

DRILLING LOG		DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 of 1
1. PROJECT		DELRAY BEACH		
2. LOCATION (Coordinates or Station)		X= 966,715 Y= 776,416		
3. DRILLING AGENCY:		ALPINE SEISMIC		
4. HOLE NO. (As shown on drawing title and file number)		DB-99-4		
5. NAME OF DRILLER		ROB SUSKO		
6. DIRECTION OF HOLE		VERTICAL		
7. THICKNESS OF BURDEN		0.0 FT		
8. DEPTH DRILLED INTO ROCK		0.0 FT		
9. TOTAL DEPTH OF HOLE		18.9' FT		
10. SIZE AND TYPE OF BIT		3"		
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		NGVD		
12. MANUFACTURER'S DESIGNATION OF DRILL		ALPINE PNEUMATIC		
13. TOT NO. OF OVERBURDEN SAMPLES TAKEN		disturbed: 0.0 undisturbed: 0.0		
14. TOTAL NO. OF CORE BOXES		1		
15. ELEVATION GROUND WATER				
16. DATE HOLE		Started	Completed	
		4/20/99	4/20/99	
17. ELEVATION TOP OF HOLE		-32.8 ft.		
18. TOTAL CORE RECOVERY FOR BORING		99%		
19. SIGNATURE OF GEOLOGIST		IBRAHIM DREMAI		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-32.8	0		SAND, fine-grained, Gray (5Y-6/1) (SP)		1	Sample #1, Depth = 0.2' 0.23 mm, 0.92 phi sorting
-33.9	1		fine-grained, trace shell hash, Gray (5Y-6/1) (SP) from -33.2' to -33.9'		2	0.98% silt Sample #2, Depth = 0.8' 0.24 mm, 1.18 phi sorting
-34.8	2		fine-grained, some shell hash, Light Gray (5Y-7/1) (SP) from -33.9' to -34.8'		3	1.0% silt Sample #3, Depth = 1.6' 0.48 mm, 1.56 phi sorting
-35.5	3		fine-grained, little shell hash, Gray (5Y-6/1) (SP) from -34.8' to -35.5'		4	0.82% silt Sample #4, Depth = 2.4' 0.23 mm, 0.68 phi sorting
-37.3	4		fine-grained, little shell hash, Gray (5Y-6/1) (SP) from -35.5' to -37.3'		5	1.07% silt Sample #5, Depth = 3.5' 0.35 mm, 1.16 phi sorting
	5					0.95% silt
	6				6	
	7					
	8					Sample #6, Depth = 8.0' 0.23 mm, 0.78 phi sorting
	9					1.70% silt
	10		fine-grained, trace shell hash, Gray (5Y-6/1) (SP) from -37.3' to -48.5'			
	11					
	12					
	13				7	Sample #7, Depth = 13.0' 0.26 mm, 0.77 phi sorting
	14					1.04% silt
-48.5	15					
-49.3	16		fine-grained, trace shell hash, Gray (5Y-6/1) (SP) from -48.5' to -49.3'			Sample #8, Depth = 16.0' 0.28 mm, 0.85 phi sorting
	17					1.06% silt
	18		fine-grained, trace shell hash, Gray (5Y-5/1) (SP) from -49.3' to -51.7'		8	
-51.7	19					
	20		End of Boring			
	21					
	22					
	23					
	24					

Note: Soils are classified in accordance with the Unified Soils Classification System.

PROJECT: Delray Beach

HOLE NUMBER:

GRADATION ANALYSIS REPORT
DELRAY BEACH VIBRACORES 1999
TESTED BY: RW ON: 8/99

SAMPLE NO.: DB99-4 S#1
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 0.2
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 129.15
SAMPLE WEIGHT AFTER WASH (GRAMS): 127.91

SIEVE SIZE	PHI SIZE	MESH SIZE (mm)	RETAINED (GRAMS)	RETAINED (%)	PASSED (%)
5/8	-4.00	16.000	0.00	0.00	100.00
5/16	-3.00	8.000	0.00	0.00	100.00
5	-2.00	4.000	0.55	0.43	99.57
7	-1.50	2.800	0.75	0.58	99.42
10	-1.00	2.000	1.40	1.08	98.92
14	-0.50	1.400	2.60	2.01	97.99
18	0.00	1.000	4.38	3.39	96.61
25	0.50	0.710	7.43	5.75	94.25
35	1.00	0.500	14.77	11.44	88.56
45	1.50	0.355	24.42	18.91	81.09
60	2.00	0.250	44.17	34.20	65.80
80	2.50	0.180	77.90	60.32	39.68
120	3.00	0.125	117.30	90.82	9.18
170	3.50	0.090	127.81	98.96	1.04
200	3.75	0.075	127.88	99.02	0.98
230	4.00	0.063	128.50	99.50	0.50
PAN			129.14	99.99	0.01

PHI(5): 0.34 PHI(16): 1.31 PHI(25): 1.70
PHI(50): 2.30 PHI(75): 2.74 PHI(84): 2.89
PHI(95): 3.26

SIEVE LOSS(g): 0.01 SILT/CLAY: 0.98%
SKEWNESS: -0.637 KURTOSIS: 1.147

GRAPHIC METHOD

MEAN (PHI): 2.02 SORTING: 0.79
MEAN (mm): 0.25 MEDIAN (mm): 0.20
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.10 SORTING: 0.92
MEAN (mm): 0.23

DATA FILE NAME: DB99-4#1.TAB

GRADATION ANALYSIS REPORT
DELRAY BEACH VIBRACORES 1999
TESTED BY: RW ON: 8/99

SAMPLE NO.: DB99-4 S#2
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 0.8
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 155.33
SAMPLE WEIGHT AFTER WASH (GRAMS): 154.29

SIEVE SIZE	PHI SIZE	MESH SIZE (mm)	RETAINED (GRAMS)	RETAINED (%)	PASSED (%)
5/8	-4.00	16.000	0.00	0.00	100.00
5/16	-3.00	8.000	0.00	0.00	100.00
5	-2.00	4.000	1.48	0.95	99.05
7	-1.50	2.800	3.23	2.08	97.92
10	-1.00	2.000	7.52	4.84	95.16
14	-0.50	1.400	15.42	9.93	90.07
18	0.00	1.000	25.27	16.27	83.73
25	0.50	0.710	43.93	28.28	71.72
35	1.00	0.500	69.56	44.78	55.22
45	1.50	0.355	90.04	57.97	42.03
60	2.00	0.250	114.48	73.70	26.30
80	2.50	0.180	136.62	87.95	12.05
120	3.00	0.125	150.95	97.18	2.82
170	3.50	0.090	154.22	99.29	0.71
200	3.75	0.075	154.26	99.31	0.69
230	4.00	0.063	154.80	99.66	0.34
PAN			155.33	100.00	0.00

PHI(5): -0.98 PHI(16): -0.02 PHI(25): 0.36
PHI(50): 1.20 PHI(75): 2.05 PHI(84): 2.36
PHI(95): 2.88

SIEVE LOSS(g): 0.00 SILT/CLAY: 0.69%
SKEWNESS: -0.209 KURTOSIS: 0.942

GRAPHIC METHOD

MEAN (PHI): 1.09 SORTING: 1.19
MEAN (mm): 0.47 MEDIAN (mm): 0.44
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 1.12 SORTING: 1.18
MEAN (mm): 0.46

DATA FILE NAME: DB99-4#2.TAB

GRADATION ANALYSIS REPORT
DELRAY BEACH VIBRACORES 1999
TESTED BY: RW ON: 8/99

SAMPLE NO.: DB99-4 S#3
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 1.6
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 137.06
SAMPLE WEIGHT AFTER WASH (GRAMS): 135.99

SIEVE SIZE	PHI SIZE	MESH SIZE (mm)	RETAINED (GRAMS)	RETAINED (%)	PASSED (%)
5/8	-4.00	16.000	0.00	0.00	100.00
5/16	-3.00	8.000	3.91	2.85	97.15
5	-2.00	4.000	6.39	4.66	95.34
7	-1.50	2.800	9.03	6.59	93.41
10	-1.00	2.000	14.14	10.32	89.68
14	-0.50	1.400	21.86	15.95	84.05
18	0.00	1.000	30.36	22.15	77.85
25	0.50	0.710	41.18	30.05	69.95
35	1.00	0.500	56.73	41.39	58.61
45	1.50	0.355	70.69	51.58	48.42
60	2.00	0.250	89.58	65.36	34.64
80	2.50	0.180	112.77	82.28	17.72
120	3.00	0.125	131.91	96.24	3.76
170	3.50	0.090	135.86	99.12	0.88
200	3.75	0.075	135.93	99.18	0.82
230	4.00	0.063	136.51	99.60	0.40
PAN			137.06	100.00	0.00

PHI(5): -1.91 PHI(16): -0.50 PHI(25): 0.18
PHI(50): 1.42 PHI(75): 2.28 PHI(84): 2.56
PHI(95): 2.96

SIEVE LOSS(g): 0.00 SILT/CLAY: 0.82%
SKEWNESS: -0.589 KURTOSIS: 0.948

GRAPHIC METHOD

MEAN (PHI): 0.91 SORTING: 1.53
MEAN (mm): 0.53 MEDIAN (mm): 0.37
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 1.07 SORTING: 1.56
MEAN (mm): 0.48

DATA FILE NAME: DB99-4#3.TAB

GRADATION ANALYSIS REPORT
DELRAY BEACH VIBRACORES 1999
TESTED BY: RW ON: 8/99

SAMPLE NO.: DB99-4 S#4
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 2.4
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 192.20
SAMPLE WEIGHT AFTER WASH (GRAMS): 190.28

SIEVE SIZE	PHI SIZE	MESH SIZE (mm)	RETAINED (GRAMS)	RETAINED (%)	PASSED (%)
5/8	-4.00	16.000	0.00	0.00	100.00
5/16	-3.00	8.000	0.00	0.00	100.00
5	-2.00	4.000	0.02	0.01	99.99
7	-1.50	2.800	0.07	0.04	99.96
10	-1.00	2.000	0.36	0.19	99.81
14	-0.50	1.400	1.05	0.55	99.45
18	0.00	1.000	2.22	1.16	98.84
25	0.50	0.710	4.91	2.55	97.45
35	1.00	0.500	11.54	6.00	94.00
45	1.50	0.355	24.00	12.49	87.51
60	2.00	0.250	64.47	33.54	66.46
80	2.50	0.180	131.07	68.19	31.81
120	3.00	0.125	182.43	94.92	5.08
170	3.50	0.090	190.08	98.90	1.10
200	3.75	0.075	190.15	98.93	1.07
230	4.00	0.063	191.20	99.48	0.52
PAN			192.18	99.99	0.01

PHI(5): 0.85 PHI(16): 1.58 PHI(25): 1.80
PHI(50): 2.24 PHI(75): 2.63 PHI(84): 2.80
PHI(95): 3.01

SIEVE LOSS(g): 0.02 SILT/CLAY: 1.07%
SKEWNESS: -0.503 KURTOSIS: 1.064

GRAPHIC METHOD

MEAN (PHI): 2.10 SORTING: 0.61
MEAN (mm) : 0.23 MEDIAN (mm): 0.21
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.15 SORTING: 0.68
MEAN (mm) : 0.23

DATA FILE NAME: DB99-4#4.TAB

GRADATION ANALYSIS REPORT
DELRAY BEACH VIBRACORES 1999
TESTED BY: RW ON: 8/99

SAMPLE NO.: DB99-4 S#5
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 3.5
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 240.78
SAMPLE WEIGHT AFTER WASH (GRAMS): 238.56

SIEVE SIZE	PHI SIZE	MESH SIZE (mm)	RETAINED (GRAMS)	RETAINED (%)	PASSED (%)
5/8	-4.00	16.000	0.00	0.00	100.00
5/16	-3.00	8.000	0.00	0.00	100.00
5	-2.00	4.000	2.55	1.06	98.94
7	-1.50	2.800	5.55	2.31	97.69
10	-1.00	2.000	10.32	4.29	95.71
14	-0.50	1.400	18.52	7.69	92.31
18	0.00	1.000	26.69	11.08	88.92
25	0.50	0.710	39.09	16.23	83.77
35	1.00	0.500	61.50	25.54	74.46
45	1.50	0.355	91.56	38.03	61.97
60	2.00	0.250	143.86	59.75	40.25
80	2.50	0.180	197.00	81.82	18.18
120	3.00	0.125	232.18	96.43	3.57
170	3.50	0.090	238.42	99.02	0.98
200	3.75	0.075	238.49	99.05	0.95
230	4.00	0.063	239.62	99.52	0.48
PAN			240.76	99.99	0.01

PHI(5): -0.90 PHI(16): 0.48 PHI(25): 0.97
PHI(50): 1.78 PHI(75): 2.35 PHI(84): 2.57
PHI(95): 2.95

SIEVE LOSS(g): 0.02 SILT/CLAY: 0.95%
SKEWNESS: -0.713 KURTOSIS: 1.147

GRAPHIC METHOD

MEAN (PHI): 1.38 SORTING: 1.05
MEAN (mm): 0.39 MEDIAN (mm): 0.29

NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 1.52 SORTING: 1.16
MEAN (mm): 0.35

DATA FILE NAME: DB99-4#5.TAB

GRADATION ANALYSIS REPORT
DELRAY BEACH VIBRACORES 1999
TESTED BY: RW ON: 8/99

SAMPLE NO.: DB99-4 S#6
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 8.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 237.42
SAMPLE WEIGHT AFTER WASH (GRAMS): 233.83

SIEVE SIZE	PHI SIZE	MESH SIZE (mm)	RETAINED (GRAMS)	RETAINED (%)	PASSED (%)
5/8	-4.00	16.000	0.00	0.00	100.00
5/16	-3.00	8.000	0.00	0.00	100.00
5	-2.00	4.000	0.98	0.41	99.59
7	-1.50	2.800	1.01	0.43	99.57
10	-1.00	2.000	1.02	0.43	99.57
14	-0.50	1.400	1.04	0.44	99.56
18	0.00	1.000	3.73	1.57	98.43
25	0.50	0.710	7.20	3.03	96.97
35	1.00	0.500	17.97	7.57	92.43
45	1.50	0.355	38.43	16.19	83.81
60	2.00	0.250	91.14	38.39	61.61
80	2.50	0.180	163.32	68.79	31.21
120	3.00	0.125	215.70	90.85	9.15
170	3.50	0.090	232.81	98.06	1.94
200	3.75	0.075	233.39	98.30	1.70
230	4.00	0.063	235.58	99.23	0.77
PAN			237.38	99.98	0.02

PHI(5): 0.72 PHI(16): 1.49 PHI(25): 1.70
PHI(50): 2.19 PHI(75): 2.64 PHI(84): 2.84
PHI(95): 3.29

SIEVE LOSS(g): 0.04 SILT/CLAY: 1.70%
SKEWNESS: -0.278 KURTOSIS: 1.118

GRAPHIC METHOD

MEAN (PHI): 2.11 SORTING: 0.68
MEAN (mm) : 0.23 MEDIAN (mm): 0.22
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.11 SORTING: 0.78
MEAN (mm) : 0.23

DATA FILE NAME: DB99-4#6.TAB

GRADATION ANALYSIS REPORT
DELRAY BEACH VIBRACORES 1999
TESTED BY: RW ON: 8/99

SAMPLE NO.: DB99-4 S#7
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 13.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 213.86
SAMPLE WEIGHT AFTER WASH (GRAMS): 211.67

SIEVE SIZE	PHI SIZE	MESH SIZE (mm)	RETAINED (GRAMS)	RETAINED (%)	PASSED (%)
5/8	-4.00	16.000	0.00	0.00	100.00
5/16	-3.00	8.000	1.15	0.54	99.46
5	-2.00	4.000	1.65	0.77	99.23
7	-1.50	2.800	2.03	0.95	99.05
10	-1.00	2.000	2.47	1.15	98.85
14	-0.50	1.400	3.06	1.43	98.57
18	0.00	1.000	3.91	1.83	98.17
25	0.50	0.710	6.03	2.82	97.18
35	1.00	0.500	12.52	5.85	94.15
45	1.50	0.355	30.86	14.43	85.57
60	2.00	0.250	98.99	46.29	53.71
80	2.50	0.180	178.67	83.55	16.45
120	3.00	0.125	208.55	97.52	2.48
170	3.50	0.090	211.61	98.95	1.05
200	3.75	0.075	211.63	98.96	1.04
230	4.00	0.063	212.74	99.47	0.53
PAN			213.86	100.00	0.00

PHI(5): 0.86 PHI(16): 1.52 PHI(25): 1.67
PHI(50): 2.05 PHI(75): 2.39 PHI(84): 2.52
PHI(95): 2.91

SIEVE LOSS(g): 0.00 SILT/CLAY: 1.04%
SKEWNESS: -0.333 KURTOSIS: 1.168

GRAPHIC METHOD

MEAN (PHI): 1.97 SORTING: 0.50
MEAN (mm): 0.25 MEDIAN (mm): 0.24
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 1.96 SORTING: 0.77
MEAN (mm): 0.26

DATA FILE NAME: DB99-4#7.TAB

GRADATION ANALYSIS REPORT
DELRAY BEACH VIBRACORES 1999
TESTED BY: RW ON: 8/99

SAMPLE NO.: DB99-4 S#8
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 16.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 219.42
SAMPLE WEIGHT AFTER WASH (GRAMS): 217.29

SIEVE SIZE	PHI SIZE	MESH SIZE (mm)	RETAINED (GRAMS)	RETAINED (%)	PASSED (%)
5/8	-4.00	16.000	0.00	0.00	100.00
5/16	-3.00	8.000	0.00	0.00	100.00
5	-2.00	4.000	0.29	0.13	99.87
7	-1.50	2.800	0.68	0.31	99.69
10	-1.00	2.000	2.83	1.29	98.71
14	-0.50	1.400	4.57	2.08	97.92
18	0.00	1.000	7.36	3.35	96.65
25	0.50	0.710	13.93	6.35	93.65
35	1.00	0.500	32.04	14.60	85.40
45	1.50	0.355	58.86	26.83	73.17
60	2.00	0.250	113.39	51.68	48.32
80	2.50	0.180	176.36	80.38	19.62
120	3.00	0.125	212.14	96.68	3.32
170	3.50	0.090	217.03	98.91	1.09
200	3.75	0.075	217.10	98.94	1.06
230	4.00	0.063	218.32	99.50	0.50
PAN			219.38	99.98	0.02

PHI(5): 0.27 PHI(16): 1.06 PHI(25): 1.43
PHI(50): 1.97 PHI(75): 2.41 PHI(84): 2.61
PHI(95): 2.95

SIEVE LOSS(g): 0.04 SILT/CLAY: 1.06%
SKEWNESS: -0.456 KURTOSIS: 1.117

GRAPHIC METHOD

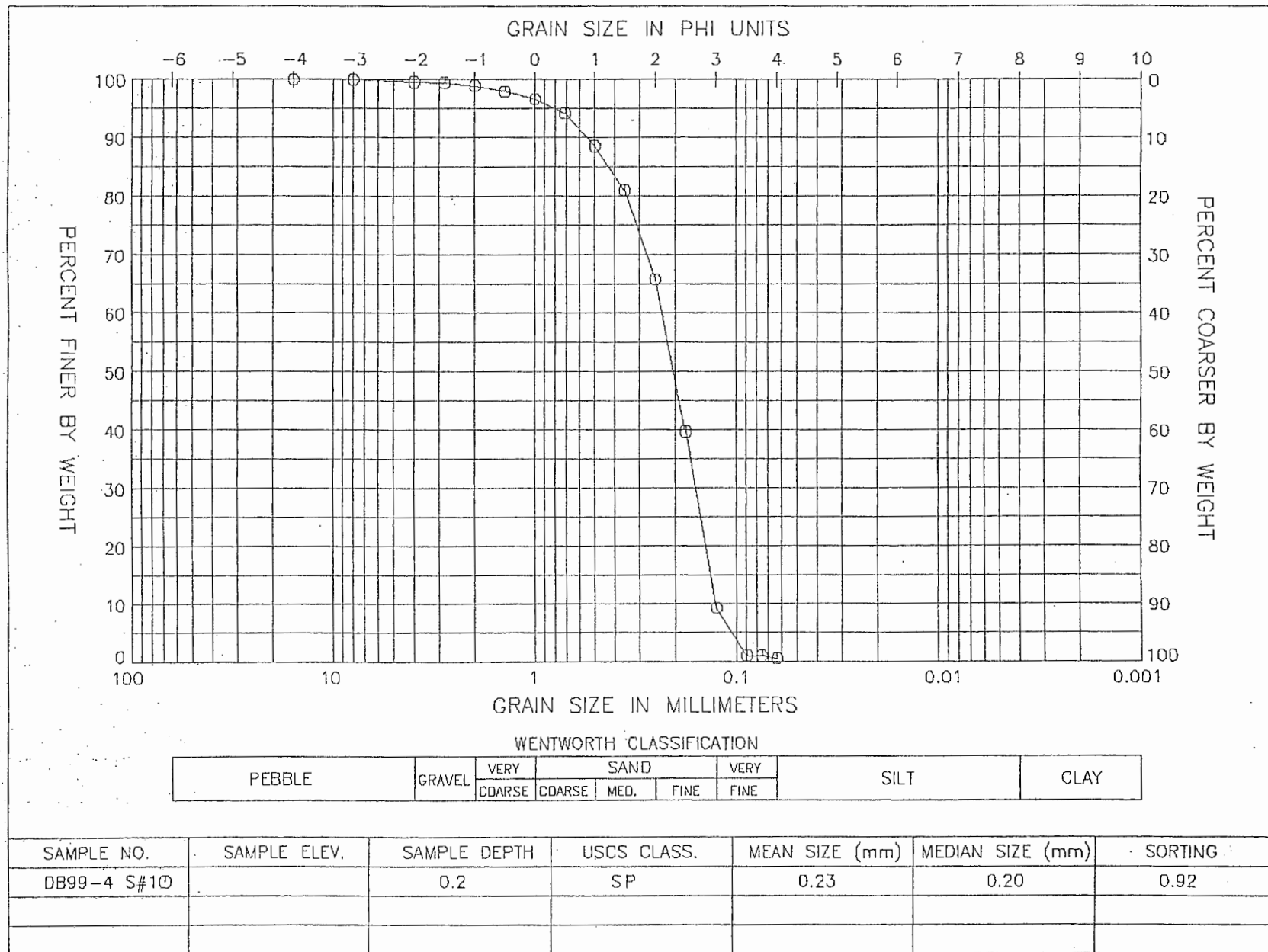
MEAN (PHI): 1.77 SORTING: 0.78
MEAN (mm): 0.29 MEDIAN (mm): 0.26
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

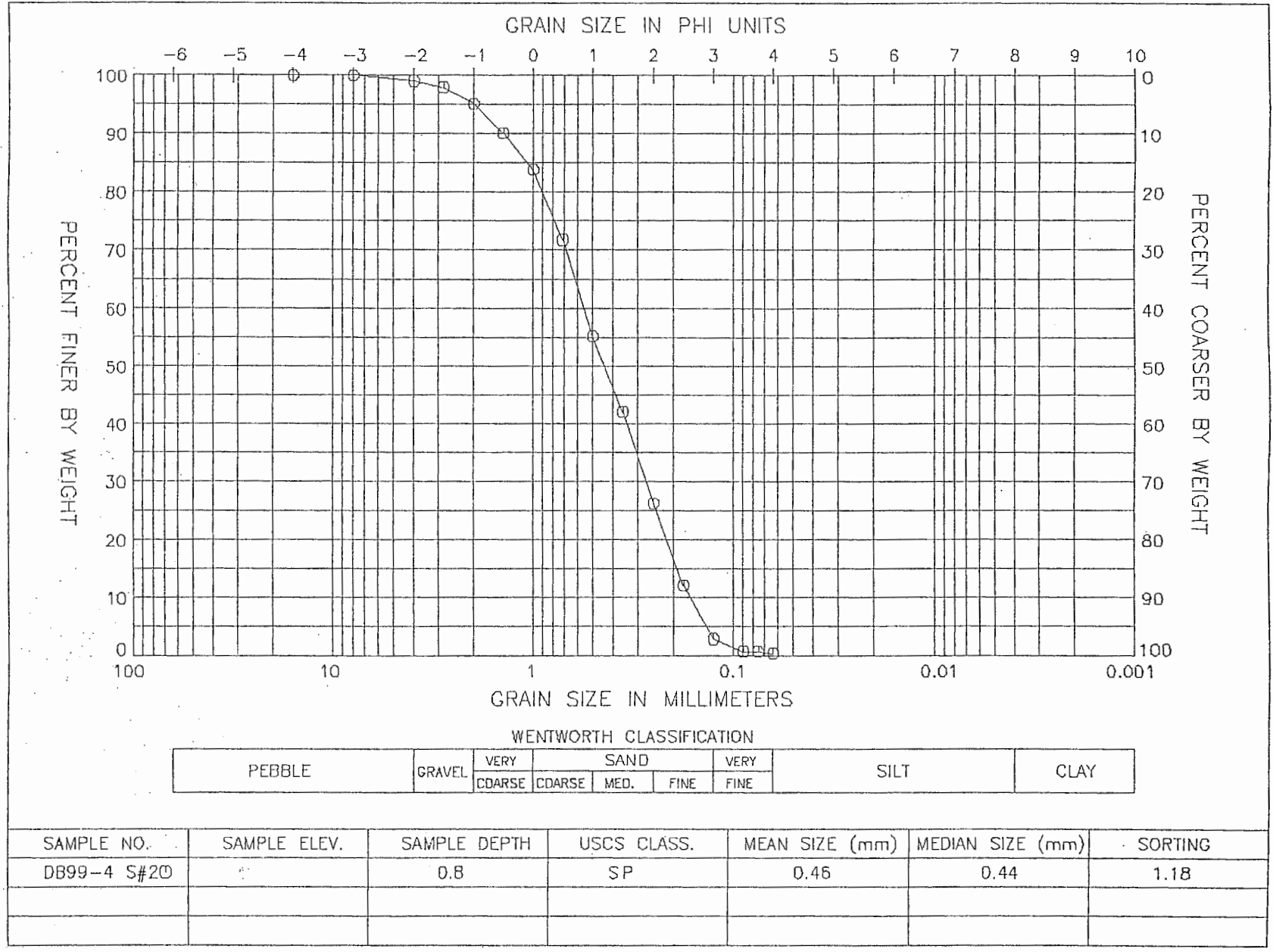
MEAN (PHI): 1.83 SORTING: 0.85
MEAN (mm): 0.28

DATA FILE NAME: DB99-4#8.TAB

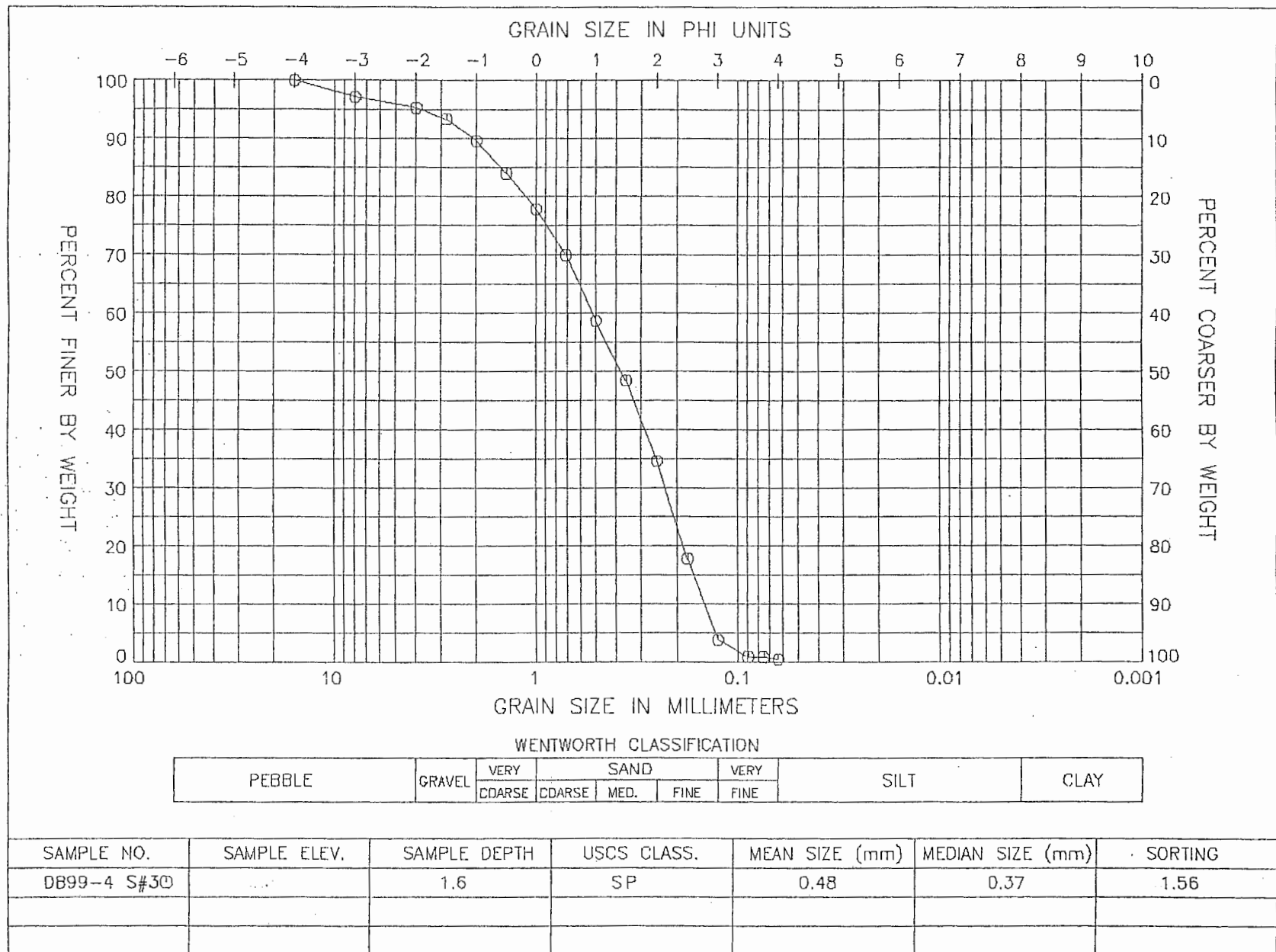
GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



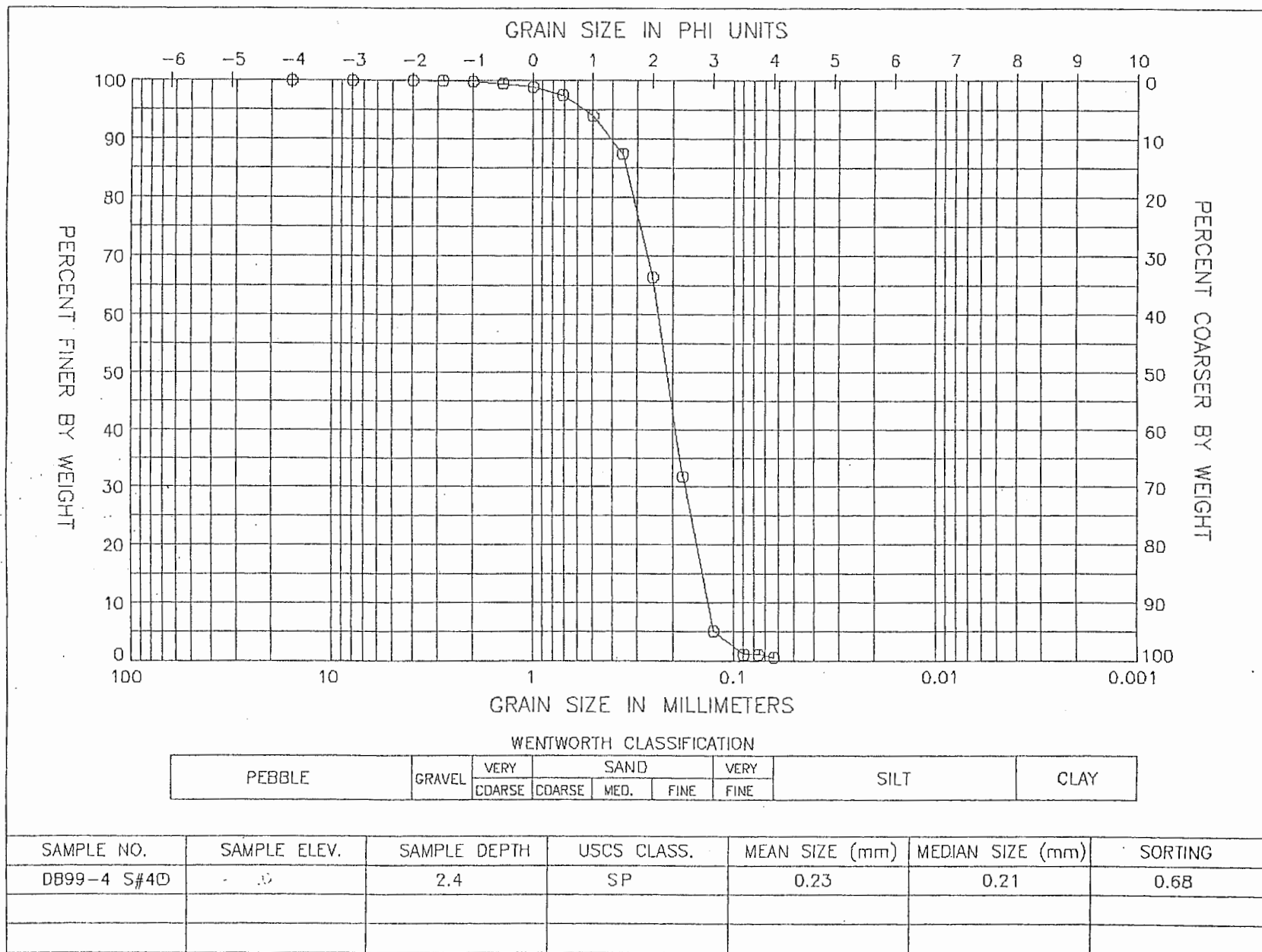
GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



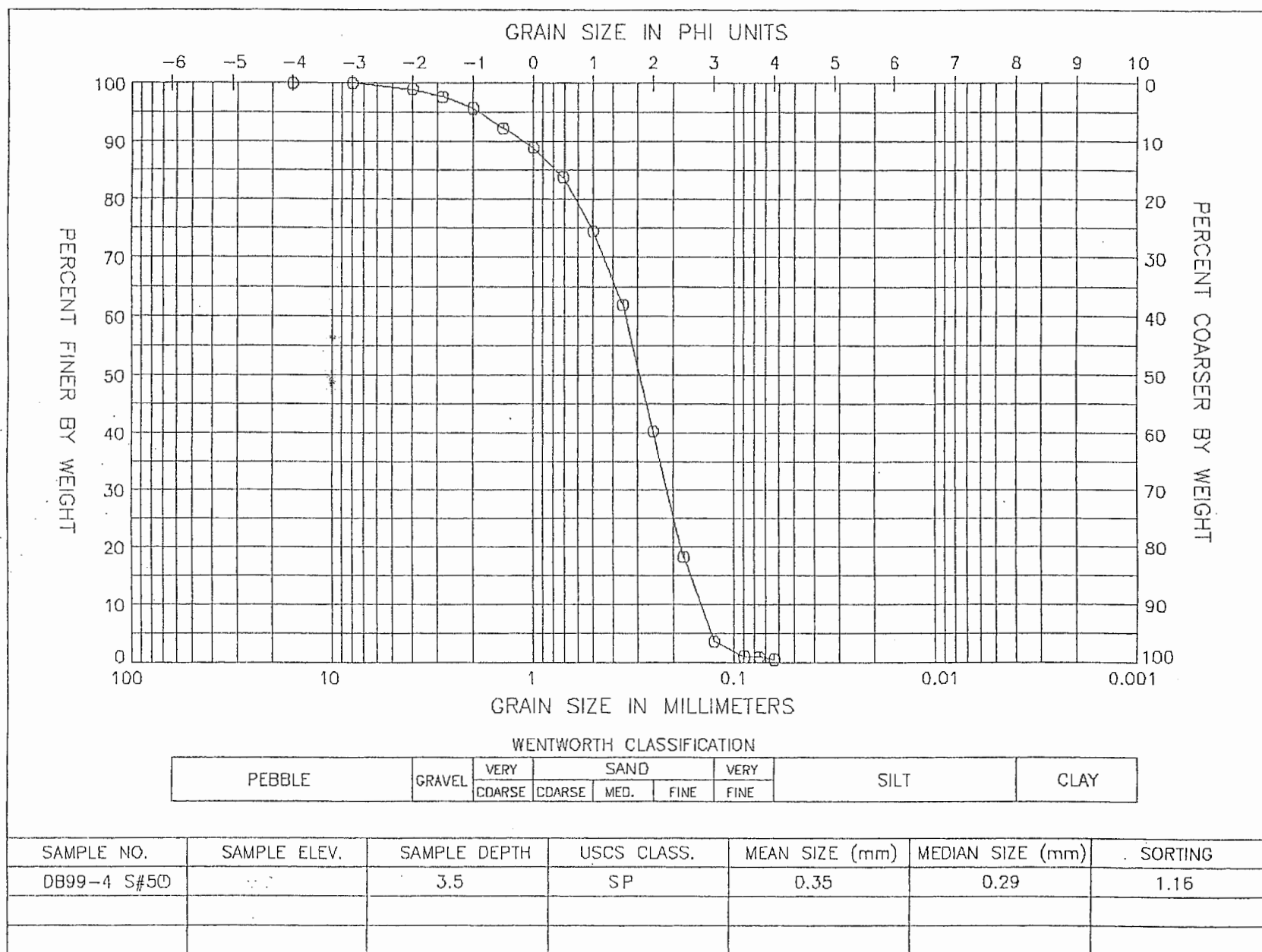
GRAIN SIZE DISTRIBUTION CURVE DELRAY BEACH VIBRACORES 1999



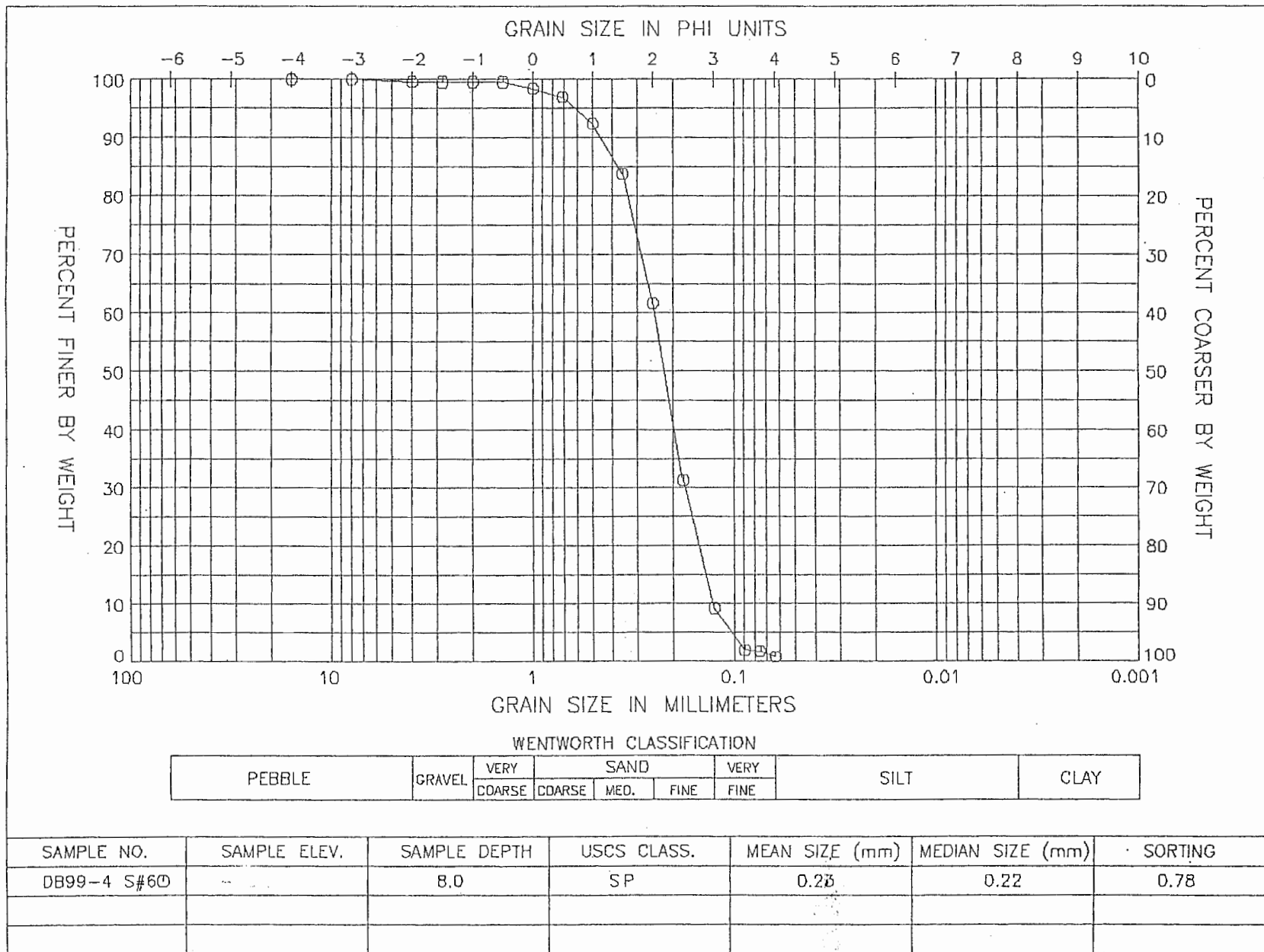
GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



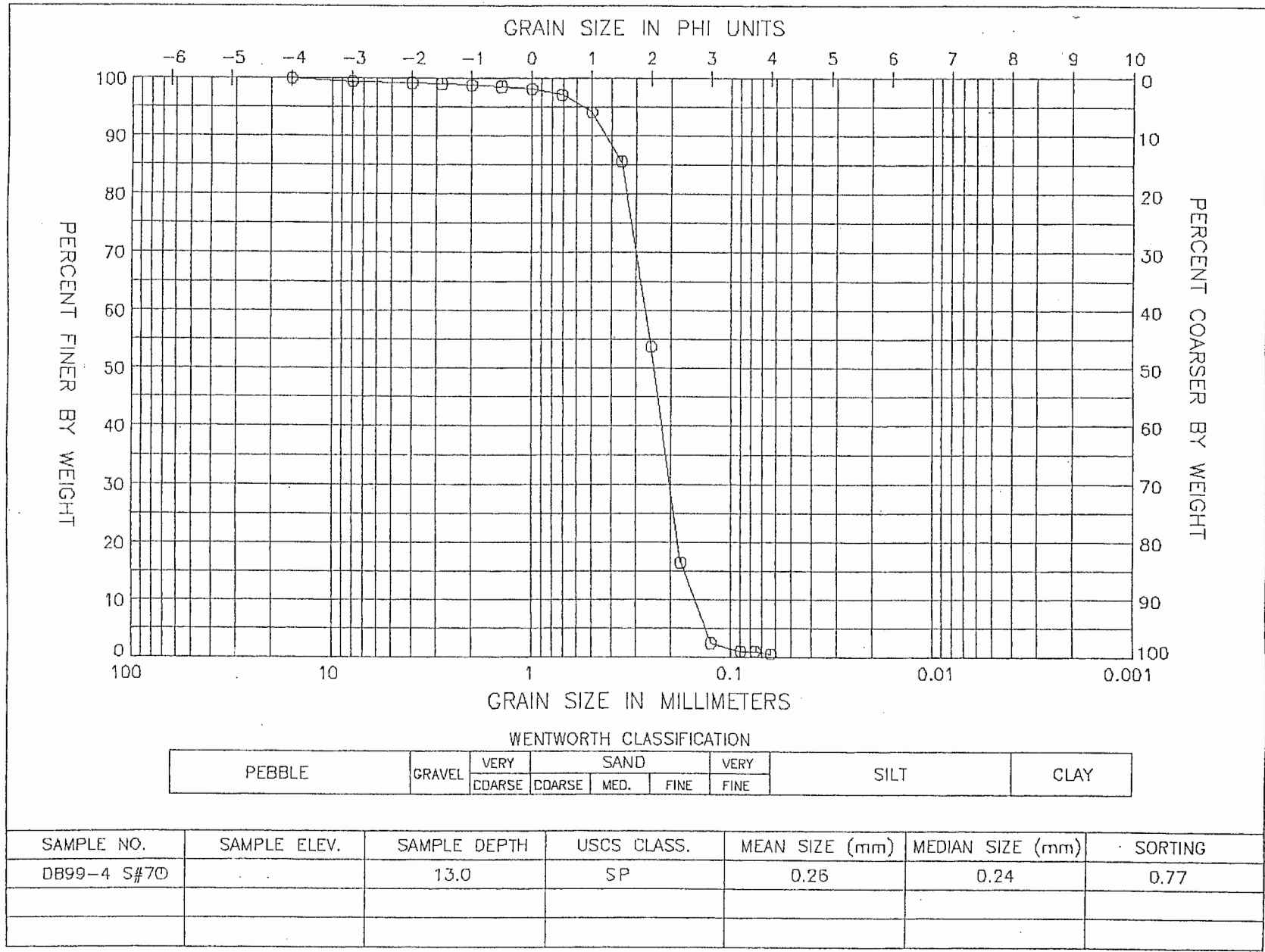
GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999

