9.42	12.70	17.93	24.17
4	-2.25	4.76	3.33	4.49	21.26	28.66
5	-2.00	4.00	4.92	6.63	26.18	35.29
7	-1.50	2.83	9.07	12.23	35.25	47.52
10	-1.00	2.00	8.50	11.46	43.75	58.98
14	-0.50	1.41	8.12	10.95	51.87	69.92
18	0.00	1.00	6.37	8.59	58.24	78.51
25	0.50	0.71	5.24	7.06	63.48	85.58
35	1.00	0.50	3.69	4.97	67.17	90.55
45	1.50	0.35	1.83	2.47	69.00	93.02
60	2.00	0.25	1.05	1.42	70.05	94.43
80	2.50	0.18	0.84	1.13	70.89	95.56
120	3.00	0.13	1.39	1.87	72.28	97.44
170	3.50	0.09	0.36	0.49	72.64	97.92
200	3.75	0.07	0.05	0.07	72.69	97.99
230	4.00	0.06	0.01	0.01	72.70	98.00

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.25	0.39	-0.20	-1.39	-2.45	-2.82	-3.41

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	-1.27	2.41	1.53	0.57	3.03

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria Island

Sample Name: AMVC-05-16 #6

Analysis Date: 03-09-05

Analyzed By: CPE

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,179	1,156,657	Florida State Plane West	-28.7 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-6/3 Dry - 5Y-6/2 Washed - 5Y-6/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
69.95	65.82	0.17	0.26	#200 - 6.60 #230 - 6.40			49

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
11/16"	-3.50	11.31	6.71	9.59	6.71	9.59
5/16"	-3.00	8.00	2.17	3.10	8.88	12.69
3.5	-2.50	5.66	3.90	5.58	12.78	18.27
4	-2.25	4.76	1.55	2.22	14.33	20.49
5	-2.00	4.00	2.41	3.45	16.74	23.93
7	-1.50	2.83	3.87	5.53	20.61	29.46
10	-1.00	2.00	4.27	6.10	24.88	35.57
14	-0.50	1.41	4.65	6.65	29.53	42.22
18	0.00	1.00	2.75	3.93	32.28	46.15
25	0.50	0.71	2.82	4.03	35.10	50.18
35	1.00	0.50	2.07	2.96	37.17	53.14
45	1.50	0.35	1.42	2.03	38.59	55.17
60	2.00	0.25	1.96	2.80	40.55	57.97
80	2.50	0.18	4.36	6.23	44.91	64.20
120	3.00	0.13	13.55	19.37	58.46	83.57
170	3.50	0.09	6.49	9.28	64.95	92.85
200	3.75	0.07	0.38	0.54	65.33	93.40
230	4.00	0.06	0.14	0.20	65.47	93.60

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

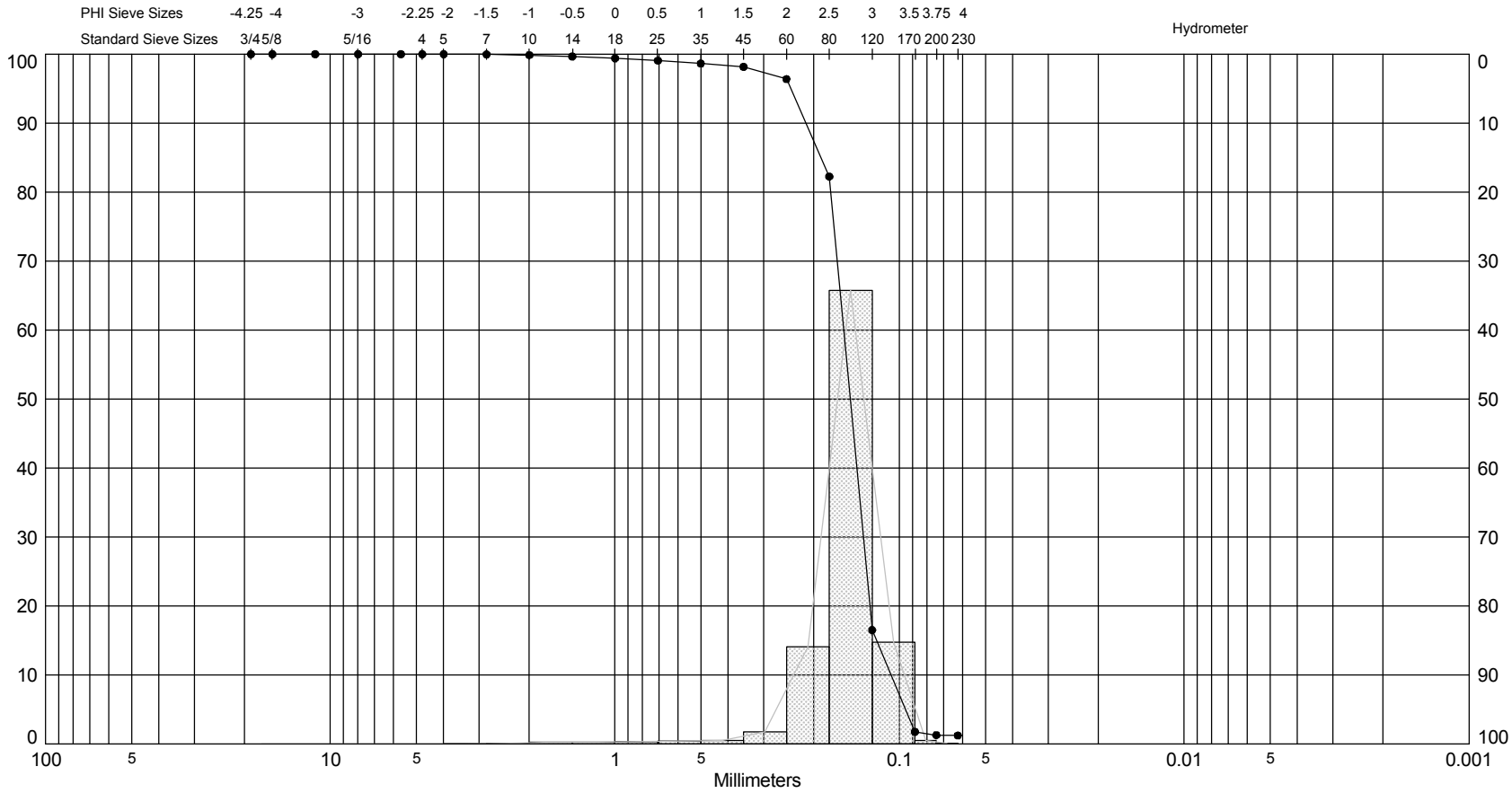
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.02	2.78	0.48	-1.90	-2.70	-3.86

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.15	0.90	2.46	-0.17	1.55

GRANULARMETRIC REPORT ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

APPENDIX 1-G

2008 CPE INDIVIDUAL VIBRACORE GRAIN SIZE DISTRIBUTION CURVES/HISTOGRAMS



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-01 #1	—●—	-20.4	SP	#200 - 1.28 #230 - 1.21		4	2.75	2.69	-3.4	24.18	0.46

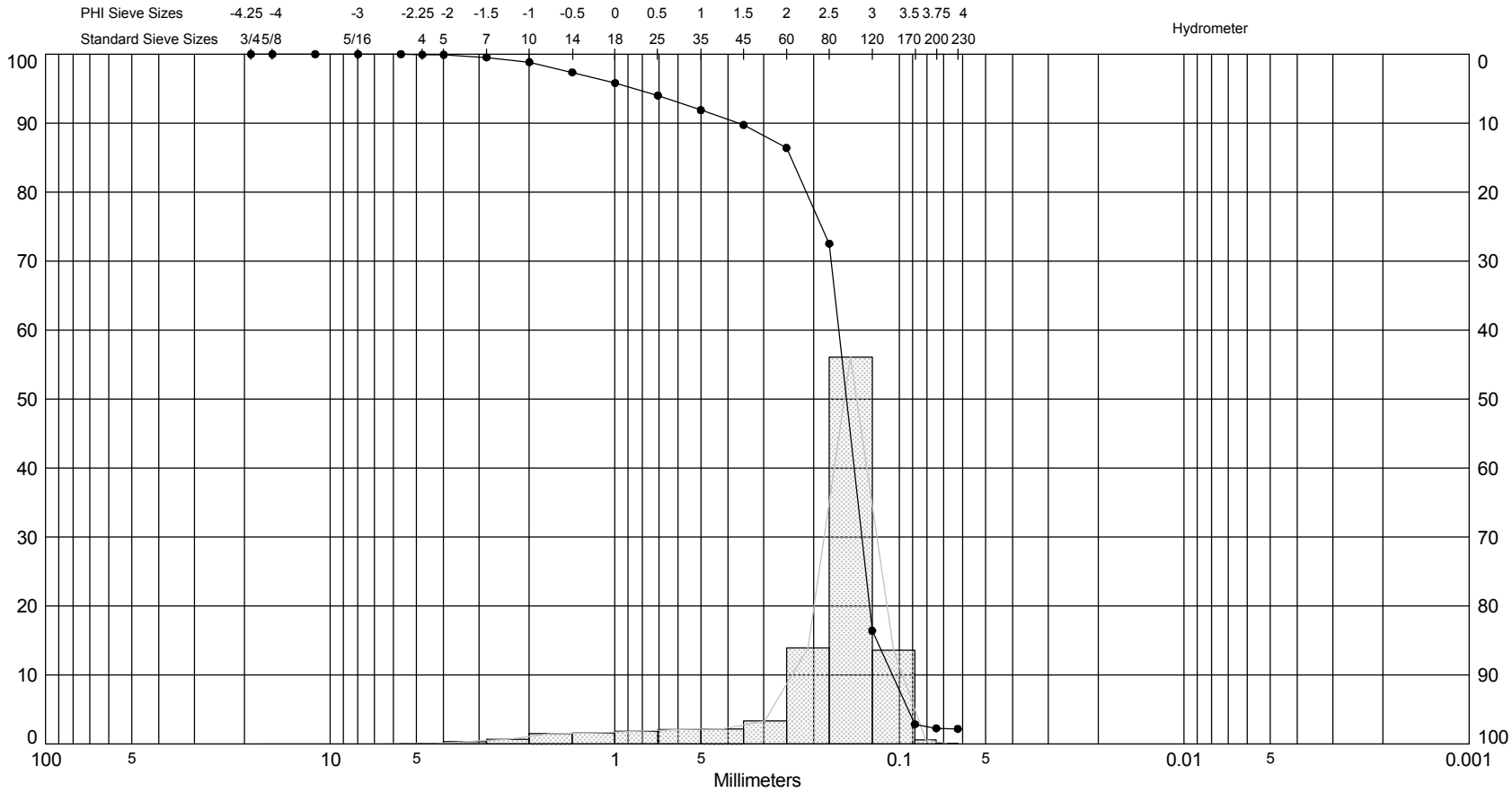
Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	409,803
Northing (Y, ft):	1,157,404
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-01 #2	—●—	-22.7	SW	#200 - 2.27 #230 - 2.19		13	2.7	2.45	-2.46	9.31	0.9

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	409,803
Northing (Y, ft):	1,157,404
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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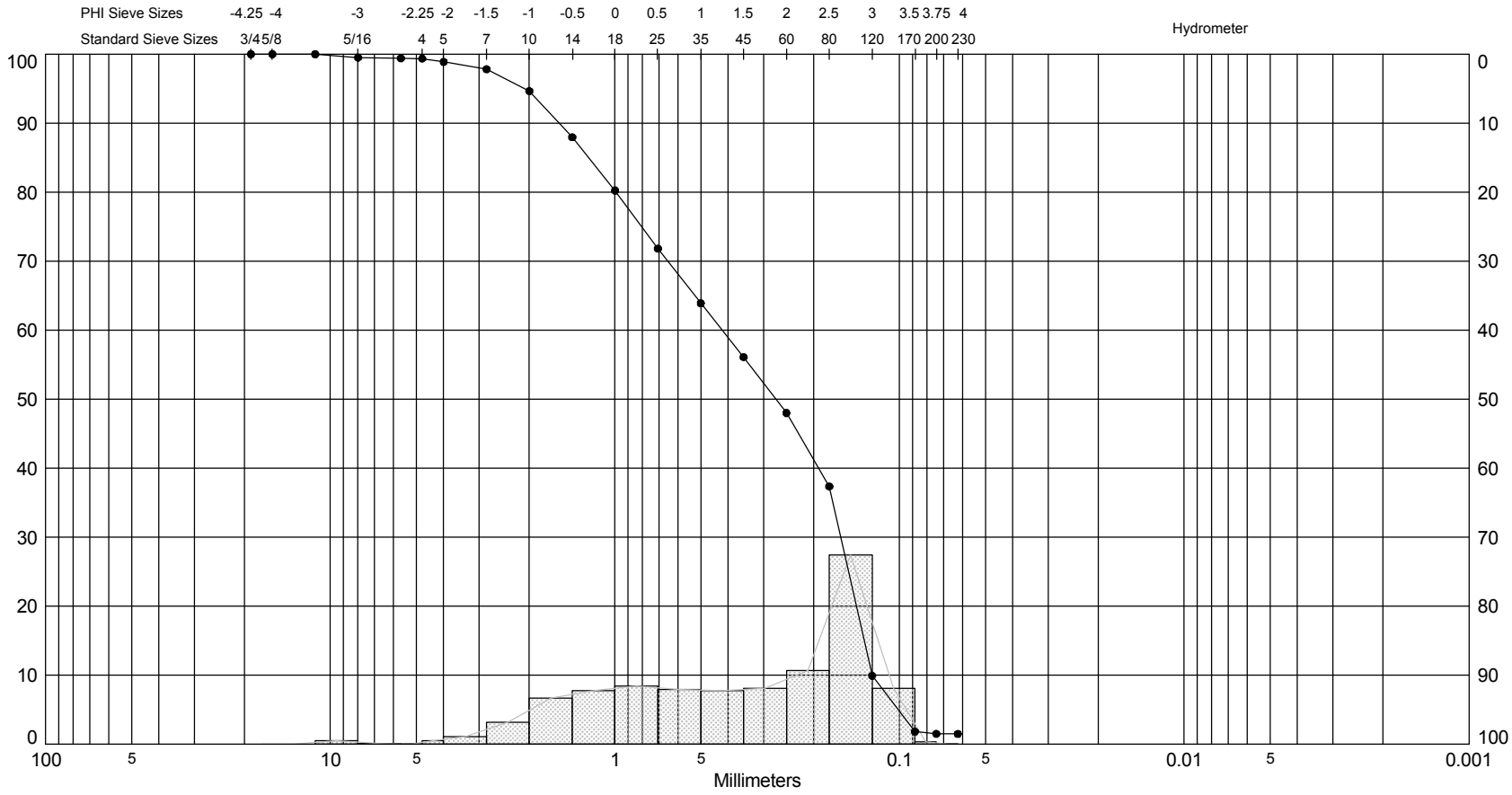

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-01 #3	—●—	-24.1	SW	#200 - 1.48 #230 - 1.46		50	1.88	1.45	-0.64	2.45	1.45

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-03-08
Analyzed By:	JC
Easting (X, ft):	409,803
Northing (Y, ft):	1,157,404
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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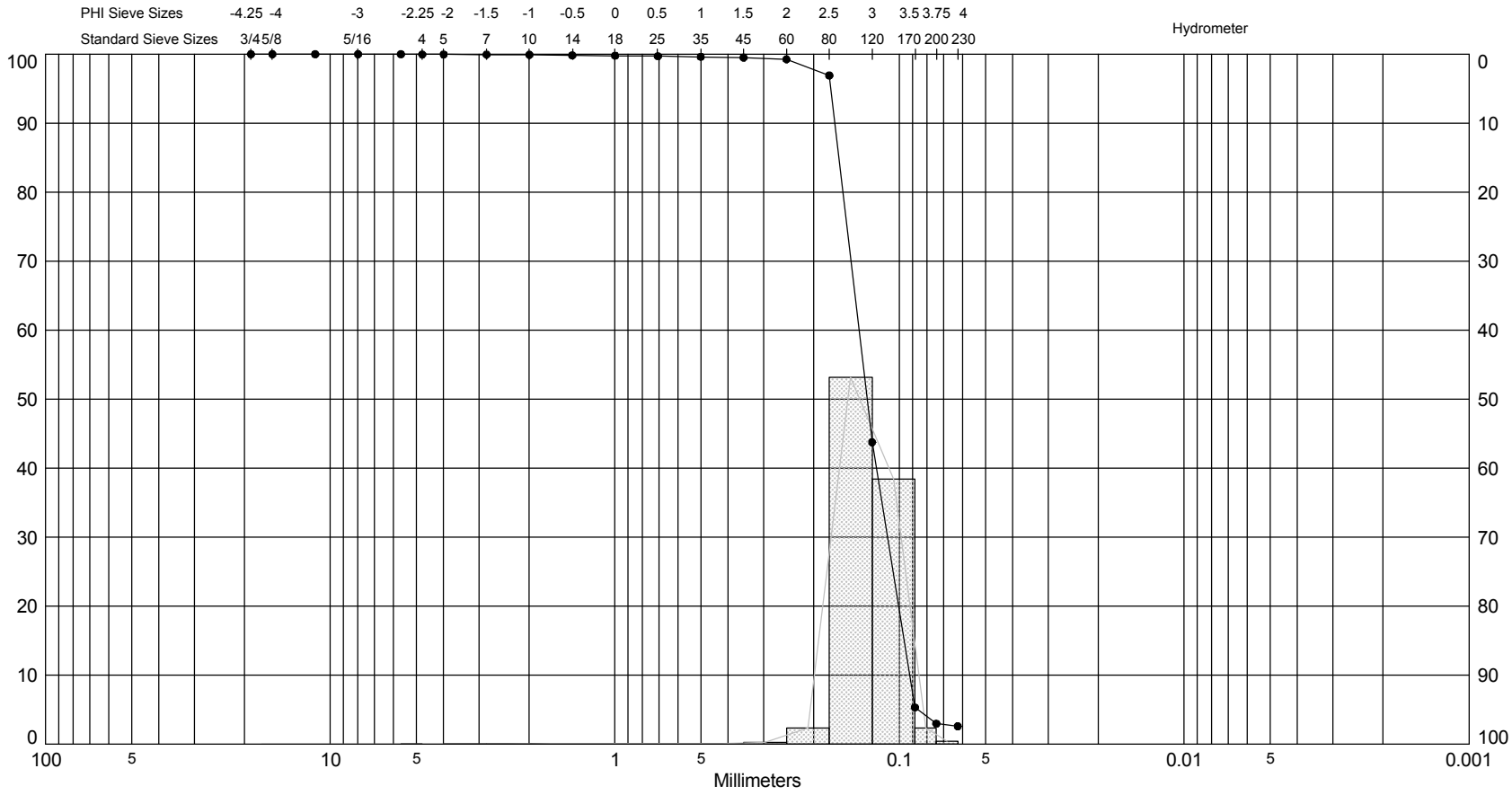

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-01 #4	—●—	-27.4	SP	#200 - 2.96 #230 - 2.58			2.94	2.94	-3.63	42.87	0.37

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-03-08
Analyzed By:	TD
Easting (X, ft):	409,803
Northing (Y, ft):	1,157,404
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
ph (561) 391-8102
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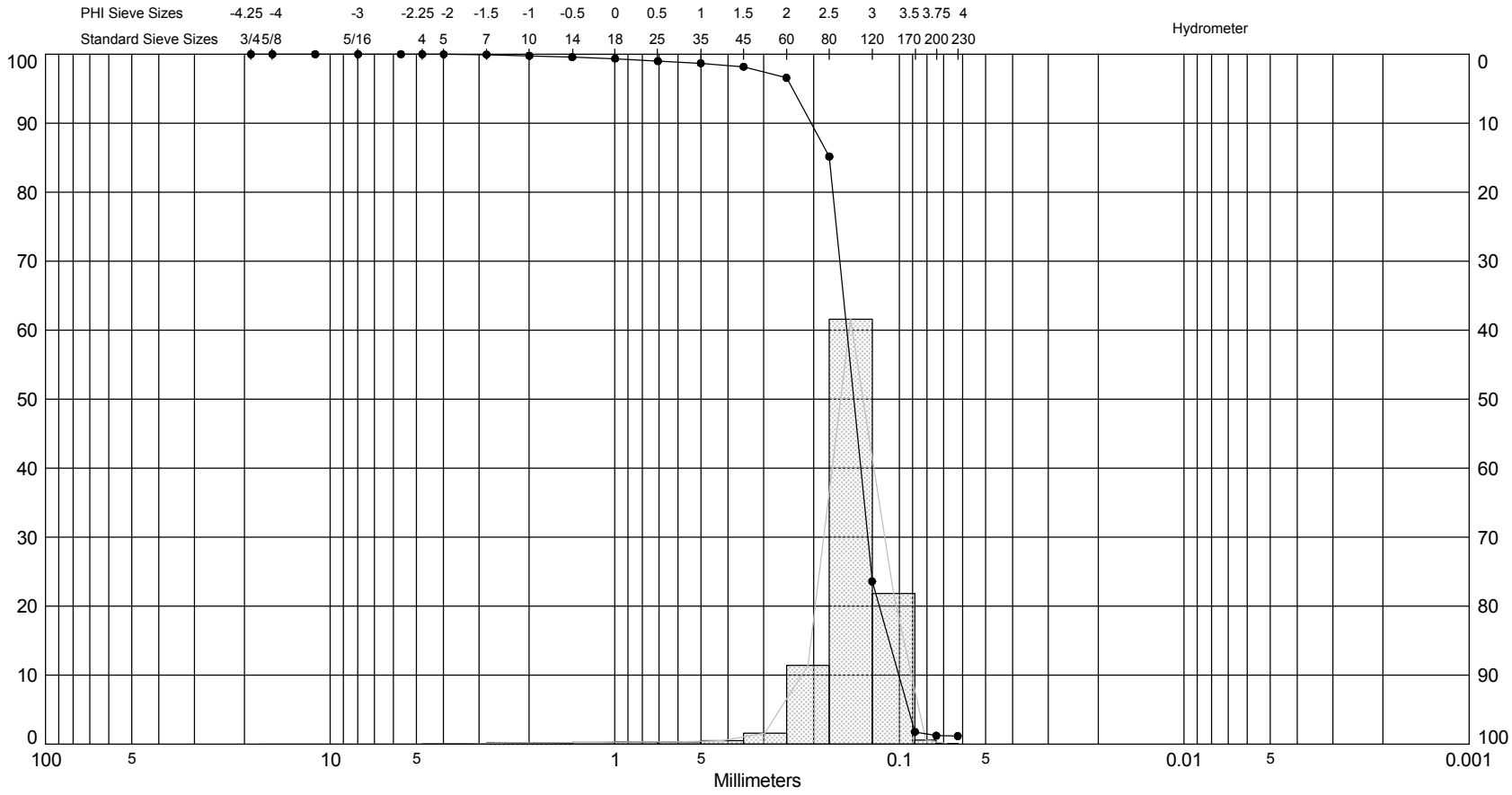
SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-02 #1	—●—	-22.2	SP	#200 - 1.22 #230 - 1.16		4	2.79	2.75	-3.51	25.45	0.48

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-02-08
Analyzed By:	LH
Easting (X, ft):	412,571
Northing (Y, ft):	1,154,054
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

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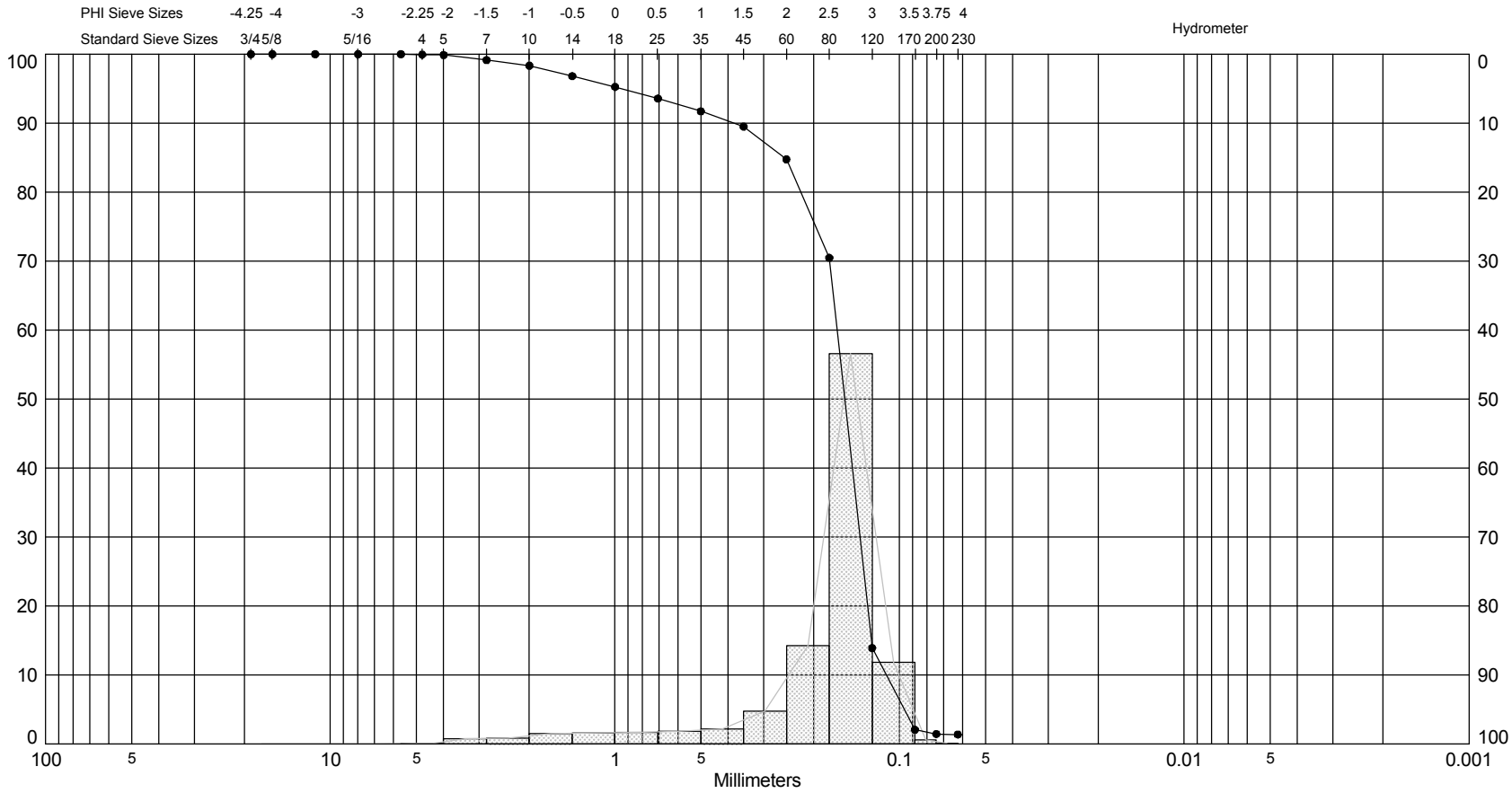

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-02 #2	—●—	-23.8	SW	#200 - 1.44 #230 - 1.37		15	2.68	2.41	-2.48	9.36	0.94

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	412,571
Northing (Y, ft):	1,154,054
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
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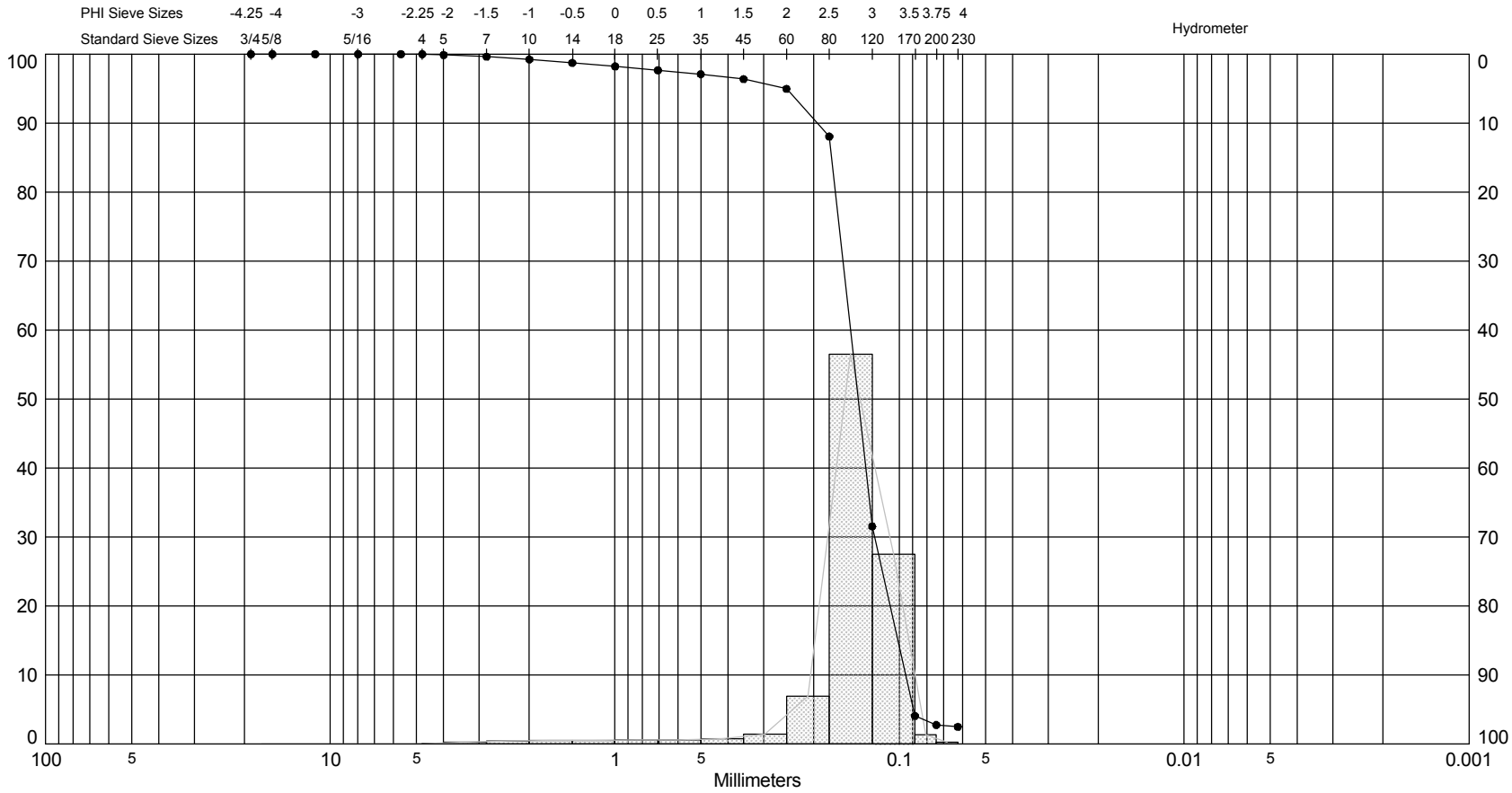
SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-02 #3	—●—	-26.1	SP	#200 - 2.74 #230 - 2.46			2.84	2.75	-3.78	21.85	0.67

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	412,571
Northing (Y, ft):	1,154,054
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

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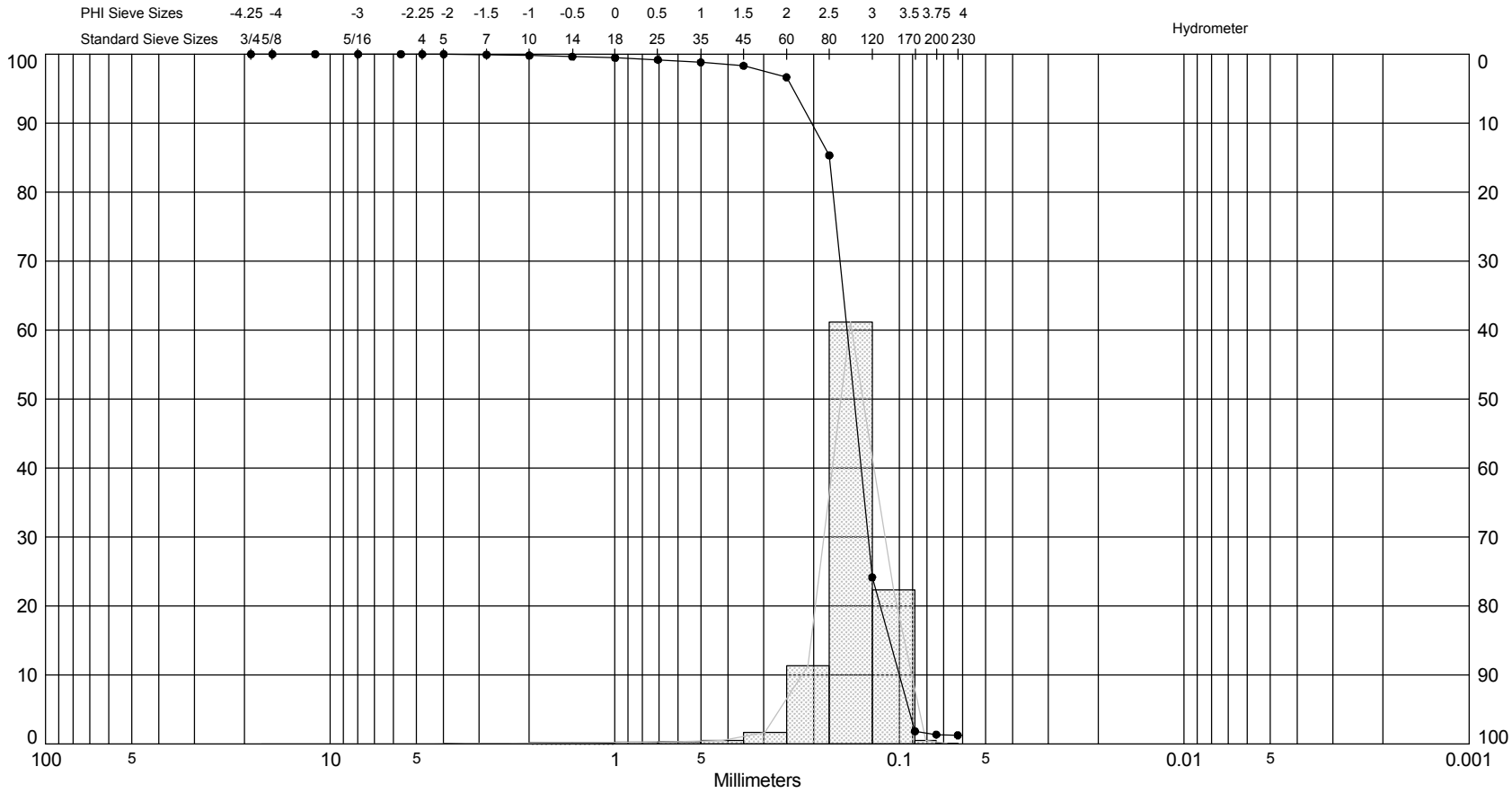

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-03 #1	—●—	-19.9	SP	#200 - 1.35 #230 - 1.26		4	2.79	2.75	-3.44	25.76	0.47

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	413,167
Northing (Y, ft):	1,154,072
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

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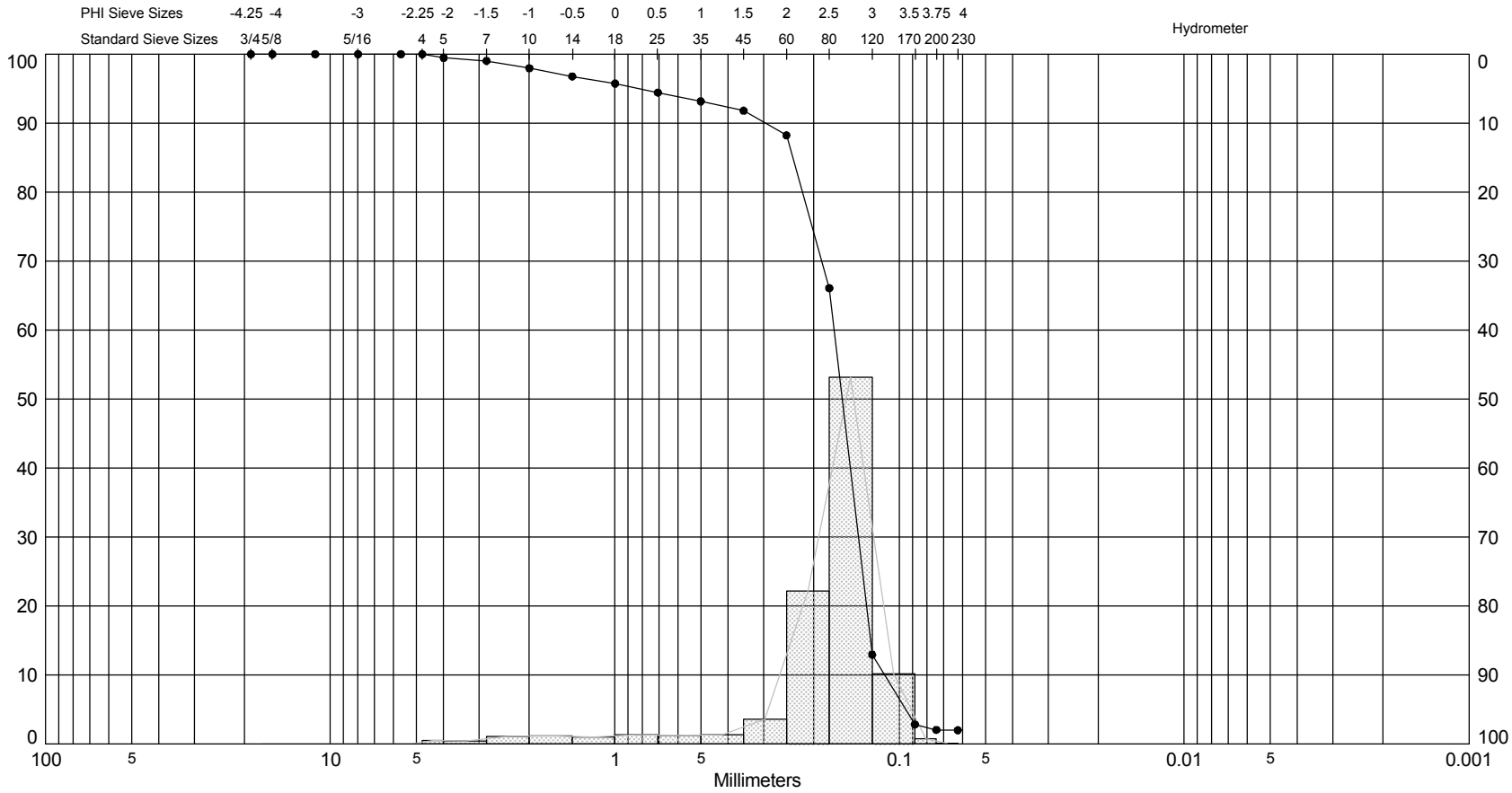

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-03 #2	—●—	-22.4	SW	#200 - 2.04 #230 - 1.98		11	2.65	2.42	-2.82	11.77	0.9

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	413,167
Northing (Y, ft):	1,154,072
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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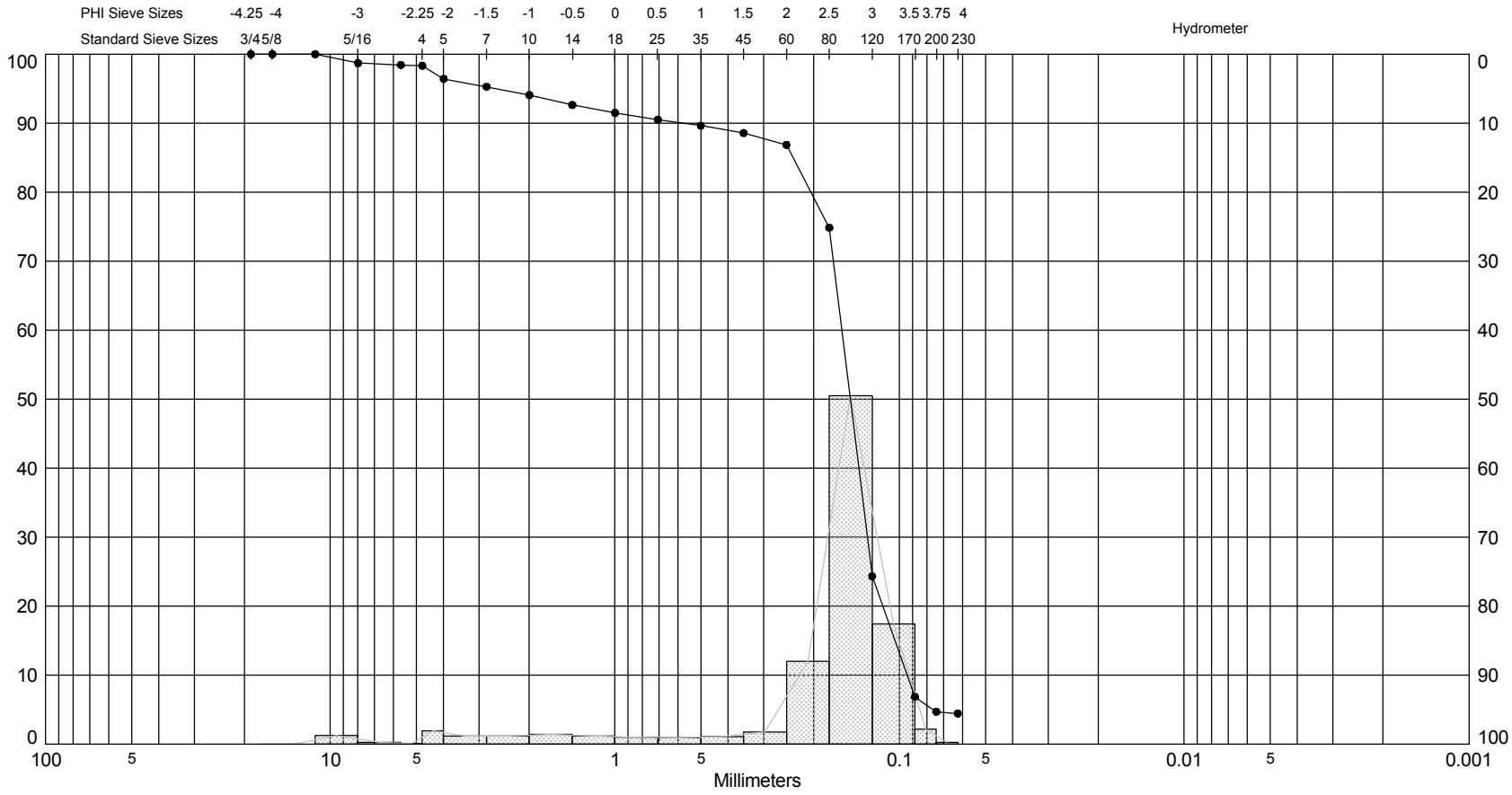
FL 33431
ph (561) 391-8102
fax (561) 391-9116

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-03 #3	—●—	-25.3	SW	#200 - 4.70 #230 - 4.44		14	2.75	2.33	-2.54	8.83	1.37

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	413,167
Northing (Y, ft):	1,154,072
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
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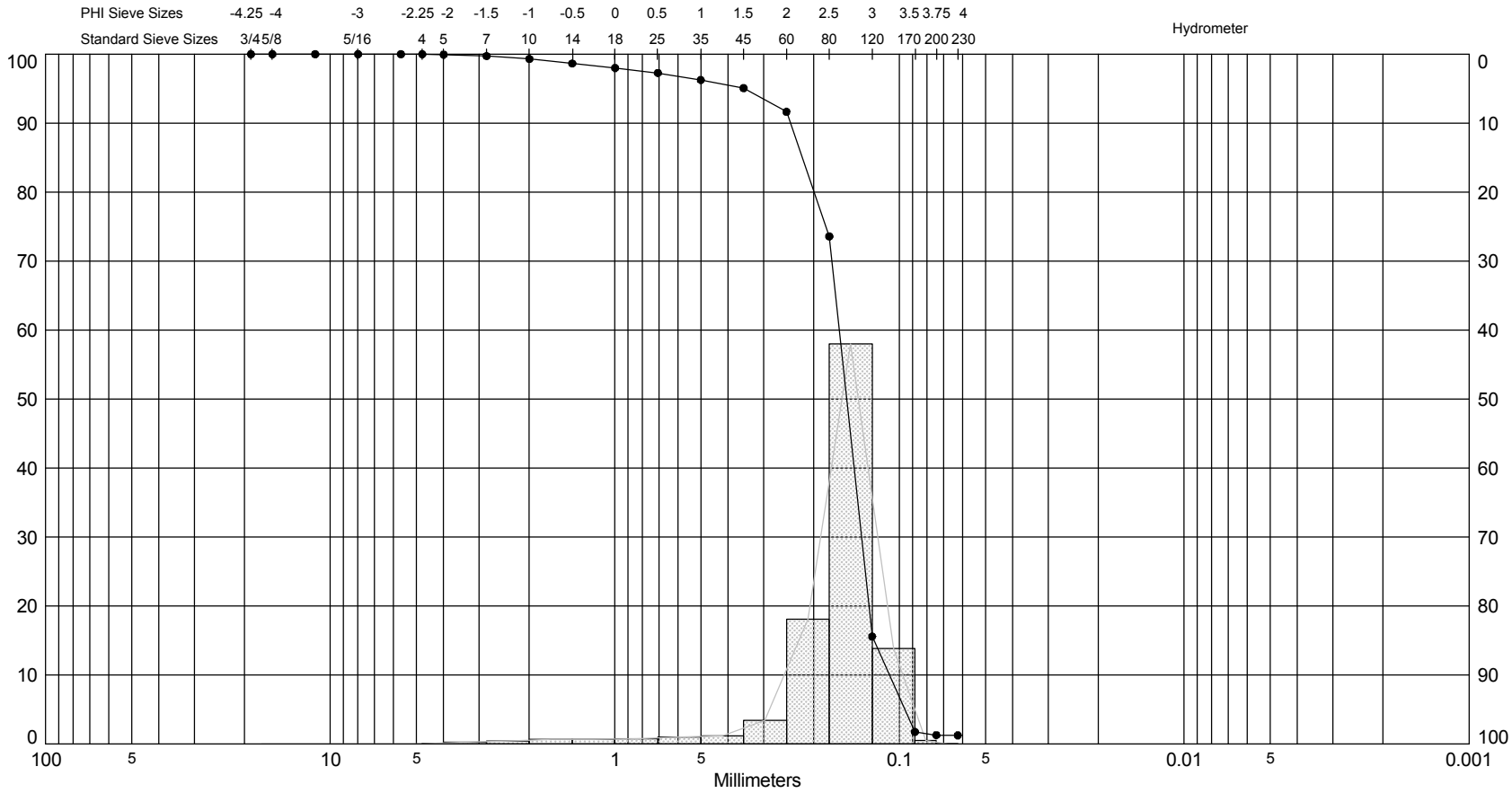
SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-05 #1	—●—	-21.5	SP	#200 - 1.28 #230 - 1.24		8	2.7	2.57	-3.17	16.37	0.68

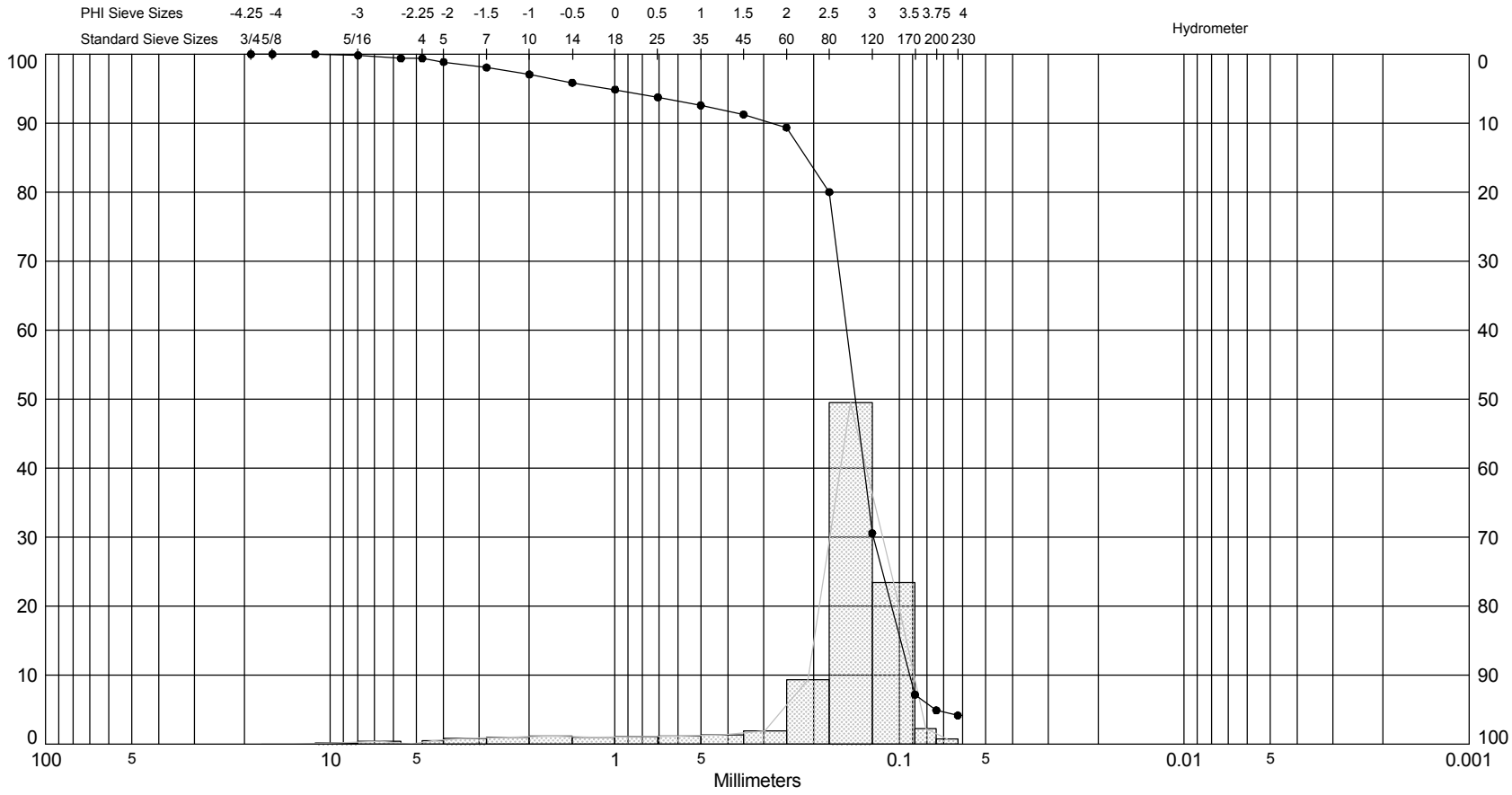
Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-03-08
Analyzed By:	TD
Easting (X, ft):	413,024
Northing (Y, ft):	1,154,853
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-05 #2	—●—	-24.3	SW	#200 - 4.89 #230 - 4.15		13	2.8	2.54	-2.88	11.84	1.07

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-03-08
Analyzed By:	JC
Easting (X, ft):	413,024
Northing (Y, ft):	1,154,853
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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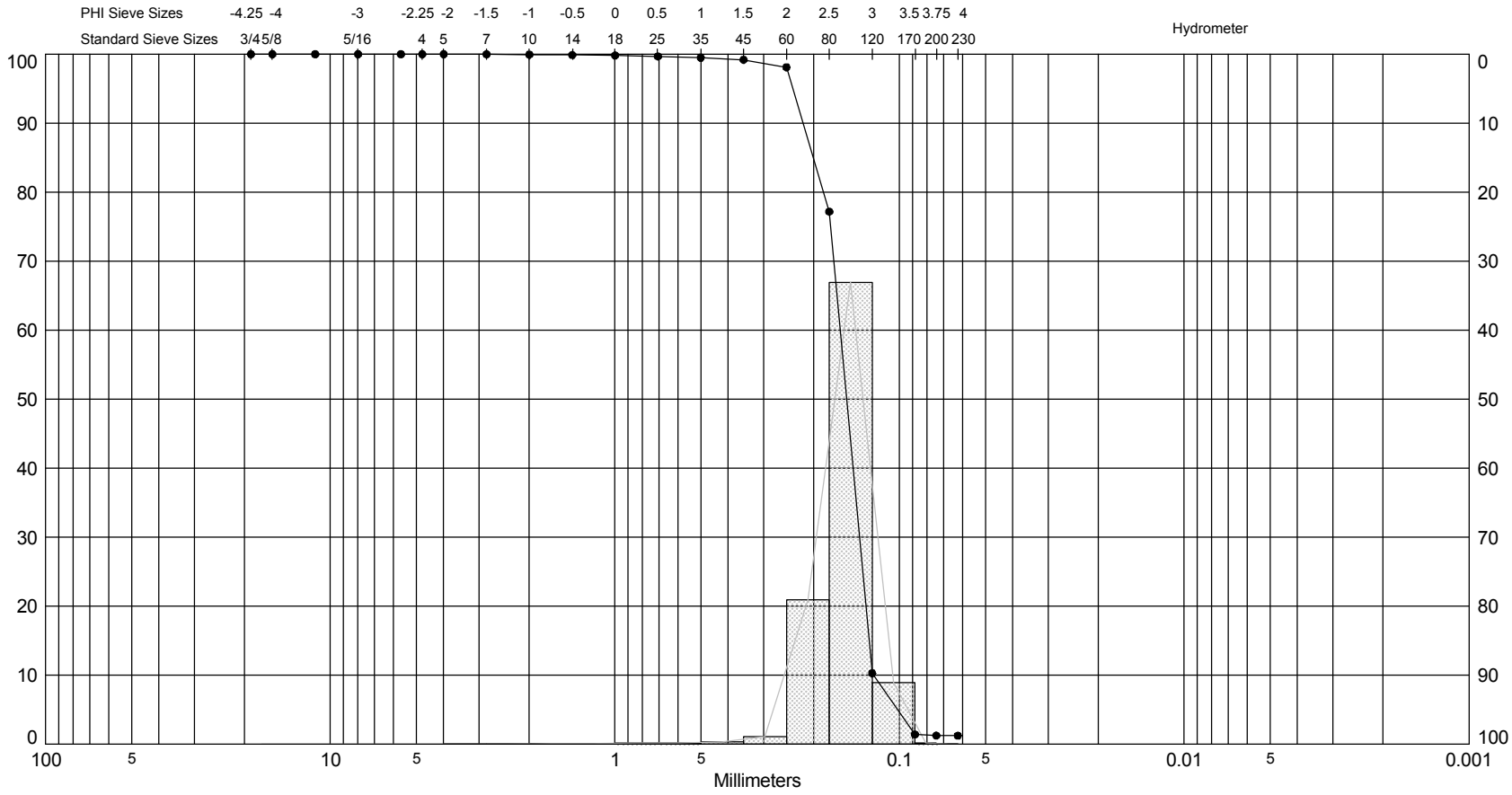

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-05 #3	—●—	-27.0	SP	#200 - 1.23 #230 - 1.21		4	2.7	2.66	-2.66	23.92	0.35

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-03-08
Analyzed By:	TD
Easting (X, ft):	413,024
Northing (Y, ft):	1,154,853
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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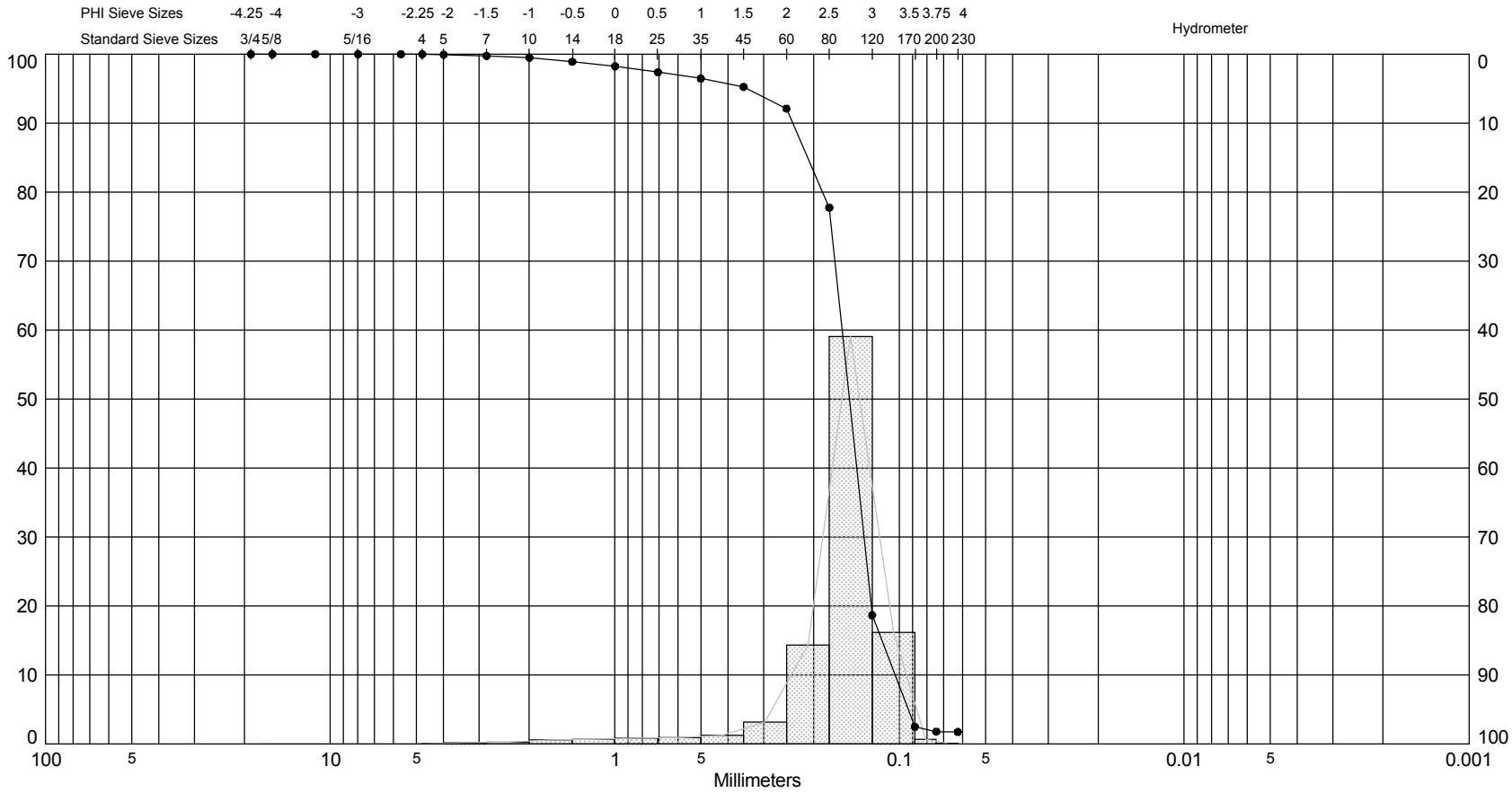

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-06 #1	—●—	-23.5	SP	#200 - 1.79 #230 - 1.72		8	2.73	2.61	-3.16	16.52	0.67

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-03-08
Analyzed By:	TD
Easting (X, ft):	412,252
Northing (Y, ft):	1,154,756
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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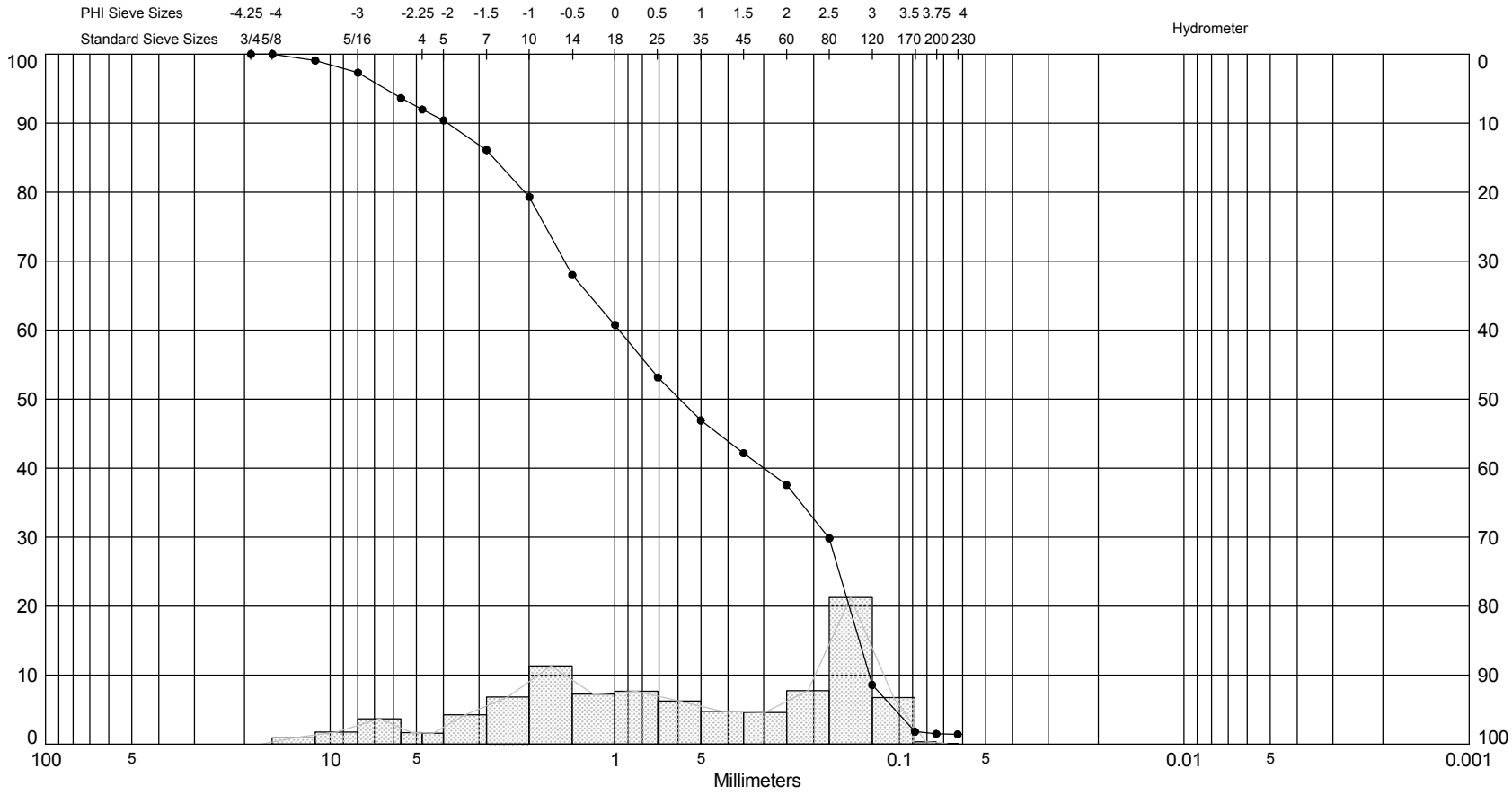

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-06 #2	—●—	-25.3	SW	#200 - 1.48 #230 - 1.42		57	0.75	0.68	-0.31	1.94	1.92

Comments:

Depths and elevations based on measured values

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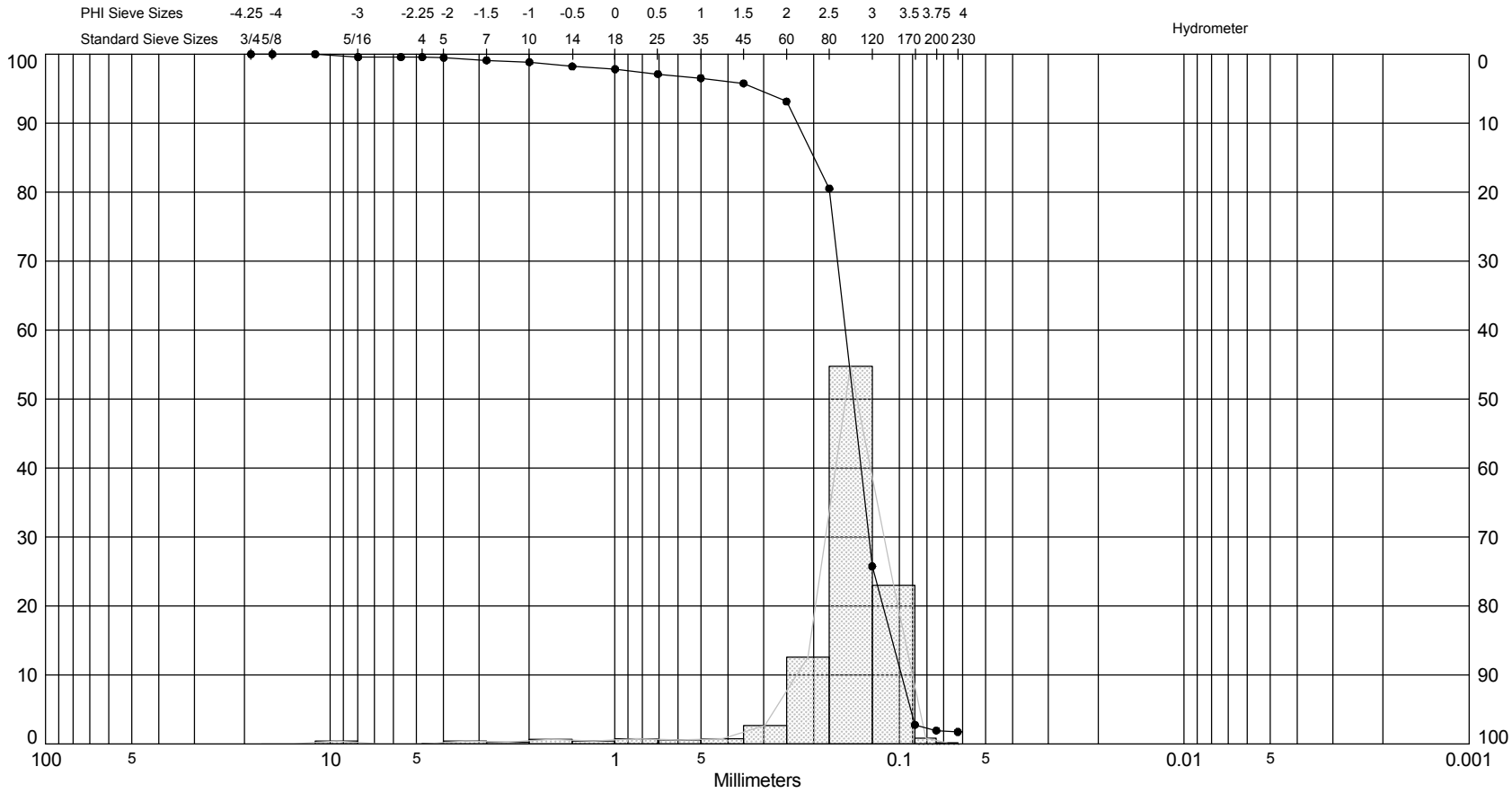
Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-03-08
Analyzed By:	TD
Easting (X, ft):	412,252
Northing (Y, ft):	1,154,756
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-06 #3	—●—	-25.8	SP	#200 - 1.94 #230 - 1.74		8	2.78	2.65	-4.04	24.6	0.78

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-03-08
Analyzed By:	JC
Easting (X, ft):	412,252
Northing (Y, ft):	1,154,756
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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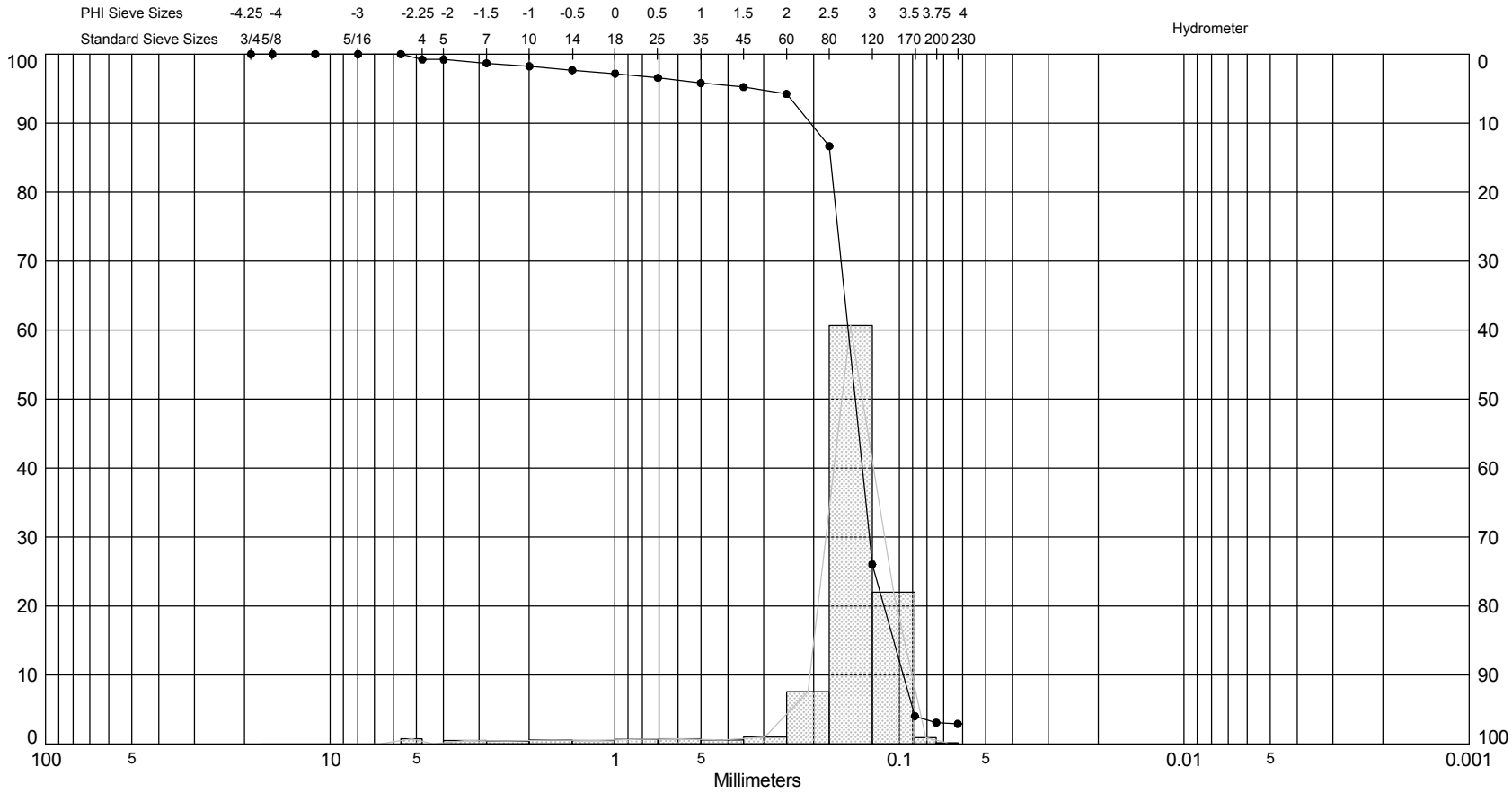

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-06 #4	—●—	-26.5	SP	#200 - 3.08 #230 - 2.92		9	2.8	2.66	-3.96	21.03	0.83

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	412,252
Northing (Y, ft):	1,154,756
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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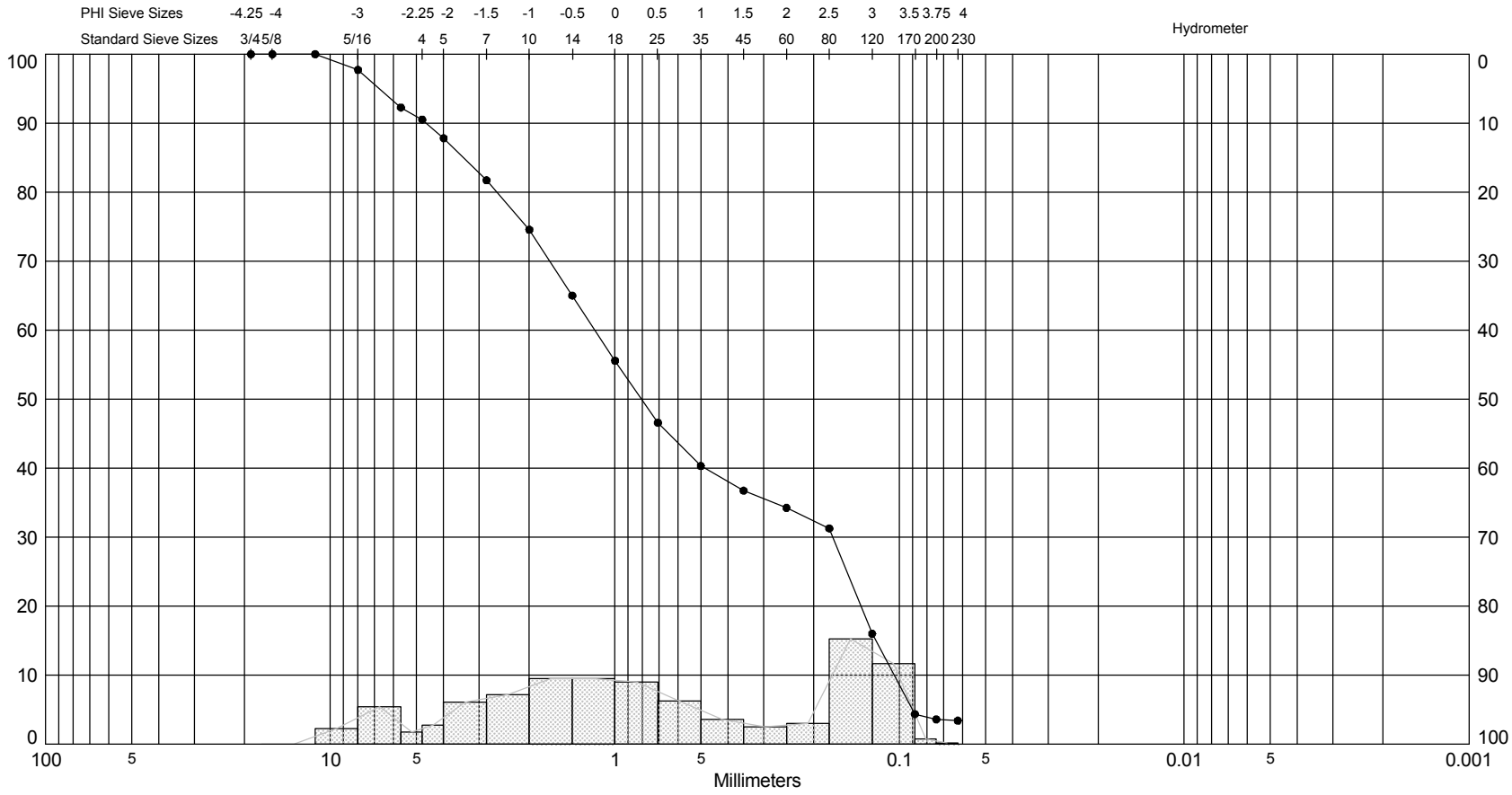

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-06 #5	—●—	-27.8	SW	#200 - 3.58 #230 - 3.39		22	0.31	0.46	-0.02	1.77	2

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	LH
Easting (X, ft):	412,252
Northing (Y, ft):	1,154,756
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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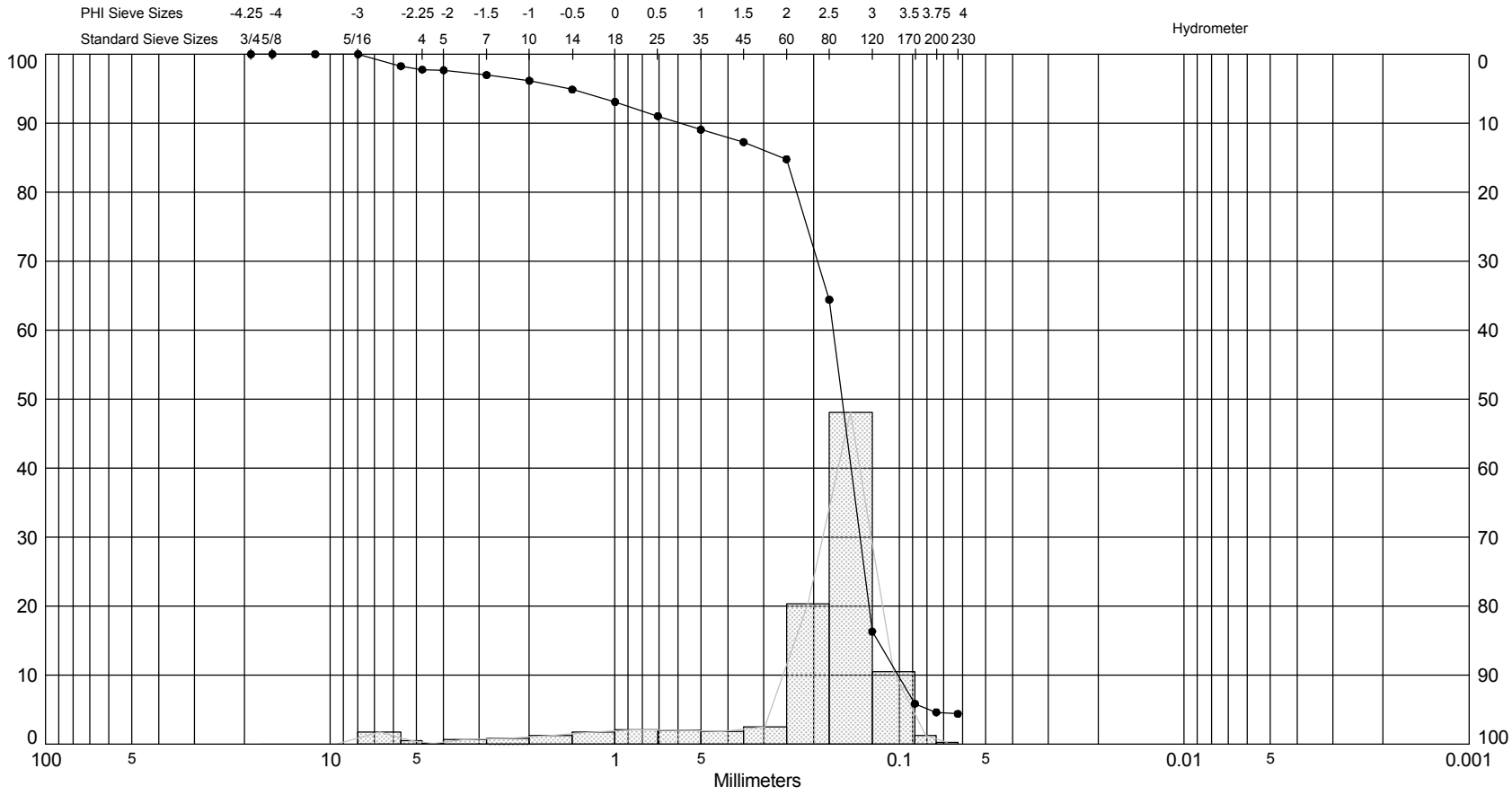

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-06 #6	—●—	-28.9	SW	#200 - 4.61 #230 - 4.38		22	2.65	2.26	-2.51	9.26	1.21

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	LH
Easting (X, ft):	412,252
Northing (Y, ft):	1,154,756
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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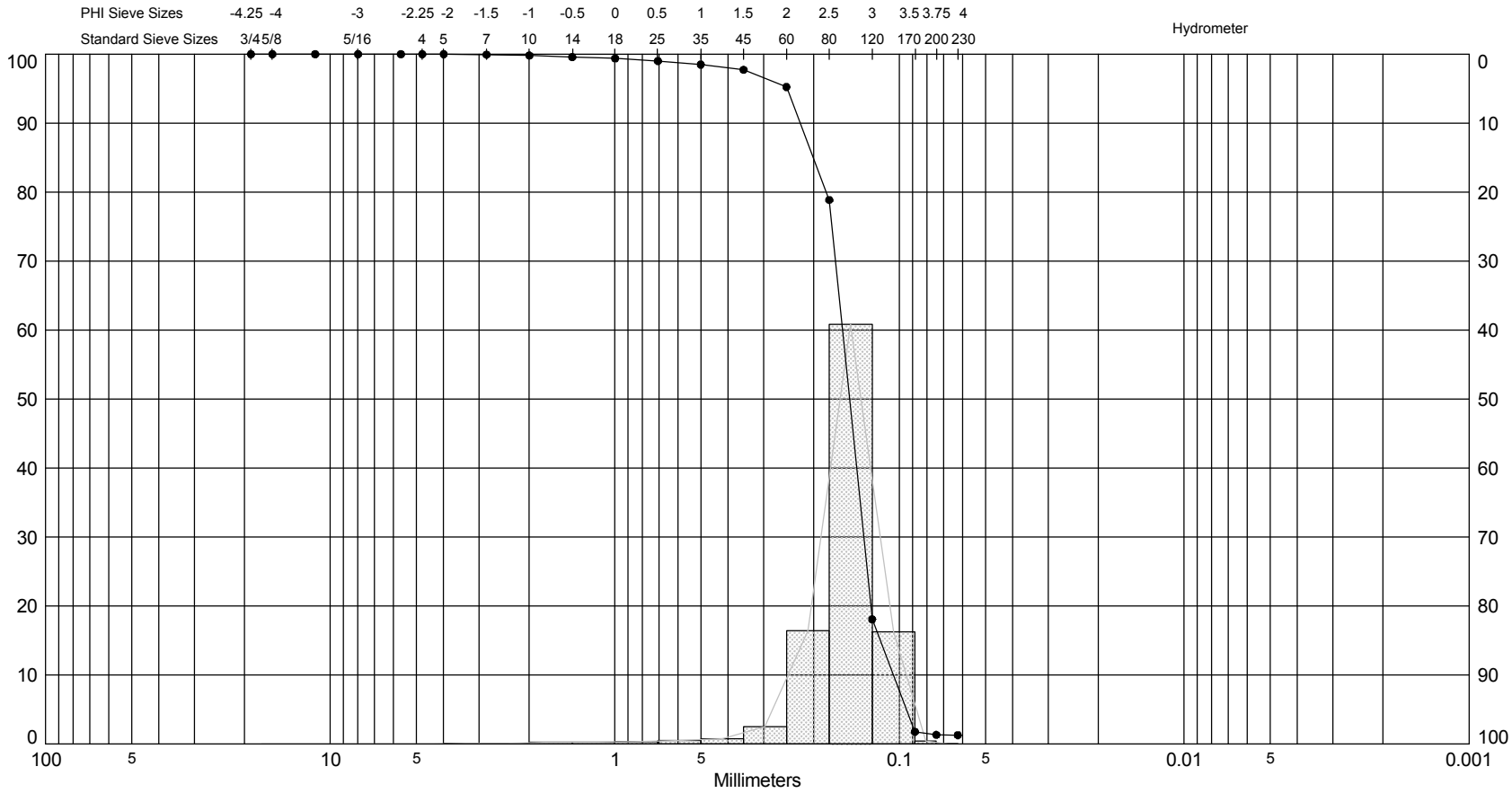

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-07 #1	—●—	-20.0	SP	#200 - 1.31 #230 - 1.28		5	2.74	2.68	-3.12	21.08	0.5

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	412,599
Northing (Y, ft):	1,155,417
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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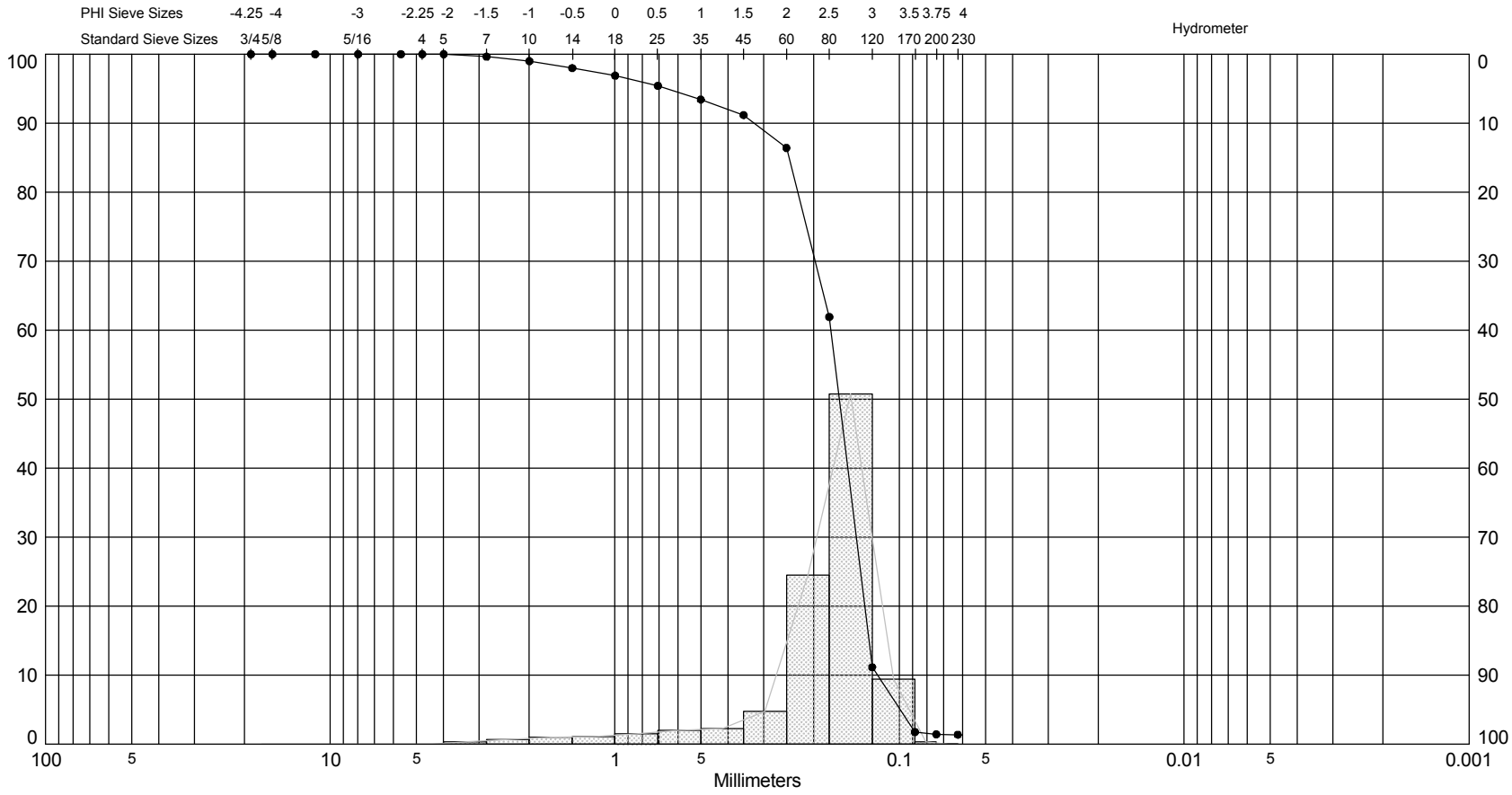

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-07 #2	—●—	-22.0	SP	#200 - 1.41 #230 - 1.37		13	2.62	2.4	-2.52	10.52	0.8

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	412,599
Northing (Y, ft):	1,155,417
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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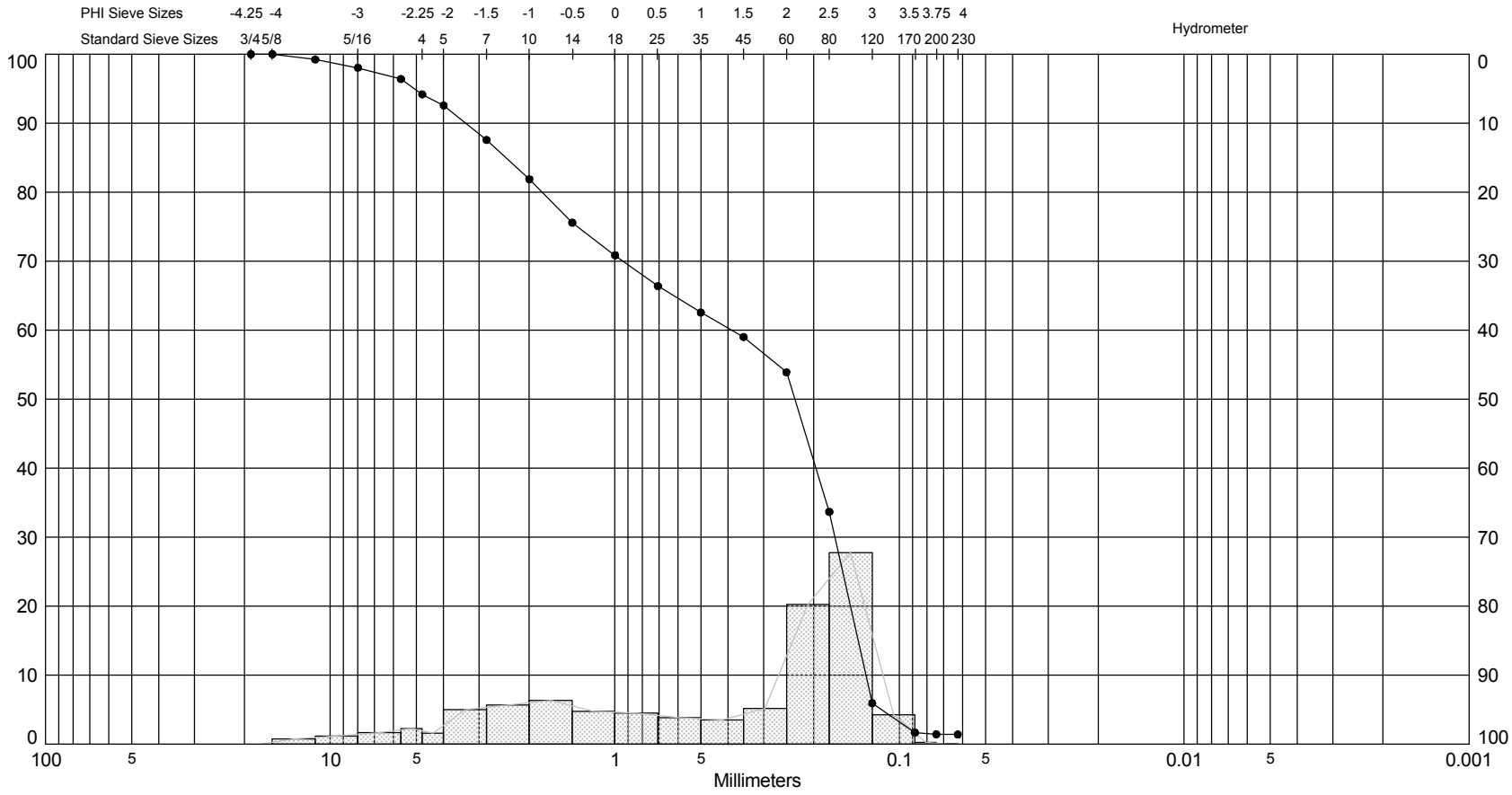

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-07 #3	—●—	-23.1	SW	#200 - 1.42 #230 - 1.39		42	2.1	1.14	-0.8	2.32	1.86

Comments:

Depths and elevations based on measured values

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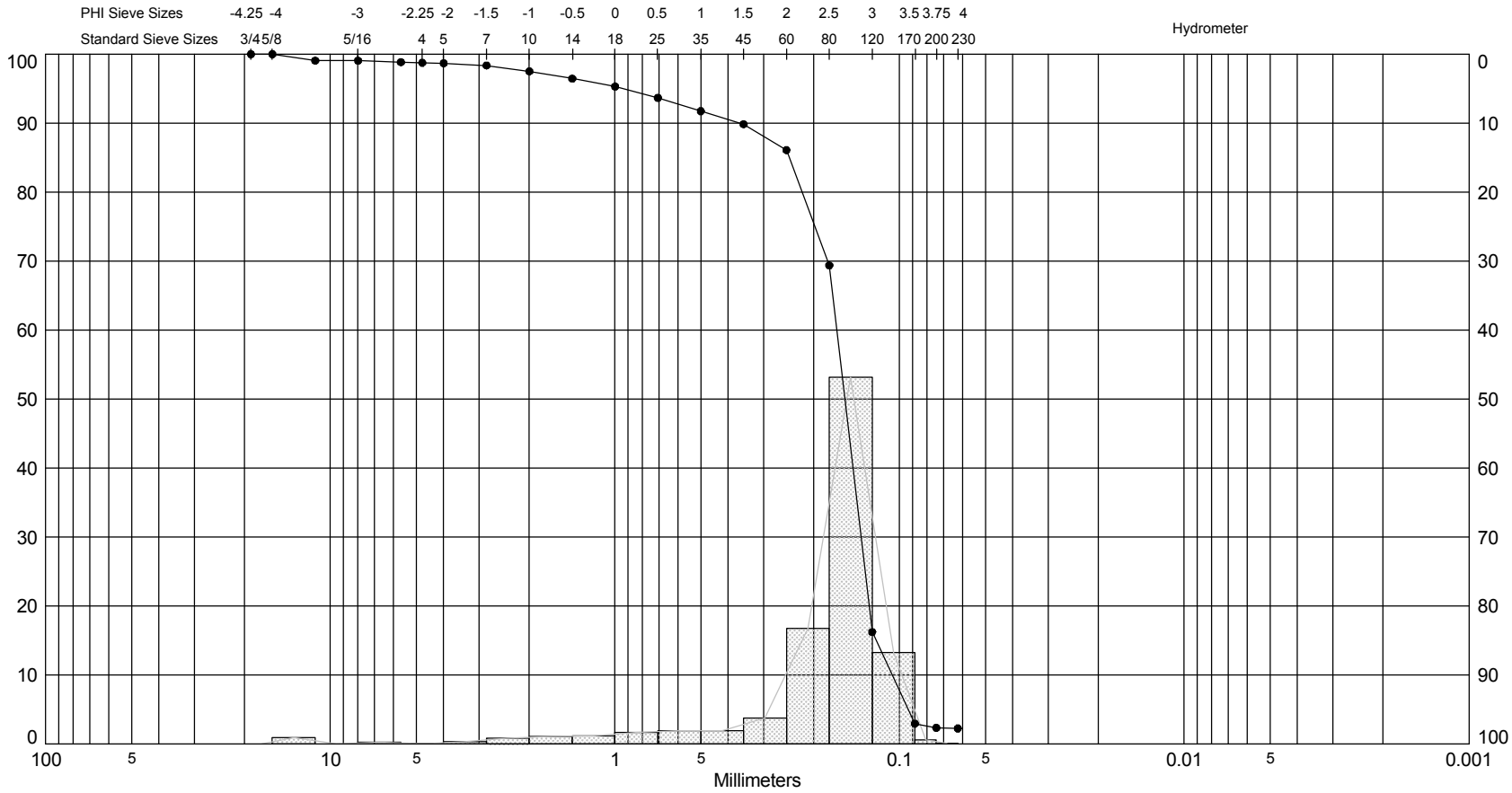
Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	412,599
Northing (Y, ft):	1,155,417
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-07 #4	—●—	-23.5	SW	#200 - 2.34 #230 - 2.24		61	2.68	2.38	-3.18	15.02	1.08

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-14-08
Analyzed By:	TD
Easting (X, ft):	412,599
Northing (Y, ft):	1,155,417
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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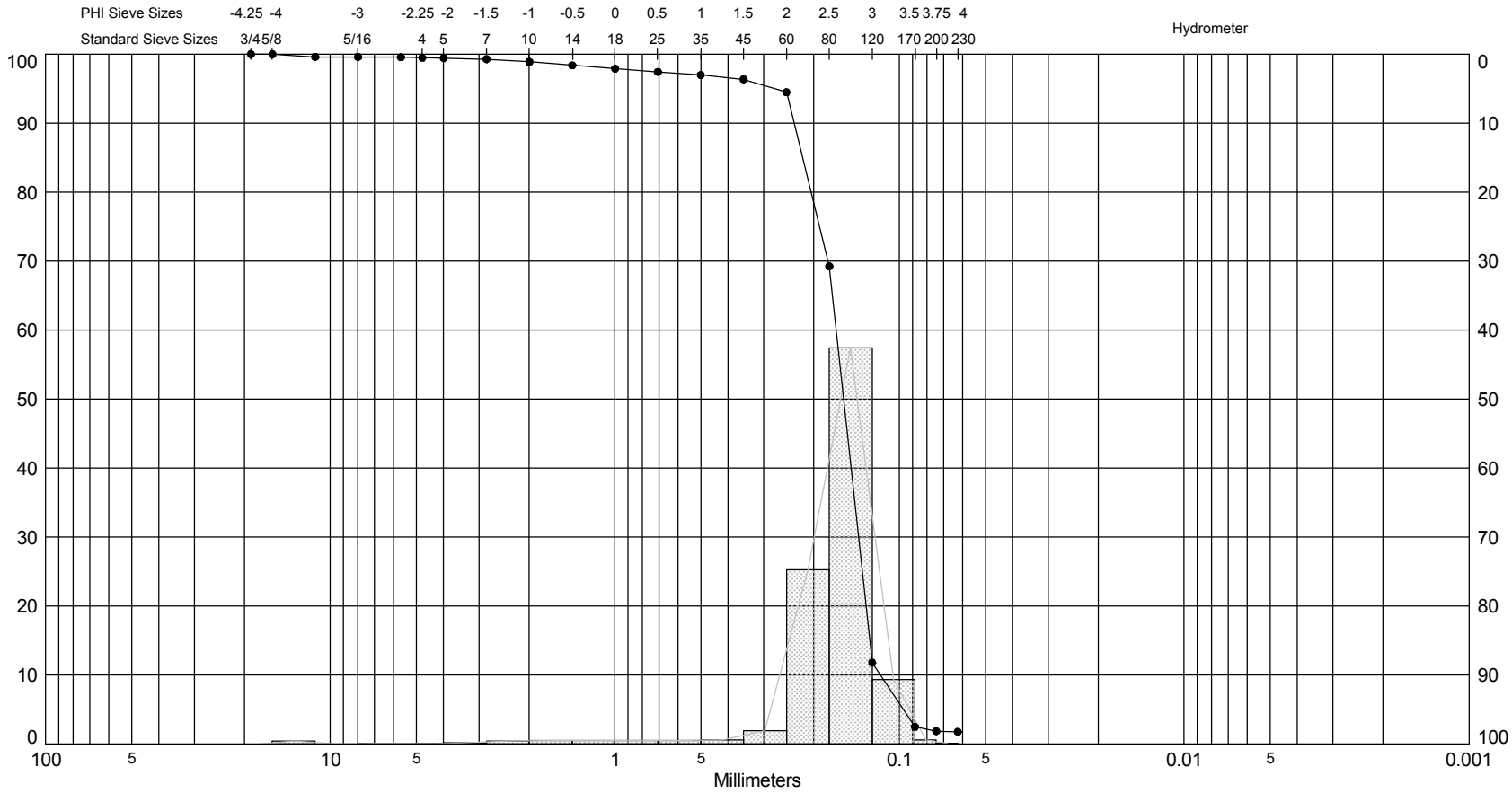

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-07 #5	—●—	-24.5	SP	#200 - 1.85 #230 - 1.76		5	2.67	2.53	-4.68	32.65	0.74

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	LH
Easting (X, ft):	412,599
Northing (Y, ft):	1,155,417
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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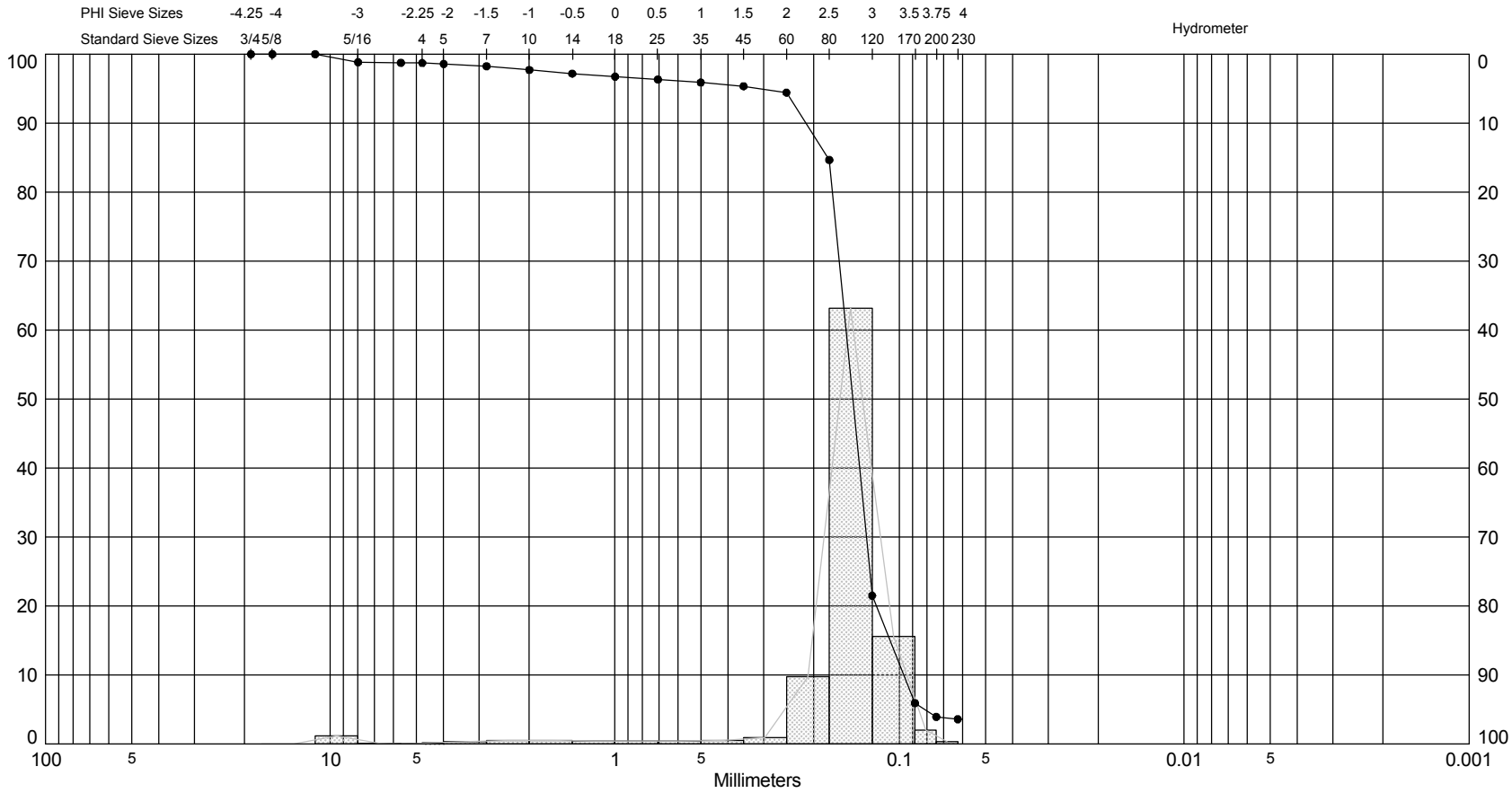

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-07 #6	—●—	-25.7	SW	#200 - 3.92 #230 - 3.59		8	2.77	2.61	-4.31	23.96	0.95

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-19-08
Analyzed By:	PB
Easting (X, ft):	412,599
Northing (Y, ft):	1,155,417
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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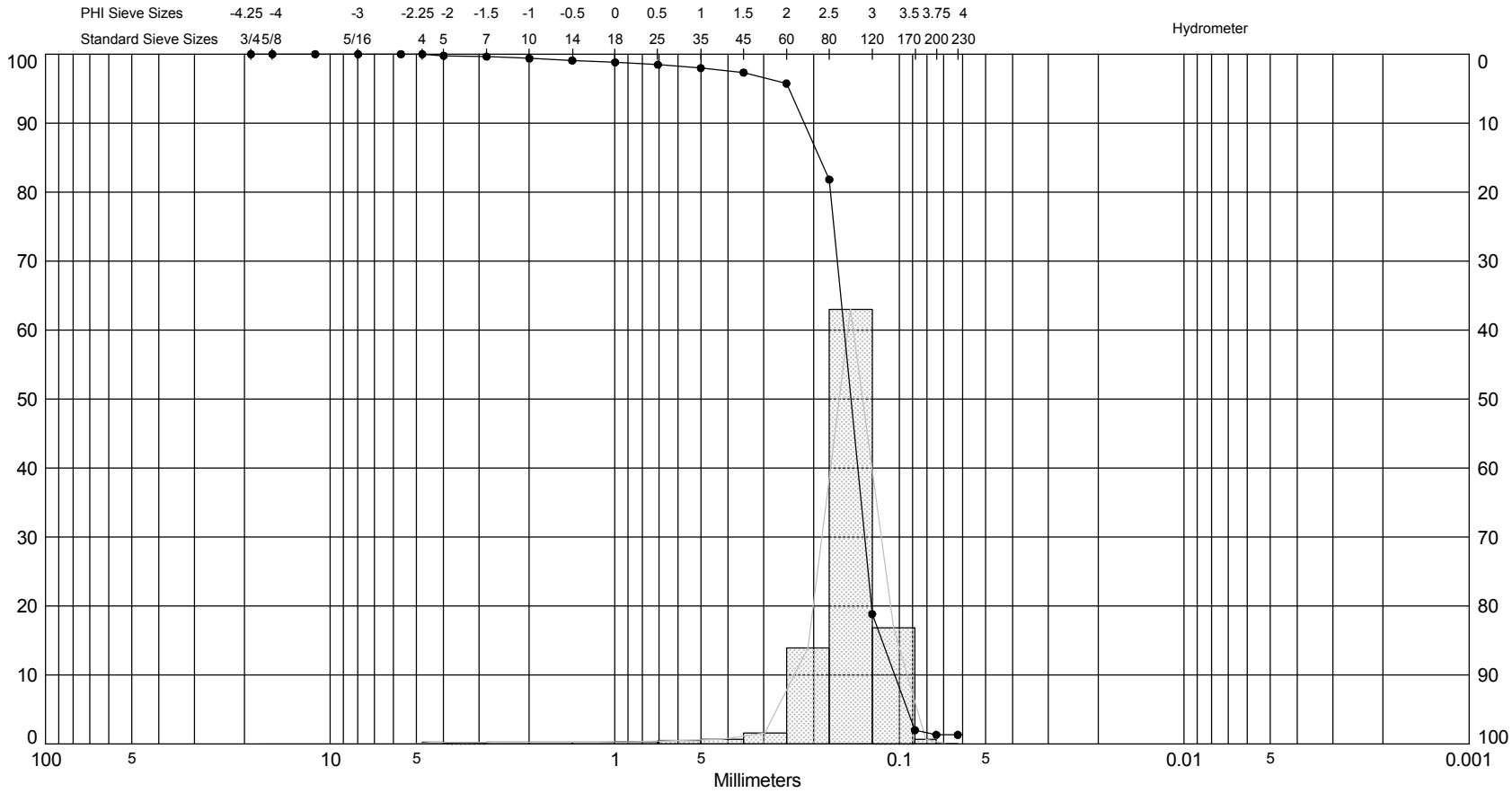

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-08 #1	—●—	-23.0	SP	#200 - 1.32 #230 - 1.31		6	2.75	2.68	-4.16	28.7	0.58

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-07-08
Analyzed By:	LH
Easting (X, ft):	411,713
Northing (Y, ft):	1,155,241
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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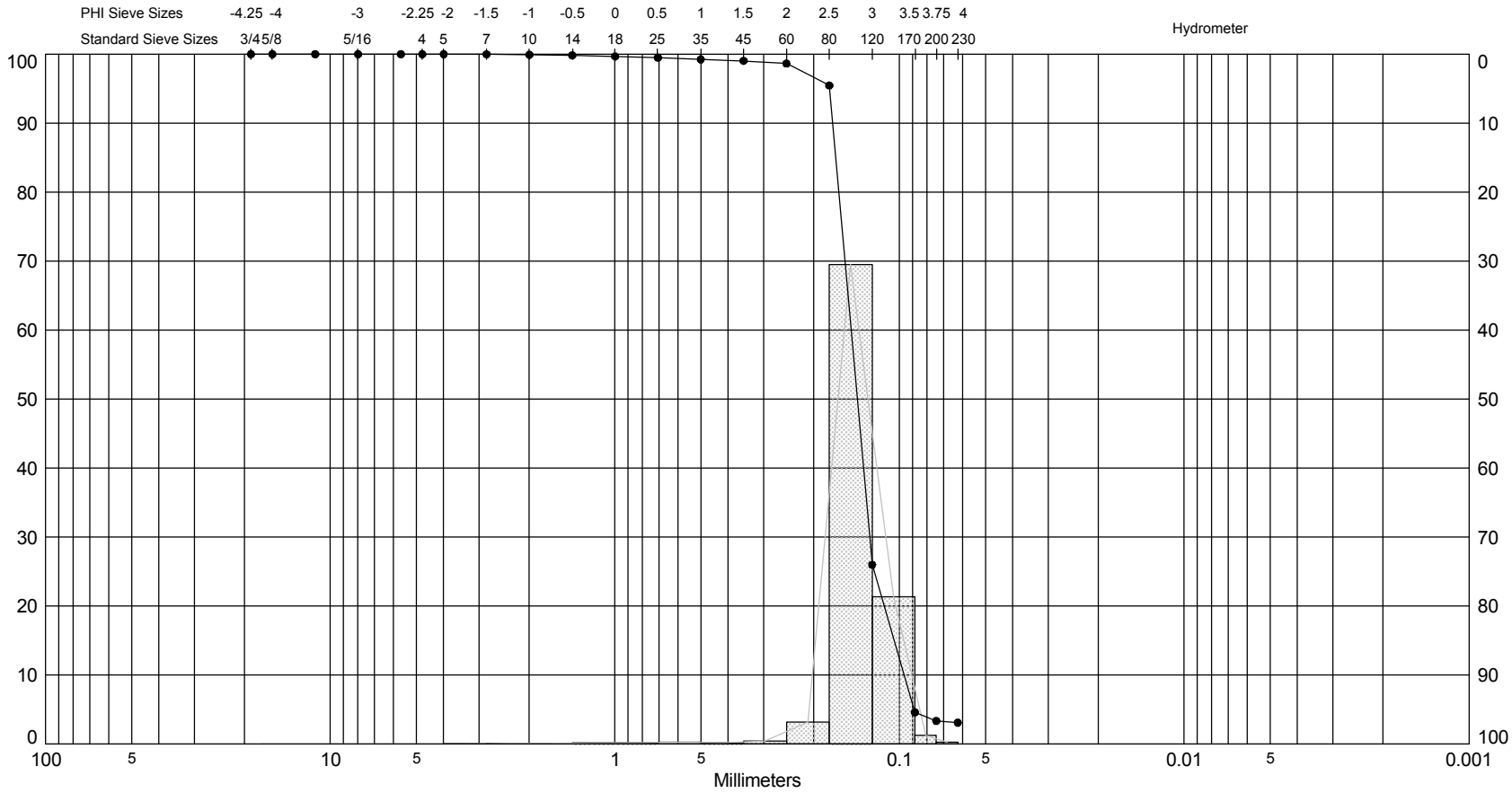

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-08 #2	—●—	-27.1	SP	#200 - 3.34 #230 - 3.08		7	2.83	2.83	-3.84	37.01	0.38

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-07-08
Analyzed By:	TD
Easting (X, ft):	411,713
Northing (Y, ft):	1,155,241
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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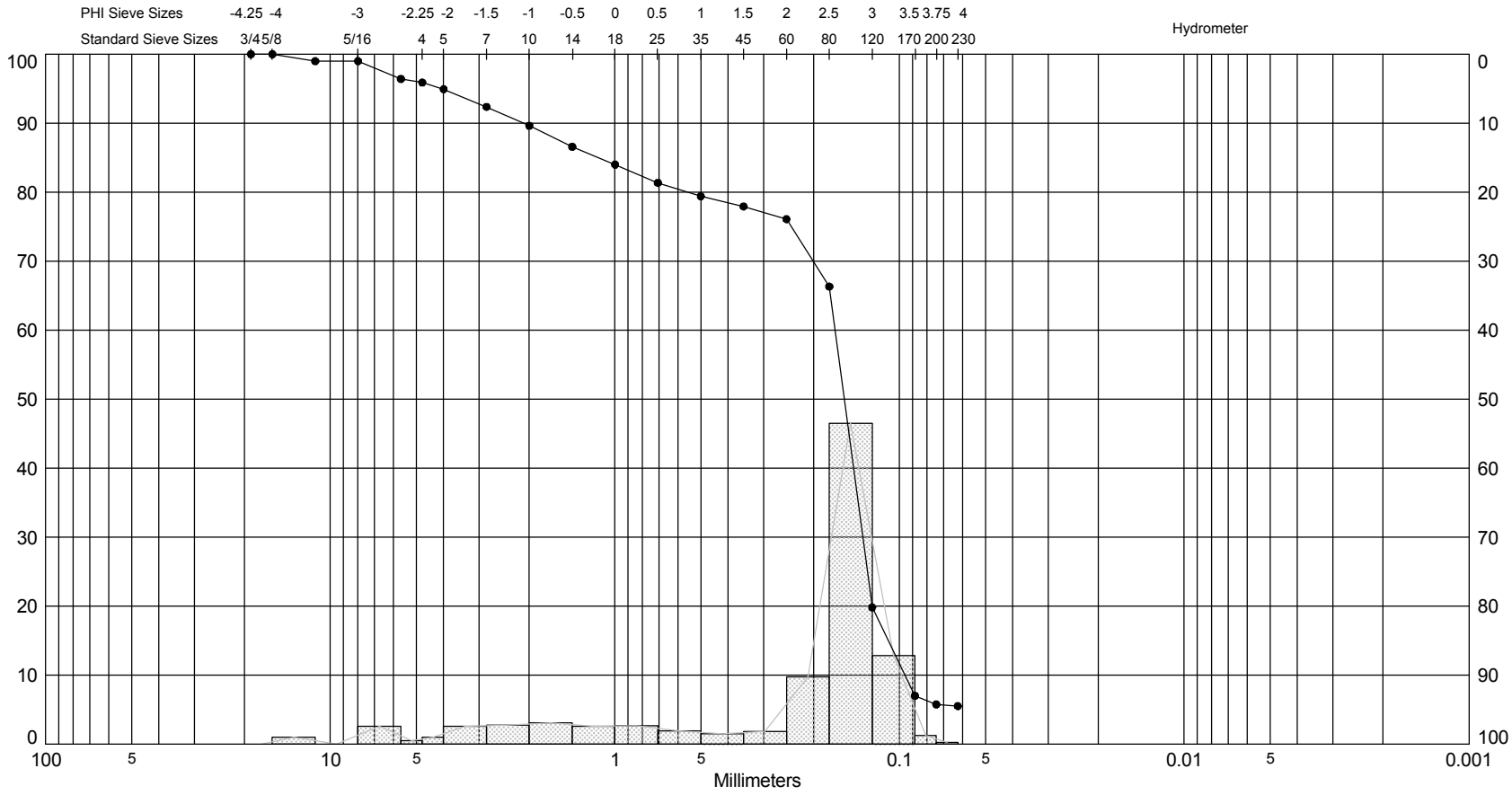

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-08 #3	—●—	-29.3	SW-SC	#200 - 5.75 #230 - 5.52		28	2.68	1.9	-1.61	4.41	1.72

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	LH
Easting (X, ft):	411,713
Northing (Y, ft):	1,155,241
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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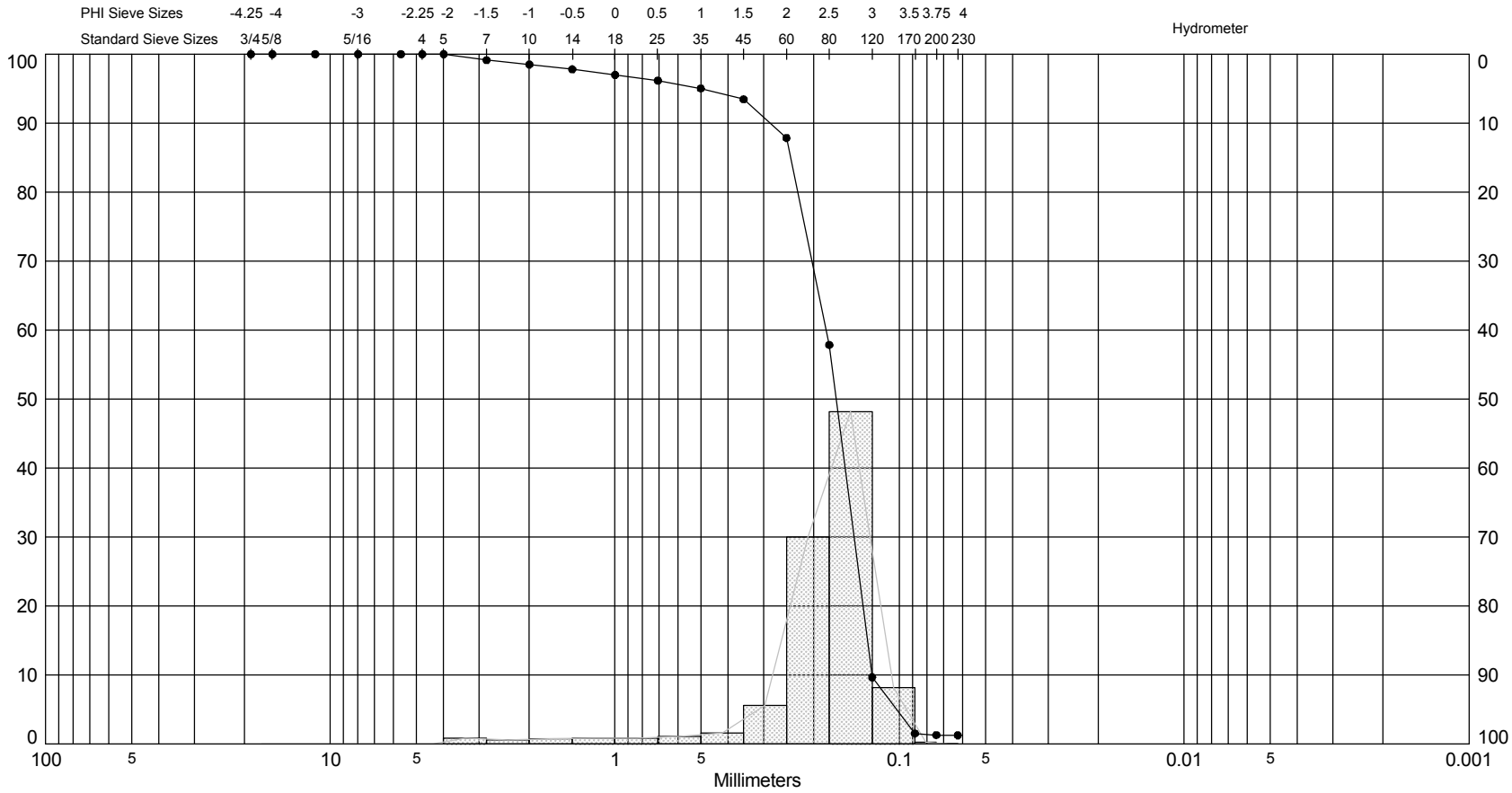

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-09 #1	—●—	-23.5	SP	#200 - 1.29 #230 - 1.26		9	2.58	2.4	-2.98	14.04	0.78

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-07-08
Analyzed By:	LH
Easting (X, ft):	410,625
Northing (Y, ft):	1,155,511
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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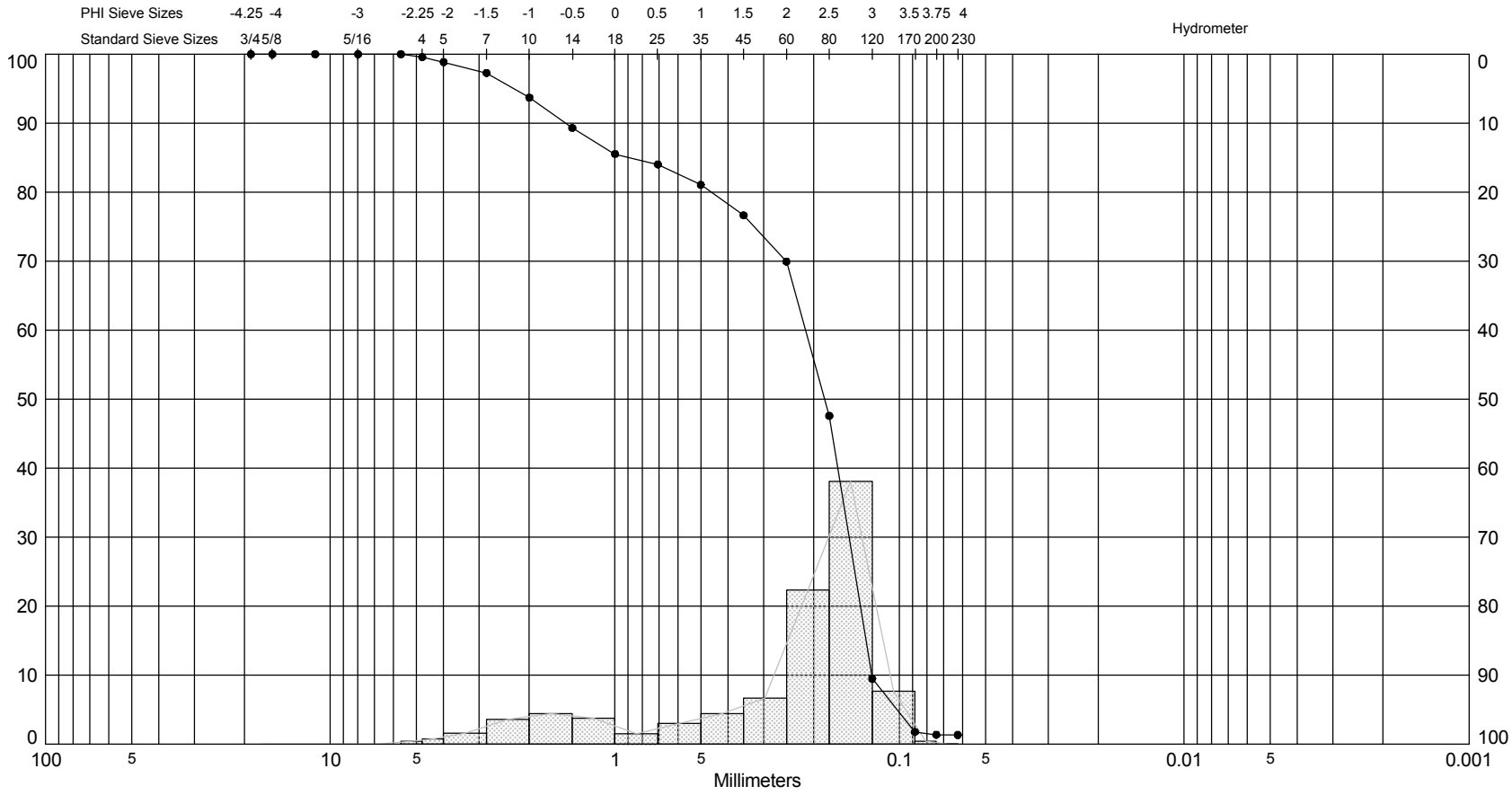

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-09 #2	—●—	-26.2	SW	#200 - 1.36 #230 - 1.33			2.45	1.9	-1.46	4.05	1.35

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-07-08
Analyzed By:	LH
Easting (X, ft):	410,625
Northing (Y, ft):	1,155,511
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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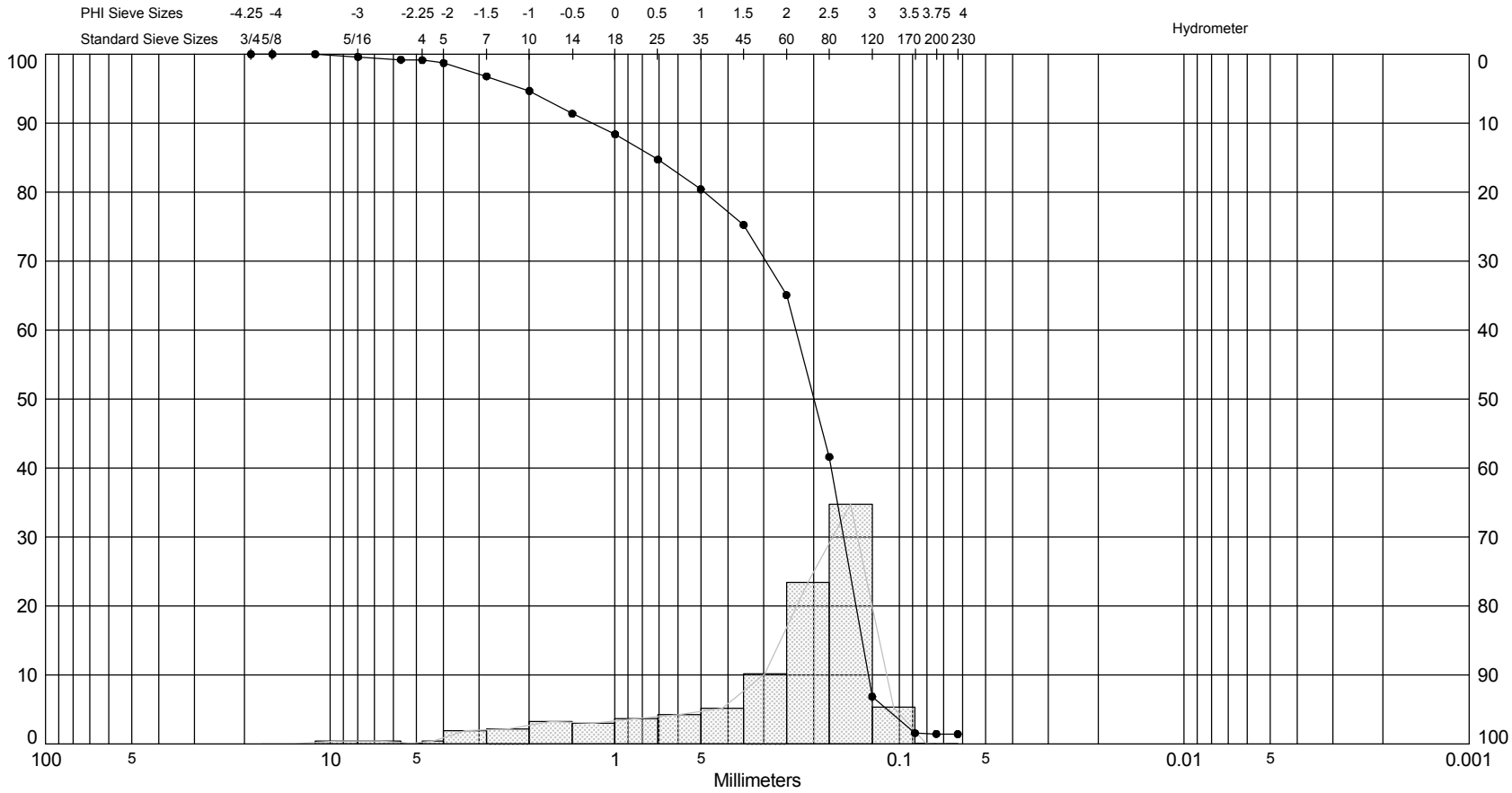

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-10 #1	—●—	-18.5	SW	#200 - 1.45 #230 - 1.41		28	2.32	1.84	-1.56	4.85	1.3

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	411,957
Northing (Y, ft):	1,156,109
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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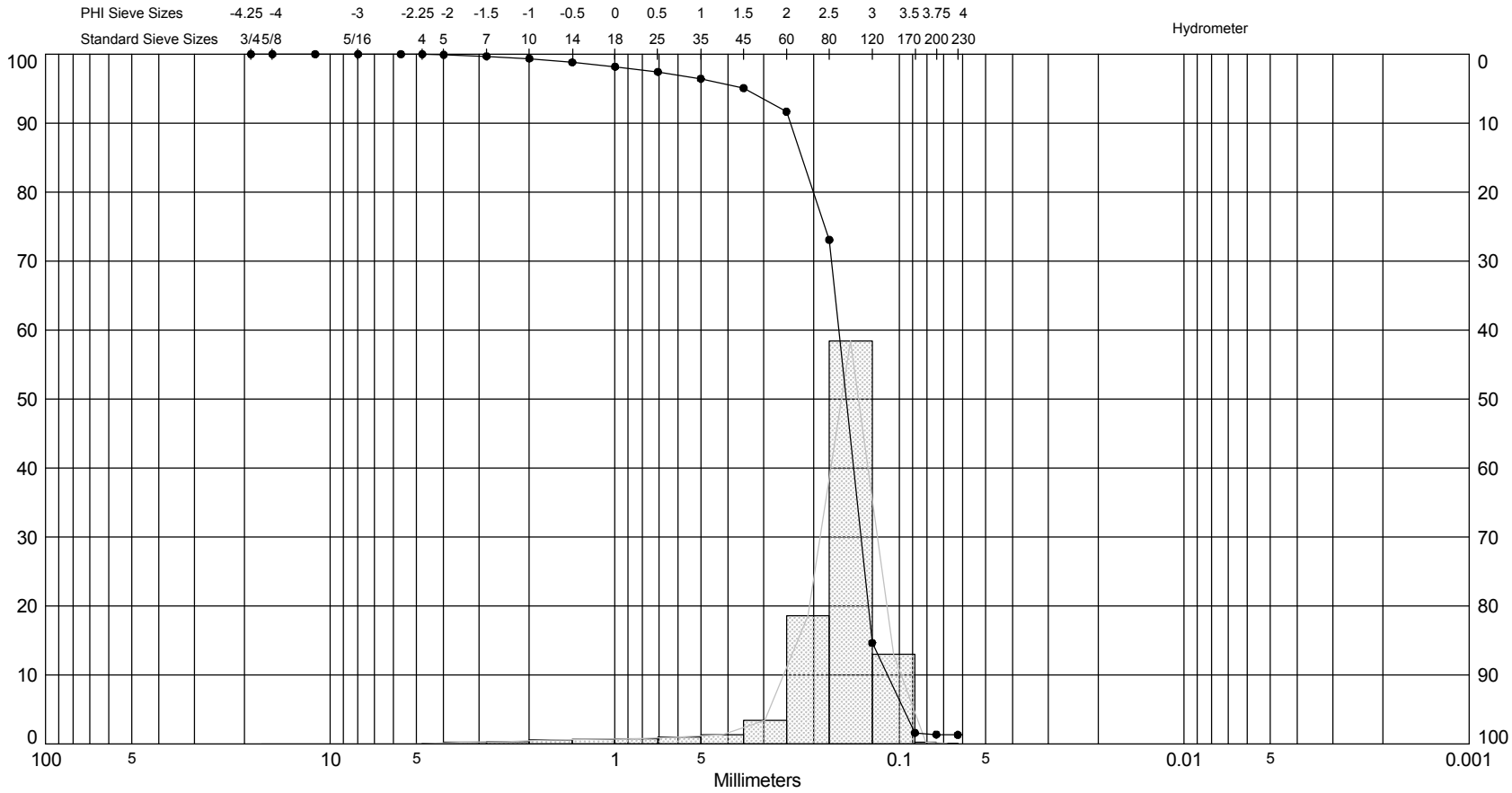

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-10 #2	—●—	-19.4	SP	#200 - 1.36 #230 - 1.31		8	2.7	2.56	-3.21	16.97	0.67

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	411,957
Northing (Y, ft):	1,156,109
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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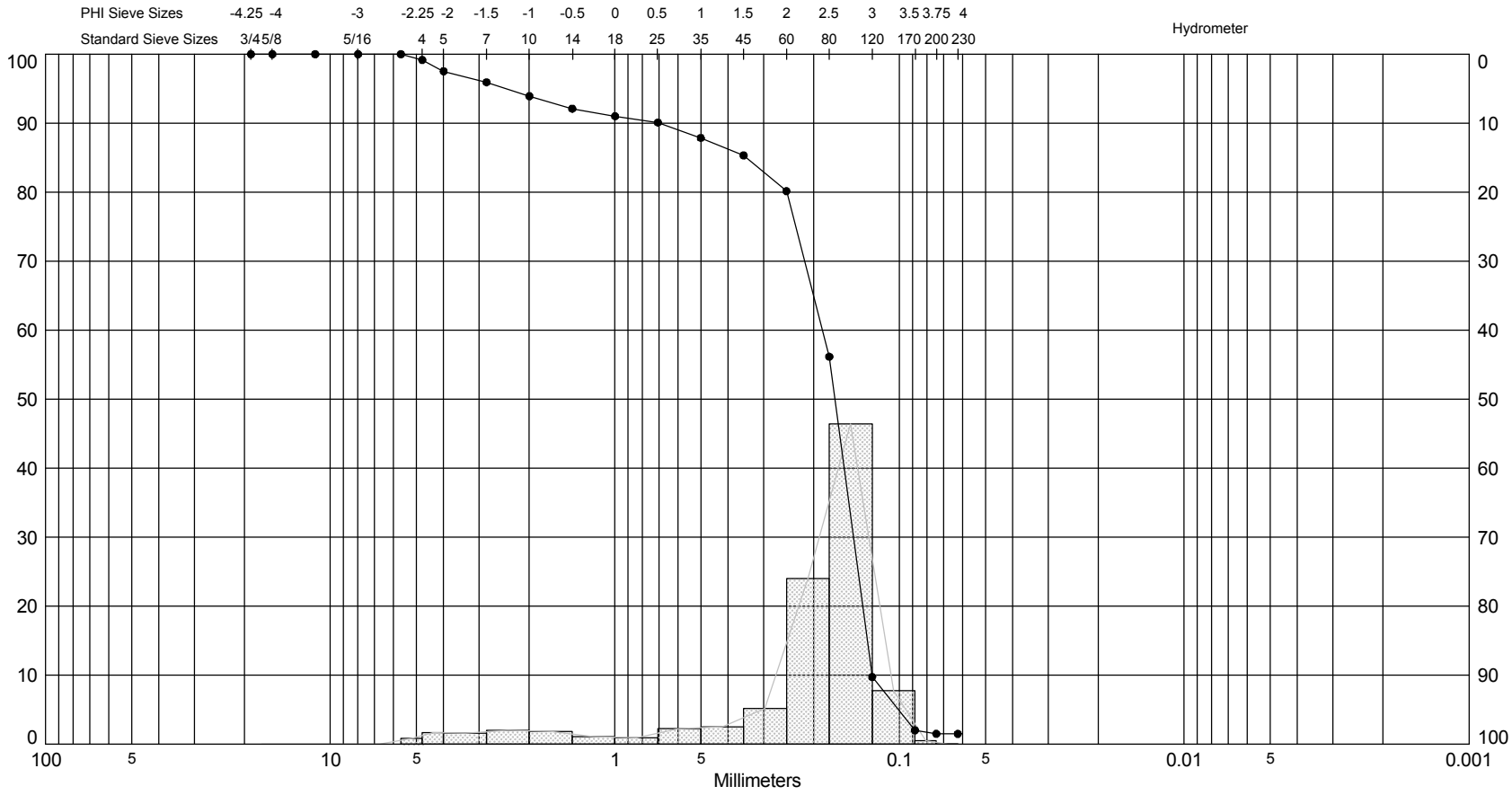

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-10 #3	—●—	-20.7	SW	#200 - 1.49 #230 - 1.48		17	2.57	2.14	-2.2	7.13	1.25

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-07-08
Analyzed By:	LH
Easting (X, ft):	411,957
Northing (Y, ft):	1,156,109
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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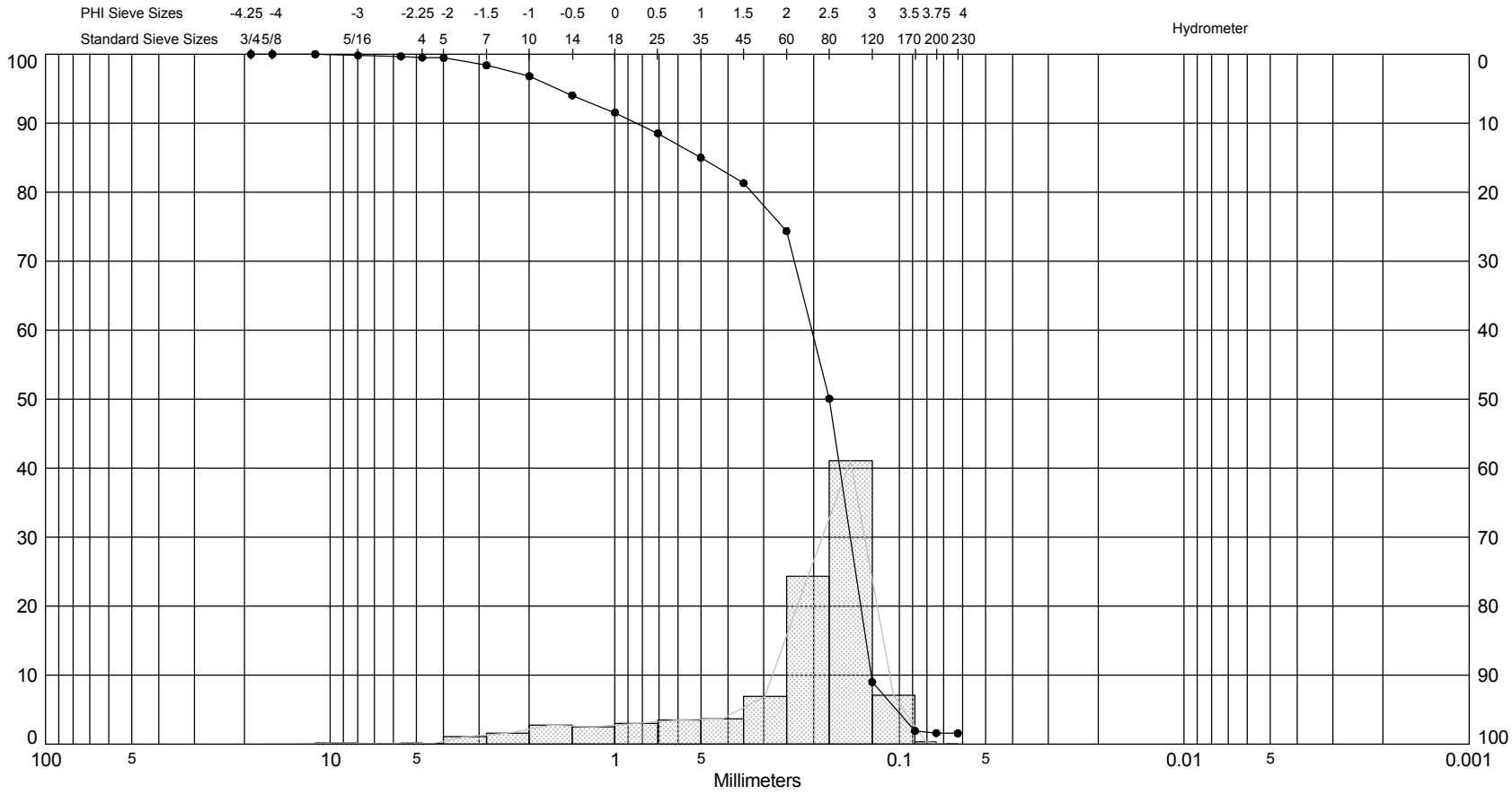

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-10 #4	—●—	-21.6	SW	#200 - 1.60 #230 - 1.56		21	2.5	2.07	-1.82	5.97	1.15

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-05-08
Analyzed By:	TD
Easting (X, ft):	411,957
Northing (Y, ft):	1,156,109
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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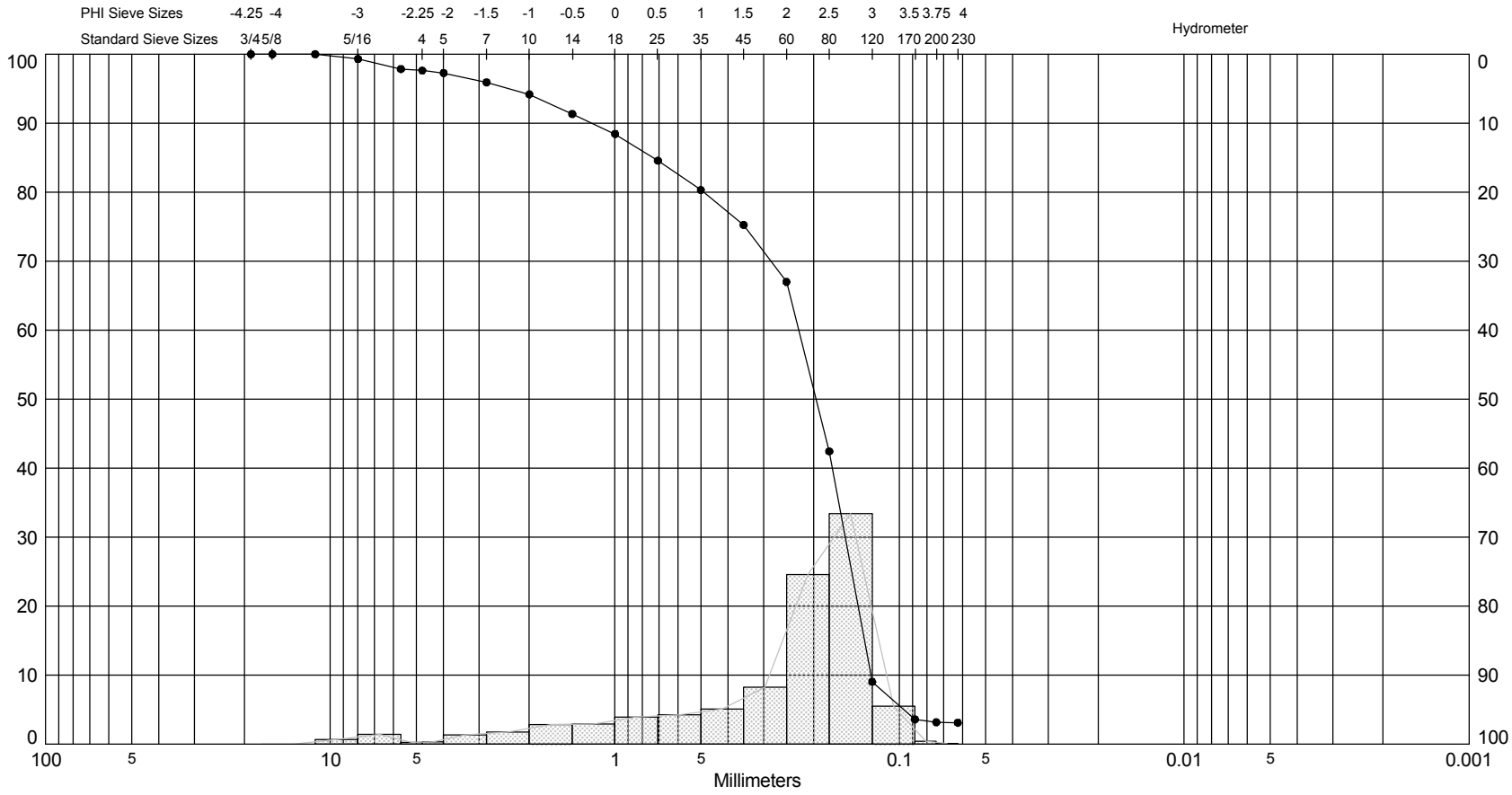

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-10 #5	—●—	-22.7	SW	#200 - 3.16 #230 - 3.11		29	2.35	1.82	-1.68	5.36	1.38

Comments:

Depths and elevations based on measured values

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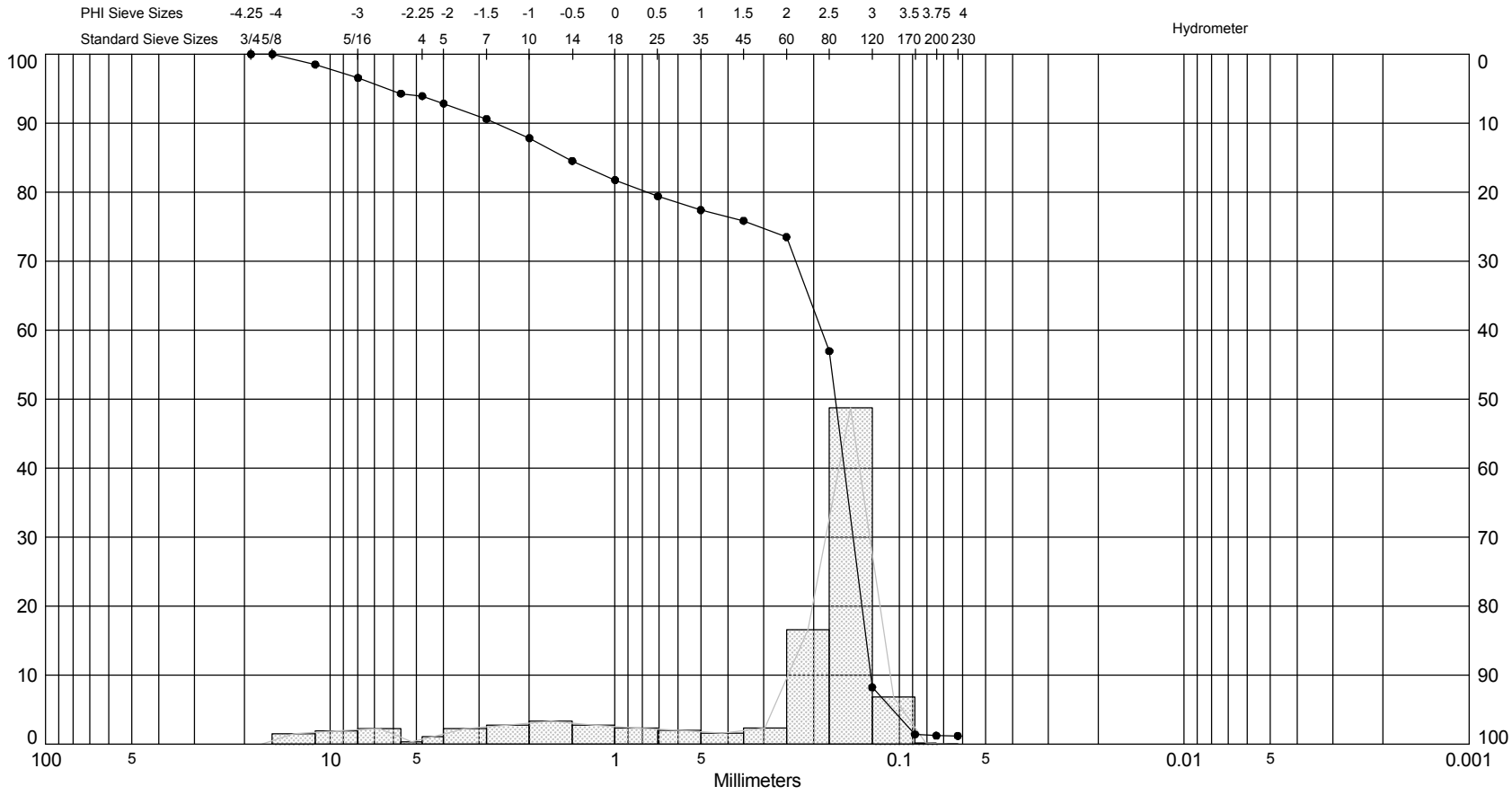
Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-08-08
Analyzed By:	PB
Easting (X, ft):	411,957
Northing (Y, ft):	1,156,109
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-10 #6	—●—	-23.9	SW	#200 - 1.22 #230 - 1.19		27	2.57	1.73	-1.61	4.36	1.81

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-08-08
Analyzed By:	TD
Easting (X, ft):	411,957
Northing (Y, ft):	1,156,109
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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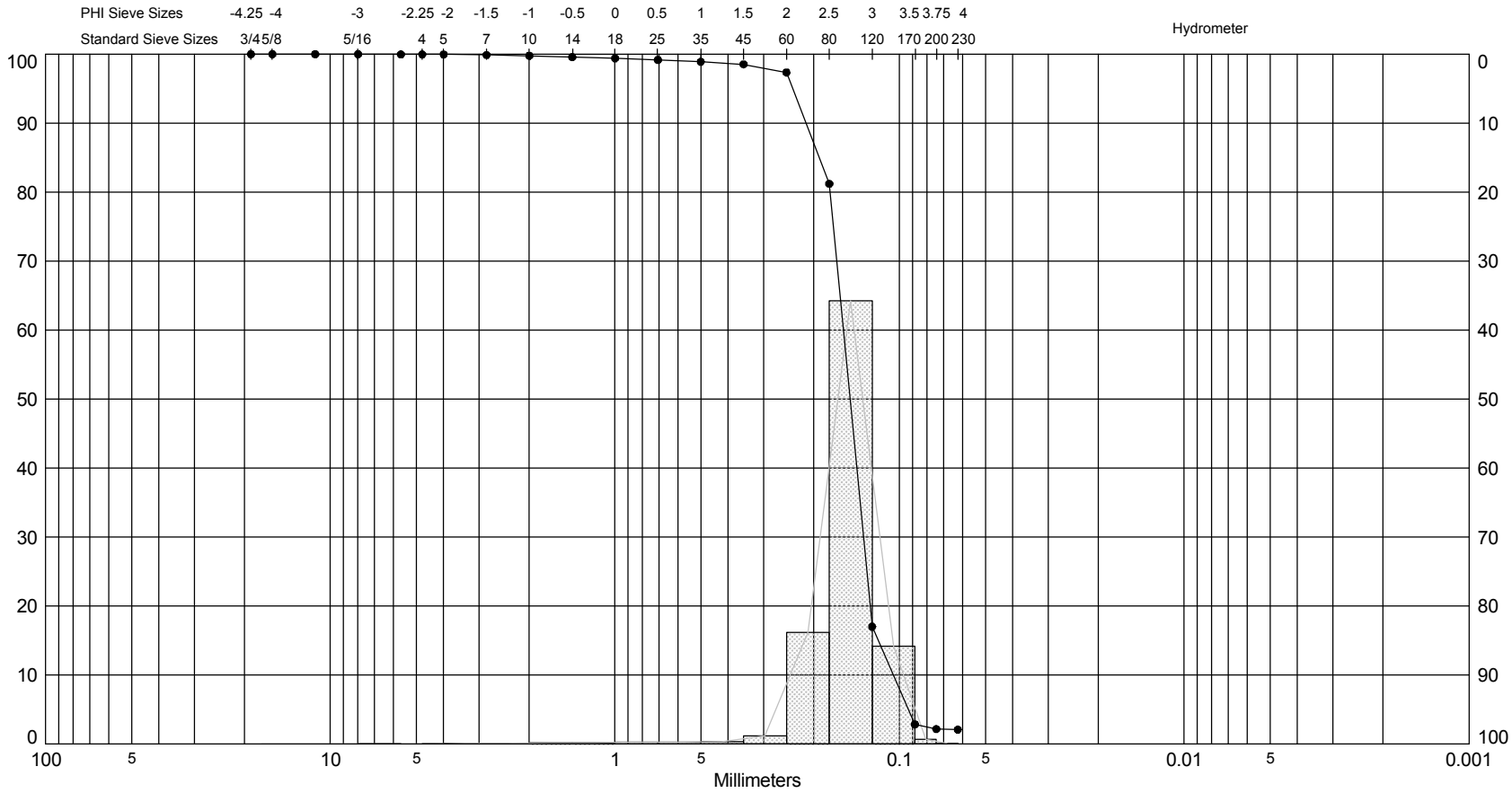

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-10 #7	—●—	-25.2	SP	#200 - 2.15 #230 - 2.07		4	2.74	2.7	-3.94	33.41	0.46

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-19-08
Analyzed By:	TD
Easting (X, ft):	411,957
Northing (Y, ft):	1,156,109
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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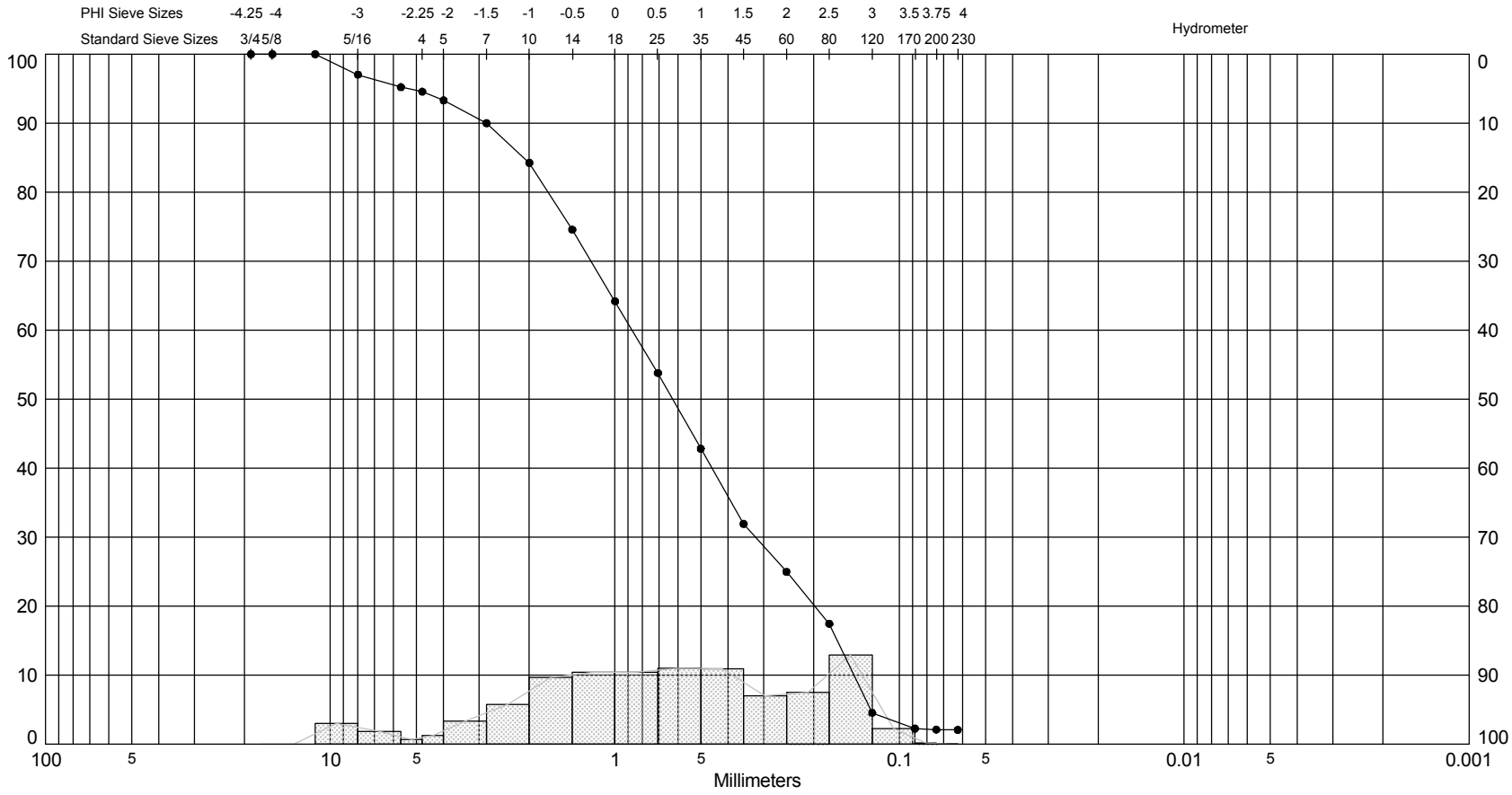

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-11 #1	—●—	-20.5	SW	#200 - 2.10 #230 - 2.06		62	0.67	0.57	-0.34	2.49	1.62

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-07-08
Analyzed By:	LH
Easting (X, ft):	413,575
Northing (Y, ft):	1,156,776
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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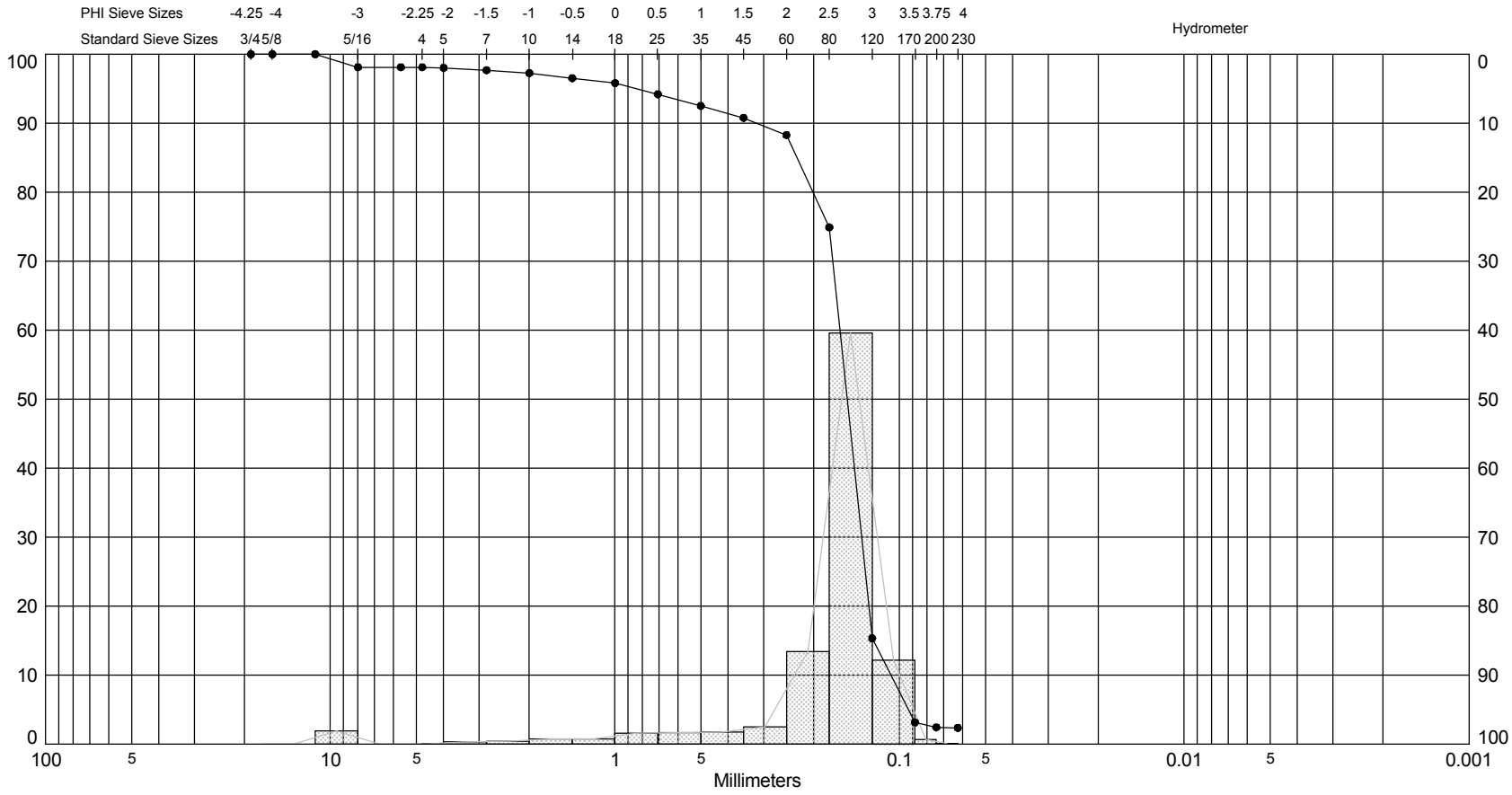

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-11 #2	—●—	-21.5	SW	#200 - 2.44 #230 - 2.36		13	2.71	2.42	-3.45	16.17	1.1

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	09-16-08
Analyzed By:	TD
Easting (X, ft):	413,575
Northing (Y, ft):	1,156,776
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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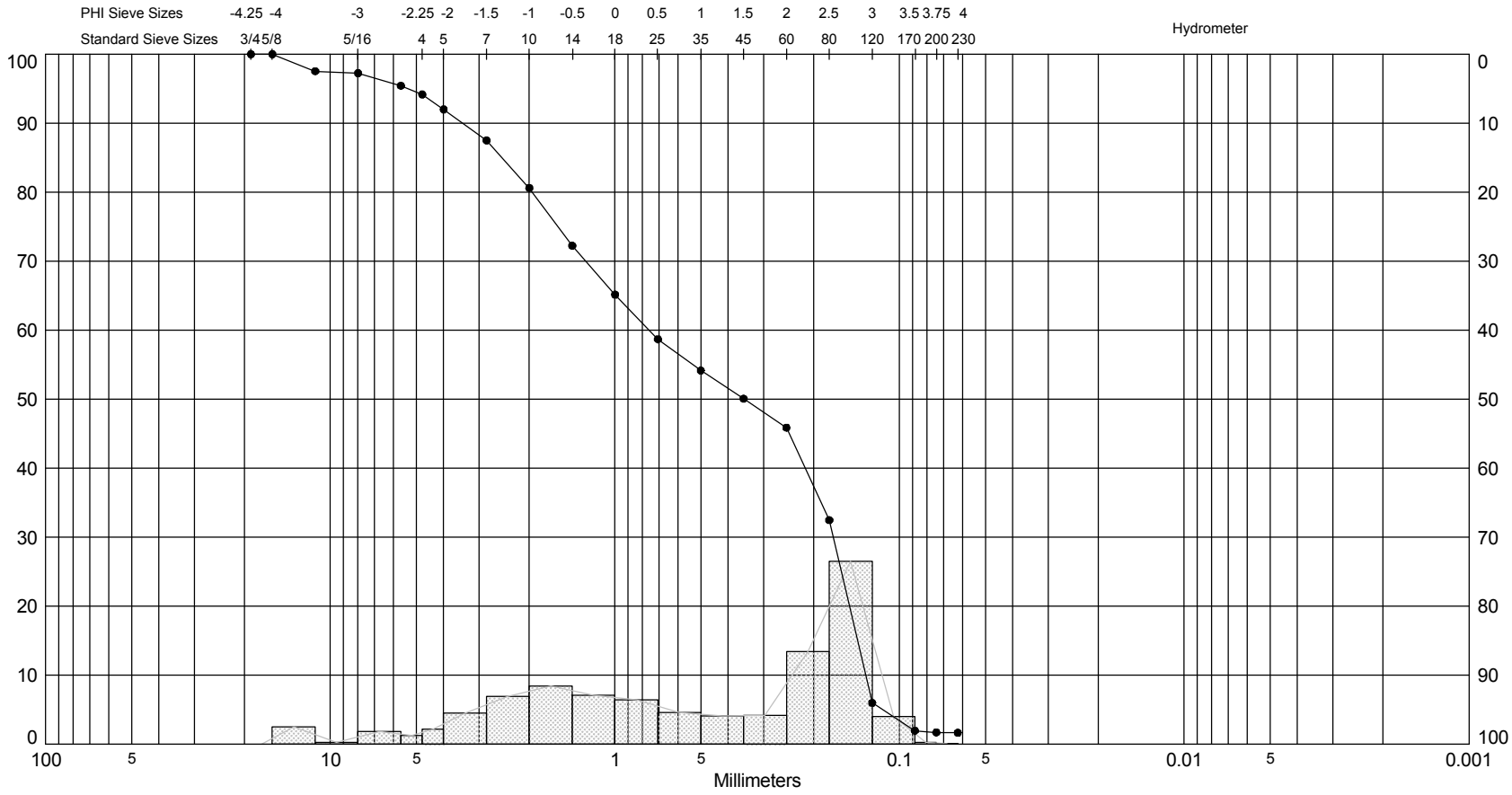

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-11 #3	—●—	-22.2	SW	#200 - 1.70 #230 - 1.64		49	1.51	0.89	-0.57	2.16	1.91

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	09-16-08
Analyzed By:	PB
Easting (X, ft):	413,575
Northing (Y, ft):	1,156,776
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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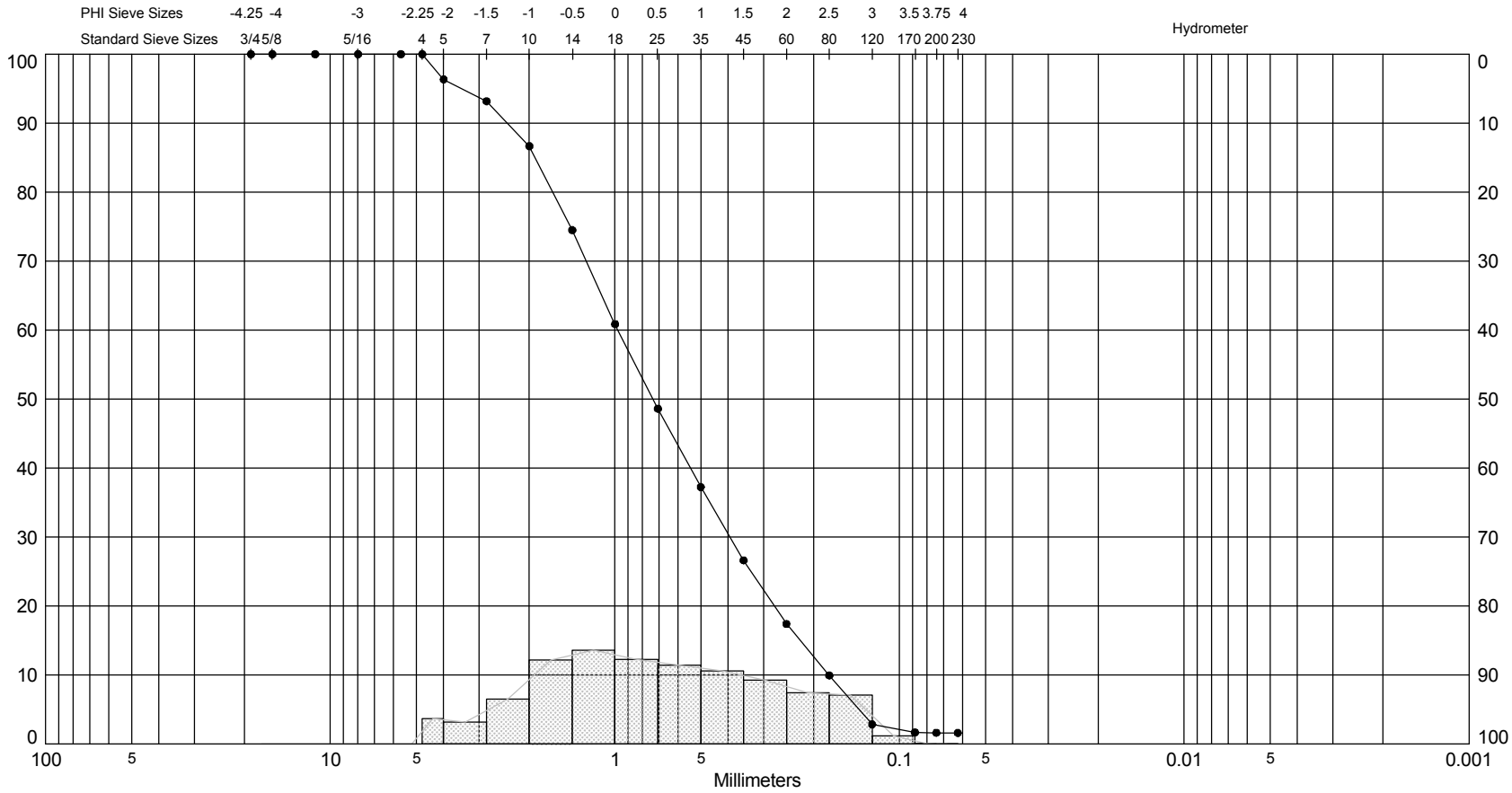

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-12 #1	—●—	-16.0	SW	#200 - 1.62 #230 - 1.60			0.44	0.48	0.06	2.18	1.34

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-07-08
Analyzed By:	LH
Easting (X, ft):	414,079
Northing (Y, ft):	1,156,860
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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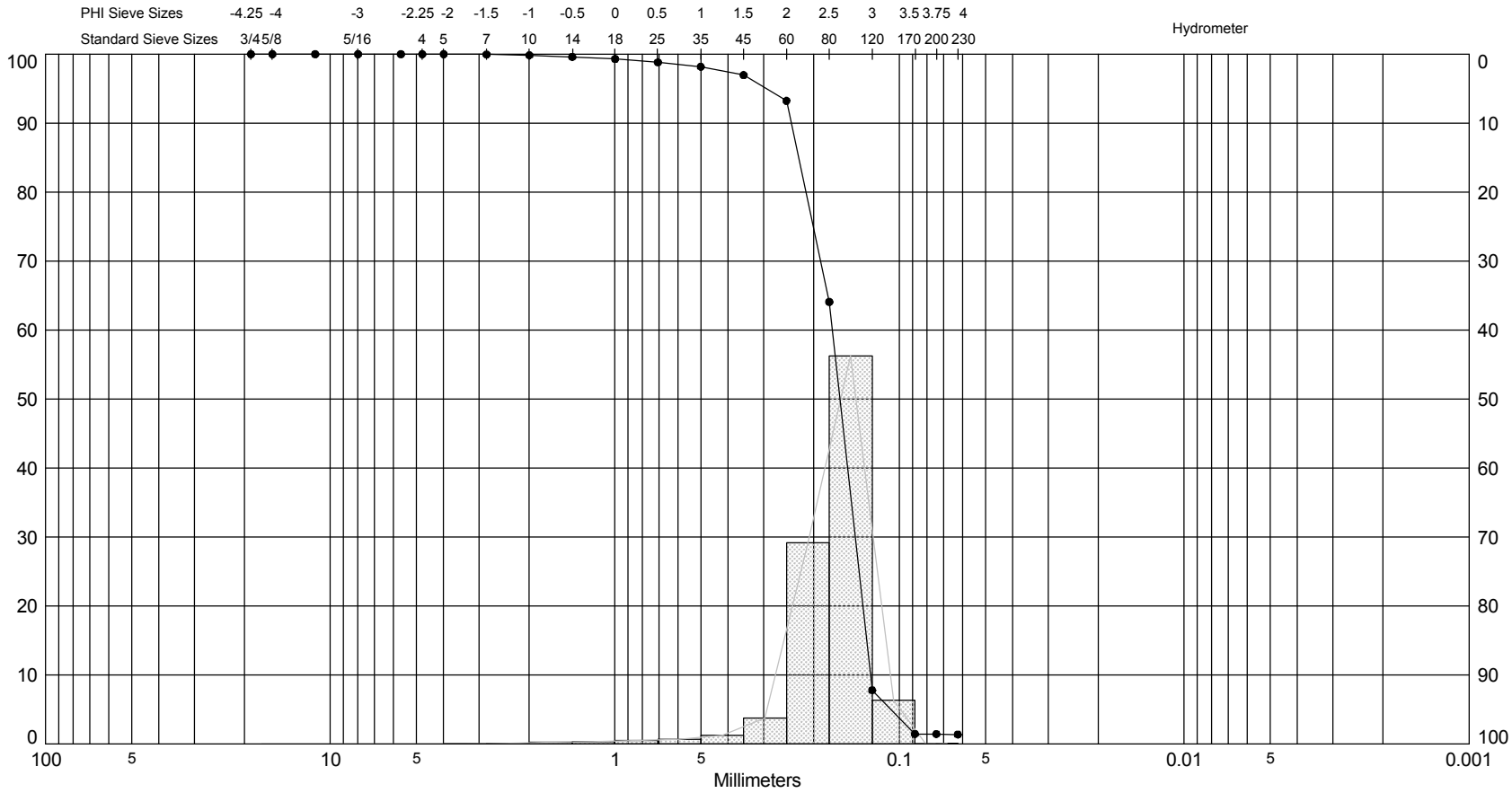

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-13 #1	—●—	-13.8	SP	#200 - 1.44 #230 - 1.37		5	2.63	2.53	-2.9	17.88	0.5

Comments:

Depths and elevations based on measured values

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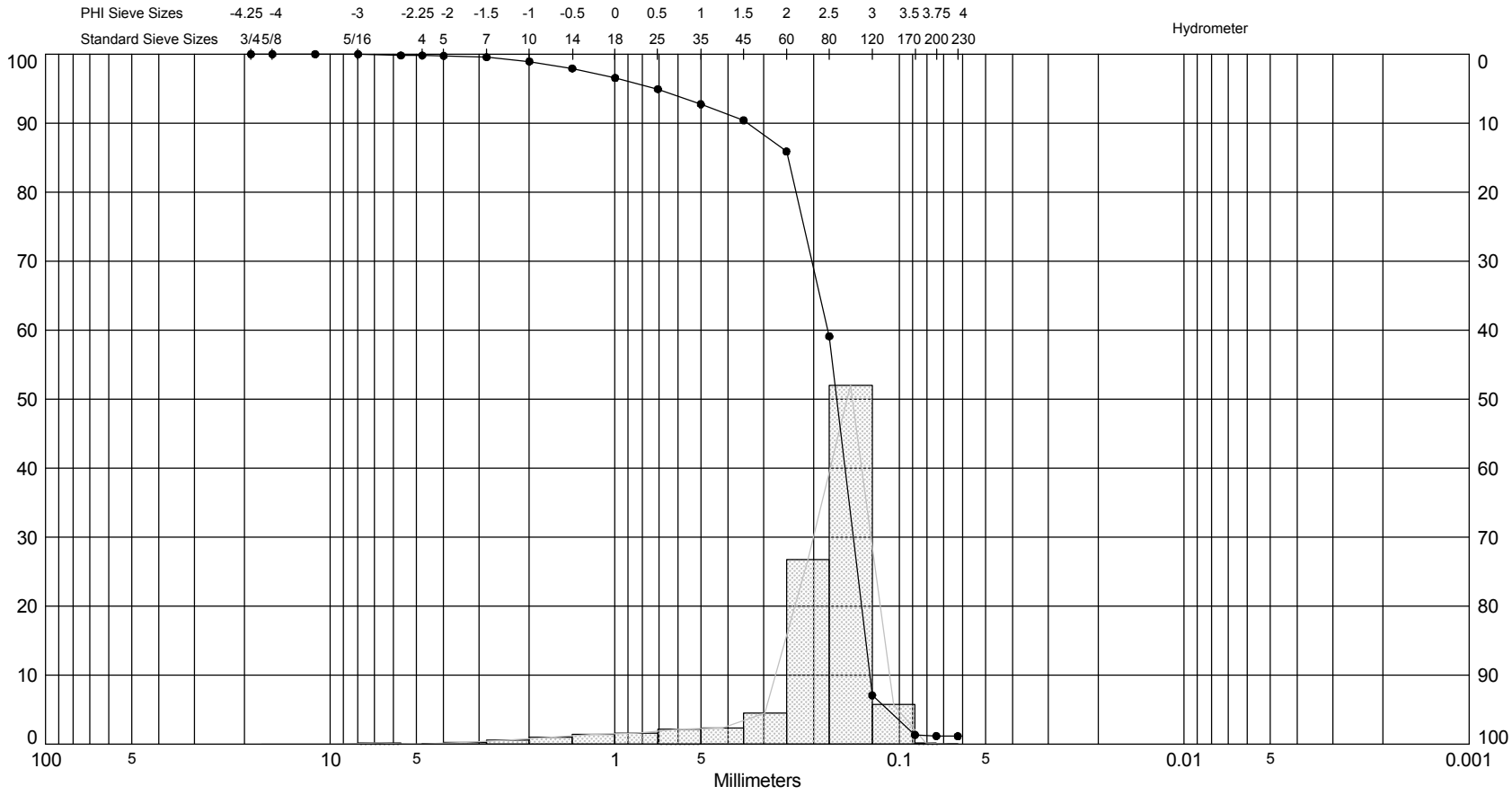
Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	413,927
Northing (Y, ft):	1,157,393
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-13 #2	—●—	-15.0	SP	#200 - 1.16 #230 - 1.14		12	2.59	2.35	-2.66	11.44	0.82

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	TD
Easting (X, ft):	413,927
Northing (Y, ft):	1,157,393
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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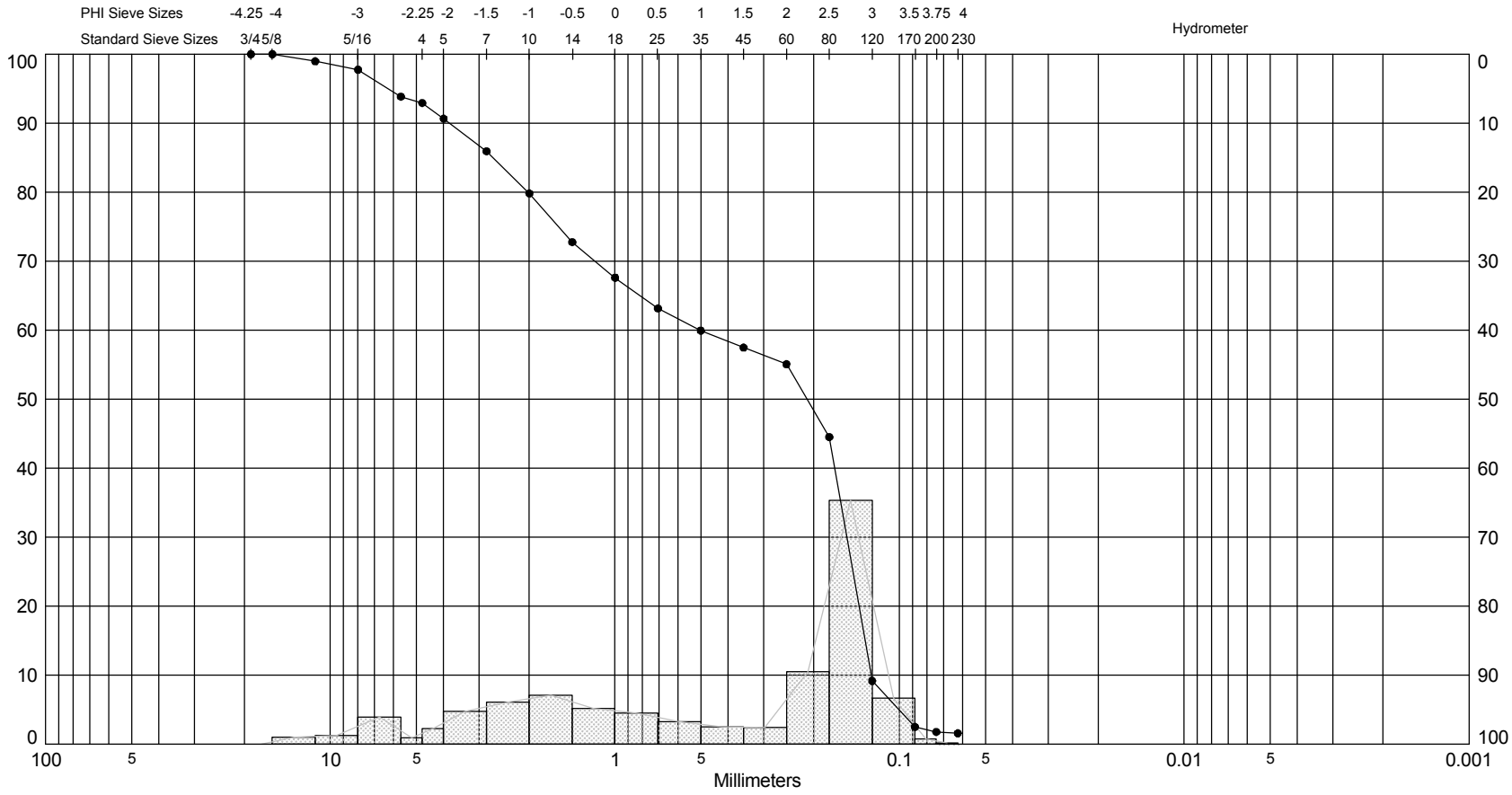

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-13 #3	—●—	-17.2	SW	#200 - 1.77 #230 - 1.57		47	2.24	1.11	-0.69	2.07	2.01

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	TD
Easting (X, ft):	413,927
Northing (Y, ft):	1,157,393
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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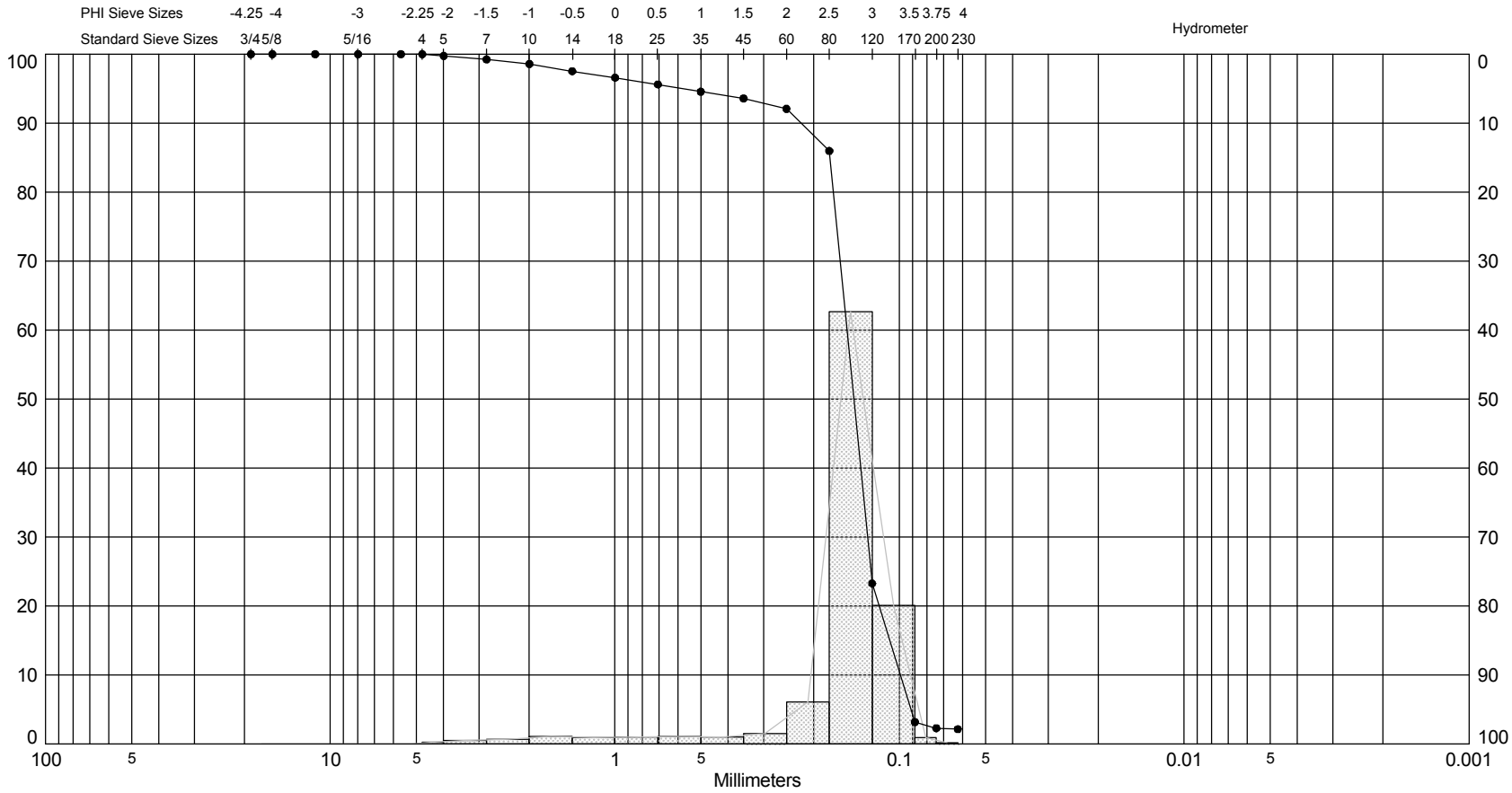

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-13 #4	—●—	-21.8	SP	#200 - 2.28 #230 - 2.13		9	2.79	2.63	-3.32	15.15	0.83

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	LH
Easting (X, ft):	413,927
Northing (Y, ft):	1,157,393
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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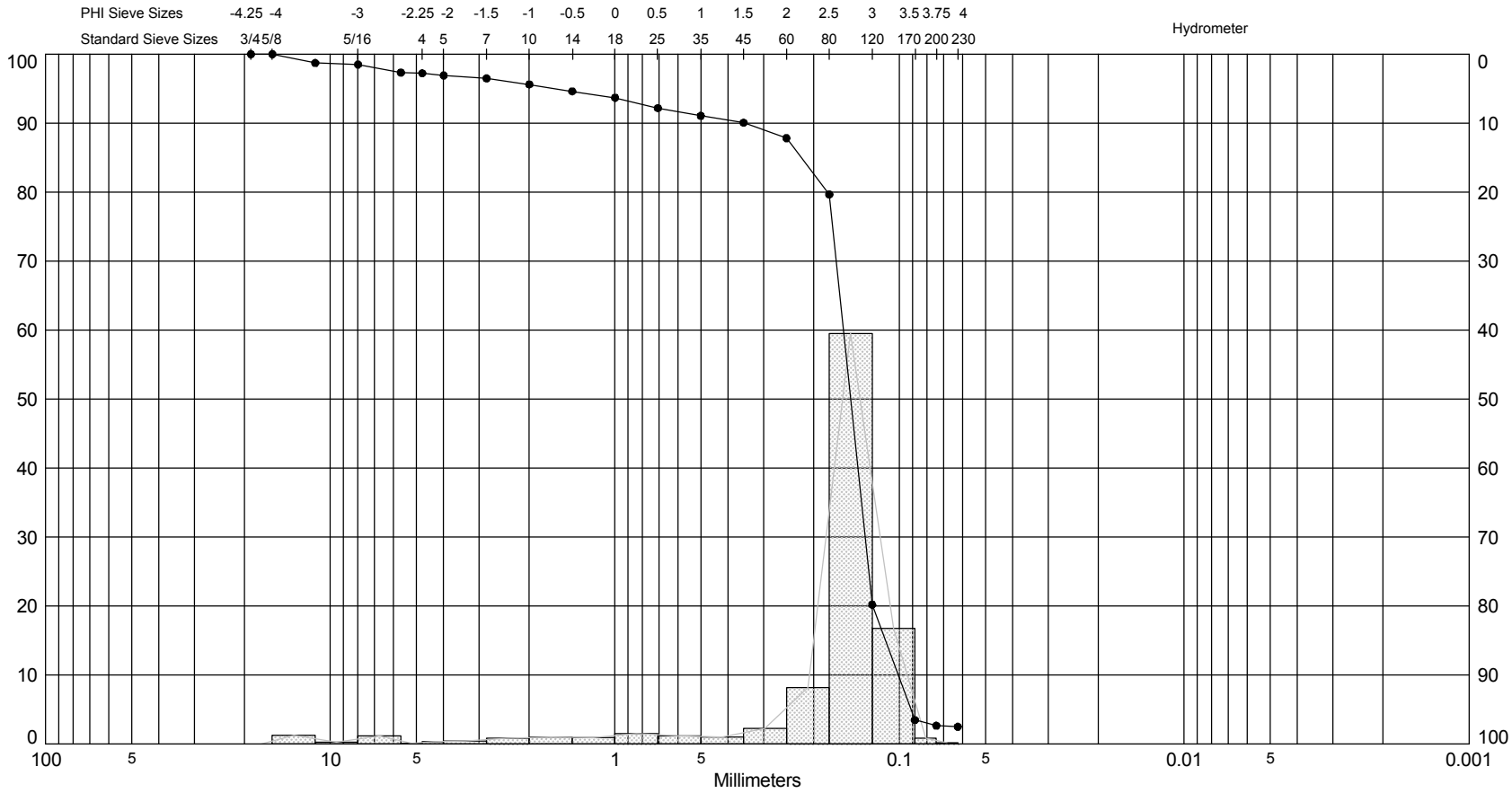

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-13 #5	—●—	-23.1	SW	#200 - 2.64 #230 - 2.48		12	2.75	2.4	-3.13	12.84	1.3

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	LH
Easting (X, ft):	413,927
Northing (Y, ft):	1,157,393
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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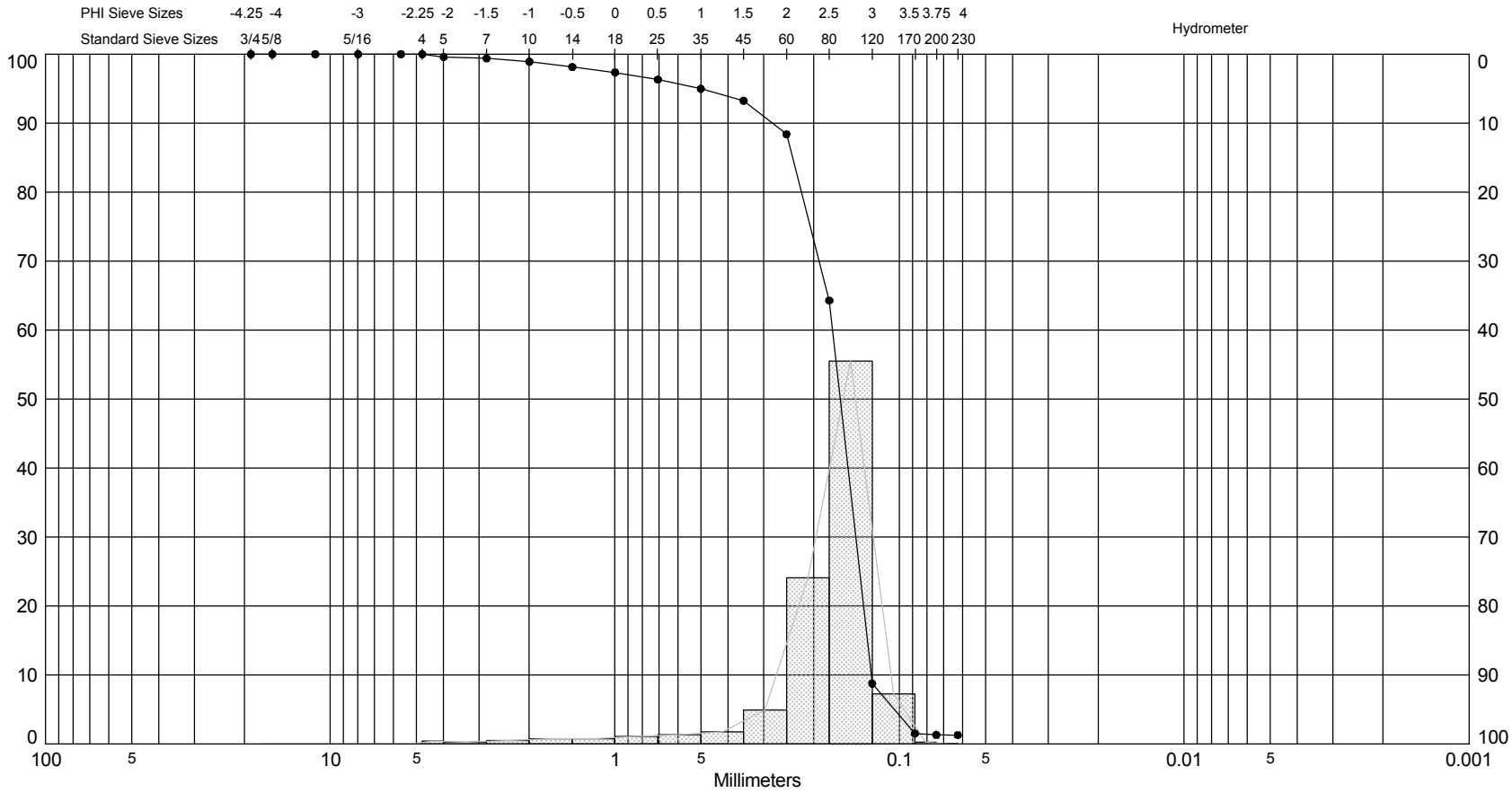

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-14 #1	—●—	-15.5	SP	#200 - 1.30 #230 - 1.29		14	2.63	2.44	-3.09	14.97	0.76

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	413,101
Northing (Y, ft):	1,157,209
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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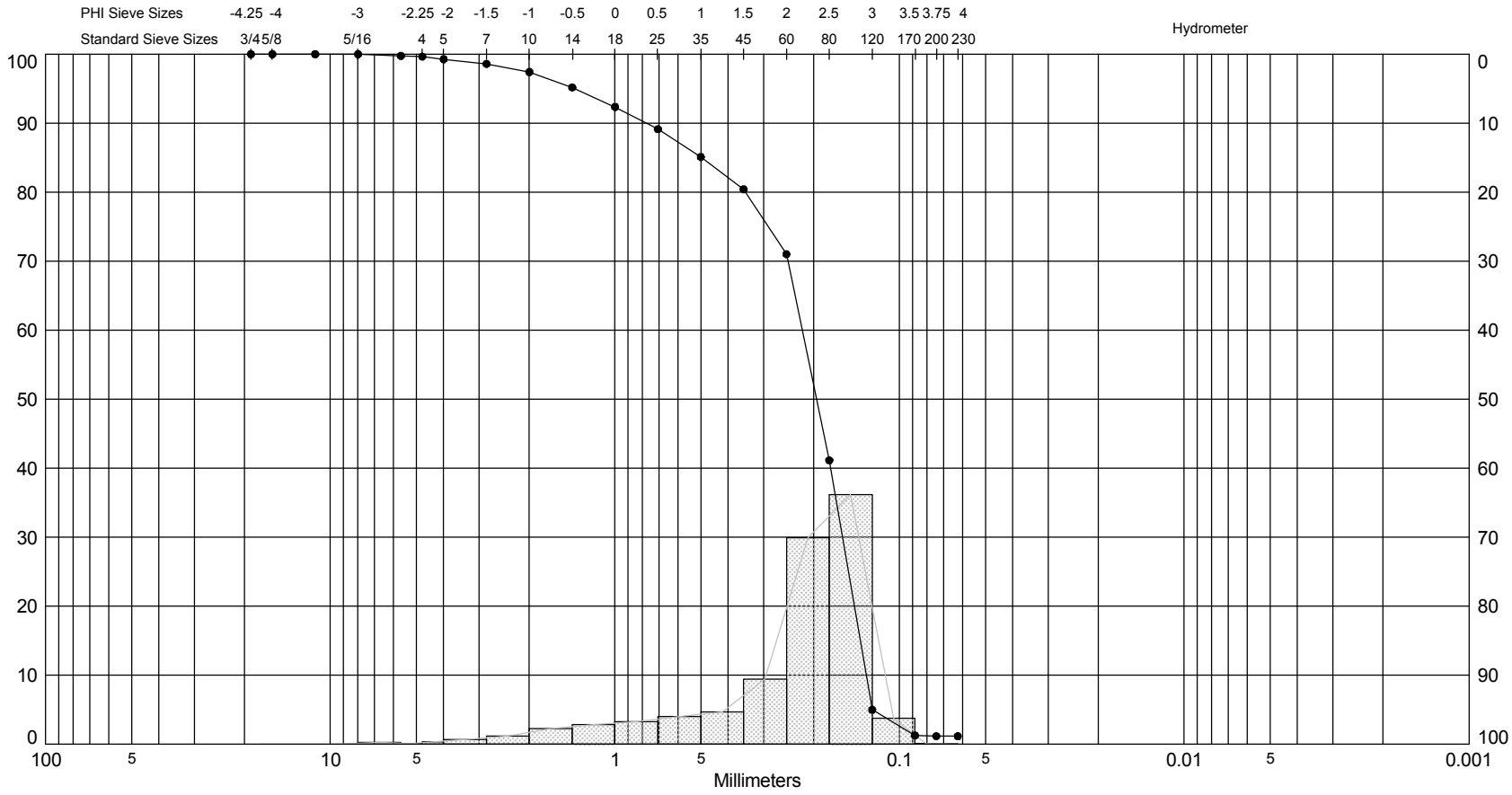

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-14 #2	—●—	-17.5	SW	#200 - 1.15 #230 - 1.14		23	2.35	2.01	-1.8	6.05	1.08

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	TD
Easting (X, ft):	413,101
Northing (Y, ft):	1,157,209
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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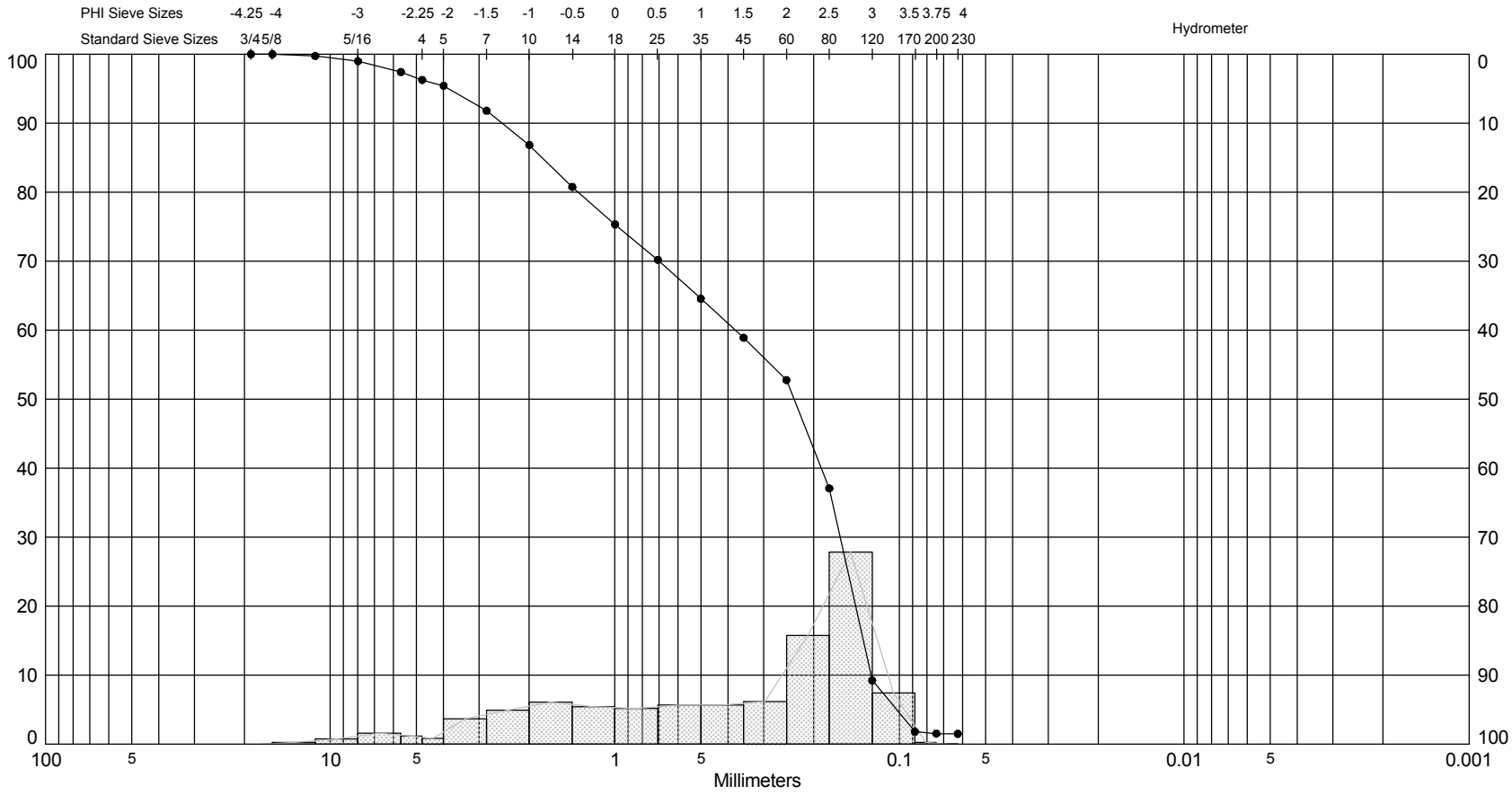

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-14 #3	—●—	-20.2	SW	#200 - 1.53 #230 - 1.49		36	2.09	1.32	-0.85	2.58	1.71

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-21-08
Analyzed By:	TD
Easting (X, ft):	413,101
Northing (Y, ft):	1,157,209
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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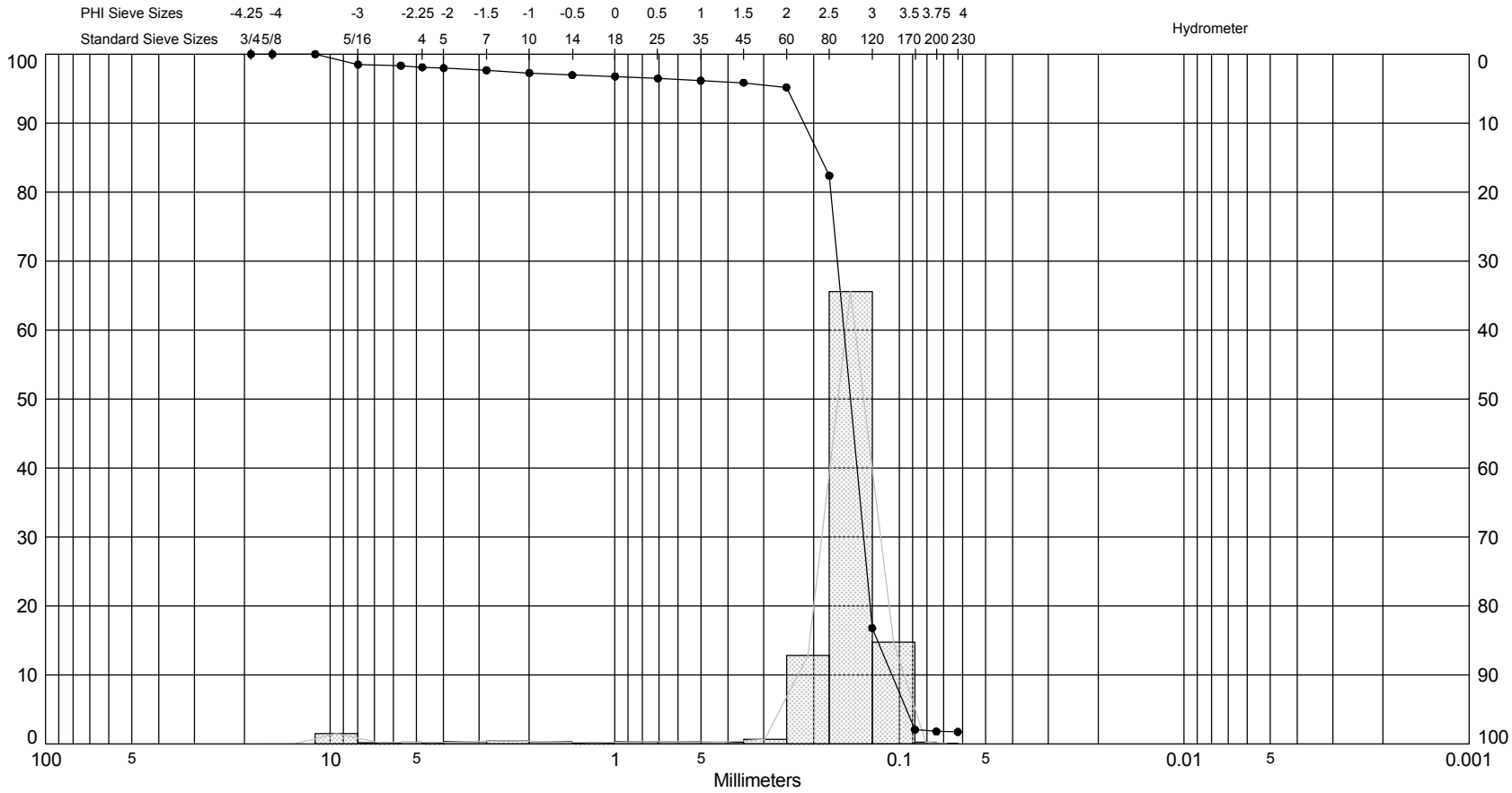

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-14 #4	—●—	-22.0	SW	#200 - 1.80 #230 - 1.74		7	2.75	2.57	-4.58	25.28	0.98

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	TD
Easting (X, ft):	413,101
Northing (Y, ft):	1,157,209
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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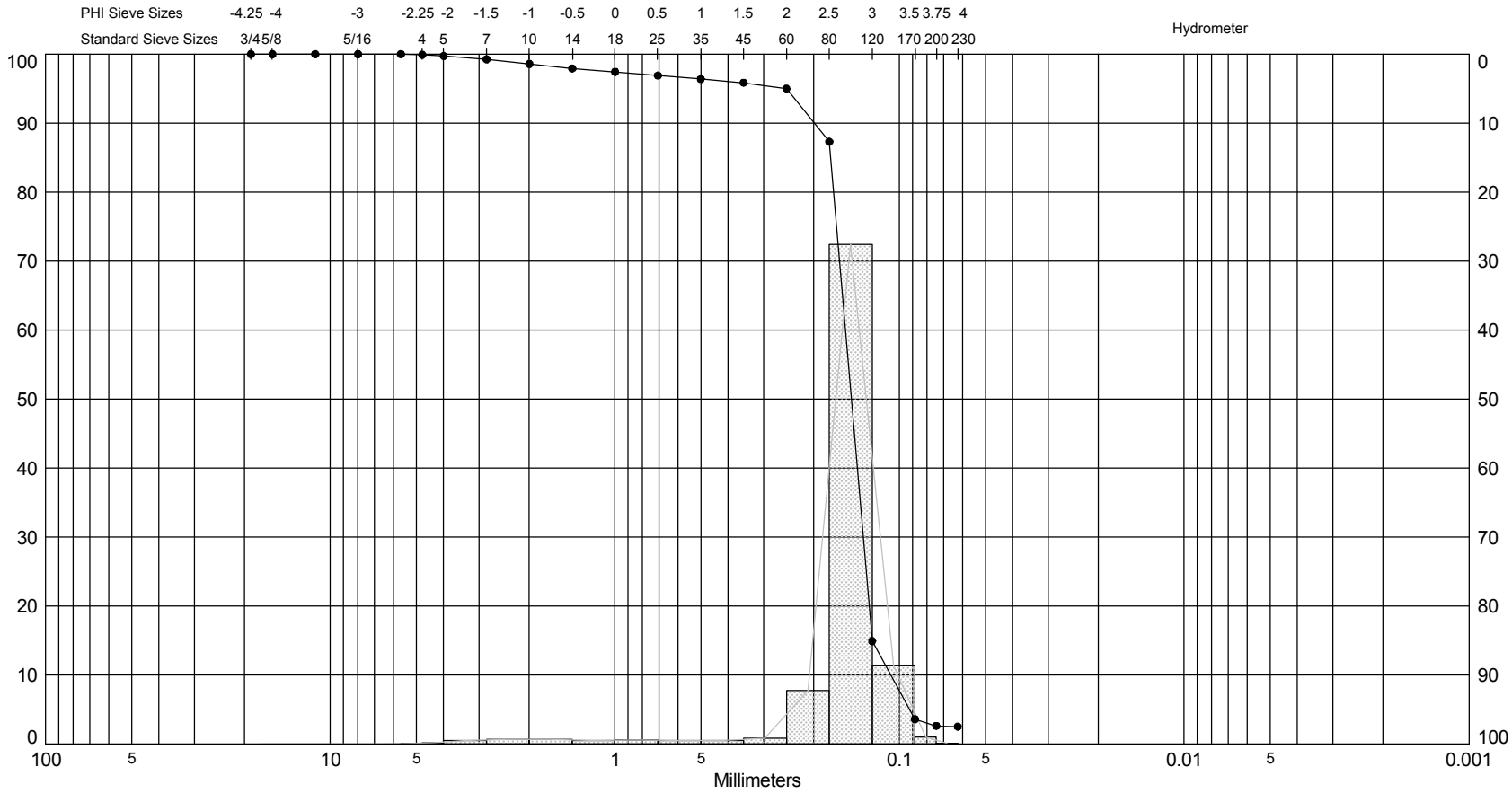

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-14 #5	—●—	-24.3	SP	#200 - 2.62 #230 - 2.52		7	2.76	2.64	-4.22	23.39	0.72

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	TD
Easting (X, ft):	413,101
Northing (Y, ft):	1,157,209
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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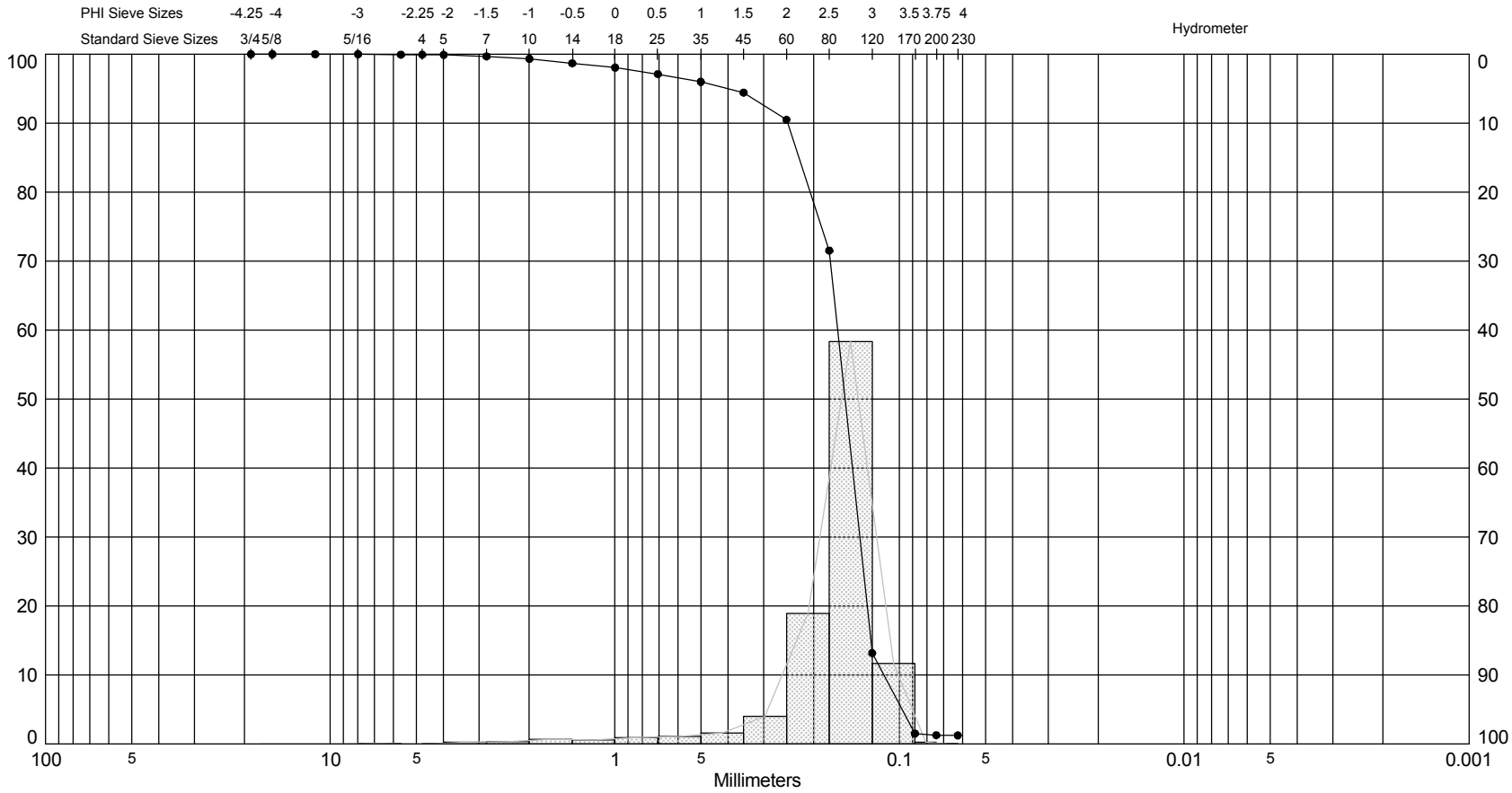

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-15 #1	—●—	-16.0	SP	#200 - 1.27 #230 - 1.23		9	2.68	2.53	-3.15	16.3	0.69

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-15-08
Analyzed By:	TD
Easting (X, ft):	413,461
Northing (Y, ft):	1,157,788
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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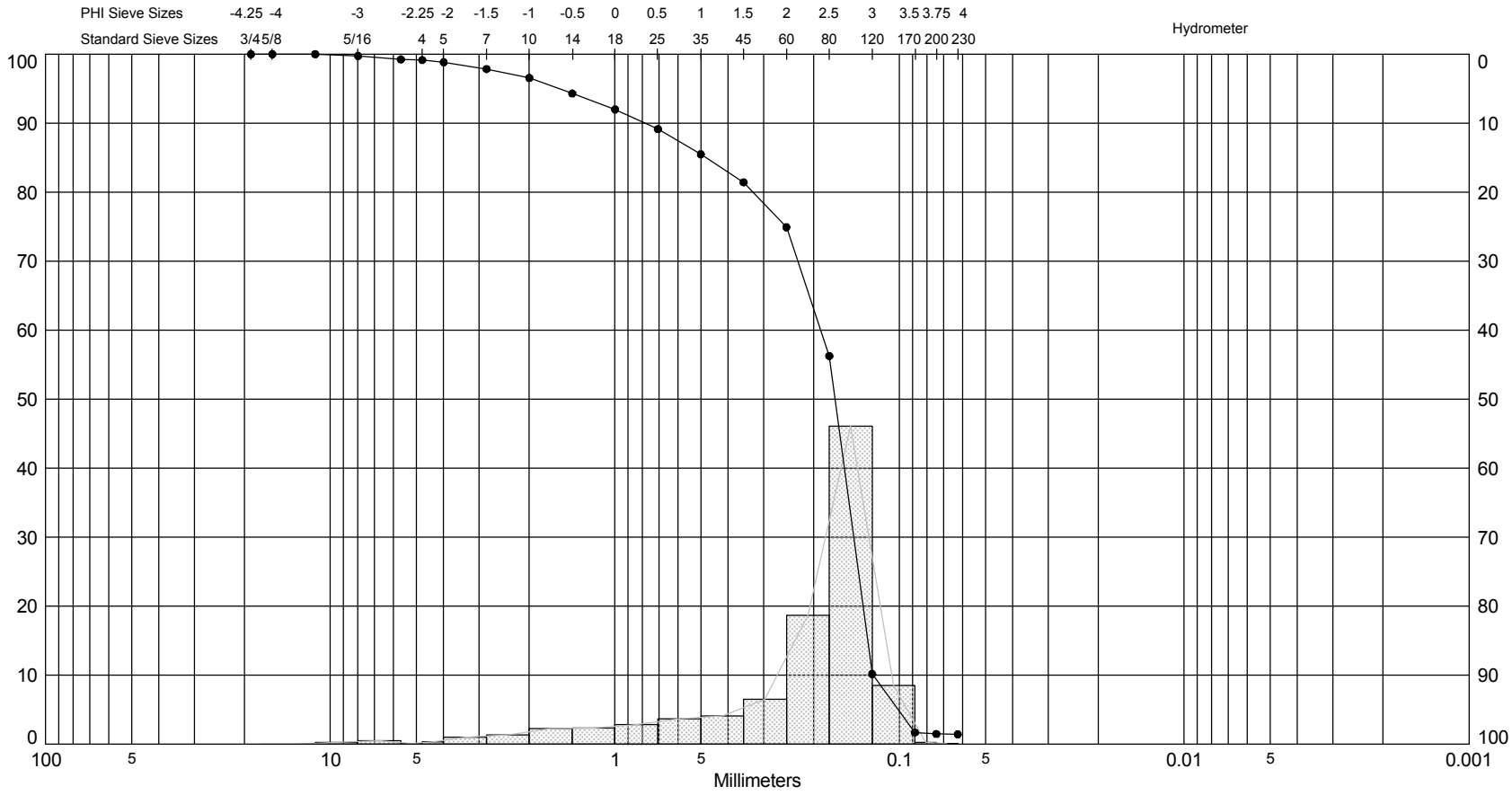

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-15 #2	—●—	-18.1	SW	#200 - 1.46 #230 - 1.41		23	2.57	2.12	-1.97	6.74	1.19

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-07-08
Analyzed By:	TD
Easting (X, ft):	413,461
Northing (Y, ft):	1,157,788
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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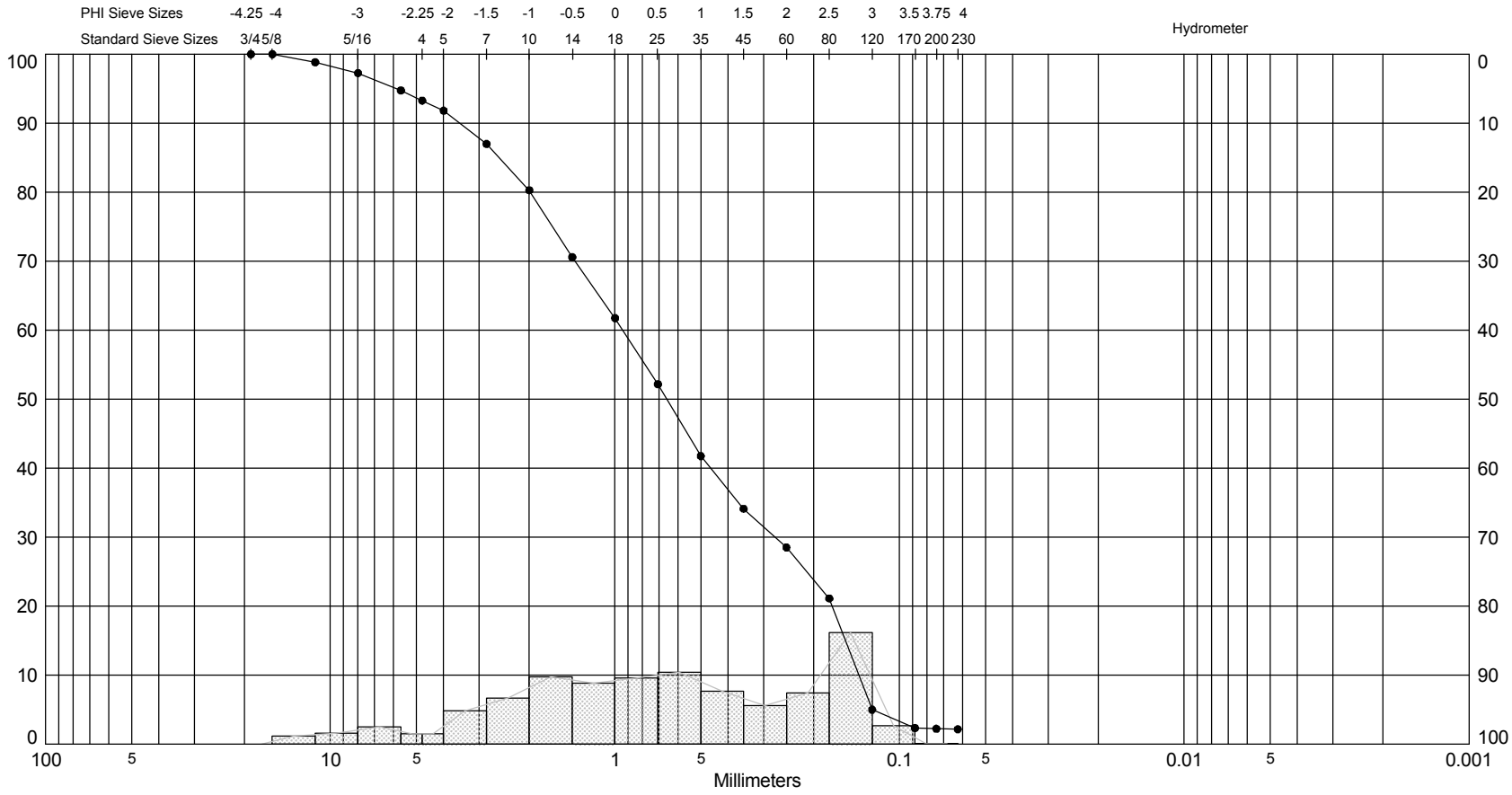

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-15 #3	—●—	-19.0	SW	#200 - 2.22 #230 - 2.15		73	0.6	0.52	-0.29	2.25	1.74

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-19-08
Analyzed By:	TD
Easting (X, ft):	413,461
Northing (Y, ft):	1,157,788
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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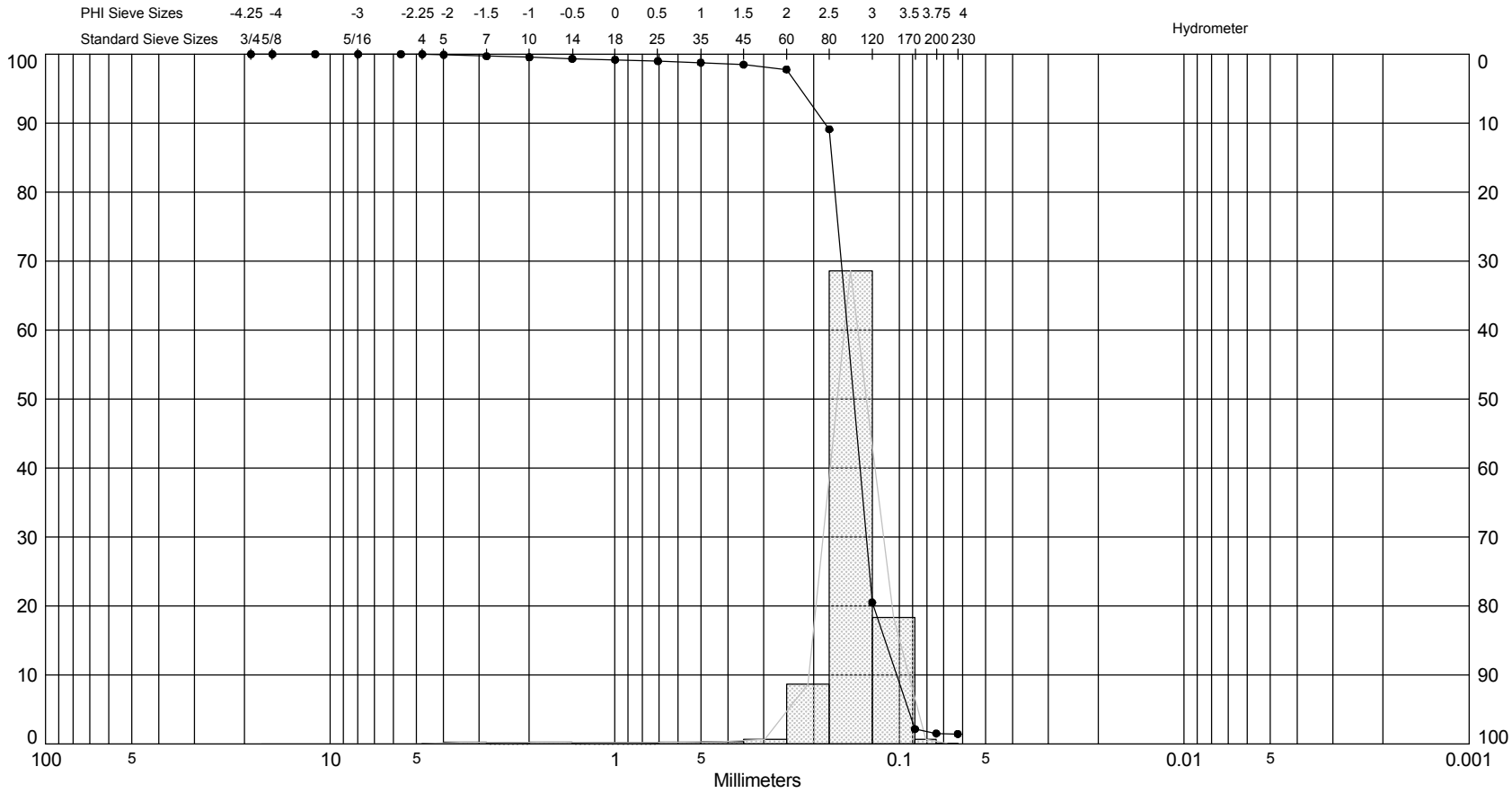

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-15 #4	—●—	-20.0	SP	#200 - 1.52 #230 - 1.44		4	2.79	2.75	-4.95	41.68	0.49

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-19-08
Analyzed By:	TD
Easting (X, ft):	413,461
Northing (Y, ft):	1,157,788
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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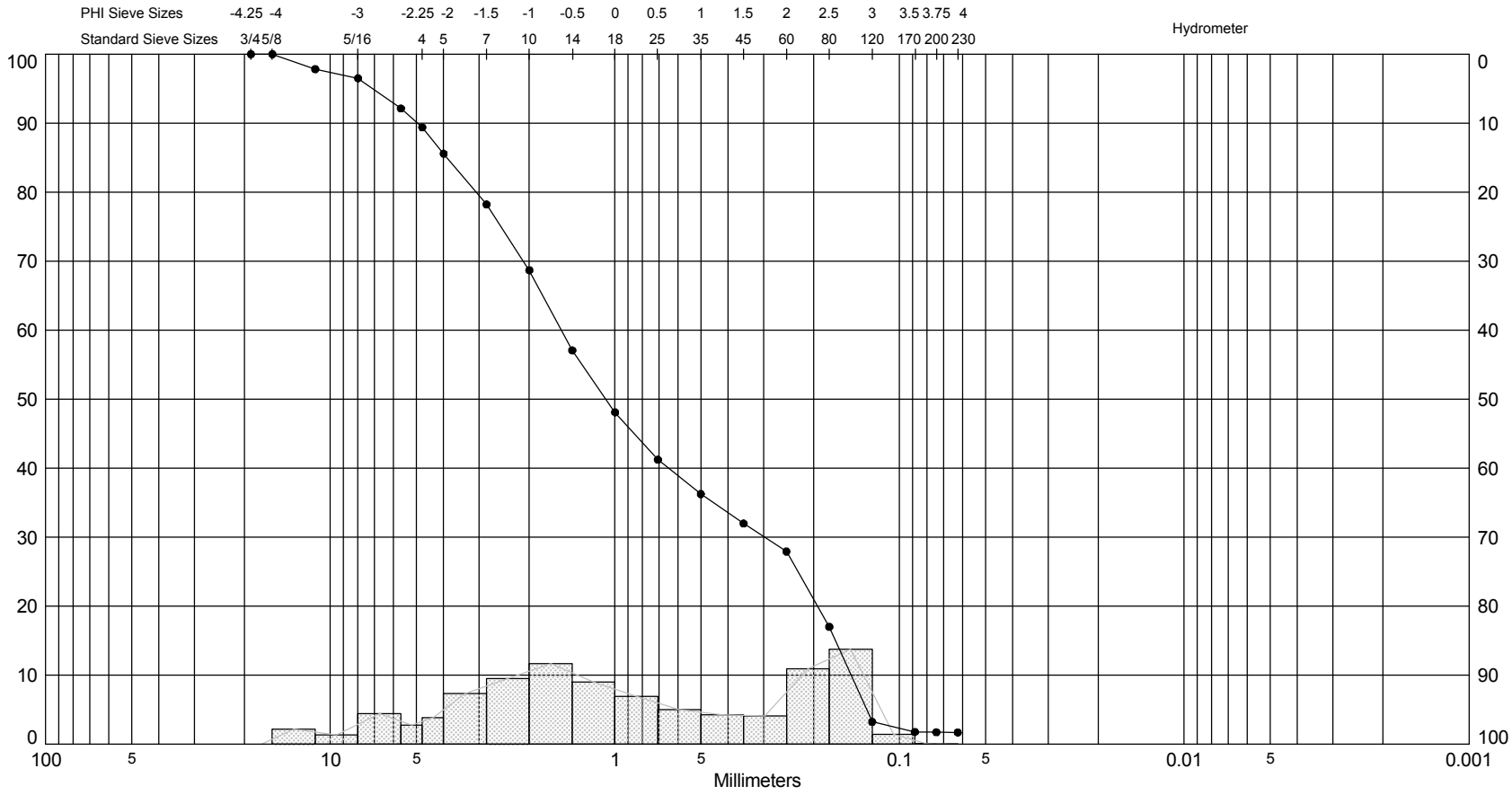

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-15 #5	—●—	-21.3	SW	#200 - 1.71 #230 - 1.69		60		0.11	0	1.87	1.89

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	LH
Easting (X, ft):	413,461
Northing (Y, ft):	1,157,788
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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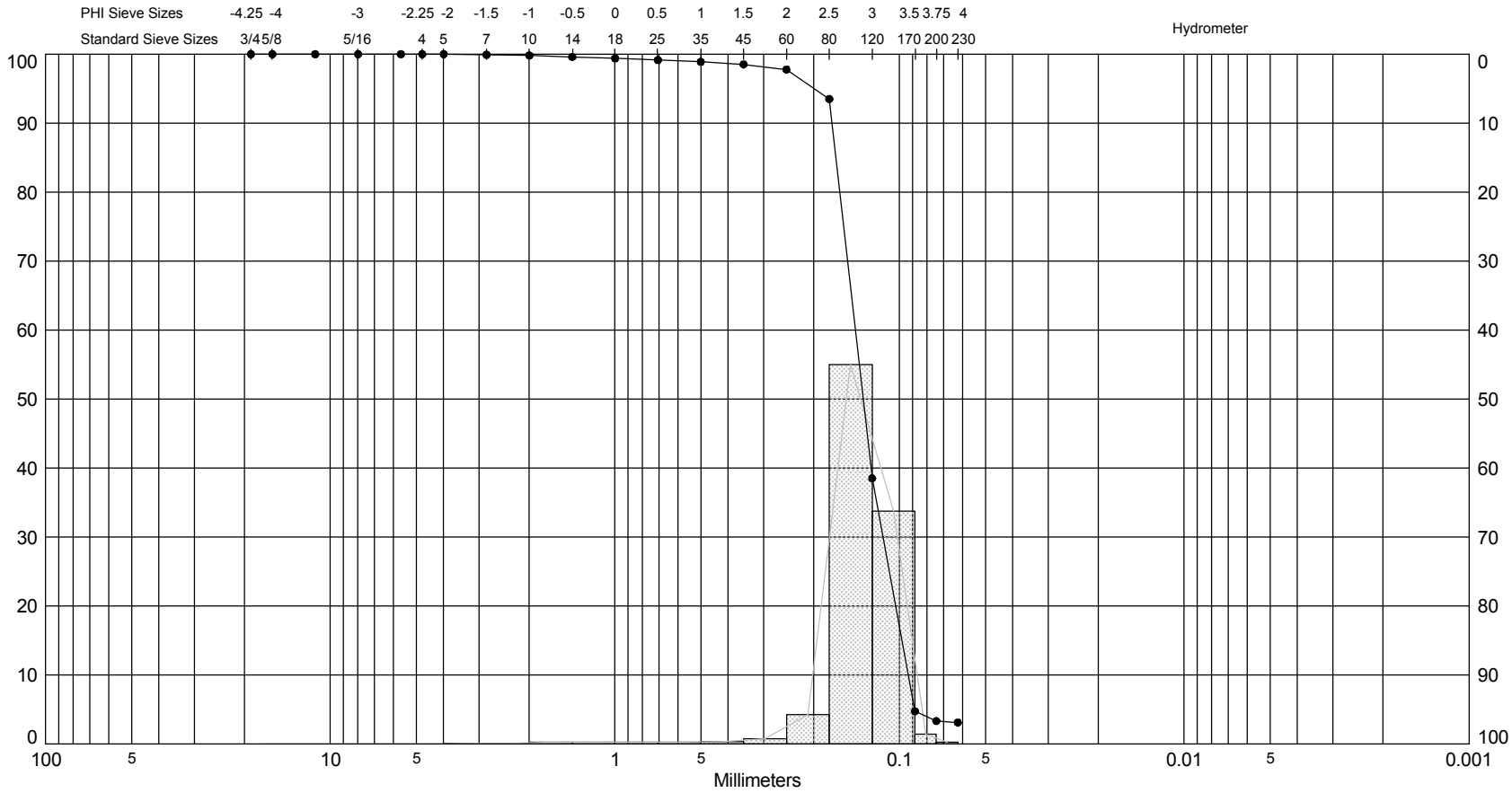

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-15 #6	—●—	-22.8	SP	#200 - 3.32 #230 - 3.11		6	2.9	2.87	-3.96	30.93	0.47

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	TD
Easting (X, ft):	413,461
Northing (Y, ft):	1,157,788
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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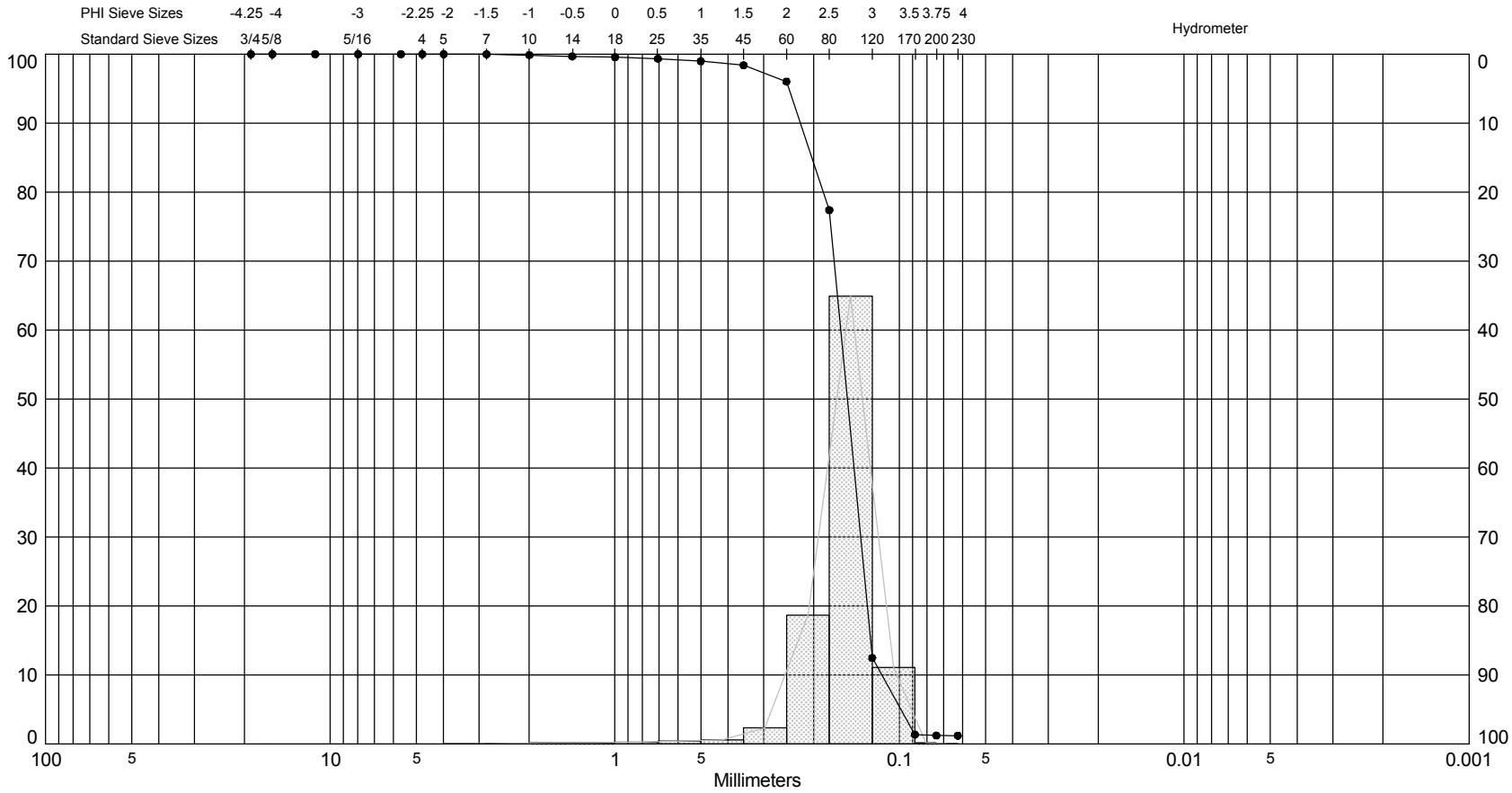

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-16 #1	—●—	-17.8	SP	#200 - 1.21 #230 - 1.20		4	2.71	2.65	-3.19	23.63	0.43

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-07-08
Analyzed By:	TD
Easting (X, ft):	412,941
Northing (Y, ft):	1,157,673
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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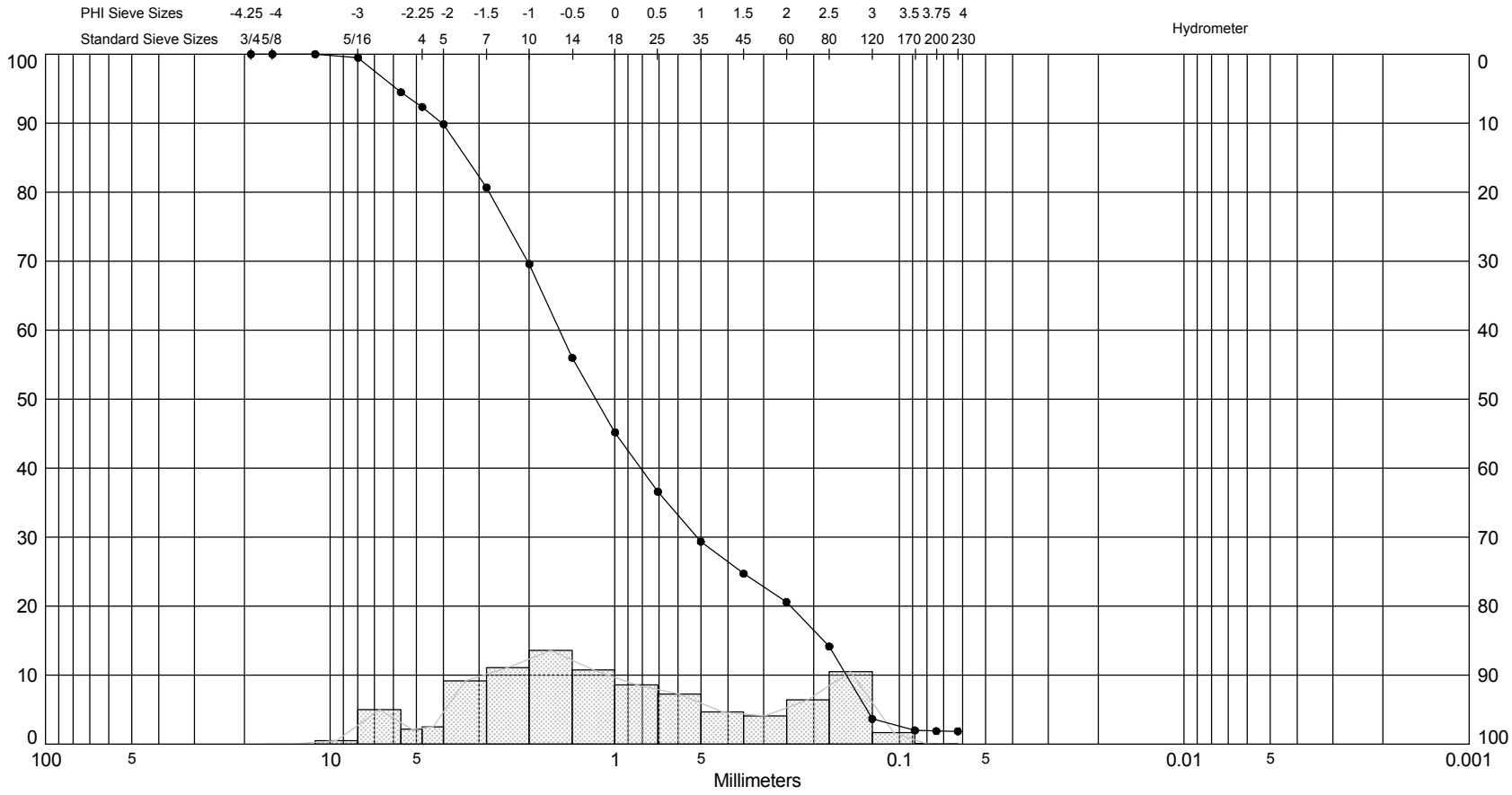

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-16 #2	—●—	-20.0	SW	#200 - 1.88 #230 - 1.86				0.01	0.28	2.06	1.68

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	412,941
Northing (Y, ft):	1,157,673
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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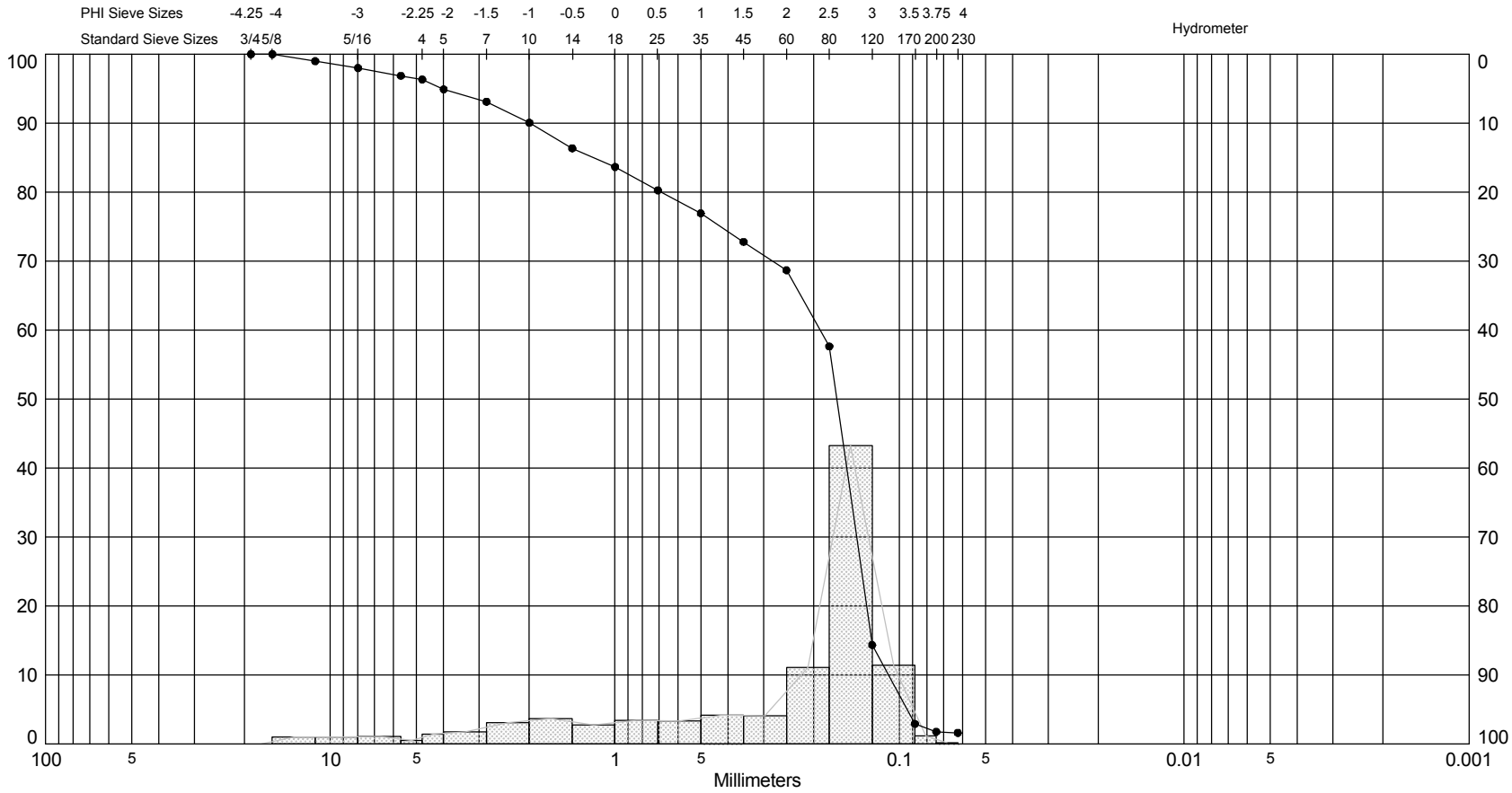

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-16 #3	—●—	-21.3	SW	#200 - 1.76 #230 - 1.61			2.59	1.8	-1.51	4.32	1.69

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	PB
Easting (X, ft):	412,941
Northing (Y, ft):	1,157,673
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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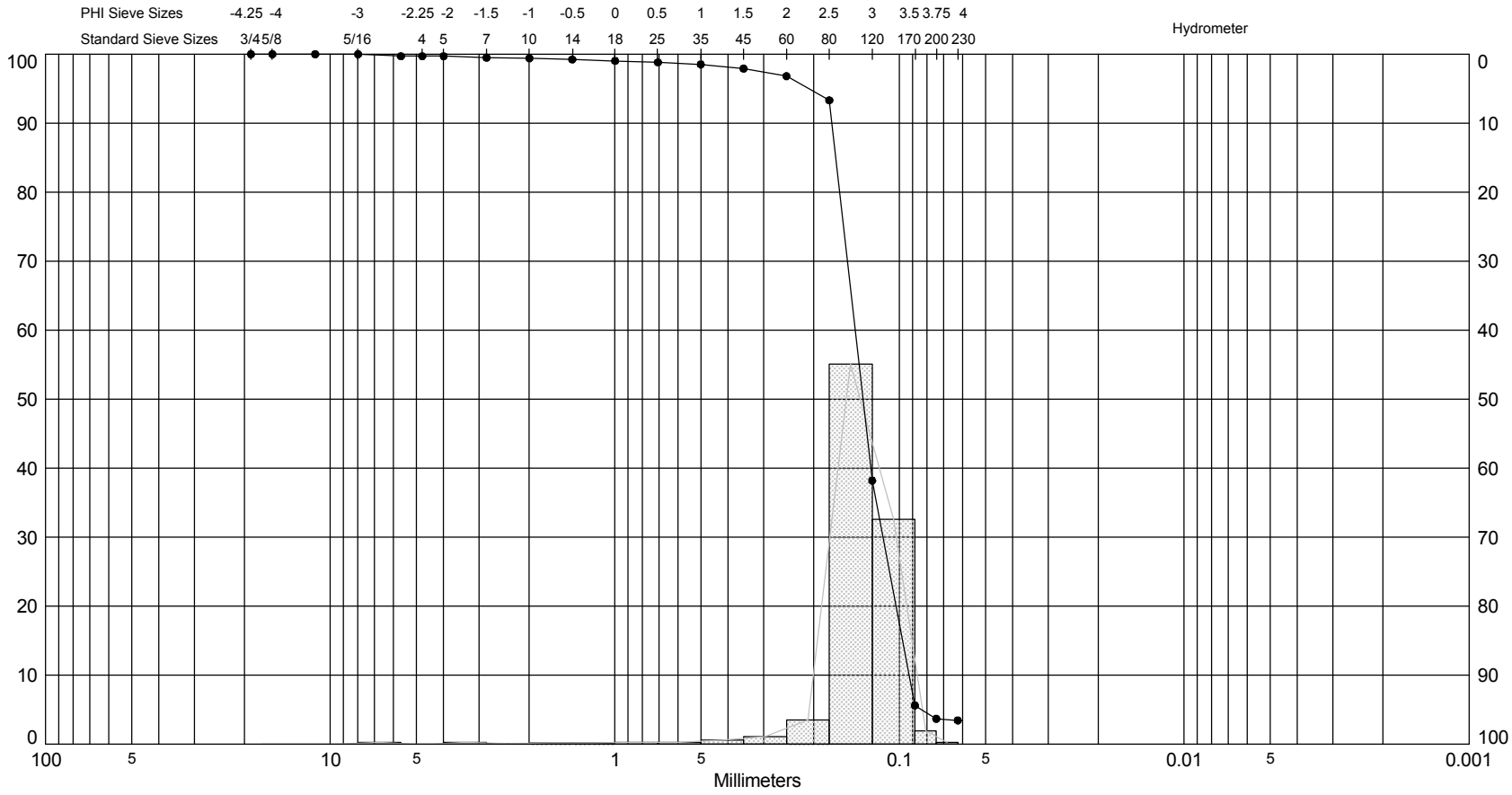

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-16 #4	—●—	-23.3	SP	#200 - 3.66 #230 - 3.44			2.89	2.85	-5.08	41.24	0.59

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-08-08
Analyzed By:	TD
Easting (X, ft):	412,941
Northing (Y, ft):	1,157,673
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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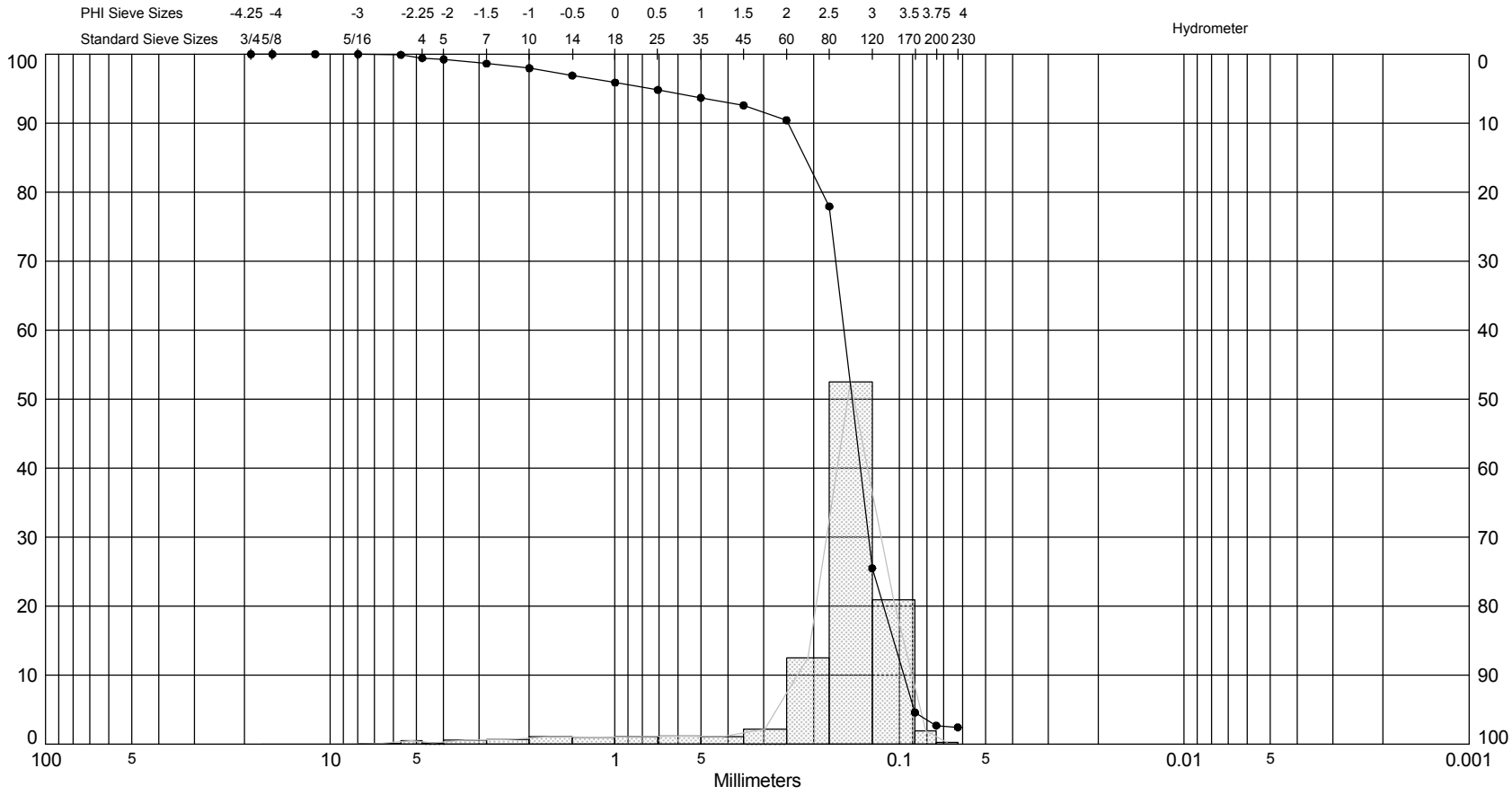

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-16 #5	—●—	-25.2	SW	#200 - 2.68 #230 - 2.43			2.77	2.56	-3.03	13.34	0.95

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-08-08
Analyzed By:	TD
Easting (X, ft):	412,941
Northing (Y, ft):	1,157,673
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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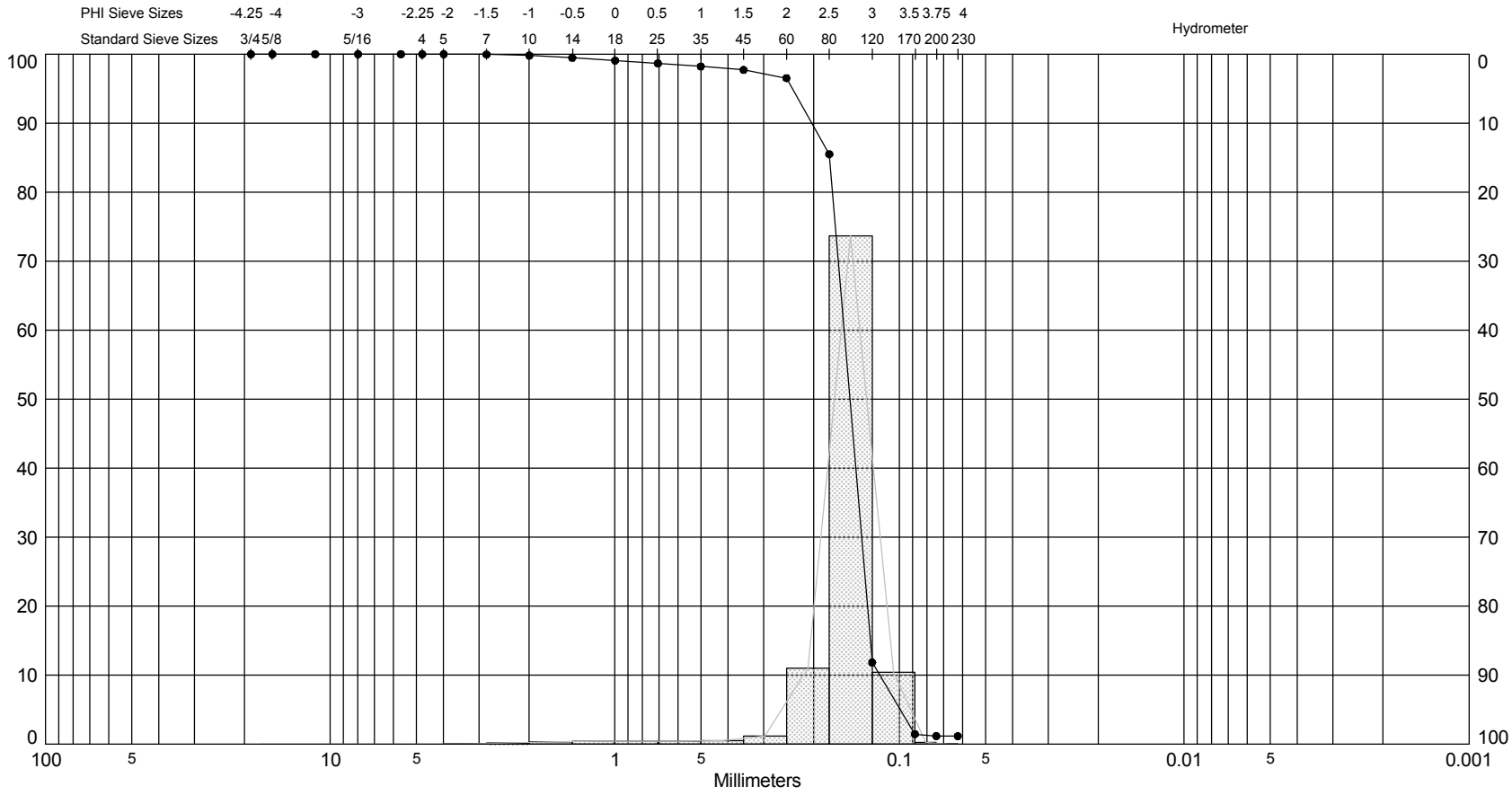

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-17 #1	—●—	-14.6	SP	#200 - 1.17 #230 - 1.15		4	2.74	2.68	-4.28	29.41	0.48

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-08-08
Analyzed By:	TD
Easting (X, ft):	412,935
Northing (Y, ft):	1,158,323
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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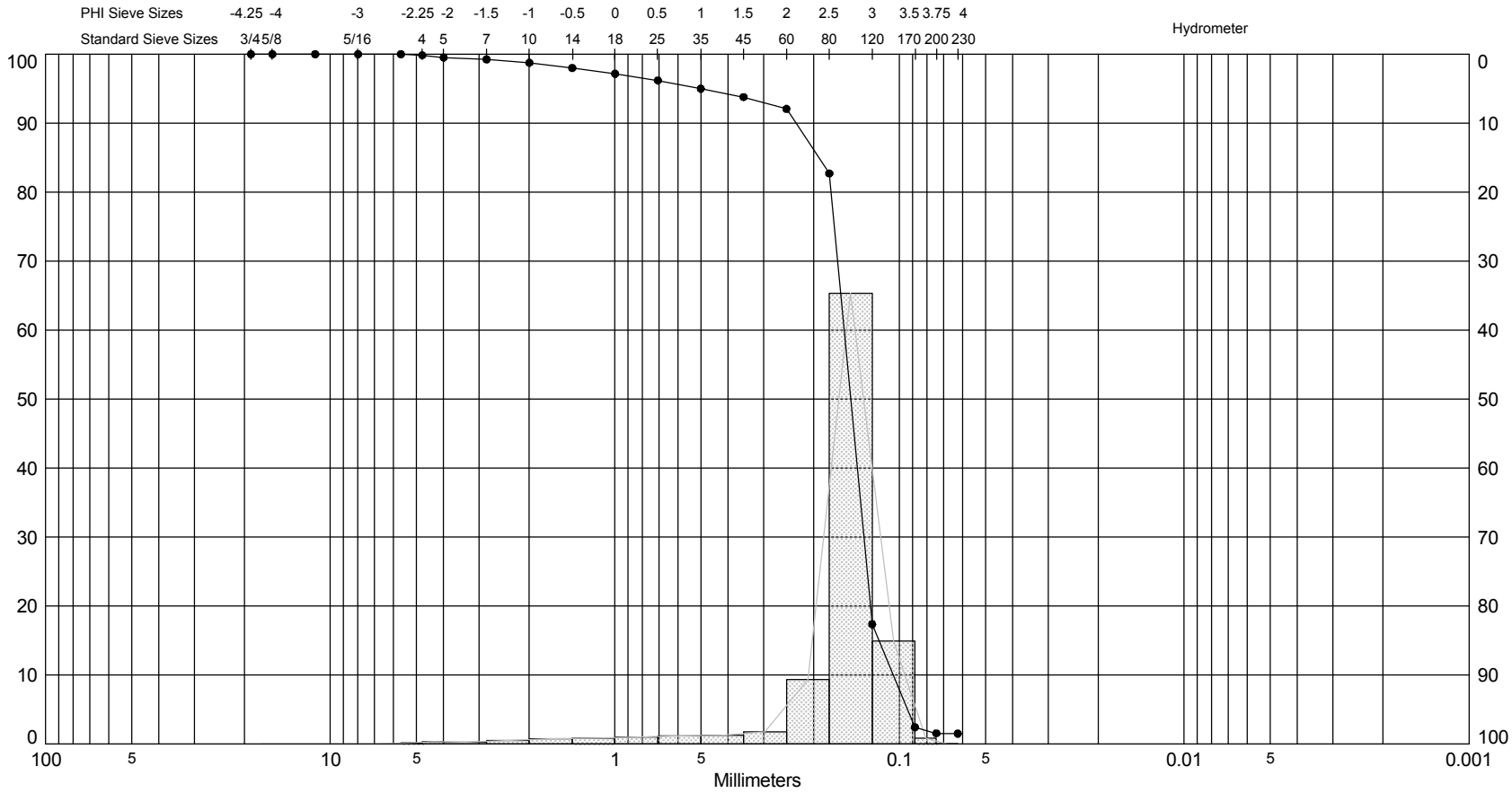

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-17 #2	—●—	-17.7	SP	#200 - 1.54 #230 - 1.50		9	2.75	2.59	-3.48	17.12	0.79

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-08-08
Analyzed By:	TD
Easting (X, ft):	412,935
Northing (Y, ft):	1,158,323
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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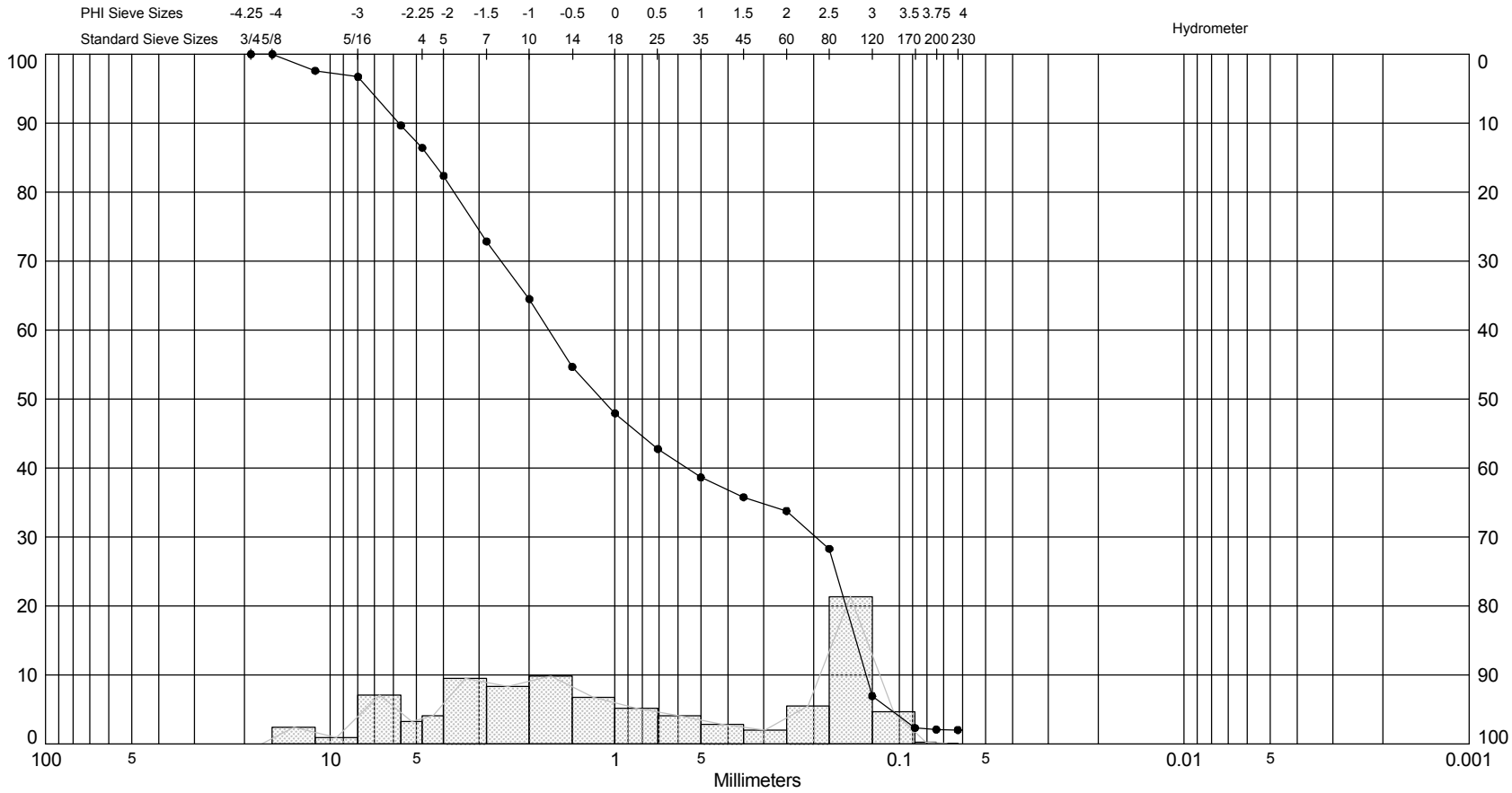

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-17 #3	—●—	-19.9	SW	#200 - 2.09 #230 - 2.03				0.15	0.05	1.64	2.1

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-08-08
Analyzed By:	TD
Easting (X, ft):	412,935
Northing (Y, ft):	1,158,323
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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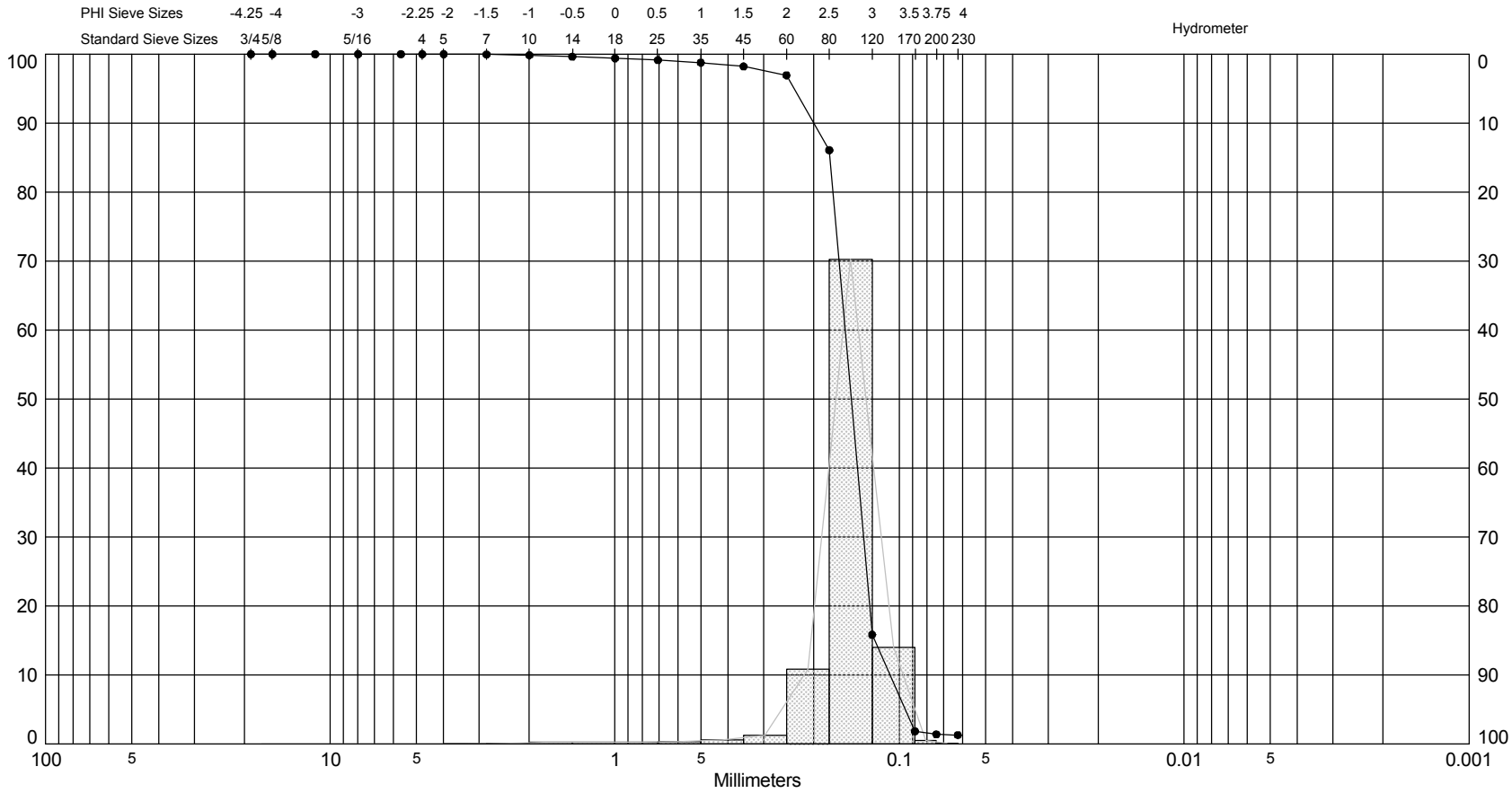

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-17 #4	—●—	-21.7	SP	#200 - 1.38 #230 - 1.29			2.76	2.71	-3.84	29.07	0.44

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-07-08
Analyzed By:	TD
Easting (X, ft):	412,935
Northing (Y, ft):	1,158,323
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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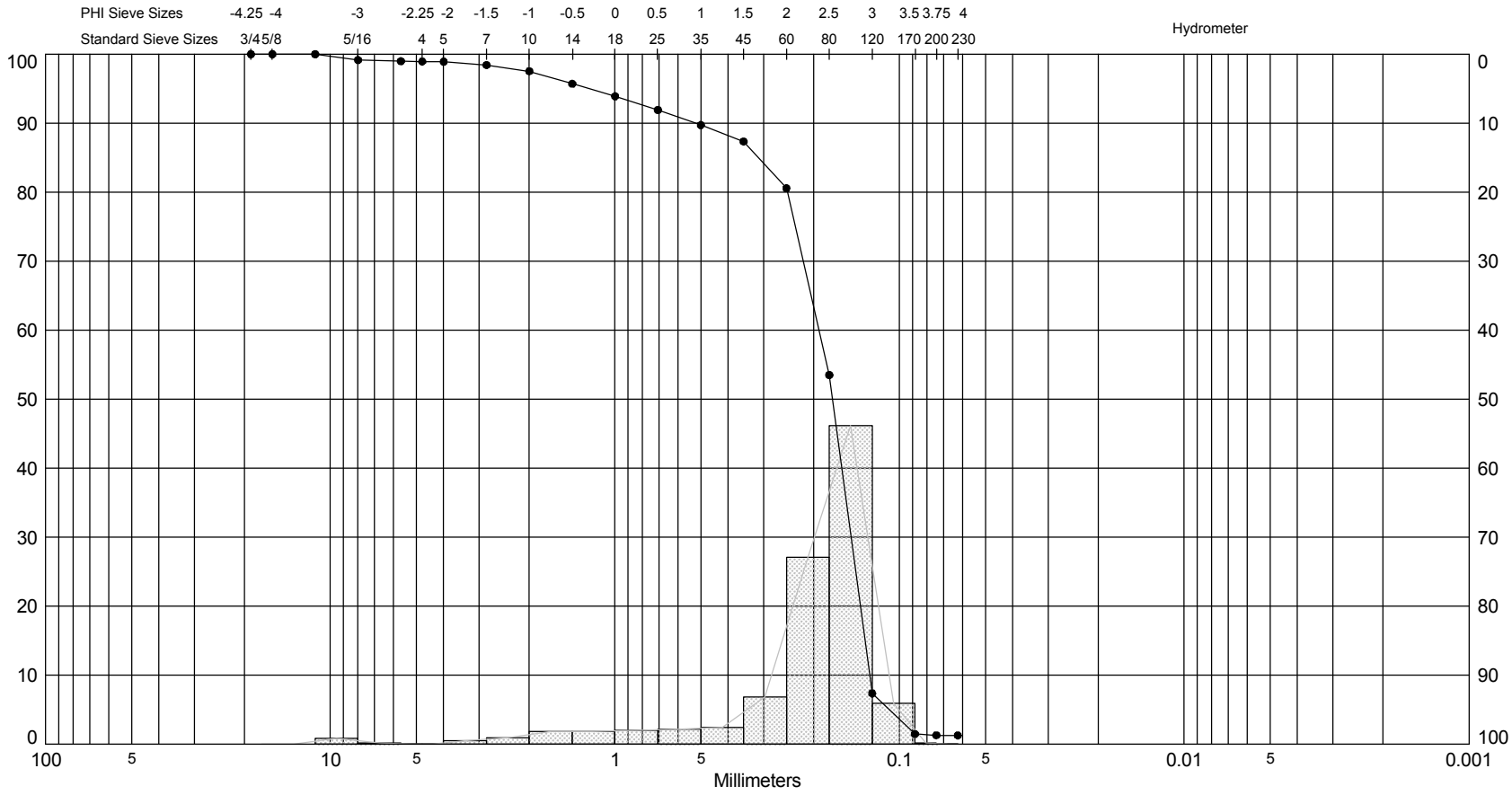

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-18 #1	—●—	-18.8	SW	#200 - 1.29 #230 - 1.27		16	2.54	2.2	-2.62	10.81	1.07

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-08-08
Analyzed By:	TD
Easting (X, ft):	411,655
Northing (Y, ft):	1,156,808
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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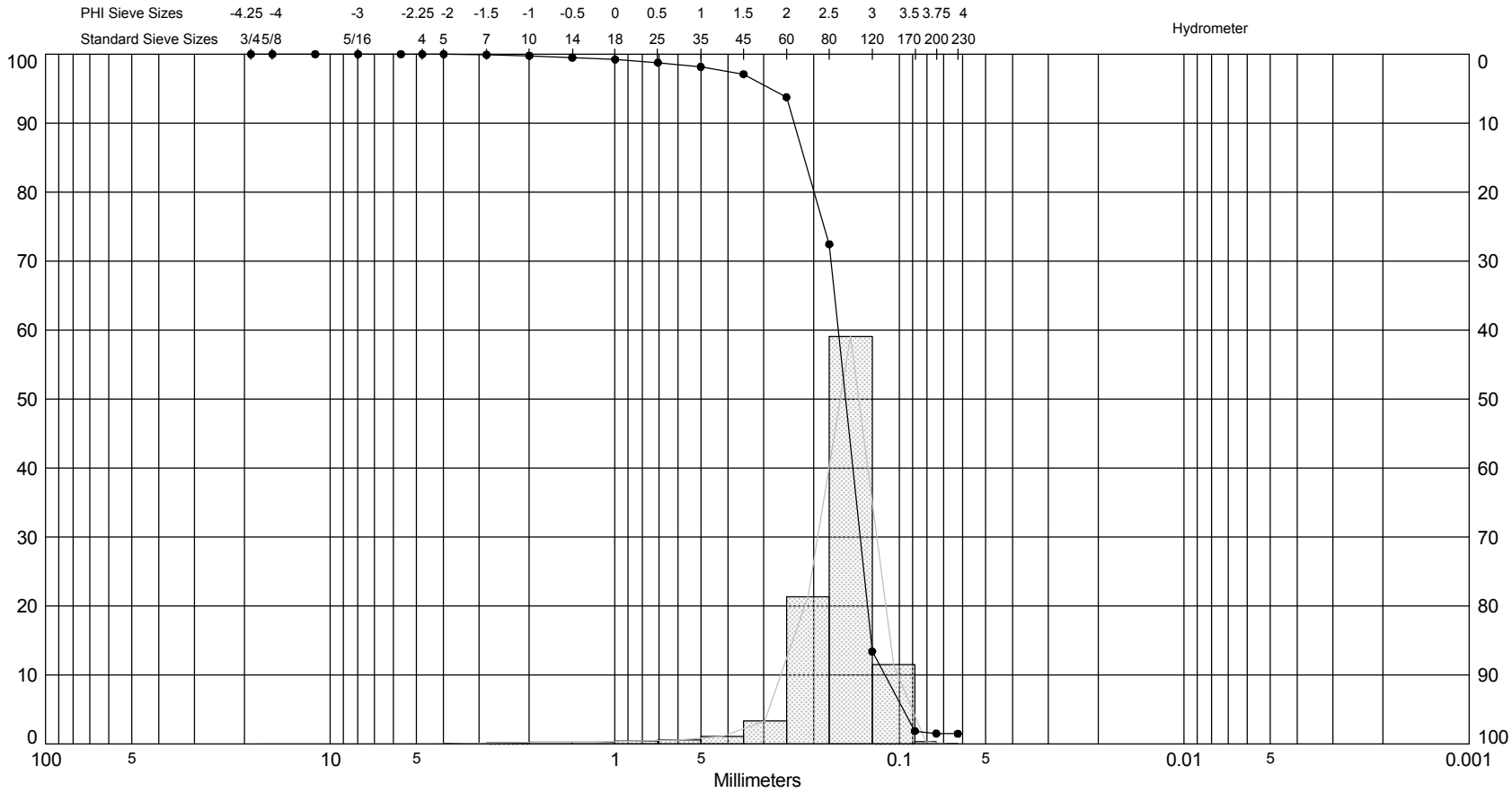

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-18 #2	—●—	-20.0	SP	#200 - 1.50 #230 - 1.46		5	2.69	2.6	-3.04	19.21	0.53

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-08-08
Analyzed By:	TD
Easting (X, ft):	411,655
Northing (Y, ft):	1,156,808
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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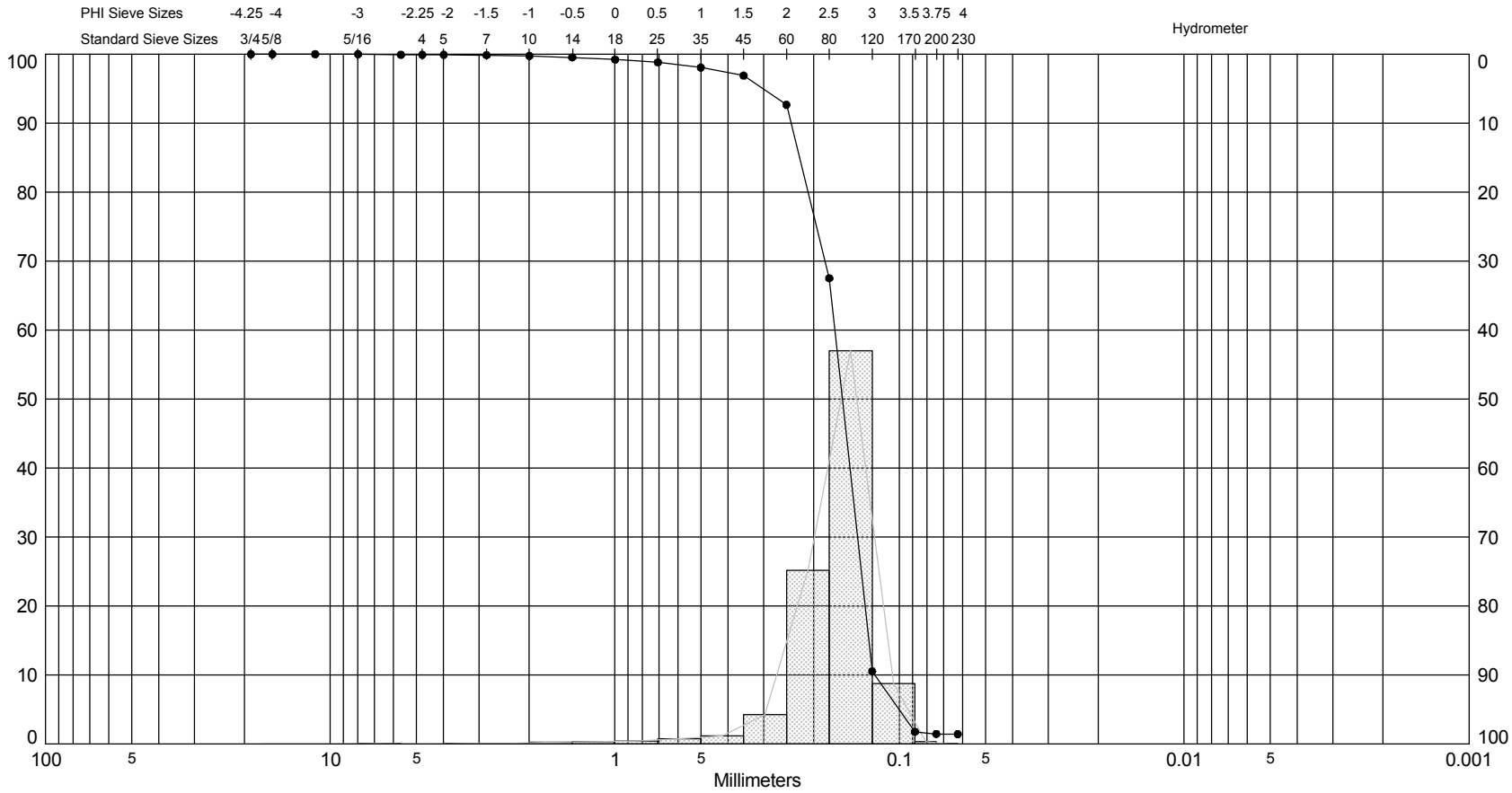

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-18 #3	—●—	-21.5	SP	#200 - 1.45 #230 - 1.41		5	2.65	2.55	-3.22	22.23	0.54

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-08-08
Analyzed By:	TD
Easting (X, ft):	411,655
Northing (Y, ft):	1,156,808
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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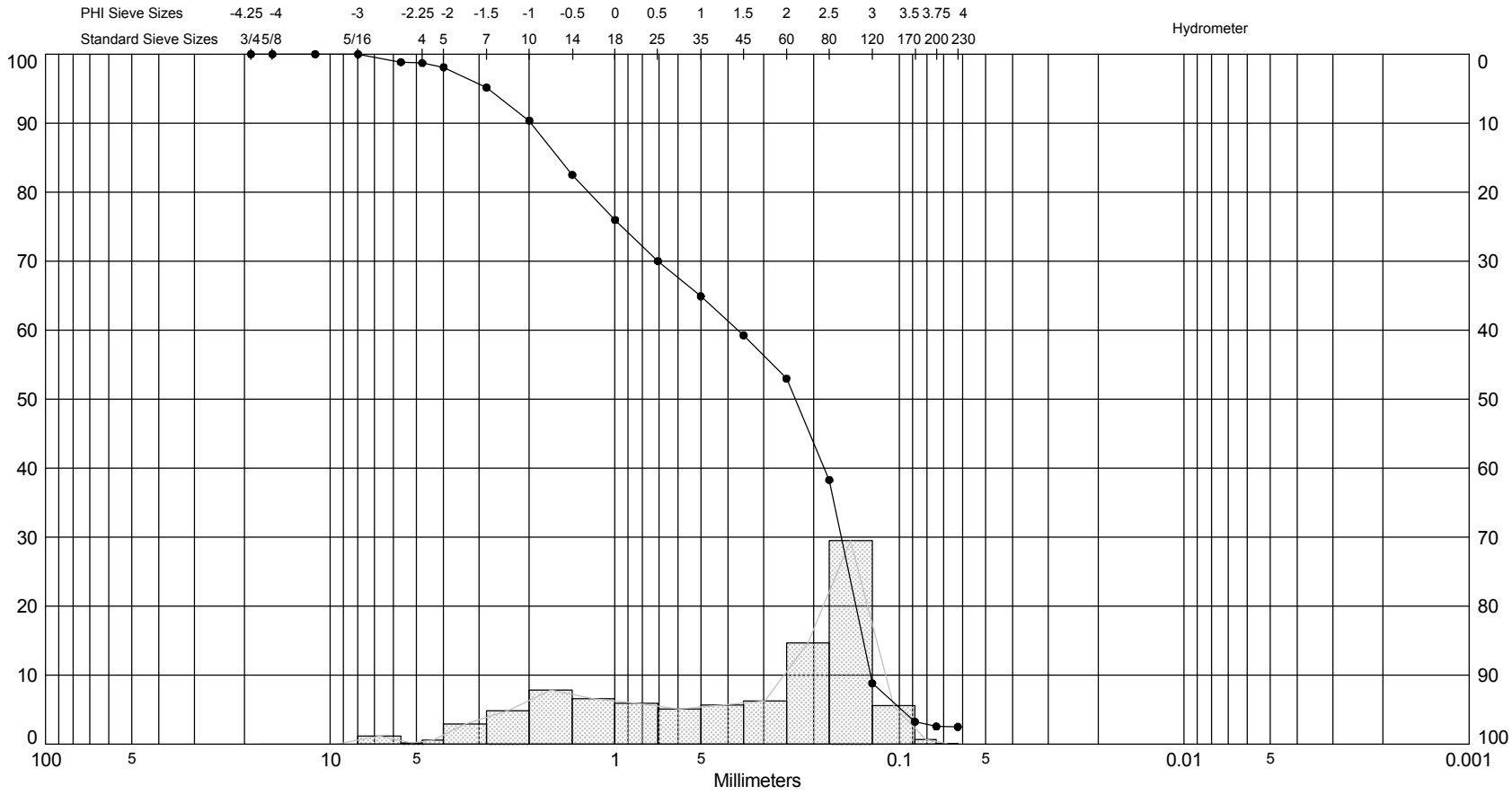

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-18 #4	—●—	-23.2	SW	#200 - 2.55 #230 - 2.49		37	2.1	1.38	-0.72	2.27	1.58

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-08-08
Analyzed By:	TD
Easting (X, ft):	411,655
Northing (Y, ft):	1,156,808
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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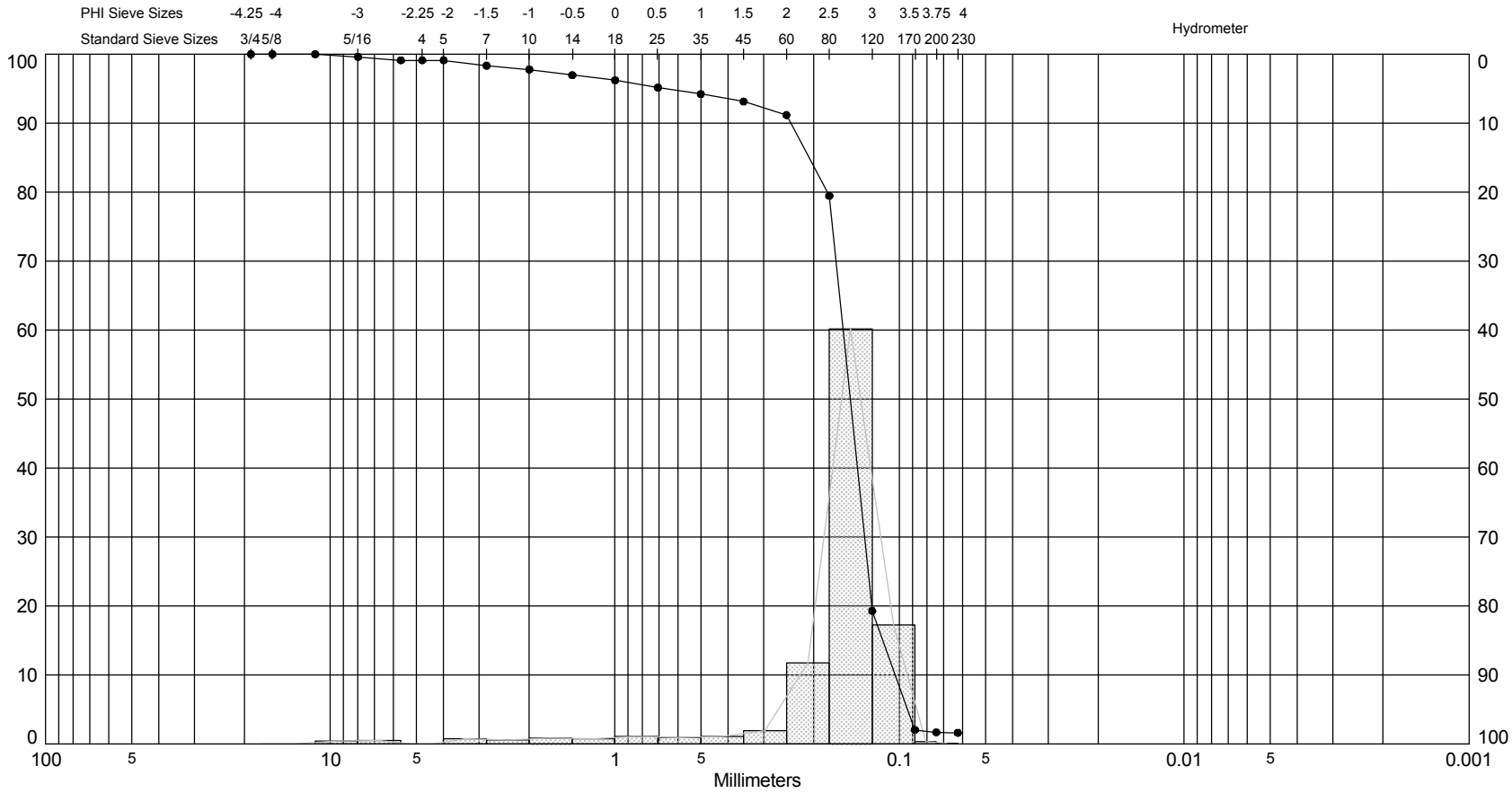

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-18 #5	—●—	-24.8	SW	#200 - 1.68 #230 - 1.62		8	2.74	2.54	-3.58	17.56	0.95

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	LH
Easting (X, ft):	411,655
Northing (Y, ft):	1,156,808
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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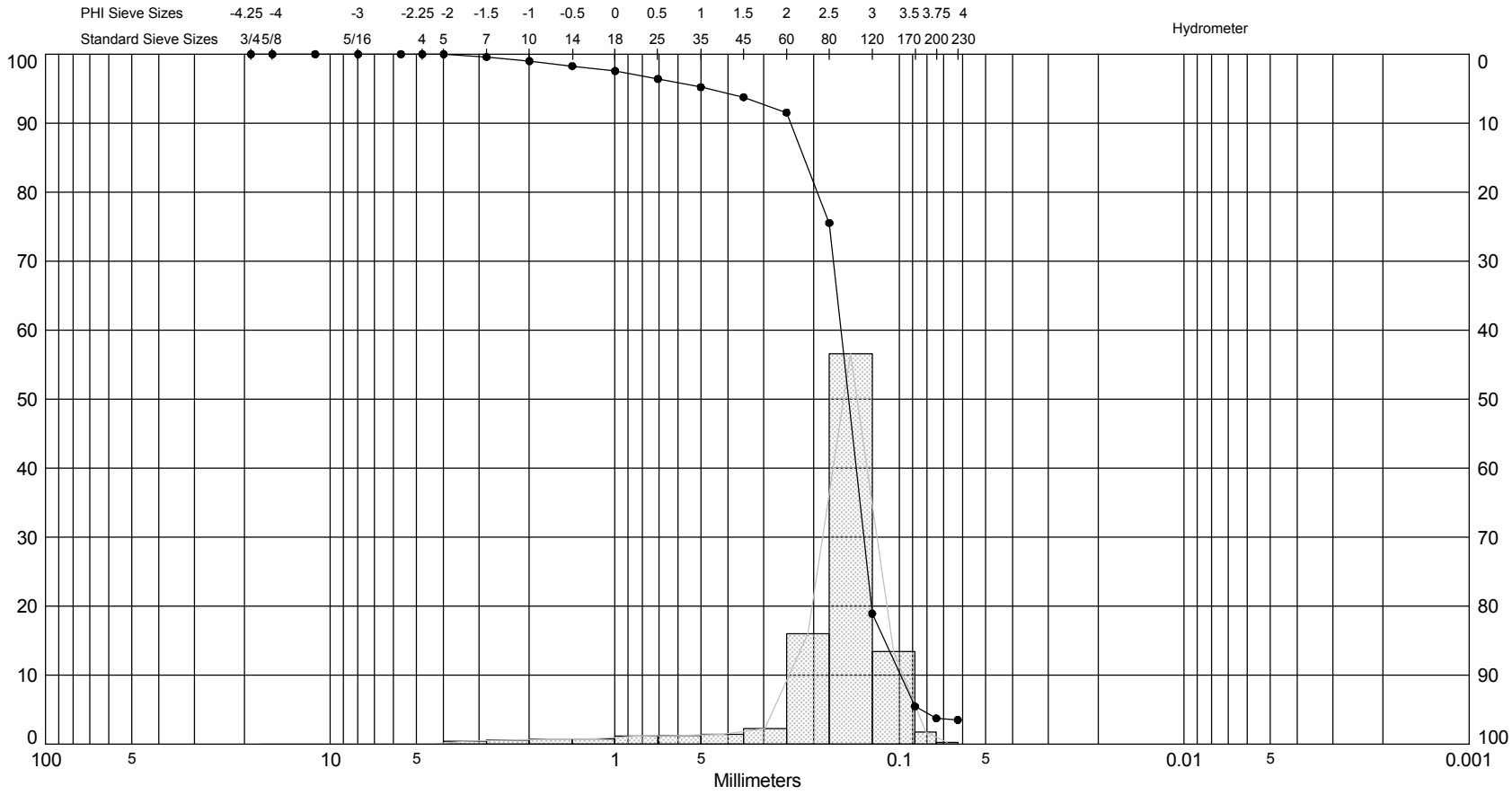

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-18 #6	—●—	-26.3	SP	#200 - 3.73 #230 - 3.51		11	2.73	2.56	-2.96	13.95	0.76

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	LH
Easting (X, ft):	411,655
Northing (Y, ft):	1,156,808
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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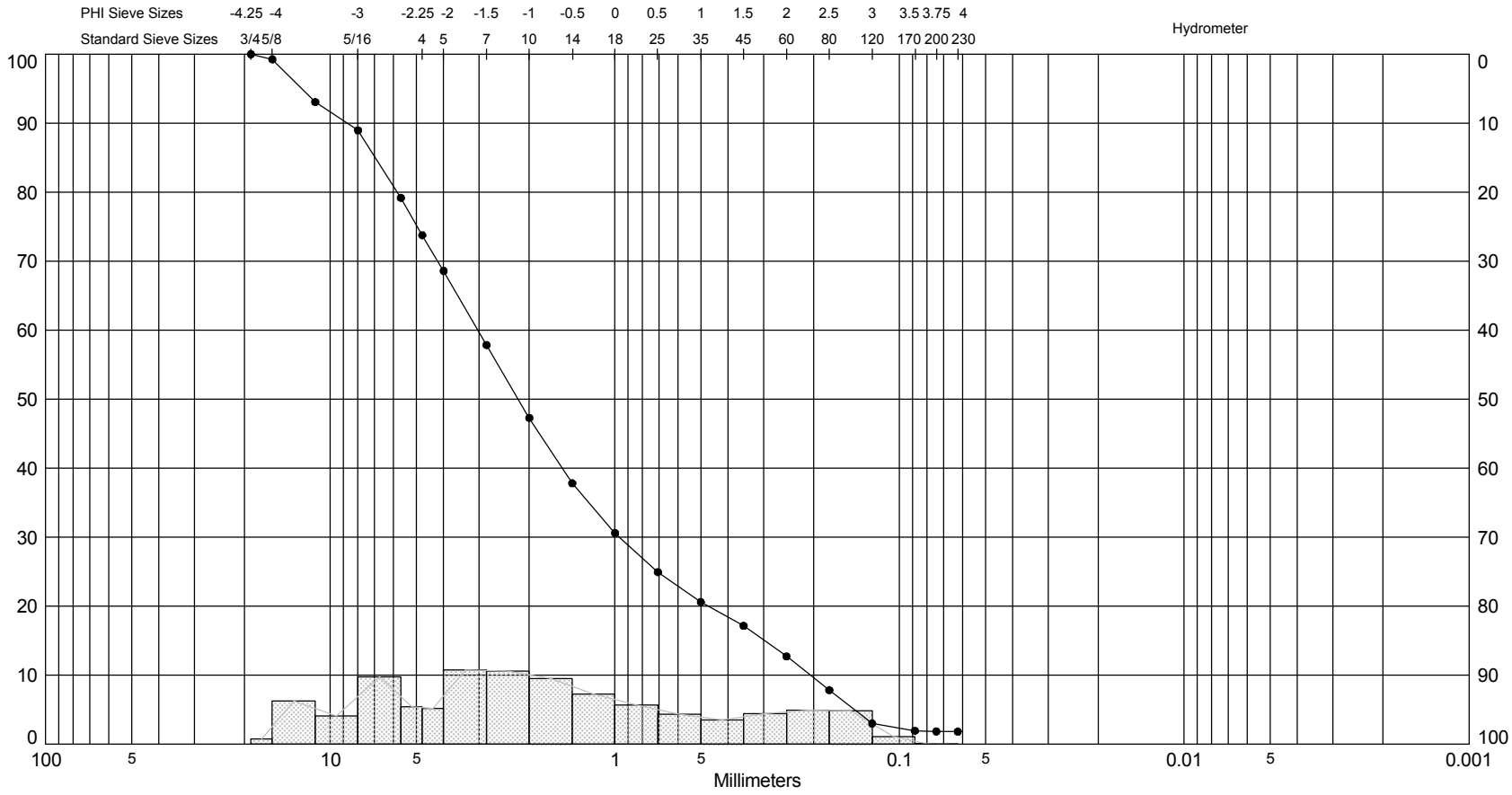

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-18 #7	—●—	-28.0	SW	#200 - 1.84 #230 - 1.80		77		-0.88	0.44	2.29	1.88

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-18-08
Analyzed By:	LH
Easting (X, ft):	411,655
Northing (Y, ft):	1,156,808
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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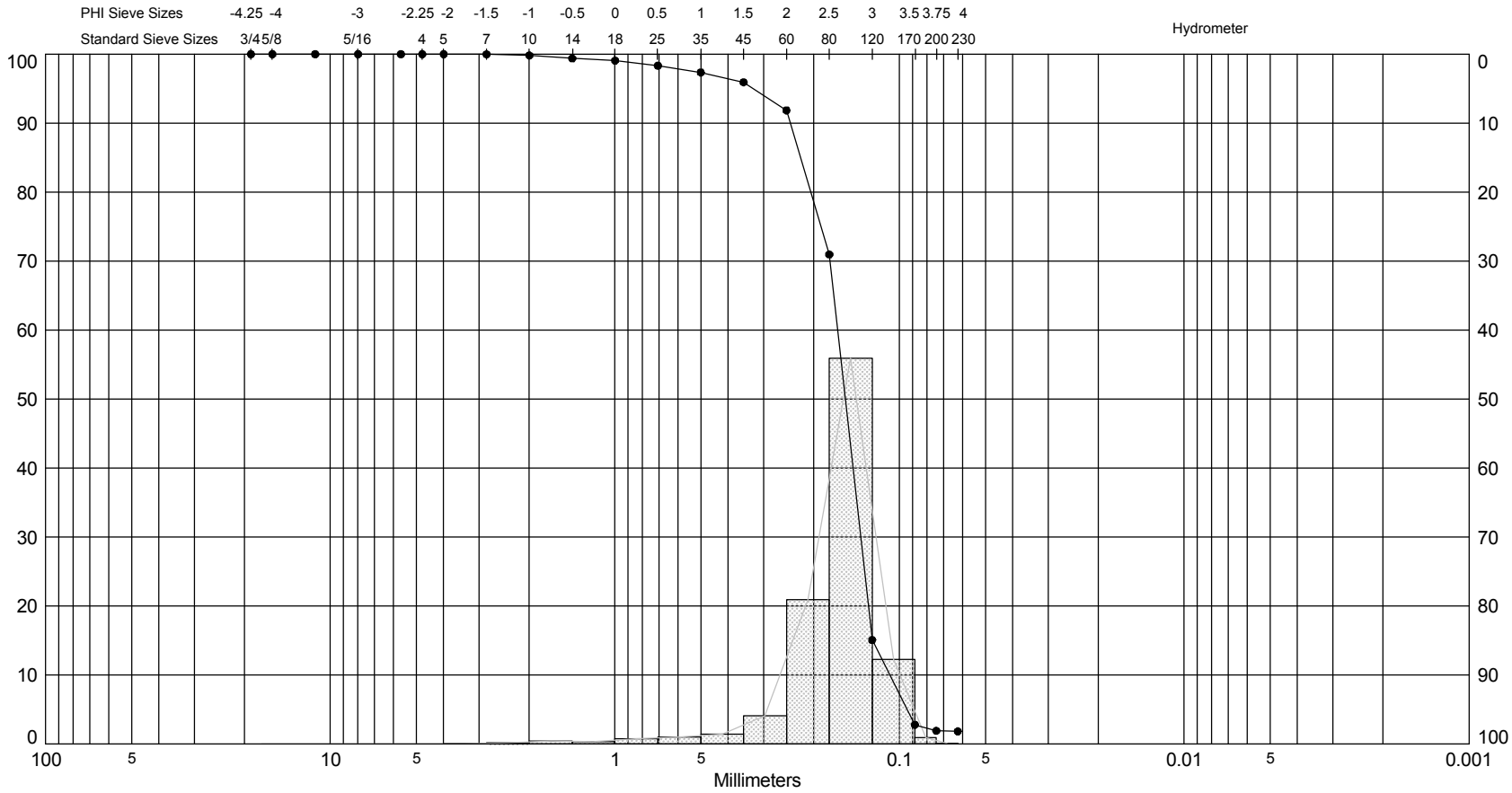

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-19 #1	—●—	-22.5	SP	#200 - 1.90 #230 - 1.82		8	2.69	2.58	-2.62	14.16	0.58

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	TD
Easting (X, ft):	411,064
Northing (Y, ft):	1,156,409
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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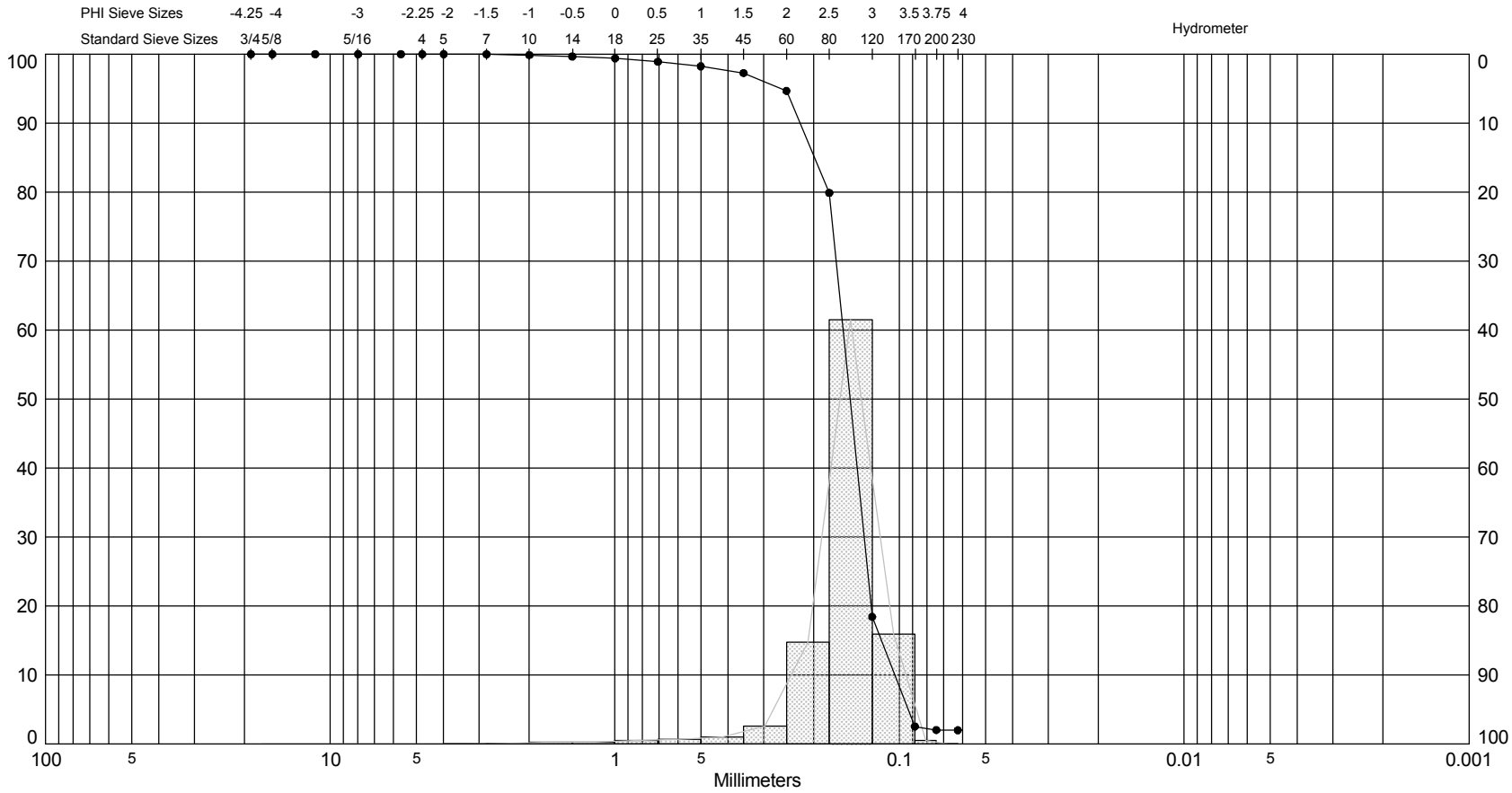

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-20 #1	—●—	-22.2	SP	#200 - 2.02 #230 - 1.98		6	2.74	2.67	-2.92	17.85	0.51

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	410,427
Northing (Y, ft):	1,156,981
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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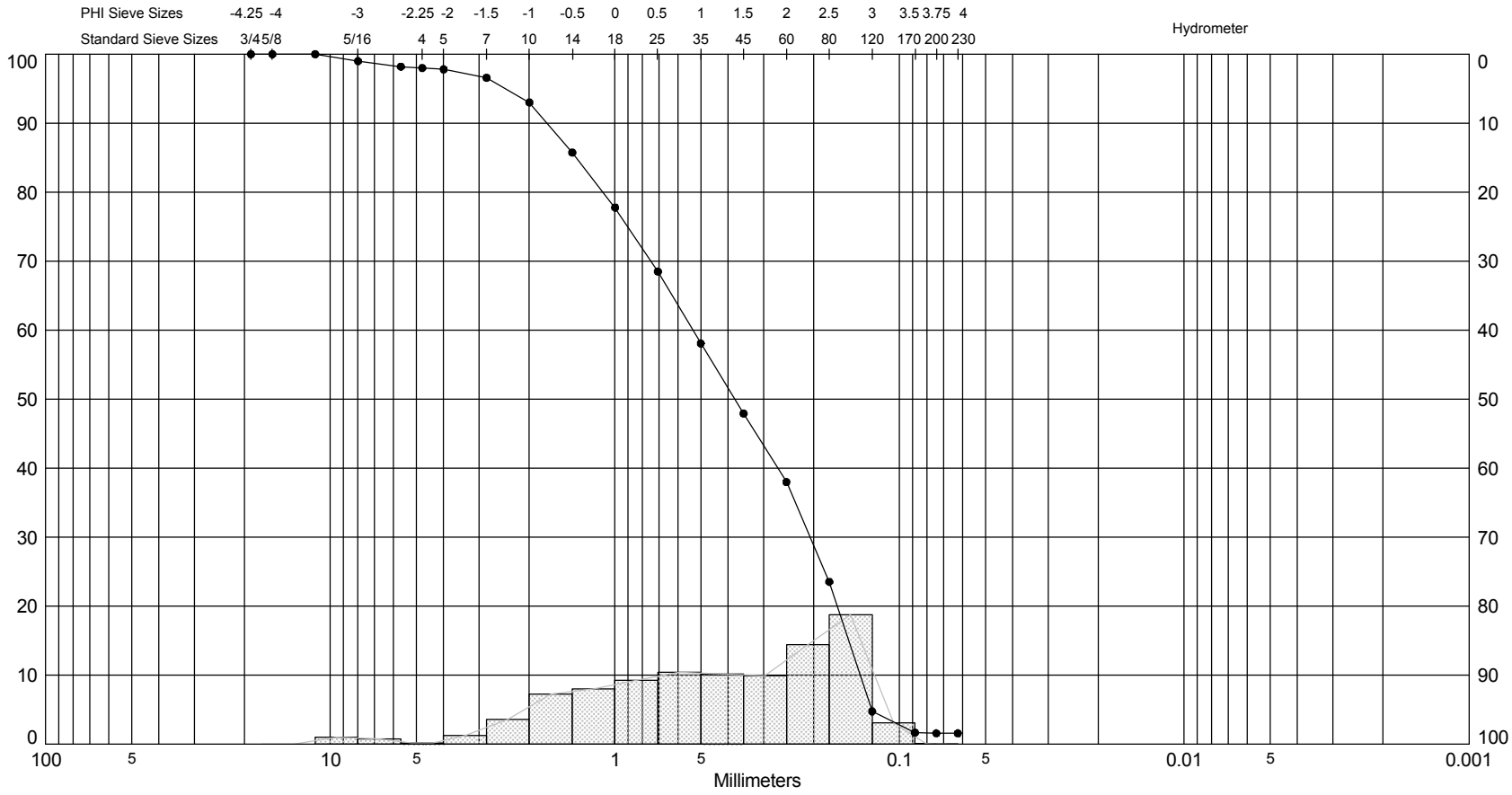

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-20 #2	—●—	-24.5	SW	#200 - 1.56 #230 - 1.55		51	1.4	1.16	-0.64	2.84	1.43

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	TD
Easting (X, ft):	410,427
Northing (Y, ft):	1,156,981
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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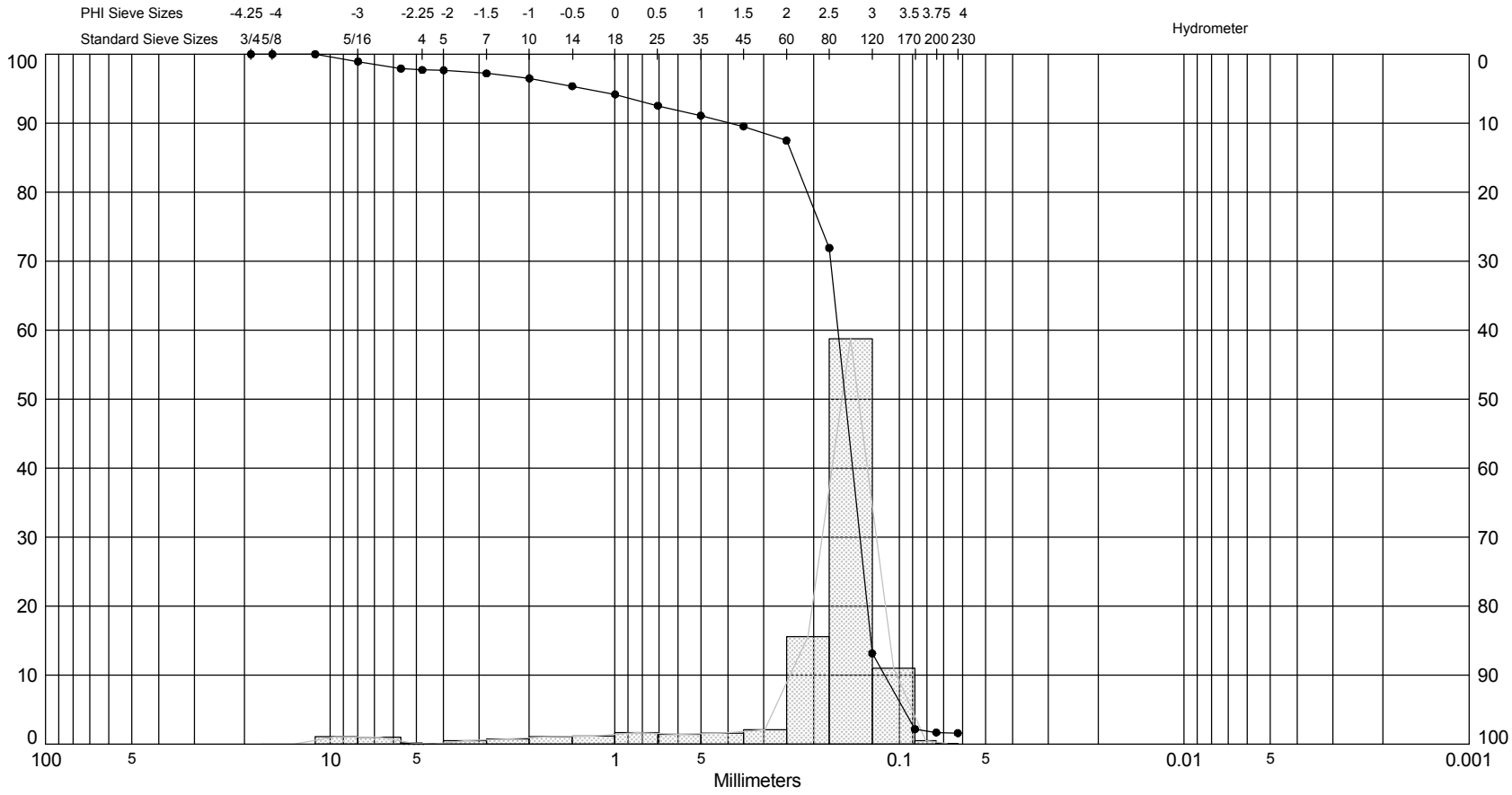

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-20 #3	—●—	-26.6	SW	#200 - 1.68 #230 - 1.60			2.69	2.36	-3.06	12.74	1.17

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	410,427
Northing (Y, ft):	1,156,981
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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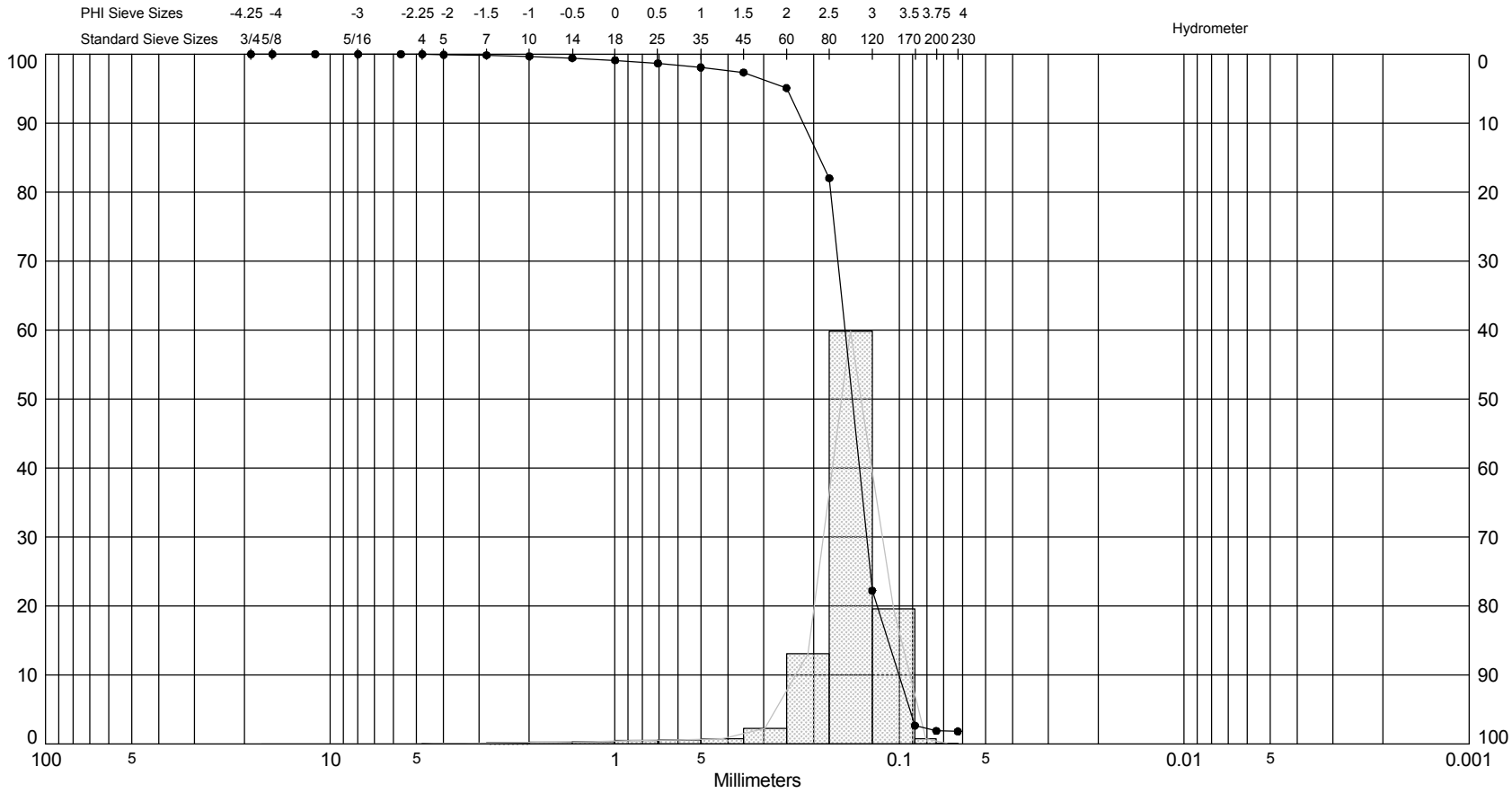

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-21 #1	—●—	-20.9	SP	#200 - 1.88 #230 - 1.80		6	2.77	2.7	-3.46	22.91	0.55

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	TD
Easting (X, ft):	410,936
Northing (Y, ft):	1,157,377
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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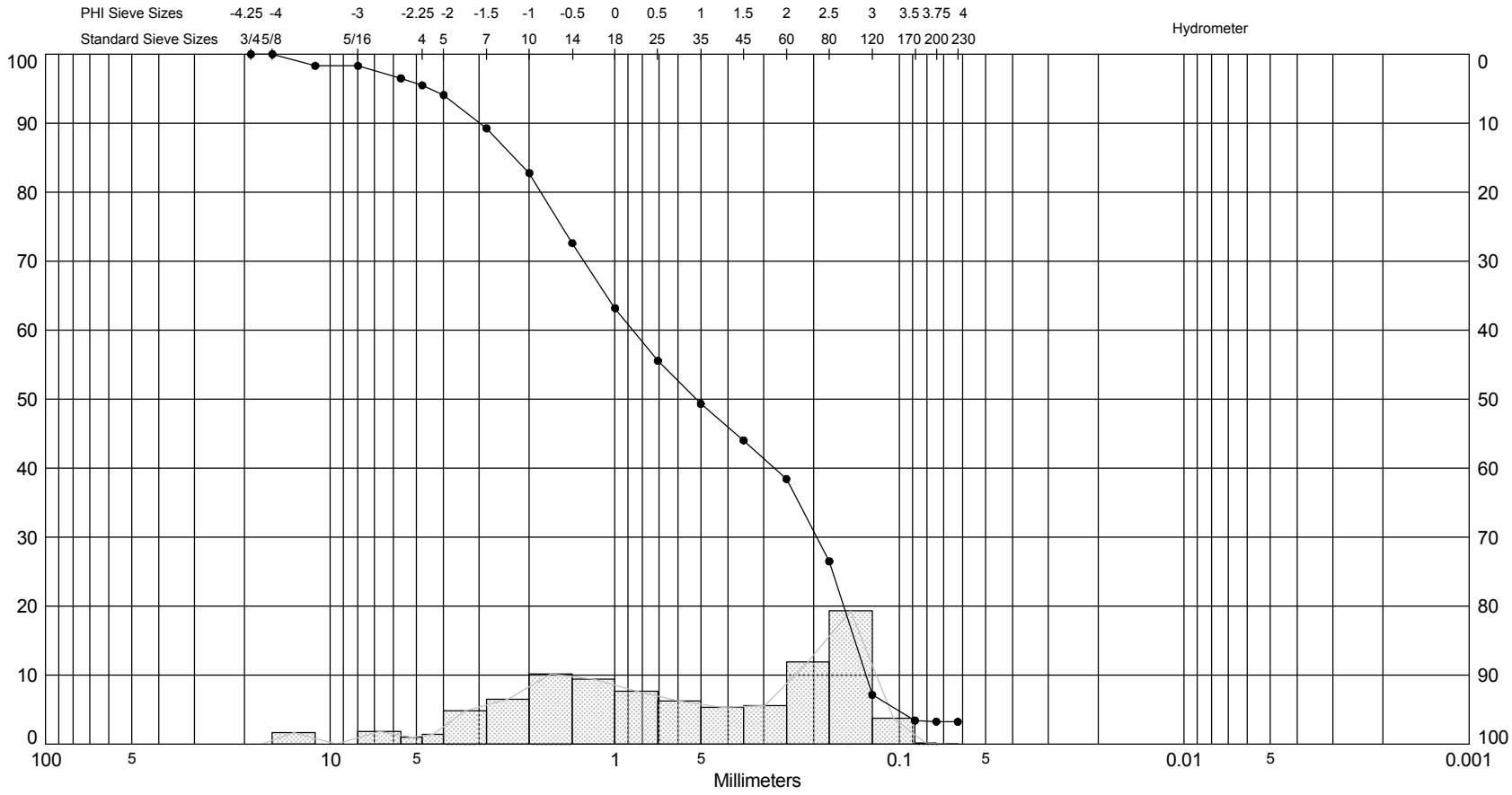

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-21 #2	—●—	-22.6	SW	#200 - 3.26 #230 - 3.23		62	0.95	0.75	-0.38	2.14	1.77

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-10-08
Analyzed By:	TD
Easting (X, ft):	410,936
Northing (Y, ft):	1,157,377
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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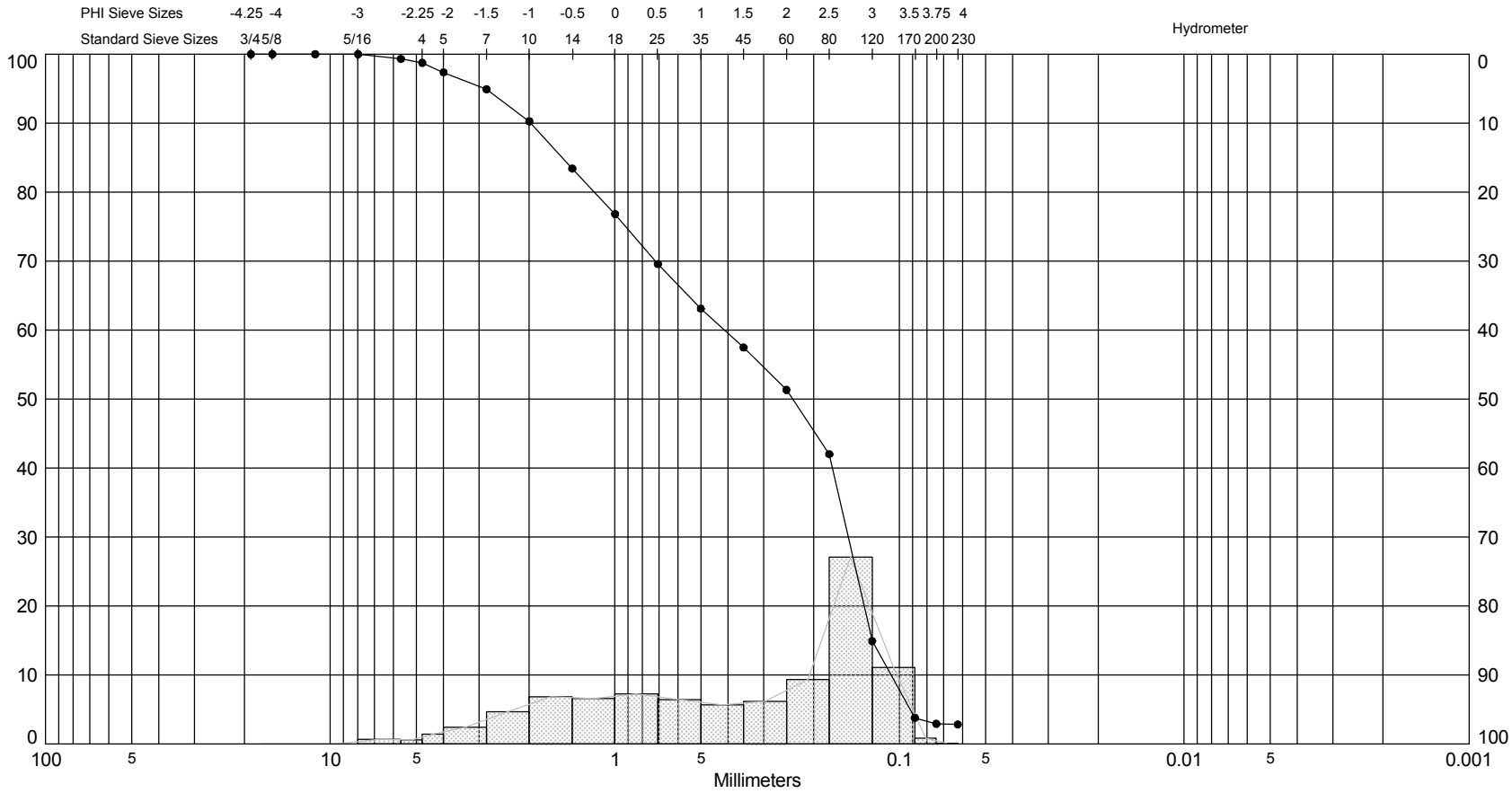

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-21 #3	—●—	-23.6	SW	#200 - 2.91 #230 - 2.82		51	2.07	1.41	-0.63	2.18	1.62

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-10-08
Analyzed By:	TD
Easting (X, ft):	410,936
Northing (Y, ft):	1,157,377
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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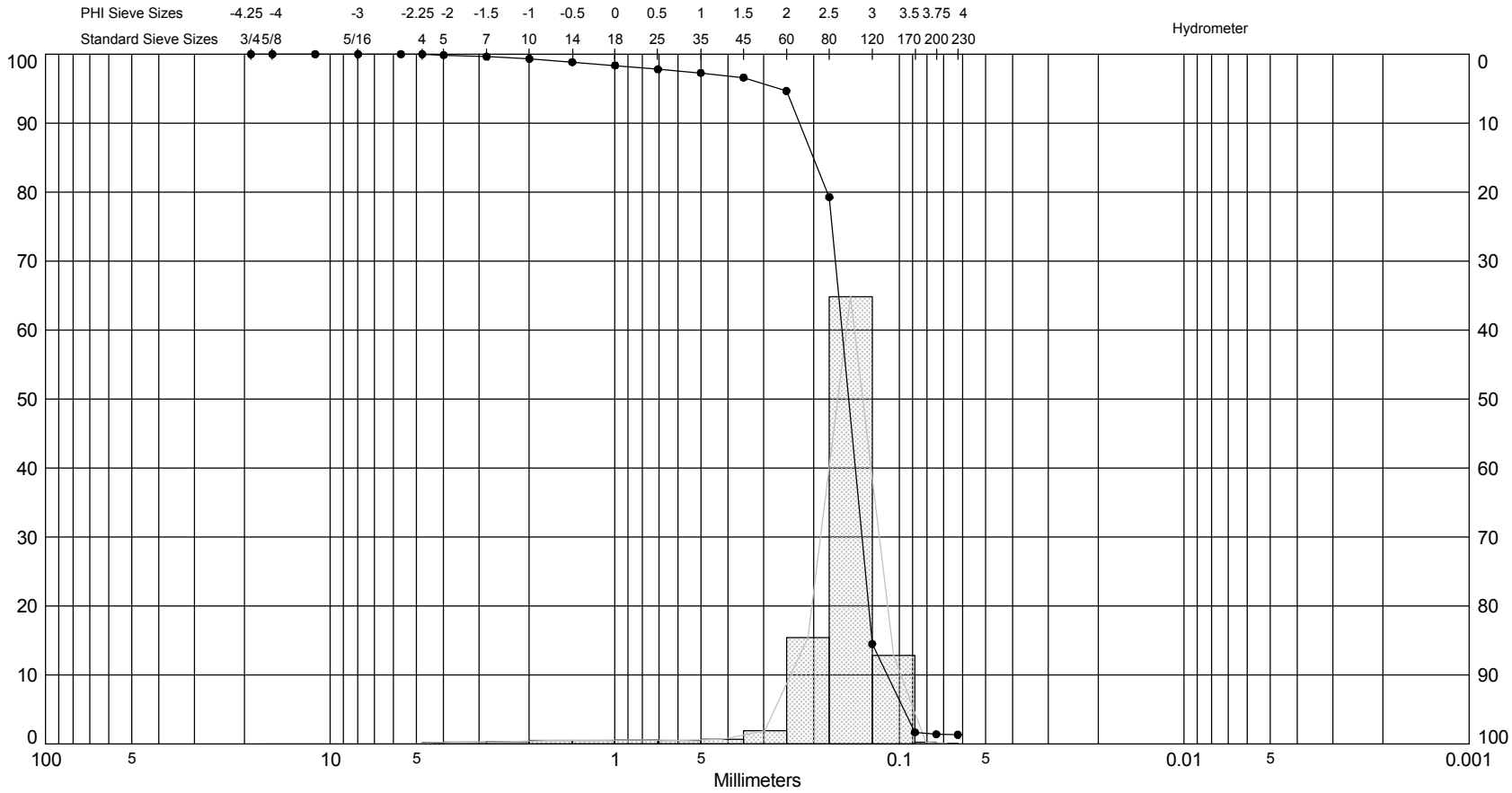

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-21 #4	—●—	-24.6	SP	#200 - 1.40 #230 - 1.34		5	2.73	2.62	-3.95	23.88	0.62

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	410,936
Northing (Y, ft):	1,157,377
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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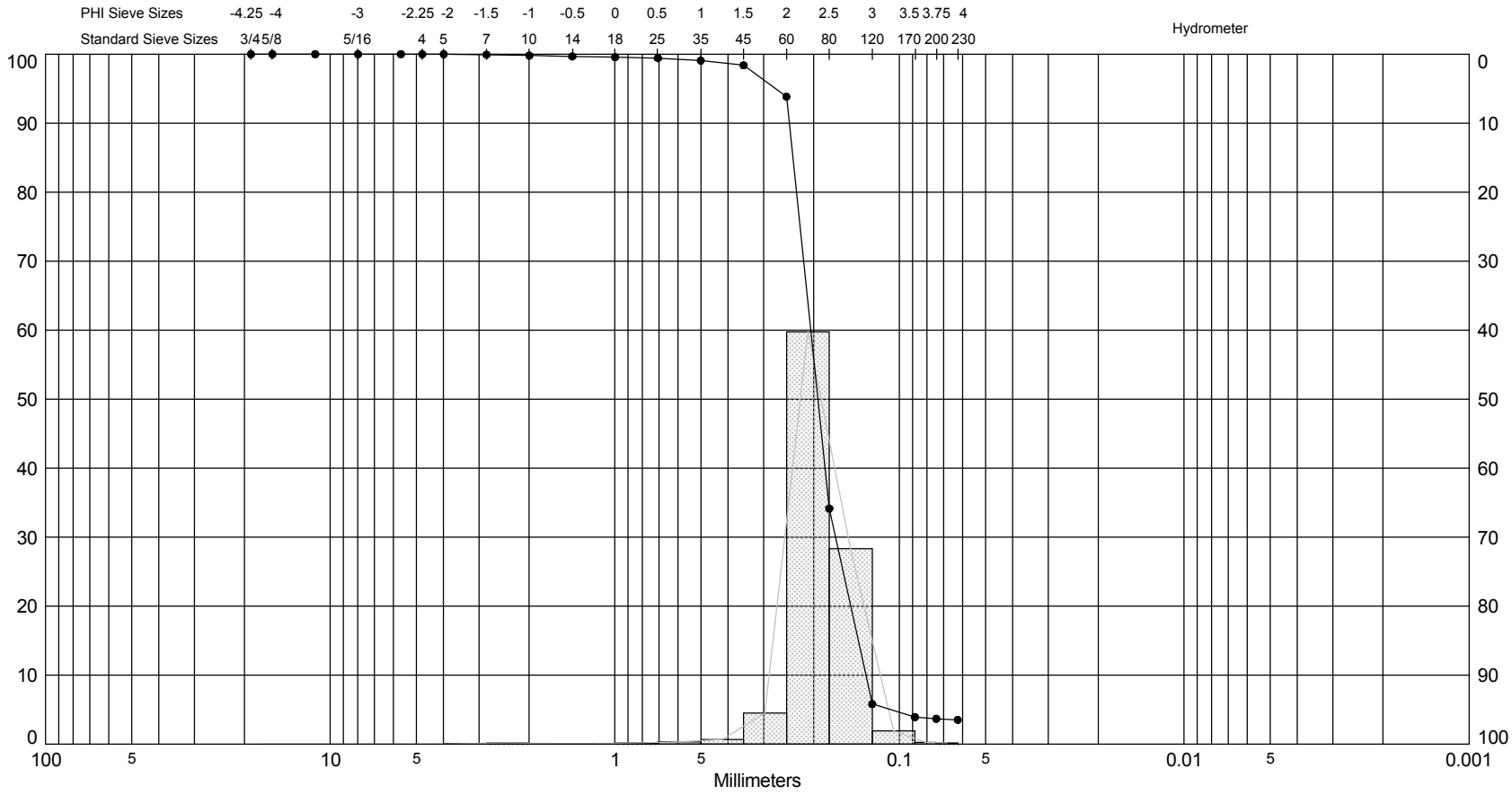

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-21 #5	—●—	-26.6	SP	#200 - 3.67 #230 - 3.52		7	2.37	2.37	-2.67	25.3	0.41

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	410,936
Northing (Y, ft):	1,157,377
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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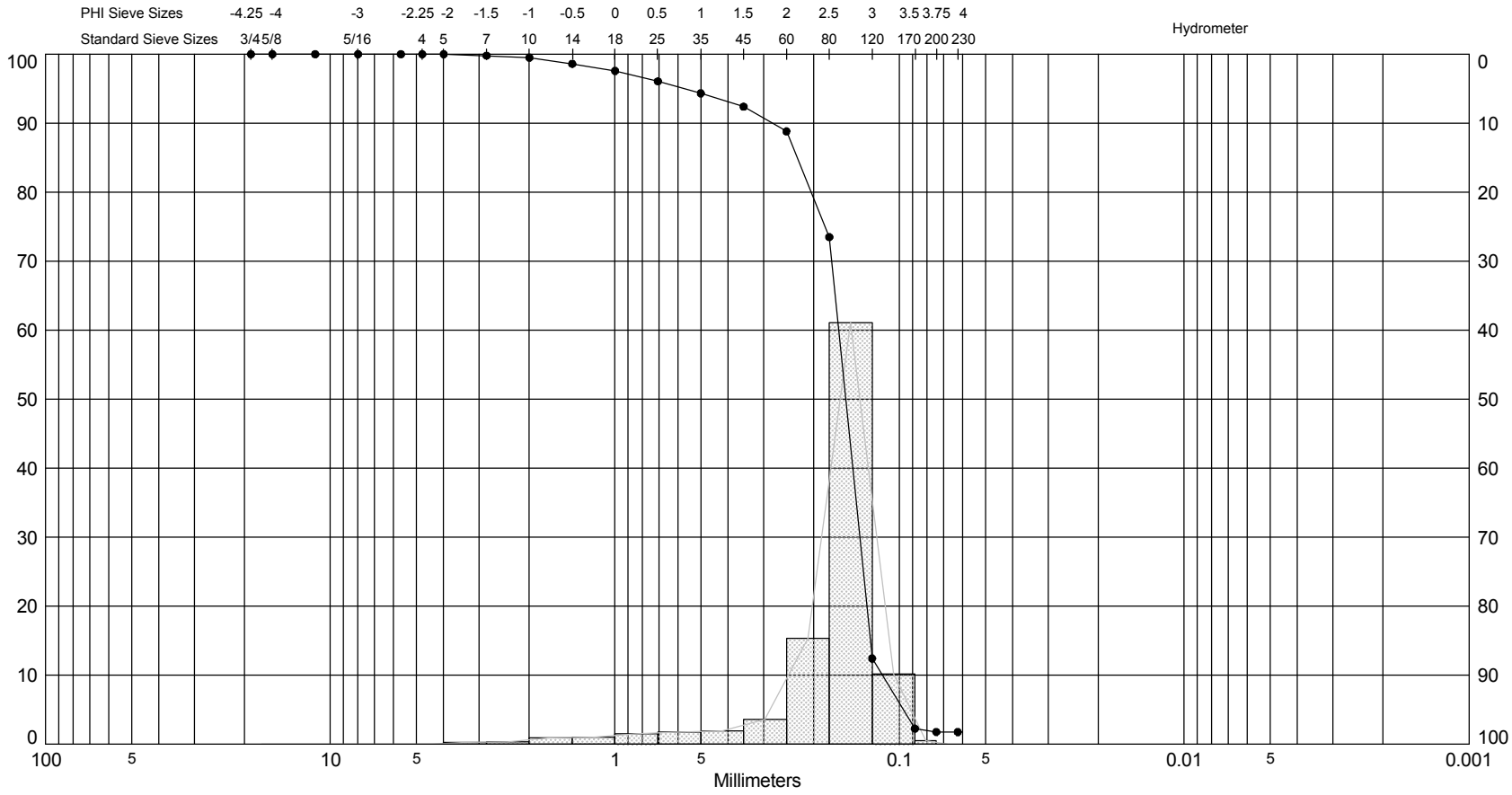

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-22 #1	—●—	-17.3	SP	#200 - 1.76 #230 - 1.76		10	2.69	2.5	-2.74	11.76	0.74

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	410,420
Northing (Y, ft):	1,157,939
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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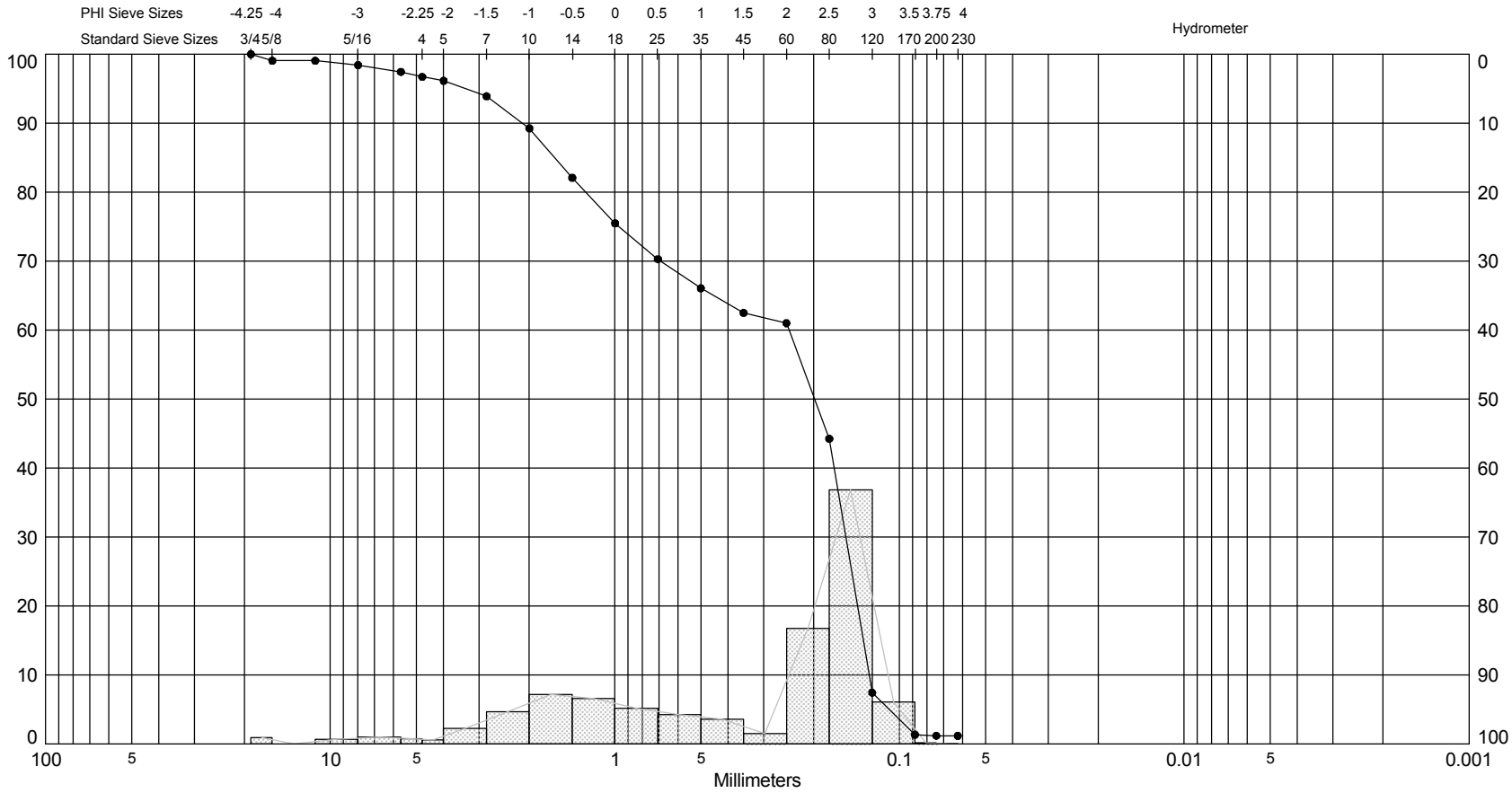

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-22 #2	—●—	-18.8	SW	#200 - 1.18 #230 - 1.16		36	2.33	1.44	-1.03	3.07	1.72

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	410,420
Northing (Y, ft):	1,157,939
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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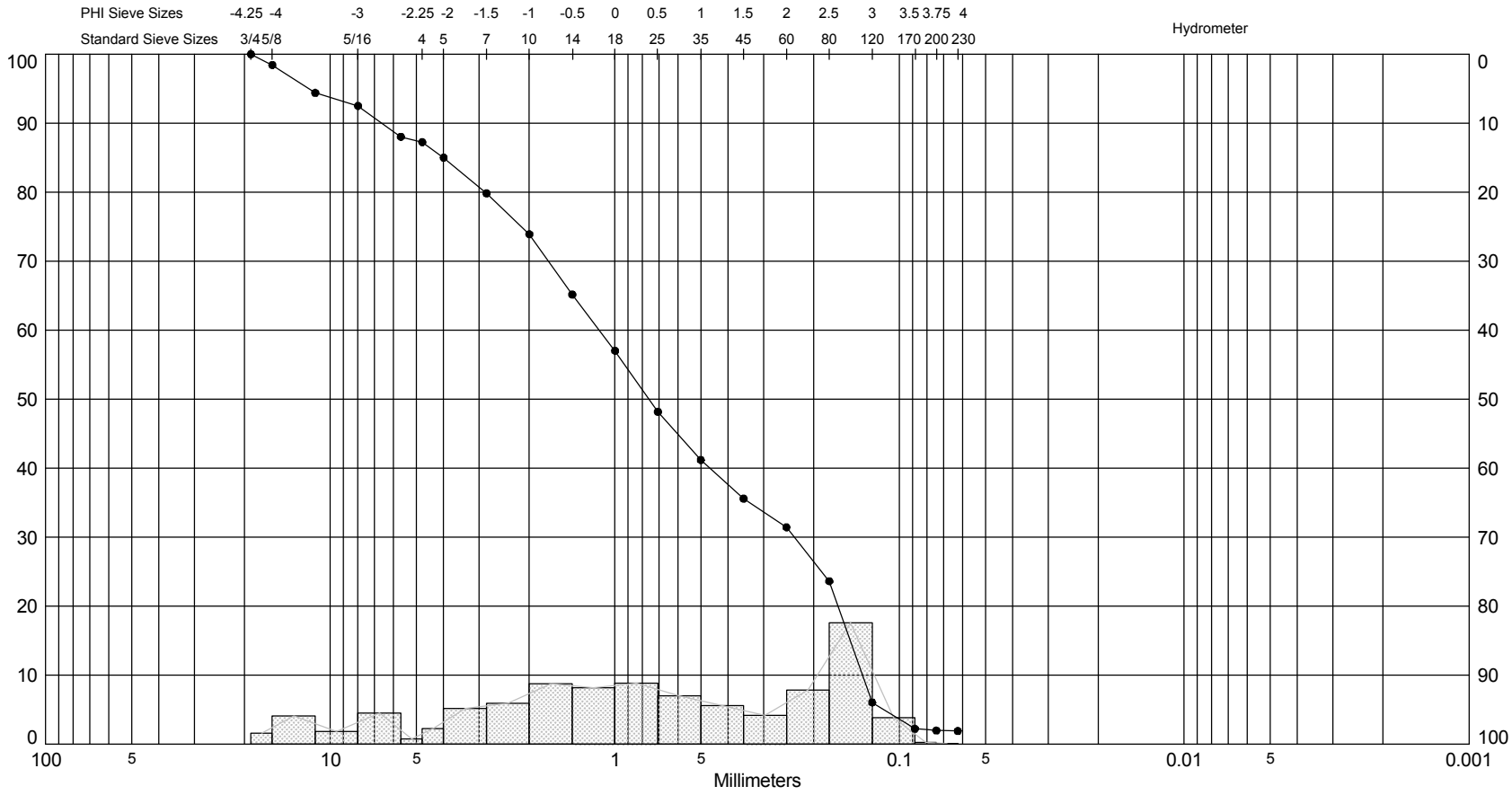

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-22 #3	—●—	-22.3	SW	#200 - 1.96 #230 - 1.89		60	0.4	0.3	-0.35	2.11	2.06

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-14-08
Analyzed By:	LH
Easting (X, ft):	410,420
Northing (Y, ft):	1,157,939
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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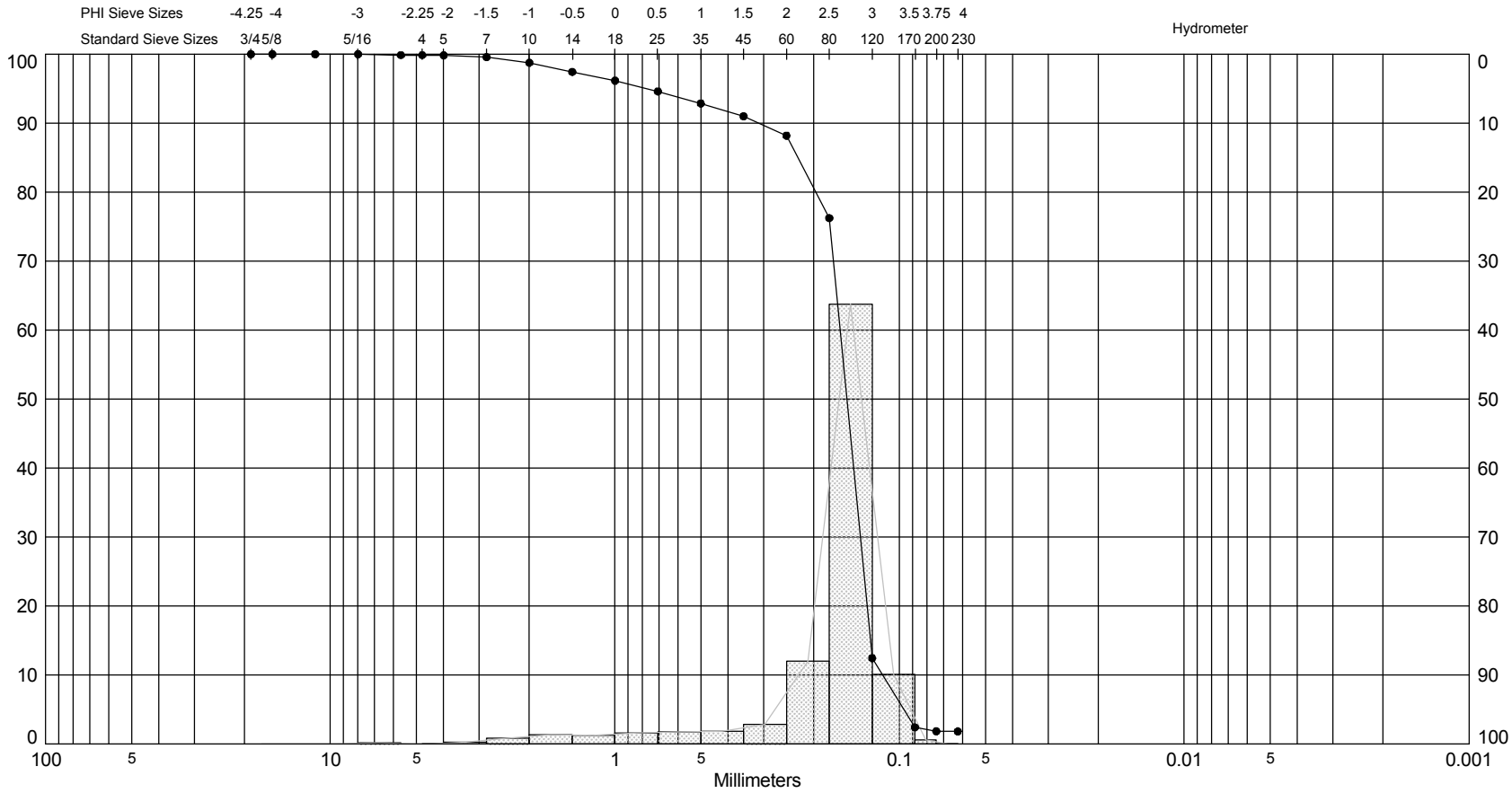

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-23 #1	—●—	-16.2	SW	#200 - 1.84 #230 - 1.81		12	2.71	2.47	-2.82	11.62	0.86

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	TD
Easting (X, ft):	411,207
Northing (Y, ft):	1,158,172
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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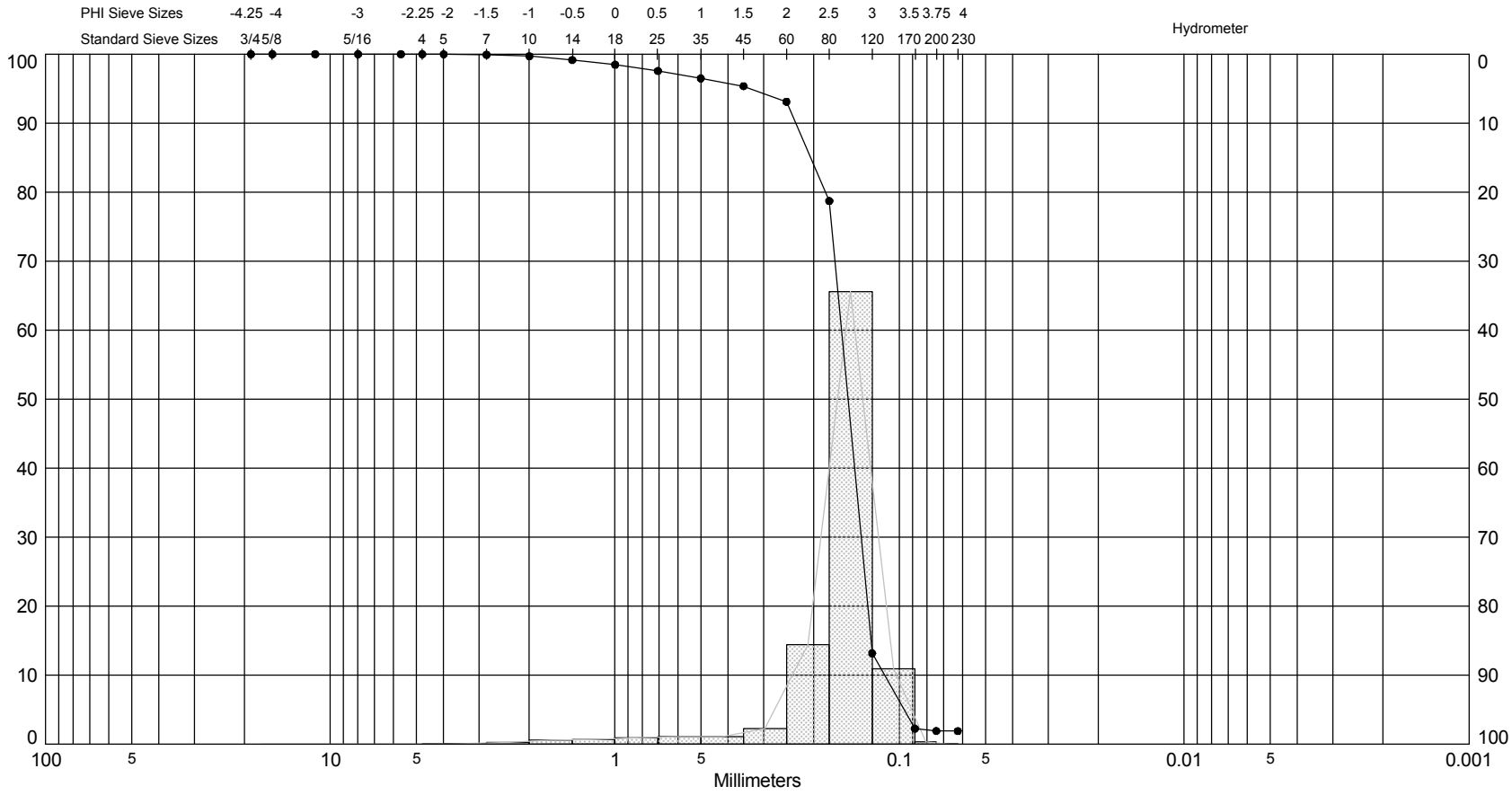

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-23 #2	—●—	-18.6	SP	#200 - 1.90 #230 - 1.88			2.72	2.6	-3.3	17.11	0.62

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	LH
Easting (X, ft):	411,207
Northing (Y, ft):	1,158,172
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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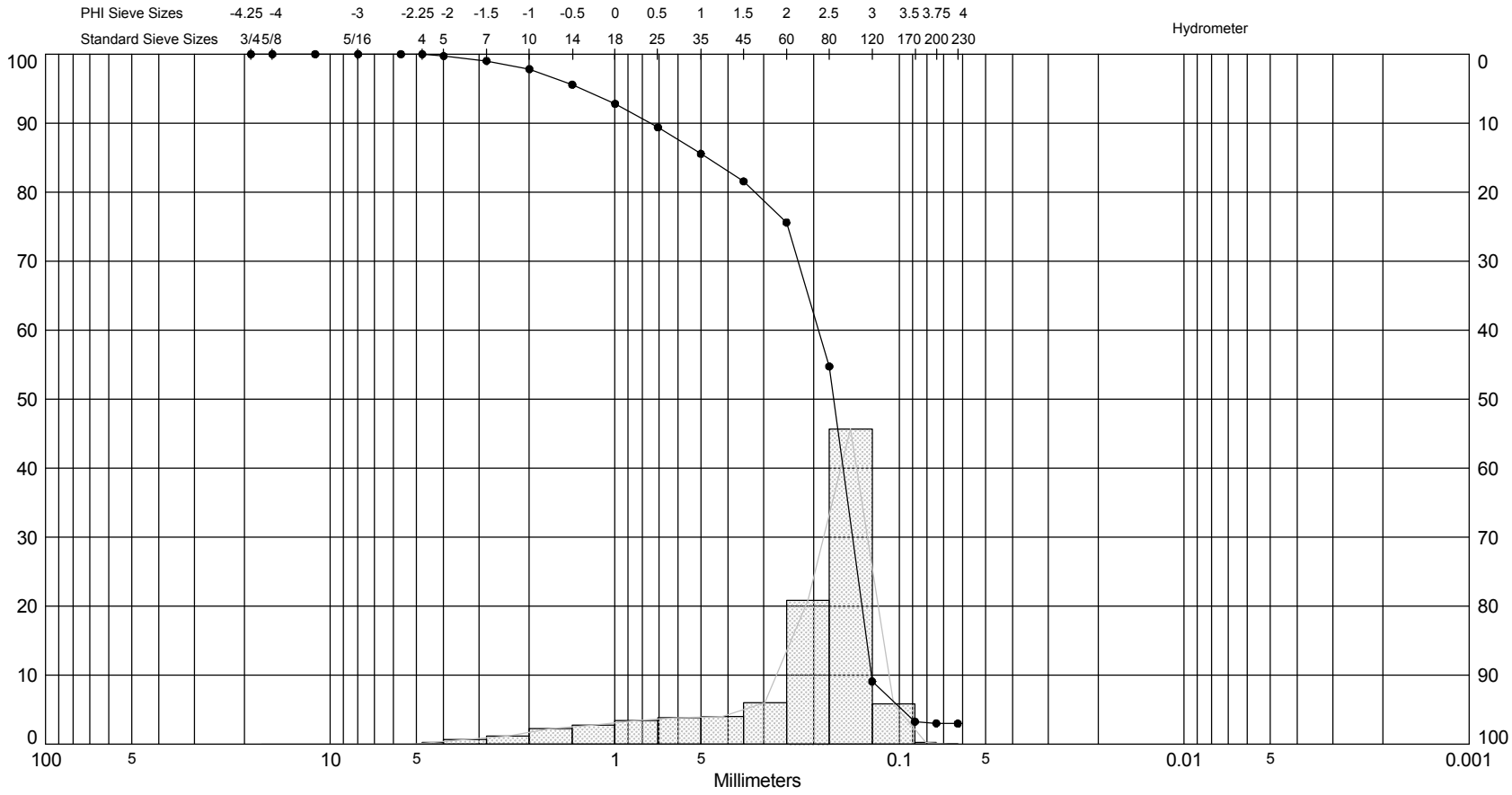

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-23 #3	—●—	-19.9	SW	#200 - 3.01 #230 - 2.97			2.55	2.12	-1.75	5.49	1.08

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	LH
Easting (X, ft):	411,207
Northing (Y, ft):	1,158,172
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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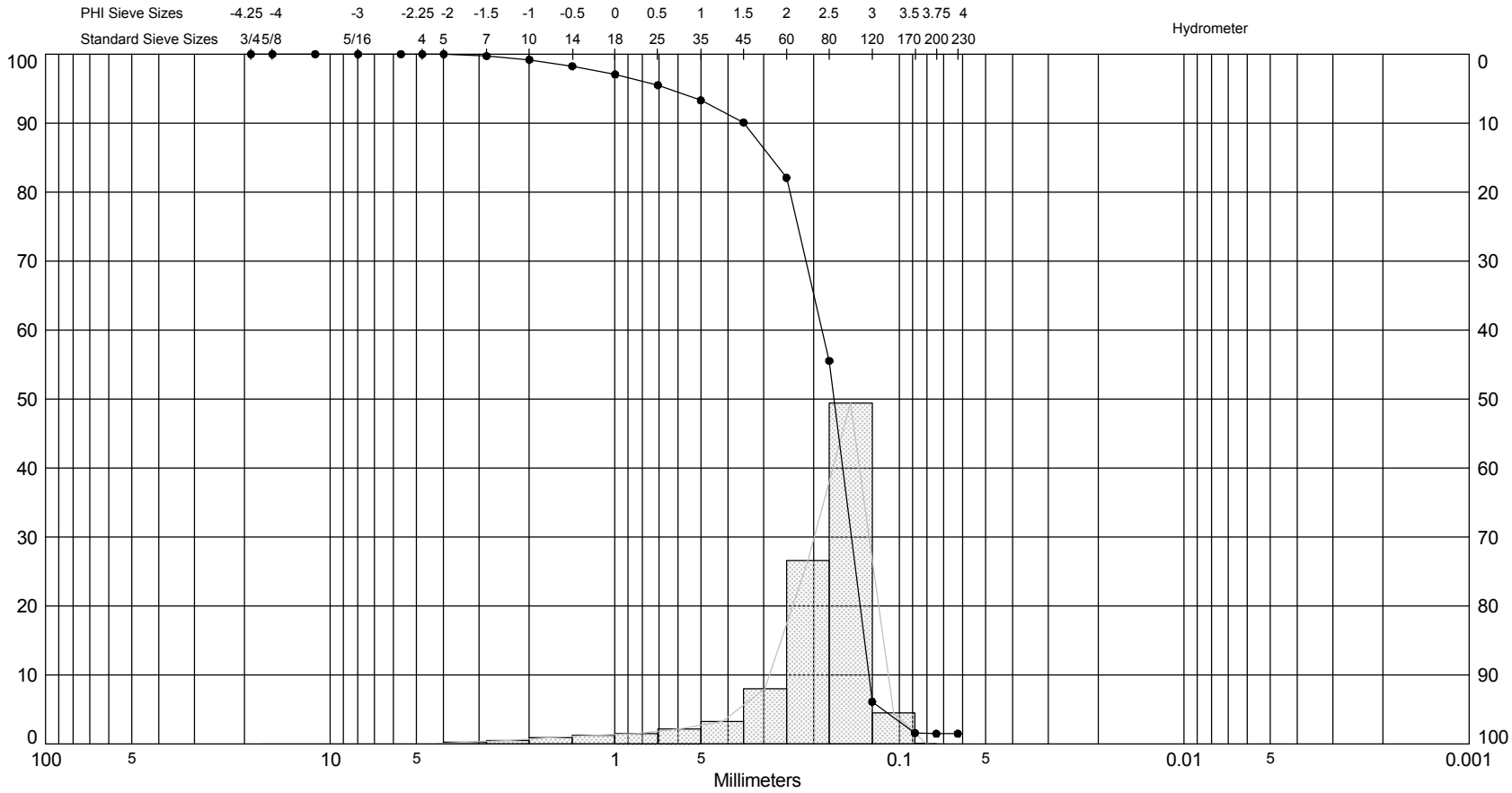

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-24 #1	—●—	-18.0	SP	#200 - 1.47 #230 - 1.47			2.56	2.32	-2.37	9.63	0.78

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	LH
Easting (X, ft):	410,358
Northing (Y, ft):	1,158,939
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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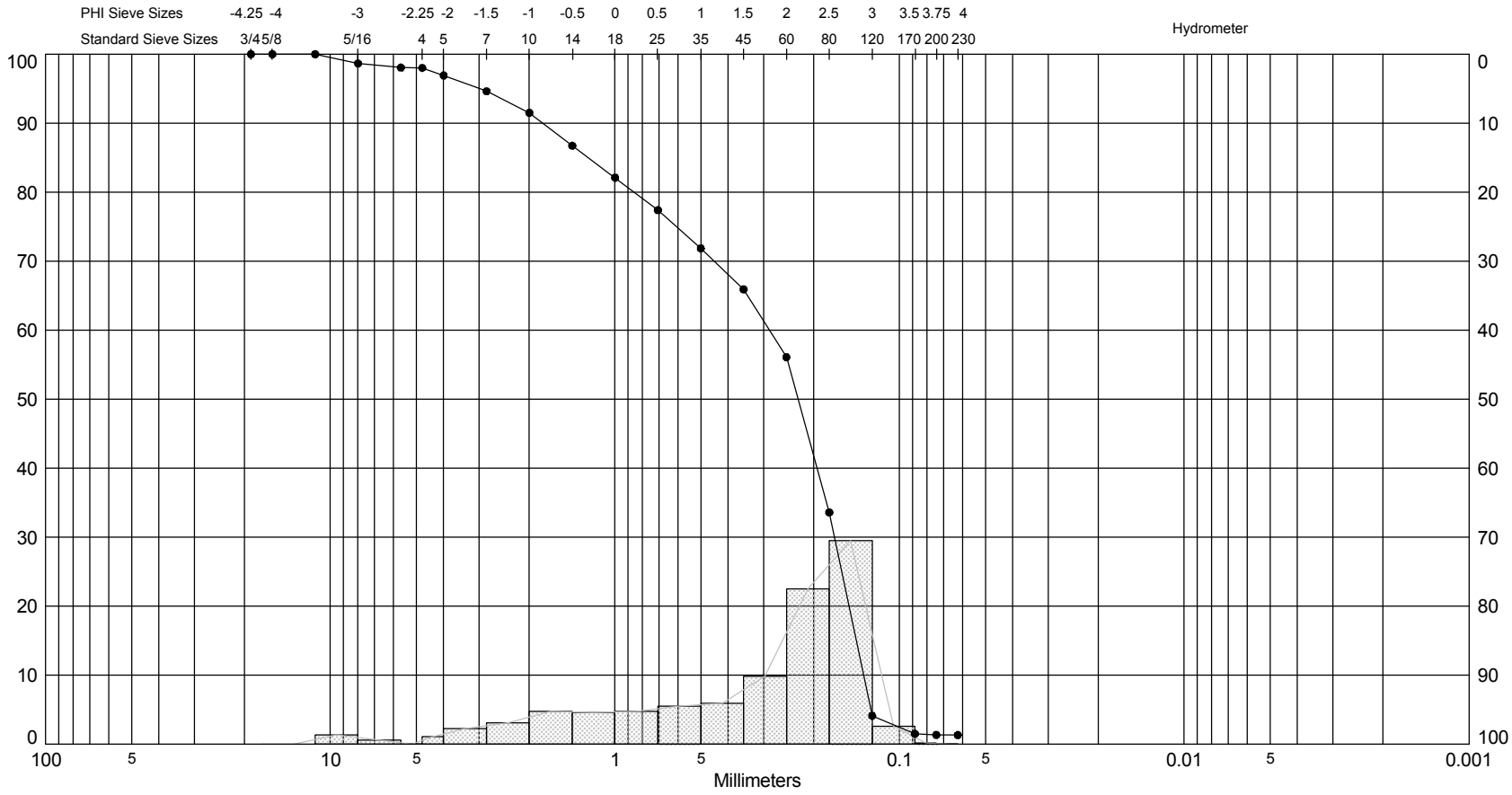


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-24 #2	—●—	-19.8	SW	#200 - 1.34 #230 - 1.31			2.14	1.52	-1.23	3.68	1.5

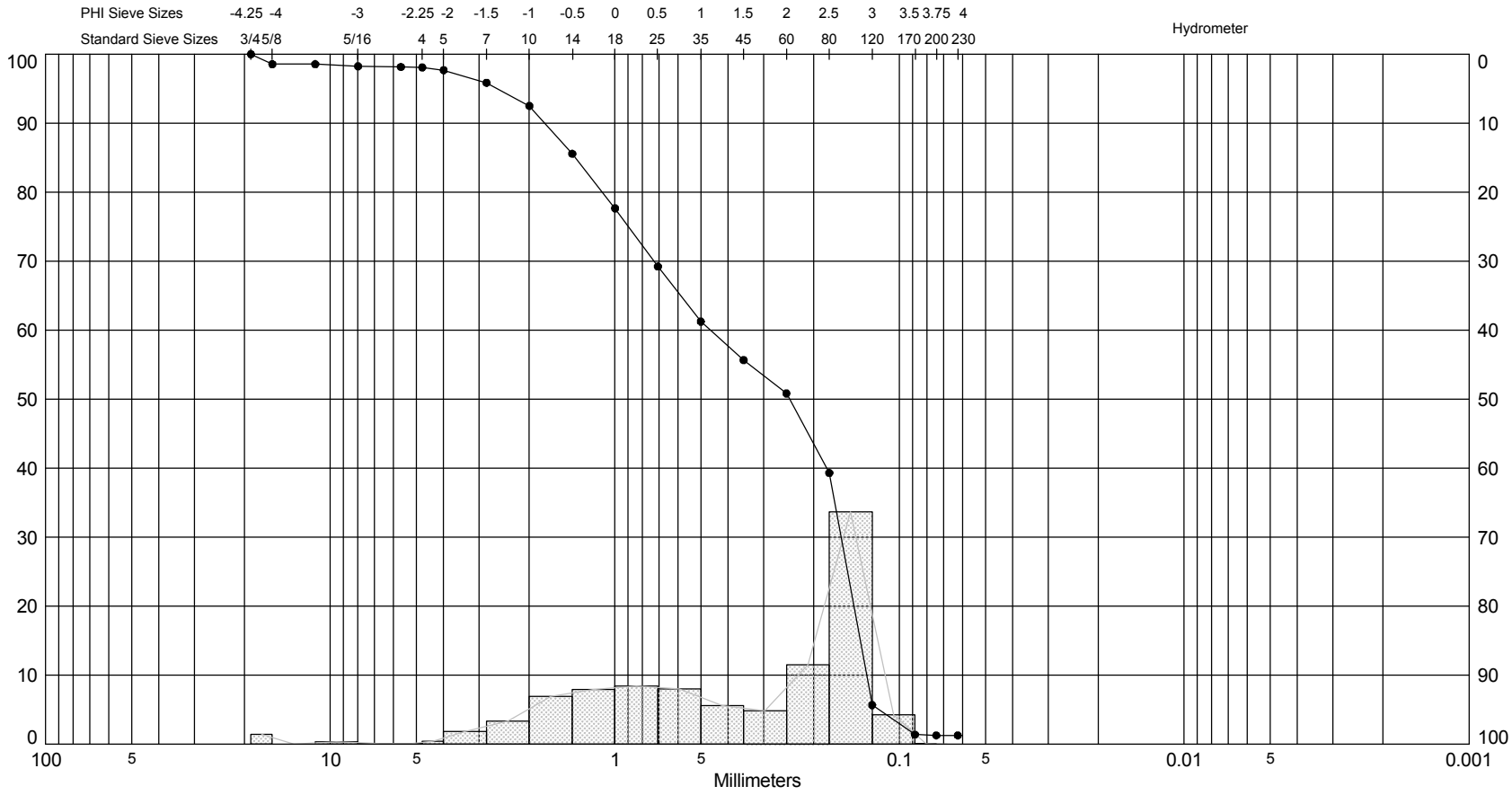
Comments:

Depths and elevations based on measured values

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	LH
Easting (X, ft):	410,358
Northing (Y, ft):	1,158,939
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-25 #1	—●—	-19.8	SW	#200 - 1.27 #230 - 1.27			2.04	1.35	-0.95	3.47	1.6

Comments:

Depths and elevations based on measured values

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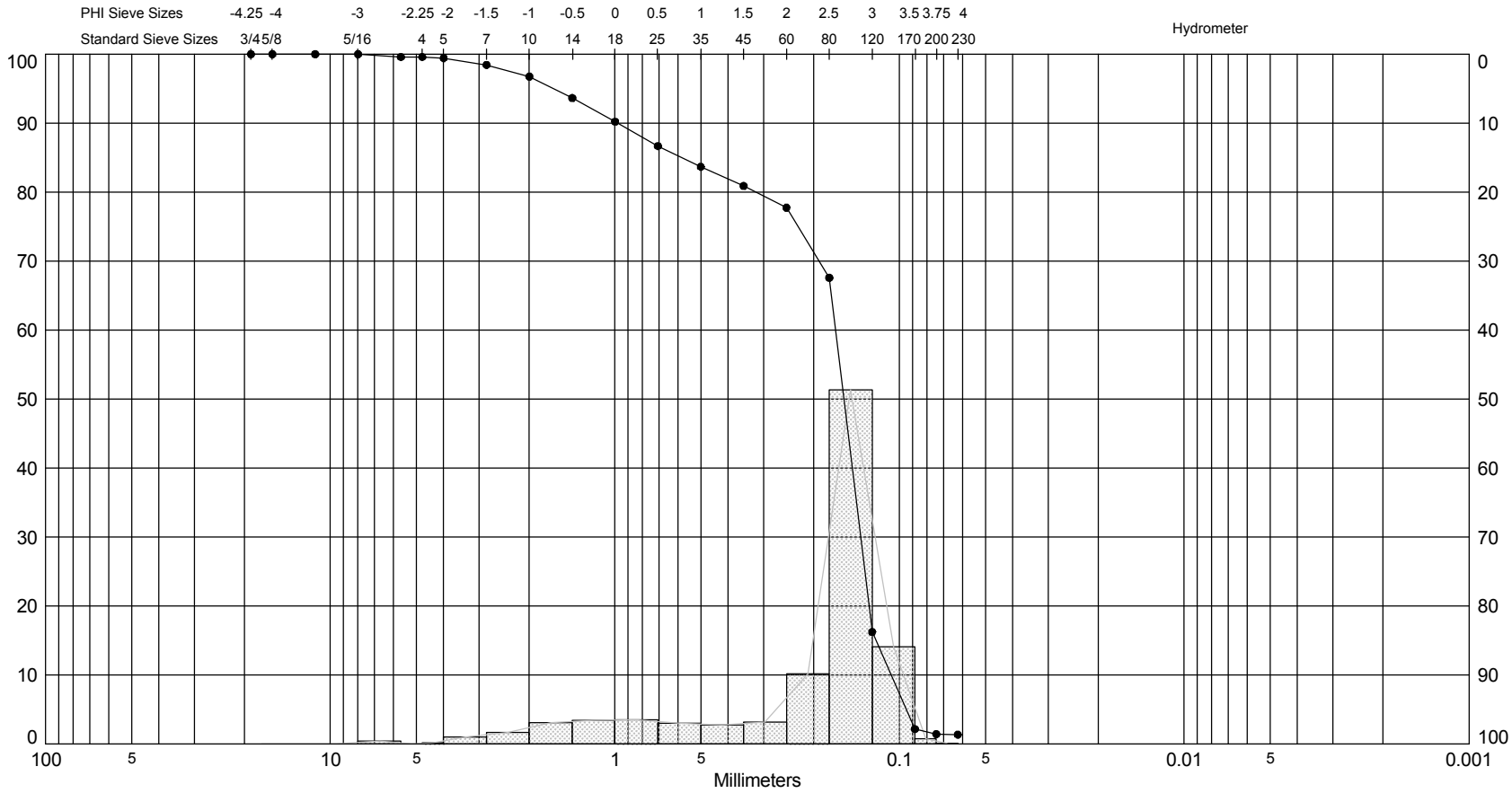
Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	LH
Easting (X, ft):	409,986
Northing (Y, ft):	1,158,655
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-26 #1	—●—	-17.0	SW	#200 - 1.41 #230 - 1.35		20	2.67	2.19	-1.76	5.23	1.24

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	TD
Easting (X, ft):	409,640
Northing (Y, ft):	1,158,254
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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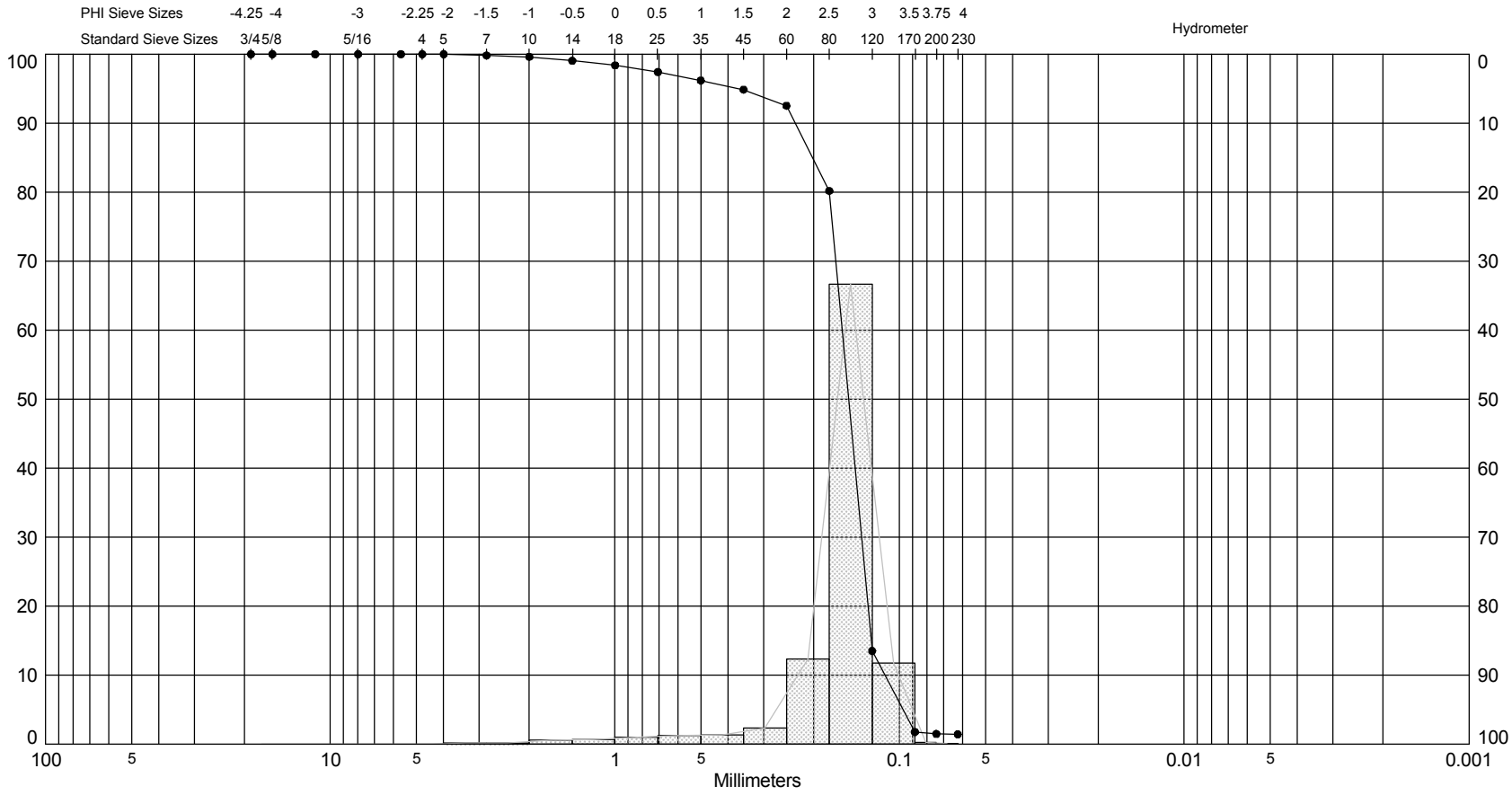

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-26 #2	—●—	-19.1	SP	#200 - 1.47 #230 - 1.41		7	2.73	2.6	-3.3	16.88	0.64

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-10-08
Analyzed By:	TD
Easting (X, ft):	409,640
Northing (Y, ft):	1,158,254
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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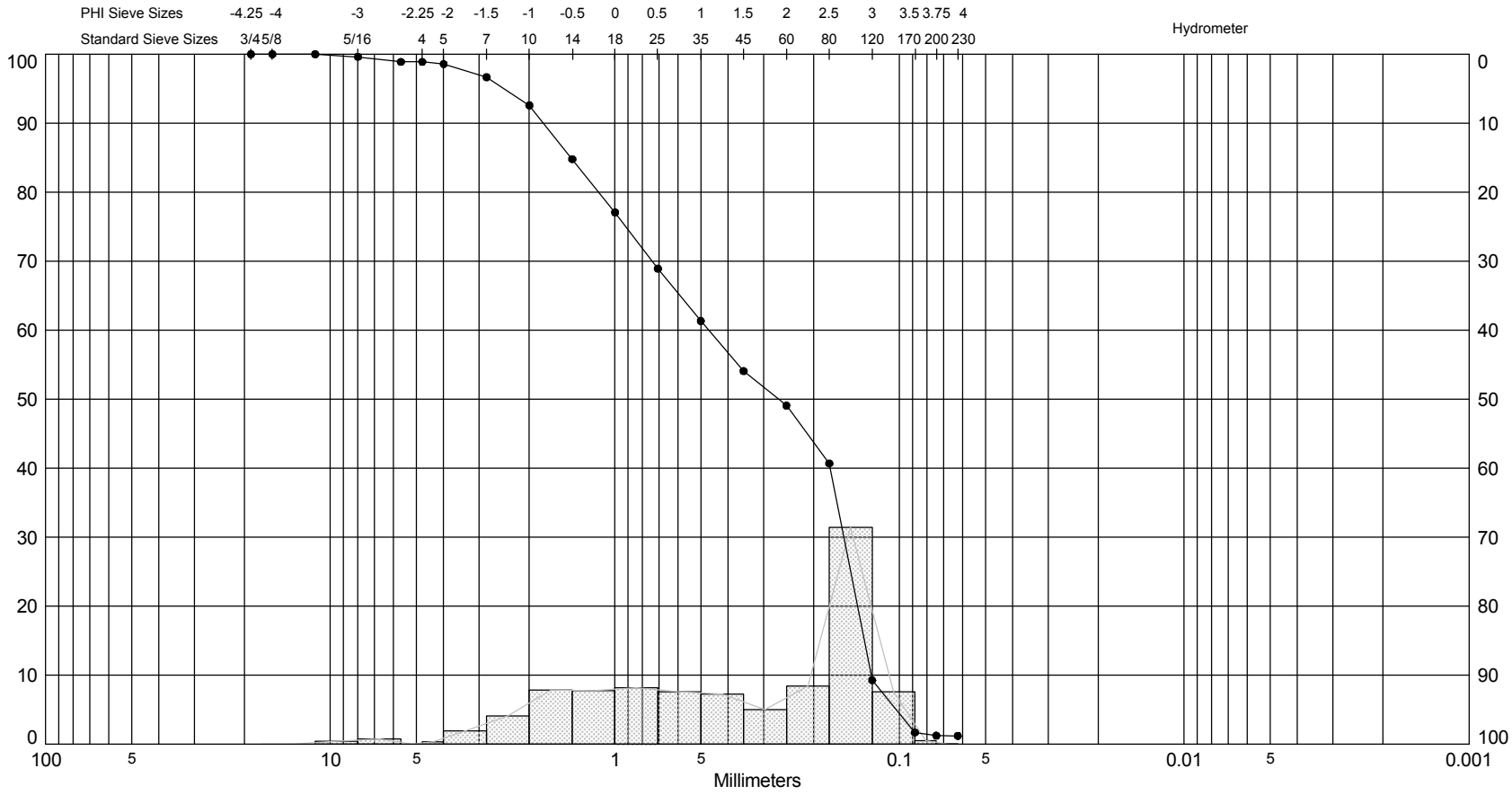

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-26 #3	—●—	-21.7	SW	#200 - 1.22 #230 - 1.20		44	1.91	1.39	-0.61	2.26	1.55

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	TD
Easting (X, ft):	409,640
Northing (Y, ft):	1,158,254
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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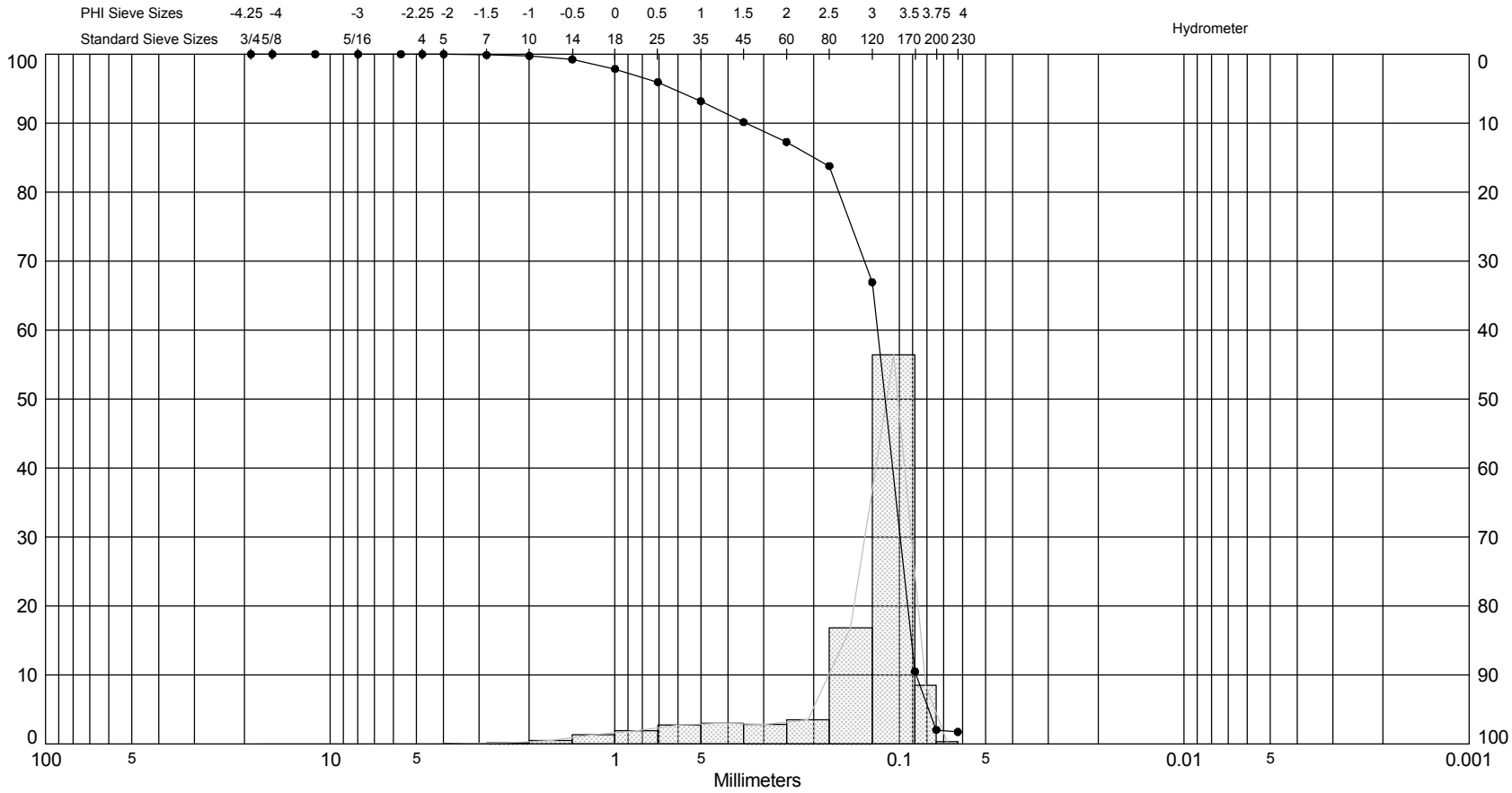

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-26 #4	—●—	-23.0	SW	#200 - 2.04 #230 - 1.74		16	3.15	2.85	-2.25	7.86	0.88

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	LH
Easting (X, ft):	409,640
Northing (Y, ft):	1,158,254
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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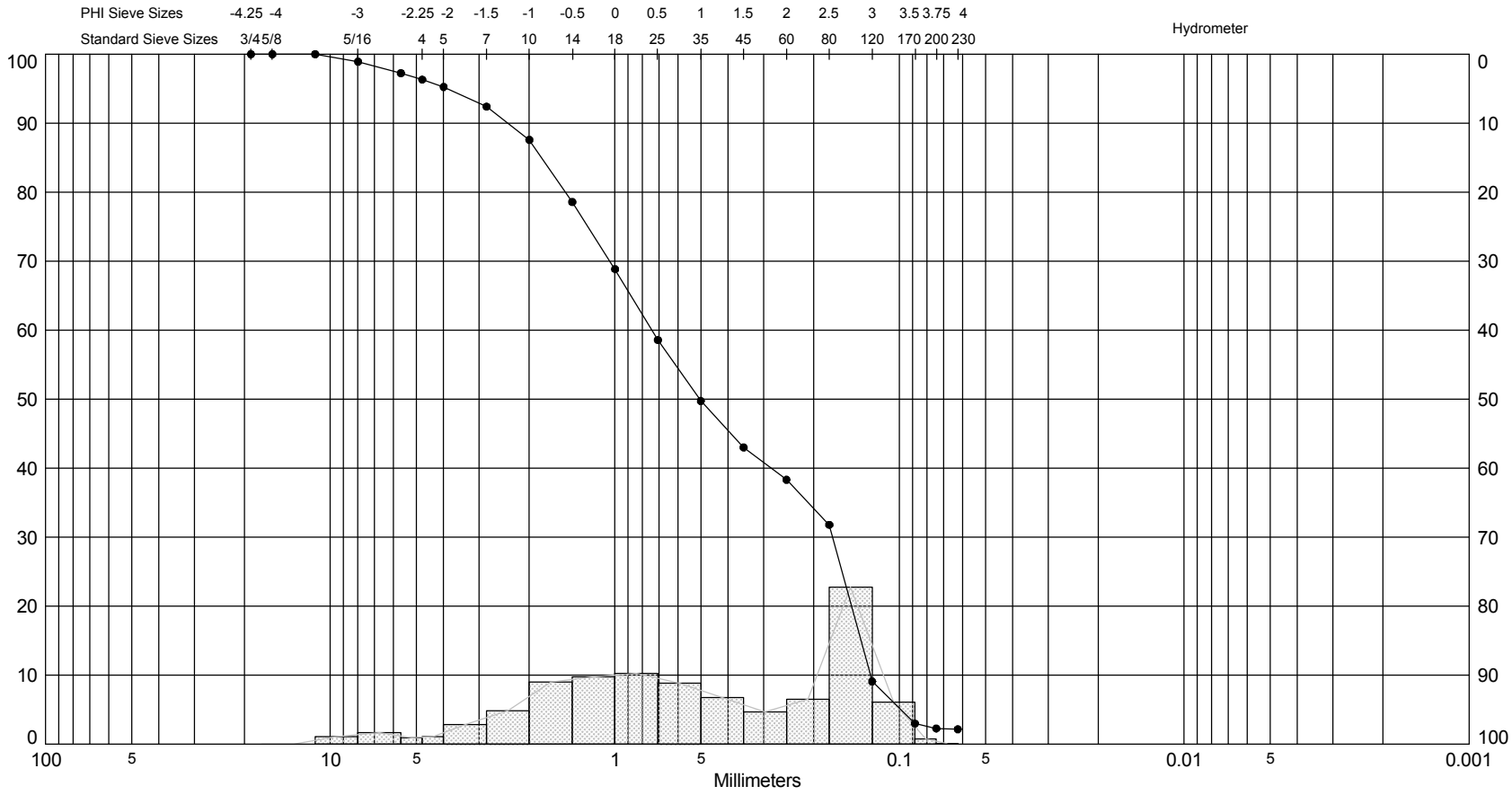

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-26 #5	—●—	-25.1	SW	#200 - 2.27 #230 - 2.15		58	0.98	0.95	-0.35	2.14	1.69

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-10-08
Analyzed By:	TD
Easting (X, ft):	409,640
Northing (Y, ft):	1,158,254
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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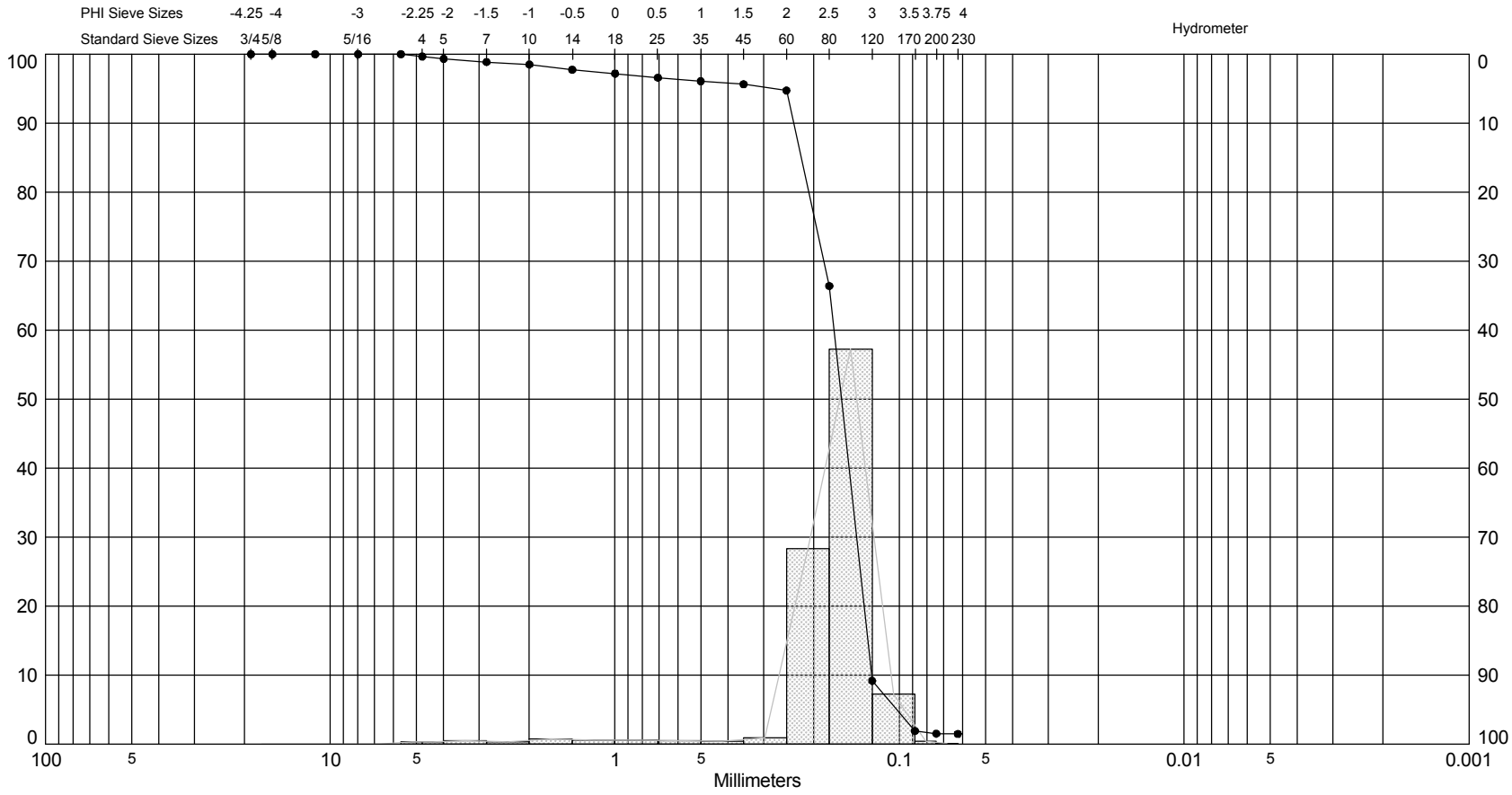

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-26 #6	—●—	-26.0	SP	#200 - 1.52 #230 - 1.46		7	2.64	2.49	-3.94	21.5	0.76

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-19-08
Analyzed By:	PB
Easting (X, ft):	409,640
Northing (Y, ft):	1,158,254
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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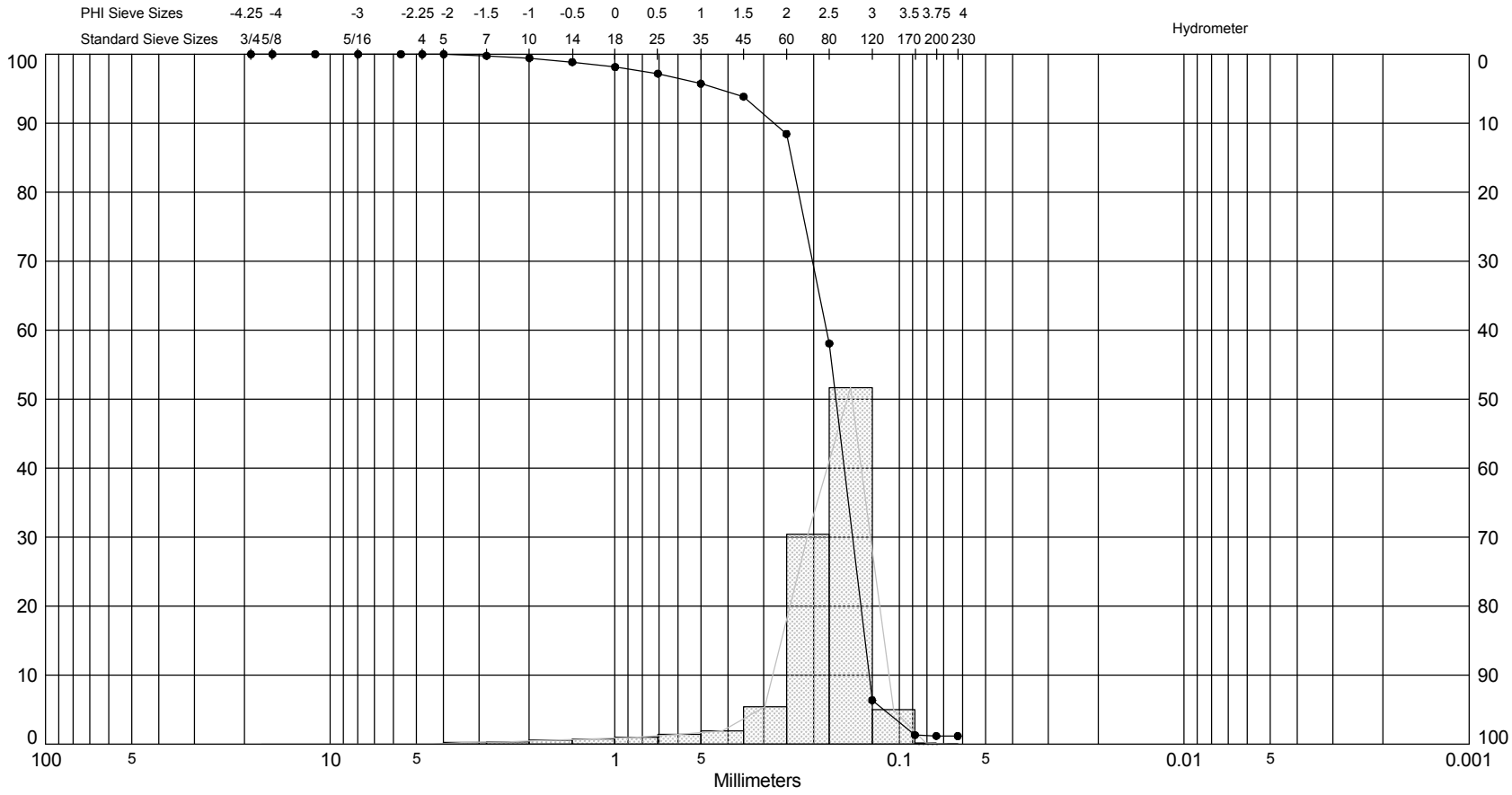

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-27 #1	—●—	-17.3	SP	#200 - 1.18 #230 - 1.16		9	2.58	2.42	-2.85	14.03	0.66

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	LH
Easting (X, ft):	409,240
Northing (Y, ft):	1,158,469
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
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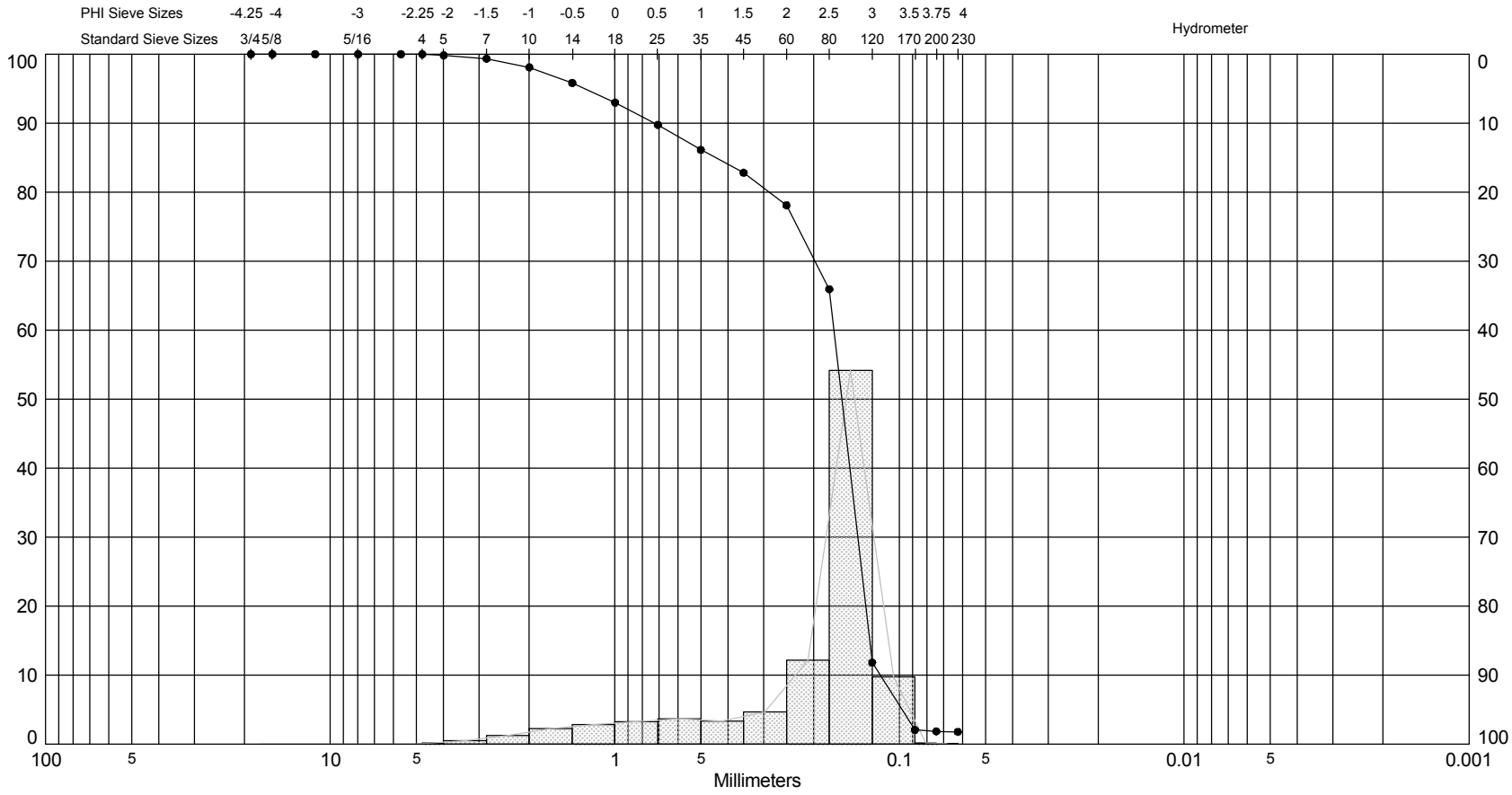

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-27 #2	—●—	-20.3	SW	#200 - 1.85 #230 - 1.79		25	2.65	2.24	-1.83	5.64	1.08

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	LH
Easting (X, ft):	409,240
Northing (Y, ft):	1,158,469
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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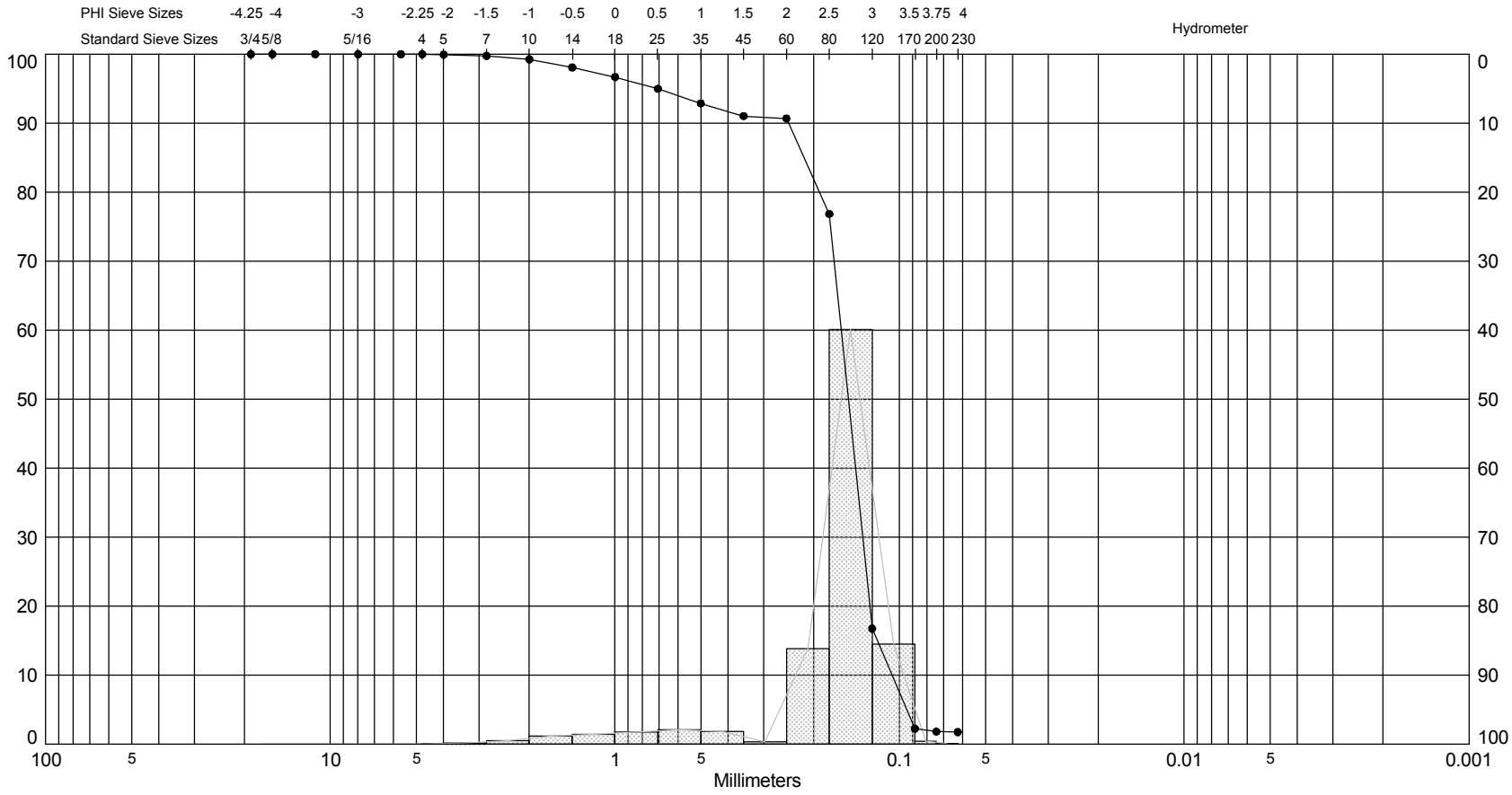

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-27 #3	—●—	-22.8	SP	#200 - 1.81 #230 - 1.75		14	2.72	2.52	-2.71	10.89	0.82

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	LH
Easting (X, ft):	409,240
Northing (Y, ft):	1,158,469
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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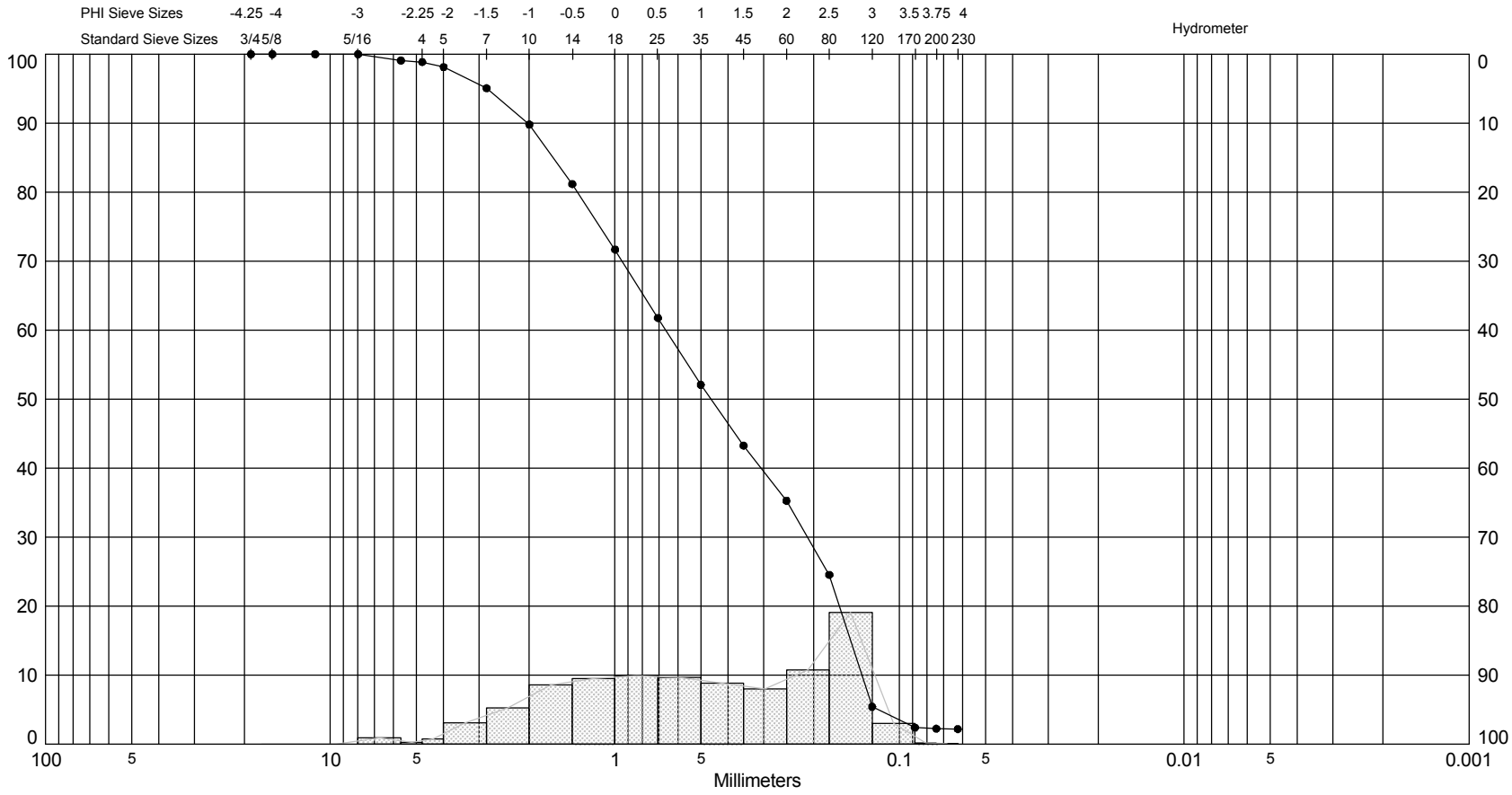

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-27 #4	—●—	-25.3	SW	#200 - 2.23 #230 - 2.18		57	1.12	0.99	-0.31	2.05	1.49

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-19-08
Analyzed By:	PB
Easting (X, ft):	409,240
Northing (Y, ft):	1,158,469
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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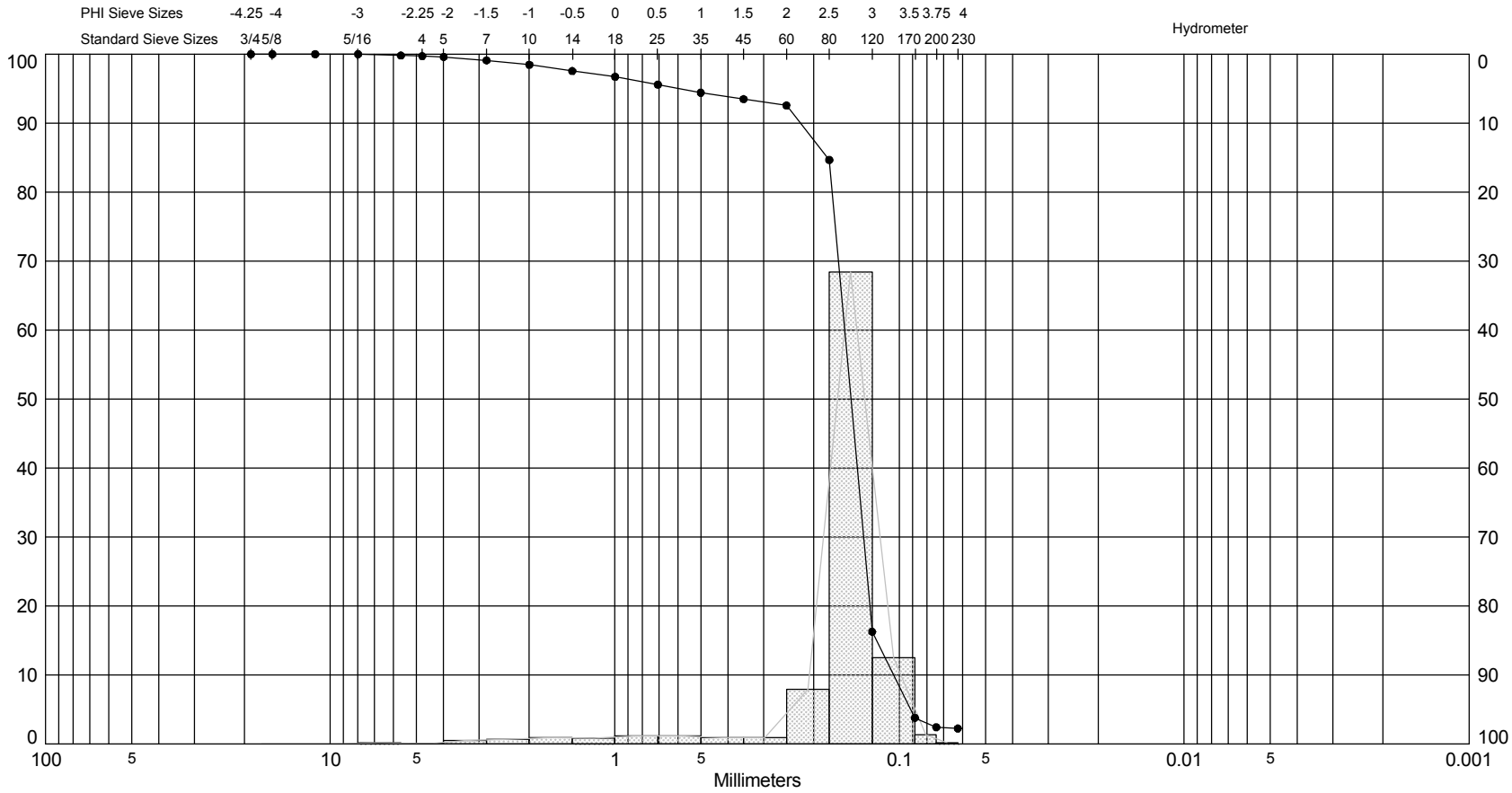

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-27 #5	—●—	-26.8	SP	#200 - 2.42 #230 - 2.23		10	2.75	2.58	-3.5	16.8	0.84

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-19-08
Analyzed By:	TD
Easting (X, ft):	409,240
Northing (Y, ft):	1,158,469
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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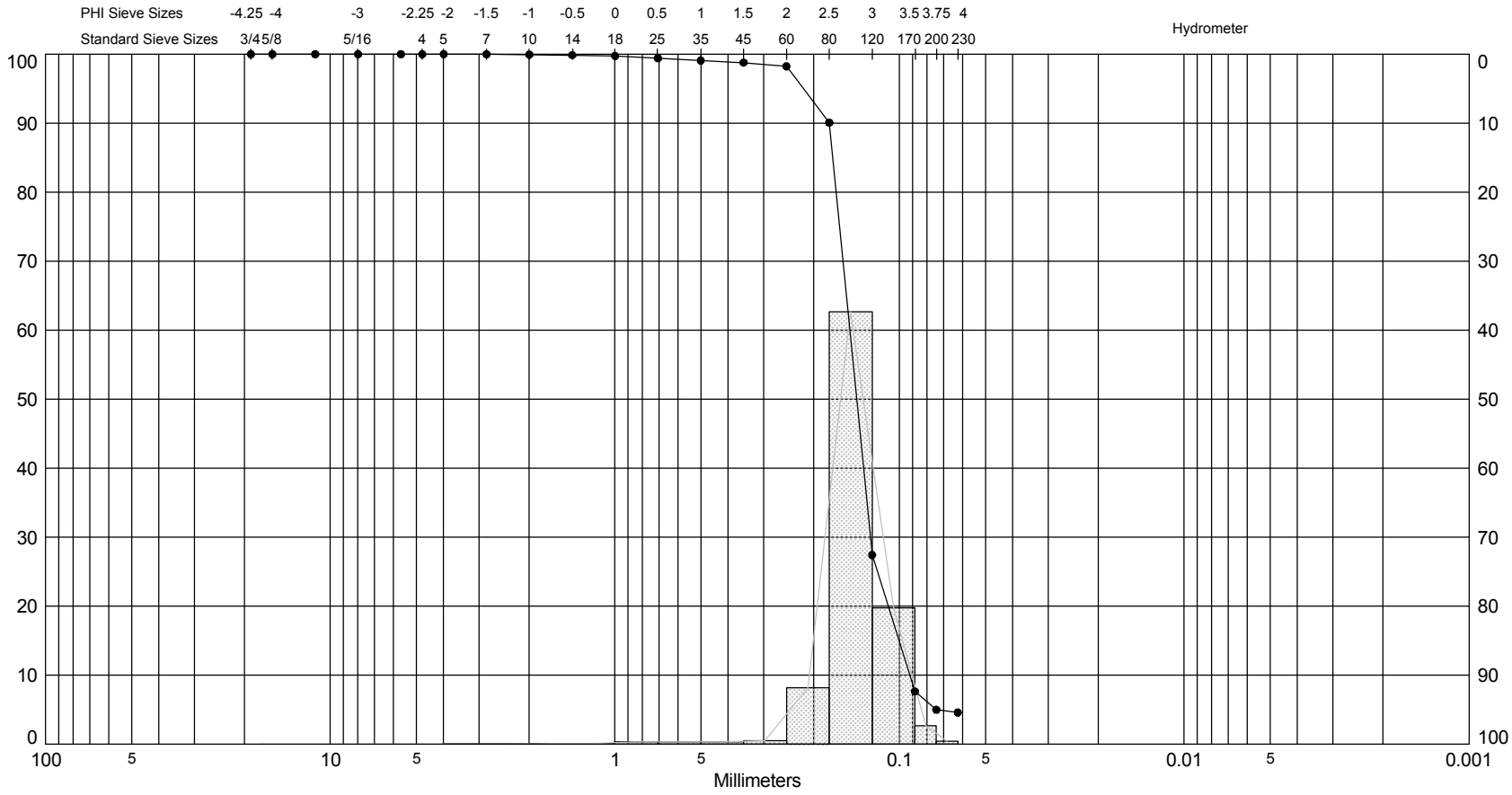

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-27 #6	—●—	-29.3	SP	#200 - 4.97 #230 - 4.58		7	2.82	2.8	-2.7	22.33	0.42

Comments:

Depths and elevations based on measured values

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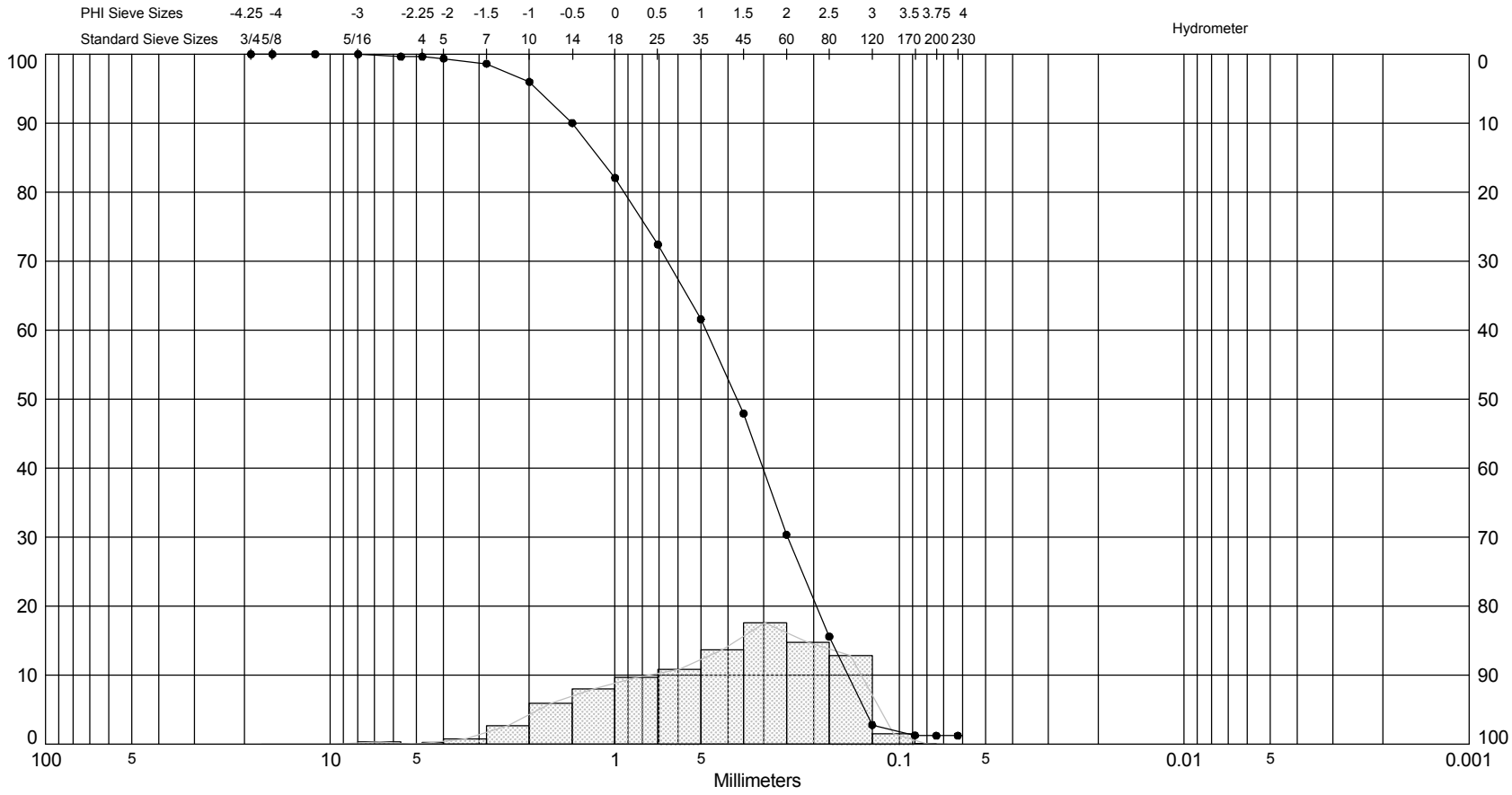
Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	08-19-08
Analyzed By:	PB
Easting (X, ft):	409,240
Northing (Y, ft):	1,158,469
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-28 #1	—●—	-18.2	SW	#200 - 1.21 #230 - 1.21		48	1.42	1.21	-0.54	2.65	1.19

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-10-08
Analyzed By:	TD
Easting (X, ft):	408,532
Northing (Y, ft):	1,158,705
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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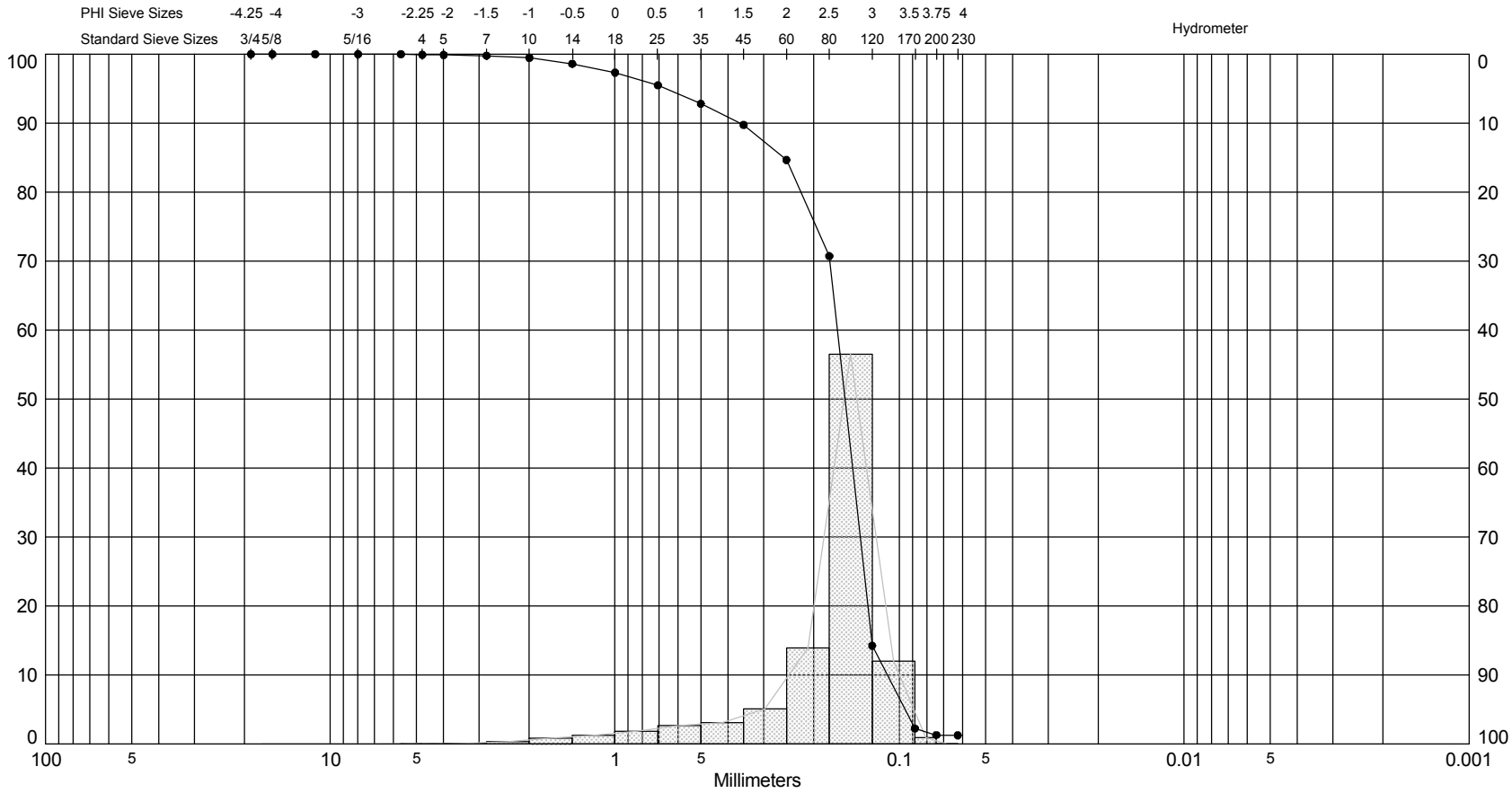

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-28 #2	—●—	-20.2	SP	#200 - 1.29 #230 - 1.25			2.68	2.46	-2.3	9.19	0.81

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	TD
Easting (X, ft):	408,532
Northing (Y, ft):	1,158,705
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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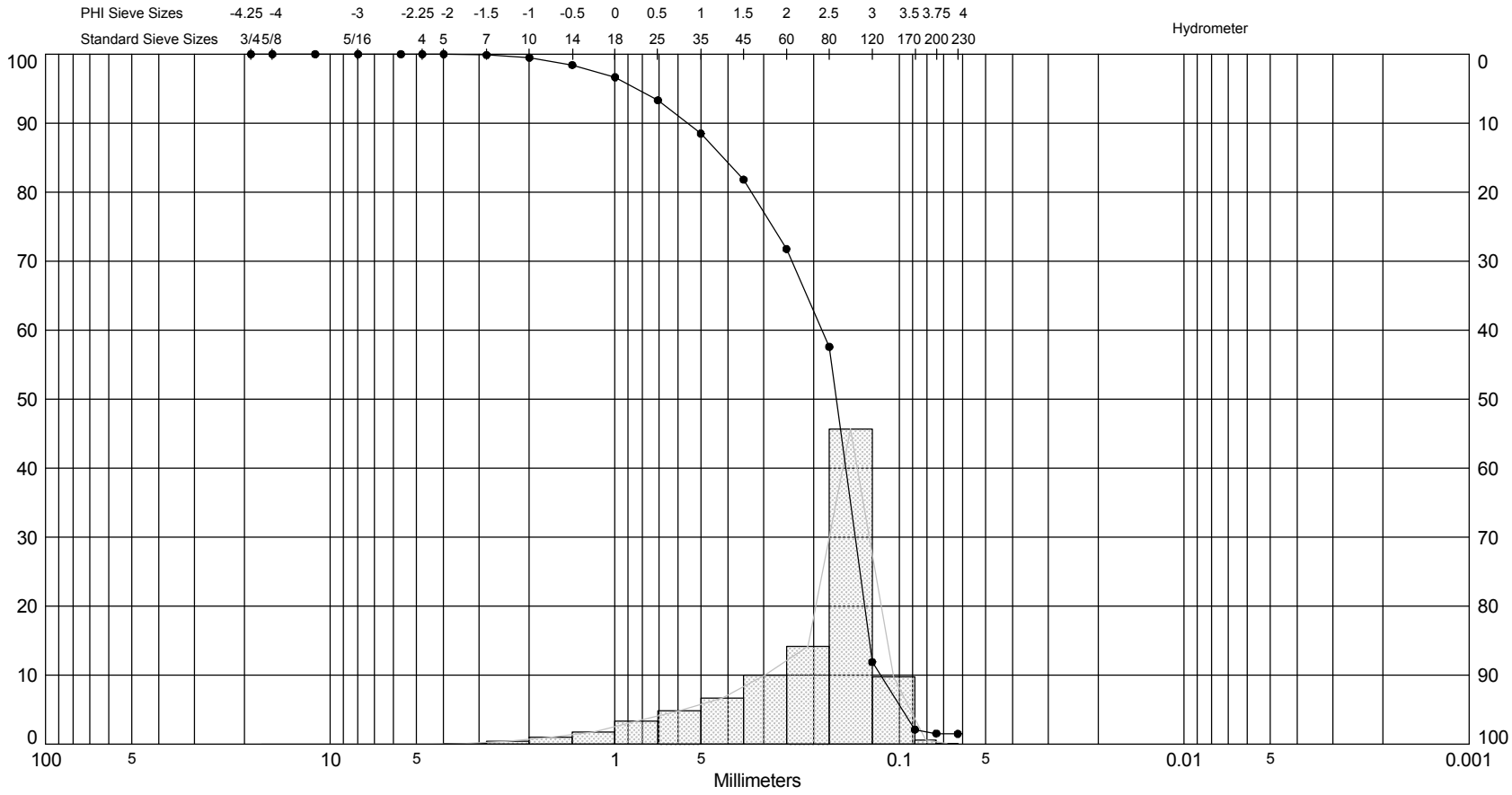

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-28 #3	—●—	-22.4	SW	#200 - 1.54 #230 - 1.48			2.58	2.23	-1.45	4.82	0.92

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	TD
Easting (X, ft):	408,532
Northing (Y, ft):	1,158,705
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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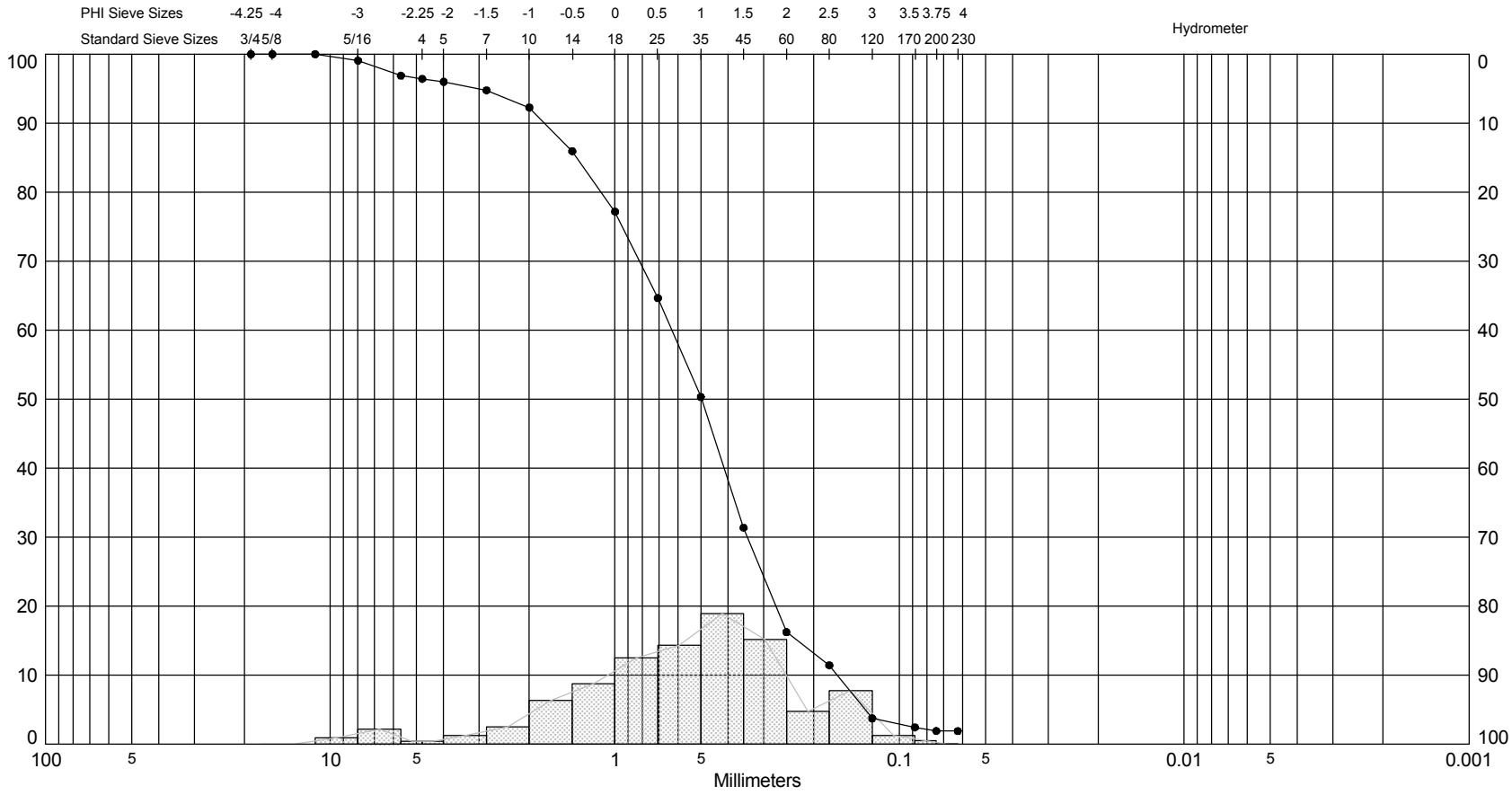

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-28 #4	—●—	-24.5	SW	#200 - 1.90 #230 - 1.88			1.01	0.81	-0.67	3.68	1.31

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-08-08
Analyzed By:	TD
Easting (X, ft):	408,532
Northing (Y, ft):	1,158,705
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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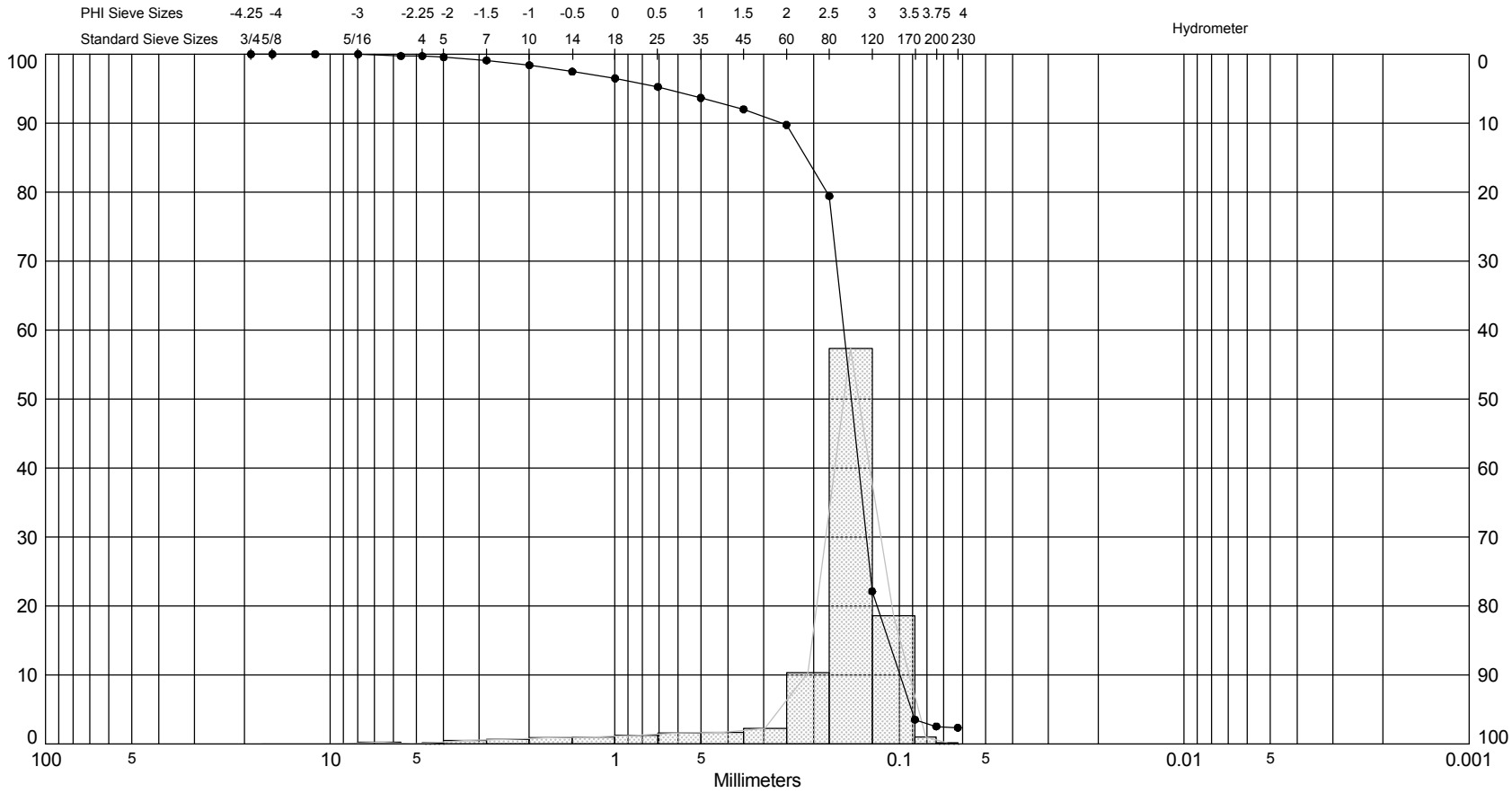

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-28 #5	—●—	-26.6	SW	#200 - 2.54 #230 - 2.35			2.76	2.55	-3.04	13.62	0.89

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	TD
Easting (X, ft):	408,532
Northing (Y, ft):	1,158,705
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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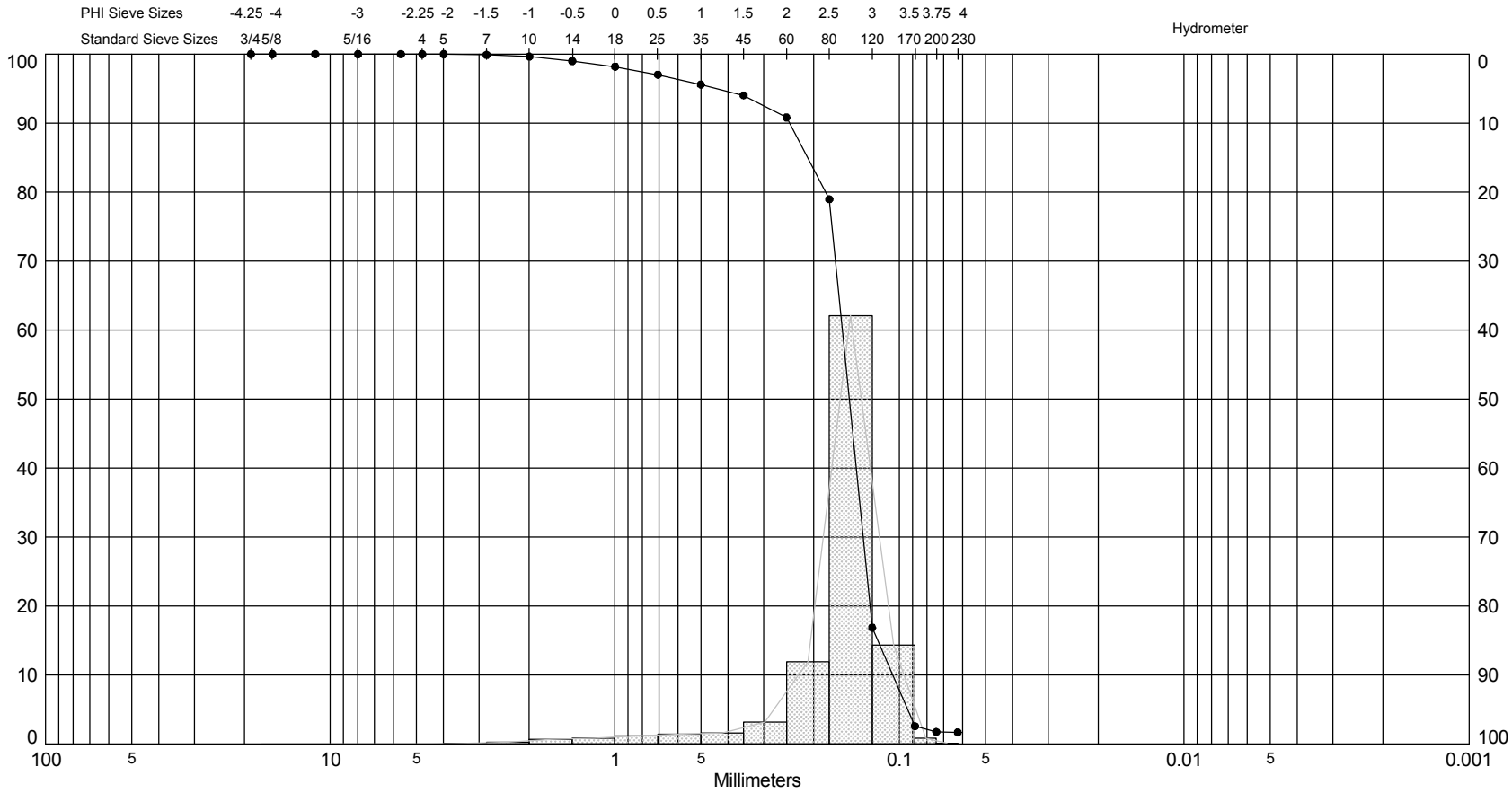

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-29 #1	—●—	-18.7	SP	#200 - 1.73 #230 - 1.68		10	2.73	2.59	-2.88	13.46	0.68

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	TD
Easting (X, ft):	408,832
Northing (Y, ft):	1,159,333
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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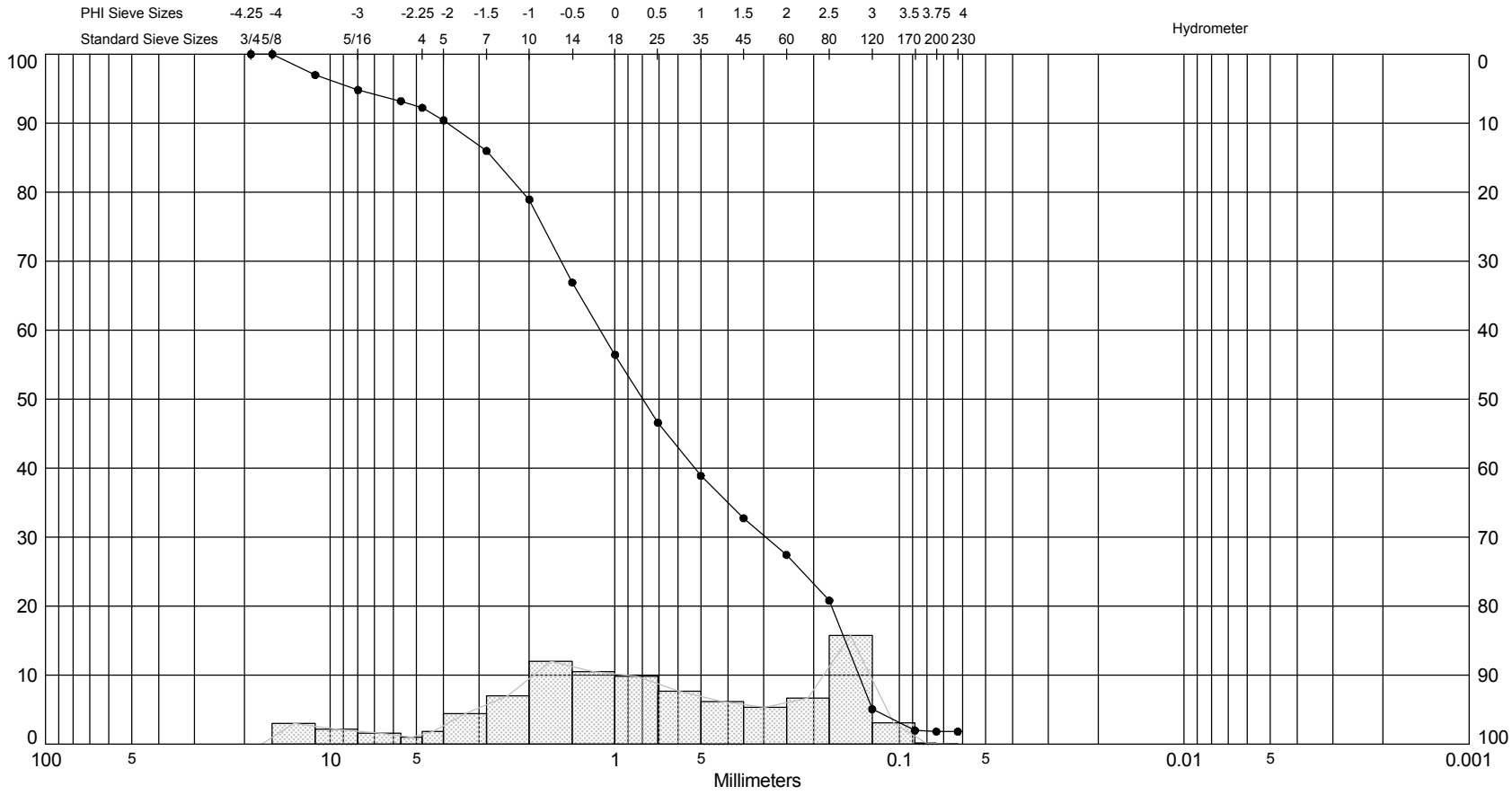

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-29 #2	—●—	-20.3	SW	#200 - 1.81 #230 - 1.80		65	0.33	0.38	-0.26	2.31	1.83

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	TD
Easting (X, ft):	408,832
Northing (Y, ft):	1,159,333
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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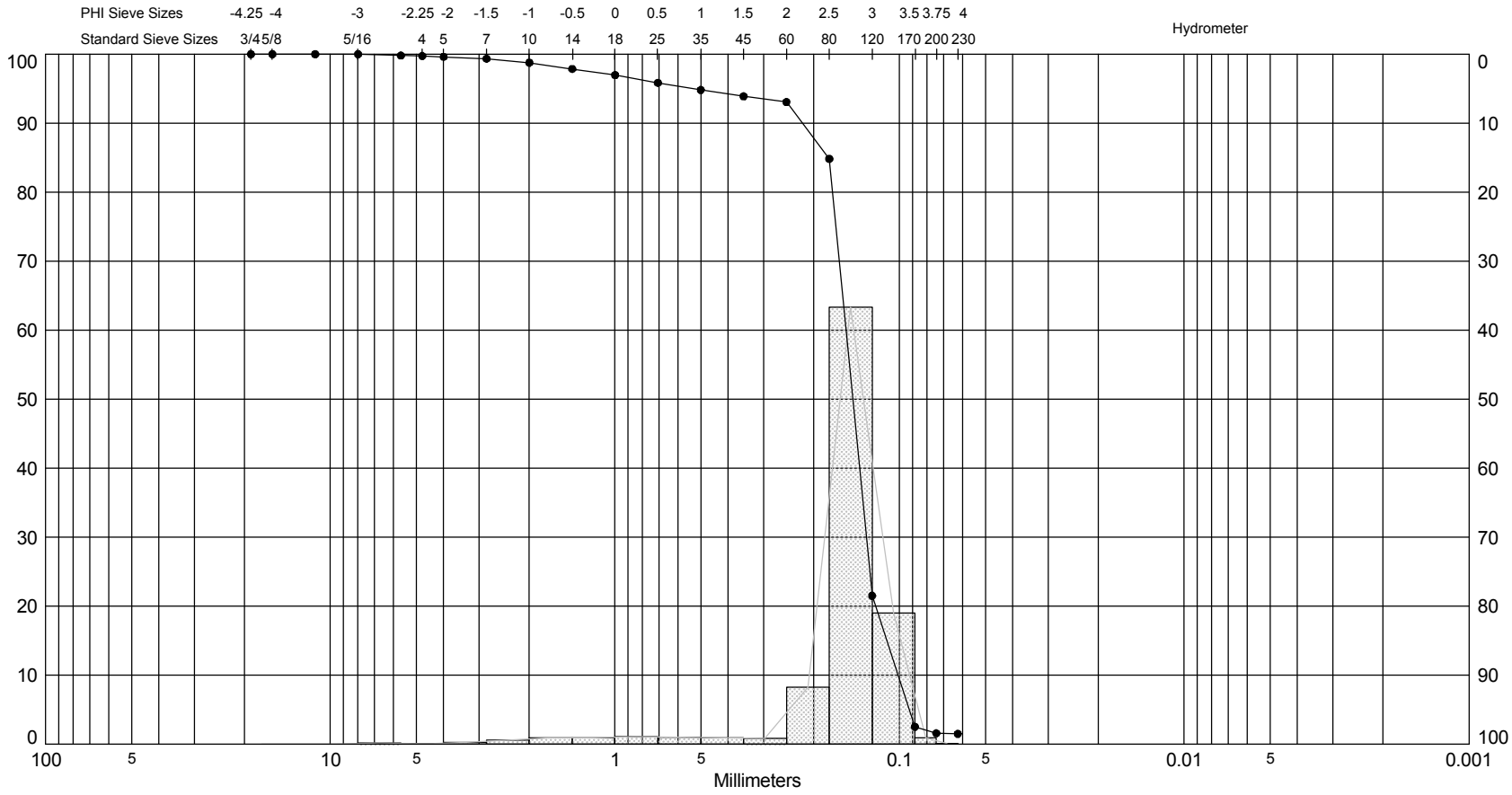
SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-29 #3	—●—	-21.7	SP	#200 - 1.57 #230 - 1.48			2.78	2.63	-3.51	17.31	0.81

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-09-08
Analyzed By:	TD
Easting (X, ft):	408,832
Northing (Y, ft):	1,159,333
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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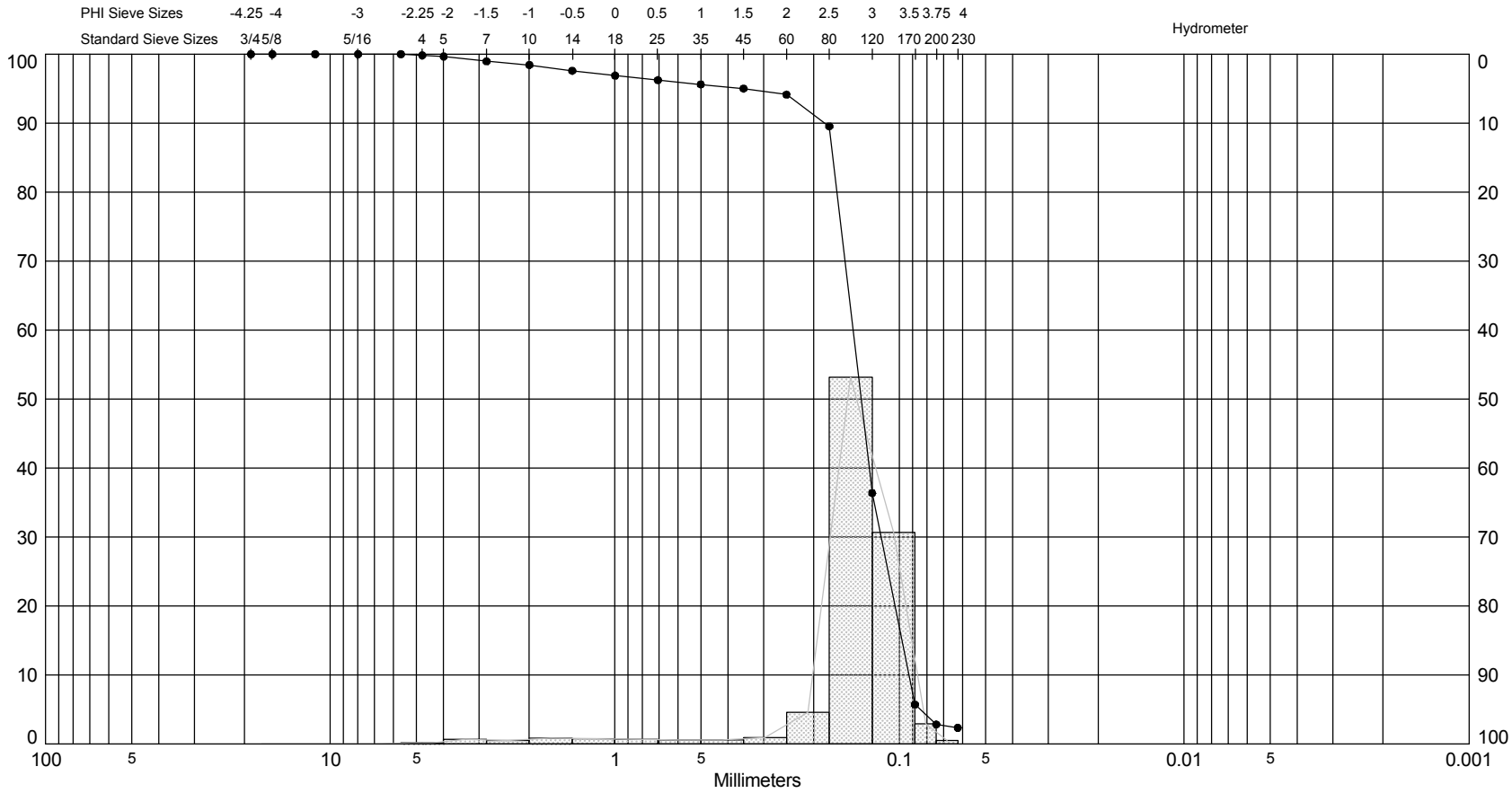

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-29 #4	—●—	-23.1	SP	#200 - 2.82 #230 - 2.34			2.87	2.74	-3.62	18.04	0.83

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	TD
Easting (X, ft):	408,832
Northing (Y, ft):	1,159,333
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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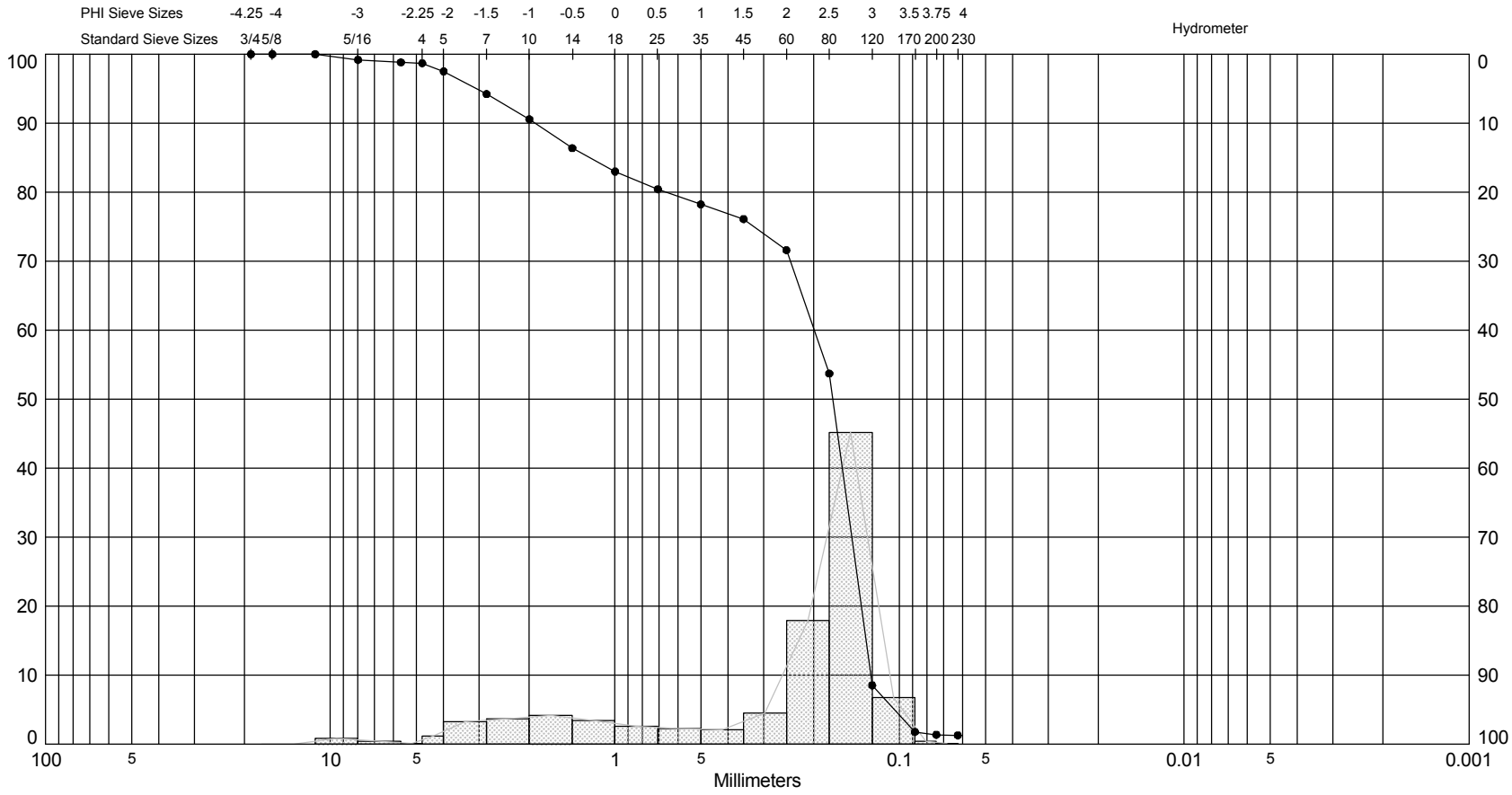

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-29 #5	—●—	-24.0	SW	#200 - 1.36 #230 - 1.28			2.54	1.83	-1.48	3.98	1.54

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-10-08
Analyzed By:	TD
Easting (X, ft):	408,832
Northing (Y, ft):	1,159,333
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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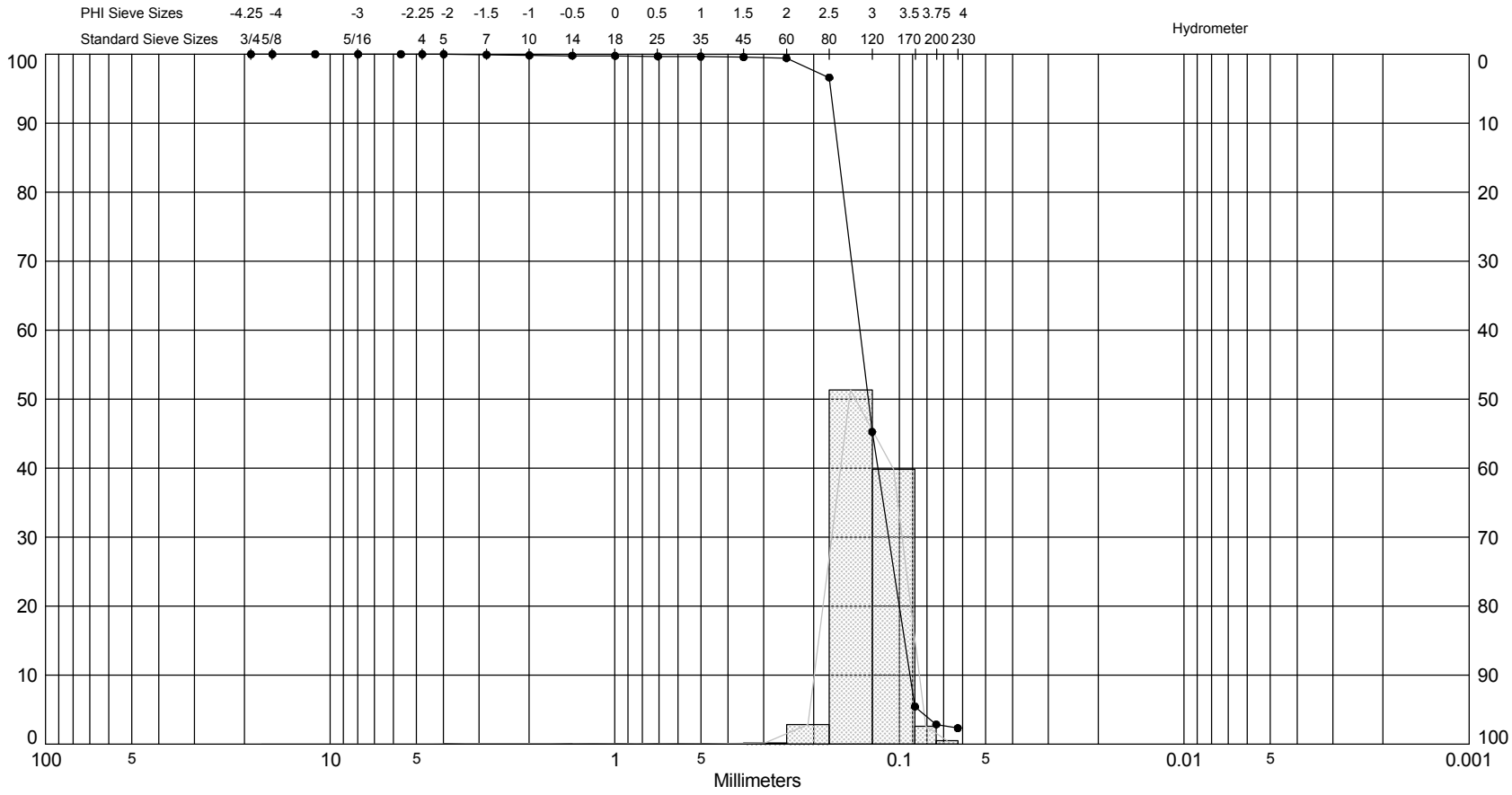
SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-29 #6	—●—	-25.7	SP	#200 - 2.85 #230 - 2.31			2.95	2.95	-3.66	42.75	0.38

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	TD
Easting (X, ft):	408,832
Northing (Y, ft):	1,159,333
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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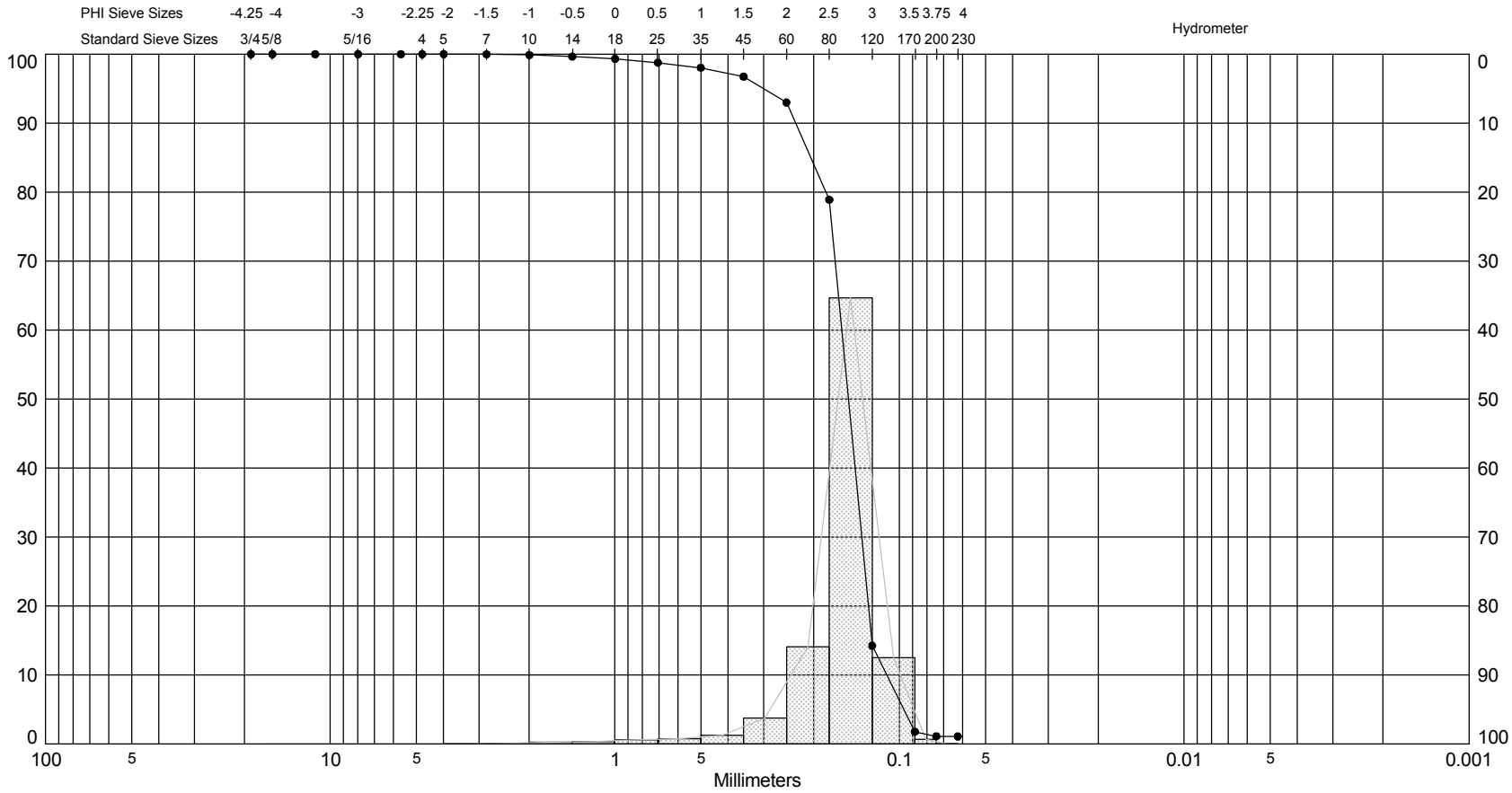
SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-30 #1	—●—	-21.2	SP	#200 - 1.11 #230 - 1.08		5	2.72	2.64	-2.88	16.65	0.52

Comments:

Depths and elevations based on measured values

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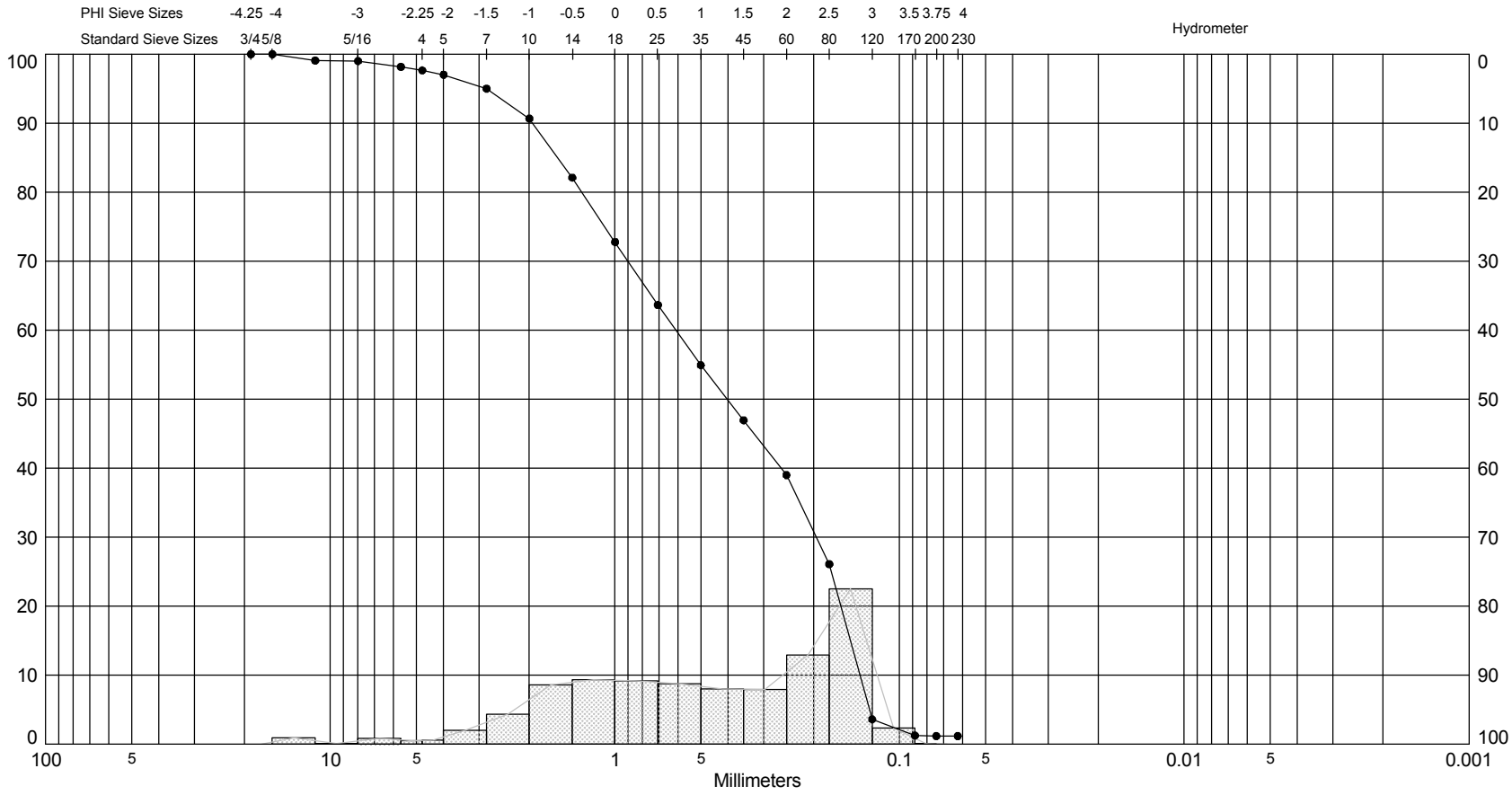
fax (561) 391-9116

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	TD
Easting (X, ft):	409,194
Northing (Y, ft):	1,159,509
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-30 #2	—●—	-23.1	SW	#200 - 1.17 #230 - 1.17			1.31	1.07	-0.59	2.62	1.54

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	LH
Easting (X, ft):	409,194
Northing (Y, ft):	1,159,509
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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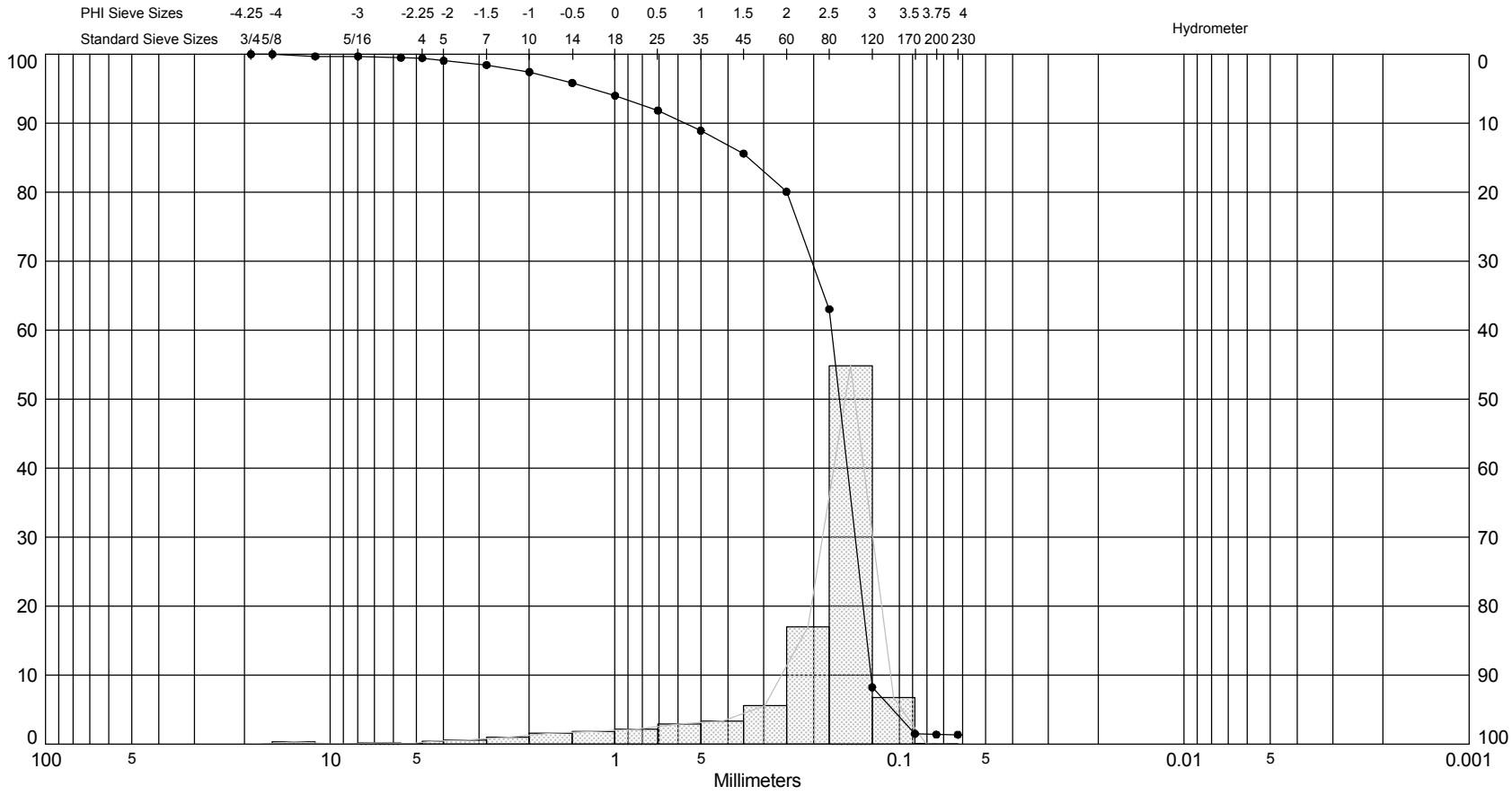
SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-30 #3	—●—	-24.1	SW	#200 - 1.38 #230 - 1.37			2.62	2.24	-2.46	9.65	1.07

Comments:

Depths and elevations based on measured values

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FL 33431
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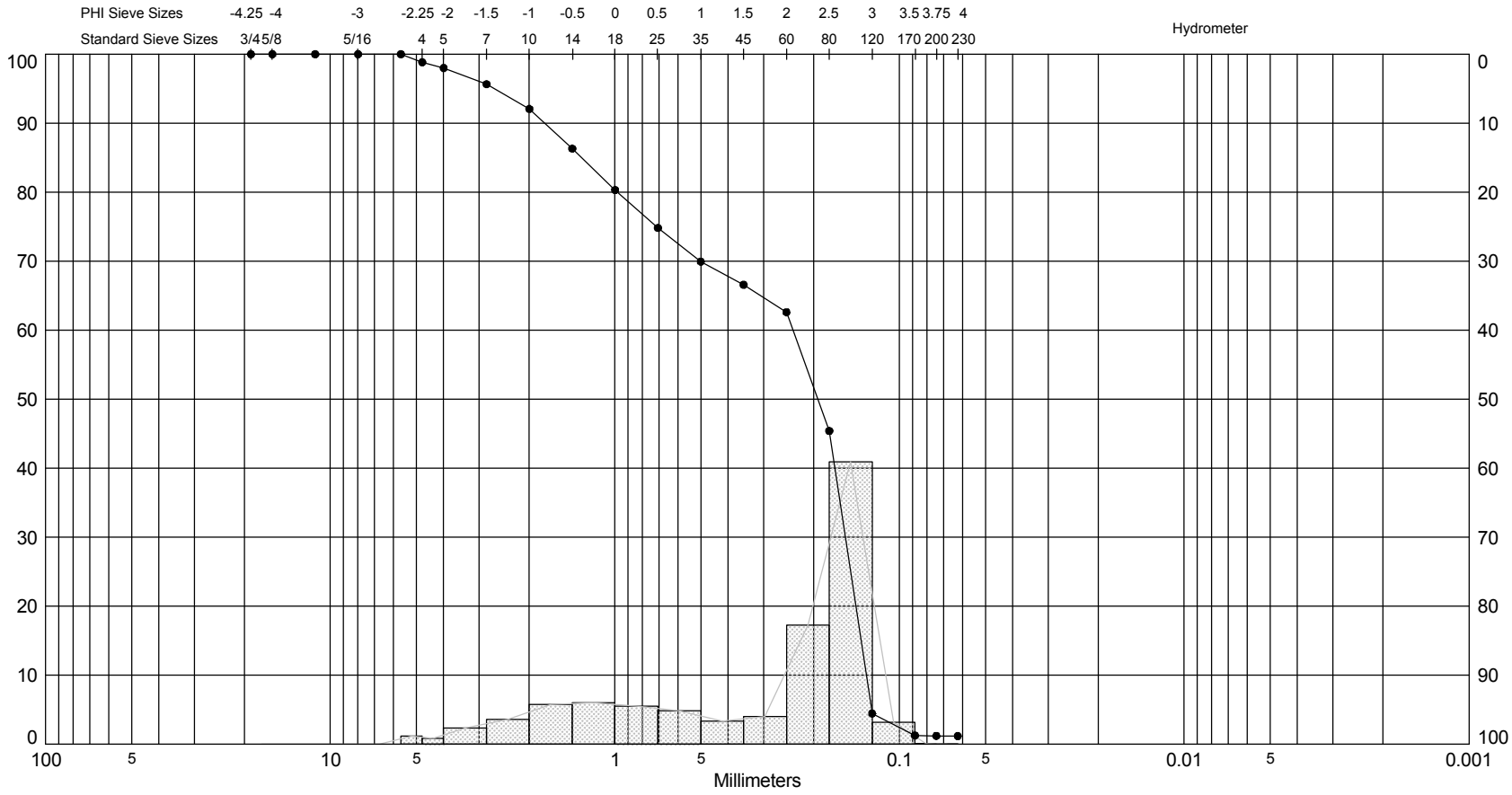
Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	LH
Easting (X, ft):	409,194
Northing (Y, ft):	1,159,509
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-30 #4	—●—	-26.3	SW	#200 - 1.20 #230 - 1.17			2.37	1.61	-1.03	2.73	1.5

Comments:

Depths and elevations based on measured values

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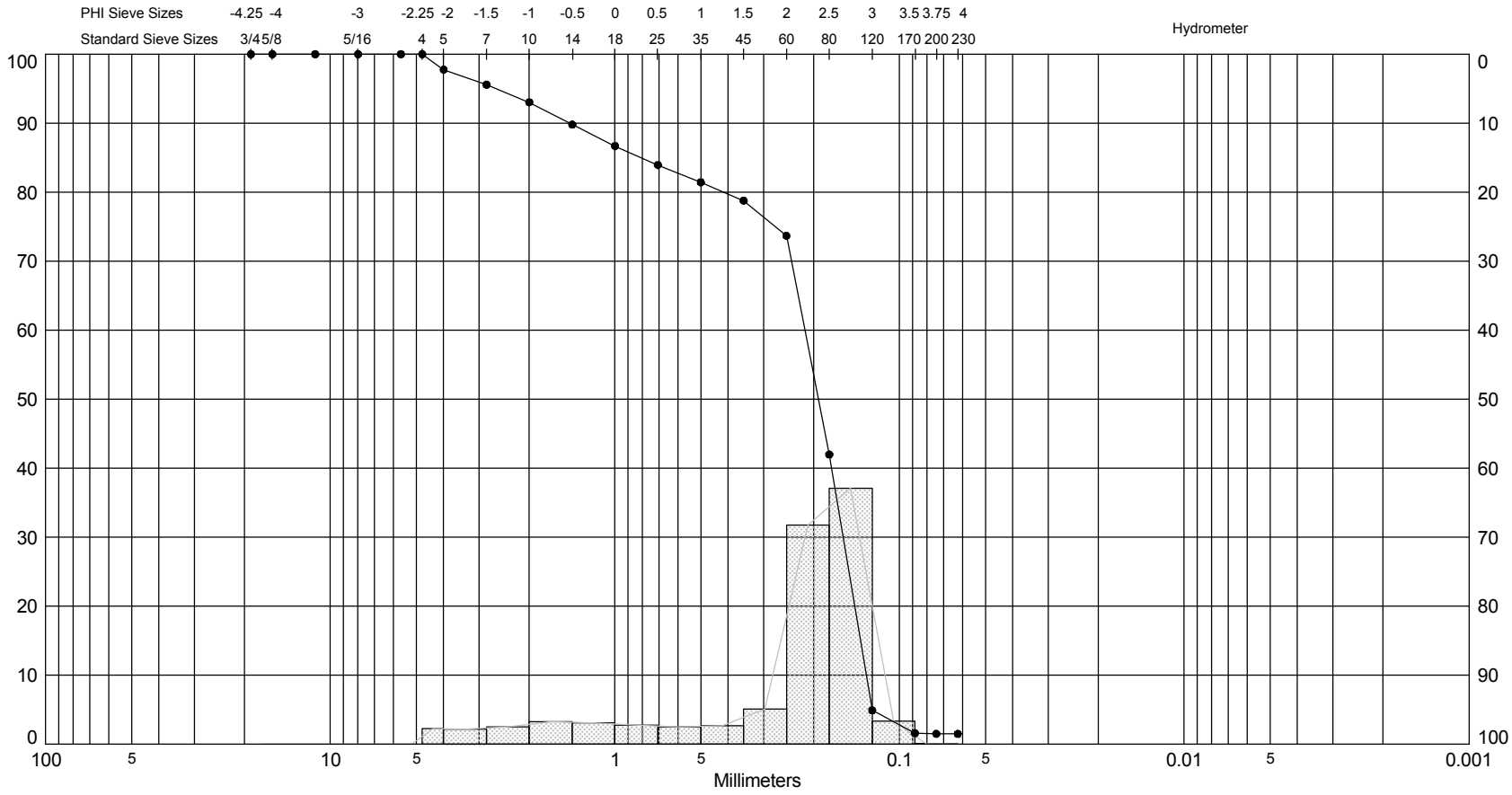
fax (561) 391-9116

Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	LH
Easting (X, ft):	409,194
Northing (Y, ft):	1,159,509
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-30 #5	—●—	-29.2	SW	#200 - 1.49 #230 - 1.47			2.37	1.87	-1.65	4.62	1.34

Comments:

Depths and elevations based on measured values

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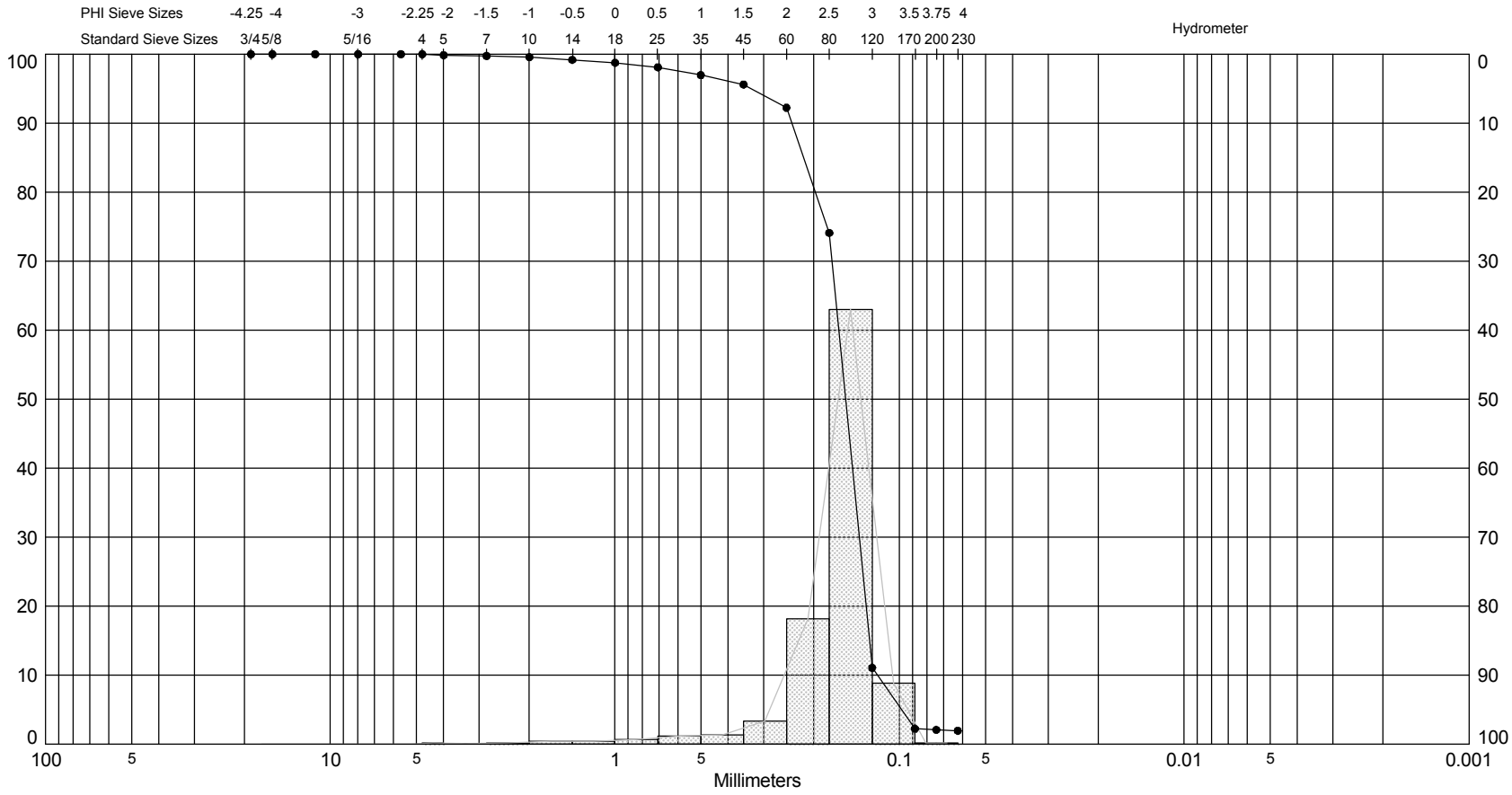
Sample Information	
Project Name:	AMI 2008 Sand Search
Analysis Date:	07-11-08
Analyzed By:	LH
Easting (X, ft):	409,194
Northing (Y, ft):	1,159,509
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS AMI_2008_VIBRACORES_ALL.GPJ FL DEP ROSS.GDT 10/29/08

APPENDIX 1-H

2005 CPE INDIVIDUAL VIBRACORE GRAIN SIZE DISTRIBUTION CURVES/HISTOGRAMS



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-08 #1	—●—	-17.0	SP	#200 - 2.07 #230 - 1.94		7	2.69	2.56	-3.41	19.77	0.6

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	02-28-05
Analyzed By:	CPE
Easting (X, ft):	413,793
Northing (Y, ft):	1,157,117
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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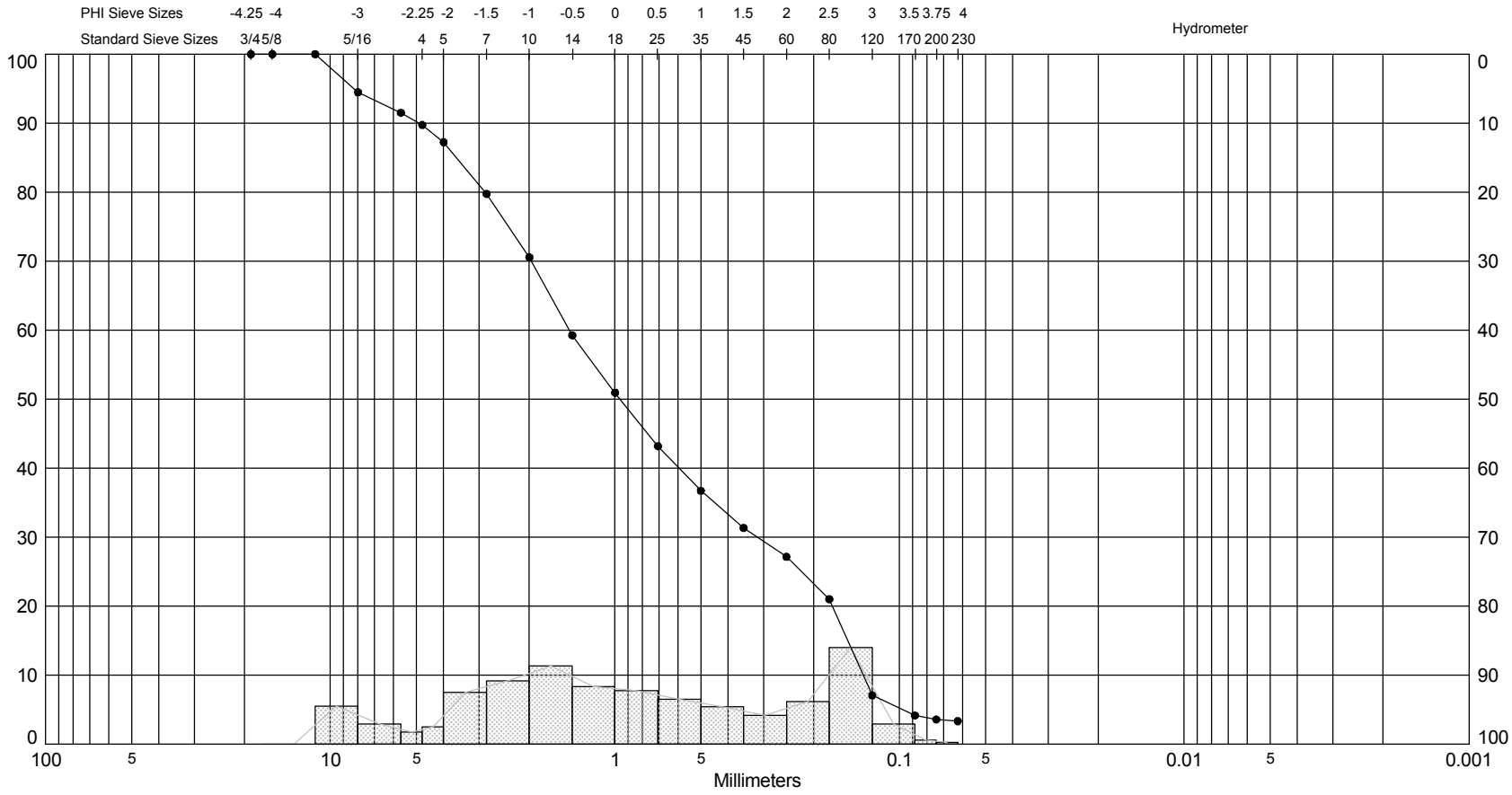
SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-08 #2	—●—	-18.2	SW	#200 - 3.57 #230 - 3.33		49	0.06	0.15	0.02	1.93	1.9

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	02-28-05
Analyzed By:	CPE
Easting (X, ft):	413,793
Northing (Y, ft):	1,157,117
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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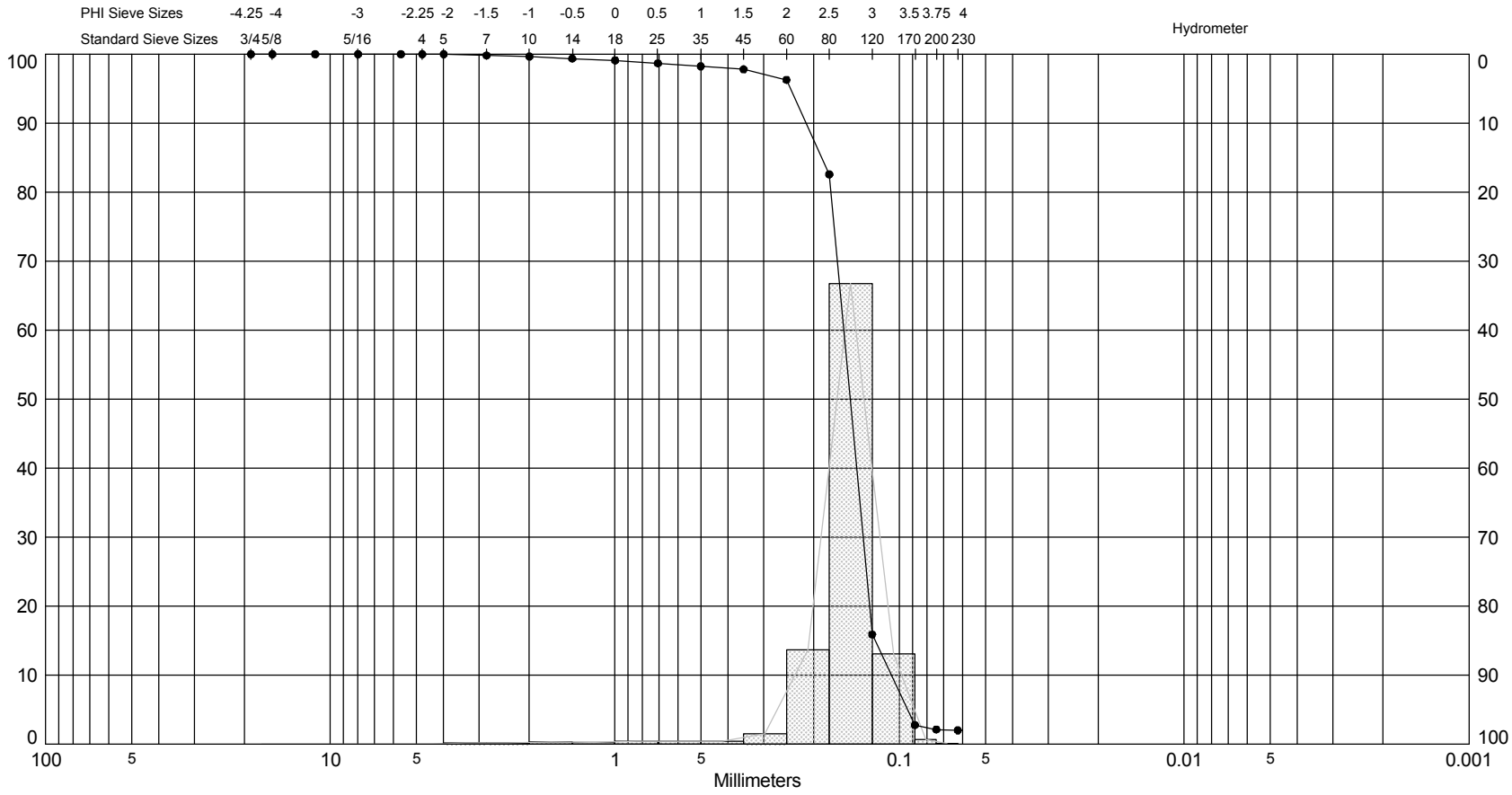
SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-08 #3	—●—	-19.0	SP	#200 - 2.12 #230 - 2.01		7	2.74	2.68	-4	28.36	0.51

Comments:

Depths and elevations based on measured values

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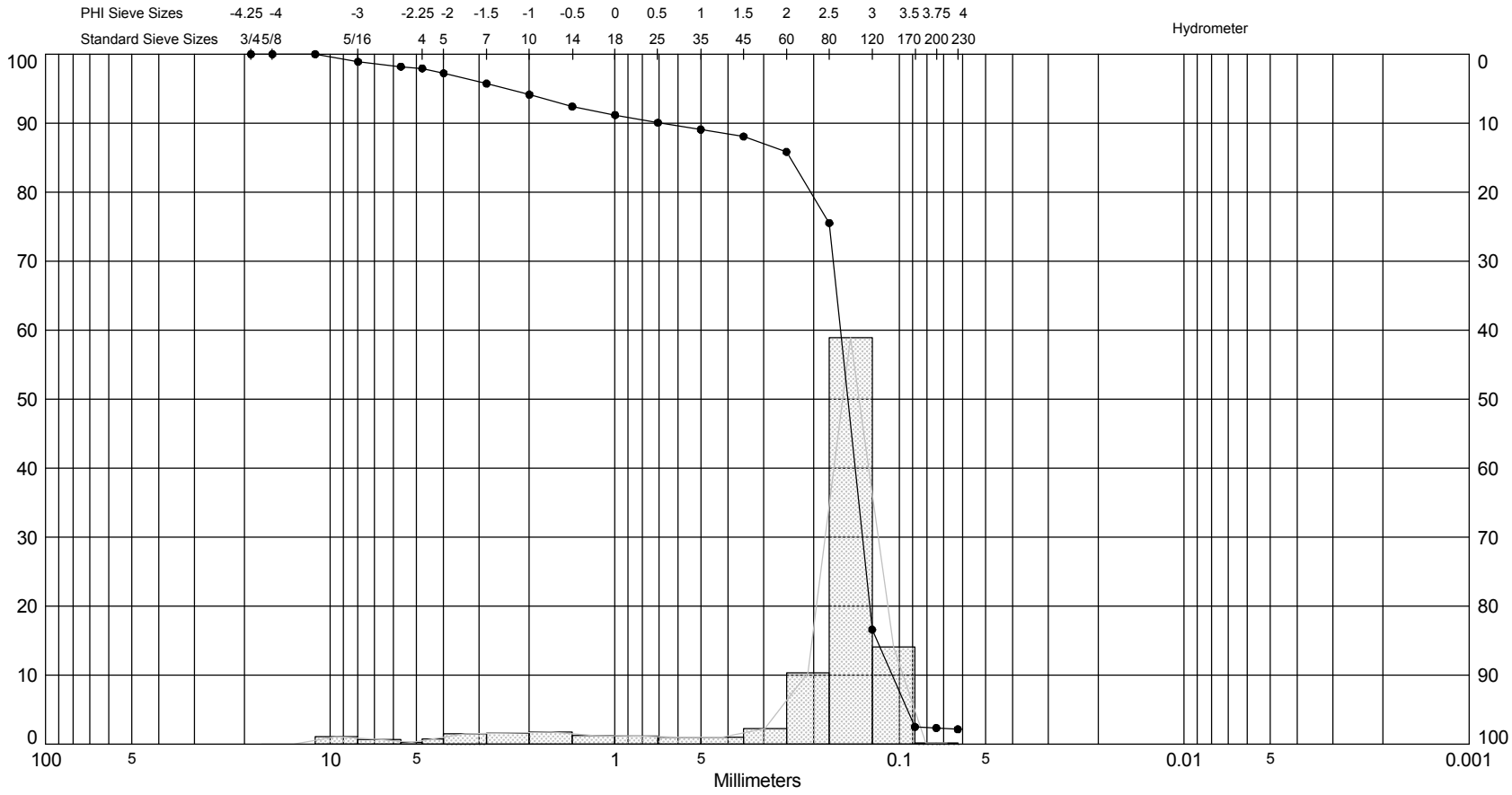
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-08-05
Analyzed By:	CPE
Easting (X, ft):	413,793
Northing (Y, ft):	1,157,117
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-08 #4	—●—	-21.0	SW	#200 - 2.34 #230 - 2.14		11	2.72	2.3	-2.59	8.99	1.33

Comments:

Depths and elevations based on measured values

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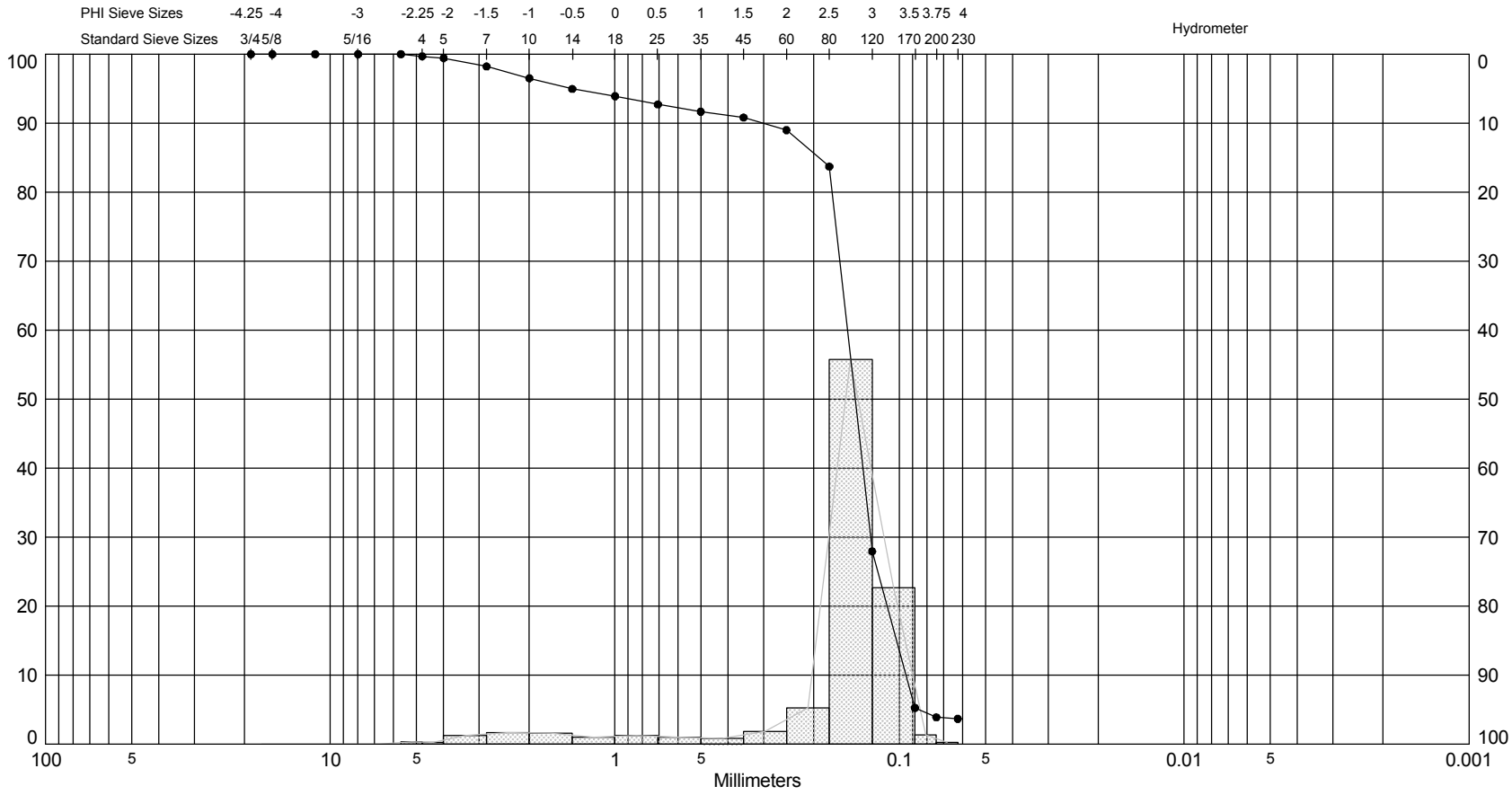
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	02-28-05
Analyzed By:	CPE
Easting (X, ft):	413,793
Northing (Y, ft):	1,157,117
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-08 #5	—●—	-23.0	SP	#200 - 3.88 #230 - 3.66			2.8	2.52	-2.74	10.07	1.08

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-07-05
Analyzed By:	CPE
Easting (X, ft):	413,793
Northing (Y, ft):	1,157,117
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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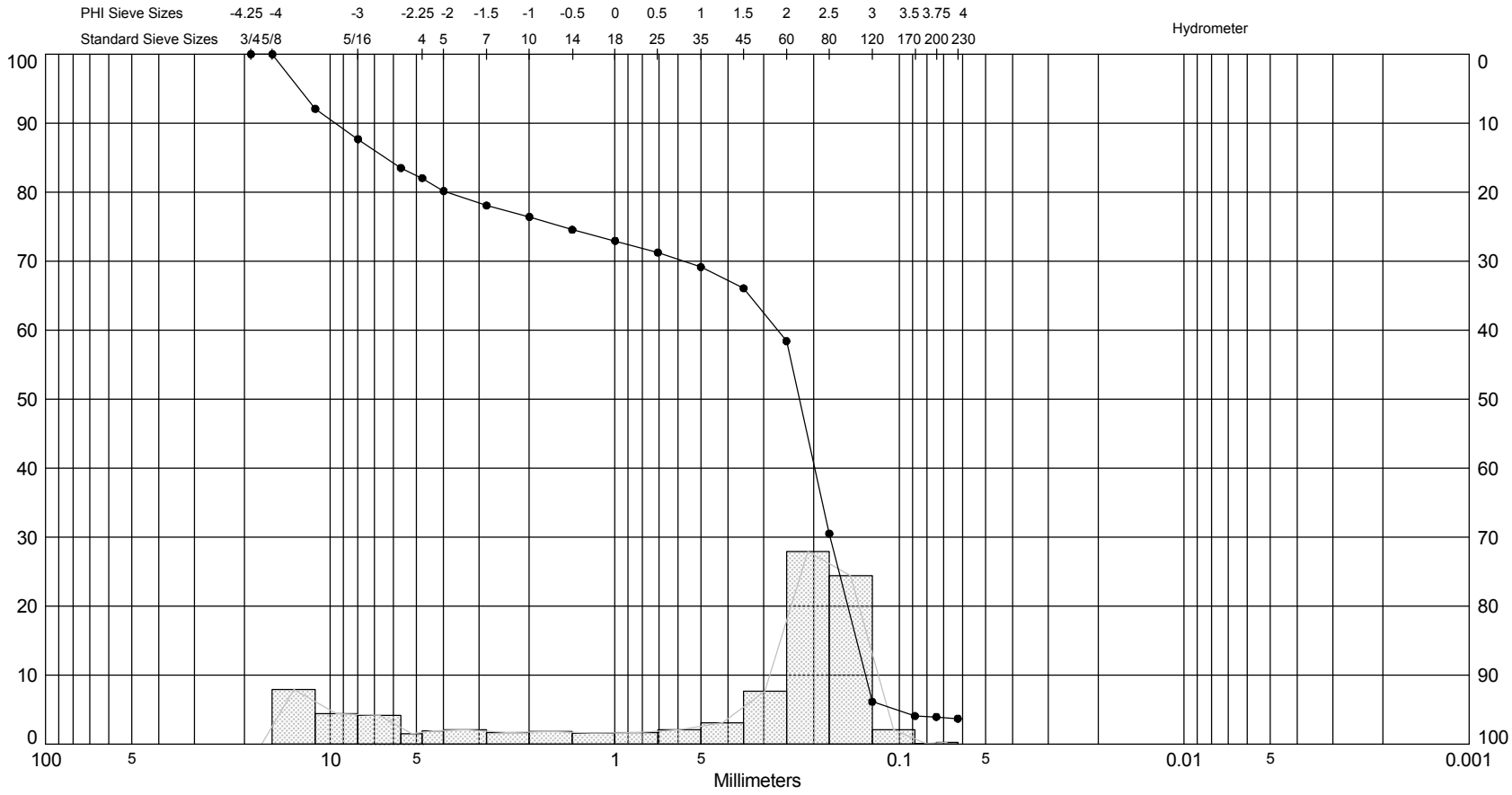

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-08 #6	—●—	-25.5	SP	#200 - 3.95 #230 - 3.70			2.15	0.9	-1.01	2.38	2.32

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	413,793
Northing (Y, ft):	1,157,117
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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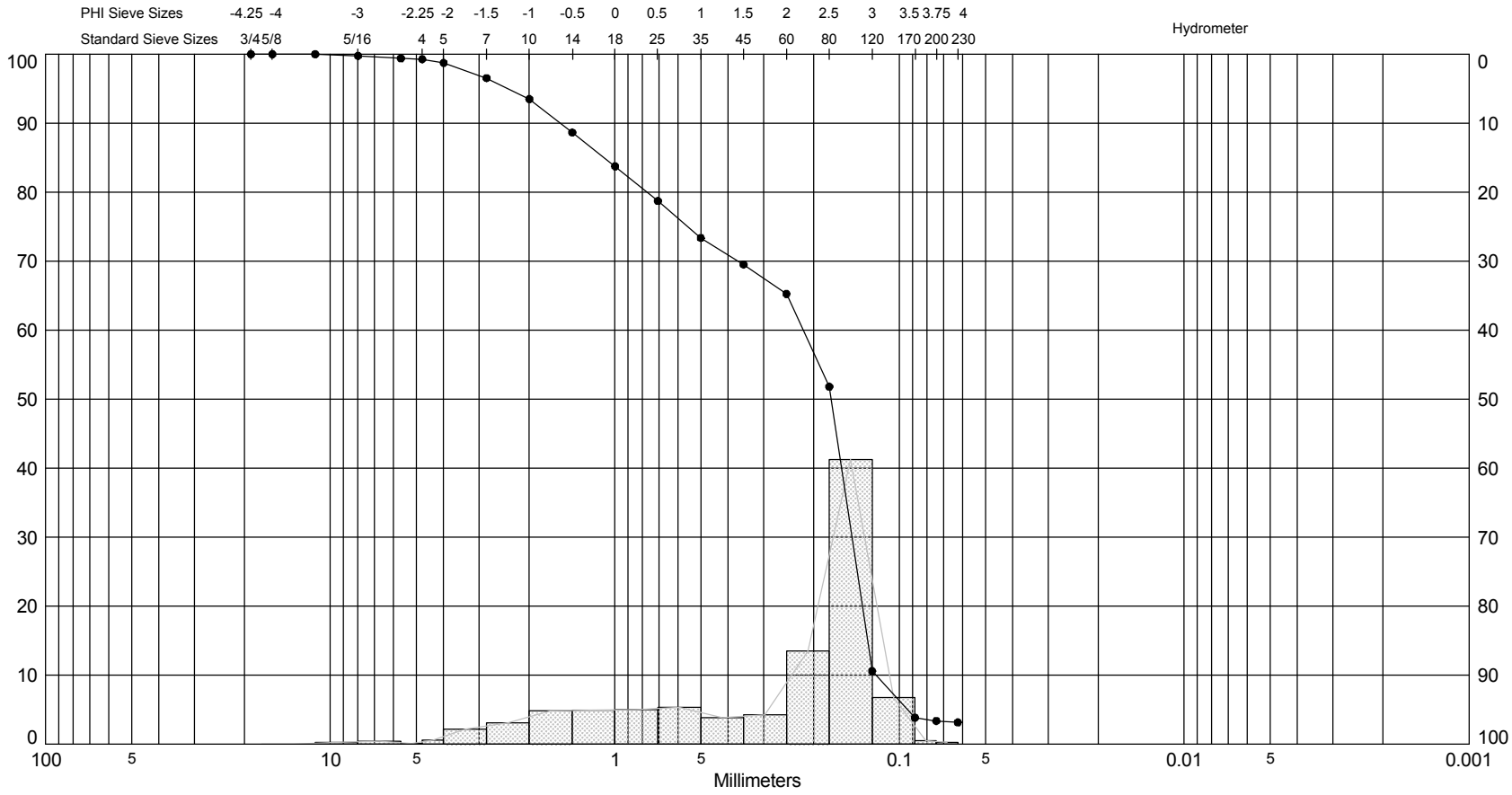

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-09 #1	—●—	-19.6	SW	#200 - 3.36 #230 - 3.14		44	2.52	1.75	-1.15	3.19	1.46

Comments:

Depths and elevations based on measured values

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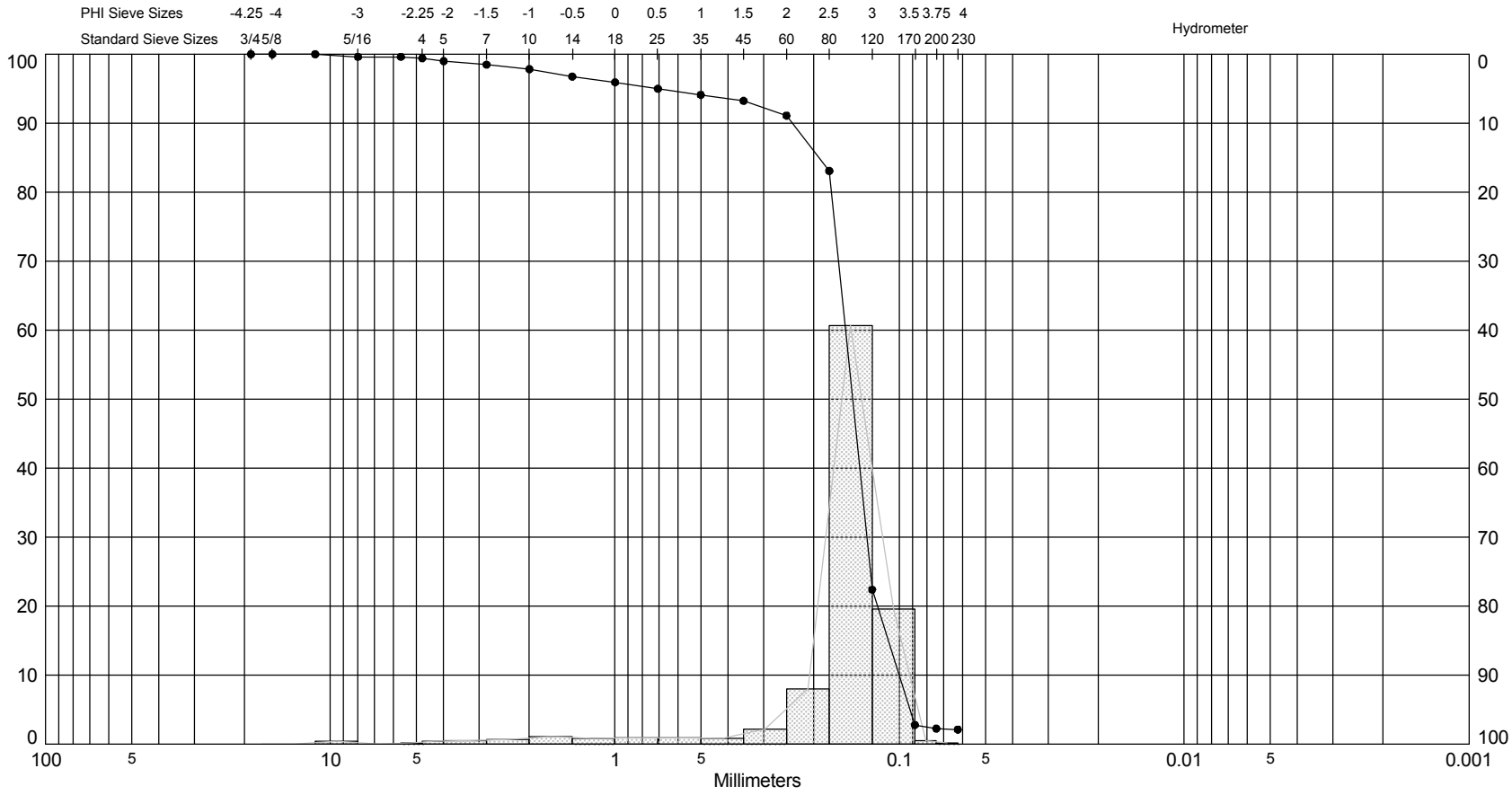
fax (561) 391-9116

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	413,365
Northing (Y, ft):	1,157,436
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-09 #2	—●—	-21.1	SW	#200 - 2.25 #230 - 2.11		10	2.77	2.57	-3.48	16.44	0.95

Comments:

Depths and elevations based on measured values

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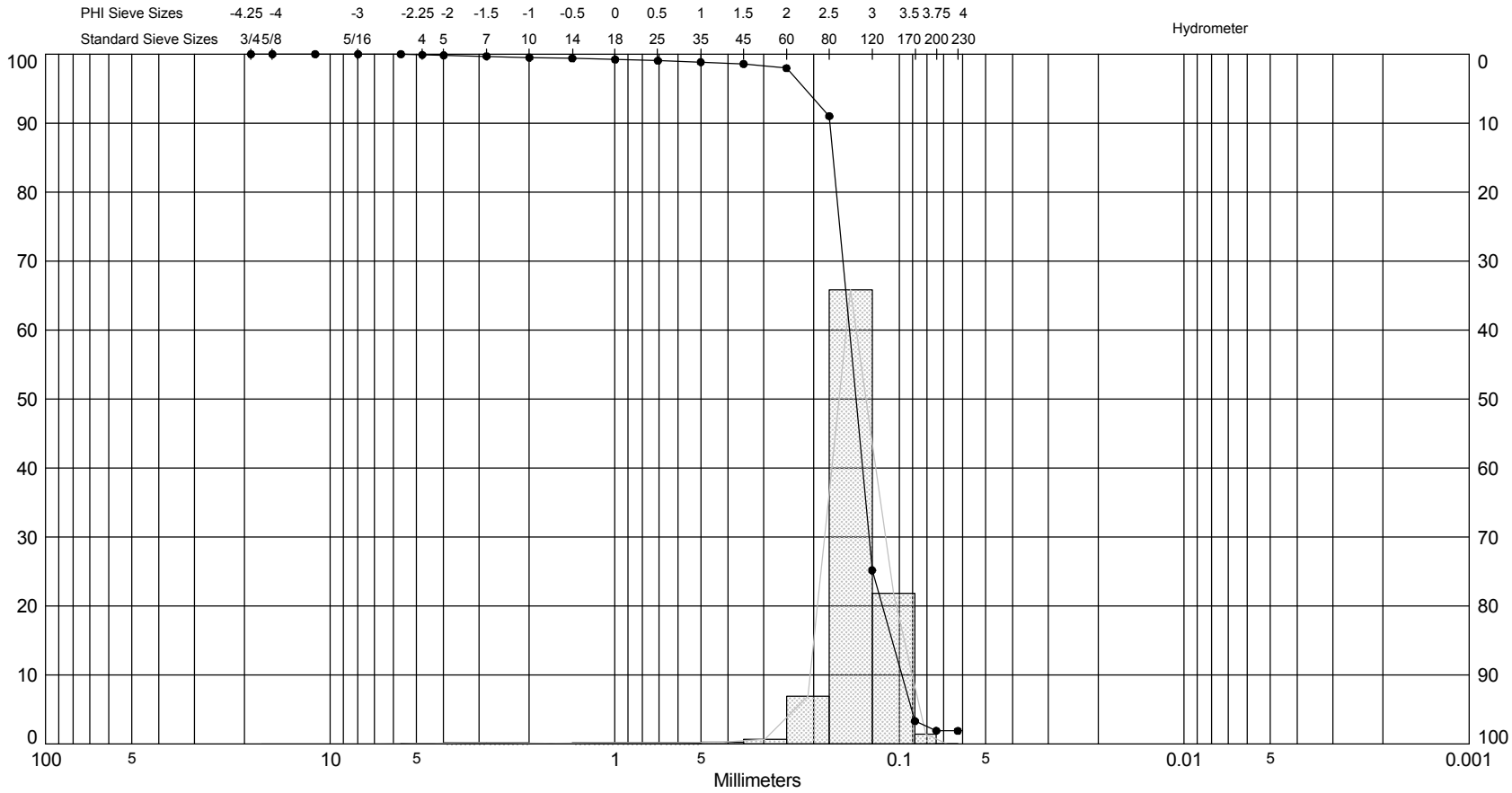
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	413,365
Northing (Y, ft):	1,157,436
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-09 #3	—●—	-24.6	SP	#200 - 1.90 #230 - 1.88			2.81	2.79	-5.08	44.51	0.5

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-05-05
Analyzed By:	CPE
Easting (X, ft):	413,365
Northing (Y, ft):	1,157,436
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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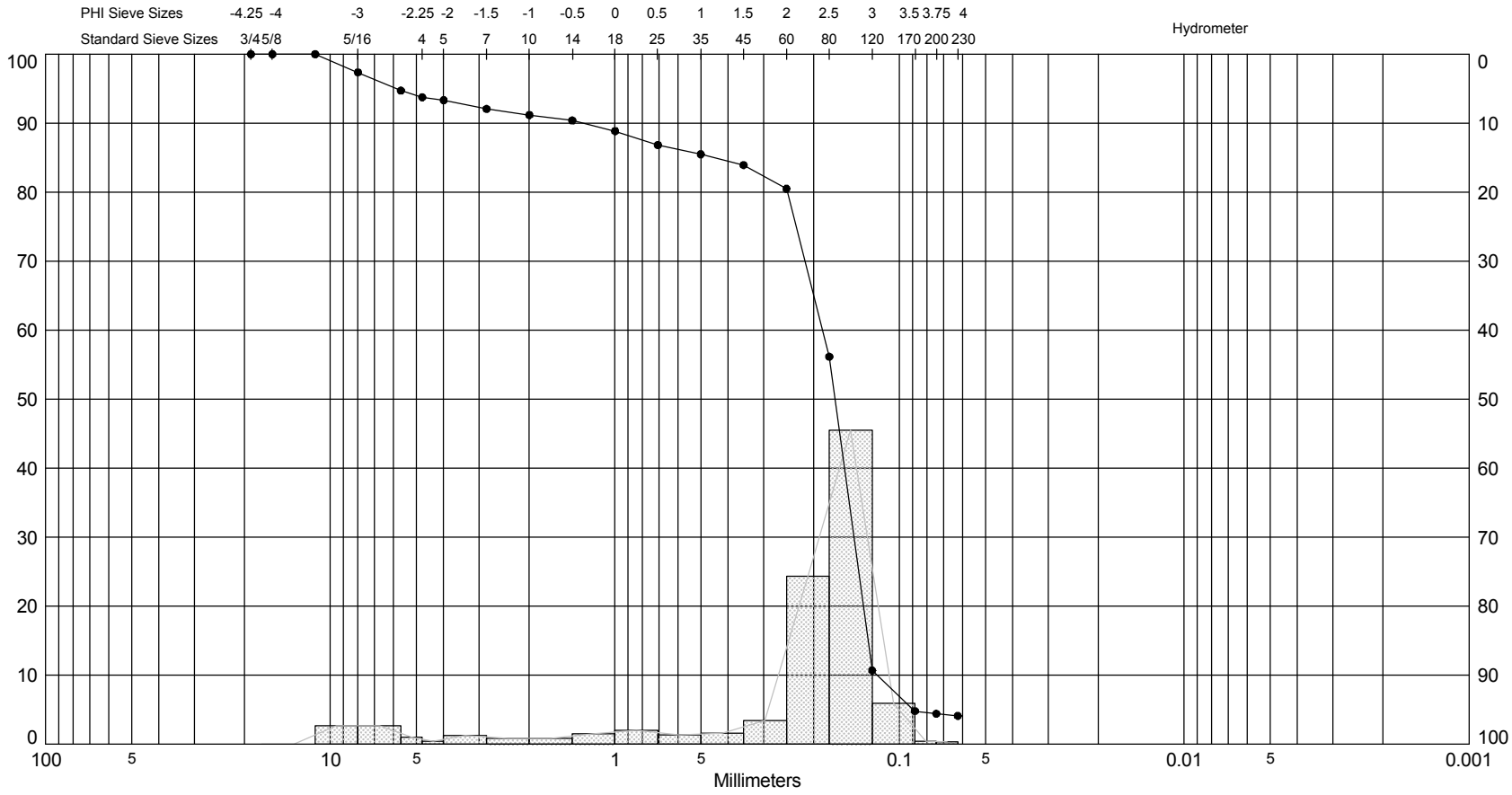

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-09 #4	—●—	-26.1	SP	#200 - 4.40 #230 - 4.10			2.57	1.96	-2.16	6.58	1.6

Comments:

Depths and elevations based on measured values

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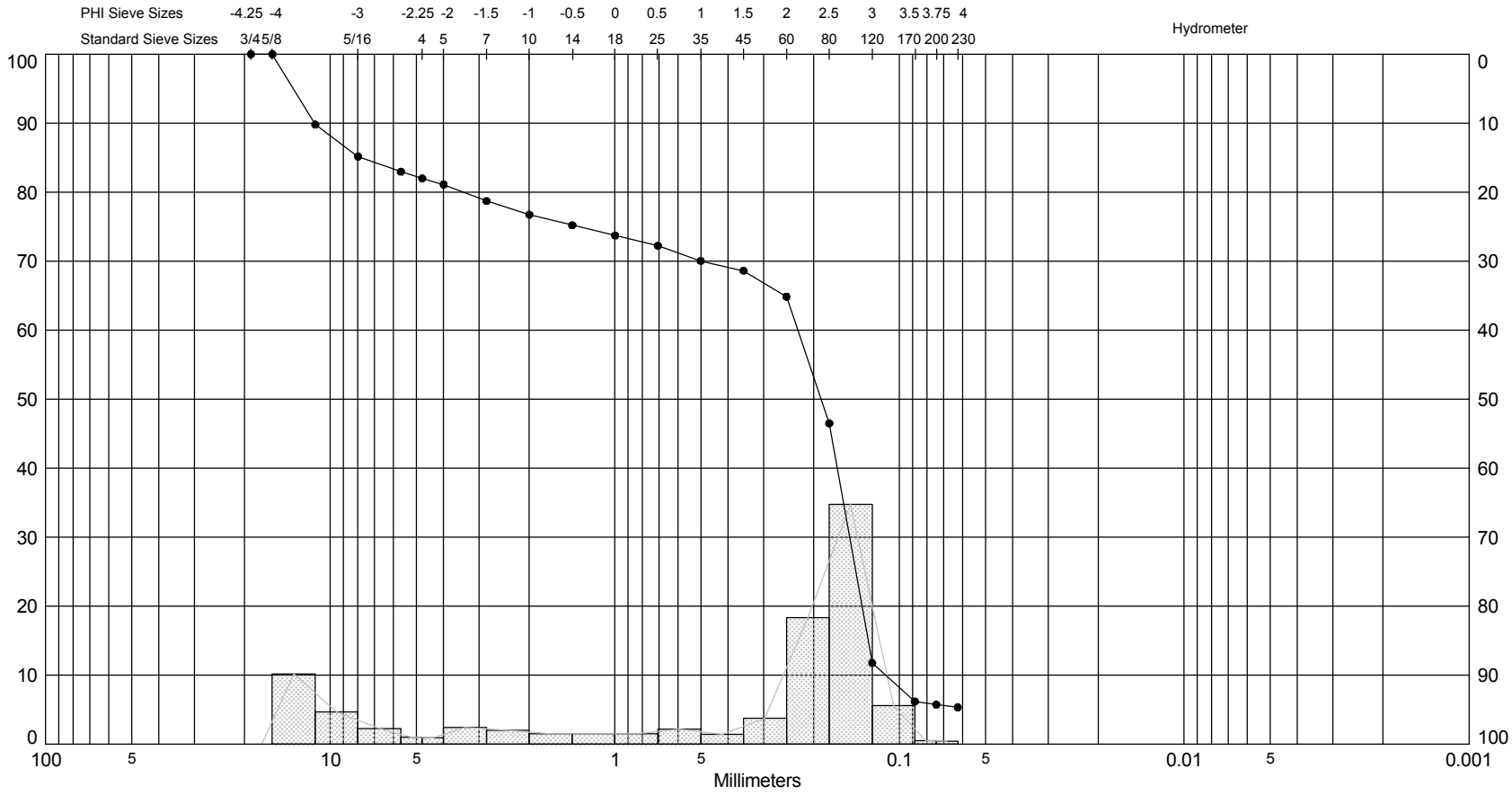
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	413,365
Northing (Y, ft):	1,157,436
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-09 #5	—●—	-28.1	SP-SM	#200 - 5.72 #230 - 5.34			2.4	1.02	-1.03	2.38	2.46

Comments:

Depths and elevations based on measured values

Coastal Planning & Engineering
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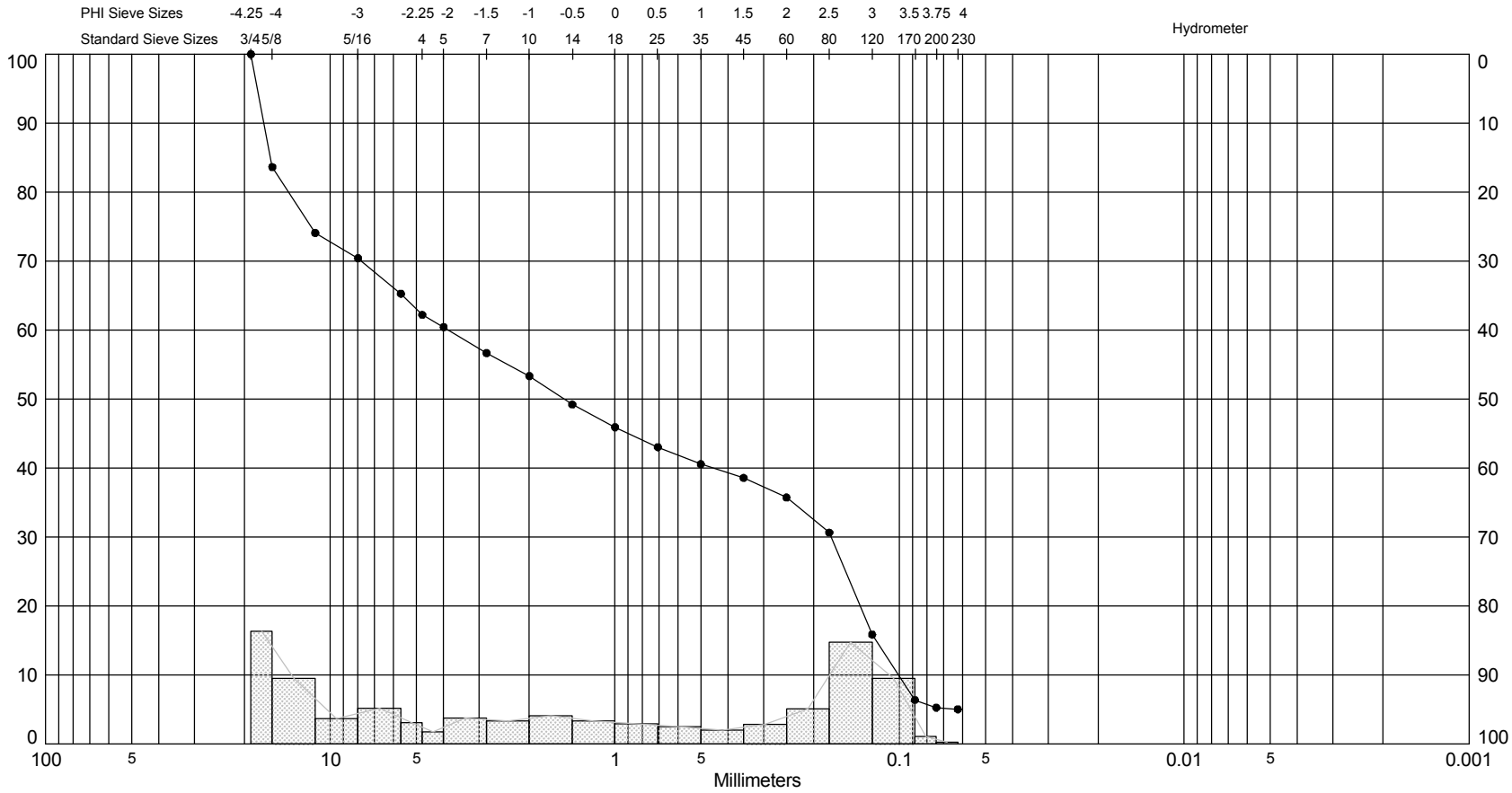
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	413,365
Northing (Y, ft):	1,157,436
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-09 #6	—●—	-32.1	SP-SM	#200 - 5.26 #230 - 5.03				-0.6	0.1	1.39	2.85

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-07-05
Analyzed By:	CPE
Easting (X, ft):	413,365
Northing (Y, ft):	1,157,436
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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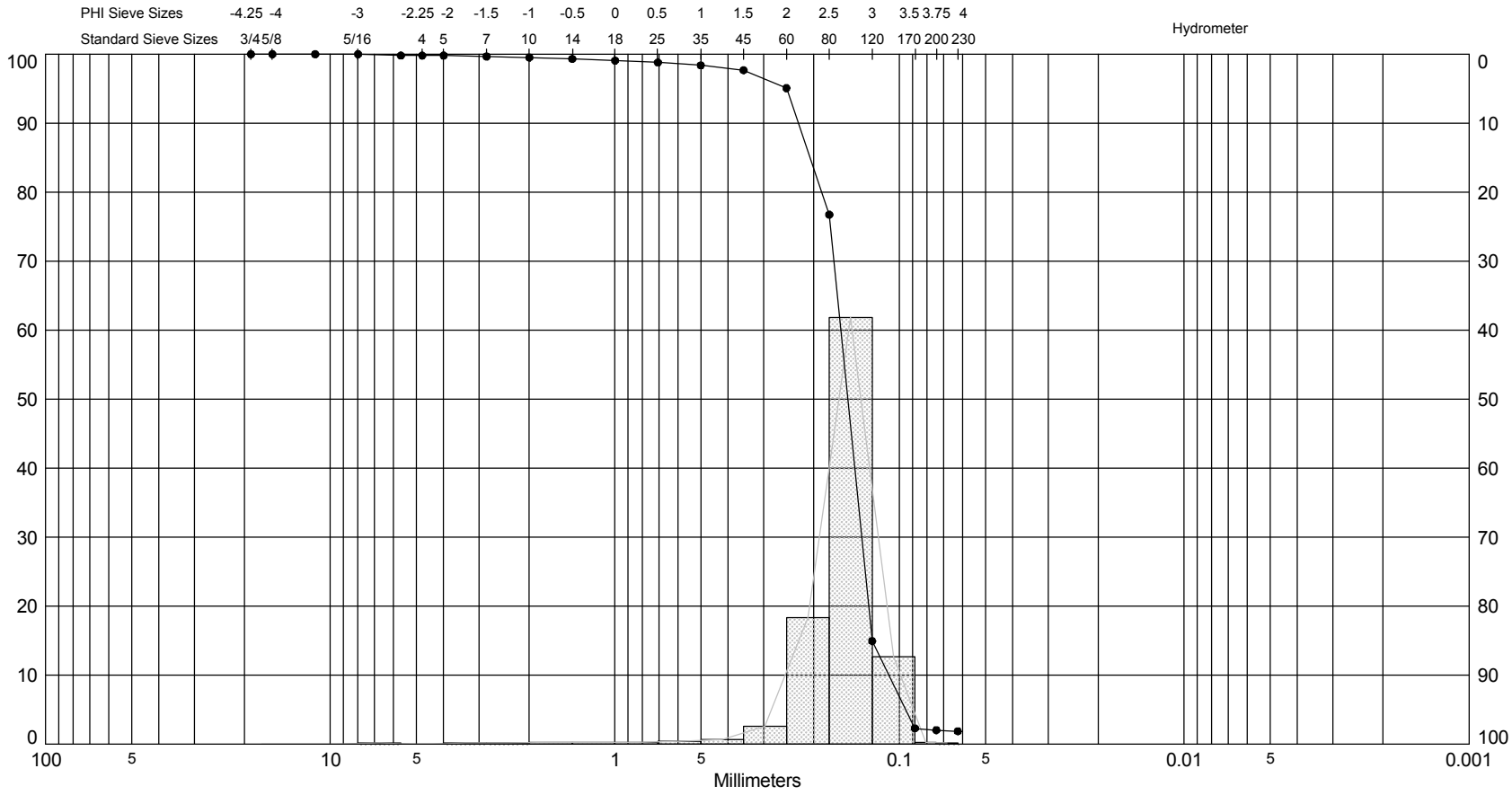

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-11 #1	—●—	-19.7	SP	#200 - 2.03 #230 - 1.87		5	2.72	2.63	-4.33	33.93	0.56

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	02-28-05
Analyzed By:	CPE
Easting (X, ft):	413,677
Northing (Y, ft):	1,156,316
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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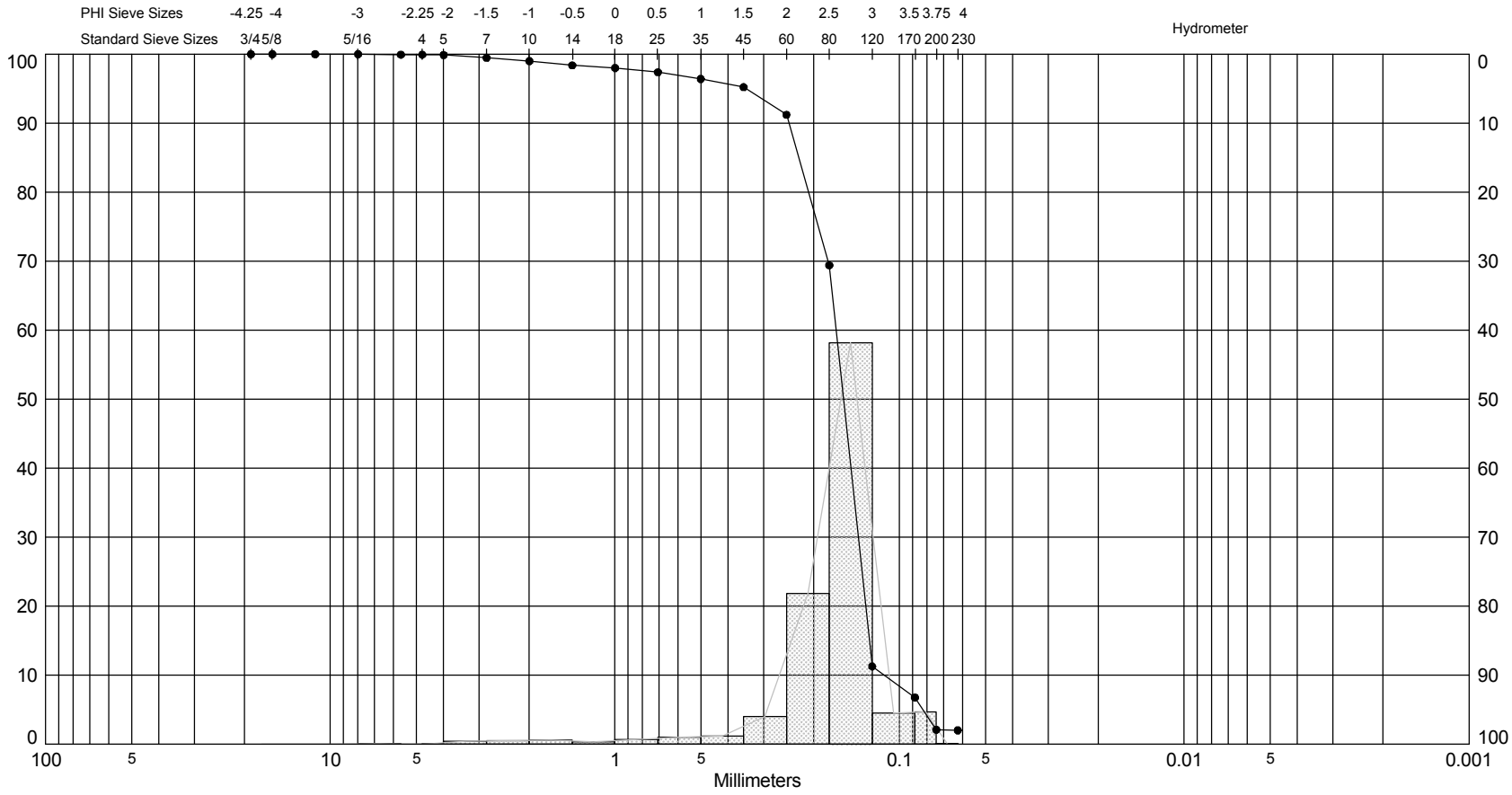

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-11 #2	—●—	-21.7	SP	#200 - 2.08 #230 - 2.00		7	2.67	2.53	-3.12	17.3	0.71

Comments:

Depths and elevations based on measured values

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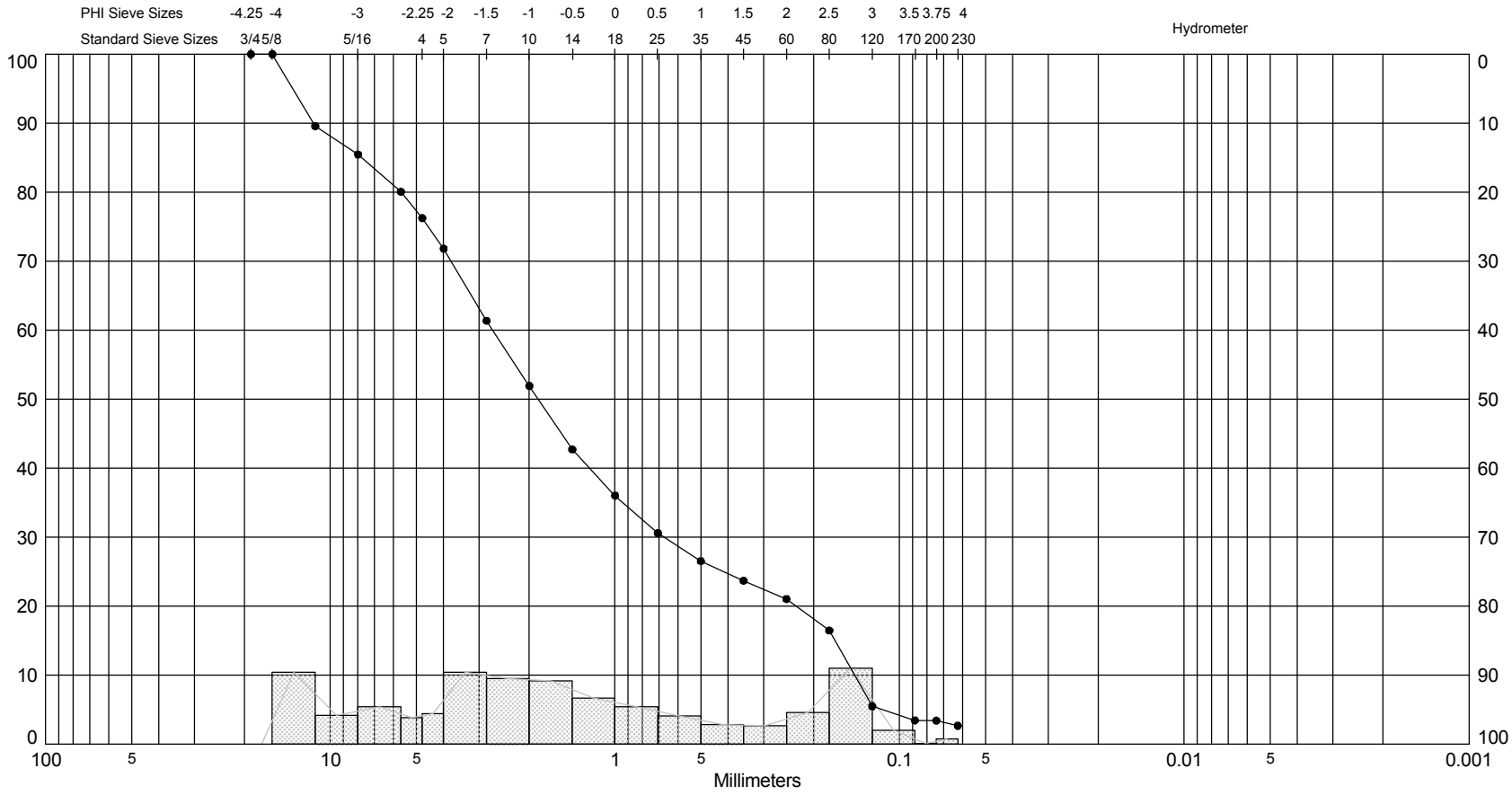
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	02-28-05
Analyzed By:	CPE
Easting (X, ft):	413,677
Northing (Y, ft):	1,156,316
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-11 #3	—●—	-22.7	SW	#200 - 3.40 #230 - 2.66		80		-0.63	0.33	2.03	2.13

Comments:

Depths and elevations based on measured values

Coastal Planning & Engineering
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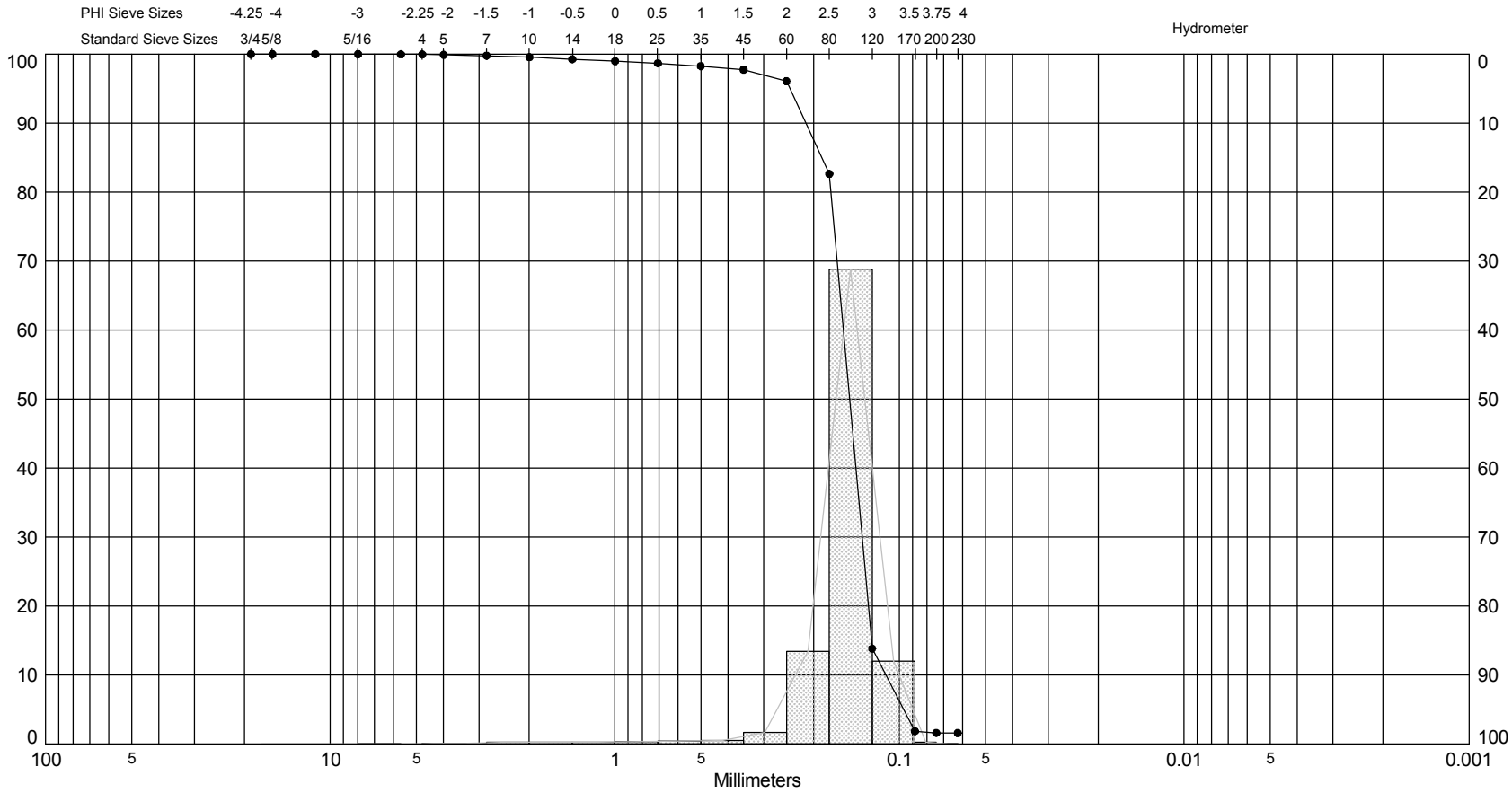
fax (561) 391-9116

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	02-28-05
Analyzed By:	CPE
Easting (X, ft):	413,677
Northing (Y, ft):	1,156,316
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-11 #4	—●—	-23.3	SP	#200 - 1.60 #230 - 1.58			2.74	2.67	-4.48	33.03	0.52

Comments:

Depths and elevations based on measured values

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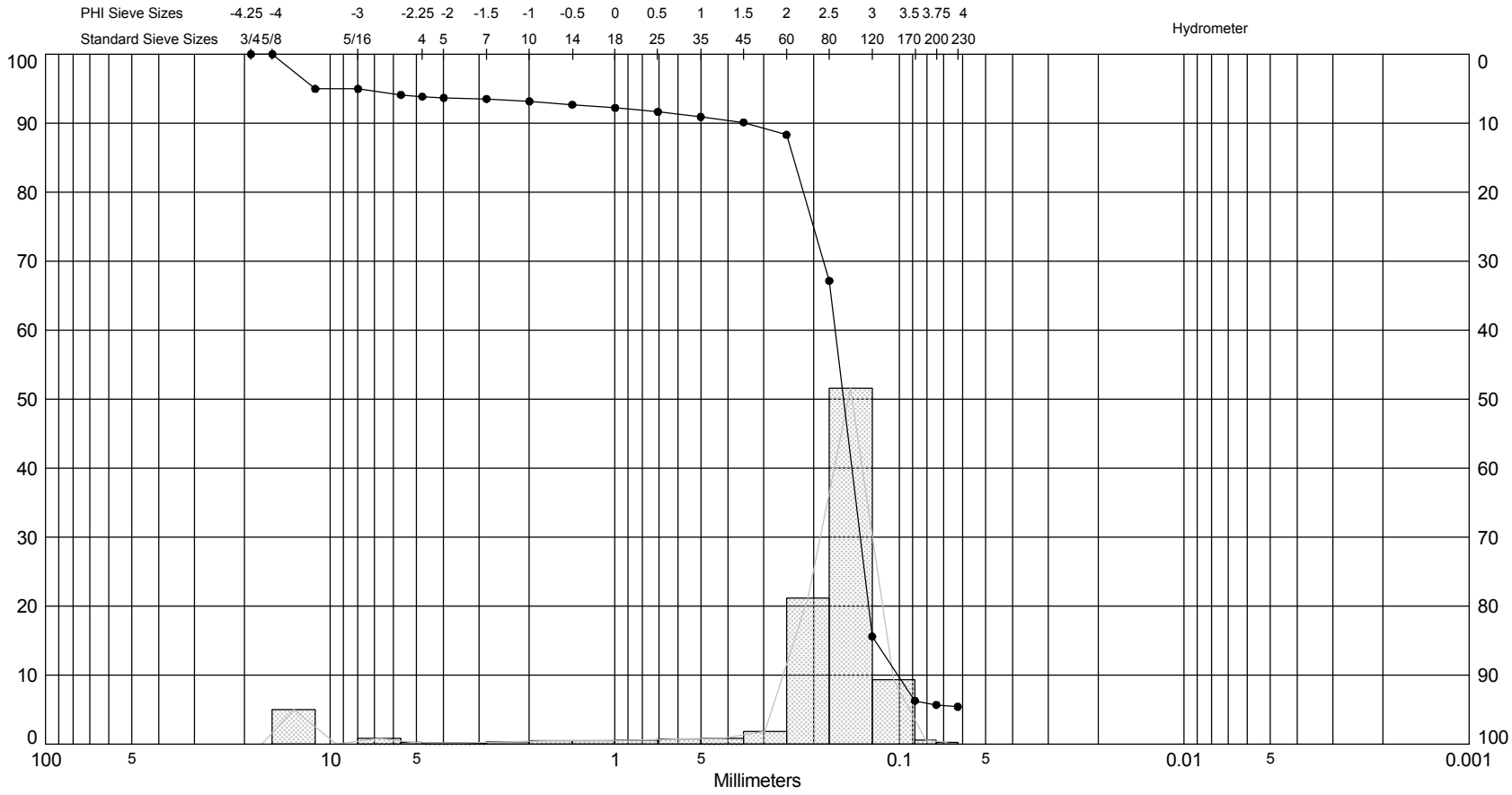
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-05-05
Analyzed By:	CPE
Easting (X, ft):	413,677
Northing (Y, ft):	1,156,316
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-11 #5	—●—	-27.9	SP-SM	#200 - 5.69 #230 - 5.41			2.67	2.16	-2.88	10.22	1.64

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-07-05
Analyzed By:	CPE
Easting (X, ft):	413,677
Northing (Y, ft):	1,156,316
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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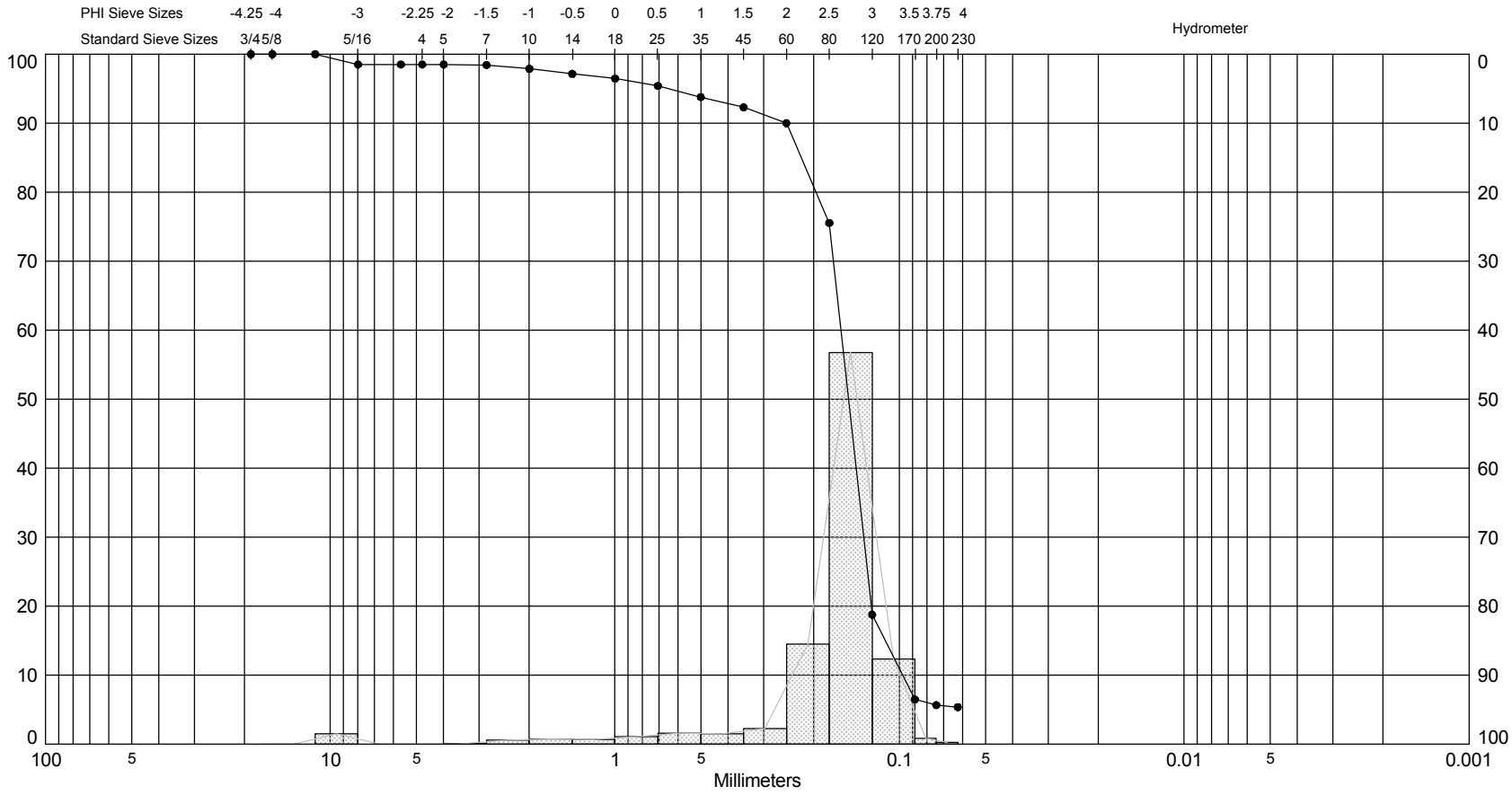

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-11 #6	—●—	-29.6	SP-SM	#200 - 5.65 #230 - 5.36			2.72	2.47	-3.65	18.57	1.02

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-07-05
Analyzed By:	CPE
Easting (X, ft):	413,677
Northing (Y, ft):	1,156,316
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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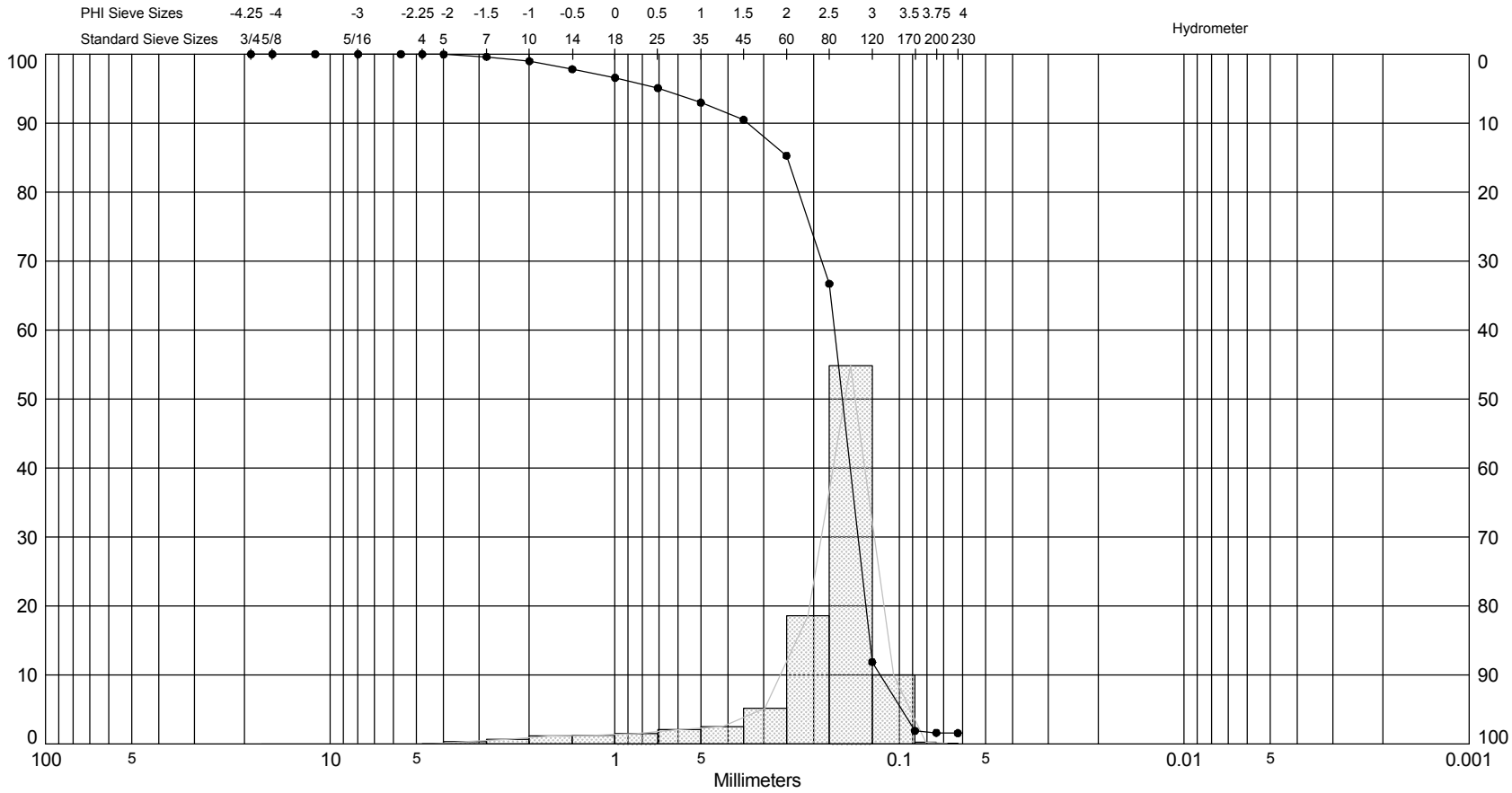

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-13 #1	—●—	-19.3	SP	#200 - 1.61 #230 - 1.56		17	2.65	2.42	-2.49	9.97	0.83

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	412,983
Northing (Y, ft):	1,155,942
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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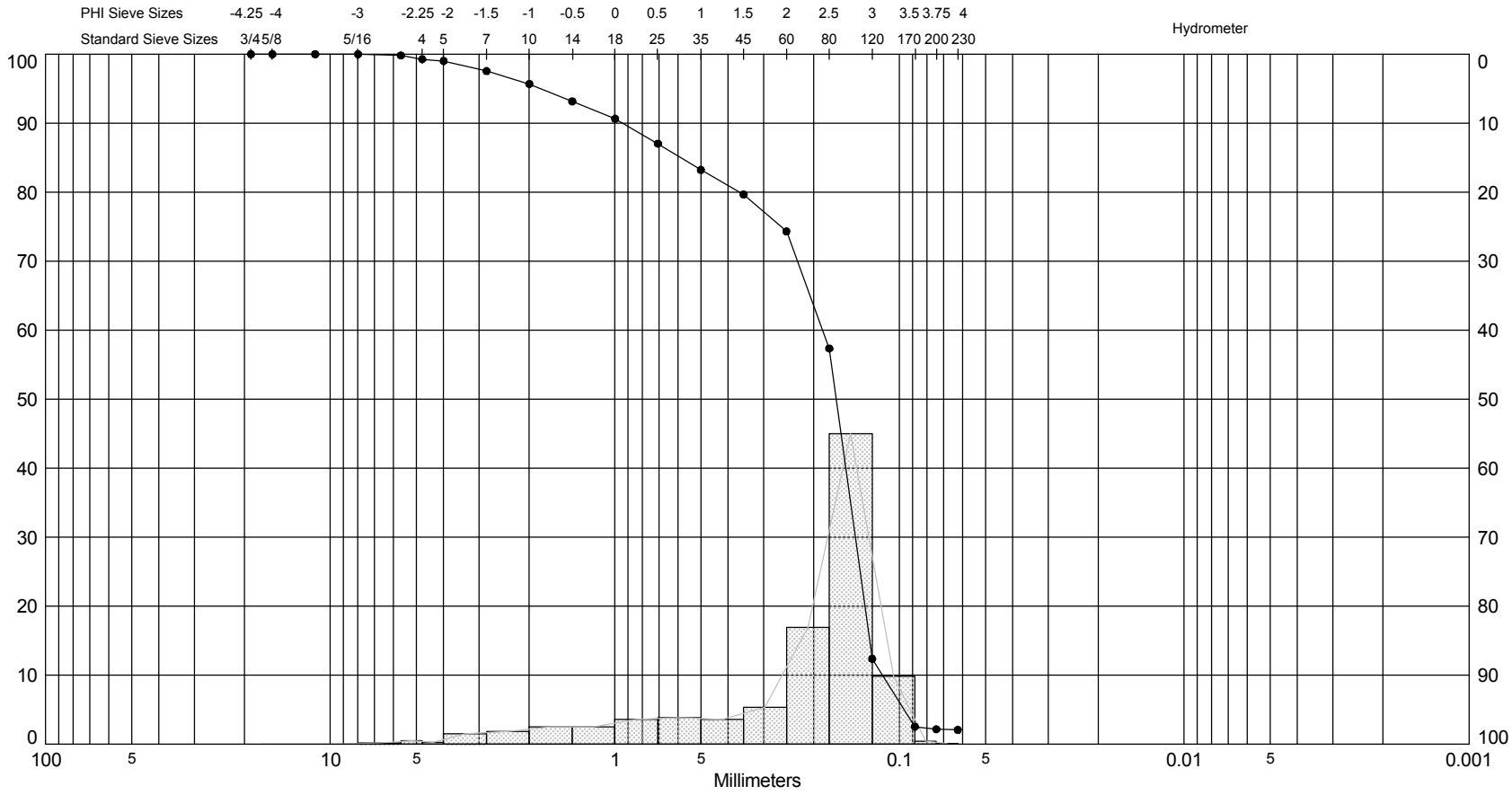

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-13 #2	—●—	-20.8	SW	#200 - 2.15 #230 - 2.05		55	2.58	2.08	-1.72	5.26	1.25

Comments:

Depths and elevations based on measured values

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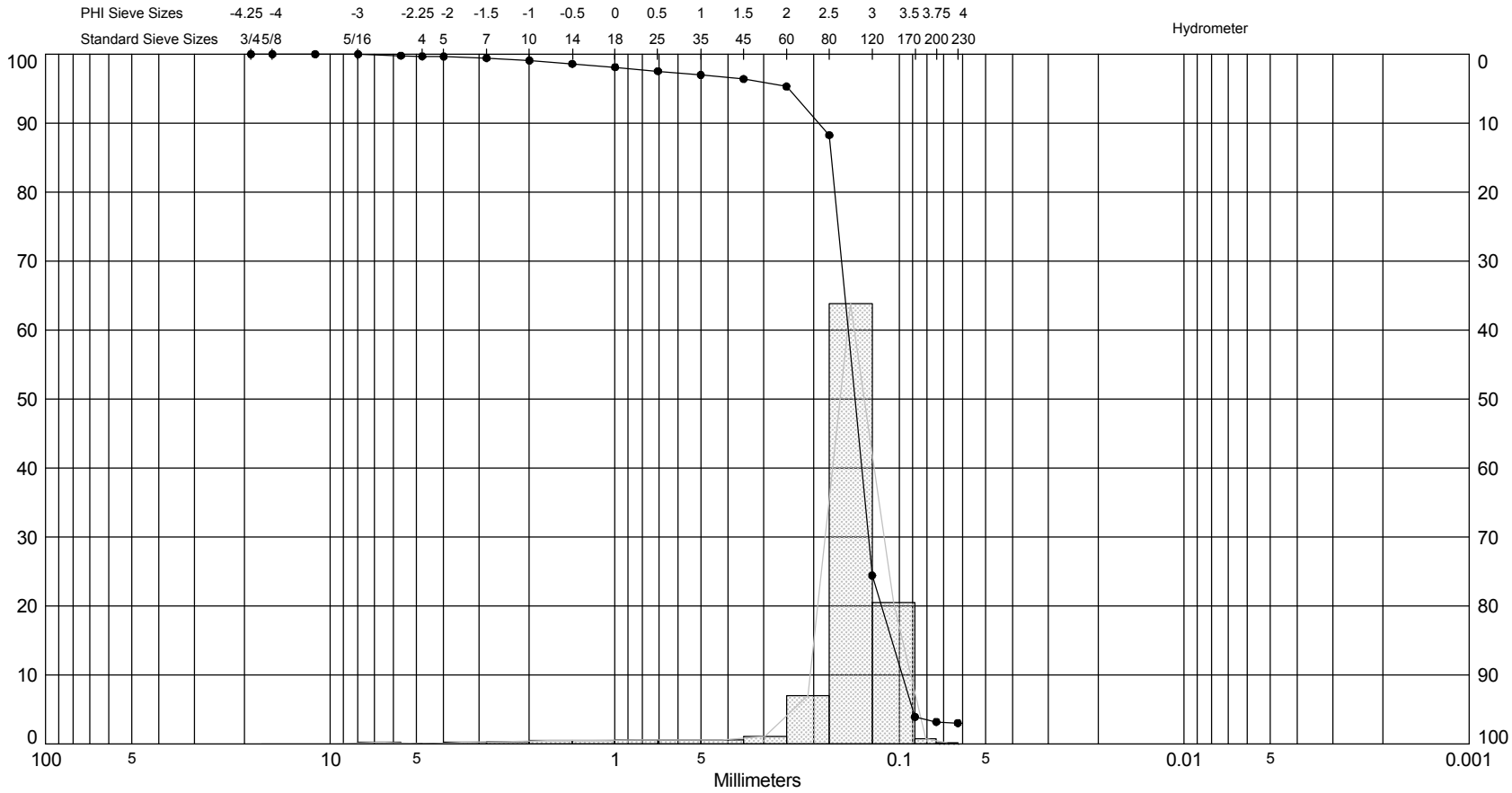
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	412,983
Northing (Y, ft):	1,155,942
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-13 #3	—●—	-22.3	SP	#200 - 3.20 #230 - 3.03		10	2.8	2.7	-4.33	26.96	0.69

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-05-05
Analyzed By:	CPE
Easting (X, ft):	412,983
Northing (Y, ft):	1,155,942
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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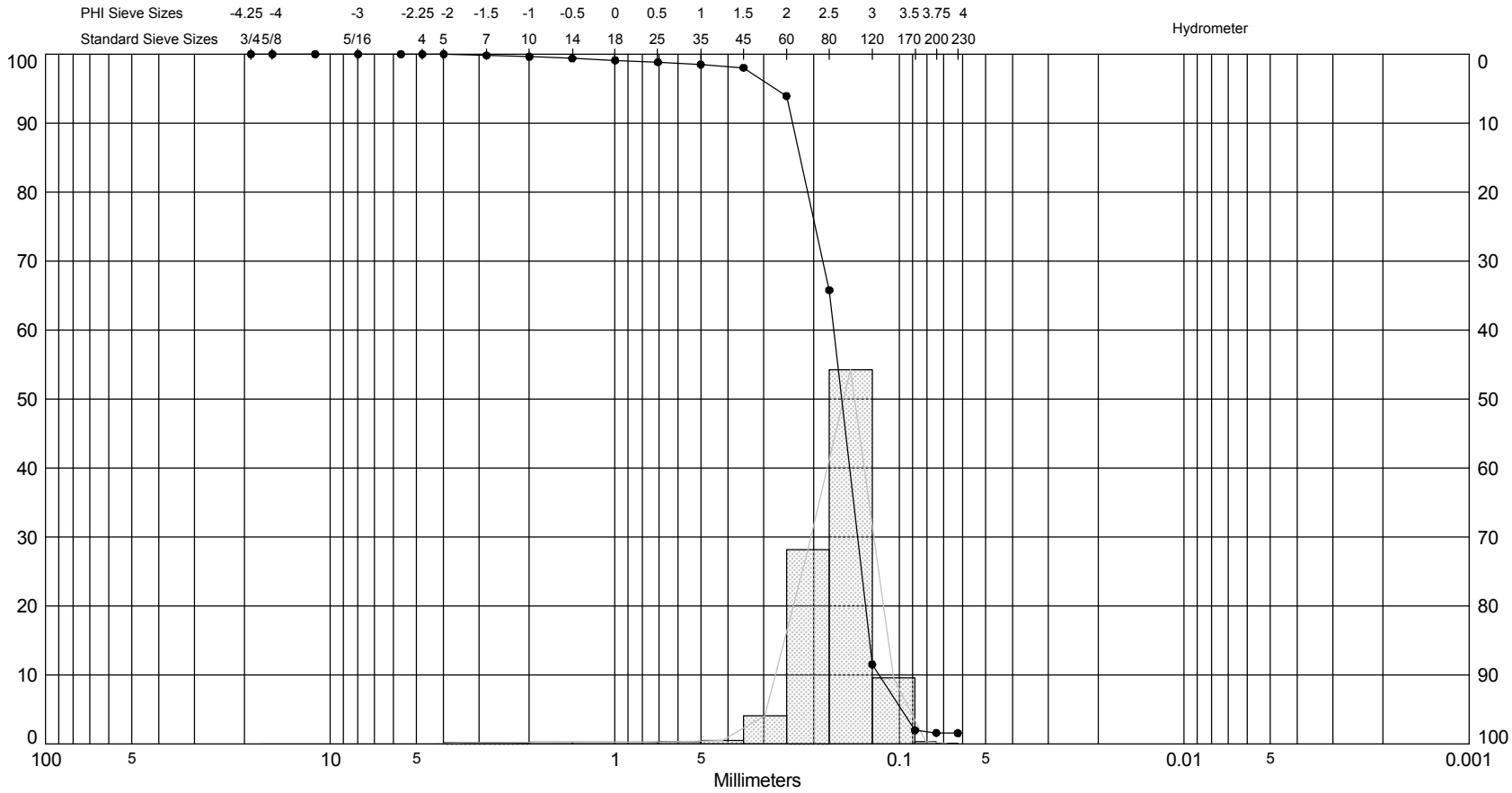
SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-13 #4	—●—	-24.5	SP	#200 - 1.60 #230 - 1.55		4	2.65	2.56	-3.27	23	0.52

Comments:

Depths and elevations based on measured values

Coastal Planning & Engineering
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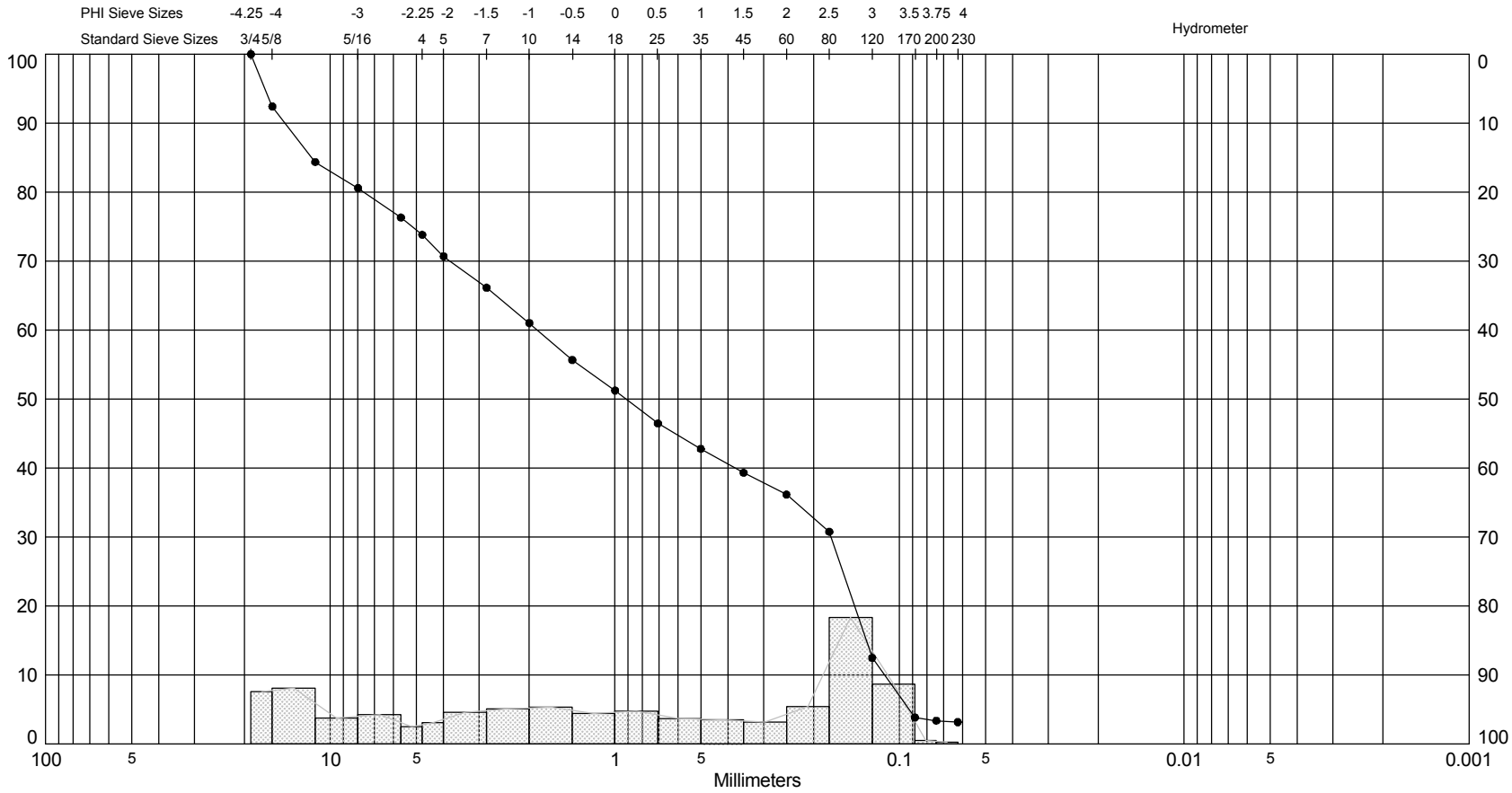
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-05-05
Analyzed By:	CPE
Easting (X, ft):	412,983
Northing (Y, ft):	1,155,942
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-13 #7	—●—	-25.3	SW	#200 - 3.37 #230 - 3.16		52	0.13	-0.11	-0.15	1.56	2.59

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	08-18-08
Analyzed By:	CPE
Easting (X, ft):	412,983
Northing (Y, ft):	1,155,942
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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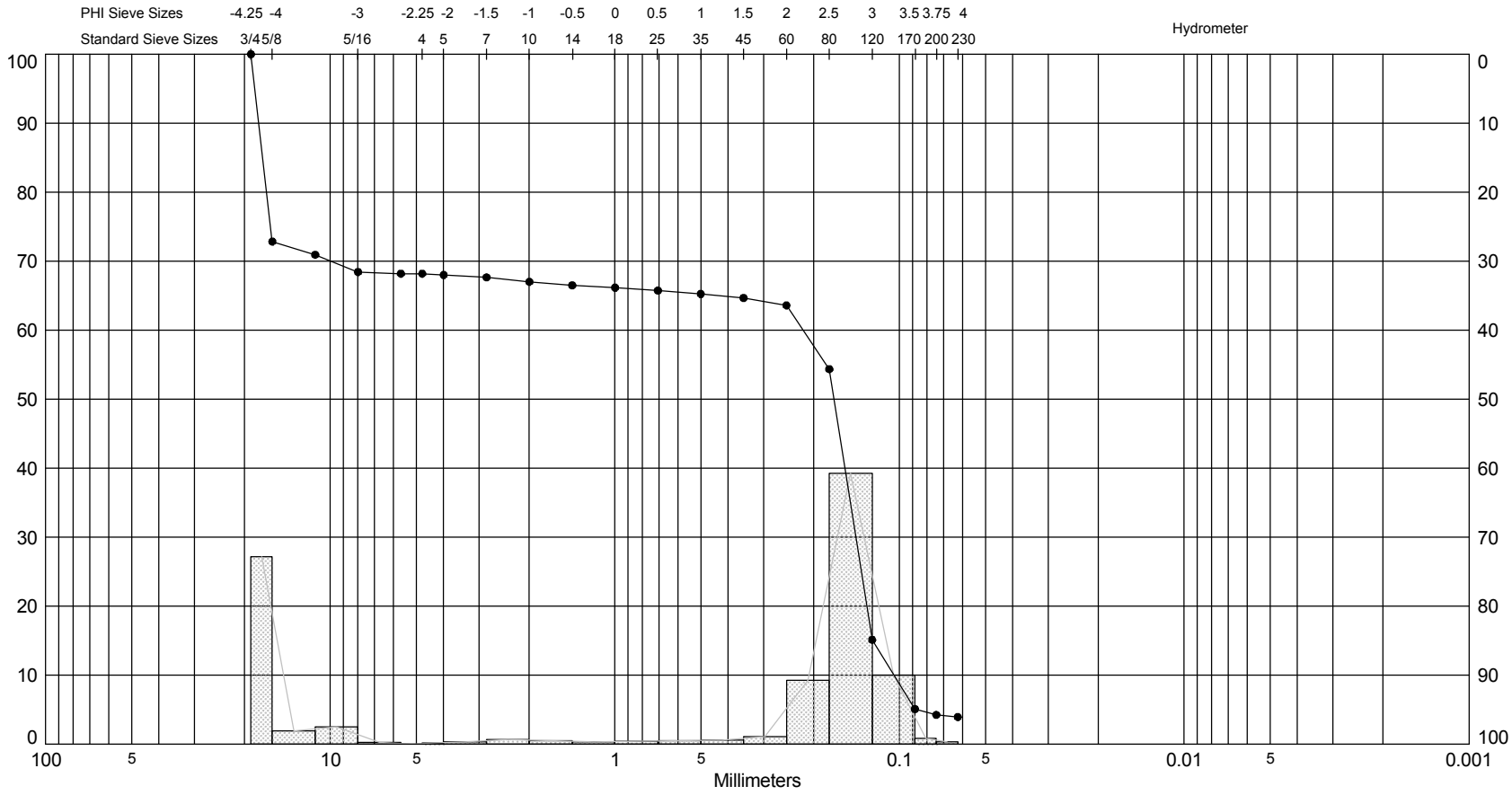

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-13 #5	—●—	-26.8	SP	#200 - 4.23 #230 - 3.93			2.56	0.4	-0.63	1.47	3.19

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-07-05
Analyzed By:	CPE
Easting (X, ft):	412,983
Northing (Y, ft):	1,155,942
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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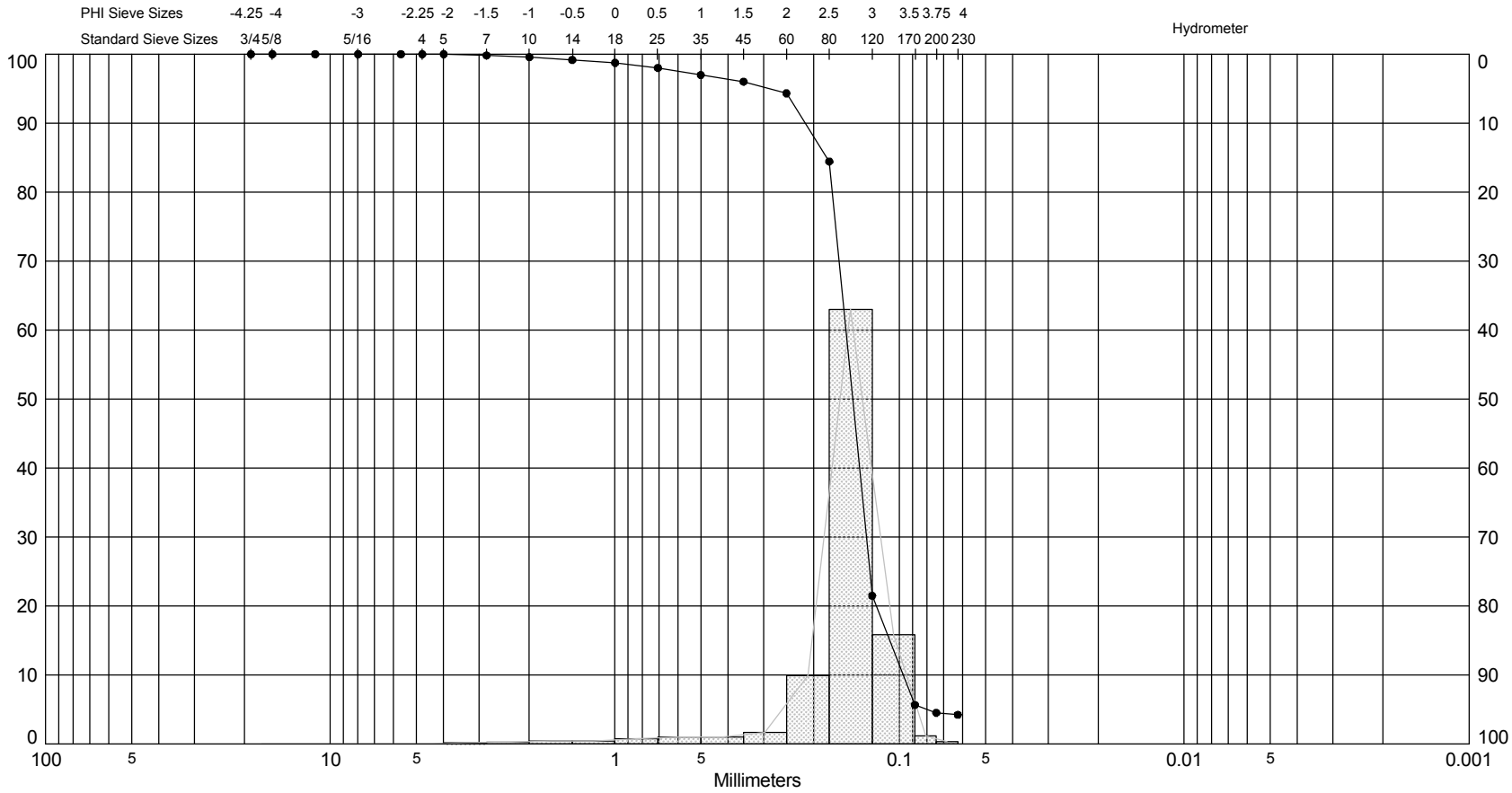

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-13 #6	—●—	-30.1	SP	#200 - 4.51 #230 - 4.21			2.77	2.67	-3.41	19.37	0.61

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-07-05
Analyzed By:	CPE
Easting (X, ft):	412,983
Northing (Y, ft):	1,155,942
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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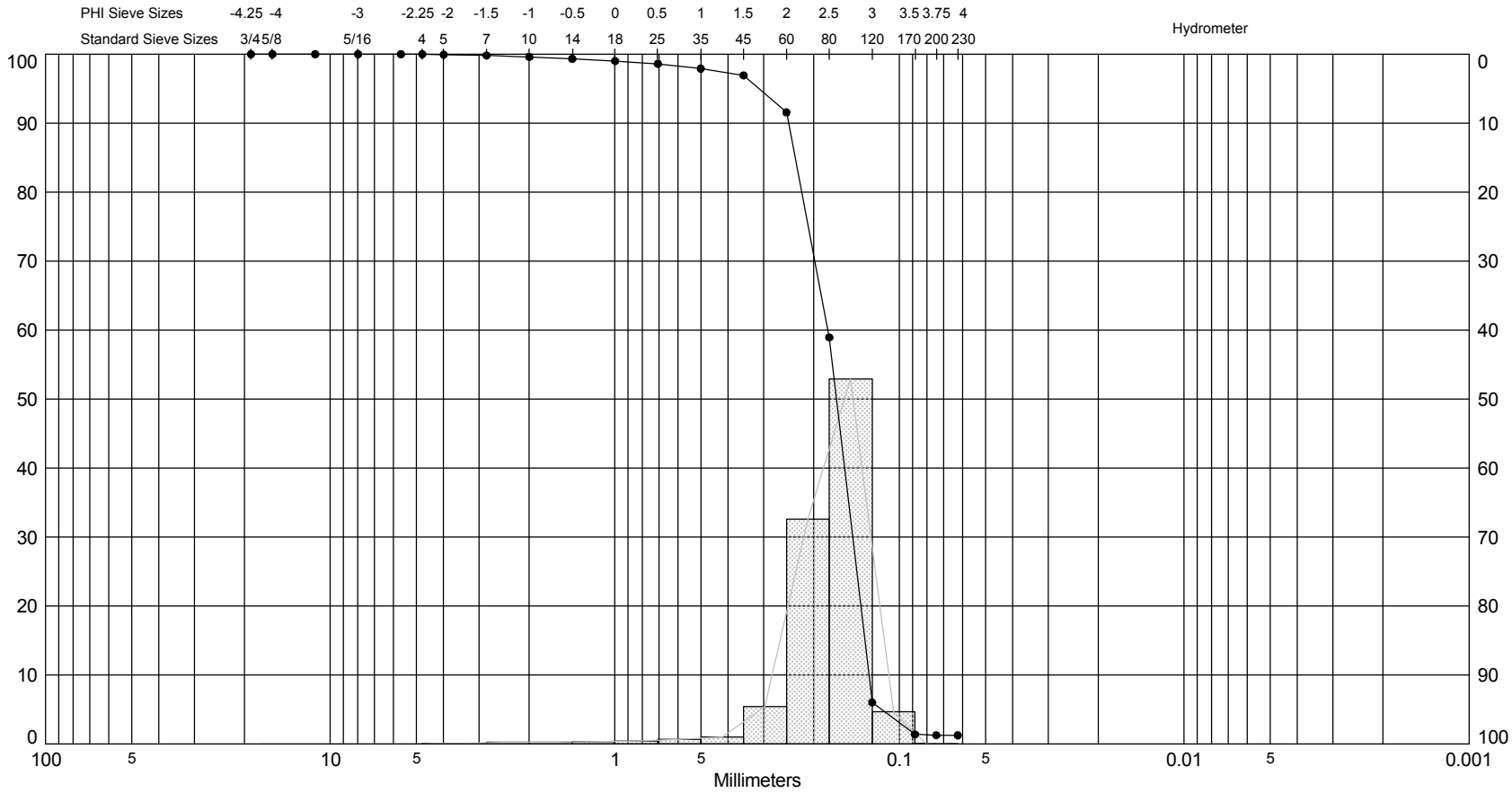

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-14 #1	—●—	-17.6	SP	#200 - 1.27 #230 - 1.26		5	2.58	2.48	-3.32	21.54	0.54

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-05-05
Analyzed By:	CPE
Easting (X, ft):	412,680
Northing (Y, ft):	1,156,488
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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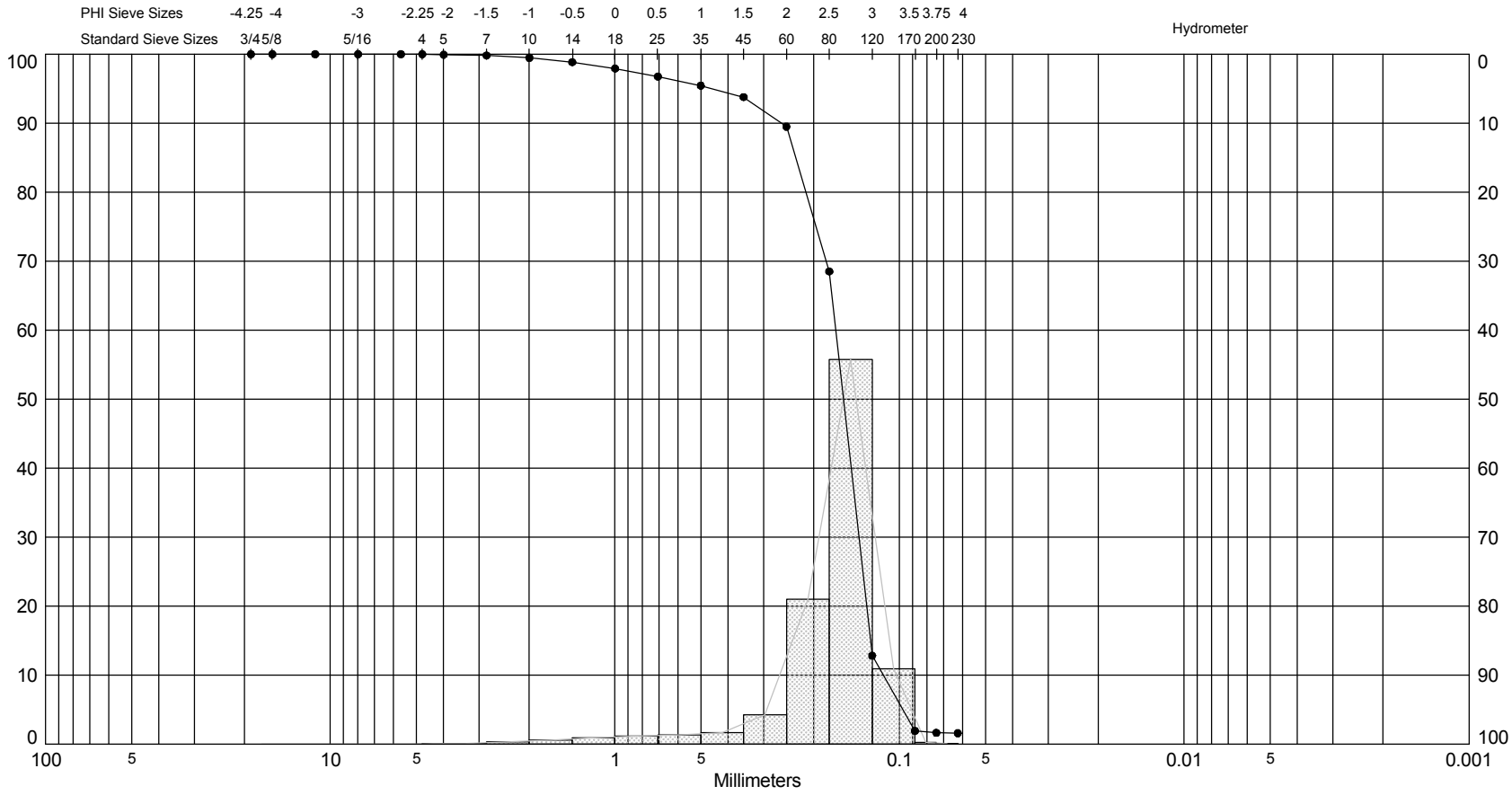

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-14 #2	—●—	-20.1	SP	#200 - 1.64 #230 - 1.59		10	2.67	2.5	-2.8	13.23	0.7

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-05-05
Analyzed By:	CPE
Easting (X, ft):	412,680
Northing (Y, ft):	1,156,488
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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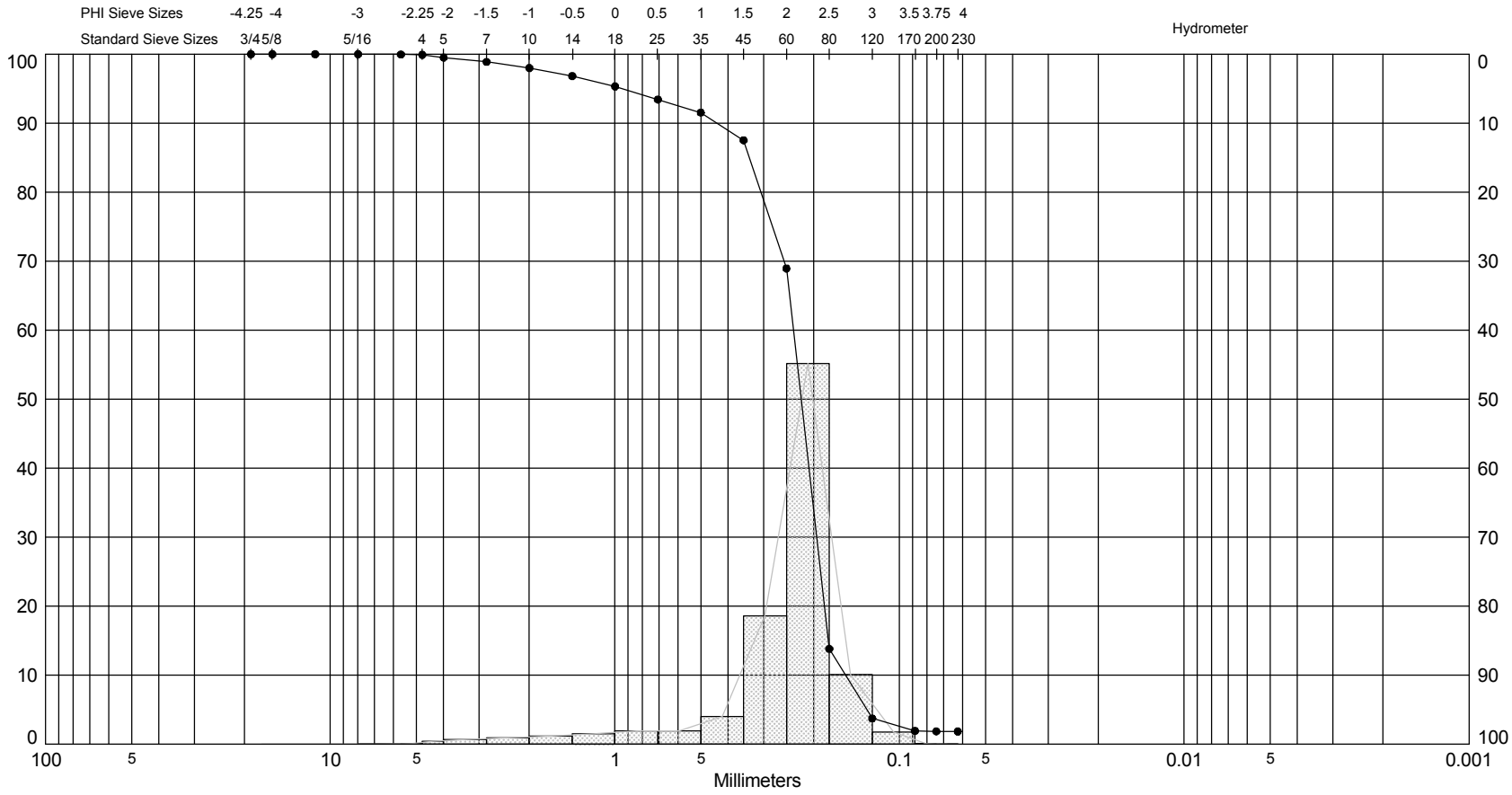

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-14 #3	—●—	-21.1	SP	#200 - 1.85 #230 - 1.84		14	2.17	1.96	-2.52	10.64	0.83

Comments:

Depths and elevations based on measured values

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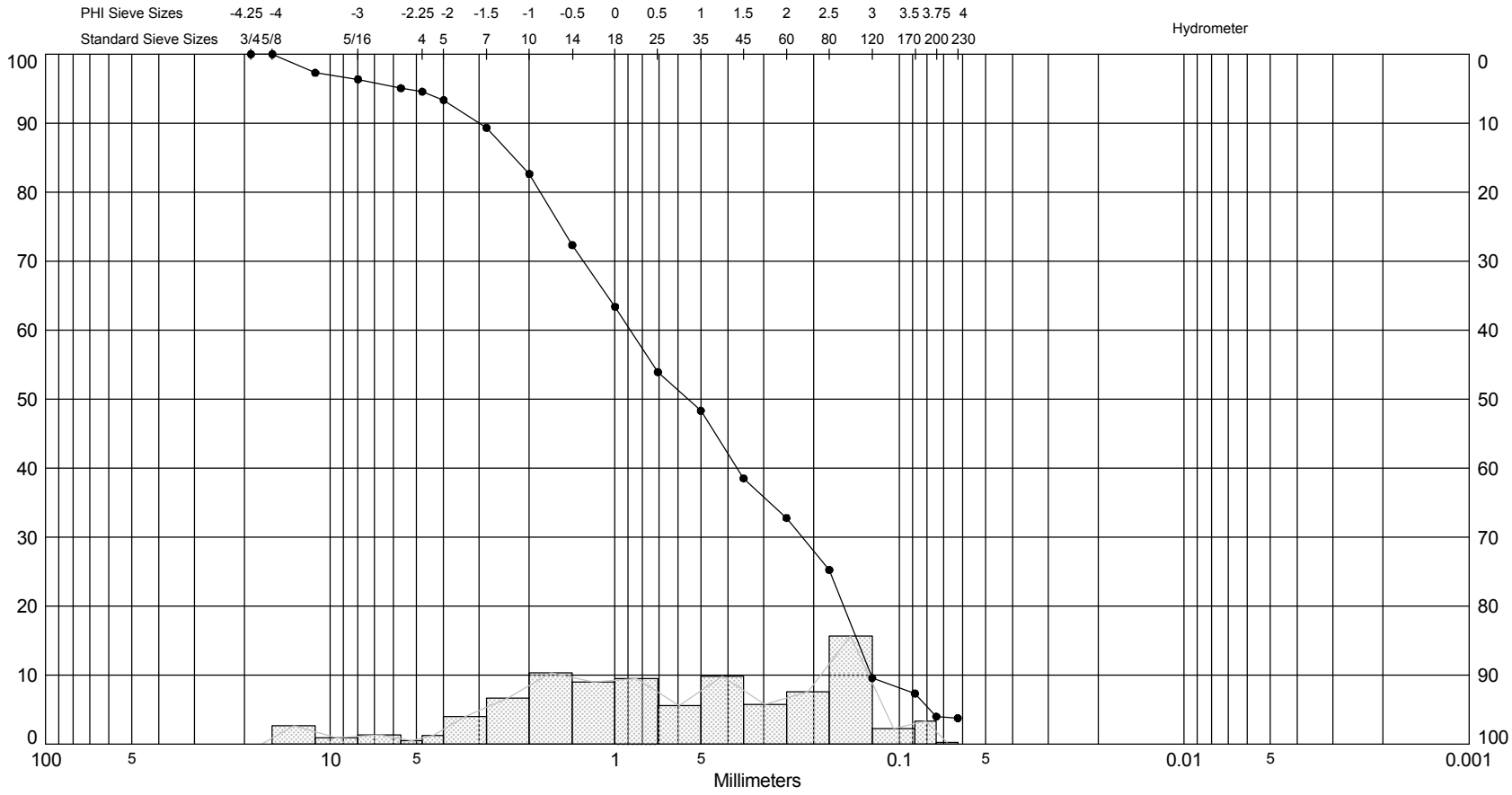
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	412,680
Northing (Y, ft):	1,156,488
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-14 #4	—●—	-22.8	SW	#200 - 3.98 #230 - 3.76		38	0.85	0.66	-0.35	2.42	1.82

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	412,680
Northing (Y, ft):	1,156,488
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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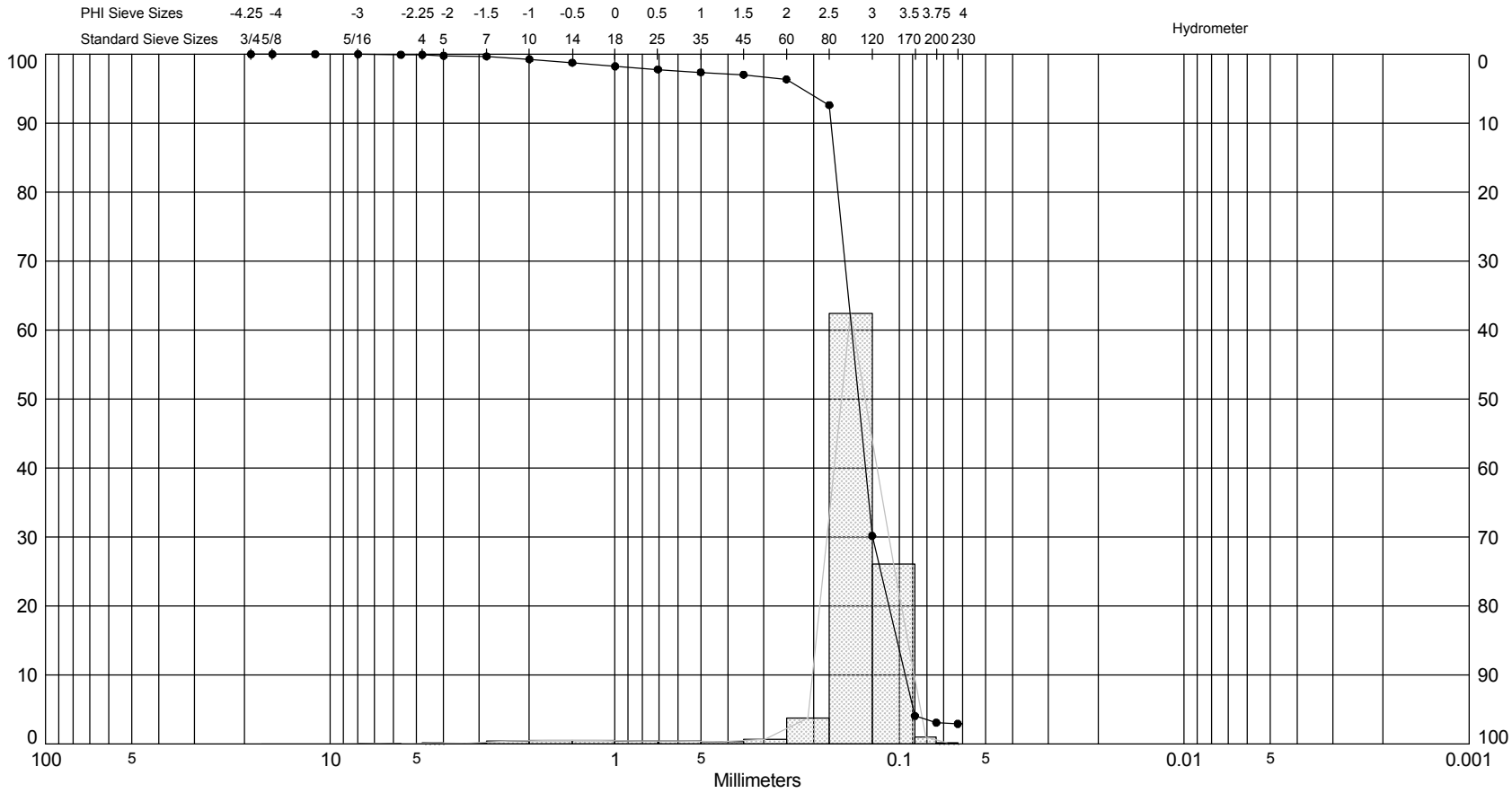

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-14 #5	—●—	-23.6	SP	#200 - 3.09 #230 - 2.92		8	2.84	2.78	-4.46	28.54	0.64

Comments:

Depths and elevations based on measured values

Coastal Planning & Engineering
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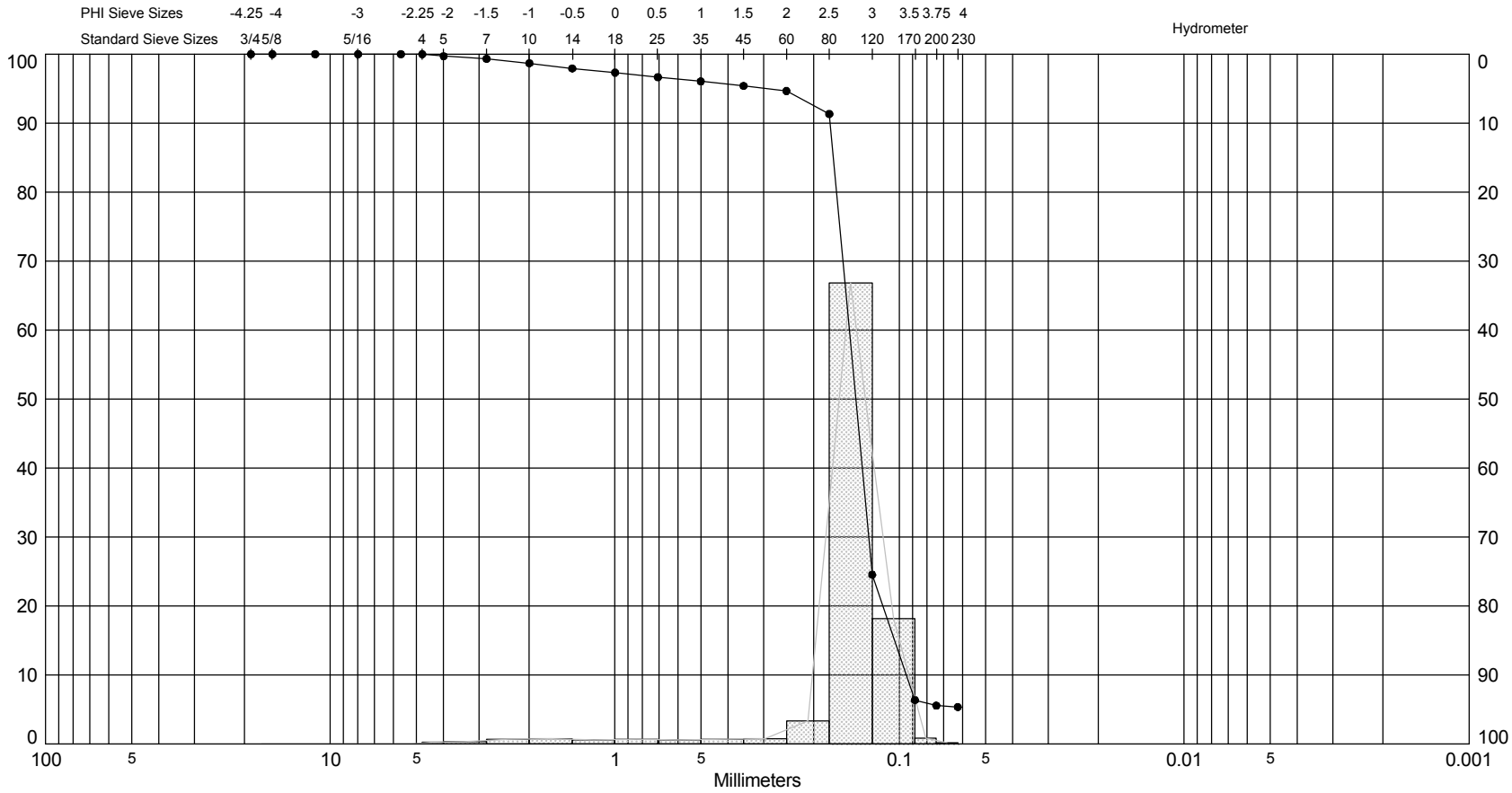
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-05-05
Analyzed By:	CPE
Easting (X, ft):	412,680
Northing (Y, ft):	1,156,488
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-14 #6	—●—	-25.8	SP-SM	#200 - 5.55 #230 - 5.35		9	2.81	2.68	-3.97	20.72	0.76

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-05-05
Analyzed By:	CPE
Easting (X, ft):	412,680
Northing (Y, ft):	1,156,488
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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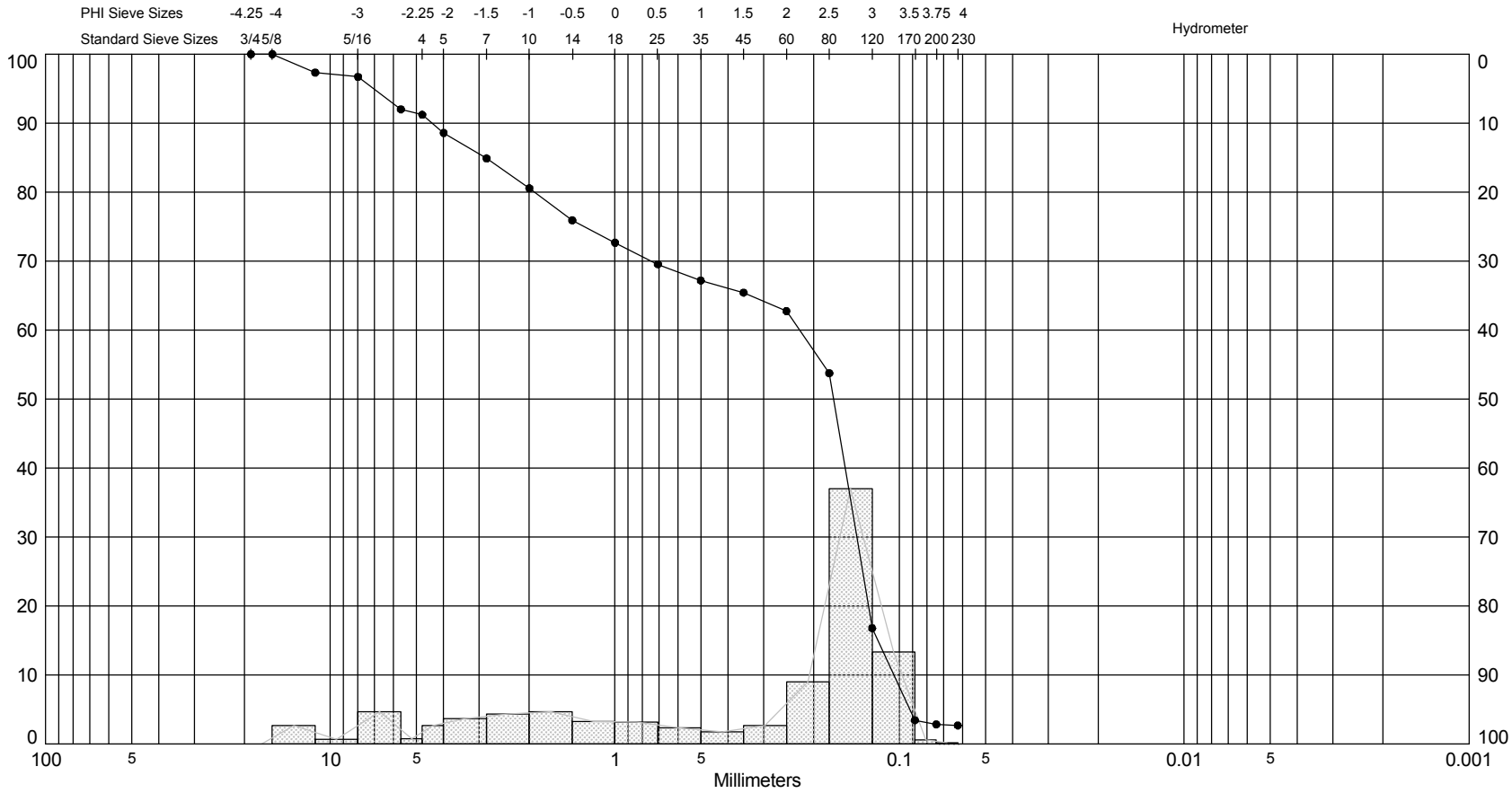

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-14 #7	—●—	-26.7	SW	#200 - 2.84 #230 - 2.68			2.55	1.32	-0.97	2.5	2.11

Comments:

Depths and elevations based on measured values

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FL 33431
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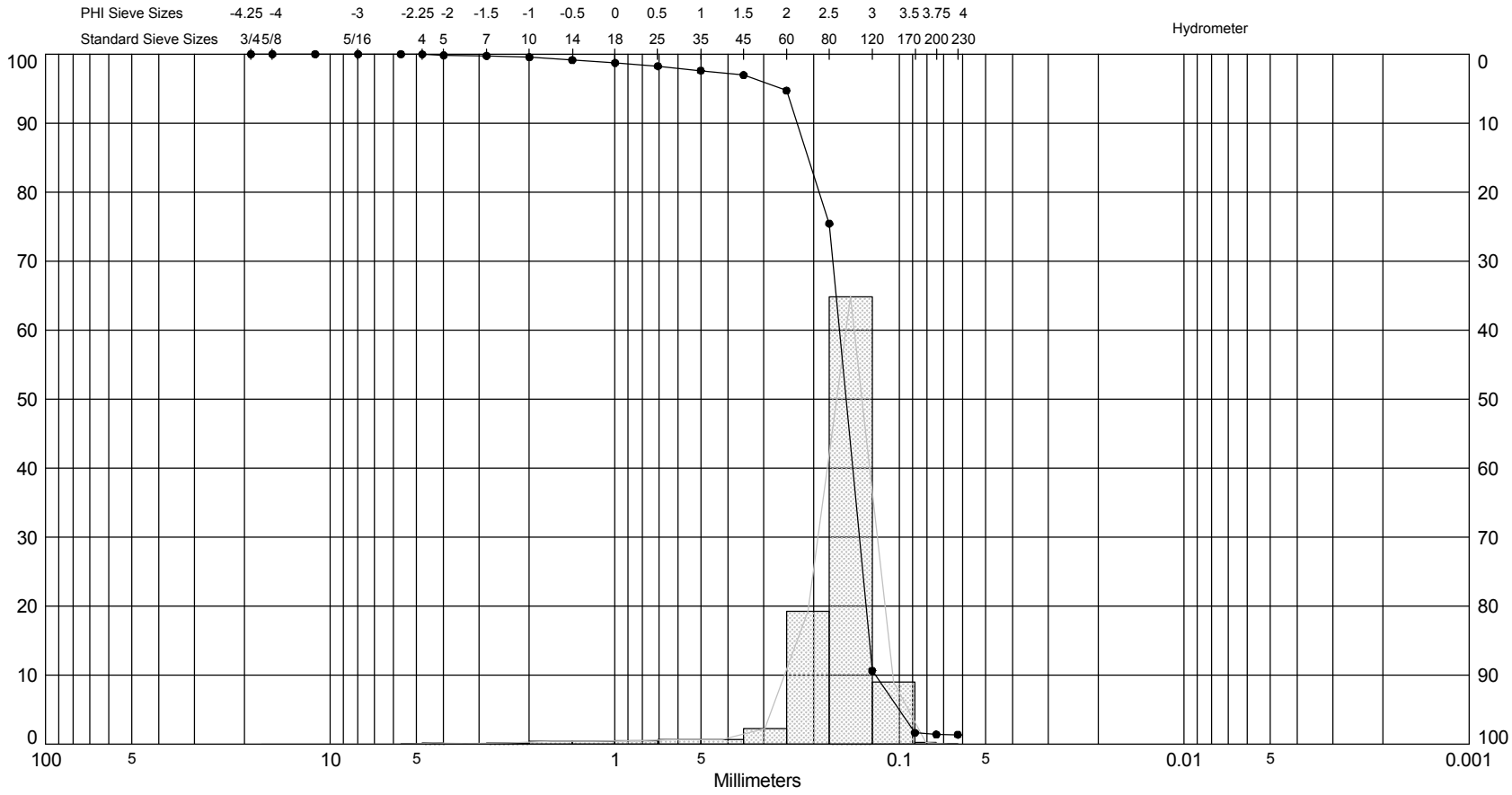
fax (561) 391-9116

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-07-05
Analyzed By:	CPE
Easting (X, ft):	412,680
Northing (Y, ft):	1,156,488
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-15 #1	—●—	-19.1	SP	#200 - 1.39 #230 - 1.37		5	2.7	2.59	-3.98	25.82	0.57

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-05-05
Analyzed By:	CPE
Easting (X, ft):	413,034
Northing (Y, ft):	1,156,701
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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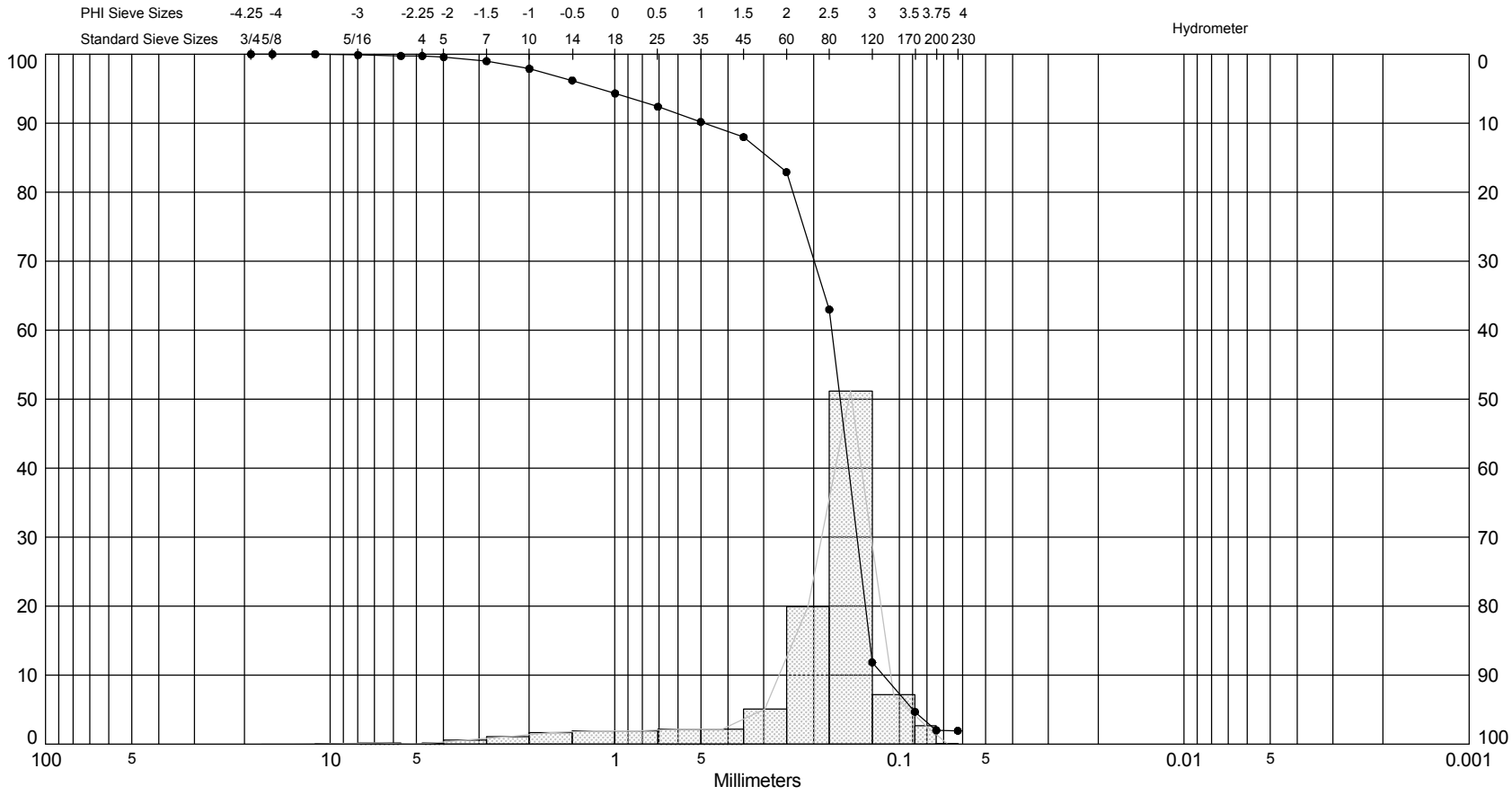

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-15 #2	—●—	-20.4	SW	#200 - 2.00 #230 - 1.93		15	2.63	2.32	-2.3	8.73	1.02

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	413,034
Northing (Y, ft):	1,156,701
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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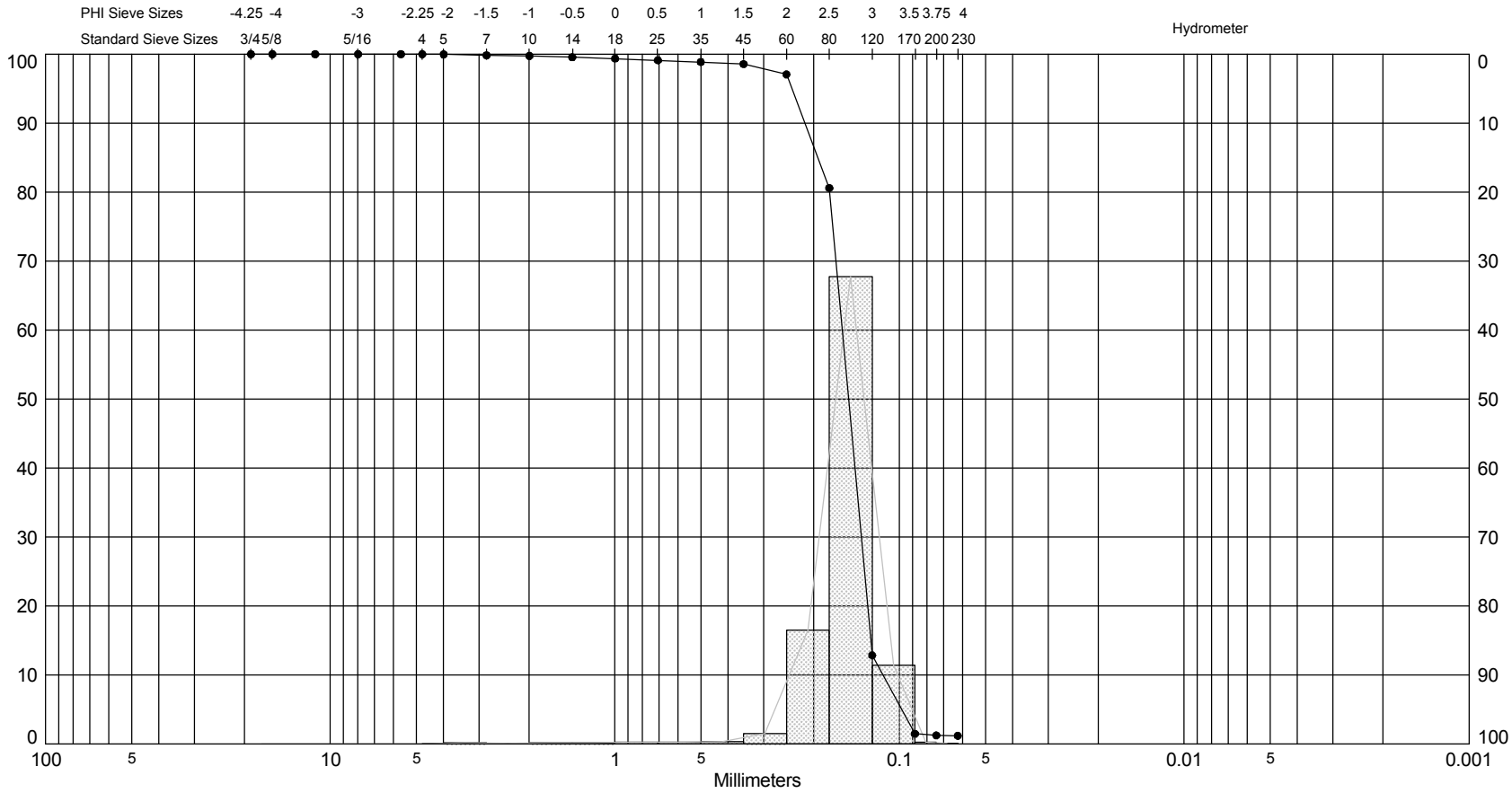

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-15 #3	—●—	-22.4	SP	#200 - 1.23 #230 - 1.18		2	2.73	2.67	-4.2	34.72	0.45

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-05-05
Analyzed By:	CPE
Easting (X, ft):	413,034
Northing (Y, ft):	1,156,701
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
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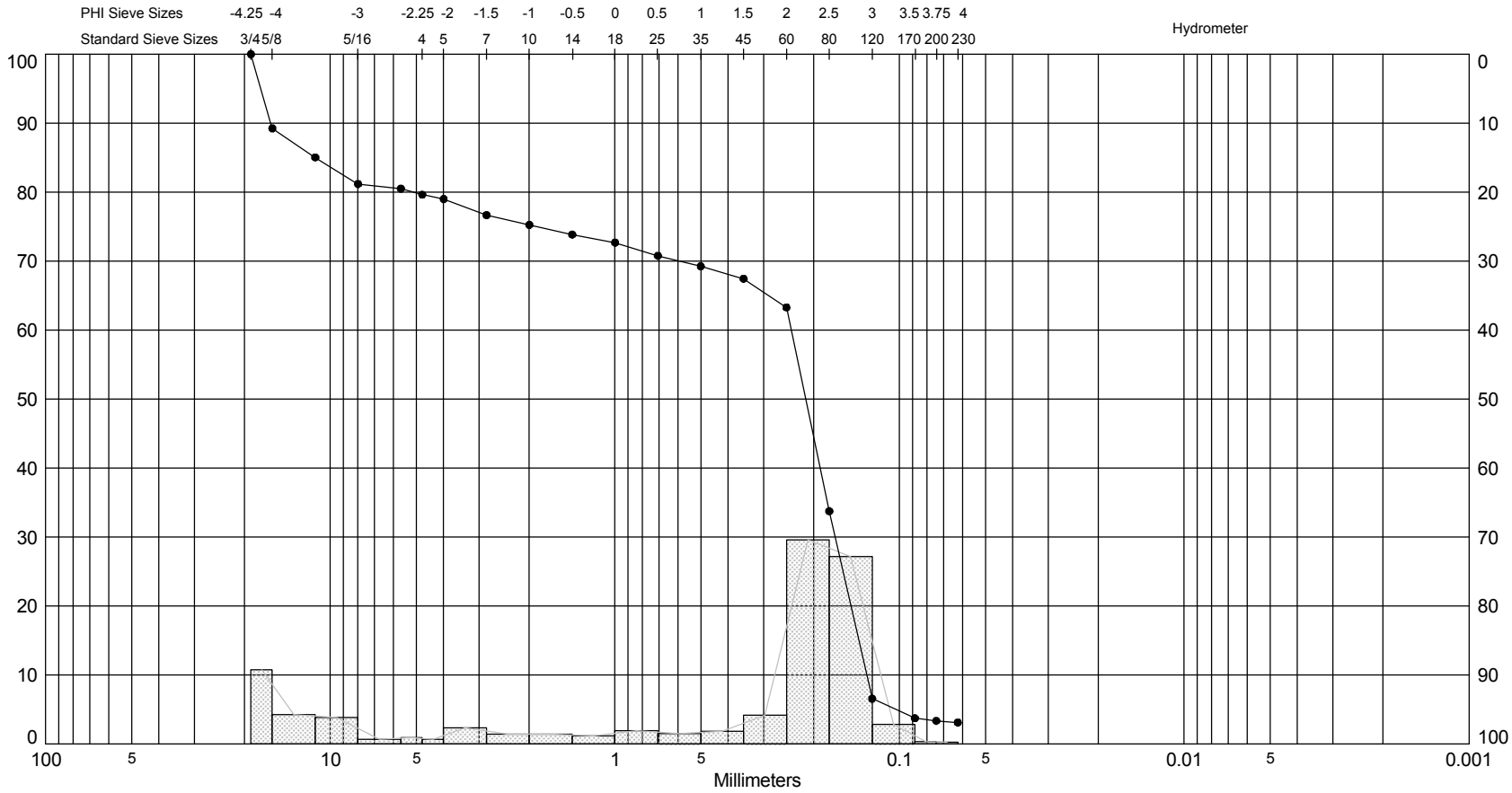
SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-15 #4	—●—	-25.2	SW	#200 - 3.35 #230 - 3.11		22	2.22	0.81	-1.03	2.35	2.59

Comments:

Depths and elevations based on measured values

Coastal Planning & Engineering
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FL 33431
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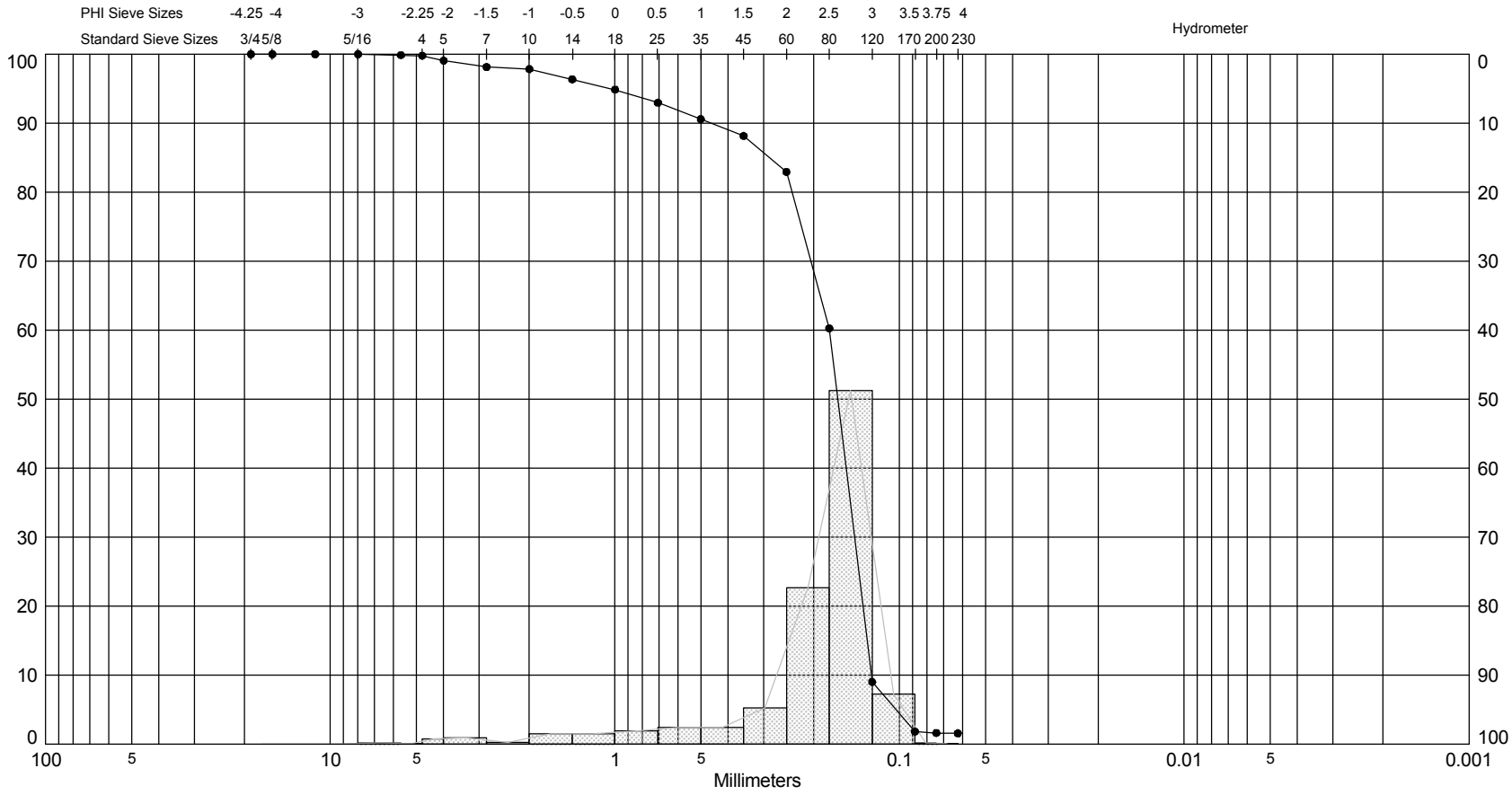
fax (561) 391-9116

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	08-19-08
Analyzed By:	CPE
Easting (X, ft):	413,034
Northing (Y, ft):	1,156,701
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-16 #1	—●—	-19.6	SW	#200 - 1.62 #230 - 1.55		15	2.6	2.29	-2.52	9.77	0.99

Comments:

Depths and elevations based on measured values

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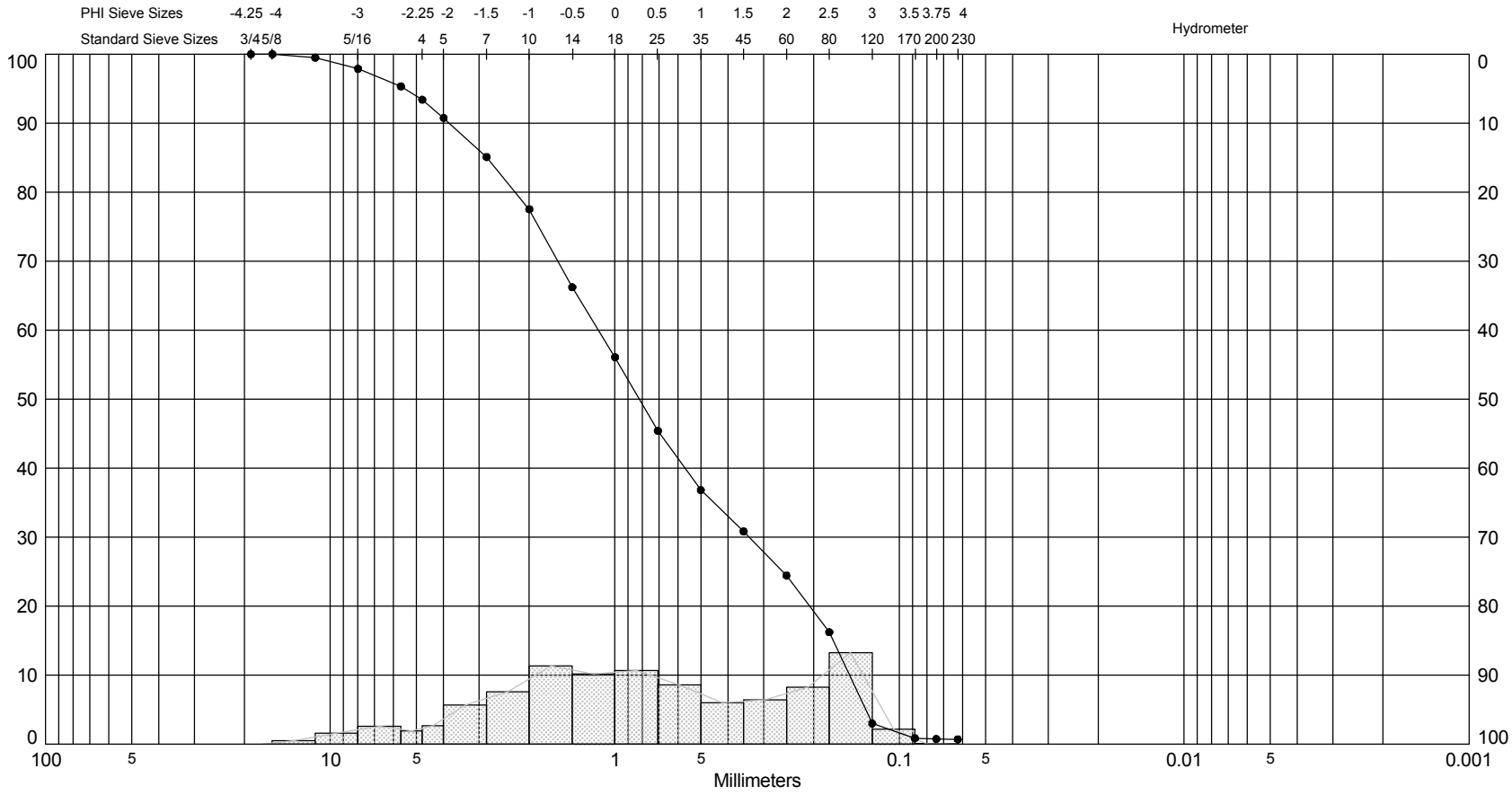
Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	412,179
Northing (Y, ft):	1,156,657
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-16 #2	—●—	-20.5	SW	#200 - 0.74 #230 - 0.70		59	0.28	0.36	-0.1	2.09	1.71

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	412,179
Northing (Y, ft):	1,156,657
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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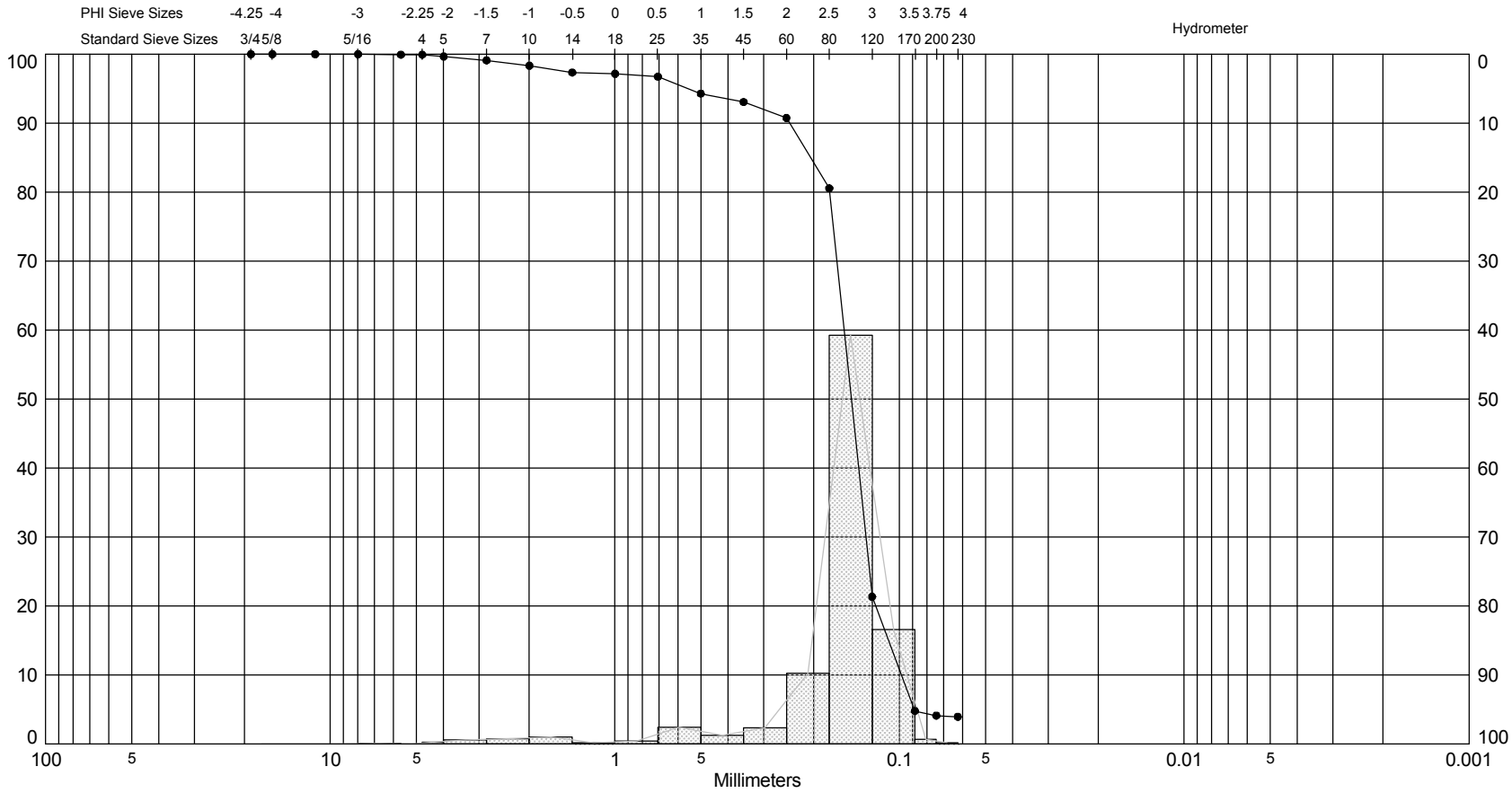

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-16 #3	—●—	-21.7	SP	#200 - 4.11 #230 - 3.94		10	2.76	2.57	-3.24	15.21	0.84

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	412,179
Northing (Y, ft):	1,156,657
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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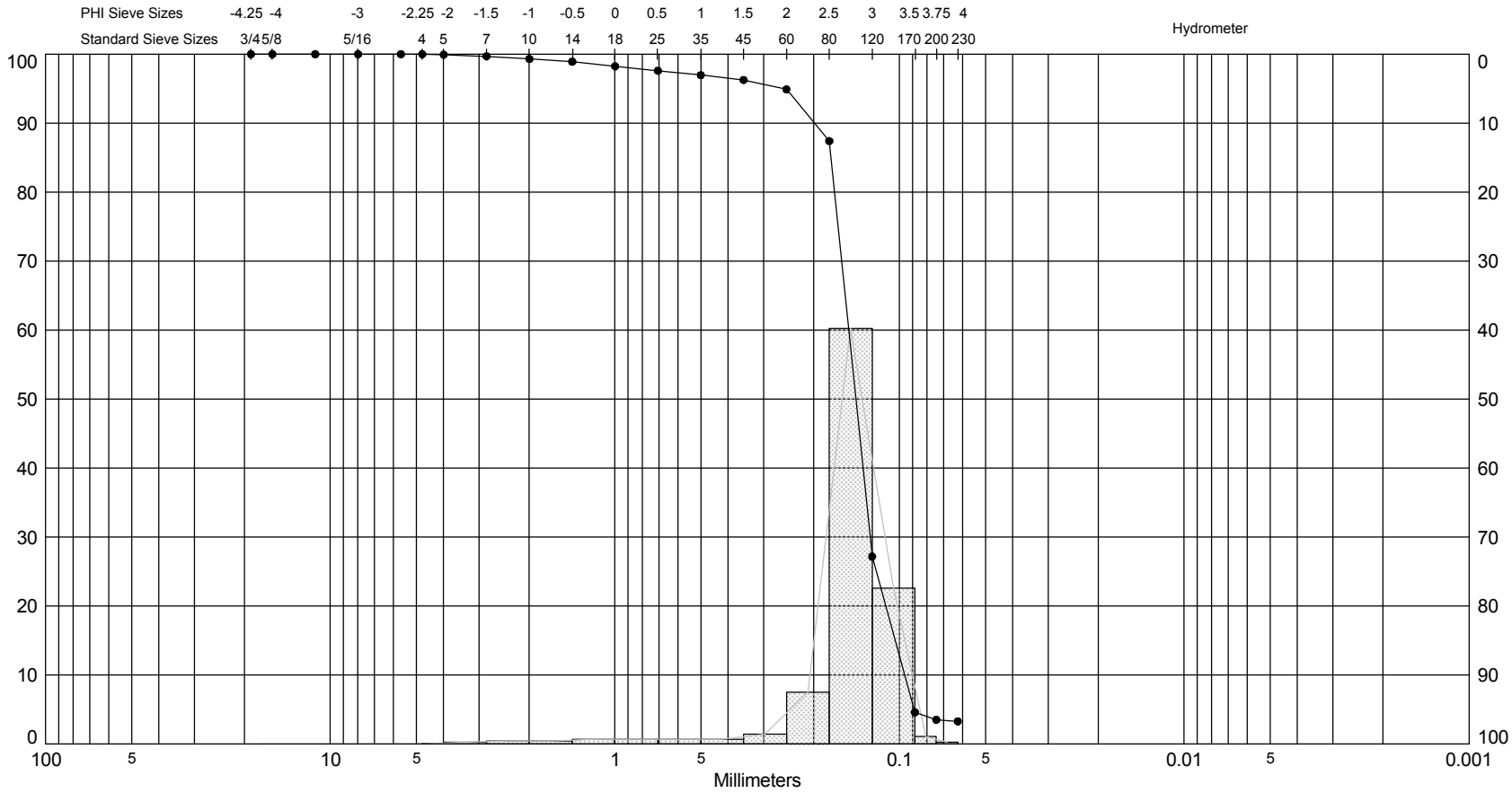

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-16 #4	—●—	-24.8	SP	#200 - 3.50 #230 - 3.28		8	2.81	2.72	-3.72	21.18	0.65

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-04-05
Analyzed By:	CPE
Easting (X, ft):	412,179
Northing (Y, ft):	1,156,657
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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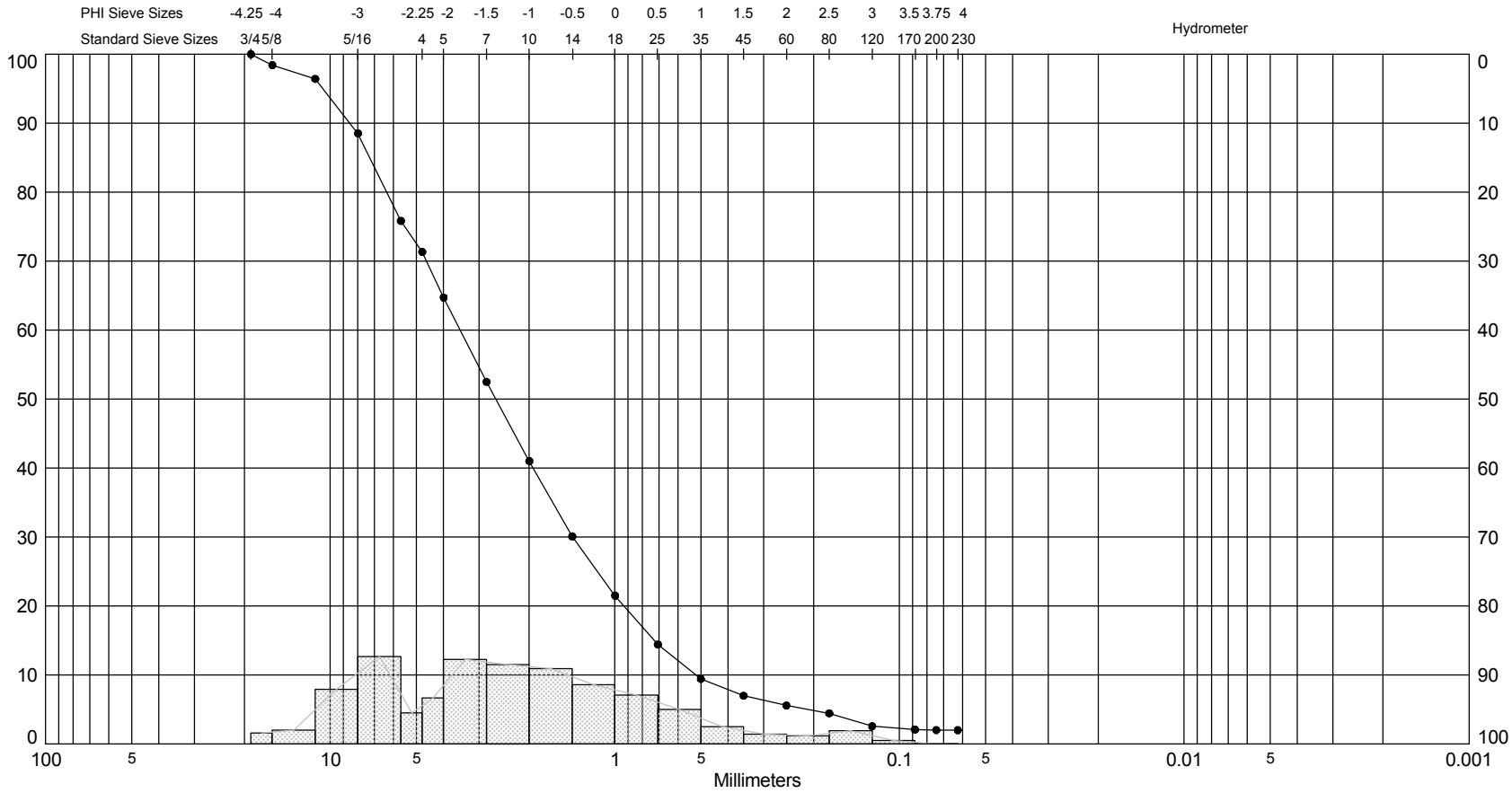

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-16 #5	—●—	-26.7	SW	#200 - 2.01 #230 - 2.00				-1.27	0.57	3.03	1.53

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-07-05
Analyzed By:	CPE
Easting (X, ft):	412,179
Northing (Y, ft):	1,156,657
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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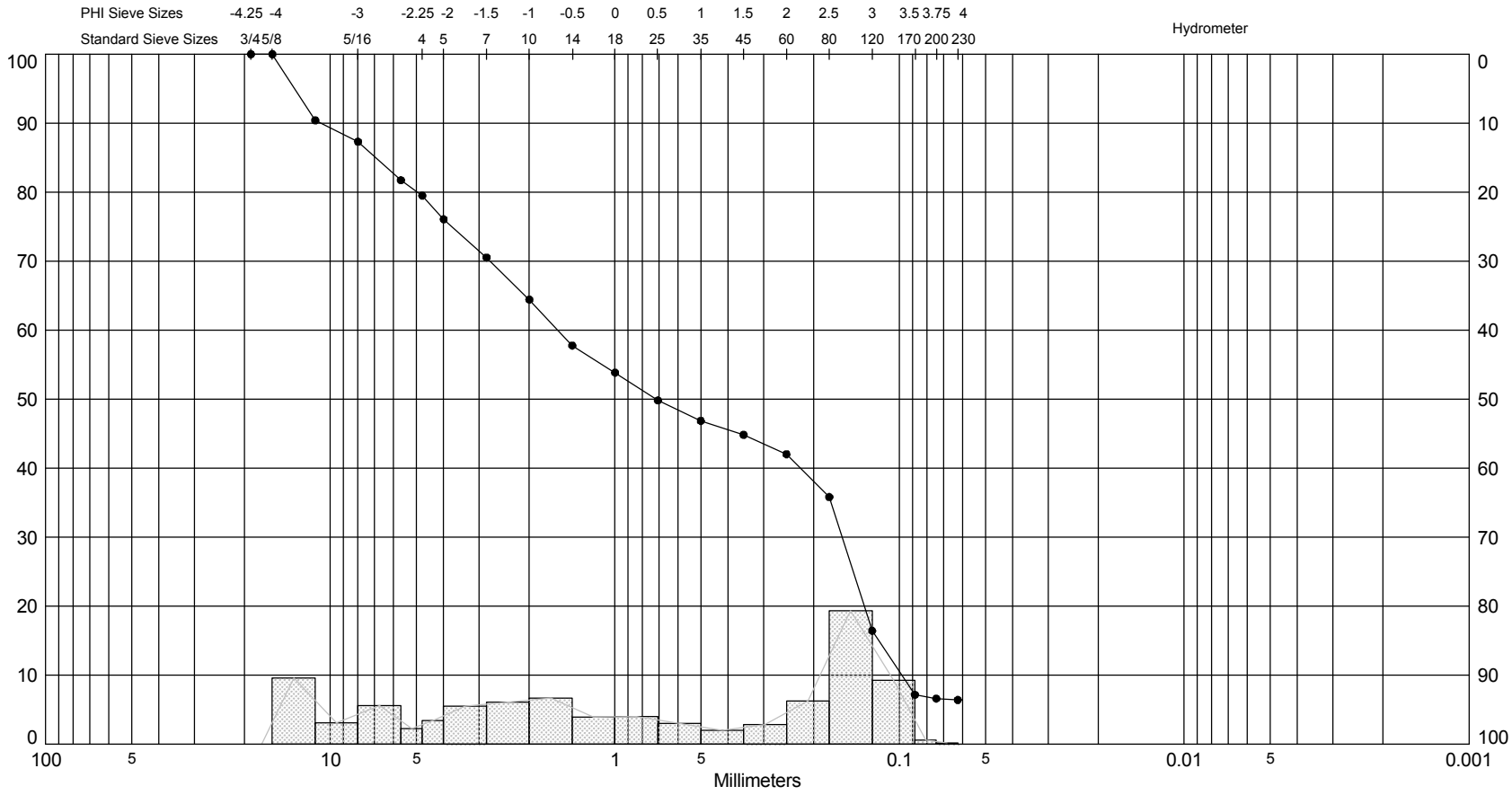

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-16 #6	—●—	-28.7	SP-SM	#200 - 6.60 #230 - 6.40			0.48	0.15	-0.17	1.55	2.46

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	Anna Maria Island
Analysis Date:	03-09-05
Analyzed By:	CPE
Easting (X, ft):	412,179
Northing (Y, ft):	1,156,657
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS ANNA_MARIA_05_NAVD88.GPJ FL DEP ROSS.GDT 10/30/08

APPENDIX 1-I

BORROW AREA COMPOSITE SUMMARY TABLES

COMPOSITE SUMMARY TABLE
ANNA MARIA VIBRACORES

VIBRACORE I. D.	EFFECTIVE LENGTH (FT)	MEAN (mm)	PHI MEAN	PHI SORTING	% SILT	% CARBONATE	WET MUNSELL VALUE
AMVC-08-01 Composite	6.1	0.19	2.42	0.94	1.54	14	7
AMVC-08-02 Composite	3.5	0.17	2.59	0.75	1.26	9	7
AMVC-08-03 Composite	6.2	0.18	2.50	0.97	2.43	10	7
AMVC-08-05 Composite	7.0	0.17	2.56	0.83	2.20	10	7
AMVC-08-06 Composite	5.1	0.18	2.44	1.08	1.88	13	6
AMVC-08-07 Composite	6.0	0.19	2.36	1.08	1.51	19	7
AMVC-08-08 Composite	5.2	0.15	2.75	0.51	2.09	21	7
AMVC-08-09 Composite	1.0	0.19	2.40	0.78	1.26	9	7
AMVC-08-10 Composite	7.0	0.22	2.17	1.21	1.75	18	7
AMVC-08-11 Composite	2.4	0.41	1.28	1.77	2.04	42	7
AMVC-08-12 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS						
AMVC-08-13 Composite	9.7	0.21	2.27	1.16	1.50	15	7
AMVC-08-14 Composite	8.0	0.22	2.21	1.14	1.37	18	7
AMVC-08-15 Composite	7.7	0.27	1.90	1.56	1.65	26	7
AMVC-08-16 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS						
AMVC-08-17 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS						
AMVC-08-18 Composite	7.5	0.20	2.30	1.08	1.80	13	6
AMVC-08-19 Composite	3.0	0.17	2.58	0.58	1.82	8	6
AMVC-08-20 Composite	5.3	0.19	2.42	0.94	1.91	14	6
AMVC-08-21 Composite	7.2	0.19	2.40	1.01	2.18	14	6
AMVC-08-22 Composite	5.8	0.30	1.72	1.67	1.58	28	6
AMVC-08-23 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS						
AMVC-08-24 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS						
AMVC-08-25 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS						
AMVC-08-26 Composite	9.3	0.20	2.31	1.24	1.52	21	6
AMVC-08-27 Composite	9.7	0.22	2.21	1.08	1.63	21	6
AMVC-08-28 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS						
AMVC-08-29 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS						
AMVC-08-30 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS						
AMVC-05-08 Composite	5.5	0.23	2.11	1.46	2.26	15	7
AMVC-05-09 Composite	3.4	0.21	2.28	1.22	2.48	22	7
AMVC-05-11 Composite	3.3	0.18	2.48	0.92	1.97	8	6
AMVC-05-13 Composite	5.2	0.19	2.39	0.99	2.17	28	7
AMVC-05-14 Composite	7.9	0.23	2.15	1.19	2.29	14	7
AMVC-05-15 Composite	4.1	0.17	2.52	0.75	1.52	8	7
AMVC-05-16 Composite	5.8	0.23	2.15	1.37	2.80	19	6
2008 AMI BORROW AREA	157.9	0.21	2.28	1.17	1.86	17	7

COMPOSITE DATA TABLE
ANNA MARIA VIBRACORES

VIBRACORE I. D.	EFFECTIVE LENGTH (FT)	MEAN (mm)	PHI MEAN	PHI SORTING	% SILT	% CARBONATE	WET MUNSELL VALUE	PHI SIZES -4.25	-4.0	-3.50	-3.0	-2.50	-2.25	-2.0	-1.5	-1.0	-0.5	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	3.75	4.0	PAN
AMVC-08-01 Composite	6.1	0.19	2.42	0.94	1.54	14	7.0	0.00	0.00	0.00	0.08	0.10	0.12	0.21	0.51	1.29	2.93	4.79	6.90	9.05	11.22	14.49	27.97	84.60	97.92	98.40	98.46	99.96
AMVC-08-02 Composite	3.5	0.17	2.59	0.75	1.26	9	7.0	0.00	0.00	0.00	0.00	0.00	0.02	0.07	0.42	0.88	1.68	2.50	3.48	4.50	5.78	8.83	21.55	80.85	98.10	98.68	98.74	100.00
AMVC-08-03 Composite	6.2	0.18	2.50	0.97	2.43	10	7.0	0.00	0.00	0.00	0.35	0.43	0.46	1.20	1.72	2.54	3.48	4.28	5.18	6.07	7.09	9.57	25.61	80.50	96.37	97.44	97.57	99.94
AMVC-08-05 Composite	7.0	0.17	2.56	0.83	2.20	10	6.7	0.00	0.00	0.00	0.05	0.20	0.20	0.40	0.81	1.42	2.25	3.00	3.85	4.89	6.12	9.01	24.25	79.58	96.48	97.53	97.80	99.97
AMVC-08-06 Composite	5.1	0.18	2.44	1.08	1.88	13	6.2	0.00	0.00	0.09	0.32	0.68	0.97	1.17	1.84	2.77	4.41	5.65	7.12	8.48	9.88	12.76	25.17	80.19	97.31	98.02	98.12	99.99
AMVC-08-07 Composite	6.0	0.19	2.36	1.08	1.51	19	6.9	0.00	0.00	0.29	0.45	0.70	1.02	1.25	2.08	3.17	4.51	5.64	6.95	8.35	9.89	13.22	32.98	86.02	97.99	98.44	98.49	99.99
AMVC-08-08 Composite	5.2	0.15	2.75	0.51	2.09	21	6.6	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.20	0.38	0.58	0.80	1.08	1.46	1.91	2.97	12.15	78.02	96.86	97.79	97.91	100.00
AMVC-08-09 Composite	1.0	0.19	2.40	0.78	1.26	9	7.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.49	2.20	3.01	3.84	4.96	6.54	12.14	42.15	90.33	98.48	98.71	98.74	99.93
AMVC-08-10 Composite	7.0	0.22	2.17	1.21	1.75	18	6.8	0.00	0.00	0.15	0.51	1.02	1.26	1.73	2.80	4.19	6.14	7.86	9.85	12.26	14.98	20.16	41.48	88.96	97.84	98.21	98.25	99.98
AMVC-08-11 Composite	2.4	0.41	1.28	1.77	2.04	42	6.6	0.00	0.00	0.72	2.54	3.75	4.37	5.50	8.16	12.47	18.79	24.99	31.31	37.31	43.17	47.83	59.02	91.44	97.54	97.90	97.96	99.96
AMVC-08-12 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS																											
AMVC-08-13 Composite	9.7	0.21	2.27	1.16	1.50	15	7.0	0.00	0.00	0.16	0.34	0.99	1.13	1.55	2.46	3.81	5.60	7.25	8.94	10.75	12.58	15.89	35.15	88.21	97.99	98.41	98.50	99.97
AMVC-08-14 Composite	8.0	0.22	2.21	1.14	1.37	18	6.9	0.00	0.00	0.04	0.43	0.75	0.98	1.39	2.24	3.50	5.28	7.05	9.01	11.34	13.97	19.16	41.03	90.42	98.39	98.60	98.63	99.96
AMVC-08-15 Composite	7.7	0.27	1.90	1.56	1.65	26	6.6	0.00	0.00	0.49	0.93	2.03	2.66	3.51	5.52	8.20	11.85	14.95	18.01	21.06	23.87	27.63	40.99	86.48	97.94	98.29	98.35	99.94
AMVC-08-16 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS																											
AMVC-08-17 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS																											
AMVC-08-18 Composite	7.5	0.20	2.30	1.08	1.80	13	6.2	0.00	0.00	0.00	0.16	0.52	0.55	0.67	1.52	2.77	4.83	6.64	8.49	10.28	12.45	16.56	35.73	87.23	97.64	98.14	98.20	99.98
AMVC-08-19 Composite	3.0	0.17	2.58	0.58	1.82	8	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.18	0.62	0.93	1.66	2.64	4.07	8.14	29.04	84.95	97.22	98.10	98.18	99.98
AMVC-08-20 Composite	5.3	0.19	2.42	0.94	1.91	14	6.0	0.00	0.00	0.00	0.17	0.31	0.34	0.37	0.59	1.29	2.70	4.27	6.26	8.58	11.11	14.95	29.68	83.89	97.62	98.06	98.09	100.00
AMVC-08-21 Composite	7.2	0.19	2.40	1.01	2.18	14	5.8	0.00	0.00	0.09	0.09	0.27	0.39	0.69	1.30	2.31	3.86	5.37	6.96	8.46	9.98	13.13	32.46	82.58	97.11	97.73	97.82	99.99
AMVC-08-22 Composite	5.8	0.30	1.72	1.67	1.58	28	6.0	0.00	0.62	1.39	1.96	3.15	3.55	4.17	6.03	8.89	13.43	17.74	21.91	25.49	28.69	31.66	46.05	90.52	98.07	98.40	98.42	99.78
AMVC-08-23 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS																											
AMVC-08-24 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS																											
AMVC-08-25 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS																											
AMVC-08-26 Composite	9.3	0.20	2.31	1.24	1.52	21	5.9	0.00	0.00	0.00	0.14	0.43	0.50	0.65	1.39	2.71	5.34	8.34	11.73	15.17	18.50	21.68	30.12	71.57	95.56	98.35	98.48	99.90
AMVC-08-27 Composite	9.7	0.22	2.21	1.08	1.63	21	6.0	0.00	0.00	0.00	0.00	0.11	0.14	0.30	0.95	2.22	4.49	7.14	10.12	13.45	16.63	20.88	38.92	89.45	98.09	98.32	98.37	99.85
AMVC-08-28 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS																											
AMVC-08-29 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS																											
AMVC-08-30 Composite	VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS																											
AMVC-05-08 Composite	5.5	0.23	2.11	1.46	2.26	15	7.3	0.00	0.00	0.00	1.30	2.04	2.42	3.12	4.96	7.12	9.75	11.72	13.64	15.40	17.05	19.63	31.75	86.26	97.21	97.57	97.74	99.64
AMVC-05-09 Composite	3.4	0.21	2.28	1.22	2.48	22	6.6	0.00	0.00	0.00	0.33	0.46	0.63	1.09	2.20	3.69	6.10	8.37	10.75	13.21	15.13	18.01	27.95	81.77	96.84	97.35	97.52	99.84
AMVC-05-11 Composite	3.3	0.18	2.48	0.92	1.97	8	6.0	0.00	0.00	0.32	0.44	0.73	0.84	1.01	1.59	2.19	2.88	3.39	4.00	4.81	5.83	9.15	28.86	87.23	95.37	97.90	98.03	99.64
AMVC-05-13 Composite	5.2	0.19	2.39	0.99	2.17	28	7.2	0.00	0.00	0.00	0.00	0.13	0.37	0.48	1.21	2.18	3.57	4.96	6.86	8.98	11.09	15.05	30.77	84.36	97.27	97.72	97.83	99.85
AMVC-05-14 Composite	7.9	0.23	2.15	1.19	2.29	14	7.0	0.00	0.00	0.44	0.60	0.84	0.93	1.27	2.13	3.62	5.84	7.97	10.33	12.13	15.15	21.86	46.04	87.49	96.77	97.62	97.71	99.92
AMVC-05-15 Composite	4.1	0.17	2.52	0.75	1.52	8	7.3	0.00	0.00	0.00	0.04	0.10	0.10	0.22	0.50	0.99	1.81	2.69	3.62	4.71	5.82	8.86	27.48	88.22	97.30	98.43	98.48	99.96
AMVC-05-16 Composite	5.8	0.23	2.15	1.37	2.80	19	5.9	0.00	0.00	0.10	0.40	0.93	1.31	2.03	3.51	5.38	8.23	10.63	13.26	16.34	18.47	21.68	32.44	82.13	96.43	97.05	97.20	99.90
2008 AMI BORROW AREA	157.9	0.21	2.28	1.17	1.86	17	6.6	0.00	0.02	0.15	0.40	0.75	0.92	1.26	2.12	3.41	5.36	7.23	9.26	11.36	13.53	17.18	33.46	84.73	97.32	98.05	98.14	99.92

CUMULATIVE PERCENTS AND COMPUTED DISTRIBUTIONS
ANNA MARIA VIBRACORES (1 of 4)

SAMPLE I. D.	ELEVATION (NAVD 88 FT)	EFFECTIVE LENGTH (FT)	MEAN (mm)	PHI MEAN	PHI SORTING	% SILT	% CARBONATE	WET MUNSELL VALUE	PHI SIZES -4.25	-4.0	-3.50	-3.0	-2.50	-2.25	-2.0	-1.5	-1.0	-0.5	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	3.75	4.0	PAN
AMVC-08-01#1	-20.4	3.3	0.15	2.69	0.46	1.21	4	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.13	0.34	0.59	0.94	1.36	1.84	3.62	17.74	83.49	98.25	98.72	98.79	99.98
AMVC-08-01#2	-22.7	1.8	0.18	2.45	0.90	2.19	13	7	0.00	0.00	0.00	0.00	0.00	0.07	0.09	0.46	1.15	2.63	4.18	5.99	8.11	10.26	13.59	27.47	83.59	97.15	97.73	97.81	100.00
AMVC-08-01#3	-24.1	1.0	0.37	1.45	1.45	1.46	50	7	0.00	0.00	0.00	0.48	0.60	0.63	1.12	2.18	5.35	12.04	19.76	28.19	36.11	43.90	52.00	62.65	90.10	98.20	98.52	98.54	99.85
AMVC-08-01#4	-27.4	0.0	0.13	2.94	0.37	2.58		6	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.05	0.08	0.16	0.21	0.29	0.38	0.49	0.73	3.08	56.25	94.68	97.04	97.42	100.00
Cut to -25.5																													
AMVC-08-01 Composite		**6.1**	**0.19**	**2.42**	**0.94**	**1.54**	**14**	**7.0**	**0.00**	**0.00**	**0.00**	**0.08**	**0.10**	**0.12**	**0.21**	**0.51**	**1.29**	**2.93**	**4.79**	**6.90**	**9.05**	**11.22**	**14.49**	**27.97**	**84.60**	**97.92**	**98.40**	**98.46**	**99.96**
AMVC-08-02#1	-22.2	1.9	0.15	2.75	0.48	1.16	4	7	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.05	0.22	0.41	0.63	1.00	1.31	1.81	3.42	14.83	76.42	98.22	98.78	98.84	100.00
AMVC-08-02#2	-23.8	1.6	0.19	2.41	0.94	1.37	15	7	0.00	0.00	0.00	0.00	0.00	0.05	0.12	0.86	1.66	3.18	4.73	6.43	8.29	10.49	15.26	29.53	86.11	97.95	98.56	98.63	100.00
AMVC-08-02#3	-26.1	0.0	0.15	2.75	0.67	2.46		6	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.37	0.77	1.27	1.78	2.34	2.90	3.62	5.04	11.95	68.46	95.95	97.26	97.54	100.00
Cut to -25.0																													
AMVC-08-02 Composite		**3.5**	**0.17**	**2.59**	**0.75**	**1.26**	**9**	**7.0**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.07**	**0.42**	**0.88**	**1.68**	**2.50**	**3.48**	**4.50**	**5.78**	**8.83**	**21.55**	**80.85**	**98.10**	**98.68**	**98.74**	**100.00**
AMVC-08-03#1	-19.9	1.9	0.15	2.75	0.47	1.26	4	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.20	0.37	0.54	0.81	1.18	1.68	3.35	14.67	75.86	98.16	98.65	98.74	99.99
AMVC-08-03#2	-22.4	2.6	0.19	2.42	0.90	1.98	11	7	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.97	2.04	3.22	4.26	5.57	6.83	8.20	11.77	33.92	87.05	97.18	97.96	98.02	99.93
AMVC-08-03#3	-25.3	1.7	0.20	2.33	1.37	4.44	14	6	0.00	0.00	0.00	1.28	1.55	1.66	3.56	4.71	5.91	7.36	8.50	9.48	10.37	11.43	13.14	25.14	75.68	93.13	95.30	95.56	99.89
Cut to -25.0																													
AMVC-08-03 Composite		**6.2**	**0.18**	**2.50**	**0.97**	**2.43**	**10**	**7.0**	**0.00**	**0.00**	**0.00**	**0.35**	**0.43**	**0.46**	**1.20**	**1.72**	**2.54**	**3.48**	**4.28**	**5.18**	**6.07**	**7.09**	**9.57**	**25.61**	**80.50**	**96.37**	**97.44**	**97.57**	**99.94**
AMVC-08-05#1	-21.5	4.6	0.17	2.57	0.68	1.24	8	7	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.27	0.69	1.35	1.99	2.72	3.73	4.92	8.36	26.41	84.43	98.26	98.72	98.76	99.98
AMVC-08-05#2	-24.3	2.3	0.17	2.54	1.07	4.15	13	6	0.00	0.00	0.00	0.16	0.61	0.61	1.13	1.93	2.94	4.14	5.13	6.25	7.41	8.74	10.63	19.98	69.45	92.83	95.11	95.85	99.96
AMVC-08-05#3	-27.0	0.1	0.16	2.66	0.35	1.21	4	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.12	0.18	0.31	0.50	0.80	1.89	22.81	89.72	98.60	98.77	98.79	100.00
Cut to -26.0																													
AMVC-08-05 Composite		**7.0**	**0.17**	**2.56**	**0.83**	**2.20**	**10**	**6.7**	**0.00**	**0.00**	**0.00**	**0.05**	**0.20**	**0.20**	**0.40**	**0.81**	**1.42**	**2.25**	**3.00**	**3.85**	**4.89**	**6.12**	**9.01**	**24.25**	**79.58**	**96.48**	**97.53**	**97.80**	**99.97**
AMVC-08-06#1	-23.5	3.1	0.16	2.61	0.67	1.72	8	6	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.24	0.50	1.10	1.76	2.62	3.53	4.74	7.88	22.25	81.33	97.53	98.21	98.28	100.00
AMVC-08-06#2	-25.3	0.5	0.62	0.68	1.92	1.42	57	5	0.00	0.00	0.92	2.69	6.37	8.02	9.60	13.89	20.69	32.00	39.24	46.87	53.08	57.84	62.44	70.16	91.41	98.20	98.52	98.58	99.95
AMVC-08-06#3	-25.8	0.7	0.16	2.65	0.78	1.74	8	7	0.00	0.00	0.00	0.42	0.42	0.42	0.50	0.89	1.15	1.78	2.16	2.88	3.47	4.23	6.87	19.47	74.26	97.23	98.06	98.26	100.00
AMVC-08-06#4	-26.5	0.8	0.16	2.66	0.83	2.92	9	7	0.00	0.00	0.00	0.00	0.00	0.78	0.78	1.32	1.76	2.31	2.80	3.44	4.19	4.77	5.78	13.33	73.96	95.97	96.92	97.08	99.95
AMVC-08-06#5	-27.8	0.0	0.73	0.46	2.00	3.39	22	5	0.00	0.00	0.00	2.28	7.72	9.47	12.18	18.28	25.45	34.98	44.44	53.41	59.70	63.27	65.76	68.73	84.01	95.65	96.42	96.61	99.91
AMVC-08-06#6	-28.9	0.0	0.21	2.26	1.21	4.38	22	6	0.00	0.00	0.00	0.00	1.73	2.23	2.32	3.02	3.85	5.12	6.91	8.97	10.94	12.74	15.22	35.59	83.68	94.15	95.39	95.62	99.94
Cut to -27.0																													
AMVC-08-06 Composite		**5.1**	**0.18**	**2.44**	**1.08**	**1.88**	**13**	**6.2**	**0.00**	**0.00**	**0.09**	**0.32**	**0.68**	**0.97**	**1.17**	**1.84**	**2.77**	**4.41**	**5.65**	**7.12**	**8.48**	**9.88**	**12.76**	**25.17**	**80.19**	**97.31**	**98.02**	**98.12**	**99.99**
AMVC-08-07#1	-20.0	2.4	0.16	2.68	0.50	1.28	5	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.19	0.41	0.62	0.99	1.50	2.27	4.75	21.13	81.95	98.24	98.69	98.72	99.98
AMVC-08-07#2	-22.0	1.1	0.19	2.40	0.80	1.37	13	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	1.01	2.02	3.11	4.59	6.57	8.82	13.59	38.09	88.87	98.25	98.59	98.63	100.00
AMVC-08-07#3	-23.1	0.8	0.45	1.14	1.86	1.39	42	7	0.00	0.00	0.77	1.96	3.60	5.82	7.43	12.44	18.12	24.42	29.14	33.62	37.44	40.98	46.12	66.33	94.06	98.33	98.58	98.61	100.00
AMVC-08-07#4	-23.5	0.8	0.19	2.38	1.08	2.24	61	6	0.00	0.00	0.94	0.94	1.15	1.24	1.31	1.63	2.48	3.54	4.69	6.33	8.26	10.15	13.90	30.62	83.79	97.05	97.66	97.76	99.99
AMVC-08-07#5	-24.5	0.9	0.17	2.53	0.74	1.76	5	7	0.00	0.00	0.39	0.39	0.45	0.53	0.56	0.72	1.11	1.62	2.10	2.56	3.02	3.64	5.53	30.76	88.21	97.53	98.15	98.24	100.00
AMVC-08-07#6	-25.7	0.0	0.16	2.61	0.95	3.59	8	6	0.00	0.00	0.00	1.17	1.25	1.28	1.42	1.75	2.29	2.82	3.26	3.67	4.11	4.64	5.57	15.33	78.51	94.08	96.08	96.41	100.00
Cut to -25.0																													
AMVC-08-07 Composite		**6.0**	**0.19**	**2.36**	**1.08**	**1.51**	**19**	**6.9**	**0.00**	**0.00**	**0.29**	**0.45**	**0.70**	**1.02**	**1.25**	**2.08**	**3.17**	**4.51**	**5.64**	**6.95**	**8.35**	**9.89**	**13.22**	**32.98**	**86.02**	**97.99**	**98.44**	**98.49**	**99.99**
AMVC-08-08#1	-23.0	2.9	0.16	2.68	0.58	1.31	6	7	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.35	0.62	0.91	1.18	1.53	2.02	2.67	4.25	18.18	81.18	98.01	98.68	98.69	100.00
AMVC-08-08#2	-27.1	2.3	0.14	2.83	0.38	3.08	41	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.08	0.17	0.32	0.52	0.76	0.96	1.36	4.54	74.04	95.41	96.66	96.92	99.99
AMVC-08-08#3	-29.3	0.0	0.27	1.90	1.72	5.52	28	6	0.00	0.00	1.01	1.01	3.58	4.11	5.07	7.63	10.37	13.42	15.99	18.64	20.58	22.07	23.90	33.69	80.20	93.00	94.25	94.48	99.96
Cut to -27.0																													
AMVC-08-08 Composite		**5.2**	**0.15**	**2.75**	**0.51**	**2.09**	**21**	**6.6**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.12**	**0.20**	**0.38**	**0.58**	**0.80**	**1.08**	**1.46**	**1.91**	**2.97**	**12.15**	**78.02**	**96.86**	**97.79**	**97.91**	**100.00**
AMVC-08-09#1	-23.5	1.0	0.19	2.40	0.78	1.26	9	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.49	2.20	3.01	3.84	4.96	6.54	12.14	42.15	90.33	98.48	98.71	98.74	99.93
AMVC-08-09#2	-26.2	0.0	0.27	1.90	1.35	1.33		7	0.00	0.00	0.00	0.00	0.00	0.42	1.14	2.72	6.29	10.68	14.46	15.97	18.93	23.35	30.05	52.42	90.54	98.23	98.64	98.67	99.99
Cut to -23.0																													
AMVC-08-09 Composite		**1.0**	**0.19**	**2.40**	**0.78**	**1.26**	**9**	**7.0**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.87**	**1.49**	**2.20**	**3.01**	**3.84**	**4.96**	**6.54**	**12.14**	**42.15**	**90.33**	**98.48**	**98.71**	**98.74**	**99.93**
AMVC-08-10#1	-18.5	0.4	0.28	1.84	1.30	1.41	28	7	0.00	0.00	0.00	0.39	0.80	0.87	1.29	3.21	5.34	8.62	11.61	15.29	19.58	24.74	34.93	58.38	93.14	98.44	98.55	98.59	100.00
AMVC-08-10#2	-19.4	1.5	0.17	2.56	0.67	1.31	8	7	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.30	0.63	1.18	1.81	2.56	3.55	4.92	8.33	26.92	85.37	98.39	98.64	98.69	100.00
AMVC-08-10#3	-20.7	1.1	0.23	2.14	1.25	1.48	17	7	0.00	0.00	0.00	0.00	0.00	0.83	2.47	4.06	6.08	7.89	8.98	9.90	12.13	14.66	19.85	43.85	90.28	98.00	98.51	98.52	100.00
AMVC-08-10#4	-21.6	1.4	0.24	2.07	1.15	1.56	21	7	0.00	0.00	0.00	0.18	0.30	0.47	0.54	1.61	3.19	5.97	8.46	11.47	14.99	18.68	25.63	49.94	91.01	98.09	98.40	98.44	99.96
AMVC-08-10#5	-22.7	1.1	0.28	1.82	1.38	3.11	29	6	0.00	0.00	0.00	0.70	2.14	2.37	2.72	4.09	5.82	8.67	11.55	15.43	19.68	24.74	32.99	57.57	90.96	96.42	96.84	96.89	100.00
AMVC-08-10#6	-23.9	0.7	0.30	1.73	1.81	1.19	27	7	0.00	0.00	1.49	3.44	5.71	6.06	7.15	9.39	12.16	15.47	18.24	20.60	22.59	24.14	26.49	43.04	91.78	98.60	98.78	98.81	99.95
AMVC-08-10#7	-25.2	0.8	0.15	2.70	0.46	2.07	4	7	0.00	0.00	0.00	0.00	0.03	0.03	0.04	0.12	0.22	0.42	0.58	0.83	1.10	1.46	2.64	18.79	83.00	97.17	97.85	97.93	99.97
Cut to -25.0																													
AMVC-08-10 Composite		**7.0**	**0.22**	**2.17**	**1.21**	**1.75**	**18**	**6.8**	**0.00**	**0.00**	**0.15**	**0.51**	**1.02**	**1.26**	**1.73**	**2.80**	**4.19**	**6.14**	**7.86**	**9.85**	**12.26**	**14.98**	**20.16**	**41.48**	**88.96**	**97.84**	**98.21**	**98.25**	**99.98**

CUMULATIVE PERCENTS AND COMPUTED DISTRIBUTIONS
ANNA MARIA VIBRACORES (2 of 4)

SAMPLE I. D.	ELEVATION (NAVD 88 FT)	EFFECTIVE LENGTH (FT)	MEAN (mm)	PHI MEAN	PHI SORTING	% SILT	% CARBONATE	WET MUNSELL VALUE	PHI SIZES -4.25	-4.0	-3.50	-3.0	-2.50	-2.25	-2.0	-1.5	-1.0	-0.5	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	3.75	4.0	PAN
AMVC-08-11#1	-20.5	0.9	0.67	0.57	1.62	2.06	62	6	0.00	0.00	0.00	2.96	4.78	5.43	6.70	10.00	15.74	25.43	35.82	46.21	57.19	68.08	75.04	82.55	95.46	97.75	97.90	97.94	99.89
AMVC-08-11#2	-21.5	0.8	0.19	2.42	1.10	2.36	13	7	0.00	0.00	0.00	1.88	1.88	1.88	1.97	2.31	2.73	3.47	4.18	5.80	7.48	9.22	11.71	25.10	84.66	96.86	97.56	97.64	99.99
AMVC-08-11#3	-22.2	0.7	0.54	0.89	1.91	1.64	49	7	0.00	0.00	2.46	2.75	4.56	5.84	8.00	12.49	19.38	27.76	34.86	41.30	45.85	49.94	54.13	67.54	94.03	98.05	98.30	98.36	100.00
Cut to -22.5																													
AMVC-08-11 Composite		**2.4**	**0.41**	**1.28**	**1.77**	**2.04**	**42**	**6.6**	**0.00**	**0.00**	**0.72**	**2.54**	**3.75**	**4.37**	**5.50**	**8.16**	**12.47**	**18.79**	**24.99**	**31.31**	**37.31**	**43.17**	**47.83**	**59.02**	**91.44**	**97.54**	**97.90**	**97.96**	**99.96**
AMVC-08-12#1	-16.0	0.0	0.72	0.48	1.34	1.6		5	0.00	0.00	0.00	0.00	0.00	0.00	3.65	6.81	13.33	25.51	39.13	51.39	62.77	73.38	82.62	90.06	97.16	98.33	98.38	98.40	100.00
AMVC-08-12 Composite									**VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS**																				
AMVC-08-13#1	-13.8	1.4	0.17	2.53	0.50	1.37	5	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.15	0.39	0.70	1.18	1.82	3.03	6.77	35.92	92.21	98.55	98.56	98.63	99.87
AMVC-08-13#2	-15.0	4.3	0.20	2.35	0.82	1.14	12	7	0.00	0.00	0.00	0.00	0.18	0.18	0.23	0.44	1.05	2.07	3.45	5.06	7.24	9.58	14.11	40.89	92.93	98.66	98.84	98.86	99.99
AMVC-08-13#3	-17.2	1.4	0.46	1.11	2.01	1.57	47	7	0.00	0.00	1.03	2.25	6.15	7.07	9.35	14.07	20.18	27.23	32.39	36.85	40.06	42.53	44.95	55.49	90.84	97.51	98.23	98.43	99.93
AMVC-08-13#4	-21.8	2.5	0.16	2.63	0.83	2.13	9	7	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.76	1.42	2.47	3.40	4.38	5.44	6.41	7.92	14.03	76.73	96.84	97.72	97.87	100.00
AMVC-08-13#5	-23.1	0.1	0.19	2.40	1.30	2.48	12	6	0.00	0.00	1.28	1.49	2.66	2.77	3.09	3.51	4.38	5.38	6.30	7.81	8.95	9.94	12.17	20.33	79.80	96.54	97.36	97.52	99.93
Cut to -22.5																													
AMVC-08-13 Composite		**9.7**	**0.21**	**2.27**	**1.16**	**1.50**	**15**	**7.0**	**0.00**	**0.00**	**0.16**	**0.34**	**0.99**	**1.13**	**1.55**	**2.46**	**3.81**	**5.60**	**7.25**	**8.94**	**10.75**	**12.58**	**15.89**	**35.15**	**88.21**	**97.99**	**98.41**	**98.50**	**99.97**
AMVC-08-14#1	-15.5	3.7	0.18	2.44	0.76	1.29	14	7	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.62	1.09	1.86	2.64	3.69	5.02	6.74	11.62	35.71	91.24	98.49	98.70	98.71	99.92
AMVC-08-14#2	-17.5	1.6	0.25	2.01	1.08	1.14	23	7	0.00	0.00	0.00	0.00	0.24	0.35	0.72	1.40	2.59	4.82	7.64	10.87	14.89	19.56	28.98	58.87	95.03	98.75	98.85	98.86	99.99
AMVC-08-14#3	-20.2	1.2	0.40	1.32	1.71	1.49	36	6	0.00	0.00	0.26	1.02	2.59	3.72	4.57	8.20	13.15	19.22	24.66	29.80	35.45	41.10	47.23	62.94	90.78	98.20	98.47	98.51	99.99
AMVC-08-14#4	-22.0	1.5	0.17	2.57	0.98	1.74	7	7	0.00	0.00	0.00	1.50	1.67	1.89	2.02	2.34	2.72	3.03	3.22	3.52	3.84	4.13	4.81	17.61	83.21	97.93	98.20	98.26	99.99
AMVC-08-14#5	-24.3	0.0	0.16	2.64	0.72	2.52	7	6	0.00	0.00	0.00	0.00	0.00	0.09	0.27	0.74	1.41	2.06	2.55	3.10	3.62	4.13	4.98	12.70	85.09	96.41	97.38	97.48	99.99
Cut to -22.5																													
AMVC-08-14 Composite		**8.0**	**0.22**	**2.21**	**1.14**	**1.37**	**18**	**6.9**	**0.00**	**0.00**	**0.04**	**0.43**	**0.75**	**0.98**	**1.39**	**2.24**	**3.50**	**5.28**	**7.05**	**9.01**	**11.34**	**13.97**	**19.16**	**41.03**	**90.42**	**98.39**	**98.60**	**98.63**	**99.96**
AMVC-08-15#1	-16.0	2.7	0.17	2.53	0.69	1.23	9	7	0.00	0.00	0.00	0.00	0.07	0.07	0.10	0.31	0.67	1.32	1.94	2.88	3.99	5.56	9.52	28.47	86.82	98.49	98.73	98.77	100.00
AMVC-08-15#2	-18.1	1.0	0.23	2.12	1.19	1.41	23	7	0.00	0.00	0.00	0.25	0.76	0.85	1.17	2.15	3.45	5.70	8.01	10.86	14.50	18.57	25.09	43.74	89.84	98.32	98.54	98.59	99.96
AMVC-08-15#3	-19.0	1.0	0.70	0.52	1.74	2.15	73	6	0.00	0.00	1.17	2.73	5.25	6.72	8.19	13.01	19.71	29.42	38.26	47.84	58.24	65.88	71.49	78.88	95.01	97.66	97.78	97.85	99.92
AMVC-08-15#4	-20.0	1.1	0.15	2.75	0.49	1.44	4	7	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.29	0.45	0.67	0.80	1.00	1.22	1.52	2.21	10.88	79.48	97.85	98.48	98.56	99.94
AMVC-08-15#5	-21.3	1.2	0.93	0.11	1.89	1.69	60	6	0.00	0.00	2.17	3.48	7.87	10.61	14.43	21.78	31.30	42.93	51.90	58.78	63.76	68.03	72.09	83.00	96.78	98.23	98.29	98.31	99.81
AMVC-08-15#6	-22.8	0.7	0.14	2.87	0.47	3.11	6	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.19	0.40	0.61	0.86	1.11	1.47	2.22	6.49	61.48	95.27	96.68	96.89	99.98
Cut to -22.5																													
AMVC-08-15 Composite		**7.7**	**0.27**	**1.90**	**1.56**	**1.65**	**26**	**6.6**	**0.00**	**0.00**	**0.49**	**0.93**	**2.03**	**2.66**	**3.51**	**5.52**	**8.20**	**11.85**	**14.95**	**18.01**	**21.06**	**23.87**	**27.63**	**40.99**	**86.48**	**97.94**	**98.29**	**98.35**	**99.94**
AMVC-08-16#1	-17.8	0.0	0.16	2.65	0.43	1.20	4	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.13	0.31	0.44	0.65	1.03	1.61	3.96	22.61	87.54	98.64	98.79	98.80	100.00
AMVC-08-16#2	-20.0	0.0	0.99	0.01	1.68	1.86		6	0.00	0.00	0.00	0.50	5.52	7.65	10.15	19.34	30.42	44.02	54.81	63.42	70.64	75.29	79.41	85.86	96.35	98.02	98.12	98.14	99.67
AMVC-08-16#3	-21.3	0.0	0.29	1.80	1.69	1.61		7	0.00	0.00	1.01	2.01	3.13	3.67	5.10	6.89	9.94	13.64	16.35	19.74	23.07	27.21	31.32	42.37	85.65	97.10	98.24	98.39	100.00
AMVC-08-16#4	-23.3	0.0	0.14	2.85	0.59	3.44		6	0.00	0.00	0.00	0.00	0.29	0.29	0.29	0.50	0.58	0.77	0.96	1.19	1.47	2.08	3.18	6.69	61.80	94.39	96.34	96.56	99.99
AMVC-08-16#5	-25.2	0.0	0.17	2.56	0.95	2.43		7	0.00	0.00	0.00	0.00	0.10	0.56	0.75	1.37	2.03	3.10	4.12	5.18	6.32	7.42	9.56	22.06	74.52	95.42	97.32	97.57	100.02
AMVC-08-16 Composite									**VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS**																				
AMVC-08-17#1	-14.6	0.0	0.16	2.68	0.48	1.15	4	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.20	0.53	0.93	1.34	1.79	2.28	3.46	14.49	88.17	98.55	98.83	98.85	99.99
AMVC-08-17#2	-17.7	0.0	0.17	2.59	0.79	1.50	9	6	0.00	0.00	0.00	0.00	0.00	0.15	0.47	0.75	1.23	2.00	2.83	3.80	4.99	6.21	7.95	17.29	82.64	97.59	98.46	98.50	100.00
AMVC-08-17#3	-19.9	0.0	0.90	0.15	2.10	2.03		5	0.00	0.00	2.40	3.28	10.33	13.56	17.63	27.15	35.51	45.33	52.07	57.24	61.36	64.23	66.22	71.71	93.05	97.68	97.91	97.97	100.00
AMVC-08-17#4	-21.7	0.0	0.15	2.71	0.44	1.29		8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.15	0.37	0.58	0.87	1.22	1.78	3.05	13.91	84.17	98.16	98.62	98.71	100.00
AMVC-08-17 Composite									**VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS**																				
AMVC-08-18#1	-18.8	0.7	0.22	2.20	1.07	1.27	16	6	0.00	0.00	0.00	0.85	1.02	1.05	1.08	1.57	2.46	4.29	6.10	8.08	10.27	12.65	19.45	46.50	92.64	98.54	98.71	98.73	99.95
AMVC-08-18#2	-20.0	1.5	0.16	2.60	0.53	1.46	5	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.22	0.50	0.77	1.22	1.83	2.90	6.23	27.55	86.60	98.13	98.50	98.54	99.97
AMVC-08-18#3	-21.5	1.8	0.17	2.55	0.54	1.41	5	7	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.14	0.25	0.46	0.79	1.19	1.94	3.11	7.33	32.48	89.47	98.23	98.55	98.59	100.00
AMVC-08-18#4	-23.2	1.5	0.38	1.38	1.58	2.49	37	5	0.00	0.00	0.00	0.00	1.15	1.29	1.89	4.83	9.63	17.48	24.04	29.99	35.08	40.75	47.04	61.72	91.20	96.76	97.45	97.51	99.98
AMVC-08-18#5	-24.8	1.5	0.17	2.54	0.95	1.62	8	6	0.00	0.00	0.00	0.39	0.88	0.88	0.88	1.67	2.22	3.04	3.79	4.84	5.79	6.87	8.82	20.54	80.71	97.96	98.32	98.38	99.98
AMVC-08-18#6	-26.3	0.5	0.17	2.56	0.76	3.51	11	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	1.00	1.72	2.44	3.58	4.79	6.23	8.46	24.46	81.08	94.53	96.27	96.49	100.00
AMVC-08-18#7	-28.0	0.0	1.84	-0.88	1.88	1.80	77	6	0.00	0.73	6.94	11.04	20.82	26.22	31.42	42.15	52.71	62.20	69.41	75.06	79.40	82.86	87.29	92.18	97.01	98.06	98.16	98.20	99.58
Cut to -26.0																													
AMVC-08-18 Composite		**7.5**	**0.20**	**2.30**	**1.08**	**1.80**	**13**	**6.2**	**0.00**	**0.00**	**0.00**	**0.16**	**0.52**	**0.55**	**0.67**	**1.52**	**2.77**	**4.83**	**6.64**	**8.49**	**10.28**	**12.45**	**16.56**	**35.73**	**87.23**	**97.64**	**98.14**	**98.20**	**99.98**
AMVC-08-19#1	-22.5	3.0	0.17	2.58	0.58	1.82	8	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.18	0.62	0.93	1.66	2.64	4.07	8.14	29.04	84.95	97.22	98.10	98.18	99.98
Cut to -23.0																													
AMVC-08-19 Composite		**3.0**	**0.17**	**2.58**	**0.58**	**1.82**	**8**	**6.0**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.18**	**0.62**	**0.93**	**1.66**	**2.64**	**4.07**	**8.14**	**29.04**	**84.95**	**97.22**	**98.10**	**98.18**	**99.98**
AMVC-08-20#1	-22.2	4.4	0.16	2.67	0.51	1.98	6	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.13	0.34	0.60	1.10	1.76	2.73	5.32	20.11	81.57	97.47	97.98	98.02	100.00
AMVC-08-20#2	-24.5	0.9	0.45	1.16	1.43	1.55	51	6	0.00	0.00	0.00	1.01	1.80	2.00	2.20	3.42	6.98	14.25	22.22	31.51	41.93	52.08	62.03	76.47	95.25	98.34	98.44	98.45	100.00
AMVC-08-20#3	-26.6	0.0	0.19	2.36	1.17	1.60		7	0.00	0.00	0.00	1.06	2.09	2.29	2.32	2.79	3.51	4.63	5.82	7.46	8.90	10.46	12.53	28.09	86.85	97.84	98.32	98.40	99.82
Cut to -25.5																													
AMVC-08-20 Composite		**5.3**	**0.19**	**2.42**	**0.94**	**1.91**	**14**	**6.0**	**0.00**	**0.00**	**0.00**	**0.17**	**0.31**	**0.34**	**0.37**	**0.59**	**1.29**	**2.70**	**4.27**	**6.26**	**8.58**	**11.11**	**14.95**	**29.68**	**83.89**	**97.62**	**98.06**	**98.09**	**100.00**

CUMULATIVE PERCENTS AND COMPUTED DISTRIBUTIONS
ANNA MARIA VIBRACORES (3 of 4)

SAMPLE I. D.	ELEVATION (NAVD 88 FT)	EFFECTIVE LENGTH (FT)	MEAN (mm)	PHI MEAN	PHI SORTING	% SILT	% CARBONATE	WET MUNSELL VALUE	PHI SIZES -4.25	-4.0	-3.50	-3.0	-2.50	-2.25	-2.0	-1.5	-1.0	-0.5	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	3.75	4.0	PAN
AMVC-08-21#1	-20.9	4.2	0.15	2.70	0.55	1.80	6	6	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.15	0.30	0.56	0.88	1.34	1.91	2.65	4.90	17.98	77.79	97.35	98.12	98.20	100.00
AMVC-08-21#2	-22.6	0.4	0.59	0.75	1.77	3.23	62	5	0.00	0.00	1.69	1.69	3.50	4.52	5.92	10.74	17.22	27.38	36.81	44.45	50.67	55.97	61.57	73.50	92.87	96.58	96.74	96.77	100.00
AMVC-08-21#3	-23.6	0.8	0.38	1.41	1.62	2.82	51	5	0.00	0.00	0.00	0.00	0.68	1.25	2.63	5.08	9.72	16.57	23.18	30.44	36.88	42.53	48.67	57.98	85.10	96.22	97.09	97.18	99.99
AMVC-08-21#4	-24.6	0.8	0.16	2.62	0.62	1.34	5	7	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.36	0.66	1.15	1.63	2.20	2.71	3.39	5.33	20.72	85.52	98.32	98.60	98.66	99.88
AMVC-08-21#5	-26.6	1.0	0.19	2.37	0.41	3.52	7	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.20	0.31	0.43	0.57	0.93	1.61	6.15	65.86	94.20	96.08	96.33	96.48	100.00
Cut to -26.0																													
AMVC-08-21 Composite		**7.2**	**0.19**	**2.40**	**1.01**	**2.18**	**14**	**5.8**	**0.00**	**0.00**	**0.09**	**0.09**	**0.27**	**0.39**	**0.69**	**1.30**	**2.31**	**3.86**	**5.37**	**6.96**	**8.46**	**9.98**	**13.13**	**32.46**	**82.58**	**97.11**	**97.73**	**97.82**	**99.99**
AMVC-08-22#1	-17.3	2.7	0.18	2.50	0.74	1.76	10	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.51	1.39	2.42	3.94	5.66	7.61	11.19	26.51	87.59	97.76	98.24	98.24	99.64
AMVC-08-22#2	-18.8	2.0	0.37	1.44	1.72	1.16	36	6	0.00	0.95	0.95	1.58	2.56	3.29	3.86	6.11	10.75	17.92	24.53	29.71	33.94	37.51	38.99	55.76	92.57	98.66	98.82	98.84	99.91
AMVC-08-22#3	-22.3	1.1	0.81	0.30	2.06	1.89	60	6	0.00	1.56	5.61	7.48	11.97	12.74	14.99	20.16	26.10	34.84	42.98	51.83	58.81	64.41	68.57	76.38	93.96	97.78	98.04	98.11	99.87
Cut to -22.5																													
AMVC-08-22 Composite		**5.8**	**0.30**	**1.72**	**1.67**	**1.58**	**28**	**6.0**	**0.00**	**0.62**	**1.39**	**1.96**	**3.15**	**3.55**	**4.17**	**6.03**	**8.89**	**13.43**	**17.74**	**21.91**	**25.49**	**28.69**	**31.66**	**46.05**	**90.52**	**98.07**	**98.40**	**98.42**	**99.78**
AMVC-08-23#1	-16.2	0.0	0.18	2.47	0.86	1.81	12	7	0.00	0.00	0.00	0.00	0.13	0.13	0.17	0.42	1.23	2.56	3.84	5.39	7.14	9.00	11.80	23.77	87.55	97.60	98.16	98.19	99.97
AMVC-08-23#2	-18.6	0.0	0.16	2.60	0.62	1.88		7	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.08	0.29	0.85	1.53	2.44	3.51	4.63	6.89	21.28	86.84	97.76	98.10	98.12	99.84
AMVC-08-23#3	-19.9	0.0	0.23	2.12	1.08	2.97		7	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.97	2.16	4.41	7.19	10.61	14.45	18.43	24.39	45.26	90.92	96.74	96.99	97.03	99.49
AMVC-08-23 Composite	**VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS**																												
AMVC-08-24#1	-18.0	0.0	0.20	2.32	0.78	1.47		6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.80	1.74	2.95	4.49	6.69	9.90	17.91	44.46	93.89	98.42	98.53	98.53	99.78
AMVC-08-24#2	-19.8	0.0	0.35	1.52	1.50	1.31		6	0.00	0.00	0.00	1.35	1.95	1.98	3.09	5.37	8.49	13.27	17.89	22.61	28.14	34.09	43.91	66.41	95.89	98.51	98.66	98.69	99.97
AMVC-08-24 Composite	**VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS**																												
AMVC-08-25#1	-19.8	0.0	0.39	1.35	1.60	1.27		6	0.00	1.45	1.45	1.75	1.85	1.91	2.31	4.14	7.48	14.43	22.33	30.78	38.74	44.34	49.16	60.70	94.34	98.62	98.73	98.73	99.97
AMVC-08-25 Composite	**VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS**																												
AMVC-08-26#1	-17.0	1.3	0.22	2.19	1.24	1.35	20	6	0.00	0.00	0.00	0.00	0.40	0.40	0.55	1.55	3.25	6.36	9.79	13.31	16.32	19.11	22.26	32.42	83.78	97.85	98.59	98.65	100.00
AMVC-08-26#2	-19.1	3.2	0.16	2.60	0.64	1.41	7	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.38	0.95	1.62	2.59	3.80	5.13	7.46	19.81	86.49	98.24	98.53	98.59	99.98
AMVC-08-26#3	-21.7	1.4	0.38	1.39	1.55	1.20	44	6	0.00	0.00	0.00	0.38	1.12	1.12	1.43	3.34	7.41	15.21	22.95	31.09	38.66	45.94	50.94	59.32	90.73	98.31	98.78	98.80	99.95
AMVC-08-26#4	-23.0	2.7	0.14	2.85	0.88	1.74	16	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.25	0.76	2.13	4.05	6.81	9.85	12.72	16.21	33.06	89.49	97.96	98.26	99.74
AMVC-08-26#5	-25.1	0.7	0.52	0.95	1.69	2.15	58	5	0.00	0.00	0.00	1.09	2.75	3.68	4.74	7.60	12.42	21.42	31.15	41.44	50.27	56.99	61.68	68.21	90.92	97.02	97.73	97.85	99.93
AMVC-08-26#6	-26.0	0.0	0.18	2.49	0.76	1.46	7	7	0.00	0.00	0.00	0.00	0.00	0.33	0.67	1.13	1.48	2.25	2.80	3.40	3.91	4.36	5.27	33.60	90.82	98.10	98.48	98.54	99.99
Cut to -25.5																													
AMVC-08-26 Composite		**9.3**	**0.20**	**2.31**	**1.24**	**1.52**	**21**	**5.9**	**0.00**	**0.00**	**0.00**	**0.14**	**0.43**	**0.50**	**0.65**	**1.39**	**2.71**	**5.34**	**8.34**	**11.73**	**15.17**	**18.50**	**21.68**	**30.12**	**71.57**	**95.56**	**98.35**	**98.48**	**99.90**
AMVC-08-27#1	-17.3	3.0	0.19	2.42	0.66	1.16	9	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.55	1.14	1.86	2.82	4.27	6.15	11.55	41.94	93.64	98.68	98.82	98.84	99.97
AMVC-08-27#2	-20.3	3.1	0.21	2.24	1.08	1.79	25	6	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.65	1.90	4.17	7.02	10.24	13.87	17.19	21.89	34.05	88.20	97.95	98.15	98.21	99.73
AMVC-08-27#3	-22.8	2.4	0.17	2.52	0.82	1.75	14	6	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.24	0.75	1.91	3.30	5.02	7.13	8.96	9.31	23.15	83.25	97.76	98.19	98.25	99.79
AMVC-08-27#4	-25.3	1.2	0.50	0.99	1.49	2.18	57	6	0.00	0.00	0.00	0.00	0.92	1.13	1.87	4.93	10.20	18.82	28.31	38.22	47.92	56.73	64.72	75.46	94.58	97.61	97.77	97.82	100.00
AMVC-08-27#5	-26.8	0.0	0.17	2.58	0.84	2.23	10	7	0.00	0.00	0.00	0.00	0.20	0.28	0.40	0.90	1.54	2.45	3.28	4.41	5.59	6.52	7.45	15.33	83.73	96.22	97.58	97.77	99.95
AMVC-08-27#6	-29.3	0.0	0.14	2.80	0.42	4.58	7	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.13	0.24	0.59	0.91	1.21	1.75	9.91	72.58	92.37	95.03	95.42	99.93
Cut to -25.5																													
AMVC-08-27 Composite		**9.7**	**0.22**	**2.21**	**1.08**	**1.63**	**21**	**6.0**	**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.14**	**0.30**	**0.95**	**2.22**	**4.49**	**7.14**	**10.12**	**13.45**	**16.63**	**20.88**	**38.92**	**89.45**	**98.09**	**98.32**	**98.37**	**99.85**
AMVC-08-28#1	-18.2	0.0	0.43	1.21	1.19	1.21	48	5	0.00	0.00	0.00	0.00	0.36	0.36	0.63	1.38	4.02	9.97	17.95	27.59	38.41	52.08	69.65	84.41	97.22	98.73	98.79	98.79	100.00
AMVC-08-28#2	-20.2	0.0	0.18	2.46	0.81	1.25		6	0.00	0.00	0.00	0.00	0.00	0.09	0.11	0.22	0.54	1.39	2.66	4.51	7.18	10.25	15.33	29.28	85.77	97.77	98.71	98.75	100.00
AMVC-08-28#3	-22.4	0.0	0.21	2.23	0.92	1.48		5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.52	1.56	3.34	6.68	11.51	18.19	28.23	42.42	88.12	97.89	98.46	98.52	100.00
AMVC-08-28#4	-24.5	0.0	0.57	0.81	1.31	1.88		5	0.00	0.00	0.00	0.93	3.12	3.57	4.00	5.23	7.72	14.05	22.82	35.36	49.70	68.63	83.78	88.56	96.28	97.56	98.10	98.12	99.99
AMVC-08-28#5	-26.6	0.0	0.17	2.55	0.89	2.35		6	0.00	0.00	0.00	0.00	0.27	0.27	0.44	0.90	1.60	2.53	3.50	4.73	6.33	7.99	10.24	20.56	77.88	96.48	97.46	97.65	99.90
AMVC-08-28 Composite	**VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS**																												
AMVC-08-29#1	-18.7	0.0	0.17	2.59	0.68	1.68	10	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.35	1.00	1.80	2.97	4.40	5.96	9.16	21.04	83.14	97.44	98.27	98.32	100.00
AMVC-08-29#2	-20.3	0.0	0.77	0.38	1.83	1.80	65	5	0.00	0.00	3.02	5.20	6.80	7.77	9.59	14.03	21.07	33.10	43.56	53.42	61.12	67.27	72.57	79.20	94.94	98.03	98.19	98.20	99.98
AMVC-08-29#3	-21.7	0.0	0.16	2.63	0.81	1.48		8	0.00	0.00	0.00	0.00	0.20	0.26	0.38	0.65	1.22	2.13	3.03	4.15	5.18	6.11	6.94	15.16	78.50	97.49	98.43	98.52	99.99
AMVC-08-29#4	-23.1	0.0	0.15	2.74	0.83	2.34		7	0.00	0.00	0.00	0.00	0.00	0.17	0.34	1.04	1.56	2.40	3.11	3.77	4.38	4.98	5.87	10.46	63.63	94.29	97.18	97.66	99.99
AMVC-08-29#5	-24.0	0.0	0.28	1.83	1.54	1.28		7	0.00	0.00	0.00	0.81	1.19	1.30	2.49	5.78	9.43	13.62	17.01	19.56	21.77	23.89	28.40	46.29	91.47	98.23	98.64	98.72	99.97
AMVC-08-29#6	-25.7	0.0	0.13	2.95	0.38	2.31		6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.16	0.21	0.23	0.30	0.33	0.41	0.55	3.38	54.74	94.55	97.15	97.69	99.99
AMVC-08-29 Composite	**VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS**																												
AMVC-08-30#1	-21.2	0.0	0.16	2.64	0.52	1.08	5	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.12	0.35	0.66	1.22	1.96	3.25	7.01	21.10	85.75	98.23	98.89	98.92	99.96
AMVC-08-30#2	-23.1	0.0	0.48	1.07	1.54	1.17		5	0.00	0.00	0.91	0.98	1.83	2.35	2.97	4.99	9.32	17.88	27.22	36.36	45.07	53.05	60.99	73.91	96.40	98.76	98.83	98.83	99.79
AMVC-08-30#3	-24.1	0.0	0.21	2.24	1.07	1.37		6	0.00	0.00	0.31	0.31	0.50	0.56	0.95	1.56	2.58	4.17	6.02	8.16	11.08	14.40	19.95	36.96	91.77	98.51	98.62	98.63	99.98
AMVC-08-30#4	-26.3	0.0	0.33	1.61	1.50	1.17		6	0.00	0.00	0.00	0.00	0.00	1.17	2.00	4.35	7.94	13.69	19.68	25.19	30.06	33.41	37.39	54.61	95.56	98.75	98.80	98.83	99.85
AMVC-08-30#5	-29.2	0.0	0.27	1.87	1.34	1.47		7	0.00	0.00	0.00	0.00	0.00	0.00	2.23	4.42	6.96	10.20	13.30	16.05	18.55	21.22	26.32	58.03	95.11	98.41	98.51	98.53	100.00
AMVC-08-30 Composite	**VIBRACORE NOT USED IN BORROW AREA COMPOSITE CALCULATIONS**																												

CUMULATIVE PERCENTS AND COMPUTED DISTRIBUTIONS
ANNA MARIA VIBRACORES (4 of 4)

SAMPLE I. D.	ELEVATION (NAVD 88 FT)	EFFECTIVE LENGTH (FT)	MEAN (mm)	PHI MEAN	PHI SORTING	% SILT	% CARBONATE	WET MUNSELL VALUE	PHI SIZES -4.25	-4.0	-3.50	-3.0	-2.50	-2.25	-2.0	-1.5	-1.0	-0.5	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	3.75	4.0	PAN
AMVC-05-08 S#1	-17.0	1.1	0.17	2.56	0.60	1.95	7	7	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.25	0.42	0.81	1.22	1.88	3.02	4.38	7.75	25.89	88.93	97.77	97.92	98.05	99.46
AMVC-05-08 S#2	-18.2	0.9	0.90	0.15	1.90	3.32	49	5	0.00	0.00	0.00	5.53	8.48	10.26	12.77	20.25	29.45	40.75	49.07	56.81	63.30	68.68	72.87	79.00	92.96	95.86	96.44	96.68	99.31
AMVC-05-08 S#3	-19.0	1.5	0.16	2.68	0.51	2.00	7	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.33	0.63	0.89	1.31	1.74	2.19	3.71	17.41	84.12	97.23	97.89	98.00	99.90
AMVC-05-08 S#4	-21.0	2.0	0.20	2.30	1.33	2.15	11	8	0.00	0.00	0.00	1.10	1.80	2.05	2.77	4.25	5.85	7.57	8.80	9.93	10.91	11.92	14.14	24.46	83.39	97.50	97.65	97.85	99.68
AMVC-05-08 S#5	-23.0	0.0	0.17	2.52	1.08	3.66		8	0.00	0.00	0.00	0.00	0.00	0.30	0.56	1.78	3.48	5.04	6.08	7.29	8.33	9.19	11.00	16.29	72.06	94.75	96.12	96.34	99.86
AMVC-05-08 S#6	-25.5	0.0	0.54	0.90	2.32	3.70		6	0.00	0.00	7.91	12.31	16.49	17.96	19.84	21.94	23.58	25.45	27.05	28.75	30.85	33.94	41.59	69.49	93.87	95.94	96.05	96.30	99.76
Cut to -22.0																													
AMVC-05-08 Composite		**5.5**	**0.23**	**2.11**	**1.46**	**2.26**	**15**	**7.3**	**0.00**	**0.00**	**0.00**	**1.30**	**2.04**	**2.42**	**3.12**	**4.96**	**7.12**	**9.75**	**11.72**	**13.64**	**15.40**	**17.05**	**19.63**	**31.75**	**86.26**	**97.21**	**97.57**	**97.74**	**99.64**
AMVC-05-09 S#1	-19.6	1.2	0.30	1.75	1.46	3.15	44	6	0.00	0.00	0.00	0.23	0.61	0.72	1.27	3.46	6.51	11.35	16.24	21.28	26.62	30.47	34.72	48.18	89.39	96.15	96.62	96.85	99.61
AMVC-05-09 S#2	-21.1	2.2	0.17	2.57	0.95	2.11	10	7	0.00	0.00	0.00	0.38	0.38	0.58	0.99	1.51	2.15	3.24	4.07	5.01	5.89	6.76	8.89	16.92	77.62	97.22	97.75	97.89	99.96
AMVC-05-09 S#3	-24.6	0.0	0.14	2.79	0.50	1.88		7	0.00	0.00	0.00	0.00	0.00	0.10	0.17	0.30	0.49	0.61	0.78	0.95	1.15	1.41	2.04	8.98	74.83	96.70	98.10	98.12	99.90
AMVC-05-09 S#4	-26.1	0.0	0.26	1.96	1.60	4.10		7	0.00	0.00	0.00	2.63	5.28	6.24	6.66	7.94	8.81	9.61	11.14	13.16	14.50	16.06	19.51	43.85	89.32	95.21	95.60	95.90	99.91
AMVC-05-09 S#5	-28.1	0.0	0.49	1.02	2.46	5.34		7	0.00	0.00	10.20	14.83	17.04	18.01	18.89	21.29	23.27	24.79	26.29	27.77	29.96	31.38	35.14	53.51	88.23	93.81	94.28	94.66	99.88
AMVC-05-09 S#6	-32.1	0.0	1.52	-0.60	2.85	5.03		7	0.00	16.37	25.91	29.59	34.72	37.79	39.56	43.33	46.67	50.79	54.09	56.97	59.45	61.43	64.28	69.37	84.14	93.63	94.74	94.97	99.88
Cut to -22.5																													
AMVC-05-09 Composite		**3.4**	**0.21**	**2.28**	**1.22**	**2.48**	**22**	**6.6**	**0.00**	**0.00**	**0.00**	**0.33**	**0.46**	**0.63**	**1.09**	**2.20**	**3.69**	**6.10**	**8.37**	**10.75**	**13.21**	**15.13**	**18.01**	**27.95**	**81.77**	**96.84**	**97.35**	**97.52**	**99.84**
AMVC-05-11 S#1	-19.7	1.5	0.16	2.63	0.56	1.88	5	6	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.34	0.48	0.70	0.94	1.21	1.63	2.33	4.92	23.26	85.06	97.71	97.97	98.12	99.67
AMVC-05-11 S#2	-21.7	1.7	0.17	2.53	0.71	2.00	7	6	0.00	0.00	0.00	0.00	0.06	0.06	0.12	0.52	0.99	1.61	1.98	2.61	3.57	4.77	8.77	30.59	88.72	93.23	97.91	98.00	99.60
AMVC-05-11 S#3	-22.7	0.1	1.55	-0.63	2.13	2.65	80	5	0.00	0.00	10.41	14.54	19.95	23.77	28.20	38.64	48.10	57.30	63.98	69.42	73.47	76.33	78.97	83.55	94.54	96.55	96.60	97.35	99.88
AMVC-05-11 S#4	-23.3	0.0	0.16	2.67	0.52	1.58		8	0.00	0.00	0.00	0.00	0.03	0.03	0.10	0.22	0.44	0.73	1.01	1.31	1.72	2.25	3.92	17.36	86.18	98.15	98.40	98.42	100.00
AMVC-05-11 S#5	-27.9	0.0	0.22	2.16	1.64	5.41		8	0.00	0.00	5.03	5.03	5.89	6.15	6.34	6.48	6.84	7.31	7.79	8.36	9.08	9.88	11.70	32.85	84.40	93.72	94.31	94.59	99.56
AMVC-05-11 S#6	-29.6	0.0	0.18	2.47	1.02	5.36		8	0.00	0.00	0.00	1.48	1.48	1.48	1.48	1.56	2.11	2.86	3.54	4.60	6.21	7.70	9.99	24.46	81.23	93.53	94.35	94.64	99.69
Cut to -22.5																													
AMVC-05-11 Composite		**3.3**	**0.18**	**2.48**	**0.92**	**1.97**	**8**	**6.0**	**0.00**	**0.00**	**0.32**	**0.44**	**0.73**	**0.84**	**1.01**	**1.59**	**2.19**	**2.88**	**3.39**	**4.00**	**4.81**	**5.83**	**9.15**	**28.86**	**87.23**	**95.37**	**97.90**	**98.03**	**99.64**
AMVC-05-13 S#1	-19.3	1.1	0.19	2.42	0.83	1.56	17	6	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.37	1.01	2.18	3.40	4.91	7.02	9.50	14.70	33.29	88.13	98.11	98.38	98.43	99.86
AMVC-05-13 S#2	-20.8	2.0	0.24	2.08	1.25	2.05	55	7	0.00	0.00	0.00	0.00	0.19	0.73	0.97	2.45	4.31	6.83	9.36	12.95	16.77	20.33	25.69	42.64	87.63	97.46	97.83	97.94	99.77
AMVC-05-13 S#3	-22.3	1.5	0.15	2.70	0.69	3.03	10	8	0.00	0.00	0.00	0.00	0.21	0.30	0.33	0.57	0.93	1.41	1.88	2.46	3.01	3.60	4.71	11.73	75.60	96.10	96.81	96.98	99.93
AMVC-05-13 S#4	-24.5	0.6	0.17	2.56	0.52	1.55	4	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.35	0.62	0.89	1.15	1.50	1.97	6.07	34.22	88.48	98.04	98.41	98.46	99.93
AMVC-05-13 S#7	-25.3	0.0	1.08	-0.11	2.59	3.16	52	6	0.00	7.58	15.63	19.42	23.69	26.19	29.30	33.86	38.97	44.33	48.77	53.54	57.21	60.69	63.85	69.23	87.53	96.17	96.63	96.84	99.84
AMVC-05-13 S#5	-26.8	0.0	0.76	0.40	3.19	3.93		7	0.00	27.15	29.06	31.56	31.80	31.80	31.99	32.35	32.98	33.50	33.84	34.26	34.74	35.34	36.40	45.64	84.88	94.92	95.77	96.07	99.77
AMVC-05-13 S#6	-30.1	0.0	0.16	2.67	0.61	4.21		7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.43	0.83	1.24	1.99	3.02	3.98	5.67	15.55	78.53	94.35	95.49	95.79	99.79
Cut to -24.0																													
AMVC-05-13 Composite		**5.2**	**0.19**	**2.39**	**0.99**	**2.17**	**28**	**7.2**	**0.00**	**0.00**	**0.00**	**0.00**	**0.13**	**0.37**	**0.48**	**1.21**	**2.18**	**3.57**	**4.96**	**6.86**	**8.98**	**11.09**	**15.05**	**30.77**	**84.36**	**97.27**	**97.72**	**97.83**	**99.85**
AMVC-05-14 S#1	-17.6	1.8	0.18	2.48	0.54	1.26	5	7	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.19	0.40	0.68	0.99	1.40	2.09	3.08	8.46	41.06	93.99	98.62	98.74	98.75	99.93
AMVC-05-14 S#2	-20.1	1.6	0.18	2.50	0.70	1.59	10	7	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.18	0.53	1.15	2.07	3.24	4.55	6.21	10.50	31.49	87.21	98.10	98.37	98.42	99.99
AMVC-05-14 S#3	-21.1	1.5	0.26	1.96	0.83	1.84	14	7	0.00	0.00	0.00	0.00	0.04	0.09	0.48	1.12	2.01	3.17	4.66	6.57	8.46	12.47	31.05	86.20	96.29	98.08	98.15	98.16	99.88
AMVC-05-14 S#4	-22.8	1.3	0.63	0.66	1.82	3.76	38	7	0.00	0.00	2.70	3.64	4.94	5.44	6.66	10.67	17.36	27.66	36.63	46.10	51.68	61.48	67.22	74.77	90.44	92.67	96.03	96.25	99.98
AMVC-05-14 S#5	-23.6	1.4	0.15	2.78	0.64	2.92	8	7	0.00	0.00	0.00	0.00	0.09	0.09	0.22	0.32	0.74	1.24	1.77	2.22	2.64	2.98	3.67	7.39	69.85	95.97	96.92	97.09	99.82
AMVC-05-14 S#6	-25.8	0.3	0.16	2.68	0.76	5.34	9	7	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.66	1.31	2.07	2.67	3.33	3.95	4.60	5.33	8.67	75.46	93.65	94.46	94.66	99.95
AMVC-05-14 S#7	-26.7	0.0	0.40	1.32	2.11	2.68		6	0.00	0.00	2.66	3.29	7.99	8.78	11.42	15.11	19.45	24.09	27.33	30.46	32.81	34.57	37.24	46.25	83.22	96.57	97.16	97.32	99.80
Cut to -25.0																													
AMVC-05-14 Composite		**7.9**	**0.23**	**2.15**	**1.19**	**2.29**	**14**	**7.0**	**0.00**	**0.00**	**0.44**	**0.60**	**0.84**	**0.93**	**1.27**	**2.13**	**3.62**	**5.84**	**7.97**	**10.33**	**12.13**	**15.15**	**21.86**	**46.04**	**87.49**	**96.77**	**97.62**	**97.71**	**99.92**
AMVC-05-15 S#1	-19.1	1.3	0.17	2.59	0.57	1.36	5	7	0.00	0.00	0.00	0.00	0.00	0.02	0.17	0.25	0.45	0.87	1.29	1.75	2.40	3.05	5.30	24.56	89.38	98.38	98.61	98.64	99.98
AMVC-05-15 S#2	-20.4	1.5	0.20	2.32	1.02	1.94	15	7	0.00	0.00	0.00	0.12	0.26	0.26	0.43	1.01	2.11	3.81	5.70	7.62	9.82	12.02	17.10	37.01	88.14	95.31	97.99	98.06	99.94
AMVC-05-15 S#3	-22.4	1.3	0.16	2.67	0.45	1.19	2	8	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.16	0.24	0.44	0.62	0.87	1.12	1.43	2.92	19.39	87.15	98.53	98.76	98.81	99.97
AMVC-05-15 S#4	-25.2	0.0	0.57	0.81	2.59	3.11	22	6	0.00	10.75	14.96	18.81	19.49	20.37	21.00	23.33	24.74	26.15	27.31	29.22	30.75	32.55	36.71	66.26	93.44	96.28	96.65	96.89	99.97
Cut to -22.5																													
AMVC-05-15 Composite		**4.1**	**0.17**	**2.52**	**0.75**	**1.52**	**8**	**7.3**	**0.00**	**0.00**	**0.00**	**0.04**	**0.10**	**0.10**	**0.22**	**0.50**	**0.99**	**1.81**	**2.69**	**3.62**	**4.71**	**5.82**	**8.86**	**27.48**	**88.22**	**97.30**	**98.43**	**98.48**	**99.96**
AMVC-05-16 S#1	-19.6	0.8	0.20	2.29	0.99	1.55	15	7	0.00	0.00	0.00	0.00	0.13	0.21	0.93	1.86	2.15	3.64	5.13	7.04	9.42	11.85	17.06	39.73	90.97	98.18	98.37	98.43	99.91
AMVC-05-16 S#2	-20.5	1.1	0.78	0.36	1.71	0.70	59	5	0.00	0.00	0.51	2.11	4.66	6.59	9.23	14.89	22.45	33.78	43.92	54.59	63.17	69.15	75.54	83.77	97.00	99.13	99.25	99.28	99.92
AMVC-05-16 S#3	-21.7	2.2	0.17	2.57	0.84	3.94	10	6	0.00	0.00	0.00	0.00	0.07	0.07	0.34	0.89	1.65	2.65	2.84	3.25	5.70	6.92	9.23	19.45	78.66	95.22	95.89	96.06	99.87
AMVC-05-16 S#4	-24.8	1.7	0.15	2.72	0.65	3.28	8	6	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.30	0.69	1.08	1.75	2.40	3.05	3.74	5.12	12.62	72.85	95.44	96.52	96.74	99.92
AMVC-05-16 S#5	-26.7	0.0	2.41	-1.27	1.53	2.00		6	0.00	1.59	3.57	11.47	24.17	28.66	35.29	47.52	58.98	69.92	78.51	85.58	90.55	93.02	94.43	95.56	97.44	97.92	97.99	98.00	99.77
AMVC-05-16 S#6	-28.7	0.0	0.90	0.15	2.46	6.40		6	0.00	0.00	9.59	12.69	18.27	20.49	23.93	29.46	35.57	42.22	46.15	50.18	53.14	55.17	57.97	64.20	83.57	92.85	93.40	93.60	99.74
Cut to -25.0																													
AMVC-05-16 Composite		**5.8**	**0.23**	**2.15**	**1.37**	**2.80**	**19**	**5.9**	**0.00**	**0.00**	**0.10**	**0.40**	**0.93**	**1.31**	**2.03**	**3.51**	**5.38**	**8.23**	**10.63**	**13.26**	**16.34**	**18.47**	**21.68**	**32.44**	**82.13**	**96.43**	**97.05**	**97.20**	**99.90**

APPENDIX 1-J

BORROW AREA COMPOSITE GRANULARMETRIC REPORTS

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: 2008 AMI BA COMP

Analysis Date: 09-18-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
		Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.78	0.08	#200 - 1.95 #230 - 1.86		17	

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	0.02	0.02	0.02	0.02
7/16"	-3.50	11.31	0.13	0.13	0.15	0.15
5/16"	-3.00	8.00	0.25	0.25	0.40	0.40
3.5	-2.50	5.66	0.35	0.35	0.75	0.75
4	-2.25	4.76	0.17	0.17	0.92	0.92
5	-2.00	4.00	0.34	0.34	1.26	1.26
7	-1.50	2.83	0.86	0.86	2.12	2.12
10	-1.00	2.00	1.29	1.29	3.41	3.41
14	-0.50	1.41	1.95	1.95	5.36	5.36
18	0.00	1.00	1.87	1.87	7.23	7.23
25	0.50	0.71	2.03	2.03	9.26	9.26
35	1.00	0.50	2.10	2.10	11.36	11.36
45	1.50	0.35	2.17	2.17	13.53	13.53
60	2.00	0.25	3.65	3.65	17.18	17.18
80	2.50	0.18	16.28	16.28	33.46	33.46
120	3.00	0.13	51.27	51.27	84.73	84.73
170	3.50	0.09	12.59	12.59	97.32	97.32
200	3.75	0.07	0.73	0.73	98.05	98.05
230	4.00	0.06	0.09	0.09	98.14	98.14

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	2.99	2.91	2.66	2.24	1.84	-0.59

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.28	0.21	1.17	-2.4	8.86

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-01 COMP

Analysis Date: 09-15-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
409,803	1,157,404	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.50	0.04	#200 - 1.60 #230 - 1.54		14	

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	0.08	0.08	0.08	0.08
3.5	-2.50	5.66	0.02	0.02	0.10	0.10
4	-2.25	4.76	0.02	0.02	0.12	0.12
5	-2.00	4.00	0.09	0.09	0.21	0.21
7	-1.50	2.83	0.30	0.30	0.51	0.51
10	-1.00	2.00	0.78	0.78	1.29	1.29
14	-0.50	1.41	1.64	1.64	2.93	2.93
18	0.00	1.00	1.86	1.86	4.79	4.79
25	0.50	0.71	2.11	2.11	6.90	6.90
35	1.00	0.50	2.15	2.15	9.05	9.05
45	1.50	0.35	2.17	2.17	11.22	11.22
60	2.00	0.25	3.27	3.27	14.49	14.49
80	2.50	0.18	13.48	13.48	27.97	27.97
120	3.00	0.13	56.63	56.63	84.60	84.60
170	3.50	0.09	13.32	13.32	97.92	97.92
200	3.75	0.07	0.48	0.48	98.40	98.40
230	4.00	0.06	0.06	0.06	98.46	98.46

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.39	2.99	2.92	2.69	2.39	2.06	0.05

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.42	0.19	0.94	-2.42	9.11

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-02 COMP

Analysis Date: 09-19-08

Analyzed By: PB

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,571	1,154,054	Florida State Plane West	

USCS:	Munsell:	Comments:
SP		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.26	0.00	#200 - 1.32 #230 - 1.26		9	

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	0.02	0.02	0.02	0.02
5	-2.00	4.00	0.05	0.05	0.07	0.07
7	-1.50	2.83	0.35	0.35	0.42	0.42
10	-1.00	2.00	0.46	0.46	0.88	0.88
14	-0.50	1.41	0.80	0.80	1.68	1.68
18	0.00	1.00	0.82	0.82	2.50	2.50
25	0.50	0.71	0.98	0.98	3.48	3.48
35	1.00	0.50	1.02	1.02	4.50	4.50
45	1.50	0.35	1.28	1.28	5.78	5.78
60	2.00	0.25	3.05	3.05	8.83	8.83
80	2.50	0.18	12.72	12.72	21.55	21.55
120	3.00	0.13	59.30	59.30	80.85	80.85
170	3.50	0.09	17.25	17.25	98.10	98.10
200	3.75	0.07	0.58	0.58	98.68	98.68
230	4.00	0.06	0.06	0.06	98.74	98.74

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	3.09	2.95	2.74	2.53	2.28	1.20

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.59	0.17	0.75	-3.15	15.2

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-03 COMP

Analysis Date: 09-15-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,167	1,154,072	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	2.37	0.06	#200 - 2.56 #230 - 2.43		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	0.35	0.35	0.35	0.35
3.5	-2.50	5.66	0.08	0.08	0.43	0.43
4	-2.25	4.76	0.03	0.03	0.46	0.46
5	-2.00	4.00	0.74	0.74	1.20	1.20
7	-1.50	2.83	0.52	0.52	1.72	1.72
10	-1.00	2.00	0.82	0.82	2.54	2.54
14	-0.50	1.41	0.94	0.94	3.48	3.48
18	0.00	1.00	0.80	0.80	4.28	4.28
25	0.50	0.71	0.90	0.90	5.18	5.18
35	1.00	0.50	0.89	0.89	6.07	6.07
45	1.50	0.35	1.02	1.02	7.09	7.09
60	2.00	0.25	2.48	2.48	9.57	9.57
80	2.50	0.18	16.04	16.04	25.61	25.61
120	3.00	0.13	54.89	54.89	80.50	80.50
170	3.50	0.09	15.87	15.87	96.37	96.37
200	3.75	0.07	1.07	1.07	97.44	97.44
230	4.00	0.06	0.13	0.13	97.57	97.57

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.46	3.11	2.95	2.72	2.48	2.20	0.40

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.5	0.18	0.97	-3.28	15.07

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-05 COMP

Analysis Date: 09-15-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,023	1,154,853	Florida State Plane West	

USCS:	Munsell:	Comments:
SP		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	2.17	0.03	#200 - 2.47 #230 - 2.20		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	0.05	0.05	0.05	0.05
3.5	-2.50	5.66	0.15	0.15	0.20	0.20
4	-2.25	4.76	0.00	0.00	0.20	0.20
5	-2.00	4.00	0.20	0.20	0.40	0.40
7	-1.50	2.83	0.41	0.41	0.81	0.81
10	-1.00	2.00	0.61	0.61	1.42	1.42
14	-0.50	1.41	0.83	0.83	2.25	2.25
18	0.00	1.00	0.75	0.75	3.00	3.00
25	0.50	0.71	0.85	0.85	3.85	3.85
35	1.00	0.50	1.04	1.04	4.89	4.89
45	1.50	0.35	1.23	1.23	6.12	6.12
60	2.00	0.25	2.89	2.89	9.01	9.01
80	2.50	0.18	15.24	15.24	24.25	24.25
120	3.00	0.13	55.33	55.33	79.58	79.58
170	3.50	0.09	16.90	16.90	96.48	96.48
200	3.75	0.07	1.05	1.05	97.53	97.53
230	4.00	0.06	0.27	0.27	97.80	97.80

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.46	3.13	2.96	2.73	2.51	2.23	1.04

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.56	0.17	0.83	-3.25	16.09

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites
Sample Name: AMVC-08-06 COMP
Analysis Date: 09-18-08
Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,252	1,154,756	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.87	0.01	#200 - 1.98 #230 - 1.88		13	

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	0.09	0.09	0.09	0.09
5/16"	-3.00	8.00	0.23	0.23	0.32	0.32
3.5	-2.50	5.66	0.36	0.36	0.68	0.68
4	-2.25	4.76	0.29	0.29	0.97	0.97
5	-2.00	4.00	0.20	0.20	1.17	1.17
7	-1.50	2.83	0.67	0.67	1.84	1.84
10	-1.00	2.00	0.93	0.93	2.77	2.77
14	-0.50	1.41	1.64	1.64	4.41	4.41
18	0.00	1.00	1.24	1.24	5.65	5.65
25	0.50	0.71	1.47	1.47	7.12	7.12
35	1.00	0.50	1.36	1.36	8.48	8.48
45	1.50	0.35	1.40	1.40	9.88	9.88
60	2.00	0.25	2.88	2.88	12.76	12.76
80	2.50	0.18	12.41	12.41	25.17	25.17
120	3.00	0.13	55.02	55.02	80.19	80.19
170	3.50	0.09	17.12	17.12	97.31	97.31
200	3.75	0.07	0.71	0.71	98.02	98.02
230	4.00	0.06	0.10	0.10	98.12	98.12

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.43	3.11	2.95	2.73	2.49	2.13	-0.26

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.44	0.18	1.08	-2.85	11.64

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-07 COMP

Analysis Date: 09-18-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,599	1,155,417	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.50	0.01	#200 - 1.56 #230 - 1.51		19	

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	0.29	0.29	0.29	0.29
5/16"	-3.00	8.00	0.16	0.16	0.45	0.45
3.5	-2.50	5.66	0.25	0.25	0.70	0.70
4	-2.25	4.76	0.32	0.32	1.02	1.02
5	-2.00	4.00	0.23	0.23	1.25	1.25
7	-1.50	2.83	0.83	0.83	2.08	2.08
10	-1.00	2.00	1.09	1.09	3.17	3.17
14	-0.50	1.41	1.34	1.34	4.51	4.51
18	0.00	1.00	1.13	1.13	5.64	5.64
25	0.50	0.71	1.31	1.31	6.95	6.95
35	1.00	0.50	1.40	1.40	8.35	8.35
45	1.50	0.35	1.54	1.54	9.89	9.89
60	2.00	0.25	3.33	3.33	13.22	13.22
80	2.50	0.18	19.76	19.76	32.98	32.98
120	3.00	0.13	53.04	53.04	86.02	86.02
170	3.50	0.09	11.97	11.97	97.99	97.99
200	3.75	0.07	0.45	0.45	98.44	98.44
230	4.00	0.06	0.05	0.05	98.49	98.49

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.38	2.98	2.90	2.66	2.30	2.07	-0.28

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.36	0.19	1.08	-2.93	12.34

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-08 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
411,713	1,155,241	Florida State Plane West	

USCS:	Munsell:	Comments:
SP		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	2.09	0.00	#200 - 2.21 #230 - 2.09		21	

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	0.12	0.12	0.12	0.12
7	-1.50	2.83	0.08	0.08	0.20	0.20
10	-1.00	2.00	0.18	0.18	0.38	0.38
14	-0.50	1.41	0.20	0.20	0.58	0.58
18	0.00	1.00	0.22	0.22	0.80	0.80
25	0.50	0.71	0.28	0.28	1.08	1.08
35	1.00	0.50	0.38	0.38	1.46	1.46
45	1.50	0.35	0.45	0.45	1.91	1.91
60	2.00	0.25	1.06	1.06	2.97	2.97
80	2.50	0.18	9.18	9.18	12.15	12.15
120	3.00	0.13	65.87	65.87	78.02	78.02
170	3.50	0.09	18.84	18.84	96.86	96.86
200	3.75	0.07	0.93	0.93	97.79	97.79
230	4.00	0.06	0.12	0.12	97.91	97.91

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.45	3.16	2.98	2.79	2.60	2.53	2.11

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.75	0.15	0.51	-4.35	33.92

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-09 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
410,625	1,155,511	Florida State Plane West	

USCS:	Munsell:	Comments:
SP		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.19	0.07	#200 - 1.29 #230 - 1.26		9	

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	0.87	0.87	0.87	0.87
10	-1.00	2.00	0.62	0.62	1.49	1.49
14	-0.50	1.41	0.71	0.71	2.20	2.20
18	0.00	1.00	0.81	0.81	3.01	3.01
25	0.50	0.71	0.83	0.83	3.84	3.84
35	1.00	0.50	1.12	1.12	4.96	4.96
45	1.50	0.35	1.58	1.58	6.54	6.54
60	2.00	0.25	5.60	5.60	12.14	12.14
80	2.50	0.18	30.01	30.01	42.15	42.15
120	3.00	0.13	48.18	48.18	90.33	90.33
170	3.50	0.09	8.15	8.15	98.48	98.48
200	3.75	0.07	0.23	0.23	98.71	98.71
230	4.00	0.06	0.03	0.03	98.74	98.74

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.29	2.93	2.84	2.58	2.21	2.06	1.01

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.4	0.19	0.78	-2.98	14.03

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-10 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
411,957	1,156,109	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.73	0.02	#200 - 1.79 #230 - 1.75		18	

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	0.15	0.15	0.15	0.15
5/16"	-3.00	8.00	0.36	0.36	0.51	0.51
3.5	-2.50	5.66	0.51	0.51	1.02	1.02
4	-2.25	4.76	0.24	0.24	1.26	1.26
5	-2.00	4.00	0.47	0.47	1.73	1.73
7	-1.50	2.83	1.07	1.07	2.80	2.80
10	-1.00	2.00	1.39	1.39	4.19	4.19
14	-0.50	1.41	1.95	1.95	6.14	6.14
18	0.00	1.00	1.72	1.72	7.86	7.86
25	0.50	0.71	1.99	1.99	9.85	9.85
35	1.00	0.50	2.41	2.41	12.26	12.26
45	1.50	0.35	2.72	2.72	14.98	14.98
60	2.00	0.25	5.18	5.18	20.16	20.16
80	2.50	0.18	21.32	21.32	41.48	41.48
120	3.00	0.13	47.48	47.48	88.96	88.96
170	3.50	0.09	8.88	8.88	97.84	97.84
200	3.75	0.07	0.37	0.37	98.21	98.21
230	4.00	0.06	0.04	0.04	98.25	98.25

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.34	2.95	2.85	2.59	2.11	1.60	-0.79

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.17	0.22	1.21	-2.32	8.35

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-11 COMP

Analysis Date: 09-18-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,575	1,156,776	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	2.00	0.04	#200 - 2.10 #230 - 2.04		42	

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	0.72	0.72	0.72	0.72
5/16"	-3.00	8.00	1.82	1.82	2.54	2.54
3.5	-2.50	5.66	1.21	1.21	3.75	3.75
4	-2.25	4.76	0.62	0.62	4.37	4.37
5	-2.00	4.00	1.13	1.13	5.50	5.50
7	-1.50	2.83	2.66	2.66	8.16	8.16
10	-1.00	2.00	4.31	4.31	12.47	12.47
14	-0.50	1.41	6.32	6.32	18.79	18.79
18	0.00	1.00	6.20	6.20	24.99	24.99
25	0.50	0.71	6.32	6.32	31.31	31.31
35	1.00	0.50	6.00	6.00	37.31	37.31
45	1.50	0.35	5.86	5.86	43.17	43.17
60	2.00	0.25	4.66	4.66	47.83	47.83
80	2.50	0.18	11.19	11.19	59.02	59.02
120	3.00	0.13	32.42	32.42	91.44	91.44
170	3.50	0.09	6.10	6.10	97.54	97.54
200	3.75	0.07	0.36	0.36	97.90	97.90
230	4.00	0.06	0.06	0.06	97.96	97.96

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.29	2.89	2.75	2.10	0.00	-0.72	-2.11

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.28	0.41	1.77	-0.88	2.76

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-13 COMP

Analysis Date: 09-18-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,927	1,157,394	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.47	0.03	#200 - 1.59 #230 - 1.50		15	

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	0.16	0.16	0.16	0.16
5/16"	-3.00	8.00	0.18	0.18	0.34	0.34
3.5	-2.50	5.66	0.65	0.65	0.99	0.99
4	-2.25	4.76	0.14	0.14	1.13	1.13
5	-2.00	4.00	0.42	0.42	1.55	1.55
7	-1.50	2.83	0.91	0.91	2.46	2.46
10	-1.00	2.00	1.35	1.35	3.81	3.81
14	-0.50	1.41	1.79	1.79	5.60	5.60
18	0.00	1.00	1.65	1.65	7.25	7.25
25	0.50	0.71	1.69	1.69	8.94	8.94
35	1.00	0.50	1.81	1.81	10.75	10.75
45	1.50	0.35	1.83	1.83	12.58	12.58
60	2.00	0.25	3.31	3.31	15.89	15.89
80	2.50	0.18	19.26	19.26	35.15	35.15
120	3.00	0.13	53.06	53.06	88.21	88.21
170	3.50	0.09	9.78	9.78	97.99	97.99
200	3.75	0.07	0.42	0.42	98.41	98.41
230	4.00	0.06	0.09	0.09	98.50	98.50

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.35	2.96	2.88	2.64	2.24	2.00	-0.67

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.27	0.21	1.16	-2.55	9.53

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-14 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,101	1,157,209	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.33	0.04	#200 - 1.40 #230 - 1.37		18	

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	0.04	0.04	0.04	0.04
5/16"	-3.00	8.00	0.39	0.39	0.43	0.43
3.5	-2.50	5.66	0.32	0.32	0.75	0.75
4	-2.25	4.76	0.23	0.23	0.98	0.98
5	-2.00	4.00	0.41	0.41	1.39	1.39
7	-1.50	2.83	0.85	0.85	2.24	2.24
10	-1.00	2.00	1.26	1.26	3.50	3.50
14	-0.50	1.41	1.78	1.78	5.28	5.28
18	0.00	1.00	1.77	1.77	7.05	7.05
25	0.50	0.71	1.96	1.96	9.01	9.01
35	1.00	0.50	2.33	2.33	11.34	11.34
45	1.50	0.35	2.63	2.63	13.97	13.97
60	2.00	0.25	5.19	5.19	19.16	19.16
80	2.50	0.18	21.87	21.87	41.03	41.03
120	3.00	0.13	49.39	49.39	90.42	90.42
170	3.50	0.09	7.97	7.97	98.39	98.39
200	3.75	0.07	0.21	0.21	98.60	98.60
230	4.00	0.06	0.03	0.03	98.63	98.63

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.29	2.94	2.84	2.59	2.13	1.70	-0.58

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.21	0.22	1.14	-2.41	8.96

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-15 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,461	1,157,788	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.59	0.06	#200 - 1.71 #230 - 1.65		26	

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	0.49	0.49	0.49	0.49
5/16"	-3.00	8.00	0.44	0.44	0.93	0.93
3.5	-2.50	5.66	1.10	1.10	2.03	2.03
4	-2.25	4.76	0.63	0.63	2.66	2.66
5	-2.00	4.00	0.85	0.85	3.51	3.51
7	-1.50	2.83	2.01	2.01	5.52	5.52
10	-1.00	2.00	2.68	2.68	8.20	8.20
14	-0.50	1.41	3.65	3.65	11.85	11.85
18	0.00	1.00	3.10	3.10	14.95	14.95
25	0.50	0.71	3.06	3.06	18.01	18.01
35	1.00	0.50	3.05	3.05	21.06	21.06
45	1.50	0.35	2.81	2.81	23.87	23.87
60	2.00	0.25	3.76	3.76	27.63	27.63
80	2.50	0.18	13.36	13.36	40.99	40.99
120	3.00	0.13	45.49	45.49	86.48	86.48
170	3.50	0.09	11.46	11.46	97.94	97.94
200	3.75	0.07	0.35	0.35	98.29	98.29
230	4.00	0.06	0.06	0.06	98.35	98.35

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.37	2.97	2.87	2.60	1.65	0.17	-1.63

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.9	0.27	1.56	-1.62	4.65

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-18 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
411,655	1,156,808	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.78	0.02	#200 - 1.86 #230 - 1.80		13	

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	0.16	0.16	0.16	0.16
3.5	-2.50	5.66	0.36	0.36	0.52	0.52
4	-2.25	4.76	0.03	0.03	0.55	0.55
5	-2.00	4.00	0.12	0.12	0.67	0.67
7	-1.50	2.83	0.85	0.85	1.52	1.52
10	-1.00	2.00	1.25	1.25	2.77	2.77
14	-0.50	1.41	2.06	2.06	4.83	4.83
18	0.00	1.00	1.81	1.81	6.64	6.64
25	0.50	0.71	1.85	1.85	8.49	8.49
35	1.00	0.50	1.79	1.79	10.28	10.28
45	1.50	0.35	2.17	2.17	12.45	12.45
60	2.00	0.25	4.11	4.11	16.56	16.56
80	2.50	0.18	19.17	19.17	35.73	35.73
120	3.00	0.13	51.50	51.50	87.23	87.23
170	3.50	0.09	10.41	10.41	97.64	97.64
200	3.75	0.07	0.50	0.50	98.14	98.14
230	4.00	0.06	0.06	0.06	98.20	98.20

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.37	2.97	2.88	2.64	2.22	1.93	-0.45

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.3	0.20	1.08	-2.41	8.88

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-19 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
411,064	1,156,408	Florida State Plane West	

USCS:	Munsell:	Comments:
SP		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.80	0.02	#200 - 1.90 #230 - 1.82		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	0.00	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	0.02	0.02	0.02	0.02
10	-1.00	2.00	0.16	0.16	0.18	0.18
14	-0.50	1.41	0.44	0.44	0.62	0.62
18	0.00	1.00	0.31	0.31	0.93	0.93
25	0.50	0.71	0.73	0.73	1.66	1.66
35	1.00	0.50	0.98	0.98	2.64	2.64
45	1.50	0.35	1.43	1.43	4.07	4.07
60	2.00	0.25	4.07	4.07	8.14	8.14
80	2.50	0.18	20.90	20.90	29.04	29.04
120	3.00	0.13	55.91	55.91	84.95	84.95
170	3.50	0.09	12.27	12.27	97.22	97.22
200	3.75	0.07	0.88	0.88	98.10	98.10
230	4.00	0.06	0.08	0.08	98.18	98.18

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	2.99	2.91	2.69	2.40	2.19	1.61

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.58	0.17	0.58	-2.62	14.15

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-20 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
410,427	1,156,981	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.91	0.00	#200 - 1.94 #230 - 1.91		14	

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	0.17	0.17	0.17	0.17
3.5	-2.50	5.66	0.14	0.14	0.31	0.31
4	-2.25	4.76	0.03	0.03	0.34	0.34
5	-2.00	4.00	0.03	0.03	0.37	0.37
7	-1.50	2.83	0.22	0.22	0.59	0.59
10	-1.00	2.00	0.70	0.70	1.29	1.29
14	-0.50	1.41	1.41	1.41	2.70	2.70
18	0.00	1.00	1.57	1.57	4.27	4.27
25	0.50	0.71	1.99	1.99	6.26	6.26
35	1.00	0.50	2.32	2.32	8.58	8.58
45	1.50	0.35	2.53	2.53	11.11	11.11
60	2.00	0.25	3.84	3.84	14.95	14.95
80	2.50	0.18	14.73	14.73	29.68	29.68
120	3.00	0.13	54.21	54.21	83.89	83.89
170	3.50	0.09	13.73	13.73	97.62	97.62
200	3.75	0.07	0.44	0.44	98.06	98.06
230	4.00	0.06	0.03	0.03	98.09	98.09

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.40	3.00	2.92	2.69	2.34	2.04	0.18

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.42	0.19	0.94	-2.53	10.35

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-21 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
410,936	1,157,377	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	2.17	0.01	#200 - 2.27 #230 - 2.18		14	

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	0.09	0.09	0.09	0.09
5/16"	-3.00	8.00	0.00	0.00	0.09	0.09
3.5	-2.50	5.66	0.18	0.18	0.27	0.27
4	-2.25	4.76	0.12	0.12	0.39	0.39
5	-2.00	4.00	0.30	0.30	0.69	0.69
7	-1.50	2.83	0.61	0.61	1.30	1.30
10	-1.00	2.00	1.01	1.01	2.31	2.31
14	-0.50	1.41	1.55	1.55	3.86	3.86
18	0.00	1.00	1.51	1.51	5.37	5.37
25	0.50	0.71	1.59	1.59	6.96	6.96
35	1.00	0.50	1.50	1.50	8.46	8.46
45	1.50	0.35	1.52	1.52	9.98	9.98
60	2.00	0.25	3.15	3.15	13.13	13.13
80	2.50	0.18	19.33	19.33	32.46	32.46
120	3.00	0.13	50.12	50.12	82.58	82.58
170	3.50	0.09	14.53	14.53	97.11	97.11
200	3.75	0.07	0.62	0.62	97.73	97.73
230	4.00	0.06	0.09	0.09	97.82	97.82

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.43	3.05	2.92	2.67	2.31	2.07	-0.12

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.4	0.19	1.01	-2.65	10.63

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-22 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
410,419	1,157,939	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.36	0.22	#200 - 1.60 #230 - 1.58		28	

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	0.62	0.62	0.62	0.62
7/16"	-3.50	11.31	0.77	0.77	1.39	1.39
5/16"	-3.00	8.00	0.57	0.57	1.96	1.96
3.5	-2.50	5.66	1.19	1.19	3.15	3.15
4	-2.25	4.76	0.40	0.40	3.55	3.55
5	-2.00	4.00	0.62	0.62	4.17	4.17
7	-1.50	2.83	1.86	1.86	6.03	6.03
10	-1.00	2.00	2.86	2.86	8.89	8.89
14	-0.50	1.41	4.54	4.54	13.43	13.43
18	0.00	1.00	4.31	4.31	17.74	17.74
25	0.50	0.71	4.17	4.17	21.91	21.91
35	1.00	0.50	3.58	3.58	25.49	25.49
45	1.50	0.35	3.20	3.20	28.69	28.69
60	2.00	0.25	2.97	2.97	31.66	31.66
80	2.50	0.18	14.39	14.39	46.05	46.05
120	3.00	0.13	44.47	44.47	90.52	90.52
170	3.50	0.09	7.55	7.55	98.07	98.07
200	3.75	0.07	0.33	0.33	98.40	98.40
230	4.00	0.06	0.02	0.02	98.42	98.42

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.30	2.93	2.83	2.54	0.93	-0.20	-1.78

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.72	0.30	1.67	-1.49	4.39

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-26 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
409,639	1,158,254	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.42	0.10	#200 - 1.65 #230 - 1.52		21	

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	0.14	0.14	0.14	0.14
3.5	-2.50	5.66	0.29	0.29	0.43	0.43
4	-2.25	4.76	0.07	0.07	0.50	0.50
5	-2.00	4.00	0.15	0.15	0.65	0.65
7	-1.50	2.83	0.74	0.74	1.39	1.39
10	-1.00	2.00	1.32	1.32	2.71	2.71
14	-0.50	1.41	2.63	2.63	5.34	5.34
18	0.00	1.00	3.00	3.00	8.34	8.34
25	0.50	0.71	3.39	3.39	11.73	11.73
35	1.00	0.50	3.44	3.44	15.17	15.17
45	1.50	0.35	3.33	3.33	18.50	18.50
60	2.00	0.25	3.18	3.18	21.68	21.68
80	2.50	0.18	8.44	8.44	30.12	30.12
120	3.00	0.13	41.45	41.45	71.57	71.57
170	3.50	0.09	23.99	23.99	95.56	95.56
200	3.75	0.07	2.79	2.79	98.35	98.35
230	4.00	0.06	0.13	0.13	98.48	98.48

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.49	3.26	3.07	2.74	2.20	1.12	-0.56

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.31	0.20	1.24	-1.77	5.59

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-08-27 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
409,240	1,158,469	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.48	0.15	#200 - 1.68 #230 - 1.63		21	

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	0.03	0.03	0.14	0.14
5	-2.00	4.00	0.16	0.16	0.30	0.30
7	-1.50	2.83	0.65	0.65	0.95	0.95
10	-1.00	2.00	1.27	1.27	2.22	2.22
14	-0.50	1.41	2.27	2.27	4.49	4.49
18	0.00	1.00	2.65	2.65	7.14	7.14
25	0.50	0.71	2.98	2.98	10.12	10.12
35	1.00	0.50	3.33	3.33	13.45	13.45
45	1.50	0.35	3.18	3.18	16.63	16.63
60	2.00	0.25	4.25	4.25	20.88	20.88
80	2.50	0.18	18.04	18.04	38.92	38.92
120	3.00	0.13	50.53	50.53	89.45	89.45
170	3.50	0.09	8.64	8.64	98.09	98.09
200	3.75	0.07	0.23	0.23	98.32	98.32
230	4.00	0.06	0.05	0.05	98.37	98.37

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.32	2.95	2.86	2.61	2.11	1.40	-0.40

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.21	0.22	1.08	-1.92	6.19

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-05-08 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,793	1,157,117	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.90	0.36	#200 - 2.43 #230 - 2.26		15	

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	1.30	1.30	1.30	1.30
3.5	-2.50	5.66	0.74	0.74	2.04	2.04
4	-2.25	4.76	0.38	0.38	2.42	2.42
5	-2.00	4.00	0.70	0.70	3.12	3.12
7	-1.50	2.83	1.84	1.84	4.96	4.96
10	-1.00	2.00	2.16	2.16	7.12	7.12
14	-0.50	1.41	2.63	2.63	9.75	9.75
18	0.00	1.00	1.97	1.97	11.72	11.72
25	0.50	0.71	1.92	1.92	13.64	13.64
35	1.00	0.50	1.76	1.76	15.40	15.40
45	1.50	0.35	1.65	1.65	17.05	17.05
60	2.00	0.25	2.58	2.58	19.63	19.63
80	2.50	0.18	12.12	12.12	31.75	31.75
120	3.00	0.13	54.51	54.51	86.26	86.26
170	3.50	0.09	10.95	10.95	97.21	97.21
200	3.75	0.07	0.36	0.36	97.57	97.57
230	4.00	0.06	0.17	0.17	97.74	97.74

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.40	2.98	2.90	2.67	2.22	1.18	-1.49

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.11	0.23	1.46	-2.07	6.37

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-05-09 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,365	1,157,436	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	2.32	0.16	#200 - 2.65 #230 - 2.48		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	0.33	0.33	0.33	0.33
3.5	-2.50	5.66	0.13	0.13	0.46	0.46
4	-2.25	4.76	0.17	0.17	0.63	0.63
5	-2.00	4.00	0.46	0.46	1.09	1.09
7	-1.50	2.83	1.11	1.11	2.20	2.20
10	-1.00	2.00	1.49	1.49	3.69	3.69
14	-0.50	1.41	2.41	2.41	6.10	6.10
18	0.00	1.00	2.27	2.27	8.37	8.37
25	0.50	0.71	2.38	2.38	10.75	10.75
35	1.00	0.50	2.46	2.46	13.21	13.21
45	1.50	0.35	1.92	1.92	15.13	15.13
60	2.00	0.25	2.88	2.88	18.01	18.01
80	2.50	0.18	9.94	9.94	27.95	27.95
120	3.00	0.13	53.82	53.82	81.77	81.77
170	3.50	0.09	15.07	15.07	96.84	96.84
200	3.75	0.07	0.51	0.51	97.35	97.35
230	4.00	0.06	0.17	0.17	97.52	97.52

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.44	3.07	2.94	2.70	2.35	1.65	-0.73

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.28	0.21	1.22	-2.16	7.16

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-05-11 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,677	1,156,316	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.61	0.36	#200 - 2.10 #230 - 1.97		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	0.32	0.32	0.32	0.32
5/16"	-3.00	8.00	0.12	0.12	0.44	0.44
3.5	-2.50	5.66	0.29	0.29	0.73	0.73
4	-2.25	4.76	0.11	0.11	0.84	0.84
5	-2.00	4.00	0.17	0.17	1.01	1.01
7	-1.50	2.83	0.58	0.58	1.59	1.59
10	-1.00	2.00	0.60	0.60	2.19	2.19
14	-0.50	1.41	0.69	0.69	2.88	2.88
18	0.00	1.00	0.51	0.51	3.39	3.39
25	0.50	0.71	0.61	0.61	4.00	4.00
35	1.00	0.50	0.81	0.81	4.81	4.81
45	1.50	0.35	1.02	1.02	5.83	5.83
60	2.00	0.25	3.32	3.32	9.15	9.15
80	2.50	0.18	19.71	19.71	28.86	28.86
120	3.00	0.13	58.37	58.37	87.23	87.23
170	3.50	0.09	8.14	8.14	95.37	95.37
200	3.75	0.07	2.53	2.53	97.90	97.90
230	4.00	0.06	0.13	0.13	98.03	98.03

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.48	2.97	2.90	2.68	2.40	2.17	1.09

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.48	0.18	0.92	-3.76	20.2

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-05-13 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,983	1,155,942	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	2.02	0.15	#200 - 2.28 #230 - 2.17		28	

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	0.13	0.13	0.13	0.13
4	-2.25	4.76	0.24	0.24	0.37	0.37
5	-2.00	4.00	0.11	0.11	0.48	0.48
7	-1.50	2.83	0.73	0.73	1.21	1.21
10	-1.00	2.00	0.97	0.97	2.18	2.18
14	-0.50	1.41	1.39	1.39	3.57	3.57
18	0.00	1.00	1.39	1.39	4.96	4.96
25	0.50	0.71	1.90	1.90	6.86	6.86
35	1.00	0.50	2.12	2.12	8.98	8.98
45	1.50	0.35	2.11	2.11	11.09	11.09
60	2.00	0.25	3.96	3.96	15.05	15.05
80	2.50	0.18	15.72	15.72	30.77	30.77
120	3.00	0.13	53.59	53.59	84.36	84.36
170	3.50	0.09	12.91	12.91	97.27	97.27
200	3.75	0.07	0.45	0.45	97.72	97.72
230	4.00	0.06	0.11	0.11	97.83	97.83

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	3.00	2.91	2.68	2.32	2.03	0.01

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.39	0.19	0.99	-2.51	9.6

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-05-14 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,680	1,156,488	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	2.21	0.08	#200 - 2.38 #230 - 2.29		14	

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	0.44	0.44	0.44	0.44
5/16"	-3.00	8.00	0.16	0.16	0.60	0.60
3.5	-2.50	5.66	0.24	0.24	0.84	0.84
4	-2.25	4.76	0.09	0.09	0.93	0.93
5	-2.00	4.00	0.34	0.34	1.27	1.27
7	-1.50	2.83	0.86	0.86	2.13	2.13
10	-1.00	2.00	1.49	1.49	3.62	3.62
14	-0.50	1.41	2.22	2.22	5.84	5.84
18	0.00	1.00	2.13	2.13	7.97	7.97
25	0.50	0.71	2.36	2.36	10.33	10.33
35	1.00	0.50	1.80	1.80	12.13	12.13
45	1.50	0.35	3.02	3.02	15.15	15.15
60	2.00	0.25	6.71	6.71	21.86	21.86
80	2.50	0.18	24.18	24.18	46.04	46.04
120	3.00	0.13	41.45	41.45	87.49	87.49
170	3.50	0.09	9.28	9.28	96.77	96.77
200	3.75	0.07	0.85	0.85	97.62	97.62
230	4.00	0.06	0.09	0.09	97.71	97.71

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.40	2.96	2.85	2.55	2.06	1.56	-0.69

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.15	0.23	1.19	-2.24	8.32

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-05-15 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
413,034	1,156,701	Florida State Plane West	

USCS:	Munsell:	Comments:
SP		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	1.48	0.04	#200 - 1.57 #230 - 1.52		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	0.04	0.04	0.04	0.04
3.5	-2.50	5.66	0.06	0.06	0.10	0.10
4	-2.25	4.76	0.00	0.00	0.10	0.10
5	-2.00	4.00	0.12	0.12	0.22	0.22
7	-1.50	2.83	0.28	0.28	0.50	0.50
10	-1.00	2.00	0.49	0.49	0.99	0.99
14	-0.50	1.41	0.82	0.82	1.81	1.81
18	0.00	1.00	0.88	0.88	2.69	2.69
25	0.50	0.71	0.93	0.93	3.62	3.62
35	1.00	0.50	1.09	1.09	4.71	4.71
45	1.50	0.35	1.11	1.11	5.82	5.82
60	2.00	0.25	3.04	3.04	8.86	8.86
80	2.50	0.18	18.62	18.62	27.48	27.48
120	3.00	0.13	60.74	60.74	88.22	88.22
170	3.50	0.09	9.08	9.08	97.30	97.30
200	3.75	0.07	1.13	1.13	98.43	98.43
230	4.00	0.06	0.05	0.05	98.48	98.48

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.37	2.97	2.89	2.69	2.43	2.19	1.13

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.52	0.17	0.75	-3.3	16.64

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2008 Composites

Sample Name: AMVC-05-16 COMP

Analysis Date: 09-16-08

Analyzed By: KD

Coastal Planning & Engineering
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FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
412,179	1,156,657	Florida State Plane West	

USCS:	Munsell:	Comments:
SW		COMPOSITE

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
100.00	100.00	2.70	0.10	#200 - 2.95 #230 - 2.80		19	

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	0.10	0.10	0.10	0.10
5/16"	-3.00	8.00	0.30	0.30	0.40	0.40
3.5	-2.50	5.66	0.53	0.53	0.93	0.93
4	-2.25	4.76	0.38	0.38	1.31	1.31
5	-2.00	4.00	0.72	0.72	2.03	2.03
7	-1.50	2.83	1.48	1.48	3.51	3.51
10	-1.00	2.00	1.87	1.87	5.38	5.38
14	-0.50	1.41	2.85	2.85	8.23	8.23
18	0.00	1.00	2.40	2.40	10.63	10.63
25	0.50	0.71	2.63	2.63	13.26	13.26
35	1.00	0.50	3.08	3.08	16.34	16.34
45	1.50	0.35	2.13	2.13	18.47	18.47
60	2.00	0.25	3.21	3.21	21.68	21.68
80	2.50	0.18	10.76	10.76	32.44	32.44
120	3.00	0.13	49.69	49.69	82.13	82.13
170	3.50	0.09	14.30	14.30	96.43	96.43
200	3.75	0.07	0.62	0.62	97.05	97.05
230	4.00	0.06	0.15	0.15	97.20	97.20

Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.

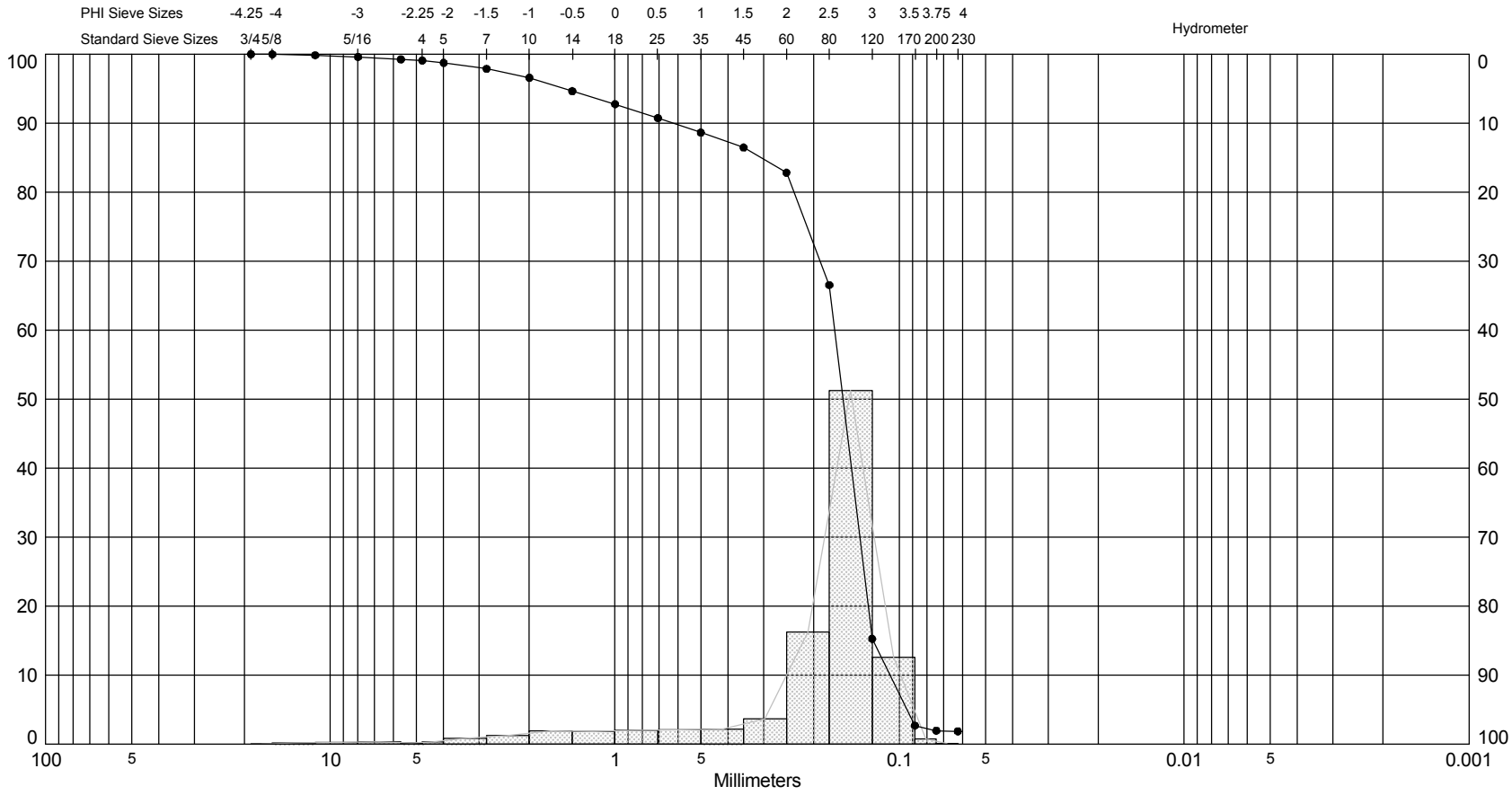
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.45	3.07	2.93	2.68	2.15	0.94	-1.10

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.15	0.23	1.37	-1.91	5.9

GRANULARMETRIC REPORT VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

APPENDIX 1-K

BORROW AREA COMPOSITE GRAIN SIZE DISTRIBUTION CURVES/HISTOGRAMS



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
2008 AMI BA COMP	—●—		SW	#200 - 1.95 #230 - 1.86		17	2.66	2.28	-2.4	8.86	1.17

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-18-08
Analyzed By:	KD
Easting (X, ft):	
Northing (Y, ft):	
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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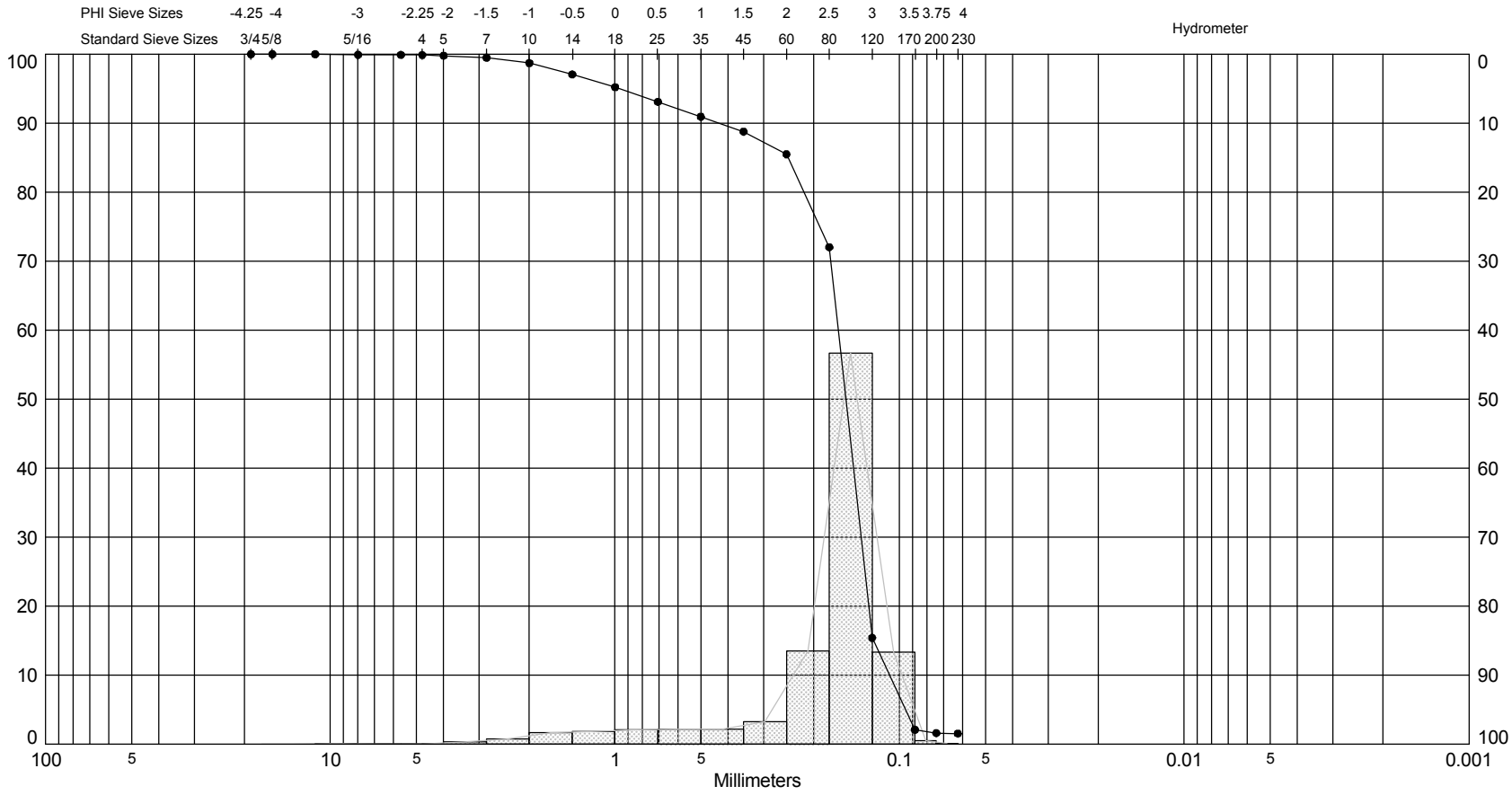
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-01 COMP	—●—		SW	#200 - 1.60 #230 - 1.54		14	2.69	2.42	-2.42	9.11	0.94

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-15-08
Analyzed By:	KD
Easting (X, ft):	409,803
Northing (Y, ft):	1,157,404
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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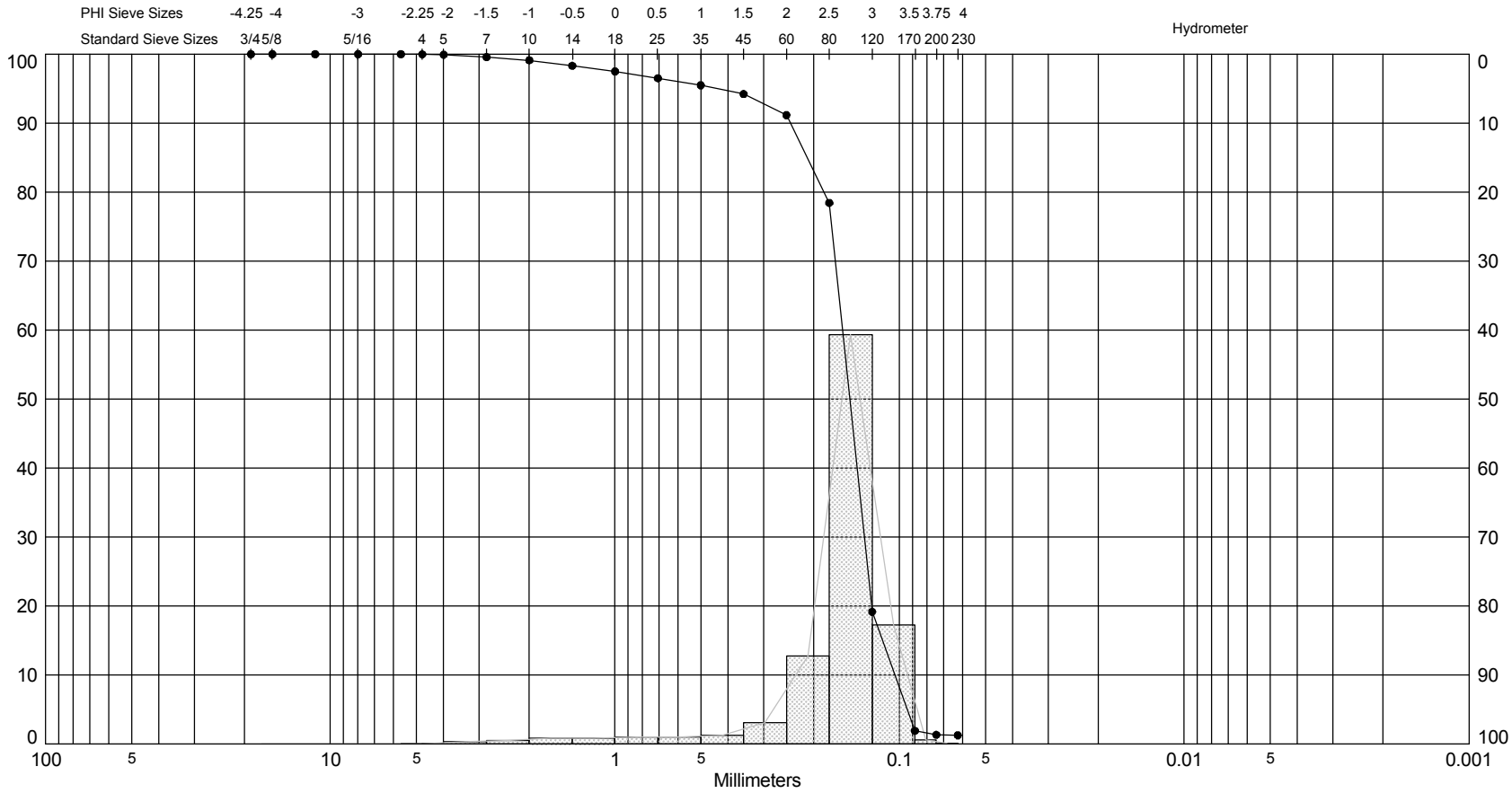

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-02 COMP	—●—		SP	#200 - 1.32 #230 - 1.26		9	2.74	2.59	-3.15	15.2	0.75

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-19-08
Analyzed By:	PB
Easting (X, ft):	412,571
Northing (Y, ft):	1,154,054
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
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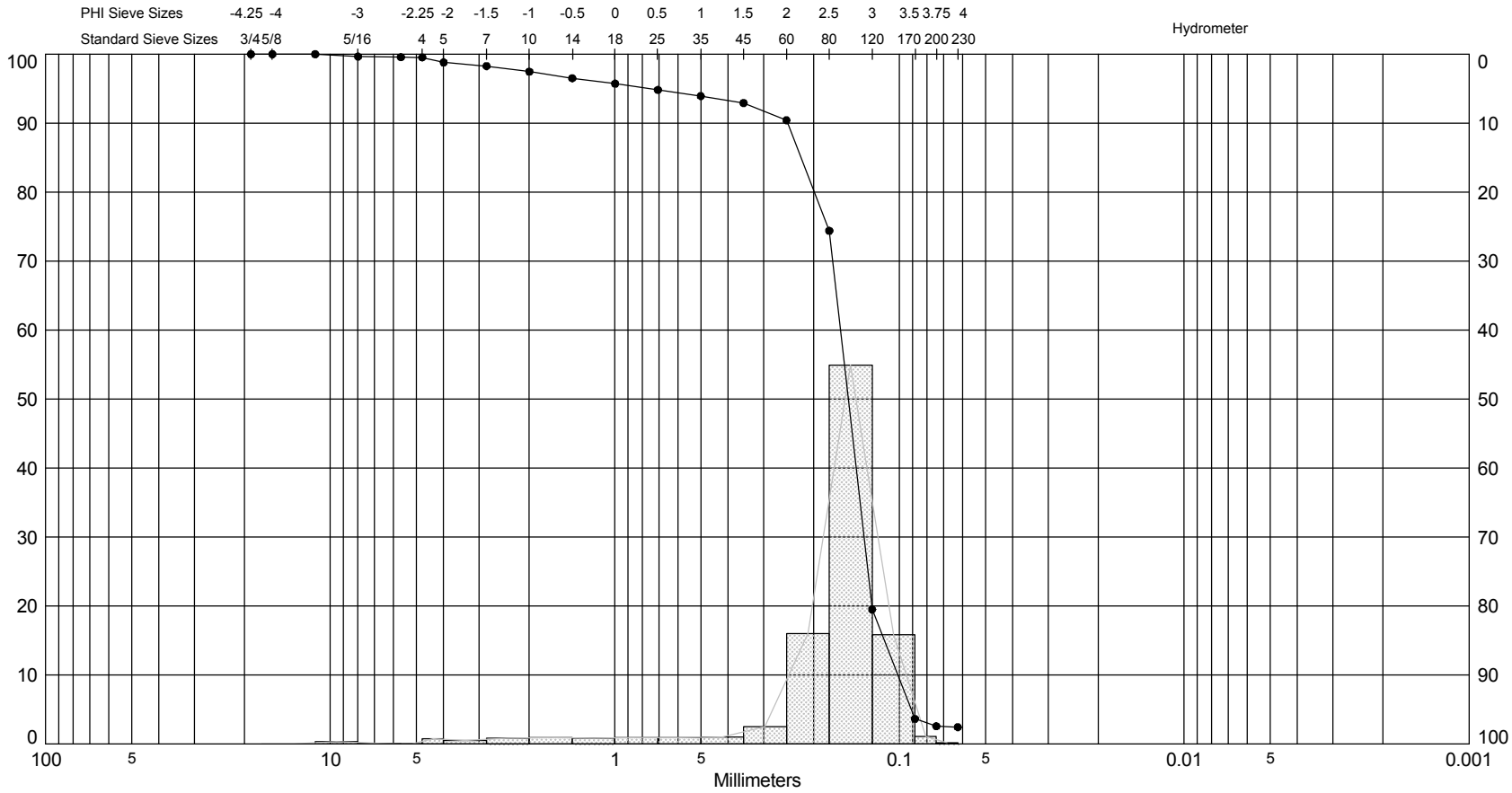

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-03 COMP	—●—		SW	#200 - 2.56 #230 - 2.43		10	2.72	2.5	-3.28	15.07	0.97

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-15-08
Analyzed By:	KD
Easting (X, ft):	413,167
Northing (Y, ft):	1,154,072
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
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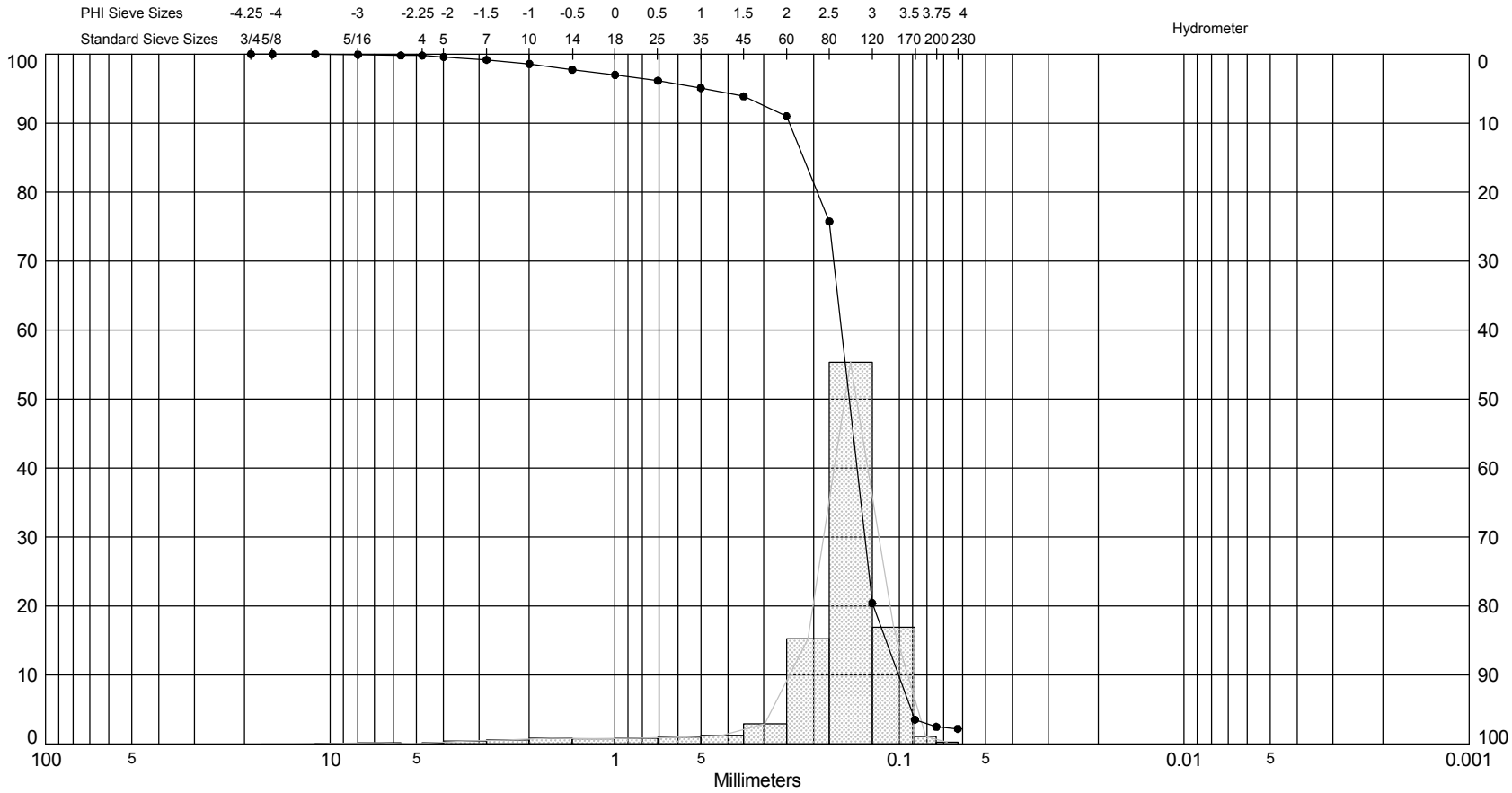
SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-05 COMP	—●—		SP	#200 - 2.47 #230 - 2.20		10	2.73	2.56	-3.25	16.09	0.83

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-15-08
Analyzed By:	KD
Easting (X, ft):	413,023
Northing (Y, ft):	1,154,853
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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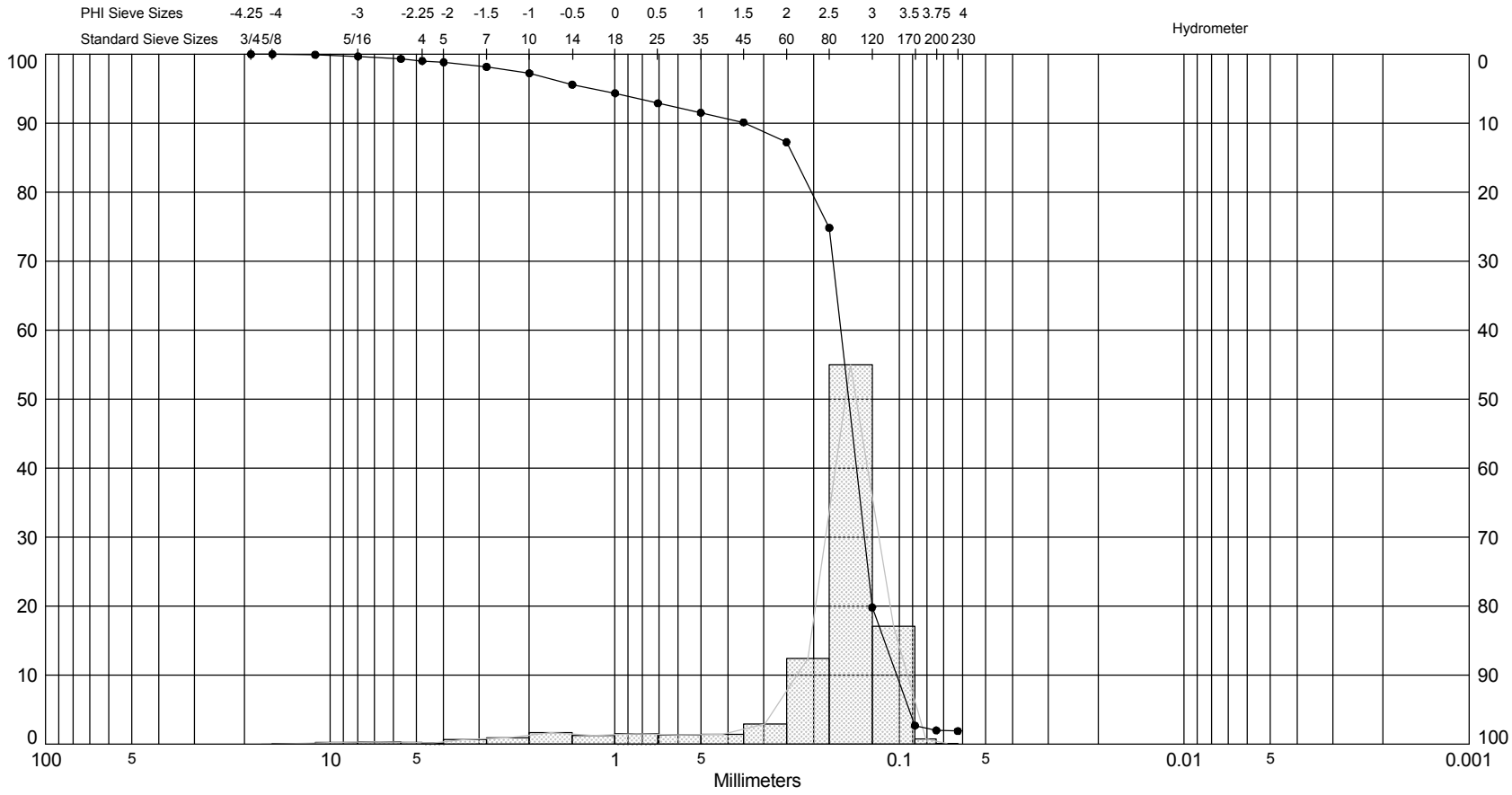

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-06 COMP	—●—		SW	#200 - 1.98 #230 - 1.88		13	2.73	2.44	-2.85	11.64	1.08

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-18-08
Analyzed By:	KD
Easting (X, ft):	412,252
Northing (Y, ft):	1,154,756
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
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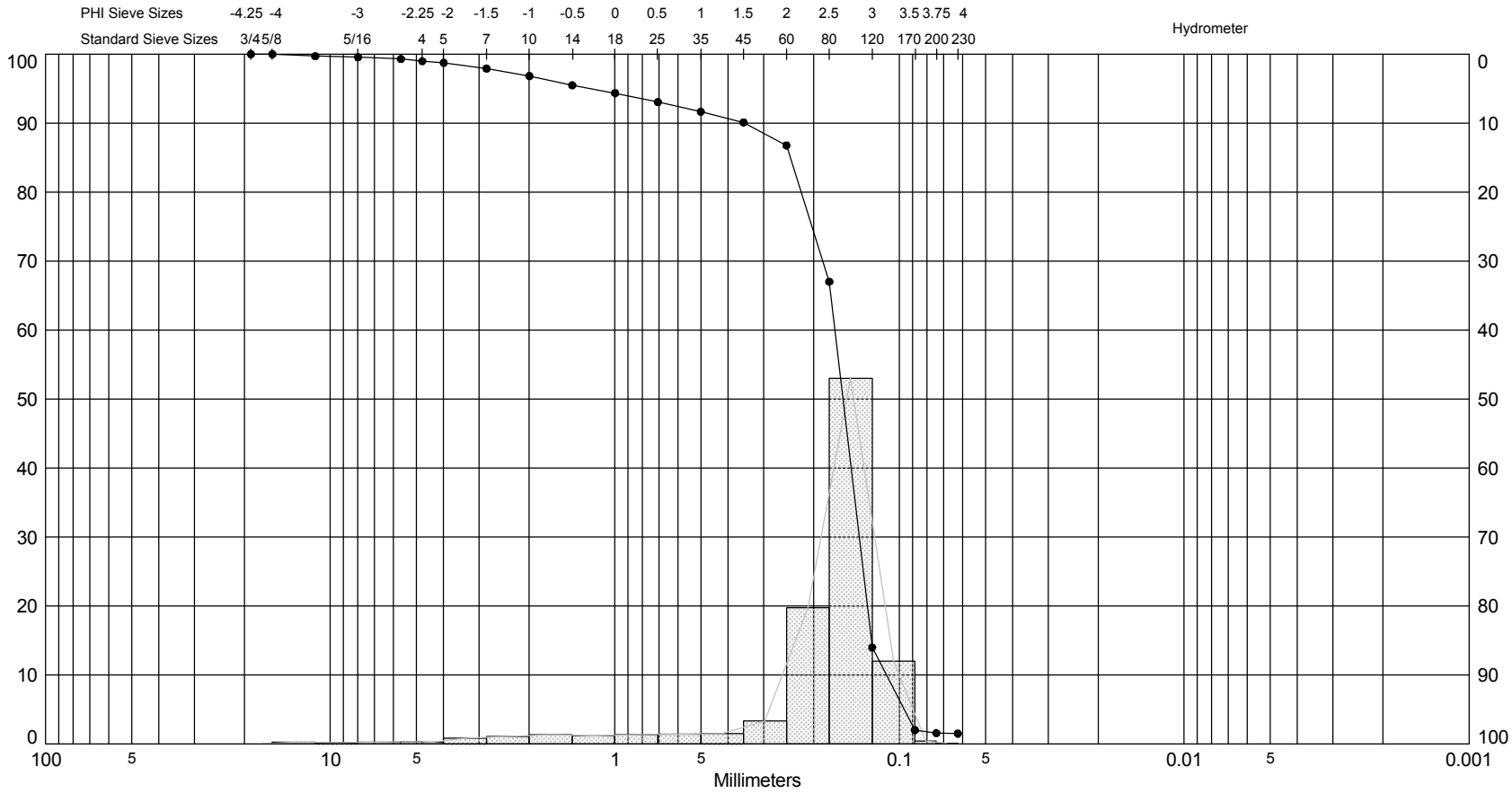

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-07 COMP	—●—		SW	#200 - 1.56 #230 - 1.51		19	2.66	2.36	-2.93	12.34	1.08

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-18-08
Analyzed By:	KD
Easting (X, ft):	412,599
Northing (Y, ft):	1,155,417
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
ph (561) 391-8102
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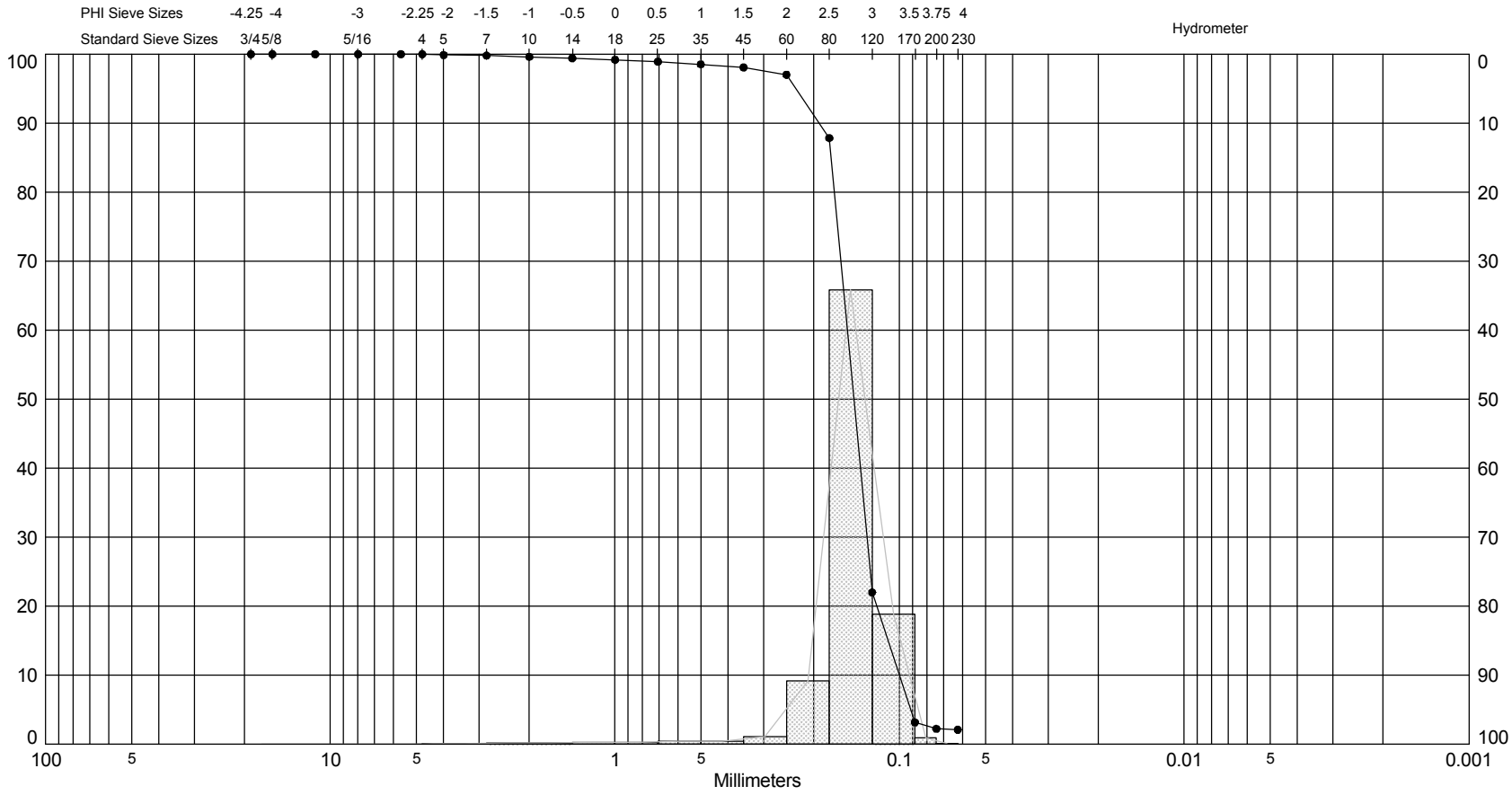

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-08 COMP	—●—		SP	#200 - 2.21 #230 - 2.09		21	2.79	2.75	-4.35	33.92	0.51

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	411,713
Northing (Y, ft):	1,155,241
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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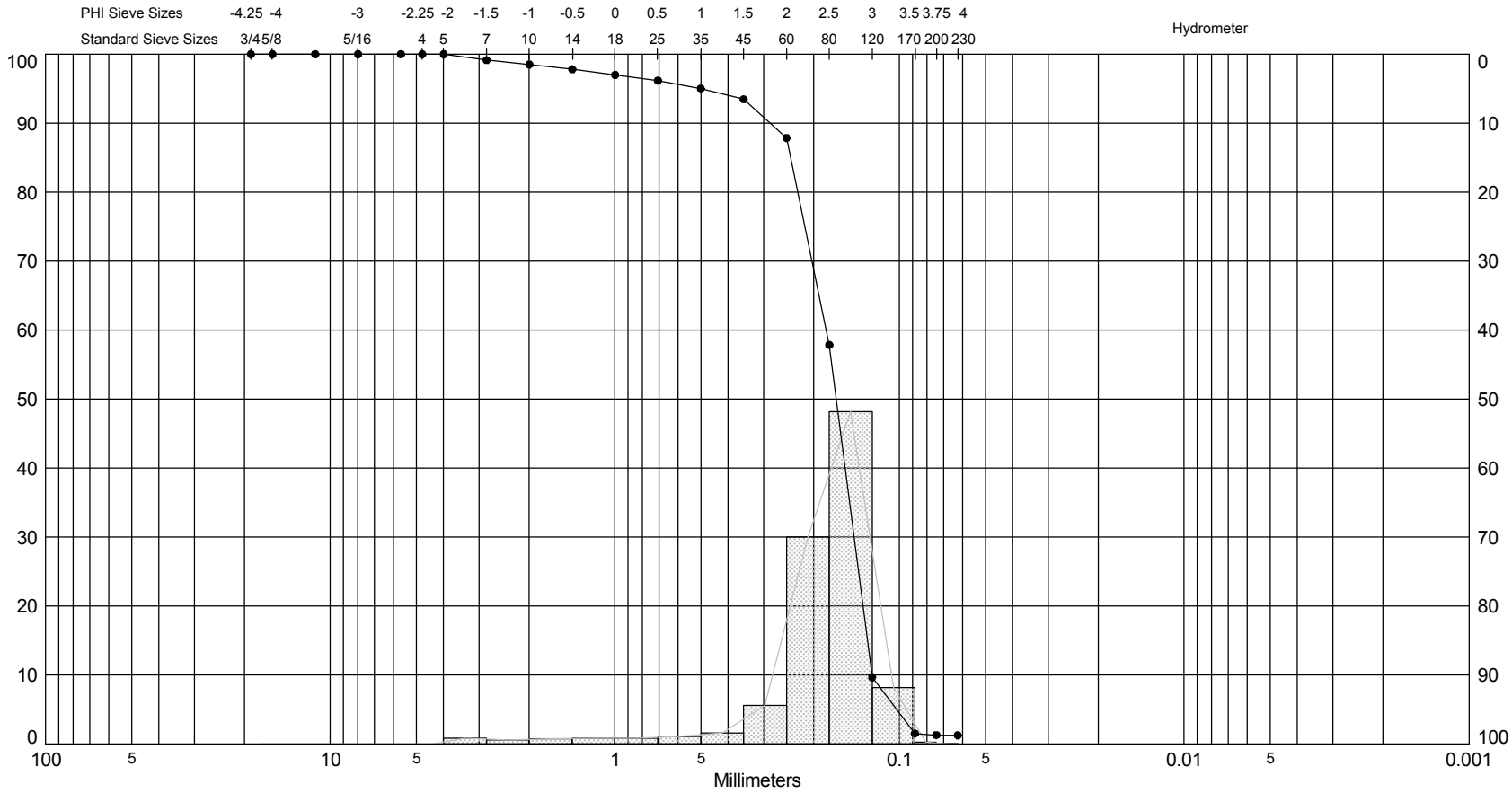

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-09 COMP	—●—		SP	#200 - 1.29 #230 - 1.26		9	2.58	2.4	-2.98	14.03	0.78

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	410,625
Northing (Y, ft):	1,155,511
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
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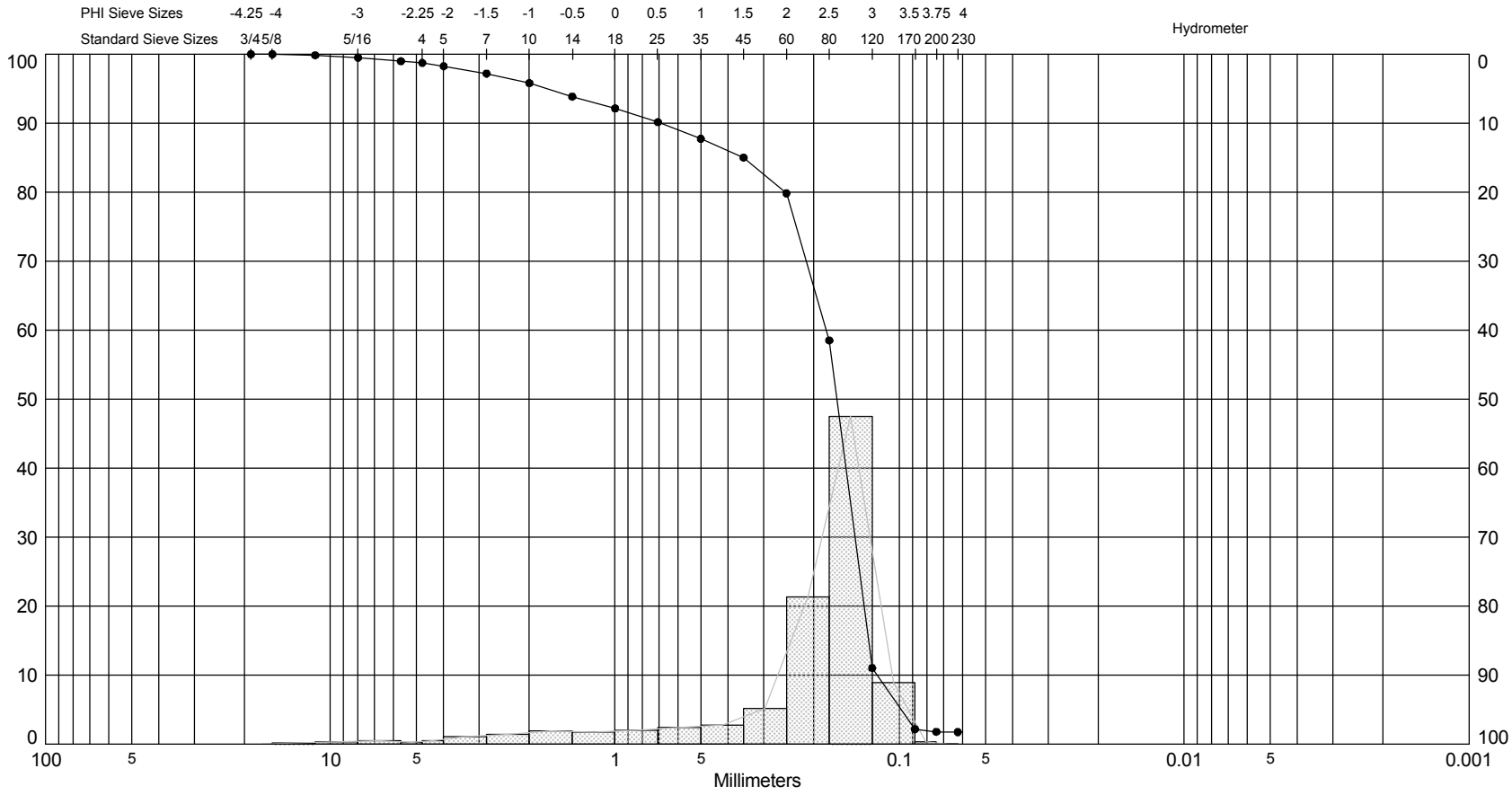

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-10 COMP	—●—		SW	#200 - 1.79 #230 - 1.75		18	2.59	2.17	-2.32	8.35	1.21

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	411,957
Northing (Y, ft):	1,156,109
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
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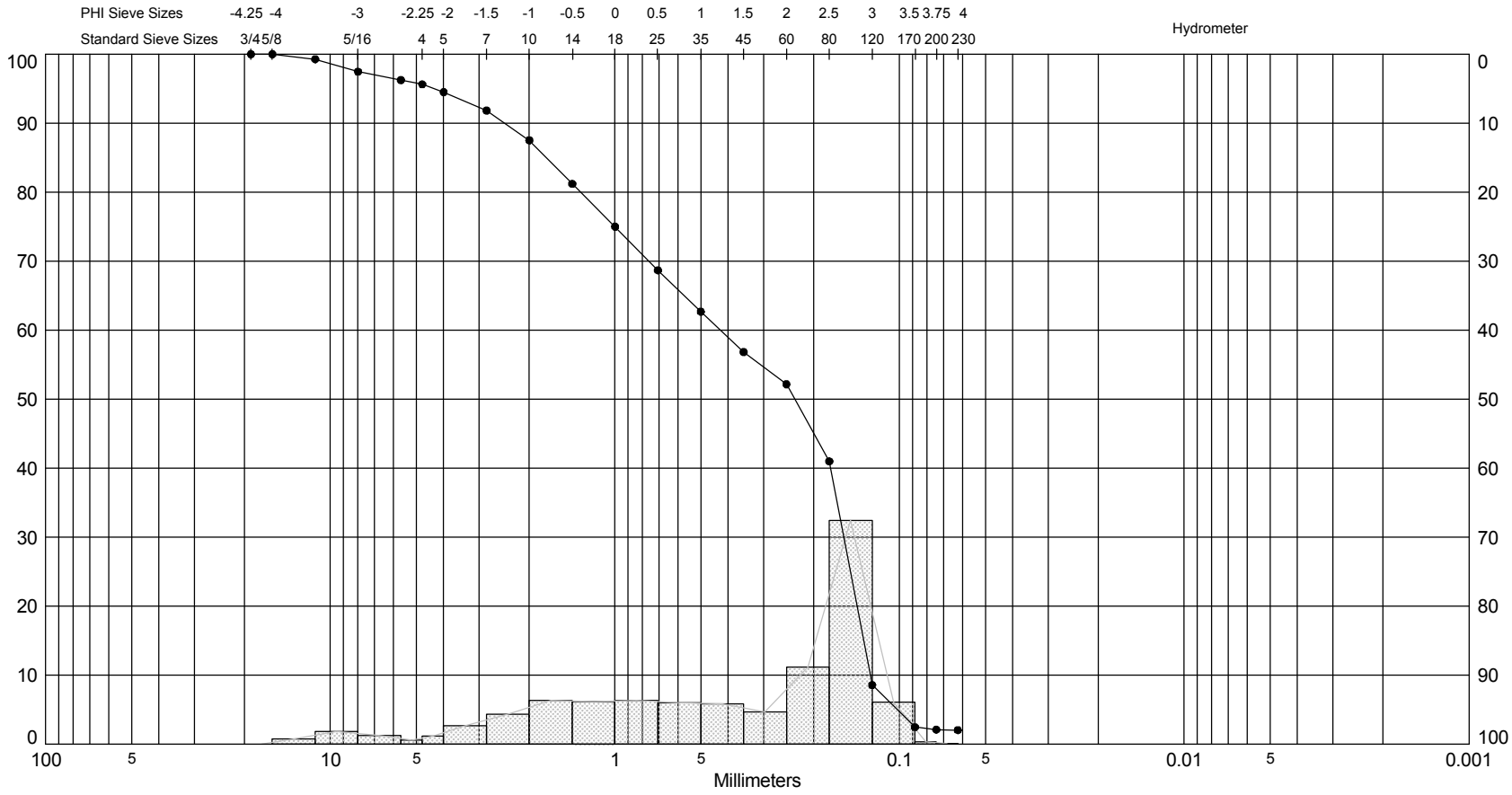
SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-11 COMP	—●—		SW	#200 - 2.10 #230 - 2.04		42	2.1	1.28	-0.88	2.76	1.77

Comments: COMPOSITE

Depths and elevations based on measured values

Coastal Planning & Engineering
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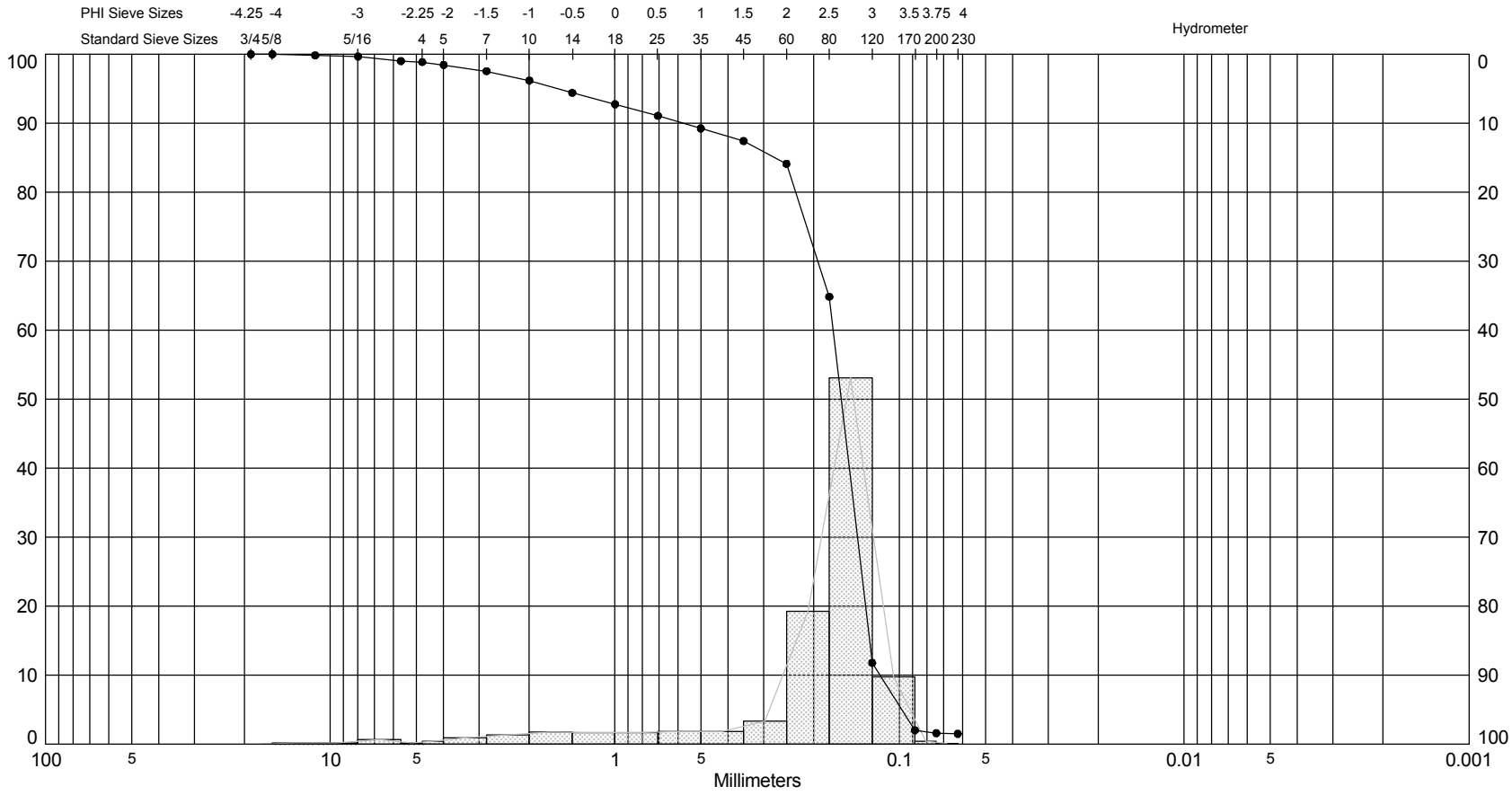
fax (561) 391-9116

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-18-08
Analyzed By:	KD
Easting (X, ft):	413,575
Northing (Y, ft):	1,156,776
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-13 COMP	—●—		SW	#200 - 1.59 #230 - 1.50		15	2.64	2.27	-2.55	9.53	1.16

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-18-08
Analyzed By:	KD
Easting (X, ft):	413,927
Northing (Y, ft):	1,157,394
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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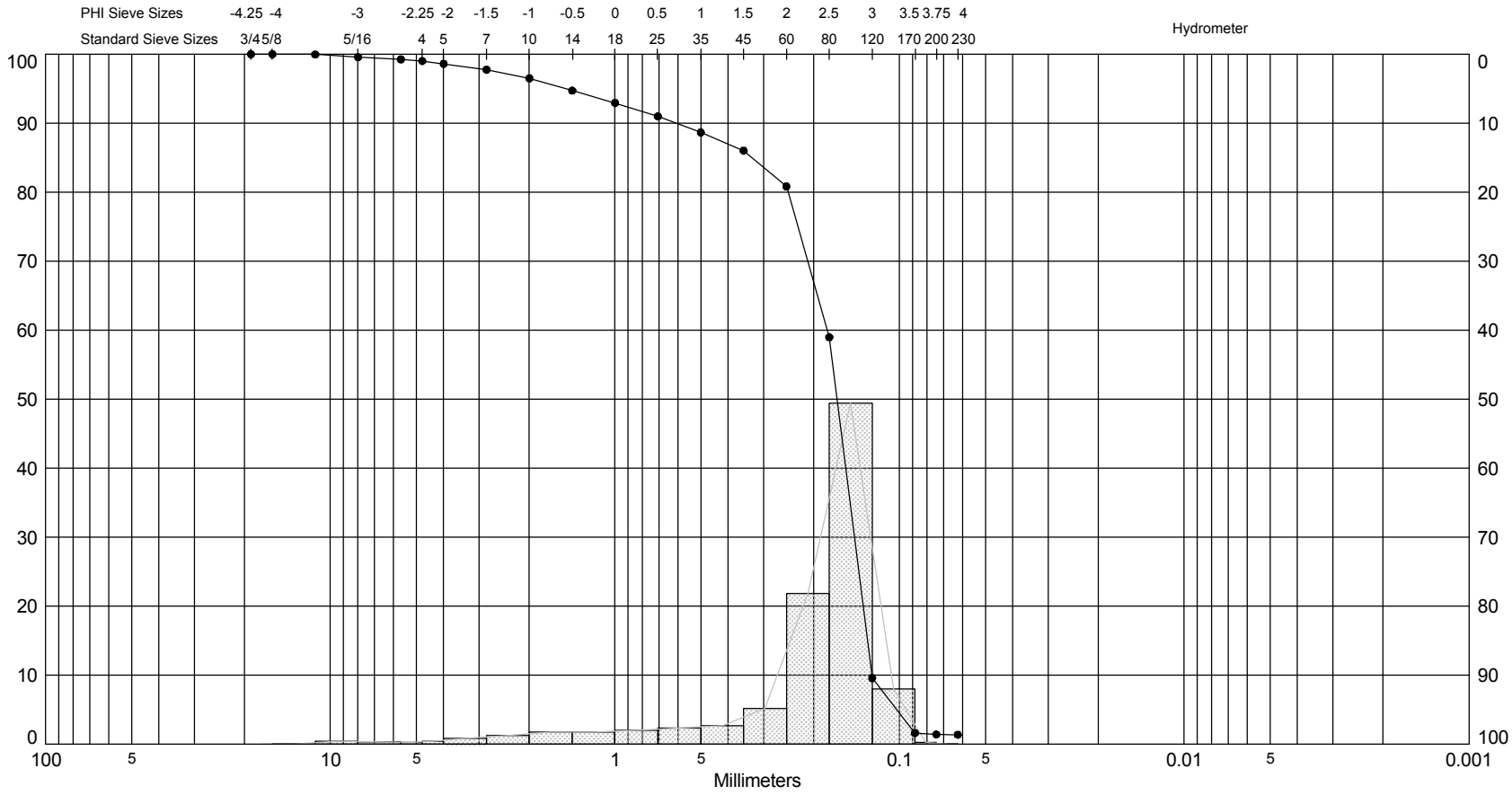

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-14 COMP	—●—		SW	#200 - 1.40 #230 - 1.37		18	2.59	2.21	-2.41	8.96	1.14

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	413,101
Northing (Y, ft):	1,157,209
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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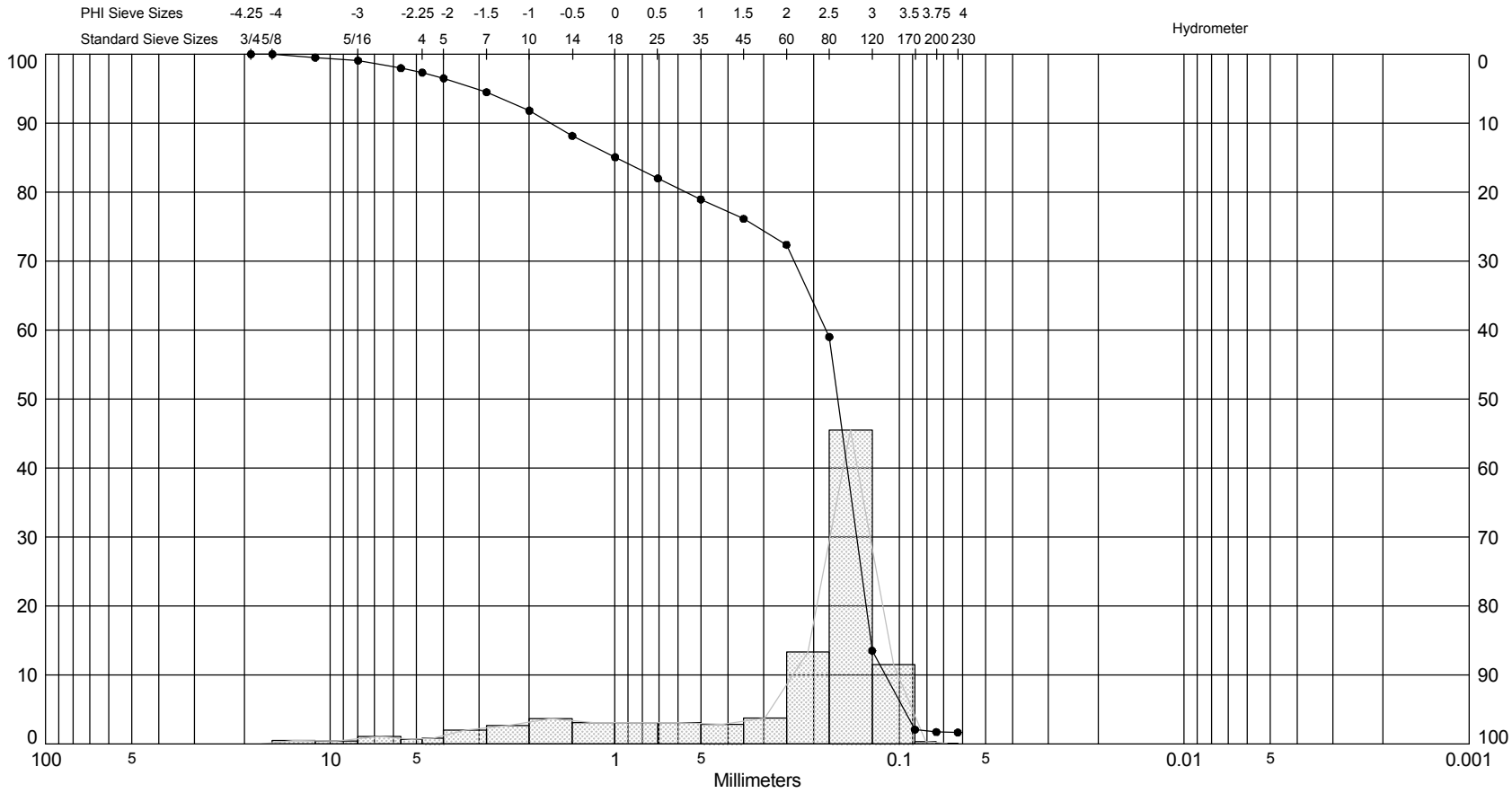

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-15 COMP	—●—		SW	#200 - 1.71 #230 - 1.65		26	2.6	1.9	-1.62	4.65	1.56

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	413,461
Northing (Y, ft):	1,157,788
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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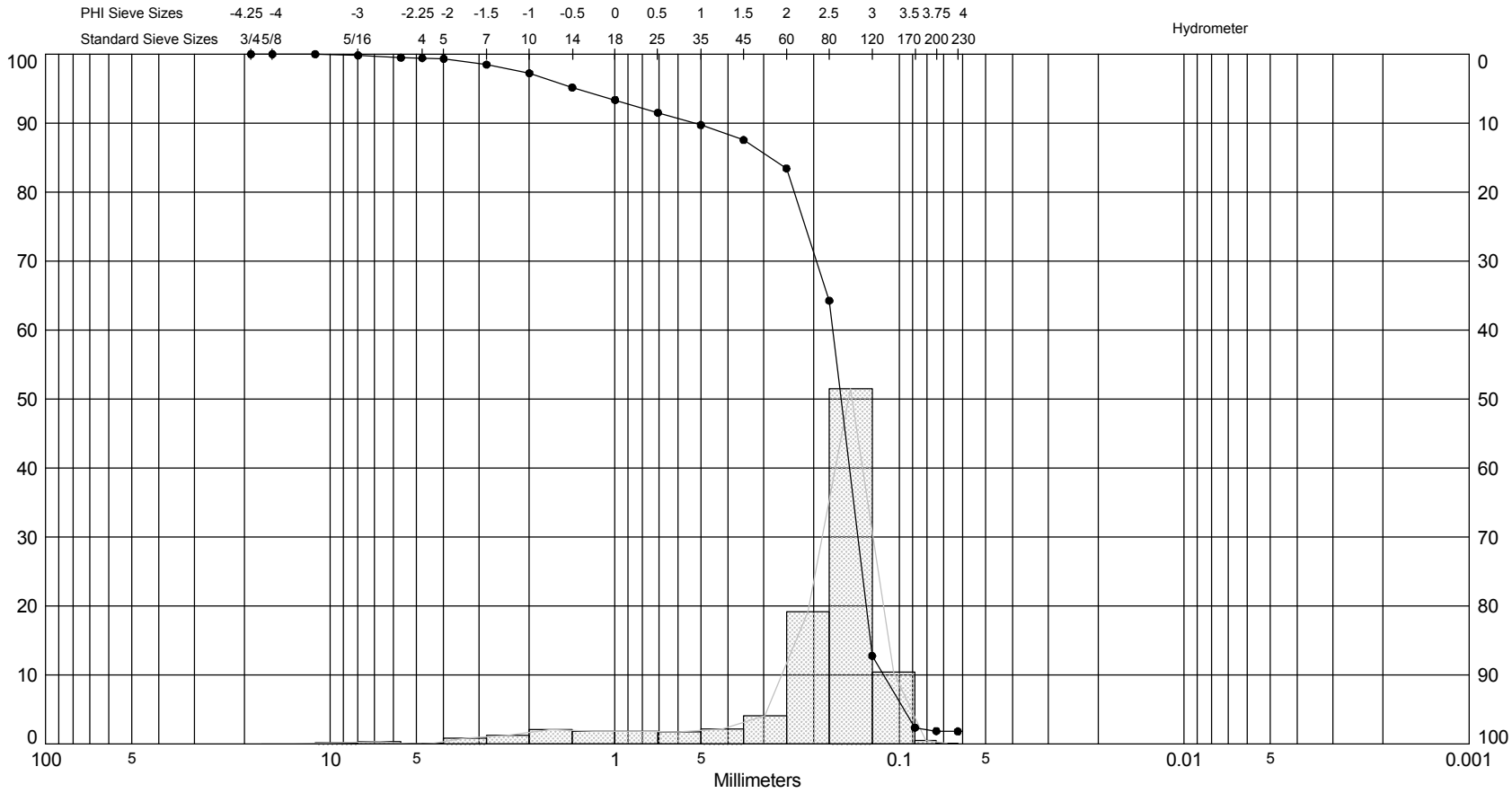

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-18 COMP	—●—		SW	#200 - 1.86 #230 - 1.80		13	2.64	2.3	-2.41	8.88	1.08

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	411,655
Northing (Y, ft):	1,156,808
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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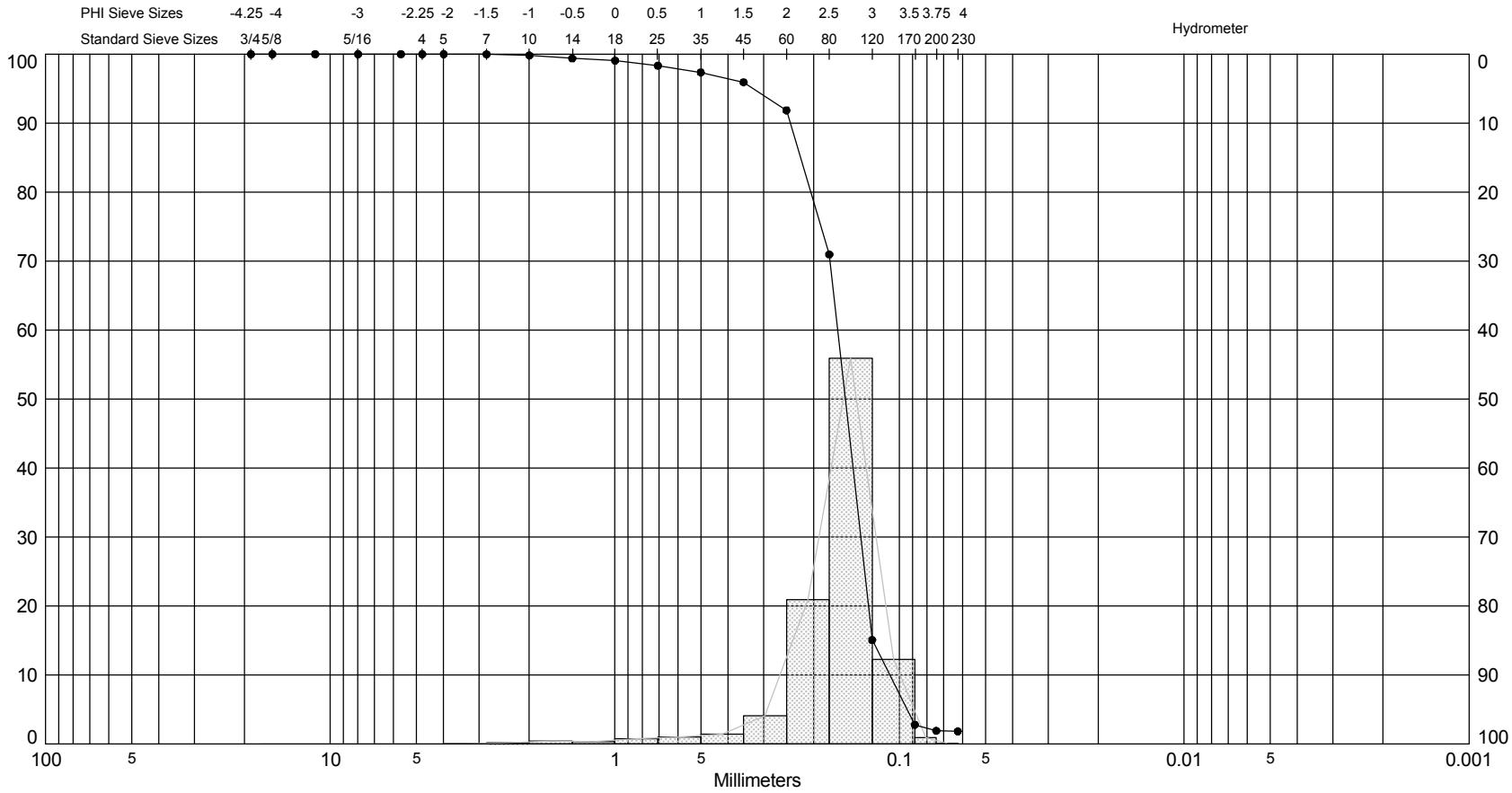

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-19 COMP	—●—		SP	#200 - 1.90 #230 - 1.82		8	2.69	2.58	-2.62	14.15	0.58

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	411,064
Northing (Y, ft):	1,156,408
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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2481 NW Boca Raton Blvd, Boca Raton
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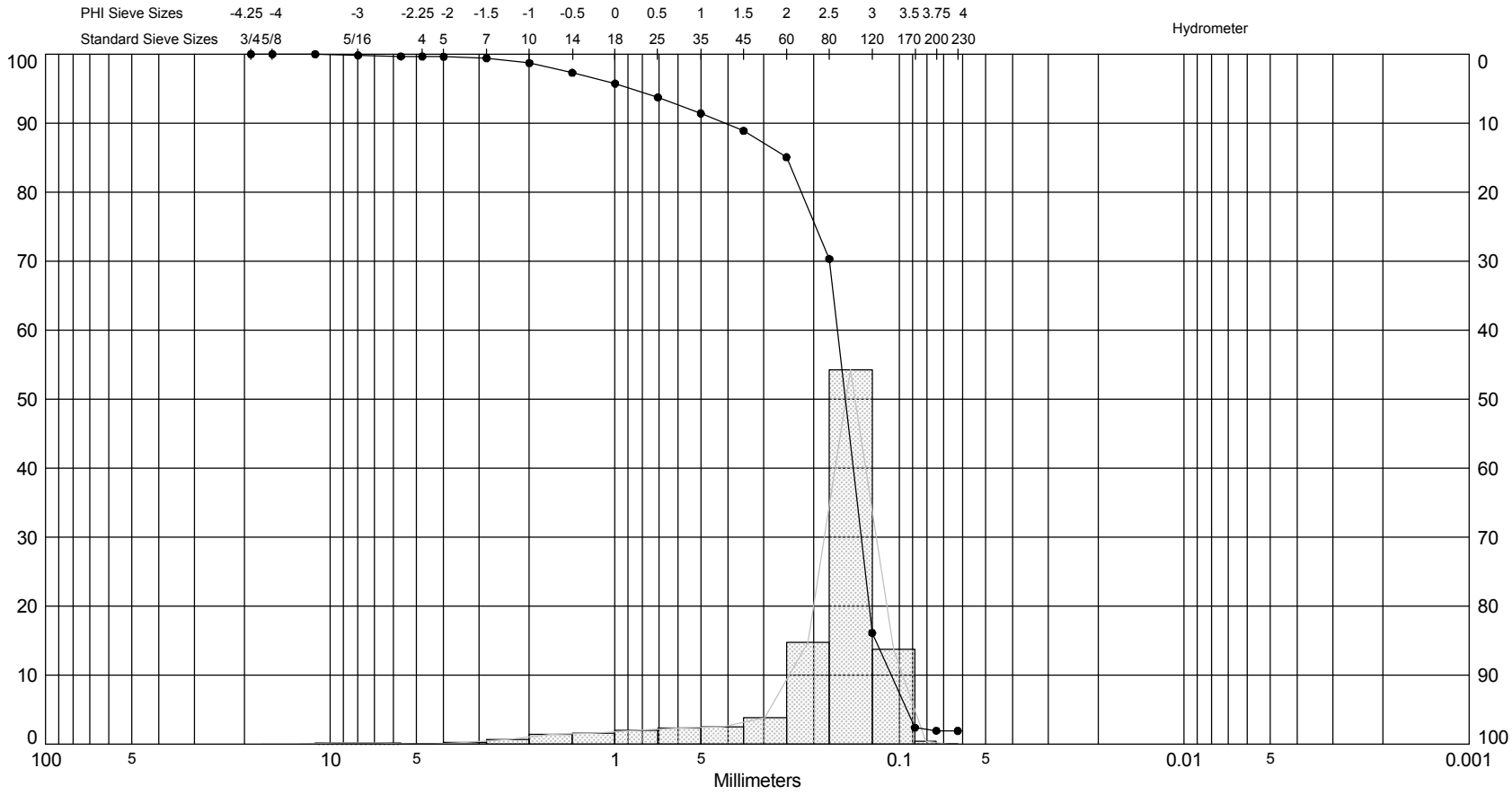
ph (561) 391-8102
fax (561) 391-9116

SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-20 COMP	—●—		SW	#200 - 1.94 #230 - 1.91		14	2.69	2.42	-2.53	10.35	0.94

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	410,427
Northing (Y, ft):	1,156,981
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
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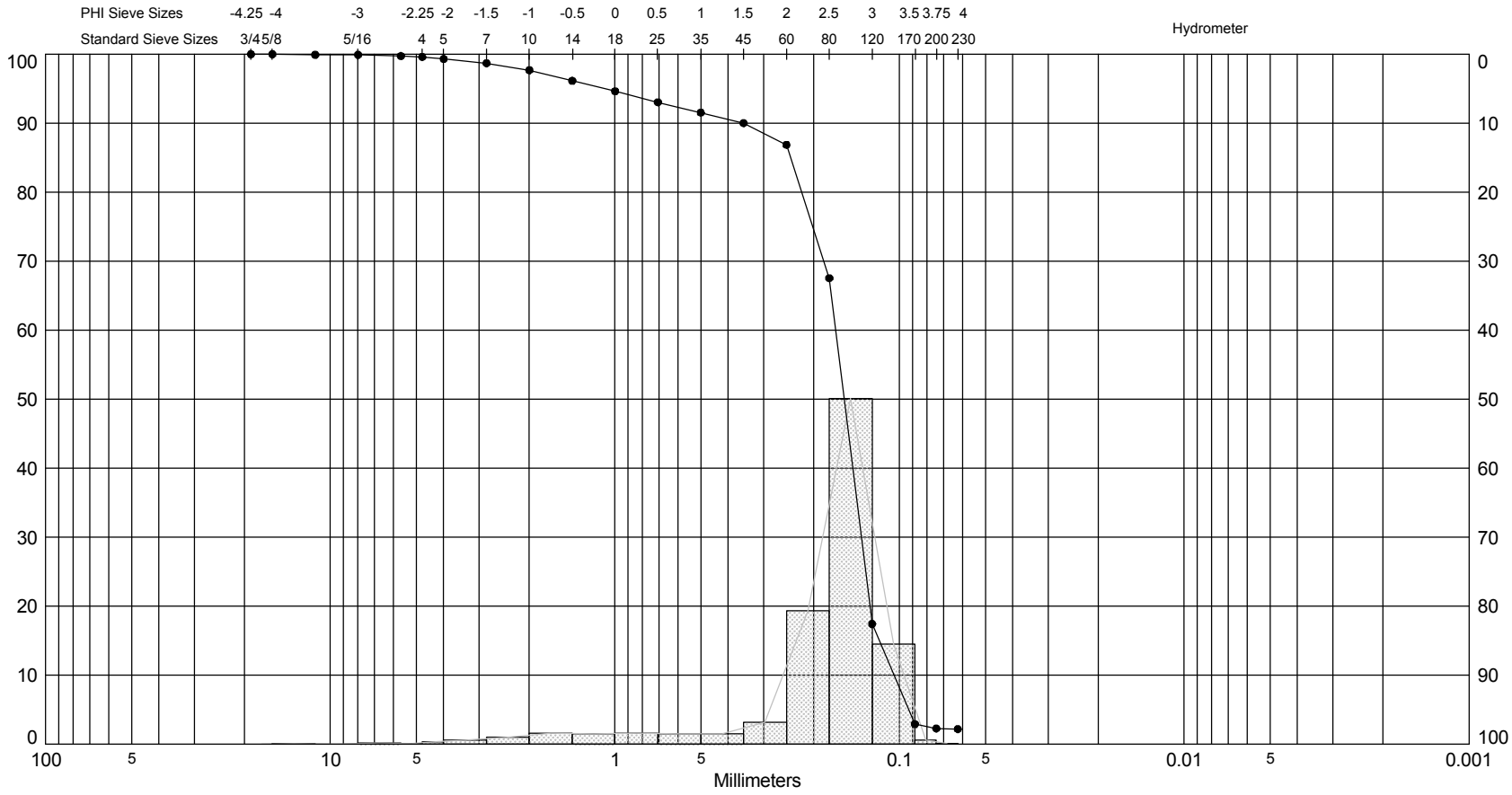
SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-21 COMP	—●—		SW	#200 - 2.27 #230 - 2.18		14	2.67	2.4	-2.65	10.63	1.01

Comments: COMPOSITE

Depths and elevations based on measured values

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ph (561) 391-8102
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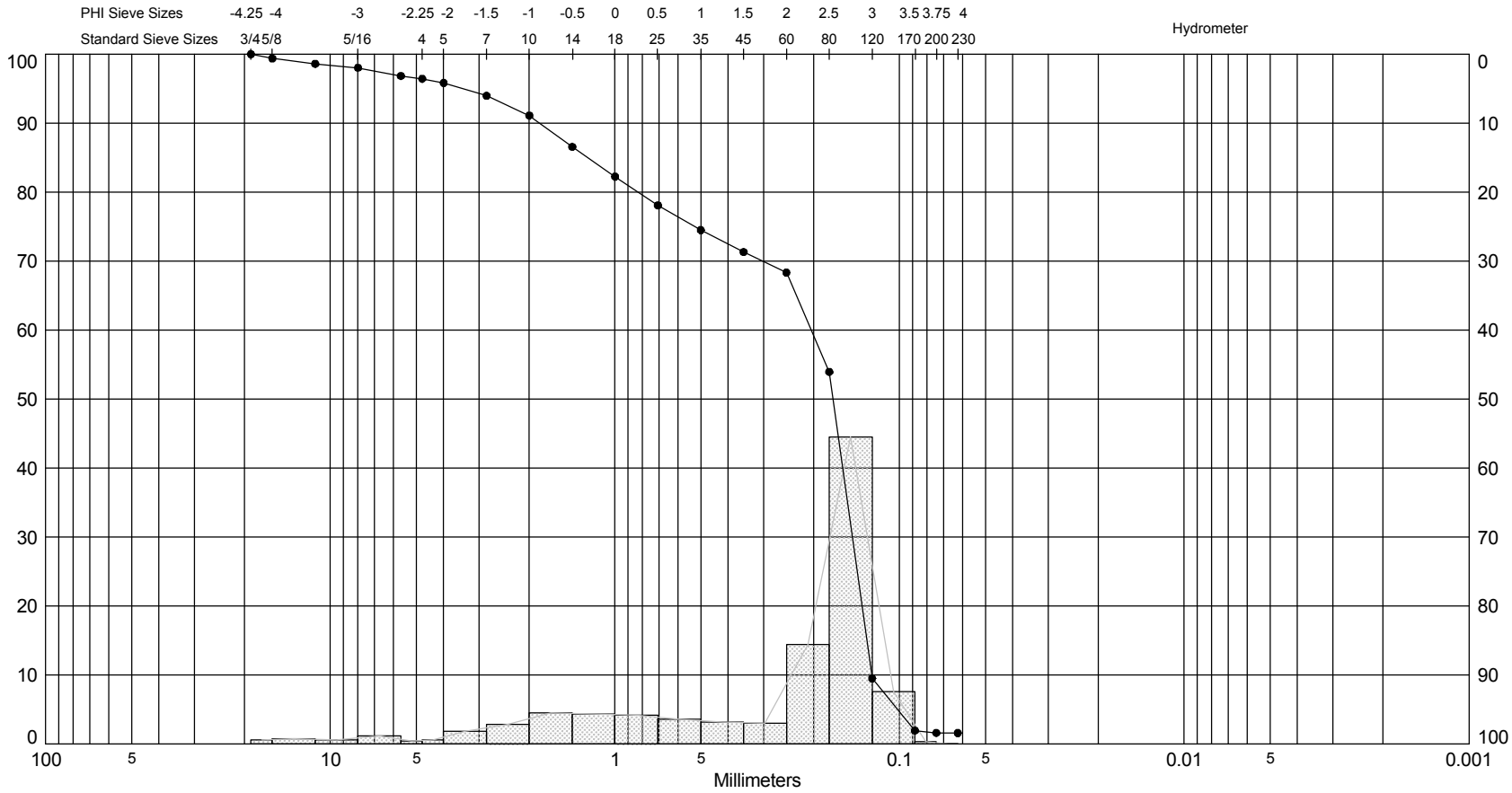
Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	410,936
Northing (Y, ft):	1,157,377
Horizontal System:	NAD 1983
Vertical System:	NAVD 88



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-22 COMP	—●—		SW	#200 - 1.60 #230 - 1.58		28	2.54	1.72	-1.49	4.39	1.67

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	410,419
Northing (Y, ft):	1,157,939
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
ph (561) 391-8102
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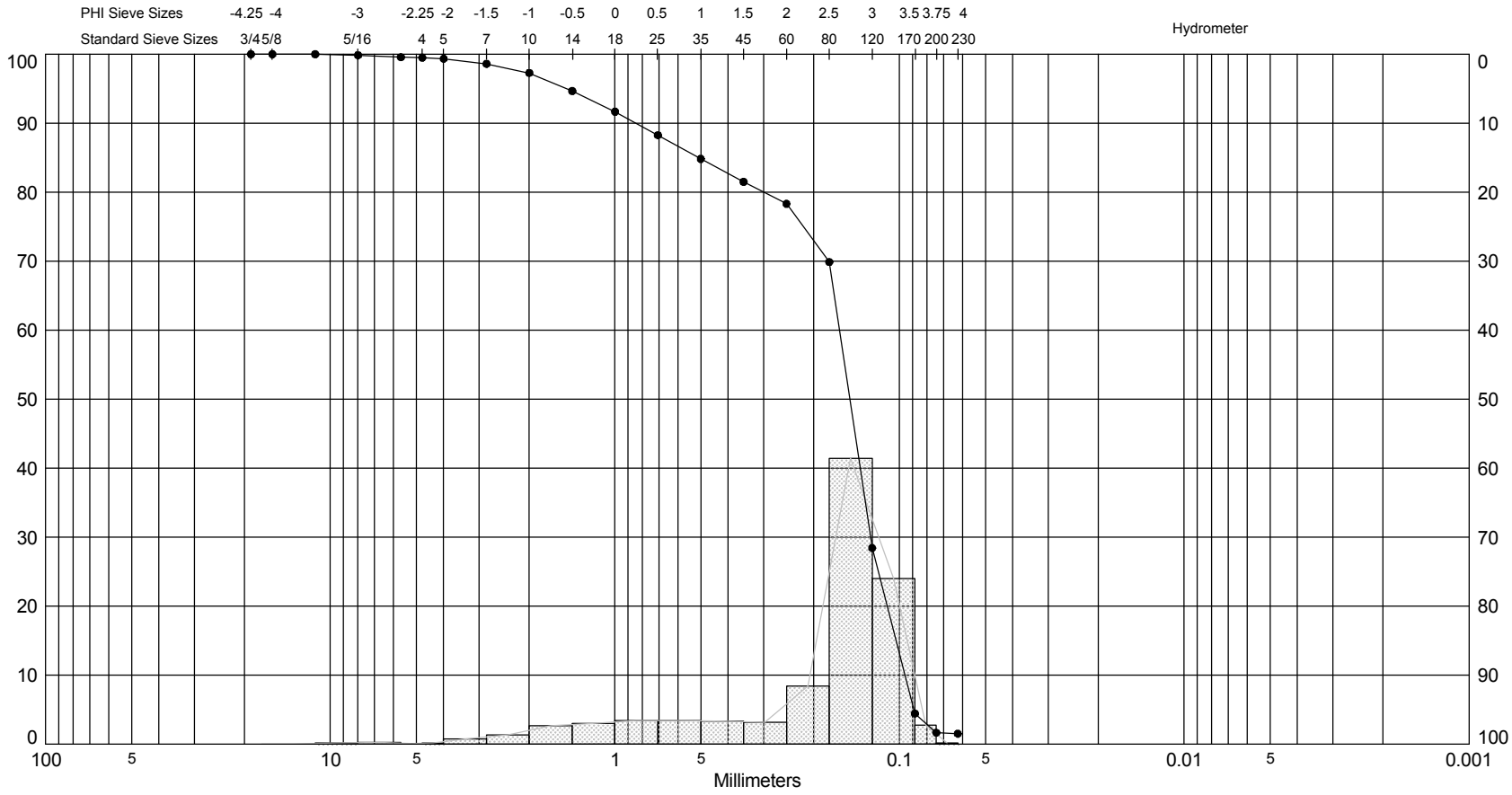

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-26 COMP	—●—		SW	#200 - 1.65 #230 - 1.52		21	2.74	2.31	-1.77	5.59	1.24

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	409,639
Northing (Y, ft):	1,158,254
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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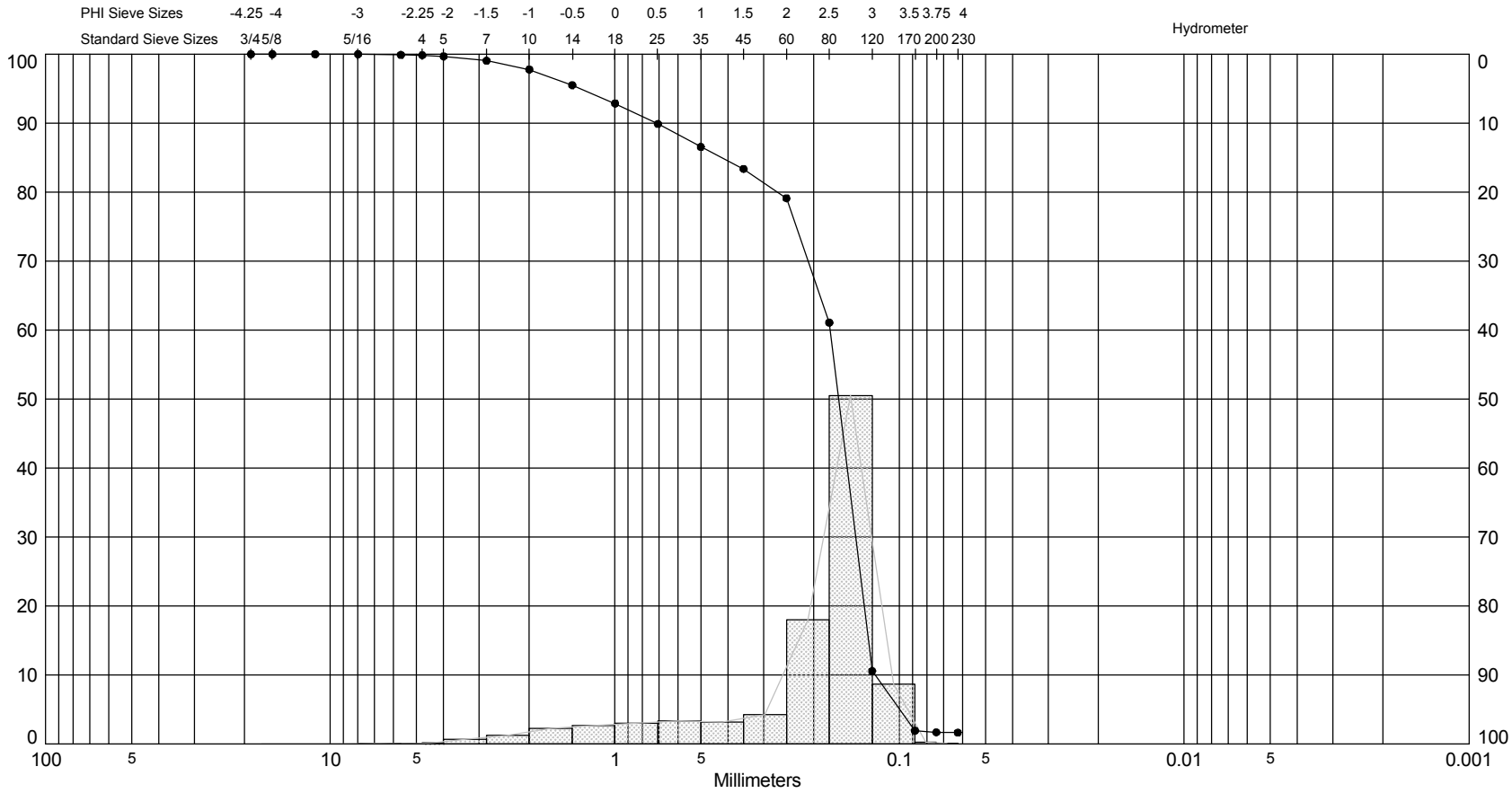
FL 33431
ph (561) 391-8102
fax (561) 391-9116



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-08-27 COMP	—●—		SW	#200 - 1.68 #230 - 1.63		21	2.61	2.21	-1.92	6.19	1.08

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	409,240
Northing (Y, ft):	1,158,469
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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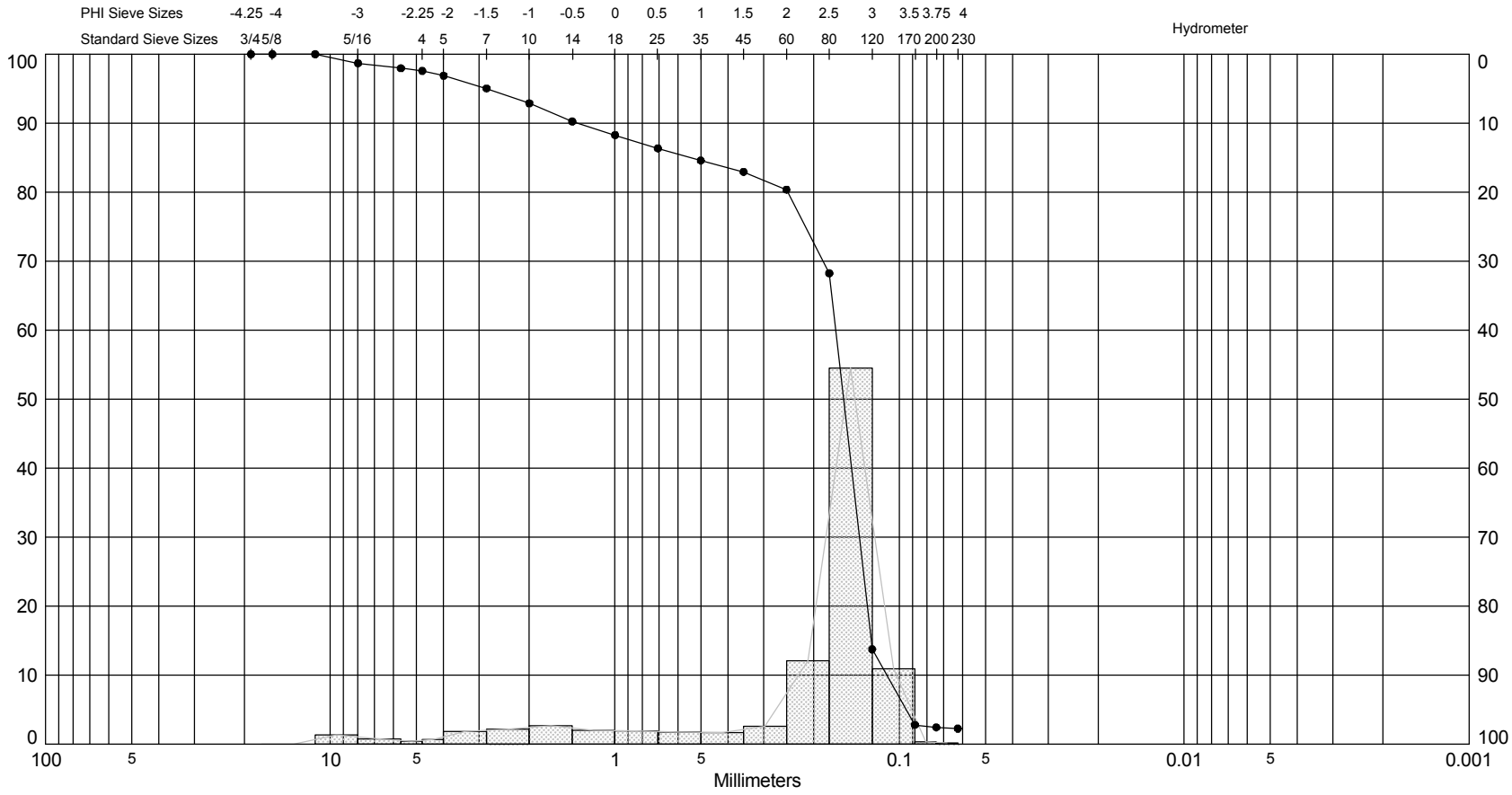

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-08 COMP	—●—		SW	#200 - 2.43 #230 - 2.26		15	2.67	2.11	-2.07	6.37	1.46

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	413,793
Northing (Y, ft):	1,157,117
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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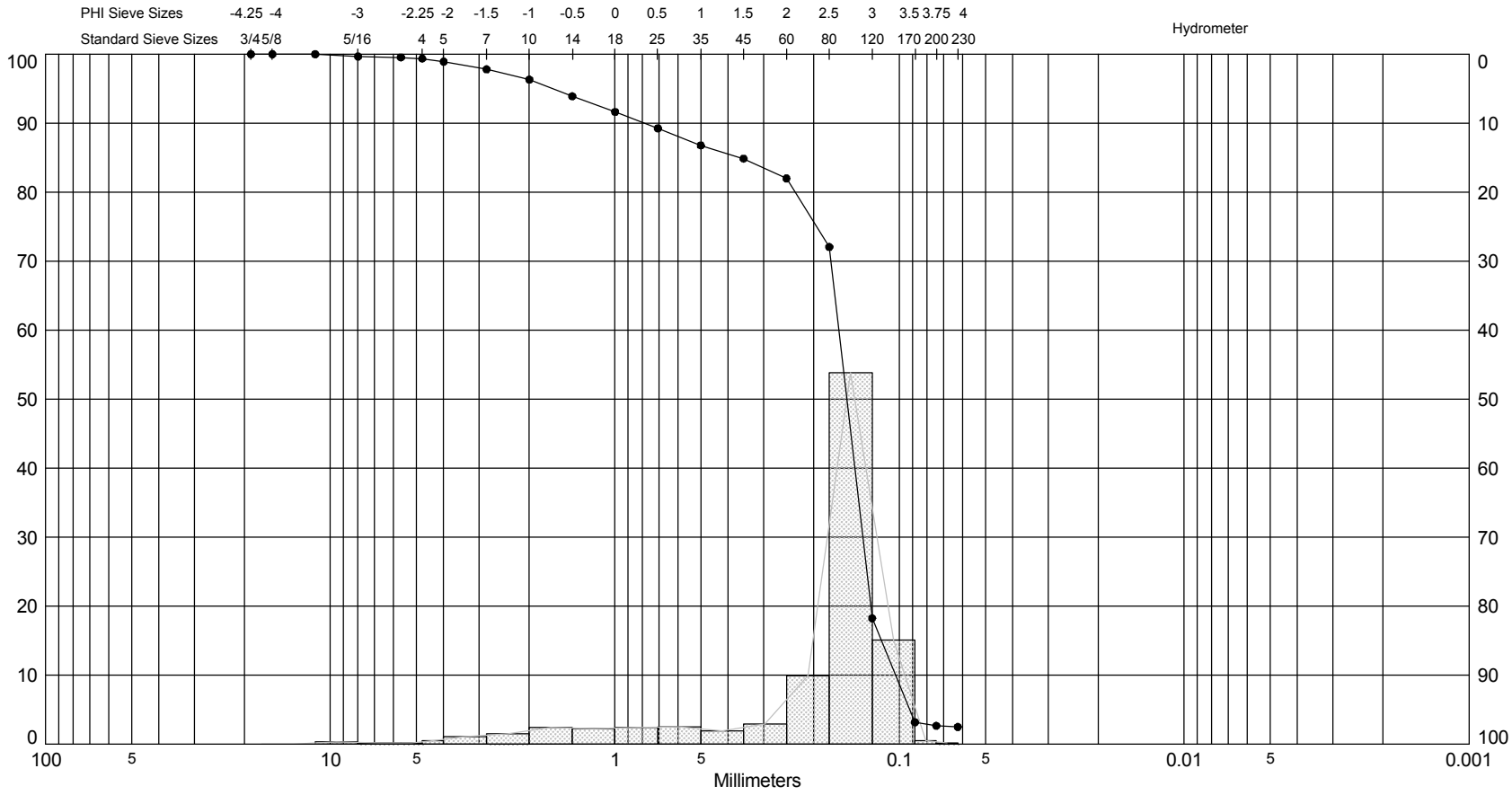

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-09 COMP	—●—		SW	#200 - 2.65 #230 - 2.48		22	2.7	2.28	-2.16	7.16	1.22

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	413,365
Northing (Y, ft):	1,157,436
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
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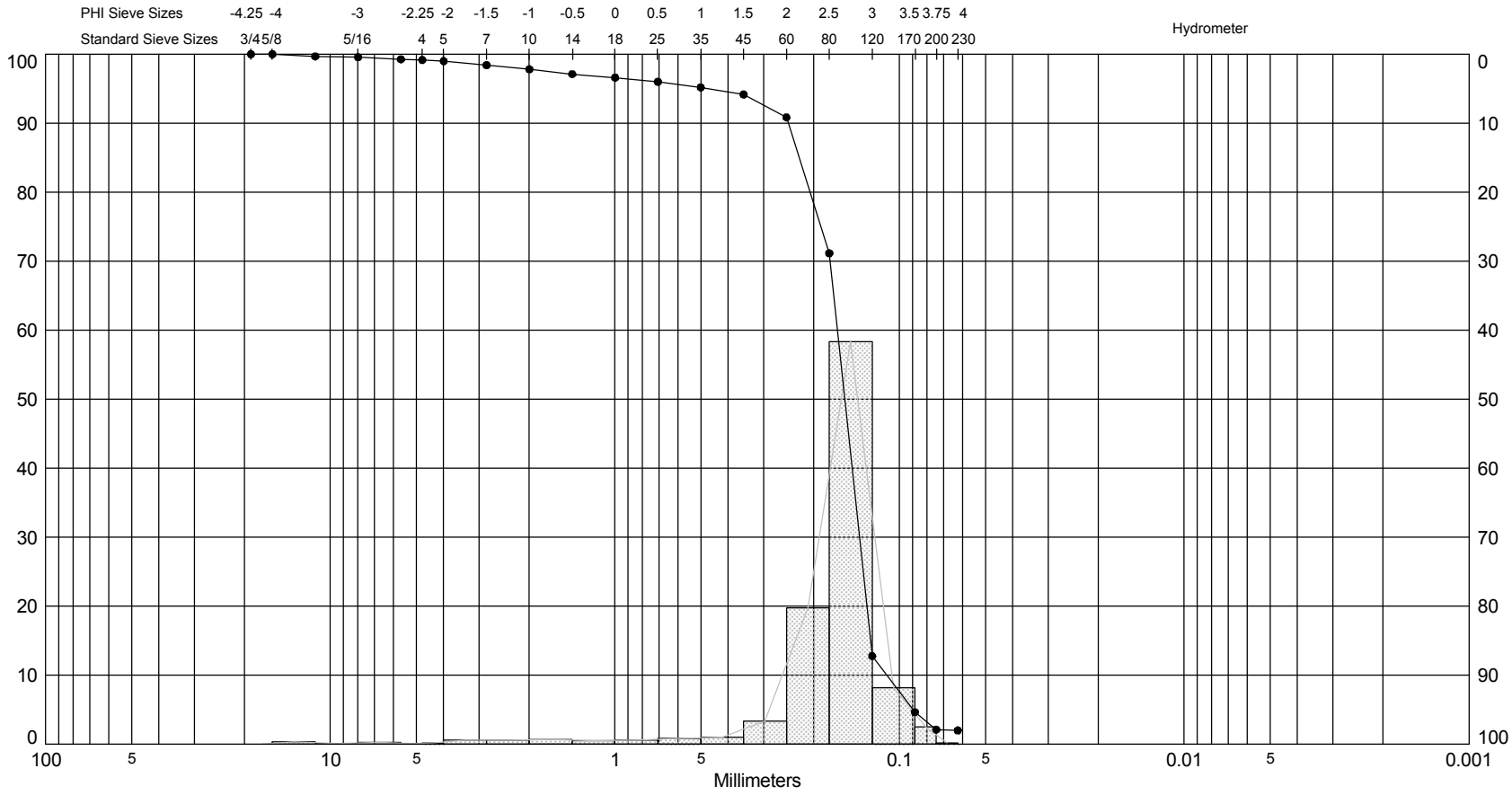
SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-11 COMP	—●—		SW	#200 - 2.10 #230 - 1.97		8	2.68	2.48	-3.76	20.2	0.92

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	413,677
Northing (Y, ft):	1,156,316
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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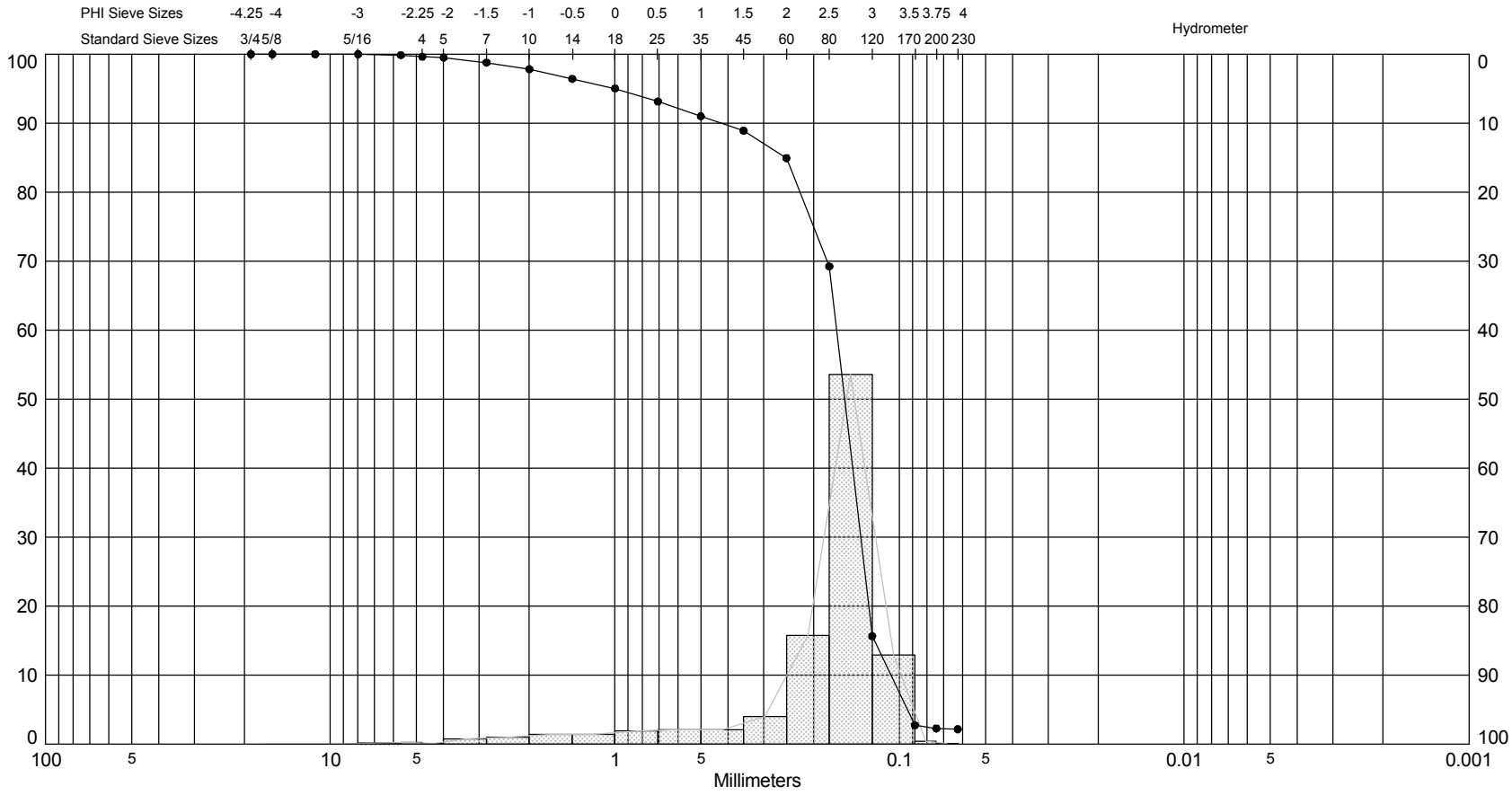

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-13 COMP	—●—		SW	#200 - 2.28 #230 - 2.17		28	2.68	2.39	-2.51	9.6	0.99

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	412,983
Northing (Y, ft):	1,155,942
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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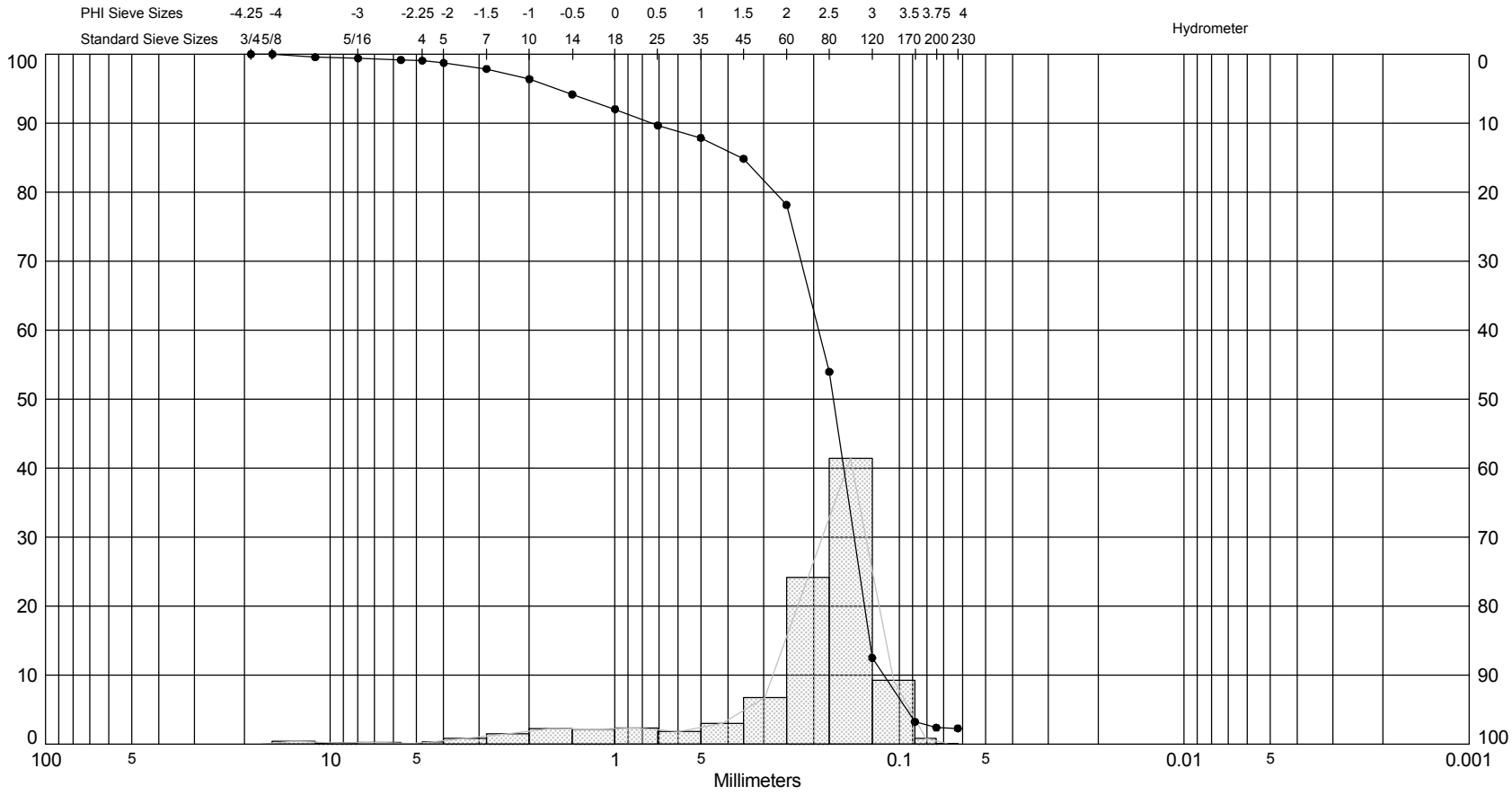

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-14 COMP	—●—		SW	#200 - 2.38 #230 - 2.29		14	2.55	2.15	-2.24	8.32	1.19

Comments: COMPOSITE

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	412,680
Northing (Y, ft):	1,156,488
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
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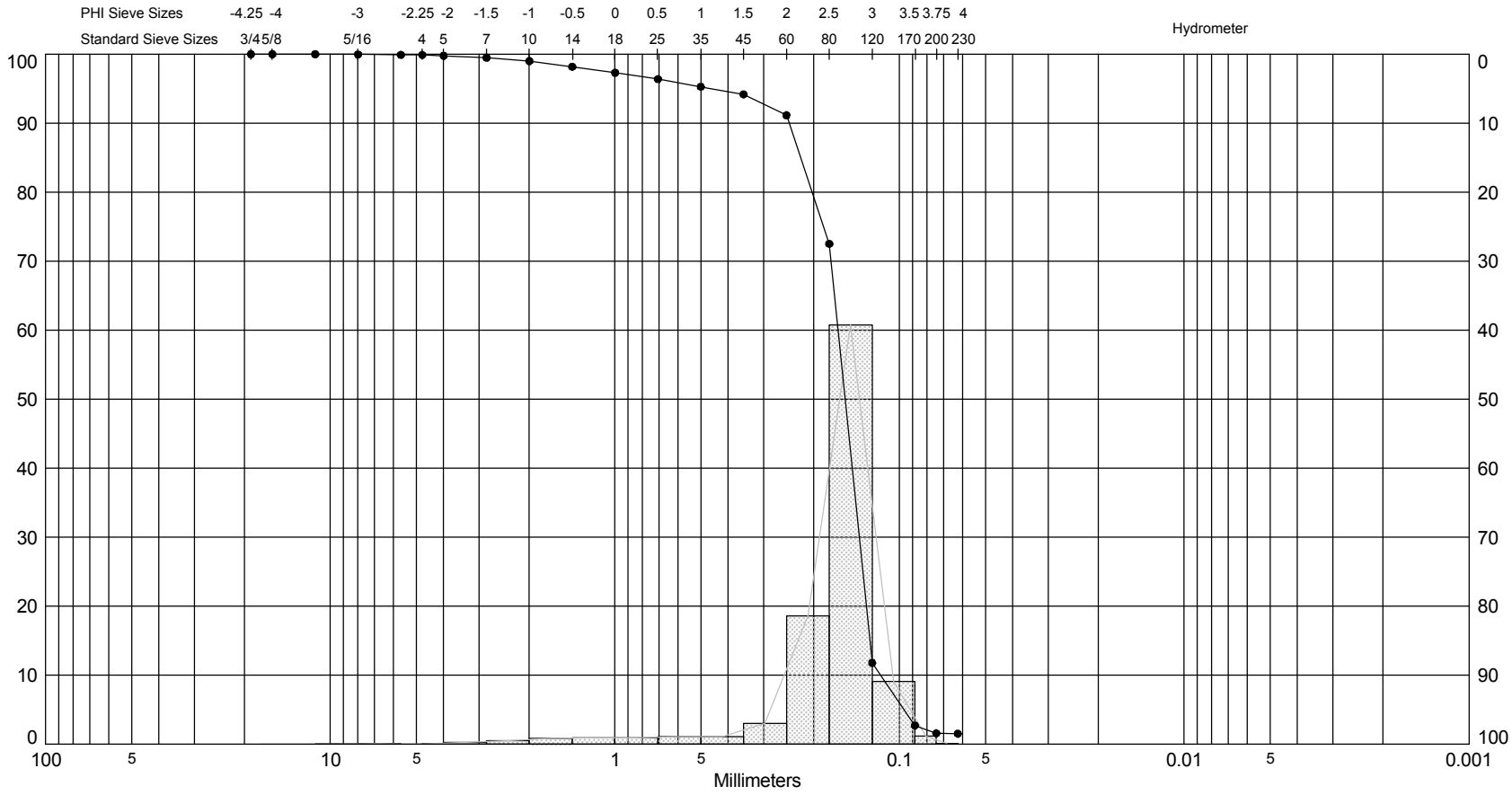
SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-15 COMP	—●—		SP	#200 - 1.57 #230 - 1.52		8	2.69	2.52	-3.3	16.64	0.75

Comments: COMPOSITE

Depths and elevations based on measured values

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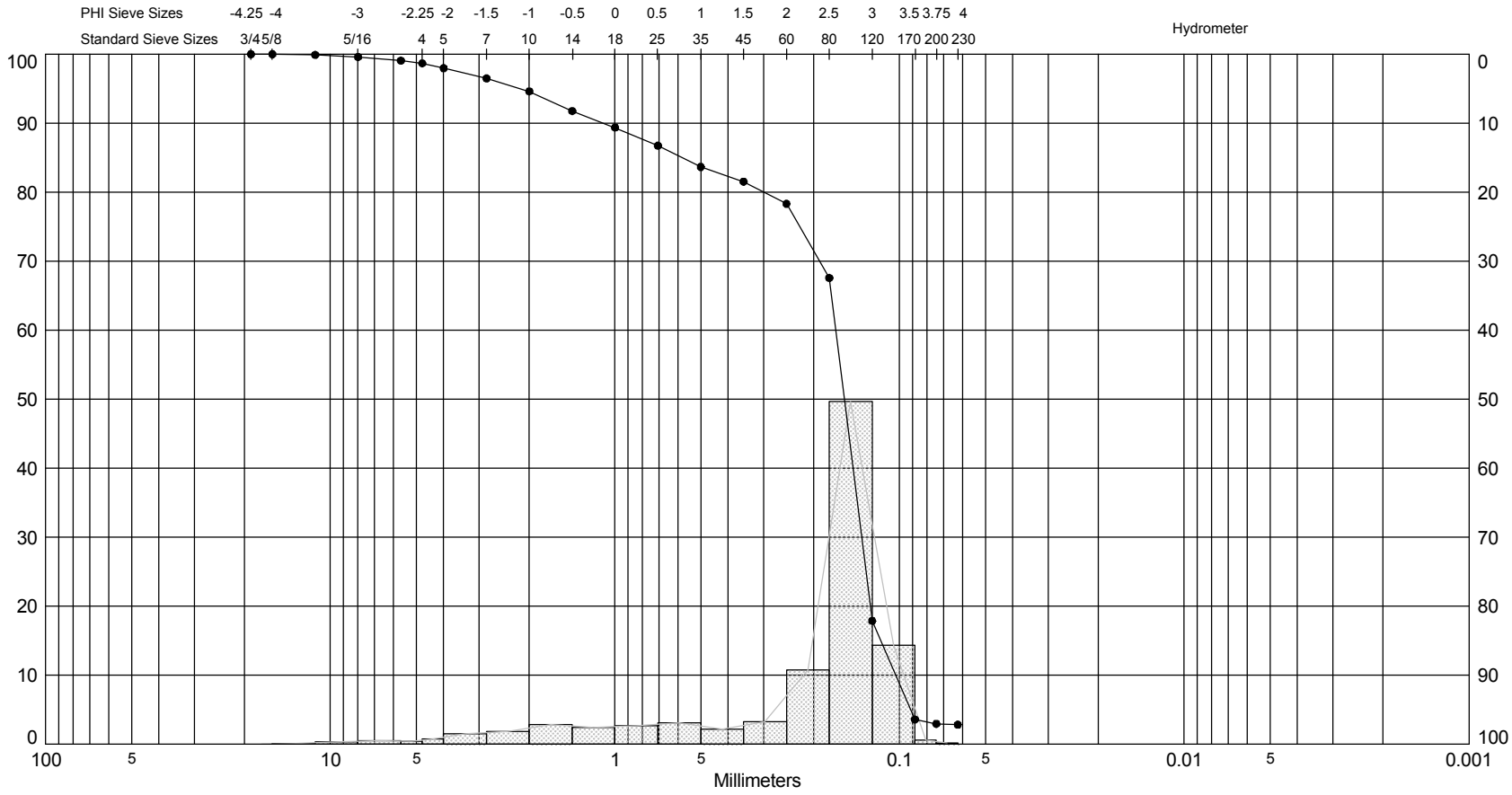
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	413,034
Northing (Y, ft):	1,156,701
Horizontal System:	NAD 1983
Vertical System:	NAVD 88



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-05-16 COMP	—●—		SW	#200 - 2.95 #230 - 2.80		19	2.68	2.15	-1.91	5.9	1.37

Comments: COMPOSITE

Depths and elevations based on measured values

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FL 33431
ph (561) 391-8102
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Sample Information	
Project Name:	Anna Maria 2008 Composites
Analysis Date:	09-16-08
Analyzed By:	KD
Easting (X, ft):	412,179
Northing (Y, ft):	1,156,657
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

SIEVE ANALYSIS VIBRACORE COMPOSITE_08_AND_05_VC'S_UPDATED_091608.GPJ JPBRAZIL.GDT 10/31/08

APPENDIX 2

SEDIMENT QA/QC PLAN

Anna Maria Island Beach Nourishment Project
FDEP JCP File Number: 0281452-001-JC
Permittee: City of Anna Maria
Sand Quality Control and Quality Assurance Plan

A. Introduction. The purpose of the sand quality control (QC) and quality assurance (QA) Plan, required by paragraph 62B-41.008 (1) (k) (4b) FAC, is to ensure that the sediment from the permitted borrow area will meet the standards outlined in the permit. Geotechnical investigations for the project have indicated that the sediment located within the spatial limits of the permitted borrow area meets the State requirements in paragraph 62B-41.007 (2) (j). The 2008 AMI Borrow Area will be used for this nourishment. About 25,000 cubic yards of material will be dredged onto the approximate 0.6 mile project area of the City of Anna Maria, located between Florida Department of Environmental Protection (FDEP) monuments R-7 through R-10, and about 169,000 cubic yards will be dredged onto the approximate 1.0 mile project area of Coquina Beach, located between Florida Department of Environmental Protection (FDEP) monuments R-35+790 ft and R-41+365 ft.

B. Risk Management. This plan outlines responsibilities of each stakeholder in the project as it relates to the placement of beach compatible material on the beach. These responsibilities are in response to the acknowledged risk that non-beach compatible sediments may exist within the borrow area and could be unintentionally placed on the beach.

1. The Engineer has performed geotechnical investigations to the standard of care in the industry and has relied on limited remote sensing techniques and a limited number of vibracores to design the borrow area. The Engineer has the personnel and testing facilities to sample and test sediment that will be placed on the beach.

2. The Permittee will be directing that the work be done and has relied on the Engineer's geotechnical investigation findings, which is based on remote sensing and limited vibracores, in authorizing the project to go to construction. The Permittee has experience with these types of projects, and has the authority to modify the project within the constraints of the permits if non-beach compatible sediments are placed on the beach.

3. The Contractor will be undertaking the work and will be relying on the Engineer's geotechnical investigation findings in constructing the project. The Contractor may assume that the sediment within the authorized borrow area is beach compatible, nevertheless, the Contractor is aware that the borrow area was designed based on remote sensing techniques and limited vibracores. It is possible that portions or components of the borrow area may be dissimilar to the vibracoring and remote sensing results. The Contractor will have on-site personnel who can identify obvious changes in sediment quality at the pipeline discharge. The Contractor has or can acquire the equipment and personnel to remediate the beach if so directed or required by the Permittee, or the FDEP.

4. The State of Florida holds title to the submerged lands (sediment) and has issued an easement for the dredging of those lands (sediment). The State has relied on the

Engineer's findings, which is based on industry standards for beach renourishment geotechnical investigations, in authorizing the project to go to construction. The State acknowledges that it is possible that unsuitable sediments may exist within the permitted borrow area. The State will retain ownership of the lands (sediment) placed seaward of the Erosion Control Line.

The Quality Control (QC) Plan for the project outlines the requirements placed on the selected Contractor so that the Contractor performs all work within the horizontal and vertical limits of the permitted borrow area and that the Contractor takes appropriate remedial actions for unsuitable material, if necessary. The Quality Assurance (QA) Plan outlines the steps to be taken by the Permittee and its Engineer to observe, sample, and test the placed sediments to determine if the sediments are in compliance. These plans are described below.

C. Quality Control Plan. The contract documents incorporate the following technical requirements, or equivalent language that addresses the location of dredging and sediment quality monitoring on the beach. The Permittee and its Engineer will seek to enforce these contract requirements during the prosecution of work.

1. Electronic Positioning and Dredge Depth Monitoring Equipment. The Contractor shall continuously operate electronic positioning equipment to monitor the precise positioning of the survey vessel and the dredge excavation device location(s) and depth(s) and to provide continuous tide information. Dredgepack needs to be configured to notify the Engineer via e-mail of any borrow area boundary violations, and the Silent Inspector systems, or equivalent, will be used to monitor dredge activities. A RTK-GPS shall be used to determine the horizontal and vertical position. All surveys must be conducted with a Trimble R8 RTK GPS base and receiver, or equivalent system, to provide kinematic survey accuracies of ± 10mm + 1 ppm RMS horizontal and ± 20mm +1 ppm RMS vertical. Vertical and horizontal positioning checks must be performed on second order control points in the project area at the beginning and end of each survey day to verify base station corrections. Checks on FDEP second order control points must maintain accuracies of ±0.16 feet vertical and ±0.66 feet horizontal as required in the Bureau of Beaches and Coastal Systems (BBCS) Monitoring Standards for Beach Erosion Control Projects section 01000 (Beach Profile Topographic Surveying).

After verifying GPS accuracy at known points at the dock, the survey vessel will verify the horizontal and vertical accuracy of the dredge's RTK GPS system by measuring a known calibration point on the dredge. A RTK base station control point will be established prior to construction and utilized for all surveys. Control for the RTK base station point will be verified and tied into the FDEP second order DNR "A" monument network. The Permittee will provide the Contractor with the base station site and control information.

Sounding data must be collected in conjunction with RTK GPS tide level corrections. Soundings will be collected with an Odom Hydrotrac echo sounder, or equivalent, to provide 0.1 foot resolution with a depth accuracy of 0.1 feet ± 0.1% depth when operated at 200kHz. The sounder will be calibrated as described in section 01200 (Borrow site, Shoal and Other Bathymetric Surveying) of the BBCS monitoring standards for Beach Erosion Control Projects. Sound velocity probes will be used at the beginning and end of each day

for sound velocity corrections. Direct depth measurements (bar-check, lead line) must be performed in shallow and deep water at the beginning and end of each day to verify depth measurement. Depth measurements must maintain a level of accuracy of 0.2-0.5 feet vertical and 2.0 feet horizontal as required by section 01200 of the BBCS monitoring standards for Beach Erosion Control Projects.

Prior to the commencement of dredging, the Contractor will be required to submit for review by the Engineer, shop drawings of a vessel layout plan indicating the position and elevation of the RTK GPS antenna and the dragheads/cutterhead. The drawing will identify the offset used by the dredge navigation software to correct for the distance between the GPS antenna and the two dragheads or cutterhead depending on the type of dredge used.

The dredge's dragarm/cutterhead depth indictor will initially be calibrated while anchored under calm conditions. While in the borrow area, the dragarm/cutterhead depth will be verified on a weekly basis by a survey rod or tape measurement from the bottom of each dragarm/cutterhead to a known verification point on the dredge and reported to the Engineer.

2. Dredge Location Control. The Contractor is required to have in continuous operation on the dredge electronic positioning equipment that will accurately compute and plot the position of the dredge. Such fixes, and the accompanying plots, shall be furnished to the Engineer daily as part of the Quality Control Reports. The electronic positioning equipment shall be installed on the dredge so as to monitor, as closely as possible, the actual location and vertical position of the excavation device(s). This will include use of the following:

- An RTK-GPS positioning system for both horizontal and vertical control of the dredge hull.
- An Electronic Compass such as a Short-Baseline DGPS azimuth determination system.
- A Heave, Pitch, Roll (HPR) compensator to determine the movement of the dredge and act as a backup for the vertical elevation determination.
- A real time electronic tide gauge set in the ocean, not the back bay, that transmits continuous data to the dredge.
- An inclinometer on the dredge ladder to determine the digging angle and depth.
- A pressure transducer depth gauge located on the dredge ladder as a back up for the inclinometer.
- A computer and software for navigation and control.
- A reliable source of survey data for the dredge software to reference.
- A trained and experienced system technician and operator.

The location of the master antenna on the dredge and the distance and direction from the master antenna to the bottom of the excavation device shall be reported on the Daily Reports. A printout of the excavation device positions in State Plane coordinates and the excavation device depths corrected for tide elevation and referenced to NAVD 1988 and time shall be maintained using an interval of 3 minutes for each printed fix. The Contractor

shall report if dredging (excavation) is occurring during periods of time for the reported fixes. A printed and computer file (in ASCII format) copy of the position data shall be provided to the Engineer as part of the daily report. The Contractor shall prepare a plot of the data that includes the State Plane Coordinate grid system and the borrow area limits. The format of the plot may be subject to approval by the Engineer. No excavation shall take place outside of the borrow area limits (horizontal and vertical limits) as shown on the drawings. The FDEP, however, recognizes that sediment below the cut depth may be disturbed as a result of excavation to cut depth limit.

3. Contingency Plan. The Contractor shall be responsible for establishing such control as may be necessary to insure that sediment excavation occurs within the allowable excavation depths and spatial limits are not exceeded. If the Contractor encounters unacceptable materials during dredging, the Contractor shall cease dredging, relocate the dredge cutterhead into acceptable material, and notify the Engineer verbally, providing the time, location, and source of the unsatisfactory material. The Contractor shall also report encounters with the trash, rock, rubble, clay pockets, or debris in the Quality Control Report, providing location in State Plane Coordinates of the area of said materials. The Contractor in cooperation with the Engineer shall use the dredge positioning records, plans, and vibracore descriptions to determine where the Contractor may dredge to avoid additional placement of unacceptable materials. The Contractor will adjust the construction operation to avoid unacceptable material to the greatest extent practicable.

4. Beach Observation. The Contractor shall continuously visually monitor the material being placed on the beach. This includes materials such as rock (d > ¾"), debris, and very silty materials (i.e. silt content > 5%). If occasional debris, trash or rocks (d > ¾"), appear on the beach during dredging operations and exceed background or natural levels, the Contractor shall remove them. The Contractor shall notify the Engineer or Permittee of any observed non-beach compatible sediment.

5. Dredge Plan. The Contractor shall follow the dredging order presented in Figure 1. The Contractor shall excavate within the borrow area in a uniform and continuous manner to extract as much material as practical within the active area of excavation. The effect is required to utilize sediment to the greatest extent practical and to avoid the loss of sediment which could be used to renourish the beach. The Contractor shall dredge the primary area to the greatest extent practical, as determined by the Engineer, before excavating the secondary area. If unsuitable material is encountered or if directed by the Engineer, the Contractor shall change the location and/or depth of excavation within the borrow limits, while still adhering to the dredging procedures and order prescribed above.

6. Vibracore Logs and Grain Size Data. The Contractor will be provided all descriptions of sediment vibracore borings collected within the borrow site and will acknowledge that she or he is aware of the quality of the sediment as described in the sediment vibracore logs. These logs and grain size data are presented in the construction specifications.

7. Contractor's QC Program. The contract documents require the Contractor to produce and follow a quality control program that is reviewed by the Permittee and

Engineer at the pre-construction conference. The program covers all of the Contractor's operations including dredging and sand placement. The program is the Contractor's means and methods of assuring herself/himself that the work is in conformance with the plans, specifications, and permits. Results of the Contractor's efforts will be recorded in the daily quality control report.

D. Quality Assurance Plan. The Permittee and the Engineer will seek to enforce the construction contract and FDEP permits related to sediment quantity. In order to do so, the following steps will be followed:

1. The Engineer has proposed to the Permittee the level of construction observation believed to be required to determine that the Contractor's work will be in conformance with the required contract and permit conditions. Construction observation and contract administration will be performed 7 days a week during periods of active construction. Most observations will be during daylight hours; however, random nighttime observations may be conducted.

2. The Engineer will provide onsite observation by an individual with training or experience in beach nourishment and construction observation and testing, and that is knowledgeable of the project design and permit conditions. The project manager, a coastal engineer, shall actively manage the field observer.

3. The Contractor's Quality Control Program shall be discussed as a matter of importance at the pre-construction meeting. The Contractor will be required to acknowledge the goals and intent of the above described sediment QC Plan prior to the issuance of a Permittee issued Notice to Proceed.

4. The Engineer will review the Contractor's daily reports which characterize the nature of the sediments encountered at the borrow area and placed along the project shoreline with specific reference to the occurrence of rock, rubble, silt or debris that exceeds acceptable limits. The Engineer will review the dredge positions on a daily basis.

5. The Engineer, or his duly authorized representative, will be on call during the period of construction for purposes of making decisions regarding issues that involve the sediment QC Plan compliance.

6. Communications will take place between the Engineer or his duly authorized representative and the onsite observer daily.

7. Any addendum or change order to the Contract between the Permittee and the Contractor will be evaluated to determine whether or not the change in scope will potentially affect the above described QC Plan.

8. The Engineer, his duly authorized representative, or the onsite observer, on behalf of the Permittee, will conduct assessments of the sediment as follows:

a. The Engineer, his duly authorized representative, or onsite observer, will collect a representative sub-surface (6 inches below grade) grab sediment sample from mid-berm from each 100-foot long section of the constructed beach to visually assess mean grain size, wet Munsell color, shell hash content, carbonate content and silt content. Shell hash will be defined as material less than 4.75mm (#4 sieve) and greater than 2.8mm (#7 sieve). Each sample will be archived with the date, time, and location of the sample. Samples will be collected once each day during beach observations, which occur during daylight hours, with occasional night time observations. Additional information regarding dredge operations (approximate time of fill placement or hopper load number) will also be recorded. The sample will be visually compared to the acceptable sand criteria. If determined necessary by the Engineer, quantitative assessments of the sand will be conducted for Munsell color, mean grain size, and shell hash, carbonate and silt contents. A record of these sand evaluations will be provided within the Engineer's daily inspection reports. All samples will be stored by the Engineer or Permittee for 60 days after project completion.

b. If the Engineer determines that the wet Munsell color, mean grain size, shell hash content, carbonate content or silt content do not comply with the quality requirements outlined in the Quality Control Program and that the sediment conditions exist for a continuous area greater than 10,000 square feet (see item D.8.f.), then the Engineer will notify the Contractor and Permittee that the material shall be removed and replaced, or otherwise remediated, until the section complies with the specifications.

c. Upon completion of a pay section which includes a FDEP monument, the Engineer will collect a representative sub-surface (6 inches below grade) sand sample from the berm at each FDEP beach profile line to quantitatively assess the wet Munsell color, mean grain size, shell hash content and silt content for compliance. Shell hash content will be estimated based on visual observations of shell hash retained on each sieve below the #4 sieve and above and including the #7 sieve. Sieve analyses are conducted in accordance with American Society for Testing and Materials Standard Materials Designation D422-63 for particle size analysis of soils (ASTM, 2004) using the sieve set listed in Table 2. The above testing procedures will also be utilized for the samples collected according to section D.8.a., which the Engineer determines do not comply with the requirements outlined in Table 1. The Engineer or Permittee will submit sediment testing results to the FDEP within 90 days following the completion of beach construction. A summary table of all values will be presented.

d. If a continuous beach area of 10,000 square feet contains sediment that is not in compliance with the permit, then the FDEP will be notified. Notification will indicate the estimated volume, aerial extent and location of any unacceptable beach areas and remediation planned. The results of any remediation will be reported to FDEP following construction.

e. Remediation will be determined by the Permittee and may include, but shall not be limited to:

(1) Excavating the non-specification material and mixing it with specification material to achieve a sand mixture that complies with the sediment criteria.

(2) Excavating the non-specification material, transporting the material to an upland location, and replacing the material with material that complies with the sediment criteria.

(3) Excavating the non-specification material, transporting the material to the submerged portion of the profile, and replacing the material with material that complies with the sediment criteria.

f. In order to determine if an area greater than 10,000 square feet of beach fill is non-compliant, the following procedure will be performed by the Engineer, or his duly authorized representative.

(1) Upon determination that the first representative surface grab sample is non compliant, at minimum, five (5) additional random surface grab samples will be taken and analyzed. If the random samples are non-compliant, then additional samples will be taken along a profile at the toe of dune, mid-berm, mean high water, mean tide level, mean low water, -2.0ft, and -4.0ft (referenced to NAVD88, ft). A composite of the profile line data will be used to determine if the material is compliant.

(2) Additional samples will be archived and evaluated according to D.8.a. (above). The samples will be stored for a period of 60 days after the completion of construction.

(3) A site map shall be prepared depicting the location of all samples and the boundaries of all areas of non-compliant fill.

(4) The total square footage will be determined.

(5) The site map and analysis will be included in the Engineer's daily observation report.

(6) This method will also be used to test remediated areas to insure compliance.

E. Sand Criteria. The sediment specifications for the borrow area material are provided in Table 1. The values provided in Table 1 represent the acceptable range of values for placed material that must be met for the material to be acceptable. Deviations from the above specifications are acceptable provided that the spatial extent of the deviations does not exceed 10,000 continuous square feet. Materials which fall outside these ranges will be considered unacceptable materials.

Table 1
Borrow Area Sediment Characteristics Based on Industry Standard Geotechnical Investigation

Sediment Parameter	Borrow Area
Allowable Wet Munsell Value[(1)]	6 or lighter
Shell Hash Content[(2)]	0-15% visual estimate
Carbonate Content	0-40%
Maximum Silt[(3)]	5%
Mean Grain Size Range[(4)]	0.14mm to 0.40mm

Note: (1) Munsell value is referenced to the 2000 standard.
(2) Shell hash content is not representative of the total carbonate content
(3) Silt is defined as any material passing the #230 sieve.
(4) Mean grain size is determined using the following sieves:

Table 2
Mesh Sizes Used for Granularmetric Analysis

SIEVE No	SIZE (phi)	SIZE (mm)
3/4	-4.25	19.00
5/8	-4.0	16.00
7/16	-3.5	11.20
5/16	-3.0	8.00
3 1/2	-2.5	5.60
4	-2.25	4.75
5	-2.0	4.00
7	-1.5	2.80
10	-1.0	2.00
14	-0.5	1.40
18	0.0	1.00
25	0.5	0.71
35	1.0	0.50
45	1.5	0.36
60	2.0	0.25
80	2.5	0.18
120	3.0	0.13
170	3.5	0.09
200	3.75	0.08
230	4.0	0.06

The criteria are based on the range of sediments quantitatively identified within the vibracores. The dredging process includes actions that will mix sediments though excavation and pumping as well as actions that cause sorting of sediments through discharge at the beach. Dredging will selectively remove sediment through vertical cuts (cutter heads). As a result, prediction of sand quality is not possible. Despite the visual appearance that the sediment is well mixed, stratification of sediments can occur. This is no different than some of the natural processes that occur on beaches. A homogenous beach is not anticipated.

F. State Review. The State of Florida shall visit the beach during the initial stages of construction and observe the sand quality. The Engineer and the Permittee will coordinate with State field representatives.

P:\Manatee\8446.45 Coquina Beach JCP\RAI #1 (03-14-08)\Geotech_responses\Attachment 27f - Sediment QA_QC plan.doc

APPENDIX 3

CONTRACTOR'S DAILY QUALITY CONTROL REPORT FORM

DAILY CONTRACTOR QUALITY CONTROL REPORT

Date: _____ Report No._____
(Report is due by 2:00 p.m. of the following day)

PROJECT: Anna Maria Island, City of Anna Maria, Beach Nourishment Project

WEATHER: (Clear) (P. Cloudy) (Cloudy) TEMP. Min. Max.

Wind Speed _____ mph Direction _____
Wave Height at:
Borrow Site _____ feet
Beach disposal _____ feet
Wave Direction _____

LOCATION OF DISCHARGE: _____ feet south of pay profile line no. _____

DRESSING OPERATIONS COMPLETE TO: _____ feet south of pay profile line no. _____

CONTRACTOR/SUB-CONTRACTOR and area of responsibility:

1. Work Performed Today: (Indicate location and description of work performed. Provide beach fill advance over last 24 hours. Attach dredge position printouts and plot to this report.)

2. Results of Surveillance: (Include satisfactory work completed or deficiencies with action to be taken.)

3. Water Quality Monitoring: Was water quality monitoring conducted today in compliance with project permit requirements of the Florida Department of Environmental Protection Permit No. 0178582-001-JC and water quality protection laws, and the results provided to the ENGINEER (Yes/No)?_____

4. Remarks: (Cover delays and any conflicts in Plans, Specifications or instructions.)

5. Equipment Data: (Indicate items of construction equipment other than hand tools at job site and whether or not used and if operable.)

6. Dredge Status: (Is the dredge working, not operating due to weather/sea state, or is it under repair?)

7. Avoidance of Overdredging: Do you certify that the dredge has excavated within the limits of the borrow areas, as shown in the Plans (Yes/No)? _____. Also, do you certify that the borrow area has not been excavated below the limit as shown in the Plans (Yes/No)? _____

8. Beach Dressing, Escarpment Leveling and Shaping of the Beach Slope as Shown in the Plans: Have sections of the beach which have been filled and reopened to the public been dressed, all escarpments leveled and the beach slope been shaped as shown in the plans?

9. Progress Summary:

	This Day	To Date
Worked Hours		
Downtime Hours (Explain Below)		
Length of Discharge Advance on Beach (Ft.)		
Volume Pumped (Estimated c.y.)		
Volume Pay (c.y. accepted sections only)		
Linear % Completed		

Explanation of Downtime:

CONTRACTOR's Verification: The above report is complete and correct and equipment used and work performed during this reporting period are in compliance with the contract drawings and specifications except as noted above.

_____

CONTRACTOR's Approved Authorized Representative

Note: This form must include continuous plots of dredge locations and depths.

MANATEE COUNTY, FLORIDA
ANNA MARIA ISLAND, CITY OF ANNA MARIA AND COQUINA BEACH
BEACH NOURISHMENT PROJECT

ENVIRONMENTAL PROTECTION

MANATEE COUNTY, FLORIDA
ANNA MARIA ISLAND, CITY OF ANNA MARIA AND COQUINA BEACH
BEACH RENOURISHMENT PROJECT

ENVIRONMENTAL PROTECTION

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MANATEE COUNTY, FLORIDA
ANNA MARIA ISLAND, CITY OF ANNA MARIA AND COQUINA BEACH
BEACH RENOURISHMENT PROJECT

ENVIRONMENTAL PROTECTION

1. SCOPE.

The Environmental Protection section of the Contract Documents addresses CONTRACTOR responsibilities for the prevention of pollution and other environmental damage as the result of construction operations under the Contract Documents, including those measures set forth in the Technical Provisions. For the purpose of this specification, pollution and other environmental damage are defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes, or damage/destroy hardbottom habitats such as reef formations. The control of pollution and damage requires consideration of air, water, land and the marine environment and includes management of construction activities, visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants. The CONTRACTOR shall fulfill these specifications at the CONTRACTOR's expense.

2. QUALITY CONTROL.

The CONTRACTOR shall establish and maintain quality control for environmental protection for all items set forth herein. The CONTRACTOR shall record on Daily Quality Control reports any problems in complying with laws, regulations and ordinances, as well as project permits, and corrective action taken.

3. PERMITS.

The CONTRACTOR shall comply with all environmental protection requirements under the terms and conditions set out in all permits applicable to the Work. Project permit copies are provided as appendices to this section of the contract. Specifically, the CONTRACTOR will familiarize himself/herself with general and specific conditions contained in the Department of Environmental Protection permit (permit no. 0281452-001-JC) and U.S. Army Corps of Engineers permit (permit no. SAJ-2000-3874 (SP-CJW). Any other licenses, easements or approvals required, including, but not limited to those which may be required by Manatee County (COUNTY) and/or the City of Anna Maria, shall be secured and paid for by the CONTRACTOR. A copy of each permit and approval is provided in the appendices, and are a part of the Contract Documents.

4. SUBCONTRACTORS.

Assurance of compliance with all sections of the contract by subcontractors shall be the responsibility of the CONTRACTOR, including compliance with all environmental and permit requirements.

5. NOTIFICATION.

The ENGINEER will notify the CONTRACTOR and the COUNTY of any known noncompliance with the aforementioned Federal, State, or local laws or regulations, permits and other elements of the CONTRACTOR's environmental protection plan. Nevertheless, it remains the sole responsibility of the CONTRACTOR to comply with all applicable Federal, State or Local laws or regulations, permits and all elements of the environmental protection plan. If there is known non-compliance, the COUNTY will determine what action will be taken and such response will be transmitted to the CONTRACTOR by the ENGINEER which may include stopping construction of the project until the CONTRACTOR complies with the environmental protection plan. It will also be the CONTRACTOR's responsibility that all subcontractors shall comply with all applicable laws, regulations, permit requirements and all elements of the environmental protection plan.

6. TURBIDITY CONTROL AND WATER QUALITY MONITORING.

6.1 Contractor Conducts Water Quality Monitoring. The CONTRACTOR shall be bound and obligated to maintain the quality of the State's waters as stipulated in Chapter 17-3 of the Florida Administrative Code. The CONTRACTOR shall conduct water quality monitoring procedures as defined in the permits for the project. Water quality monitoring shall be included in the project construction bid as a portion of the unit cost of the project hydraulic fill placement. The CONTRACTOR shall provide the ENGINEER with daily water quality monitoring reports immediately after completion of the water quality analysis.

6.2 Water Quality Monitoring Procedures. The DEP permit for the project requires water quality monitoring to occur three times daily during project construction. Page 20 of 29 of the Florida Department of Environmental Protection (FDEP) permit addresses the water quality monitoring program to be conducted by the CONTRACTOR. Water quality samples are to be analyzed soon after collection by the CONTRACTOR. Under no circumstances will more than two (2) hours lapse between collection and analysis of the samples. Water samples shall be tested using calibrated turbidity meter. The turbidity meter shall be calibrated by the manufacturer within one year prior to the beginning of the project. Written documentation shall be submitted to the ENGINEER. The meter shall be calibrated with standards prior to each use. Reports, including all information required by the FDEP permit, shall be provided to the ENGINEER on a daily basis. If a water quality violation is recorded, the CONTRACTOR is required to immediately cease construction activities and contact the ENGINEER with the results of the water quality analysis. Reports shall be submitted on the Corps of Engineers Turbidity Monitoring Test Report form, Section 01131

and will be provided to the CONTRACTOR by the ENGINEER prior to the start of construction. Water quality monitoring will be performed by the CONTRACTOR, as stated in Section 6 and provided for by Department of Environmental Protection permit no. 0281452-001-JC. The permit is provided in Appendix 1 of the Environmental Protection section of the Contract Documents. All reporting to the Department of Environmental Protection will be provided by the ENGINEER using CONTRACTOR water quality monitoring data.

6.3 Water Quality Violations. The CONTRACTOR is to follow all requirements concerning water quality as provided by permits for the project. In the event of a turbidity violation, the CONTRACTOR will take immediate corrective action indicated in project permits which could include stopping work, changing construction or environmental protection methods, relocation of the dredge in the borrow area or other action. Construction activities may not resume until water quality has returned to within standards (as provided by the DEP permit).

7. PROTECTION OF ENVIRONMENTAL RESOURCES.

The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The CONTRACTOR shall confine his/her activities to areas defined by the Plans and Specifications. Environmental protection shall be as stated in the following subparagraphs.

7.1 Protection of Land Resources

Prior to the beginning of any construction, and at the request of the CONTRACTOR, the ENGINEER shall identify land resources to be preserved within the CONTRACTOR's work area, which is defined as the beach seaward of the vegetation line. The CONTRACTOR shall not remove, cut, deface, injure, or destroy land resources including sand dune or berm vegetation, trees, shrubs, vines, grasses, top soil, and land forms without direct written permission from COUNTY. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is allowed, the CONTRACTOR shall provide effective protection for land and vegetation resources at all times as defined in the following paragraphs. The CONTRACTOR will be responsible for the replacement of any damaged or destroyed vegetation, to the satisfaction of the COUNTY. Failure to replace damaged or destroyed vegetation by the CONTRACTOR will result in replacement by the COUNTY; cost of replacement will be deducted from monies due to the CONTRACTOR, or from monies which will be due to the CONTRACTOR by the COUNTY.

7.1.1 Work Area Limits. Isolated areas (if any) within the work area which are to be saved and protected shall also be identified by the ENGINEER or COUNTY and marked or fenced by the CONTRACTOR. All monuments and markers shall be protected. Where construction operations are to be conducted during darkness, the monument or marks shall be visible. The CONTRACTOR shall convey to all subcontractors and personnel the purpose of marking and/or protection for all necessary objects.

7.1.2 Protection of Landscape. Unless otherwise approved by the COUNTY, no trees, shrubs, vines, grasses or other vegetation will be harmed or destroyed by the CONTRACTOR for any purpose. The CONTRACTOR shall relocate any sea oats that may be affected by construction activities.

7.1.3. Retardation and Control of Runoff. Runoff from the construction site shall be controlled by the CONTRACTOR by the construction of diversion ditches, benches and berms to retard and divert runoff to protected drainage courses, and any measures required by area wide plans approved under paragraph 208 of the Clean Water Act. Dikes will be constructed above the mean high water line and maintained in continuous repair to allow partial settling of fine materials from dredging, or as required by permit documents. The ENGINEER can require the CONTRACTOR to extend dikes up to 500 feet in length if it is deemed necessary for retardation and control of runoff. The extension of dikes, if required, will be provided by the CONTRACTOR at no additional cost.

7.1.4 Temporary Excavations. Embankments for plant and/or work areas shall be controlled to protect adjacent areas from despoilment.

7.1.5 Disposal of Solid Wastes. Solid wastes (including clearing debris) shall be placed in containers which are removed from the beach area and emptied on a regular schedule. The CONTRACTOR will empty containers when three-quarters full and will avoid overflow conditions. All handling and disposal shall be conducted to prevent contamination. No steel, cables, wire, pipe, drums OR ANY OTHER DEBRIS shall be permitted to be disposed overboard into the waters of the Gulf of Mexico or any other water body. Disposal of solid wastes or debris in the Gulf of Mexico is a violation of State and Federal laws. If such debris is found, the debris shall be removed by the CONTRACTOR at his own cost, or the cost of removal deducted from the CONTRACTOR's final payment.

7.1.6 Disposal of Chemical Waste. Chemical waste shall be stored in corrosion resistant containers, removed from the work area and disposed of in accordance with Federal, State, and Local regulations. The CONTRACTOR shall perform all maintenance of equipment, including but not limited to refueling, filter changes, and

replacement of hydraulic lines in a manner so as not to contaminate soils, ground or surface waters, or any other natural resources.

7.2 Protection of Fish and Wildlife Resources. The CONTRACTOR shall keep construction activities under continued surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific consideration, as well as measures for their protection, will be addressed in the CONTRACTOR's Environmental Protection Plan prior to the beginning of project construction.

7.2.1 Sea Turtles. If project construction occurs during a portion of the sea turtle nesting season (May 1 to October 31), construction pipes shall be placed parallel to shore whenever possible, and as far landward as possible without impacting the dune system, structures, or access points. In order to minimize adverse effects to sea turtles, nighttime lighting will comply with permit conditions and contract documents for the project and include lowering, screening and shielding lights where possible. All temporary storage of pipes or equipment shall be off the beach whenever possible, or as far landward as possible without impacting the dune system, structures or access points. The CONTRACTOR shall become familiar with, and comply with all permit requirements for sea turtle protection regarding construction procedures, beach lighting and dates of construction.

7.2.2 Manatee Protection. In order to ensure that manatees are not adversely affected by construction activities, the CONTRACTOR shall adhere to the conditions as outlined in the General Conditions.

7.2.3 Hardbottom Resources. Hardbottom communities exist offshore of Manatee County. The CONTRACTOR shall avoid contact with any and all hardbottom communities as stated in the Contract Documents.

7.3 Protection of Air Resources. The CONTRACTOR shall keep construction activities under surveillance, management, and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by the CONTRACTOR in accomplishing the specified construction shall be in strict accordance with the applicable air pollution standards of the State of Florida (Florida Statute, Chapter 403 and others) and all Federal emission and performance laws and standards.

7.4 Protection of Sound Intrusions. The CONTRACTOR shall keep construction activities under surveillance, and control to minimize damage to the environment by noise. If booster pumps are used on the beach, the CONTRACTOR shall provide adequate muffler systems and erect a sound barrier to deflect noise in the waterward direction and away from buildings.

7.5 Dispensing of Fuel. Secondary containment, which is capable of holding at minimum 110% of the tank contents, must be provided by the CONTRACTOR for each fuel storage tank. Fuel dispensers shall have a 4-foot square, 16-gauge metal pan with borders banded up and welded at corners right below the bibb. Edges of the pans shall be 8-inch minimum in depth to ascertain that no contamination of the ground takes place. Pans shall be cleaned by an approved method immediately after every dispensing of fuel and wastes disposed of offsite in an approved area. Should any spilling of fuel occur, the CONTRACTOR shall immediately contain the spill and contact the appropriate local authorities. The CONTRACTOR will be solely responsible for any fines, penalties or other legal activities related to fuel spills.

7.6 Temporary Sanitary Facility. The CONTRACTOR shall supply and maintain, at minimum, one (1) temporary sanitary facility for the use of land based employees and subcontractors. The facility shall be conveniently located in the vicinity of the beach disposal operation, but away from residential buildings along the coastline. The facility shall be removed at the end of the project.

7.7 Storage of Lubricants. All lubricants and other potential liquid pollutants shall be stored in sealed, non-corrosive containers. Individual containers shall be stored in metal pans with borders banded up and welded at the corners right below the bibb. Pans shall be deep enough to prevent contamination of the ground. Pans shall be kept clean of all spillage or leakage.

8. POST CONSTRUCTION CLEAN-UP.

The CONTRACTOR shall clean-up any area used for construction as stated in General Condition Section 30, Final Clean-Up.

9. RESTORATION OF LANDSCAPE DAMAGE.

The CONTRACTOR shall restore all landscape features damaged or destroyed during construction operations outside the limits of the approved work area. Such restoration shall be in accordance with a plan submitted for approval by the COUNTY. This work will be accomplished at the CONTRACTOR's expense. Final payment to the CONTRACTOR shall not occur until the ENGINEER and the COUNTY are satisfied with the CONTRACTOR's effort to restore landscape or any other damage caused by the CONTRACTOR or his subcontractors.

10. MAINTENANCE OF POLLUTION CONTROL FACILITIES.

The CONTRACTOR shall maintain constructed facilities and portable pollution control devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

11. TRAINING OF CONTRACTOR PERSONNEL IN POLLUTION CONTROL AND ENVIRONMENTAL PROTECTION.

The CONTRACTOR shall train all subcontractors and personnel in all phases of environmental protection. Personnel and subcontractors will be familiar with permit requirements, contract documents, and with the necessity of protection of all habitats, including offshore hardbottom communities. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to insure adequate and continuous environmental pollution control. Quality Control and supervisory personnel shall be thoroughly trained in the proper use of monitoring devices and abatement equipment, and shall be thoroughly knowledgeable of Federal, State, and local laws, regulations, and permits as listed in the Environmental Protection Plan submitted by the CONTRACTOR to the U.S. Army Corps of Engineers. Quality Control personnel will be identified in the Quality Control Plan submitted to the U.S. Army Corps of Engineers in accordance with the General Conditions.

12. FUEL OIL TRANSFER OPERATIONS.

In accordance with the U.S. Coast Guard regulations (33 CFR 156.120, or as revised or updated), couplings used in fuel oil transfer operations on any vessel with a capacity of 250 or more barrels of oil (or fuel) shall be either a bolted or full-threaded connection; or a quick-connect coupling approved by the Commandant; or an automatic back-pressure shutoff nozzle used to fuel the vessel. An executed fuel oil transfer (Declaration) form signed by the tanker man shall be completed for each refueling operation. The U.S. Coast Guard shall also be notified prior to any refueling.

APPENDIX 1

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOINT COASTAL PERMIT NO. 0281452-001-JC

Florida Department of Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

CONSOLIDATED JOINT COASTAL PERMIT AND SOVEREIGN SUBMERGED LANDS AUTHORIZATION

PERMITTEE:
Manatee County
415 10th Street West
Bradenton, FL 34205

AGENT:
Rick Spadoni
Coastal Planning and Engineering, Inc.
2481 Boca Raton Blvd.
Boca Raton, FL 33431

PERMIT INFORMATION:
Permit Number: 0281452-001-JC

Project Name: City of Anna Maria Nourishment and Coquina Beach Restoration

County: Manatee

Issuance Date: July 23, 2010

Expiration Date of Construction Phase: July 23, 2015

REGULATORY AUTHORIZATION:

This permit is issued under the authority of Chapter 161 and Part IV of Chapter 373, Florida Statutes (F.S.), and Title 62, Florida Administrative Code (F.A.C.). Pursuant to Operating Agreements executed between the Department of Environmental Protection (Department) and the water management districts, as referenced in Chapter 62-113, F.A.C., the Department is responsible for reviewing and taking final agency action on this activity.

ACTIVITY DESCRIPTION:

The project entails beach nourishment along 3,000 feet of shoreline in the City of Anna Maria, and beach restoration along 5,075 feet of shoreline at the Coquina Beach segment, both located on Anna Maria Island. Approximately 194,000 cubic yards of beach quality sand will be utilized to construct the two segments. There will be a 600-foot gap in the Coquina Beach segment, where fill will only be mechanically placed above the Mean High Water Line. The berm elevation for the project will be +4.0 feet NAVD, with a beach slope of 1:15 (vertical:horizontal) from the seaward edge of the berm to the slope intercept with the seabed. The construction berm crest will include the 75-foot design berm width, plus an average of 70 additional feet of berm width for advanced nourishment. A geotube assemblage comprised of three sand-filled geotextile containers/tubes will be installed north of Longboat Pass (immediately north of the existing terminal groin/jetty) to limit sand from the Coquina Beach

segment from passing through the existing jetty into Longboat Pass. The tube will be 100 feet in length with a crest elevation of +2.9 feet NAVD. The borrow area (for both segments of the project) will be the 2008 Anna Maria Island Borrow Area, located on the Passage Key Inlet ebb tidal shoal.

The Coquina Beach Restoration is expected to cause impacts to nearshore hardbottom. The project is expected to directly impact 1.05 acres and to indirectly impact 3.45 acres, for a total anticipated impact area of 4.50 acres of hardbottom habitat (containing 68% hardbottom and 32% persistent sand cover). In order to mitigate for the impacts to hardbottom, 4.87 acres of artificial reef habitat, with the same ratio of sand to hardbottom as the natural hardbottom, will be built. This 4.87-acre mitigation reef habitat will contain at least 3.31 net acres of hardbottom.

ACTIVITY LOCATION:

The City of Anna Maria beach nourishment site is located between R-7 and R-10. The Coquina Beach restoration site is located between R-35+790 and R-41+365, with a 600 foot gap between R-37+250 and R-38. Both segments of the project are located on Anna Maria Island, in Manatee County, Sections 18, Township 34 South, Range 16 East (City of Anna Maria Segment) and Sections 4, 9 and 10, Township 35 South, Range 16 East (Coquina Beach Segment). The Borrow Area is located on the Passage Key Inlet ebb tidal shoal, approximately 2,000 feet offshore of the north end of Anna Maria Island, in the Gulf of Mexico, Class III Waters.

PROPRIETARY AUTHORIZATION:

This activity also requires a proprietary authorization, as the activity is located on sovereign submerged lands held in trust by the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), pursuant to Article X, Section 11 of the Florida Constitution, and Sections 253.002 and 253.77, F.S. The activity is not exempt from the need to obtain a proprietary authorization. The Board of Trustees delegated the Department the responsibility to review and take final action on this request for proprietary authorization in accordance with Section 18-21.0051, F.A.C., and the Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C. This proprietary authorization has been reviewed in accordance with Chapter 253, F.S., Chapter 18-21 and Section 62-343.075, F.A.C., and the policies of the Board of Trustees.

As staff to the Board of Trustees, the Department has reviewed the project described above, and has determined that the dredging and beach placement activity qualifies for a Letter of Consent to use sovereign, submerged lands, as long as the work performed is located within the boundaries as described herein and is consistent with the terms and conditions herein. Therefore, consent is hereby granted, pursuant to Chapter 253.77, F.S., to perform the activity on the specified sovereign submerged lands.

COASTAL ZONE MANAGEMENT:

This permit constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act. This permit also

constitutes certification of compliance with state water quality standards pursuant to Section 401 of the Clean Water Act, 33 U.S.C. 1341.

OTHER PERMITS:

Authorization from the Department does not relieve you from the responsibility of obtaining other permits (Federal, State, or local) that may be required for the project. When the Department received your permit application, a copy was sent to the U.S. Army Corps of Engineers (USACE) for review. The USACE will issue their authorization directly to you, or contact you if additional information is needed. If you have not heard from the USACE within 30 days from the date that your application was received by the Department, contact the nearest USACE regulatory office for status and further information. Failure to obtain USACE authorization prior to construction could subject you to federal enforcement action by that agency.

AGENCY ACTION:

The above named Permittee is hereby authorized to construct the work outlined in the activity description and activity location of this permit and shown on the approved permit drawings, plans and other documents attached hereto. This agency action is based on the information submitted to the Department as part of the permit application, and adherence with the final details of that proposal shall be a requirement of the permit. **This permit and authorization to use sovereign submerged lands are subject to the General Conditions and Specific Conditions, which are a binding part of this permit and authorization.** Both the Permittee and their Contractor are responsible for reading and understanding this permit (including the permit conditions and the approved permit drawings) prior to commencing the authorized activities, and for ensuring that the work is conducted in conformance with all the terms, conditions and drawings.

GENERAL CONDITIONS:

1. All activities authorized by this permit shall be implemented as set forth in the plans and specifications approved as a part of this permit, and all conditions and requirements of this permit. The Permittee shall notify the Department in writing of any anticipated deviation from the permit prior to implementation so that the Department can determine whether a modification of the permit is required pursuant to section 62B-49.008, Florida Administrative Code.

2. If, for any reason, the Permittee does not comply with any condition or limitation specified in this permit, the Permittee shall immediately provide the Bureau of Beaches and Coastal Systems and the appropriate District office of the Department with a written report containing the following information: a description of and cause of noncompliance; and the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

3. This permit does not eliminate the necessity to obtain any other applicable licenses or permits that may be required by federal, state, local, special district laws and regulations. This permit is not a waiver or approval of any other Department permit or authorization that may be required for other aspects of the total project that are not addressed in this permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of sovereignty land of Florida seaward of the mean high-water line, or, if established, the erosion control line, unless herein provided and the necessary title, lease, easement, or other form of consent authorizing the proposed use has been obtained from the State. The Permittee is responsible for obtaining any necessary authorizations from the Board of Trustees of the Internal Improvement Trust Fund prior to commencing activity on sovereign lands or other state-owned lands.

5. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

6. This permit does not convey to the Permittee or create in the Permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the Permittee. The issuance of this permit does not convey any vested rights or any exclusive privileges.

7. This permit or a copy thereof, complete with all conditions, attachments, plans and specifications, modifications, and time extensions shall be kept at the work site of the permitted activity. The Permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

8. The Permittee, by accepting this permit, specifically agrees to allow authorized Department personnel with proper identification and at reasonable times, access to the premises where the permitted activity is located or conducted for the purpose of ascertaining compliance with the terms of the permit and with the rules of the Department and to have access to an copy any records that must be kept under conditions of the permit; to inspect the facility, equipment, practices, or operations regulated or required under this permit; and to sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules. Reasonable time may depend on the nature of the concern being investigated.

9. At least forty-eight (48) hours prior to commencement of activity authorized by this permit, the Permittee shall submit to the Bureau of Beaches and Coastal Systems (JCP

Compliance Officer) and the appropriate District office of the Department a written notice of commencement of construction indicating the actual start date and the expected completion date and an affirmative statement that the Permittee and the contractor, if one is to be used, have read the general and specific conditions of the permit and understand them.

10. If historic or archaeological artifacts, such as, but not limited to, Indian canoes, arrow heads, pottery or physical remains, are discovered at any time on the project site, the Permittee shall immediately stop all activities in the immediate area that disturb the soil in the immediate locale and notify the State Historic Preservation Officer and the Bureau of Beaches and Coastal Systems (JCP Compliance Officer). In the event that unmarked human remains are encountered during permitted activities, all work shall stop in the immediate area and the proper authorities notified in accordance with Section 872.02, F.S.

11. Within 30 days after completion of construction or completion of a subsequent maintenance event authorized by this permit, the Permittee shall submit to the Bureau of Beaches and Coastal Systems (JCP Compliance Officer) and the appropriate District office of the Department a written statement of completion and certification by a registered professional engineer. This certification shall state that all locations and elevations specified by the permit have been verified; the activities authorized by the permit have been performed in compliance with the plans and specifications approved as a part of the permit, and all conditions of the permit; or shall describe any deviations from the plans and specifications, and all conditions of the permit. When the completed activity differs substantially from the permitted plans, any substantial deviations shall be noted and explained on two paper copies and one electronic copy of as-built drawings submitted to the Bureau of Beaches and Coastal Systems (JCP Compliance Officer)

SPECIFIC CONDITIONS:

1. No work shall be conducted until and unless the Department issues a Final Order of Variance (File No. 0281452-002-BV) from Rule 62-4.244(5)(c), F.A.C., to establish an expanded mixing zone.

2. All reports or notices relating to this permit shall be sent to the DEP, Bureau of Beaches and Coastal Systems, JCP Compliance Officer, 3900 Commonwealth Boulevard, Mail Station 300, Tallahassee, Florida 32399-3000 (e-mail address: JCP Compliance@dep.state.fl.us).

3. No work shall be conducted under this permit until the Permittee has received a written notice to proceed from the Department. At least 45 days prior to the requested date of

issuance of the notice to proceed, the Permittee shall submit a written request for a Notice to Proceed and the following items for review and approval by the Department:

a. The Permittee shall submit the ***final plans and specifications*** for this project, which must be consistent with the activity description of this permit and the approved permit drawings. The Permittee shall point out any deviations from the activity description or the approved permit drawings, and any significant changes would require a permit modification. Submittal shall include one (1) hardcopy (sized 11 inches by 17 inches or greater, with all text legible) and one (1) electronic copy of the final plans and specifications. The plans and specifications shall be accompanied by a letter indicating the project name, the permit number, the type of construction activity, the specific type of equipment to be used, the anticipated volume of material to be moved (if applicable) and the anticipated schedule. Further, the Permittee shall specify any anticipated sites that will be used (such as a disposal or re-use location) and appropriate contact information for those facilities. The final plans and specifications submitted under this condition must comply with all conditions set forth in this permit.

b. ***Turbidity monitoring qualifications***. Construction at the project site shall be monitored closely by person(s) with professional experience in monitoring turbidity for beach restoration or nourishment projects to assure that turbidity levels do not exceed the compliance standards established in this permit. Also, an individual familiar with beach construction techniques and turbidity monitoring shall be present at all times when fill material is discharged on the beach. This individual shall have authority to alter construction techniques or shut down the dredging or beach construction operations if turbidity levels exceed the compliance standards established in this permit. The names and qualifications of those individuals performing these functions, along with 24-hour contact information, shall be submitted for approval.

c. **Biological monitoring qualifications**: Biological monitoring qualifications shall be submitted to DEP/BBCS for review at least 30 days prior the sampling event. If additional monitoring team(s) are subcontracted, or new staff is added to the monitoring team, proposed changes and qualifications shall be submitted to DEP/BBCS for review at least 30 days prior the sampling event. The Permittee's agent is fully responsible for training of new staff members and subcontractors as well as the QA/QC verification of their work.

4. **Pre-Construction Conference.** The Permittee shall conduct a pre-construction conference to review the specific conditions and monitoring requirements of this permit with Permittee's contractors, the engineer of record and the JCP Compliance Officer (or designated alternate). In order to ensure that appropriate representatives are available, at least twenty-one (21) days prior to the intended commencement date for the permitted

construction, the Permittee is advised to contact the Department, and the other agency representatives listed below:

DEP, Bureau of Beaches & Coastal Systems
JCP Compliance Officer
3900 Commonwealth Boulevard, MS 300
Tallahassee, Florida 32399-3000
phone: (850) 414-7716
e-mail: JCP Compliance@dep.state.fl.us

DEP Southwest District Office
Submerged Lands & Environmental Resources
13051 North Telecom Parkway
Temple Terrace, FL 33637
(813)632-7600

Imperiled Species Management Section
Florida Fish & Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600
phone: (850) 922-4330
fax: (850) 921-4369 or email: marine.turtle@myfwc.com

Florida Fish & Wildlife Conservation Commission
Division of Marine Fisheries
Artificial Reef Program
620 S. Meridian Street, Box 4B2
Tallahassee, FL 32399-1600
phone: (850) 922-4340 x207

The Permittee is also advised to schedule the pre-construction conference at least a week prior to the intended commencement date. At least seven (7) days in advance of the pre-construction conference, the Permittee shall provide written notification, advising the participants (listed above) of the agreed-upon date, time and location of the meeting, and also provide a meeting agenda and a teleconference number.

5. Following construction of the artificial reefs, the Permittee shall complete the Florida Fish & Wildlife Conservation Commission's ***FLORIDA ARTIFICIAL REEF MATERIALS PLACEMENT REPORT AND POST-DEPLOYMENT NOTIFICATION*** using the form provided on their web page:

http://myfwc.com/docs/Conservation/FWCArtificialReefMaterialPlacementReport.pdf.

Within 30 days following construction, the completed form shall be submitted to the Florida Fish & Wildlife Conservation Commission, Division of Marine Fisheries, Artificial Reef Program, 620 S. Meridian Street, Tallahassee, FL 32399 and a copy e-mailed to the JCP Compliance Officer. In addition to attaching the completed form, please indicate on the e-mail that the information is being submitted for the City of Anna Maria Nourishment and Coquina Beach Restoration project, Permit No. 0281452-001-JC.

6. Sediment quality shall be assessed as outlined in the Sediment QA/QC Plan, dated and approved on June 21, 2010 (attached). Any occurrences of unacceptable material will be handled according to the protocols set forth in the Sediment QA/QC Plan. The sediment testing results shall be submitted to FDEP within 90 days following the completion of beach construction.

7. Per the attached "***Anna Maria Island Beach Nourishment Project – Hardbottom Mitigation and Monitoring Plan***", approved on March 24, 2010, the Permittee shall construct a 4.87-acre limestone boulder artificial reef site, containing at least 3.31 net acres of limestone boulder hardbottom to mitigate for anticipated impacts to 4.5 acres of hardbottom habitat, which contained 3.06 net acres of hardbottom, located from R-35-R-39. The ratio of boulder to sand within the artificial reef site to be constructed shall meet or exceed the ratio found at the impact site, which was 68% hardbottom and 32% sand cover. The ratio was based on a line-intercept survey conducted in the summer of 2010, which took into account relatively stable areas of sand covering hardbottom. The net amount of hardbottom within the artificial reef shall be estimated using the line-intercept method to assess the projective cover of the boulders.

8. The construction of the mitigative artificial reef (also referenced herein as the 'New Artificial Reef' to distinguish it from artificial reefs constructed in 1993 and 2005) shall occur prior to the completion of construction of the beach restoration project. If the construction of the mitigative artificial reef has not commenced by the time the beach restoration construction is completed, based on the date of contractor demobilization, the total amount of mitigation will be increased by 0.3 acre per year. The material used to construct the artificial reef shall consist of limestone boulders. The boulders shall have an average diameter large enough to remain stable (3.5 feet) and be placed in a single layer, in areas underlain by rock with an overlying sand layer that is shallow enough to minimize subsidence, such that the post-subsidence relief of the artificial reef will be approximately 1-2 feet. The mitigative reef shall be placed so as not to impact existing hardbottom habitats and the 4.87 acres mitigation site (which is divided into two areas) is approximately 150 feet from exposed, natural hardbottom communities. A minimum 50 foot buffer between the new artificial reef and all existing artificial reef and/or natural hardbottom communities shall be maintained during boulder placement.

9. **Contingency Mitigation Plan.** The primary 4.87-acre artificial reef site was designed to mitigate for the anticipated project-related impacts to hardbottom contained within a 4.50-acre impact area Hardbottom coverage in that impact area was 68% and sand coverage was 32%, so the impact area contained 3.06 net acres of hardbottom. However, a contingency plan has been developed for any project-related impacts to nearshore hardbottom resources that may exceed the anticipated 4.50 acres of hardbottom habitat impact. A contingency artificial reef establishment area will provide for the creation of up to 3.50 acres of mitigation between R-36 and R-38, adjacent to the primary reef. Another suitable area of 5.40 acres has been identified between R-37 and R-39. Selection criteria and proximity to existing hardbottom and artificial reefs for the contingency and additional suitable areas follow the same methods used to design the primary mitigation reef. If additional mitigation is required, the Department will conduct a second Uniform Mitigation Assessment Method (UMAM) assessment to calculate the appropriate mitigation acreage.

10. The pipeline corridor shall avoid placement over hardbottom communities if possible (buffer of at least 200 feet); if the passage over hardbottom is unavoidable, efforts to minimize impacts by using risers in the area where the pipeline crosses hardbottom shall be made. If the pipeline extends over the hardbottom or within 200 feet of the hardbottom or artificial reef, than monitoring (pre-, during, and post-construction) will be required in the areas of hardbottom crossings and/or areas of hardbottom (artificial reefs) in the distance less than 200 feet from the pipeline.

Marine Turtle Protection Conditions

11. ***Pre-Construction Meeting.*** A meeting between representatives of the contractor, the Service, the FWC, and the permitted sea turtle surveyor prior to the commencement of work on this project must be held. At least 10 business days advance notice must be provided prior to conducting this meeting. This will provide an opportunity for explanation and/or clarification of the sea turtle and piping plover protection measures as well as additional guidelines when construction occurs during the nesting season such as storing equipment, minimizing driving, and follow up meetings during construction.

12. ***Marine Turtle Nest Surveys.*** Sea turtle nesting surveys shall be initiated 65 days prior to sand placement or by April 15, whichever is later. Nesting surveys must continue through the end of the project or through November 30, whichever is earlier. Hatchling and emerging success monitoring will involve checking nests beyond the completion date of the daily early morning nesting surveys.

    a) Sea turtle nesting surveys and egg relocations will only be conducted by persons with prior experience and training in these activities and who is duly authorized to conduct such activities through a valid permit issued by FWC, pursuant to FAC 68E-1. Nesting surveys must be conducted daily between sunrise and 9 a.m.

b) The contractor shall not initiate work until daily notice has been received from the sea turtle permit holder that the morning survey has been completed. Surveys must be performed in such a manner so as to ensure that construction activity does not occur in any location prior to completion of the necessary sea turtle protection measures.

c) The surveys shall be conducted and eggs shall be relocated per the following requirements.

i) Only those nests that may be affected by material placement will be relocated. Nests requiring relocation shall be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting will not interfere with hatchling orientation. Relocated nests shall not be placed in organized groupings; relocated nests shall be randomly staggered along the length and width of the beach in settings that are not expected to experience daily inundation by high tides or known to routinely experience severe erosion and egg loss, or subject to artificial lighting. Nest relocations in association with construction activities shall cease when construction activities no longer threaten nests.

ii) Sea turtle nests deposited where the project activities have ceased or will not occur for 65 days shall be marked and left *in situ* unless other factors threaten the success of the nest. The turtle permit holder shall install an on-beach marker at the nest site and/or a secondary marker at a point landward as possible to assure that future location of the nest will be possible should the on-beach marker be lost. A series of stakes and highly visible survey ribbon or string shall be installed to establish a 10-foot radius around the nest. No activity shall occur within this area, nor will any activities occur which could result in impacts to the nest. Nest sites shall be inspected daily to assure nest markers remain in place and the nest has not been disturbed by the project activities.

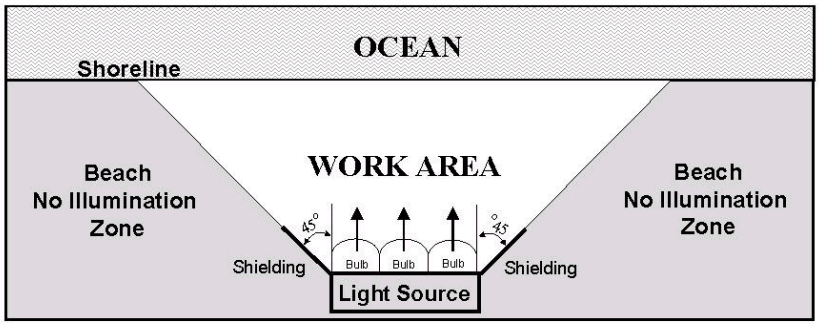
iii) Reports on all nesting activity shall be provided for the initial nesting season and for a minimum of three additional nesting seasons if placed material still remains on the beach. Monitoring of nesting activity in the seasons following construction shall include daily report sheets noting all activity, nesting success rates, hatching success of all relocated nests, hatching success of a representative sampling of nests left in place (if any), dates of construction and names of all personnel involved in nest surveys and relocation activities. Data should be reported separately for the nourished areas and for an equal length of adjacent beach that is not nourished in accordance with the attached Table. Summaries of nesting activity shall be submitted in electronic format (Excel spreadsheets). All reports should submitted by January 15 of the following year.

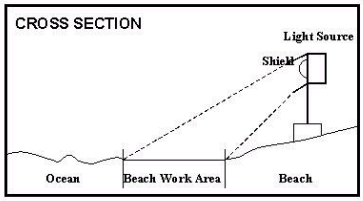
Table 1. Marine Turtle Monitoring for Beach Restoration Projects

The following monitoring is required for beach restoration projects. Reports summarizing the nesting should be submitted to the Tequesta office with a copy to the Tallahassee office by January 15 of the subsequent year. Data for nesting activity on the nourished beach and on an equal length of beach that is not nourished shall be reported separately, and should include numbers of nests lost to erosion or washed out. Summaries of nesting activity shall be submitted in electronic format (Excel spreadsheets).

Characteristic	Parameter	Measurement	Variable
Nesting Success	False crawls - number	Visual assessment of all false crawls	Number and location of false crawls in fill areas and nonfill areas: any interaction of the turtle with obstructions, such as groins, seawalls, or scarps, should be noted.
	False crawl - type	Categorization of the stage at which nesting was abandoned	Number in each of the following categories: emergence-no digging, preliminary body pit, abandoned egg chamber.
	Nests	Number	The number of marine turtle nests in filled and nonfilled areas should be noted. If possible, the location of all marine turtle nests shall be marked on map of project, and approximate distance to sea walls or scarps measured using a meter tape. Any abnormal cavity morphologies should be reported as well as whether turtle touched groins, seawalls, or scarps during nest excavation
		Lost Nests	The number of nests lost to inundation, erosion or the number with lost markers that could not be found.
	Lighting Impacts	Disoriented sea turtles	The number of disoriented hatchlings and adults shall be documented and reported in accordance with existing FWC protocol for disorientation events.
Reproductive Success	Emergence & hatching success	Standard survey protocol	Numbers of the following: unhatched eggs, depredated nests and eggs, live pipped eggs, dead pipped eggs, live hatchlings in nest, dead hatchlings in nest, hatchlings emerged, disoriented hatchlings, depredated hatchlings per each nest.

13. ***Project Lighting***. Lighting on offshore or onshore equipment shall be minimized through reduction, shielding, lowering, and appropriate placement to avoid excessive illumination of the water's surface and nesting beach while meeting all Coast Guard, EM 385-1-1, and OSHA requirements. Light intensity shall be reduced to the minimum standard required by OSHA for General Construction areas, in order not to misdirect sea turtles. Shields shall be affixed to the light housing and be large enough to block light from all lamps from being transmitted outside the construction area, as illustrated below.





BEACH LIGHTING SCHEMATIC

14. ***Equipment Storage***. Staging areas for construction equipment for sand placement shall be located off the beach to the maximum extent practicable from April 15 to October 31; if construction is to occur during this timeframe, the following protocols shall apply:

a) Nighttime storage of the beach restoration project construction equipment not in use shall be off the beach to minimize disturbance to sea turtle nesting and hatching activities.

b) All construction pipes that are placed on the beach shall be located as far landward as possible without compromising the integrity of the existing dune system.

   i) Temporary storage of pipes shall be off the beach to the maximum extent possible.
   ii) Temporary storage of pipes on the beach shall be in such a manner so as to impact the least amount of nesting habitat and shall not compromise the integrity of the dune systems.

iii) Pipes placed parallel to the dune shall be five to ten feet away from the toe of the dune.

15. ***Fill Restrictions***. During nesting season, the contractor shall not extend the beach fill more than 500 feet along the shoreline between dusk and the following day until the daily nesting survey has been completed and the beach cleared for fill advancement, in accordance with the following protocols:

a) If the 500 feet is not feasible for the project, an agreed upon distance shall be decided on during the preconstruction meeting.

b) Once the beach has been cleared and the necessary nest relocations have been completed, the contractor is allowed to proceed with the placement of fill during daylight hours until dusk at which time the 500-foot length limitation shall apply.

16. ***Beach Maintenance.*** All derelict concrete, metal, and coastal armoring material and other debris shall be removed from the beach prior to any dredged material placement to the maximum extent practicable. If debris removal activities will take place from April 15 through September 30, the work shall be conducted during daylight hours only and shall not commence until completion of the sea turtle survey each day. All excavations and temporary alterations of the beach topography shall be filled or leveled to the natural beach profile prior to 9 p.m. each day.

17. ***Compaction Sampling***. Immediately after completion of the beach restoration project and prior to April 15 for 3 subsequent years, sand compaction shall be monitored in the area of sand placement in accordance with the following protocols:

a) Compaction sampling stations shall be located at 500-foot intervals along the project area. One station shall be at the seaward edge of the dune/bulkhead line (when material is placed in this area) and one station shall be midway between the dune line and the high water line (normal wrack line).

b) At each station, the cone penetrometer shall be pushed to a depth of 6, 12, and 18 inches three times (three replicates). Material may be removed from the hole if necessary to ensure accurate readings of successive levels of sediment. The penetrometer may need to be reset between pushes, especially if sediment layering exists. Layers of highly compact material may lie over less compact layers. Replicates shall be located as close to each other as possible, without interacting with the previous hole and/or disturbed sediments. The three replicate compaction values for each depth shall be averaged to produce final values for each depth at each station. Reports shall include all 18 values for each transect line, and the final 6 averaged compaction values.

c) If the average value for any depth exceeds 500 psi for any two or more adjacent stations, then that area shall be tilled prior to April 15.

d) If values exceeding 500 psi are distributed throughout the project area but in no case do those values exist at two adjacent stations at the same depth, then consultation with the FWC shall be required to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling shall not be required.

18. ***Tilling Requirements***. Immediately after completion of the beach fill placement event, and prior to April 1 for 3 subsequent years, if placed sand still remains on the beach, the beach shall be tilled as described below or the applicant may follow the procedure outlined below to request a waiver of the tilling requirement. During tilling, at a minimum, the protocol provided below shall be followed:

a) The area shall be tilled to a depth of 36 inches. All tilling activity must be completed prior to April 1. Each pass of the tilling equipment shall be overlapped to allow more thorough and even tilling. Tilling should occur landward of the wrack line and avoid all vegetated areas 3 square feet or greater with a 3 foot buffer around the vegetated areas.

b) An annual summary of compaction surveys and the actions taken shall be submitted to the FWC.

c) If the project is completed just before the nesting season, tilling shall not occur in areas where nests have been left in place or relocated unless authorized by the U.S. Fish and Wildlife Service in an Incidental Take Statement.

d) This condition shall be evaluated annually and may be modified if necessary to address sand compaction problems identified during the previous year.

e) To request a waiver of the tilling requirement, the Permittee may measure sand compaction in the area of restoration in accordance with a protocol agreed to by the FWC, the Department, the U.S. Fish & Wildlife Service, and the applicant to determine if tilling is necessary.

19. ***Escarpment Surveys***. Visual surveys for escarpments along the beach fill area shall be made immediately after completion of the beach nourishment project and between March 15 and April 15 for the following three years if placed sand still remains on the beach. All scarps shall be leveled or the beach profile shall be reconfigured to minimize scarp formation. In addition, weekly surveys of the project area shall be conducted during the two nesting seasons following completion of fill placement as follows:

a) The number of escarpments and their location relative to DNR-DEP reference monuments shall be recorded during each weekly survey and reported relative to the length of the beach surveyed (e.g., 50% scarps). Notations on the height of these escarpments shall be included (0 to 2 feet, 2 to 4 feet, and 4 feet or higher) as well as the maximum height of all escarpments.

b) Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet shall be leveled to the natural beach contour by April 15. Any escarpment removal shall be reported relative to R-monument.

c) If weekly surveys during the marine turtle nesting season document subsequent reformation of escarpments that exceed 18 inches in height for a distance of 100 feet, the FWC shall be contacted immediately to determine the appropriate action to be taken. Upon written notification, the Permittee shall level escarpments in accordance with mechanical methods prescribed by the FWC.

20. ***Lighting Surveys***. A survey of all artificial lighting visible from the project beach shall be conducted after the beach restoration project to determine if any lighting can be seen. The surveys shall document all lighting visible from the post-project restored beach. The post-project survey shall be conducted by May 15 following the project work and again by June 15, July 15, August 15, and September 15 of that nesting season. For each light source visible, it must be documented that the property owner(s) have been notified of the problem light with recommendations for correcting the light. Recommendations must be in accordance with the Florida Model Lighting Ordinance for Marine Turtle Protection FAC 62B-55. A summary report of each survey including documentation of property owner notification shall be submitted to the FWC Imperiled Species Management Section in Tallahassee by the 1st of the following month; and a final summary report provided by December 15 of that year. After the final report is completed, a meeting must be set up with FWC and the USFWS to discuss the survey report and documented sea turtle disorientations.

21. ***Marine Turtle or Nest Encounters***. Upon locating a dead, injured, or sick endangered or threatened sea turtle specimen, initial notification must be made to the FWC at 1-888-404-FWCC. Care should be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological materials in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed. In the event a sea turtle nest is excavated during construction activities, all work shall cease in that area immediately and the permitted person responsible for egg relocation for the project should be notified so the eggs can be moved to a suitable relocation site.

Shorebird Protection Conditions

22. ***Shorebird Surveys***. Shorebird surveys should be conducted by trained, dedicated individuals (Shorebird Monitor) with proven shorebird identification skills and avian survey experience. Credentials of the Shorebird Monitor will be submitted to the FWC Regional Biologist for review and approval. Shorebird Monitors will use the following survey protocols:

a) *Nesting Season Surveys*. Shorebird Monitors should review and become familiar with the general information and data collection protocols outlined on the FWC's Beach-Nesting Bird Website (http://myfwc.com/shorebirds/). An outline of what data should be collected, including downloadable field data sheets, is available on the website.

i) The nesting season is generally 1 April – 1 September, but some nesting may occur through September. In addition, the imperiled snowy plover (*Charadrius alexandrinus*) may nest as early as February along the west coast and panhandle of Florida.

ii) Nesting season surveys shall begin on February 15 or 10 days prior to project commencement (including surveying activities and other pre-construction presence on the beach), whichever is later, and be conducted daily throughout the construction period or through August, whichever is earlier. Weekly surveys of the project site shall continue through August or through fledgling or loss of identified nests or hatchlings, whichever is later.

iii) Nesting season surveys shall be conducted in all potential beach-nesting bird habitat within the project boundaries that may be impacted by construction or pre-construction activities during the nesting season. Portions of the project in which there is no potential for project-related activity during the nesting season may be excluded.

iv) Surveys for detecting new nesting activity will be completed on a daily basis prior to movement of equipment, operation of vehicles, or other activities that could potentially disrupt nesting behavior or cause harm to the birds or their eggs or young.

v) Surveys should be conducted by traversing the length of the project area and visually inspecting, using binoculars or spotting scope, for the presence of shorebirds exhibiting breeding behavior.

vi) If an ATV or other vehicle is needed to cover large project areas, the vehicle must be operated at a speed <6 mph, shall be run at or below the high-tide line, and the Shorebird Monitor will stop at no greater than 200 meter intervals to visually inspect for nesting activity.

vii) Once breeding is confirmed by the presence of a scrape, eggs, or young, the Bird Monitor will notify the Regional Nongame Biologist of the FWC at (863) 648-3200 within 24 hours.

viii) All breeding activity will be reported to the Beach-Nesting Bird website within one week of data collection.

ix) Observations of non-breeding shorebirds should be reported to the Shorebird-Seabird Occurrence Database, as described below.

23. ***Buffer Zones and Travel Corridors***. Within the project area, the Permittee shall establish a 300 ft-wide buffer zone around any location where shorebirds have been engaged in nesting behavior, including territory defense. Any and all construction activities, including movement of vehicles, should be prohibited in the buffer zone.

a) The width of the buffer zone shall be increased if birds appear agitated or disturbed by construction or other activities in adjacent areas.

b) Site-specific buffers may be implemented upon approval by FWC as needed.

c) Reasonable and traditional pedestrian access should not be blocked where nesting birds will tolerate pedestrian traffic. This is generally the case with lateral movement of beach-goers walking parallel to the beach at or below the highest tide line. Pedestrian traffic may also be tolerated when nesting was initiated within 300 feet of an established beach access pathway. The Permittee shall work with FWC staff to determine if pedestrian access can be accommodated without compromising nesting success.

d) Designated buffer zones must be posted with clearly marked signs around the perimeter. If pedestrian pathways are approved within the 300-foot buffer zone, these should be clearly marked. These markings shall be maintained until nesting is completed or terminated. In the case of solitary nesters, nesting is not considered to be completed until all chicks have fledged.

e) No construction activities, movement of vehicles, or stockpiling of equipment shall be allowed within the buffer area.

f) FWC-approved travel corridors should be designated and marked outside the buffer areas. Heavy equipment, other vehicles, or pedestrians may transit past nesting areas in these corridors. However, other activities such as stopping or turning shall be prohibited within the designated travel corridors adjacent to the nesting site.

i) Where such a travel corridor must be established within the project area it should avoid critical areas for shorebirds (known nesting sites, wintering grounds, FWC-designated Critical Wildlife Areas, and USFWS-designated critical piping plover habitat) as much as possible, and be marked with signs clearly delineating the travel corridor from the shorebird buffer areas described above.

ii) To the degree possible, the Permittee should maintain some activity within these corridors on a daily basis, without directly disturbing any shorebirds documented on site or interfering with sea turtle nesting, especially when those corridors are established prior to commencement of construction. Passive methods to modify nesting site suitability must be approved by FWC Regional Biologist for that region.

24. ***Placement of Equipment and Sand***. If it will be necessary to extend construction pipes past a known shorebird nesting site or over-wintering area for piping plovers, then whenever possible those pipes should be placed landward of the site before birds are active in that area. No pipe or sand shall be placed seaward of a known shorebird nesting site during the shorebird nesting season.

25. ***Notification***. If shorebird nesting occurs within the project area, a bulletin board will be placed and maintained in the construction area with the location map of the construction site showing the bird nesting areas and a warning, clearly visible, stating that "BIRD NESTING AREAS ARE PROTECTED BY THE FLORIDA THREATENED AND ENDANGERED SPECIES ACT AND THE STATE AND FEDERAL MIGRATORY BIRD ACTS".

26. ***Beach Contours***. Shorebird surveys must be conducted at least ten (10) days prior to any tilling or scarp removal that occurs during shorebird nesting season, starting February 15. It is the responsibility of the contractors to avoid tilling or scarp removal in areas where nesting birds are present.

a) A relatively even surface, with no deep ruts or furrows, shall be created during tilling. To do this, chain-linked fencing or other material shall be dragged over those areas as necessary after tilling.

b) The slope between the mean high water line and the mean low water line must be maintained in such a manner as to approximate natural slopes.

Manatee Protection Conditions

27. The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

a) All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b) All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c) Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d) All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e) Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida.

f) Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used (see MyFWC.com). One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 81/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities.

MONITORING REQUIRED:
WATER QUALITY MONITORING

28. Water Quality - Turbidity shall be monitored as follows:

Units: Nephelometric Turbidity Units (NTUs).

Frequency: 3 times daily at least 4 hours apart during all dredging and sand placement operations.

Location: Background: At mid-depth, clearly outside the influence of any artificially generated turbidity plume.

Dredge Site: approximately 300 meters in the opposite direction of the prevailing current flow.

Beach Site: approximately 500 meters upcurrent of the point where the return water from the dredged discharge reenters the Gulf of Mexico and the same distance offshore as the associated compliance sample.

Compliance: At mid-depth, within the densest portion of any visible turbidity plume generated by this project.

Dredge Site: Samples shall be collected 150 meters downcurrent from the dredge head, in the densest portion of any visible turbidity plume.

Beach Site: Samples shall be collected where the densest portion of the turbidity plume crosses the edge of the mixing zone, which measures 300 meters offshore and 1,000 meters downcurrent from the point where the return water from the dredged discharge reenters the Gulf of Mexico.

Intermediate Monitoring: Mid-depth, at points approximately 250 meters, 500 meters, and 750 meters downcurrent from the point where the return water from the dredged discharge reenters the Gulf of Mexico, within the densest portion of any visible turbidity plume. These measurements will be used to calibrate the size of the mixing zone for future events.

29. The **compliance** locations given above shall be considered the limits of the temporary mixing zone for turbidity allowed during construction. If monitoring reveals turbidity levels at the **compliance** sites that are greater than 29 NTUs above the corresponding

background turbidity levels, construction activities shall **cease immediately** and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. Any such occurrence shall also be immediately reported to the JCP Compliance Officer at JCP Compliance@dep.state.fl.us and the Department's Southwest District office in Tampa.

The turbidity monitor is also responsible for observing any potential turbidity plumes around the pipeline, which could be created by a pipeline leak. If a pipeline leak is observed, the JCP Compliance Officer shall be notified. If the plume from the pipeline leak is recoded where the pipeline is crossing sandy areas, the dredging crew shall be notified to fix the problem. If the plume from the pipeline leak is recoded within 200 feet of hardbottom, construction activities shall **cease immediately** until the leak is fixed.

30. Turbidity Reports. All turbidity monitoring data shall be submitted within one week of analysis, along with documents containing the following information:

a. time of day samples were taken;
b. dates of sampling and analysis;
c. depth of water body;
d. depth of each sample;
e. antecedent weather conditions, including wind direction and velocity;
f. tidal stage and direction of flow;
g. water temperature;
h. a map indicating the sampling locations;
i. a statement describing the methods used in collection, handling, storage and analysis of the samples;
j. a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection, calibration of the meter and accuracy of the data.

Monitoring reports shall be submitted to the BBCS in Tallahassee (attn: JCP Compliance Officer) and to the Department's Southwest District office. Failure to submit reports in a timely manner constitutes grounds for revocation of the permit. When submitting this information to the Department, on the cover page to the submittal and at the top of each page, please state: "This information is provided in partial fulfillment of the monitoring requirements in Permit No. 0281452-001-JC, for the City of Anna Maria Nourishment and Coquina Beach Restoration Project."

Any project-associated discharge other than dredging, or placing sand on the beach (e.g., scow leakage or runoff from temporary containment area) shall be monitored as close to the source as possible every hour until compliance levels match the background turbidity levels, or until otherwise directed by the Department. The Permittee shall notify the

Department by separate email to the JCP Compliance Officer, of such an event within 24 hours of the time the Permittee first becomes aware of the discharge.

BIOLOGICAL MONITORING

31. **Nearshore Hardbottom Monitoring**

A. ***In-situ Hardbottom Delineation.*** In order to quantify changes in hardbottom exposure, divers will periodically delineate the hardbottom through filed studies based on the most recent, clear aerial imagery available. Once hardbottom resources are delineated, the acreage of exposed hardbottom in the nearshore Coquina Beach Nourishment Project area will be determined. Results of each hardbottom investigation will be compared to previous hardbottom mapping surveys to show changes in hardbottom exposure over time. If impacts are more than anticipated, further mitigation shall be required.

B. ***Transect establishment and monitoring*:** In order to monitor impacts to the nearshore hardbottom area, a total of thirteen (13) transects shall be established in the nearshore hardbottom areas. Of these 13 transects, 9 will be monitored for unanticipated impacts (section 1. below), and 4 will be monitored to assess the impact area (section 2. below).

1**. Unanticipated Impacts**: In order to assess any unanticipated project-related impacts to natural nearshore hardbottom, nine (9) of the transects will be monitored outside the impact area, including the hardbottom area north of the project area and the hardbottom resources located west (seaward) of the equilibrium toe of fill (ETOF). For these transects, the following monitoring protocols shall be performed (in the order listed):

i. ***Line-intercept method*** will be used to monitor sediment coverage. During each survey, a biologist will swim the length of each transect and note the location along the transect tape, and linear extent, of each sand patch that is at least 0.5 m in length and uninterrupted by benthic biota.

ii. ***BEAMR assessment*** will be performed to characterize the benthic communities. The BEAMR method is summarized in the attached Monitoring and Mitigation Plan. Photographs will be taken to supplement BEAMR data along each transect.

iii. ***Video Documentation*** will supplement the BEAMR and line-intercept data along the nine (9) transects outside the ETOF to help assess any unanticipated

project-related impacts. Video will be collected along each transect in an east to west direction.

2. **Impact Area**: In order to record the condition of hardbottom within the impact area and to document sedimentation and any potential re-exposure, video will be collected along the four (4) transects within the ETOF that are anticipated to experience project-related impacts. Video will be collected along each transect in an east to west direction.

C. ***Schedule***. Hardbottom delineation, as well as the thirteen (13) nearshore hardbottom transects, shall be monitored on five (5) occasions, with all surveys taking place during the summer: once before construction of the City of Anna Maria Nourishment and Coquina Beach Restoration Project (a second, additional pre-construction survey may be conducted by the Permittee as an optional survey); once immediately following construction; and then annually for three years post-construction. Each monitoring event shall include line-intercept, BEAMR and video data collection on the nine (9) transects outside the ETOF, and video collection on the four (4) transects located within the ETOF.

D. ***Reports.*** An immediate post-construction, first annual, second annual and third annual post-construction nearshore hardbottom monitoring report shall be prepared and submitted to the Department for review within 90 days of the completion of each monitoring event, for three years post-construction. Monitoring progress shall be reported weekly until the completion of each survey, at which point the JCP Compliance Officer shall be notified that the survey is complete. The immediate post-construction report, and all following reports, shall compare data to pre-construction results and to each previous post-construction report. A final report shall be prepared following the conclusion of the third year of post-construction monitoring and shall summarize and compare data of all reports. Reports shall analyze and discuss any observed burial, sedimentation, or changes to benthic communities based on the transect monitoring, including line-intercept and BEAMR data. Data shall be analyzed to determine any potential secondary impacts due to the City of Anna Maria Nourishment and Coquina Beach Restoration Project. Videos collected along monitoring transects shall be submitted on DVDs with each annual report. Each annual report shall also include the results of the annual summer hardbottom delineation and a comparison of exposed hardbottom acreage delineated during all hardbottom investigations.

Annual monitoring reports shall include:

- A map including the Coquina Beach Restoration Project area and adjacent hardbottom resources and monitoring transects overlaid onto recent, clear aerial photographs;
- Analysis of sedimentation on the transects outside the ETOF based on line-intercept data and data from quadrats;

- Multivariate analysis of quantitative BEAMR data with subsequent analysis of benthic biological components on the transects outside the ETOF (*e.g.*, percent cover by corals, octocorals, sponges, and algae);
- A description of the condition (*e.g.*, exposed or buried) of transects located within the ETOF;
- A comparison of post-construction monitoring results to pre-construction monitoring results;
- A figure comparing the most recent annual hardbottom delineation and all previous hardbottom delineations;
- Calculation of exposed hardbottom acreage and comparison to previous exposed hardbottom acreages;
- Copies of all transect video submitted on DVDs; and,
- All raw data in the format that was used for the analysis.

32. **Mitigation Reef Monitoring**

A. ***Line Intercept Study***. Immediately following construction of the New Artificial Reef, divers shall conduct a line-intercept survey as part of the as-built survey in order to estimate percent of net boulder cover. Preceding this survey, the placement of 30-meter transects within the artificial reef site will be determined by randomly generating the start points and degree headings for each transect, with approximately 12 transects per acre of artificial reef. During the line-intercept survey, divers will swim the length of each transect and record the projection of limestone boulders on the transect line. Based on the data collected along all transects, the percent net boulder cover and percent sand cover within the artificial reef site will be calculated and reported.

B. ***Transect Establishment and Monitoring.*** In order to monitor benthic colonization and succession, twenty (20) monitoring transects shall be established on the New Artificial Reef, according to the Monitoring and Mitigation Plan:

i. The **BEAMR assessment,** as described in the Monitoring and Mitigation Plan, shall be used to assess the benthic communities. Photographs shall be taken to supplement BEAMR data along each transect.

ii. **Video Documentation** shall be collected along all artificial reef transects to supplement the BEAMR data. Video shall be collected along each transect in an east to west direction.

iii. **Photo Quadrat Monitoring.** In order to create a photo record of colonization and succession, five (5) 0.5- m^2 photoquadrats shall be monitored on the New Artificial Reef. The time-series photographs will provide a clear visual representation of the colonization and succession on the Artificial Reef, and the

Coral Point Count calculations will quantify the change in benthic cover taking place over time in each photo-quadrat. These data will lead to a better understanding of the colonization processes occurring on artificial reefs in the nearshore habitat of the Gulf coast of Florida.

C. ***Comparison to 2005 Artificial Reef.*** The 2005 Artificial Reef shall be monitored and compared to the New Artificial Reef built for this project, in order to gain insight into colonization and succession patterns occurring on artificial reefs in the nearshore habitat of the Gulf coast of Florida. Divers shall survey the 2005 Artificial Reef during each monitoring event. Data collected on the 2005 Artificial Reef shall not be used as one of the criteria of mitigation success of the New Artificial Reef; success of the New Artificial Reef will be solely determined by comparison to the natural nearshore hardbottom habitat expected to be impacted by the project (see F below).

D. ***Mapping of Artificial Reef.*** During the final (third) monitoring survey on the New Artificial Reef, biologists shall also map the artificial reef in order to determine the total acreage.

E. ***Schedule.*** Immediately following construction of the New Artificial Reef, divers shall conduct a line-intercept survey as part of the as-built survey. The artificial reef transects, (including twenty (20) transects on the New Artificial Reef and ten (10) transects on the 2005 Artificial Reef), shall be monitored annually (summer) for three years following placement of the New Artificial Reef. During the final (third) monitoring survey, biologists shall map the artificial reef.

F. ***Success***. Success will be achieved when the benthic community and colonization of the mitigation reef has been documented to be comparable to the benthic community and species composition documented in the impact area during the September 2009 survey. The criteria for successful mitigation will be defined by: 1) 90% of species found in the impact site shall be present in the mitigation site by the time of the completion of the monitoring period; and 2) percent cover by the major groups of organisms in the mitigation site shall be no less that it was in the impact site.

G. ***Reports.*** A first, second and third annual mitigative artificial reef monitoring report shall be completed within 90 days of the completion of each annual monitoring event, for three years following placement of the New Artificial Reef. Monitoring progress shall be reported weekly until the completion of each survey, at which point the JCP Compliance Officer shall be notified that the survey is complete. Each annual report shall document the colonization of the New Artificial Reef and compare the species composition on this reef to that documented in the impact area during the September 2009 survey. The benthic community on the New Artificial Reef shall also be compared to the benthic community found on the 2005 Artificial Reef so that community succession can be analyzed on both artificial reefs.

Annual monitoring reports shall include:

- A map including the Coquina Beach Restoration Project area, adjacent hardbottom resources and monitoring transects, the New Artificial Reef and 2005 Artificial Reef and associated monitoring transects overlaid onto recent, clear aerial photographs;
- An analysis of quantitative BEAMR data on benthic biological components on artificial reef monitoring transects (*e.g.*, percent cover by corals, octocorals, sponges, and algae);
- A comparative analyses of the new mitigative artificial reef and natural hardbottom resources to determine mitigation success;
- An analysis of succession based on comparison of benthic communities found on the New Artificial Reef and 2005 Artificial Reef;
- An analysis of colonization and succession within the five (5) photo-quadrats, including time-series photographs;
- Current acreage of artificial reef (for Final report only);
- Copies of all transect video submitted on DVDs; and
- All raw data in the format that was used for the analysis.

33**. PHYSICAL MONITORING REQUIRED:**

Pursuant to 62B-41.005(16), F.A.C., physical monitoring of the project is required through acquisition of project-specific data to include, at a minimum, topographic and bathymetric surveys of the beach, offshore, and borrow site areas, and engineering analysis. The monitoring data is necessary in order for both the project sponsor and the Department to regularly observe and assess, with quantitative measurements, the performance of the project, any adverse effects which have occurred, and the need for any adjustments, modifications, or mitigative response to the project. The scientific monitoring process also provides the project sponsor and the Department information necessary to plan, design, and optimize subsequent follow-up projects, potentially reducing the need for and costs of unnecessary work, as well as potentially reducing any environmental impacts that may have occurred or be expected.

The Monitoring Plan shall indicate the project's predicted design life.

The approved Monitoring Plan is attached to this permit and can be revised at any later time by written request of the Permittee and with the written approval of the Department. If subsequent to approval of the Monitoring Plan there is a request for modification of the permit, the Department may require revised or additional monitoring requirements as a condition of approval of the permit modification.

As guidance for obtaining Department approval, the Monitoring Plan shall generally contain the following items:

a. Topographic and bathymetric profile surveys of the beach and offshore shall be conducted within 90 days prior to commencement of construction, and within 60 days following completion of construction of the project. Thereafter, monitoring surveys shall be conducted annually for a period of three (3) years and then biennially until the next beach nourishment event or the expiration of the project design life, whichever occurs first. The monitoring surveys shall be conducted during a spring or summer month and repeated as close as practicable during that same month of the year. If the time period between the immediate post-construction survey and the first annual monitoring survey is less than six months, then the Permittee may request a postponement of the first monitoring survey until the following spring/summer. A prior design survey of the beach and offshore may be submitted for the pre-construction survey if consistent with the other requirements of this condition.

   The monitoring area shall include profile surveys at each of the Department of Environmental Protection's reference monuments within the bounds of the beach fill area and along at least 5,000 feet of the adjacent shoreline on both sides of the beach fill area. For those project areas that contain erosion control structures, such as groins or breakwaters, additional profile lines shall be surveyed at a sufficient number of intermediate locations to accurately identify patterns of erosion and accretion within this subarea. All work activities and deliverables shall be conducted in accordance with the latest update of the Bureau of Beaches and Coastal Systems (BBCS) *Monitoring Standards for Beach Erosion Control Projects, Sections 01000 and 01100*.

b. Bathymetric surveys of the borrow area(s) shall be conducted within 90 days prior to commencement of construction, and within 60 days following completion of construction of the project concurrently with the beach and offshore surveys required above. Thereafter, monitoring surveys of the borrow areas shall be dependent on their location. Borrow sites located in tidal inlet shoals or in nearshore waters above the depth of closure for littoral transport processes shall be at two (2) year intervals concurrently with the beach and offshore surveys required above. These biennially monitoring surveys are not required for borrow sites located below the depth of closure for littoral transport processes. A prior design survey of the borrow area may be submitted for the pre-construction survey if consistent with the other requirements of this condition.

   Survey grid lines across the borrow area(s) shall be spaced to provide sufficient detail for accurate volumetric calculations but spaced not more than a maximum of 500 feet apart, and shall extend a minimum of 500 feet beyond the boundaries of the borrow site. For borrow sites located in tidal inlet shoals, bathymetric surveys of the entire shoal complex, including any attachment bars, shall be conducted unless otherwise specified by the Department based upon the size of the shoal and the potential effects of the dredging on inlet processes. In all other aspects, work activities and deliverables shall be consistent with the BBCS Monitoring Standards for Beach Erosion Control Projects, Section 01200.

c. The Permittee shall submit an engineering report and the monitoring data to the BBCS within 90 days following completion of the post-construction survey and each annual or biennial monitoring survey.

The report shall summarize and discuss the data, the performance of the beach fill project, and identify erosion and accretion patterns within the monitored area. In addition, the report shall include a comparative review of project performance to performance expectations and identification of adverse impacts attributable to the project.

Appendices shall include plots of survey profiles and graphical representations of volumetric and shoreline position changes for the monitoring area. Results shall be analyzed for patterns, trends, or changes between annual surveys and cumulatively since project construction.

d. Monitoring reports and data shall be submitted to the Bureau of Beaches and Coastal Systems in Tallahassee. Failure to submit reports and data in a timely manner constitutes grounds for revocation of the permit. When submitting any monitoring information to the Bureau, please include a transmittal cover letter clearly labeled with the following at the top of each page: **"This monitoring information is submitted in accordance with Item No. [XX] of the approved Monitoring Plan for Permit No. 0281452-001-JC for the monitoring period [XX].**

34. All reports or notices relating to this permit shall be sent to the Department, Bureau of Beaches and Coastal Systems, JCP Compliance Officer, 3900 Commonwealth Boulevard, Mail Station 300, Tallahassee, Florida 32399-3000 (e-mail address: JCPCompliance@dep.state.fl.us).

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Michael R. Barnett, P.E., Chief
Bureau of Beaches and Coastal Systems

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Deputy Clerk 7/23/2010

Deputy Clerk Date

Prepared by Lainie Edwards, Ph.D.

Attachments: Approved Permit Drawings (19 pages)
Physical Monitoring Plan (approved 5-20-2010)
Sediment QA/QC Plan (approved 6-21-2010)
Coquina Mitigation and Monitoring Plan (approved 3-24-2010)