

DRILLING LOG		DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 of 1
1. PROJECT DELRAY BEACH		10. SIZE AND TYPE OF BIT 3"		
2. LOCATION (Coordinates or Station) X= 965,812 Y= 768,294		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NGVD		
3. DRILLING AGENCY: ALPINE SEISMIC		12. MANUFACTURER'S DESIGNATION OF DRILL ALPINE PNEUMATIC		
4. HOLE NO. (As shown on drawing title and file number) DB-99-11		13. TOT NO. OF OVERBURDEN SAMPLES TAKEN disturbed: 0.0 undisturbed: 0.0		
5. NAME OF DRILLER ROB SUSKO		14. TOTAL NO. OF CORE BOXES 1		
6. DIRECTION OF HOLE VERTICAL		16. ELEVATION GROUND WATER		
7. THICKNESS OF BURDEN 0.0 FT		16. DATE HOLE Started Completed 4/20/99 4/20/99		
8. DEPTH DRILLED INTO ROCK 0.0 FT		17. ELEVATION TOP OF HOLE -33.0 ft.		
9. TOTAL DEPTH OF HOLE 19.7' FT		18. TOTAL CORE RECOVERY FOR BORING 94%		
		19. SIGNATURE OF GEOLOGIST IBRAHIM DREMALI		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-33	0		SAND, fine-grained, (5Y-6/1) (SP)		1	SP Sample #1, Depth = 1.0' 0.24 mm, 0.67 phi sorting 1.79% silt
-34.5	1		medium-grained, (5Y-6/1) (SP) from -34.5' to -35.0'		2	
-35	2		fine-grained, (5Y-6/1) (SP) from -35.0' to -35.6'		3	Sample #2, Depth = 1.7' 0.41 mm, 1.17 phi sorting 1.06% silt
-35.6	3		medium-grained, (5Y-6/1) (SP) from -35.6' to -37.4'		4	Sample #3, Depth = 2.2' 0.26 mm, 0.81 phi sorting 1.81% silt
	4				5	Sample #4, Depth = 3.2' 0.49 mm, 1.24 phi sorting 1.04% silt
	5				6	Sample #5, Depth = 5.0' 0.25 mm, 0.84 phi sorting 1.25% silt
	6				7	Sample #6, Depth = 8.0' 0.25 mm, 0.75 phi sorting 1.75% silt
	7				8	Sample #7, Depth = 12.5' 0.27 mm, 0.78 phi sorting 3.98% silt
	8				9	
	9				10	
	10				11	
	11				12	
	12		fine-grained, trace shell hash, Gray (5Y-6/1) (SP) from -37.4' to -52.7'		13	
	13				14	
	14				15	
	15				16	
	16				17	Sample #8, Depth = 16.0' 0.20 mm, 2.33 phi sorting 1.97% silt
	17				18	
	18				19	
-52.7	19				20	
	20		End of Boring		21	
	21				22	
	22				23	
	23				24	
	24					Note: Soils are classified in accordance with the Unified Soils Classification System.

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

SAMPLE NO.: DB99-11 S#8
 SAMPLE ELEV. (FT. NGVD):
 SAMPLE DEPTH (FT.): 16.0
 SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 153.10
 SAMPLE WEIGHT AFTER WASH (GRAMS): 150.19

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	0.00	0.00	100.00
7	-1.50	2.800	0.09	0.06	99.94
10	-1.00	2.000	0.45	0.29	99.71
14	-0.50	1.400	0.74	0.48	99.52
18	0.00	1.000	1.03	0.67	99.33
25	0.50	0.710	1.64	1.07	98.93
35	1.00	0.500	4.16	2.72	97.28
45	1.50	0.355	10.23	6.68	93.32
60	2.00	0.250	34.63	22.62	77.38
80	2.50	0.180	88.49	57.80	42.20
120	3.00	0.125	139.75	91.28	8.72
170	3.50	0.090	149.95	97.94	2.06
200	3.75	0.075	150.09	98.03	1.97
230	4.00	0.063	151.59	99.01	0.99
PAN			153.09	99.99	0.01

PHI(5): 1.29 PHI(16): 1.79 PHI(25): 2.03
 PHI(50): 2.39 PHI(75): 2.76 PHI(84): 2.89
 PHI(95): 3.28

SIEVE LOSS(g): 0.01 SILT/CLAY: 1.97%
 SKEWNESS: -0.192 KURTOSIS: 1.129

GRAPHIC METHOD

MEAN (PHI): 2.33 SORTING: 0.55
 MEAN (mm) : 0.20 MEDIAN (mm): 0.19
 NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.33 SORTING: 0.61
 MEAN (mm) : 0.20

DATA FILE NAME: DB99-11#8.TAB

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

SAMPLE NO.: DB99-11 S#1
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 1.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 200.27
SAMPLE WEIGHT AFTER WASH (GRAMS): 196.75

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	0.12	0.06	99.94
7	-1.50	2.800	0.19	0.09	99.91
10	-1.00	2.000	0.43	0.21	99.79
14	-0.50	1.400	1.08	0.54	99.46
18	0.00	1.000	2.21	1.10	98.90
25	0.50	0.710	4.51	2.25	97.75
35	1.00	0.500	12.34	6.16	93.84
45	1.50	0.355	30.64	15.30	84.70
60	2.00	0.250	73.89	36.90	63.10
80	2.50	0.180	147.76	73.78	26.22
120	3.00	0.125	193.09	96.41	3.59
170	3.50	0.090	196.66	98.20	1.80
200	3.75	0.075	196.69	98.21	1.79
230	4.00	0.063	198.47	99.10	0.90
PAN			200.26	100.00	0.00

PHI(5): 0.85 PHI(16): 1.52 PHI(25): 1.72
PHI(50): 2.18 PHI(75): 2.53 PHI(84): 2.73
PHI(95): 2.97

SIEVE LOSS(g): 0.01 SILT/CLAY: 1.79%
SKEWNESS: -0.442 KURTOSIS: 1.082

GRAPHIC METHOD

MEAN (PHI): 2.05 SORTING: 0.60
MEAN (mm) : 0.24 MEDIAN (mm): 0.22
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.08 SORTING: 0.67
MEAN (mm) : 0.24

DATA FILE NAME: DB99-11#1.TAB

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

SAMPLE NO.: DB99-11 S#2
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 1.7
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 235.89
SAMPLE WEIGHT AFTER WASH (GRAMS): 233.43

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	2.05	0.87	99.13
7	-1.50	2.800	4.36	1.85	98.15
10	-1.00	2.000	9.20	3.90	96.10
14	-0.50	1.400	20.19	8.56	91.44
18	0.00	1.000	33.66	14.27	85.73
25	0.50	0.710	54.13	22.95	77.05
35	1.00	0.500	88.04	37.32	62.68
45	1.50	0.355	118.27	50.14	49.86
60	2.00	0.250	160.09	67.87	32.13
80	2.50	0.180	203.20	86.14	13.86
120	3.00	0.125	229.68	97.37	2.63
170	3.50	0.090	233.23	98.87	1.13
200	3.75	0.075	233.38	98.94	1.06
230	4.00	0.063	234.63	99.47	0.53
PAN			235.86	99.99	0.01

PHI (5): -0.88 PHI (16): 0.10 PHI (25): 0.57
PHI (50): 1.49 PHI (75): 2.20 PHI (84): 2.44
PHI (95): 2.89

SIEVE LOSS (g): 0.03 SILT/CLAY: 1.06%
SKEWNESS: -0.417 KURTOSIS: 0.953

GRAPHIC METHOD

MEAN (PHI): 1.21 SORTING: 1.17
MEAN (mm) : 0.43 MEDIAN (mm): 0.35
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 1.28 SORTING: 1.17
MEAN (mm) : 0.41

DATA FILE NAME: DB99-11#2.TAB

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

SAMPLE NO.: DB99-11 S#3
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 2.2
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 212.24
SAMPLE WEIGHT AFTER WASH (GRAMS): 208.47

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	0.02	0.01	99.99
5	-2.00	4.000	0.02	0.01	99.99
7	-1.50	2.800	0.23	0.11	99.89
10	-1.00	2.000	0.86	0.41	99.59
14	-0.50	1.400	2.71	1.28	98.72
18	0.00	1.000	5.52	2.60	97.40
25	0.50	0.710	11.19	5.27	94.73
35	1.00	0.500	24.58	11.58	88.42
45	1.50	0.355	44.94	21.17	78.83
60	2.00	0.250	91.79	43.25	56.75
80	2.50	0.180	158.43	74.65	25.35
120	3.00	0.125	202.04	95.19	4.81
170	3.50	0.090	208.33	98.16	1.84
200	3.75	0.075	208.39	98.19	1.81
230	4.00	0.063	210.32	99.09	0.91
PAN			212.22	99.99	0.01

PHI(5): 0.45 PHI(16): 1.23 PHI(25): 1.59
PHI(50): 2.11 PHI(75): 2.51 PHI(84): 2.73
PHI(95): 3.00

SIEVE LOSS(g): 0.02 SILT/CLAY: 1.81%
SKEWNESS: -0.515 KURTOSIS: 1.132

GRAPHIC METHOD

MEAN (PHI): 1.90 SORTING: 0.75
MEAN (mm) : 0.27 MEDIAN (mm): 0.23
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 1.97 SORTING: 0.81
MEAN (mm) : 0.26

DATA FILE NAME: DB99-11#3.TAB

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

SAMPLE NO.: DB99-11 S#4
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 3.2
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 204.34
SAMPLE WEIGHT AFTER WASH (GRAMS): 202.35

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	1.34	0.66	99.34
7	-1.50	2.800	4.54	2.22	97.78
10	-1.00	2.000	13.86	6.78	93.22
14	-0.50	1.400	26.72	13.08	86.92
18	0.00	1.000	43.95	21.51	78.49
25	0.50	0.710	65.35	31.98	68.02
35	1.00	0.500	97.46	47.70	52.30
45	1.50	0.355	121.04	59.23	40.77
60	2.00	0.250	149.52	73.17	26.83
80	2.50	0.180	181.73	88.94	11.06
120	3.00	0.125	199.98	97.87	2.13
170	3.50	0.090	202.19	98.95	1.05
200	3.75	0.075	202.22	98.96	1.04
230	4.00	0.063	203.32	99.50	0.50
PAN			204.31	99.99	0.01

PHI (5): -1.20 PHI (16): -0.33 PHI (25): 0.17
PHI (50): 1.10 PHI (75): 2.06 PHI (84): 2.34
PHI (95): 2.84

SIEVE LOSS(g): 0.03 SILT/CLAY: 1.04%
SKEWNESS: -0.208 KURTOSIS: 0.874

GRAPHIC METHOD

MEAN (PHI): 0.95 SORTING: 1.34
MEAN (mm): 0.52 MEDIAN (mm): 0.47
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 1.02 SORTING: 1.24
MEAN (mm): 0.49

DATA FILE NAME: DB99-11#4.TAB

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

SAMPLE NO.: DB99-11 S#5
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 5.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 171.37
SAMPLE WEIGHT AFTER WASH (GRAMS): 169.24

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	0.61	0.36	99.64
7	-1.50	2.800	0.82	0.48	99.52
10	-1.00	2.000	1.64	0.96	99.04
14	-0.50	1.400	2.85	1.66	98.34
18	0.00	1.000	5.11	2.98	97.02
25	0.50	0.710	8.97	5.23	94.77
35	1.00	0.500	18.08	10.55	89.45
45	1.50	0.355	31.82	18.57	81.43
60	2.00	0.250	65.93	38.47	61.53
80	2.50	0.180	121.55	70.93	29.07
120	3.00	0.125	162.77	94.98	5.02
170	3.50	0.090	169.16	98.71	1.29
200	3.75	0.075	169.22	98.75	1.25
230	4.00	0.063	170.29	99.37	0.63
PAN			171.37	100.00	0.00

PHI (5): 0.45 PHI (16): 1.34 PHI (25): 1.66
PHI (50): 2.18 PHI (75): 2.58 PHI (84): 2.77
PHI (95): 3.00

SIEVE LOSS(g): 0.00 SILT/CLAY: 1.25%
SKEWNESS: -0.632 KURTOSIS: 1.134

GRAPHIC METHOD

MEAN (PHI): 1.95 SORTING: 0.72
MEAN (mm) : 0.26 MEDIAN (mm): 0.22

NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.02 SORTING: 0.84
MEAN (mm) : 0.25

DATA FILE NAME: DB99-11#5.TAB

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

SAMPLE NO.: DB99-11 S#6
SAMPLE ELEV. (FT. NGVD):
SAMPLE DEPTH (FT.): 8.0
SAMPLE TYPE: BEACH SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 201.46
SAMPLE WEIGHT AFTER WASH (GRAMS): 198.10

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	0.40	0.20	99.80
7	-1.50	2.800	0.52	0.26	99.74
10	-1.00	2.000	0.85	0.42	99.58
14	-0.50	1.400	1.62	0.80	99.20
18	0.00	1.000	3.24	1.61	98.39
25	0.50	0.710	6.75	3.35	96.65
35	1.00	0.500	17.59	8.73	91.27
45	1.50	0.355	40.55	20.13	79.87
60	2.00	0.250	87.60	43.48	56.52
80	2.50	0.180	152.51	75.70	24.30
120	3.00	0.125	192.79	95.70	4.30
170	3.50	0.090	197.84	98.20	1.80
200	3.75	0.075	197.93	98.25	1.75
230	4.00	0.063	199.74	99.15	0.85
PAN			201.42	99.98	0.02

PHI(5): 0.65 PHI(16): 1.32 PHI(25): 1.60
PHI(50): 2.10 PHI(75): 2.49 PHI(84): 2.71
PHI(95): 2.98

SIEVE LOSS(g): 0.04 SILT/CLAY: 1.75%
SKEWNESS: -0.408 KURTOSIS: 1.079

GRAPHIC METHOD

MEAN (PHI): 1.95 SORTING: 0.69
MEAN (mm) : 0.26 MEDIAN (mm): 0.23
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 1.99 SORTING: 0.75
MEAN (mm) : 0.25

DATA FILE NAME: DB99-11#6.TAB

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

SAMPLE NO.: DB99-11#7
 SAMPLE ELEV. (FT. NGVD):
 SAMPLE DEPTH (FT.): 12.5
 SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 103.40
 SAMPLE WEIGHT AFTER WASH (GRAMS): 99.45

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	0.04	0.04	99.96
7	-1.50	2.800	0.08	0.08	99.92
10	-1.00	2.000	0.56	0.54	99.46
14	-0.50	1.400	1.05	1.02	98.98
18	0.00	1.000	1.86	1.80	98.20
25	0.50	0.710	4.54	4.39	95.61
35	1.00	0.500	11.54	11.16	88.84
45	1.50	0.355	22.44	21.70	78.30
60	2.00	0.250	52.25	50.53	49.47
80	2.50	0.180	83.26	80.52	19.48
120	3.00	0.125	97.27	94.07	5.93
170	3.50	0.090	99.24	95.98	4.02
200	3.75	0.075	99.28	96.02	3.98
230	4.00	0.063	101.39	98.05	1.95
PAN			103.38	99.98	0.02

PHI(5): 0.55 PHI(16): 1.23 PHI(25): 1.56
 PHI(50): 1.99 PHI(75): 2.41 PHI(84): 2.63
 PHI(95): 3.24

SIEVE LOSS(g): 0.02 SILT/CLAY: 3.98%
 SKEWNESS: -0.138 KURTOSIS: 1.300

GRAPHIC METHOD

MEAN (PHI): 1.93 SORTING: 0.70
 MEAN (mm) : 0.26 MEDIAN (mm): 0.25

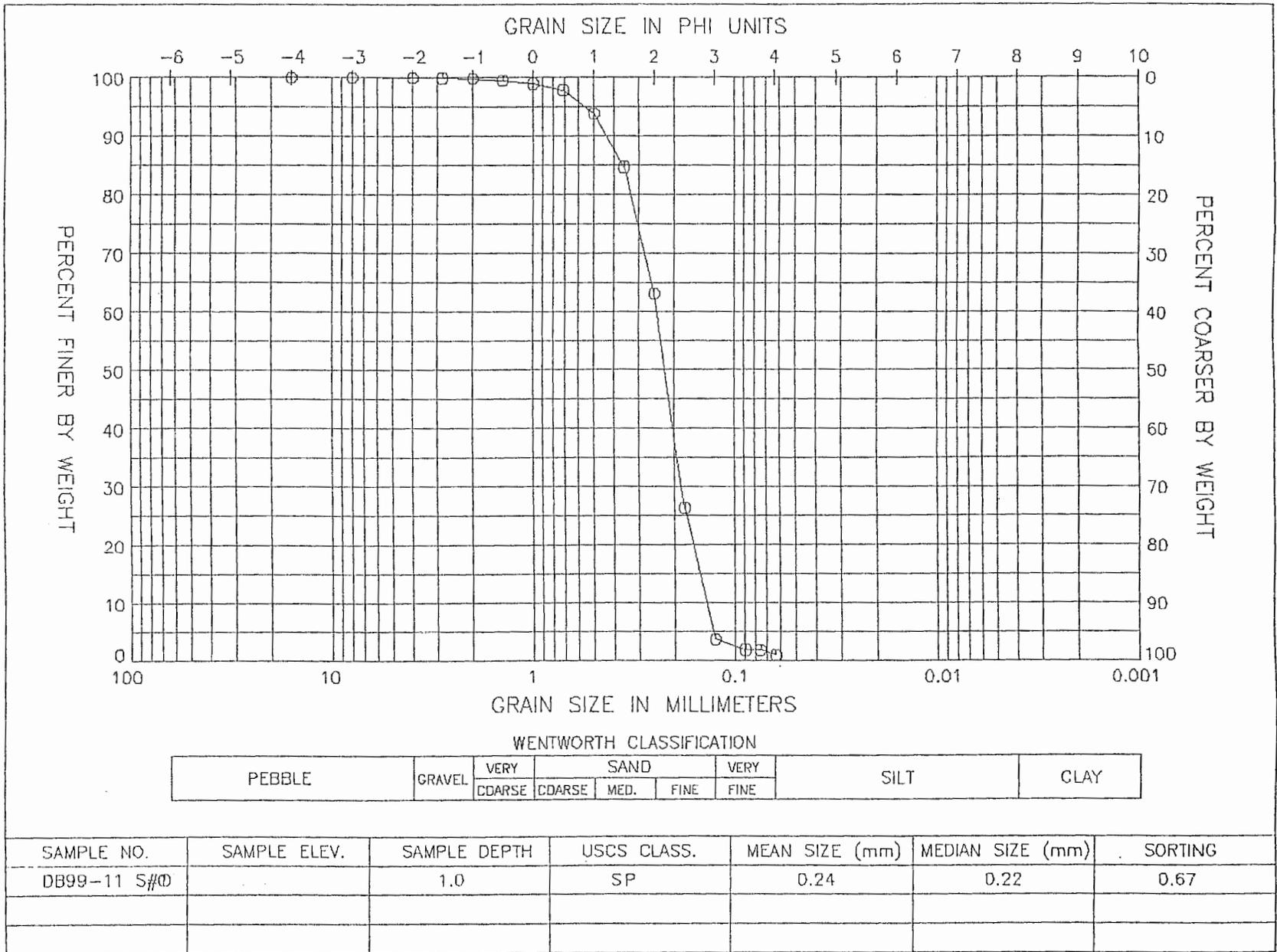
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

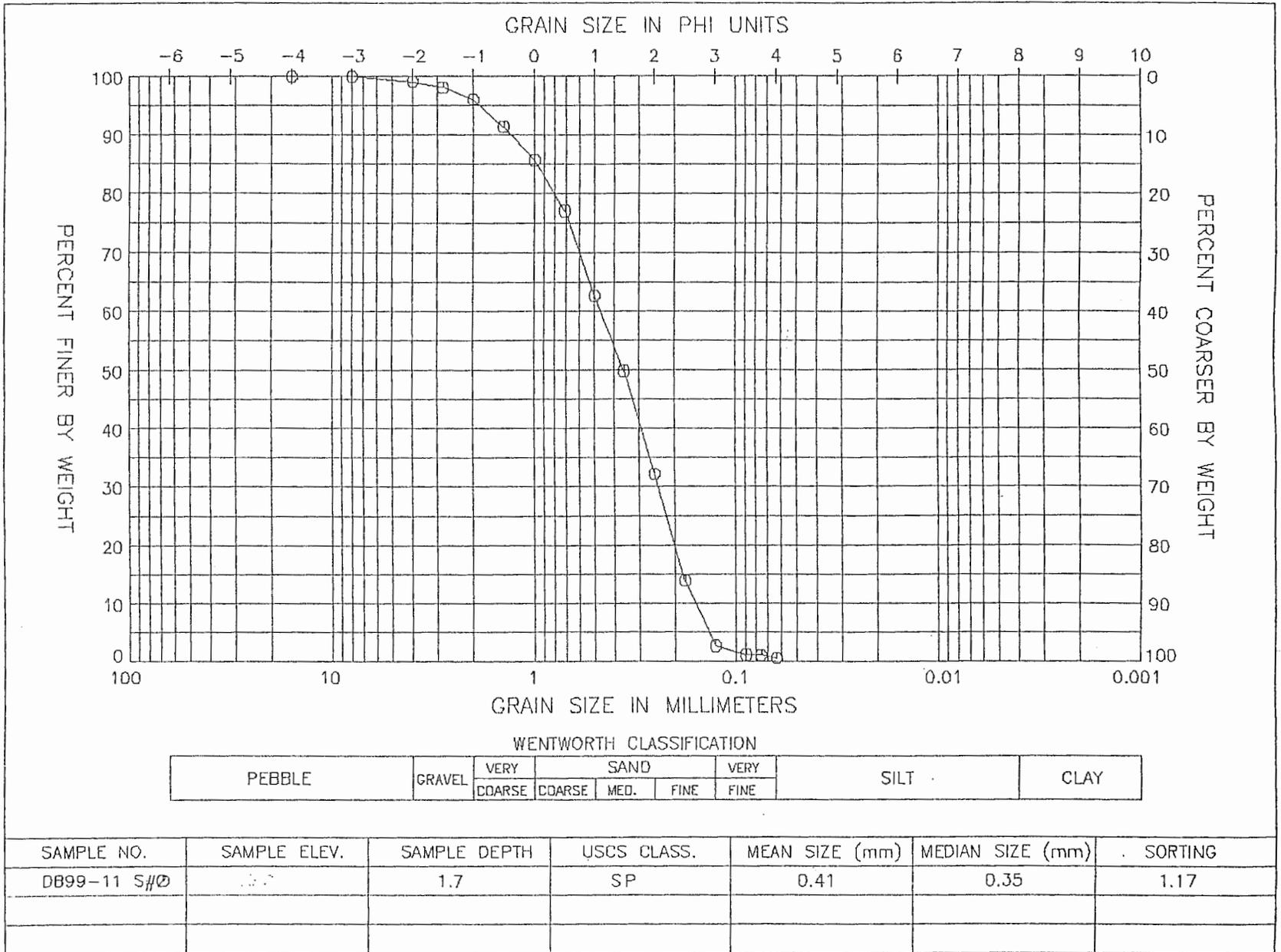
MEAN (PHI): 1.91 SORTING: 0.78
 MEAN (mm) : 0.27

DATA FILE NAME: DB99-11#7.TAB

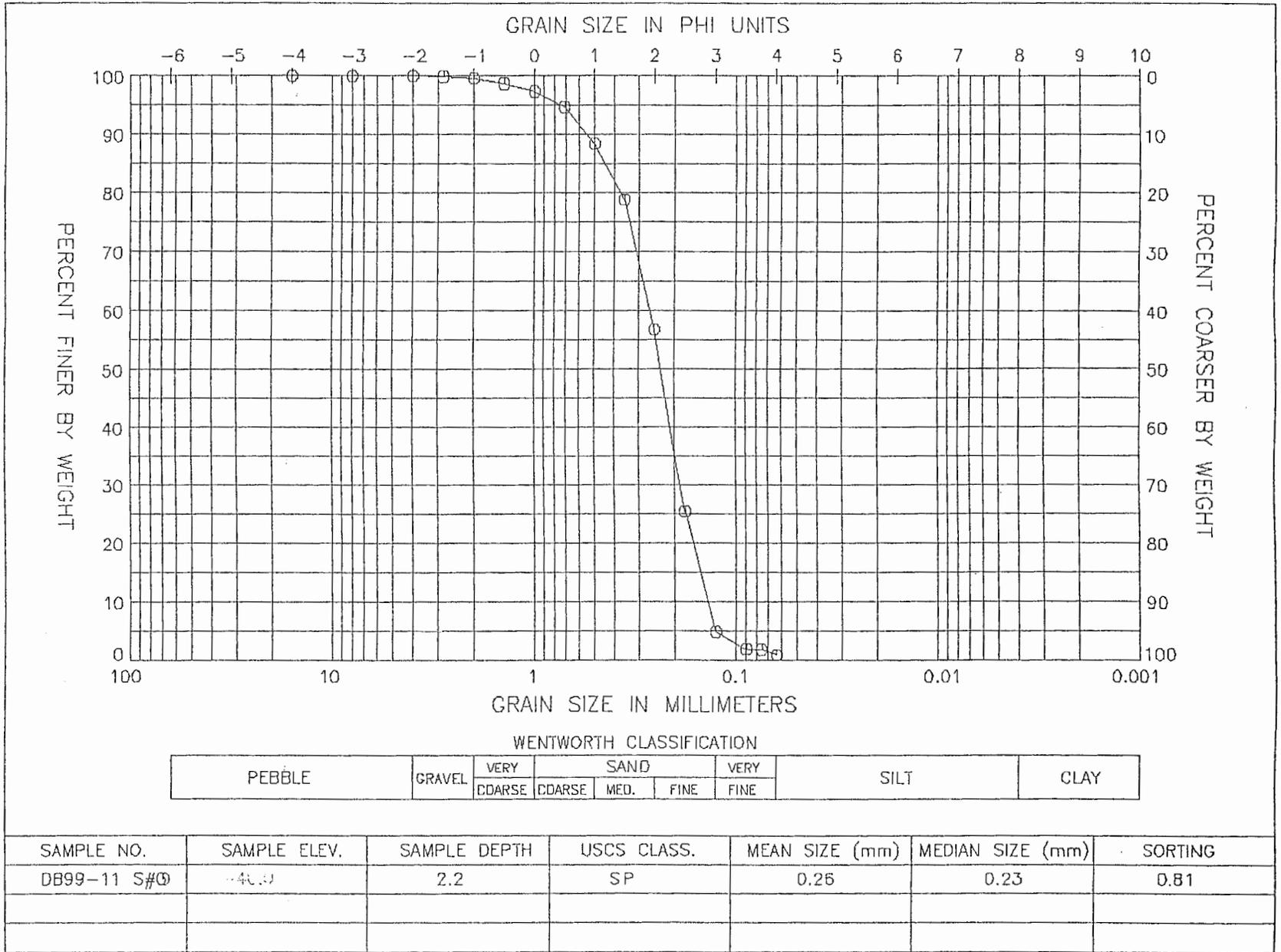
GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



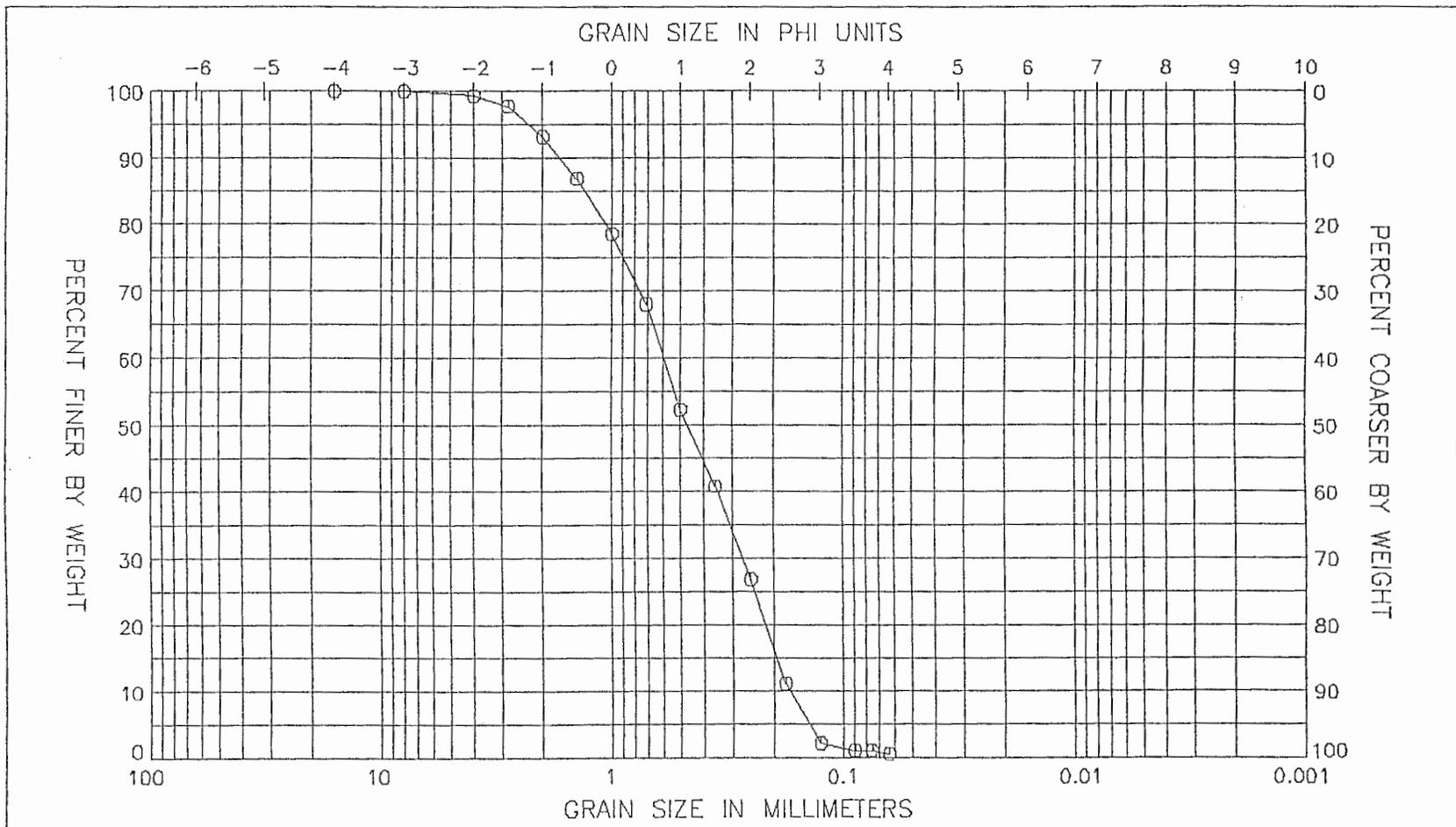
GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999

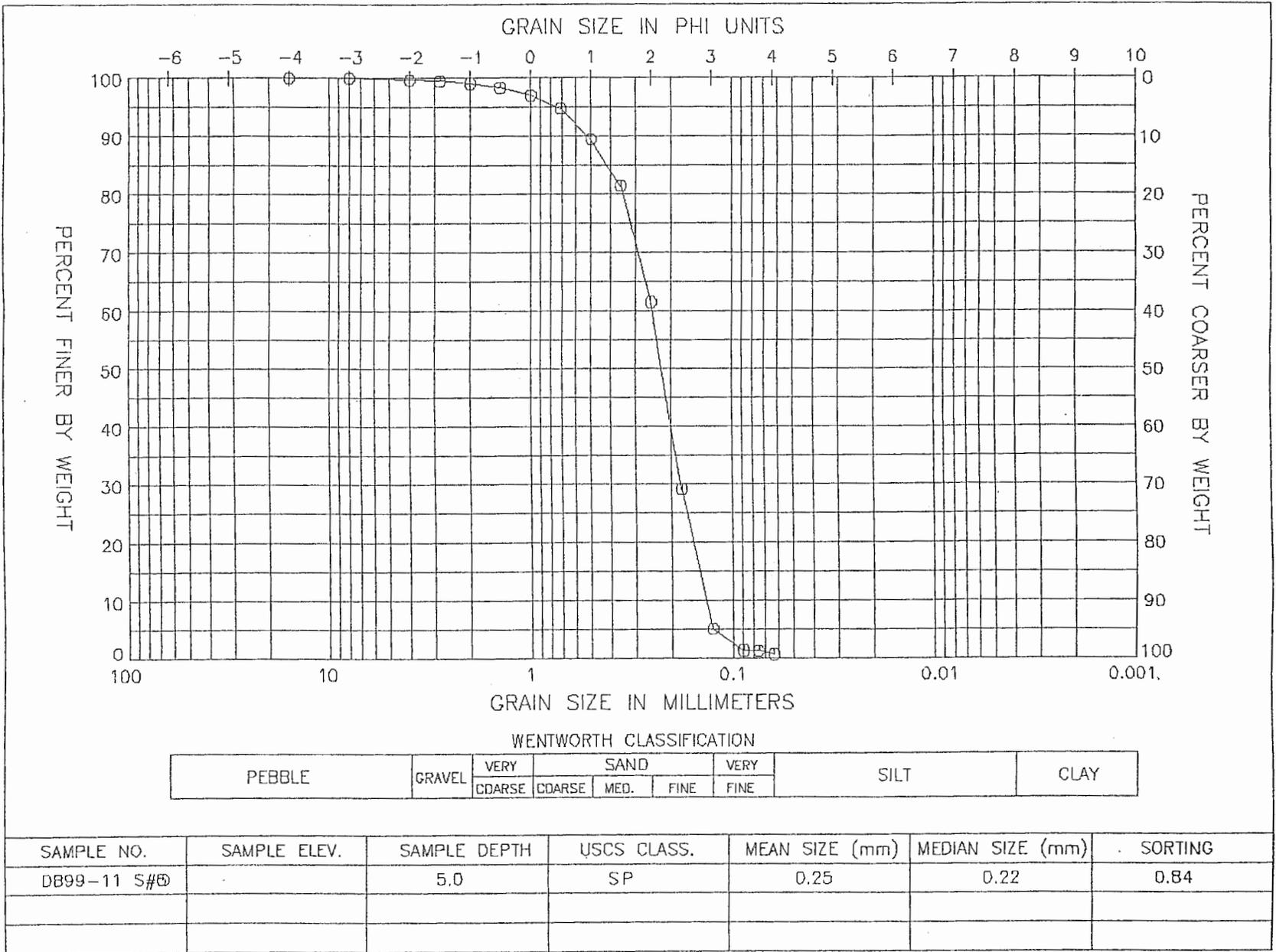


WENTWORTH CLASSIFICATION

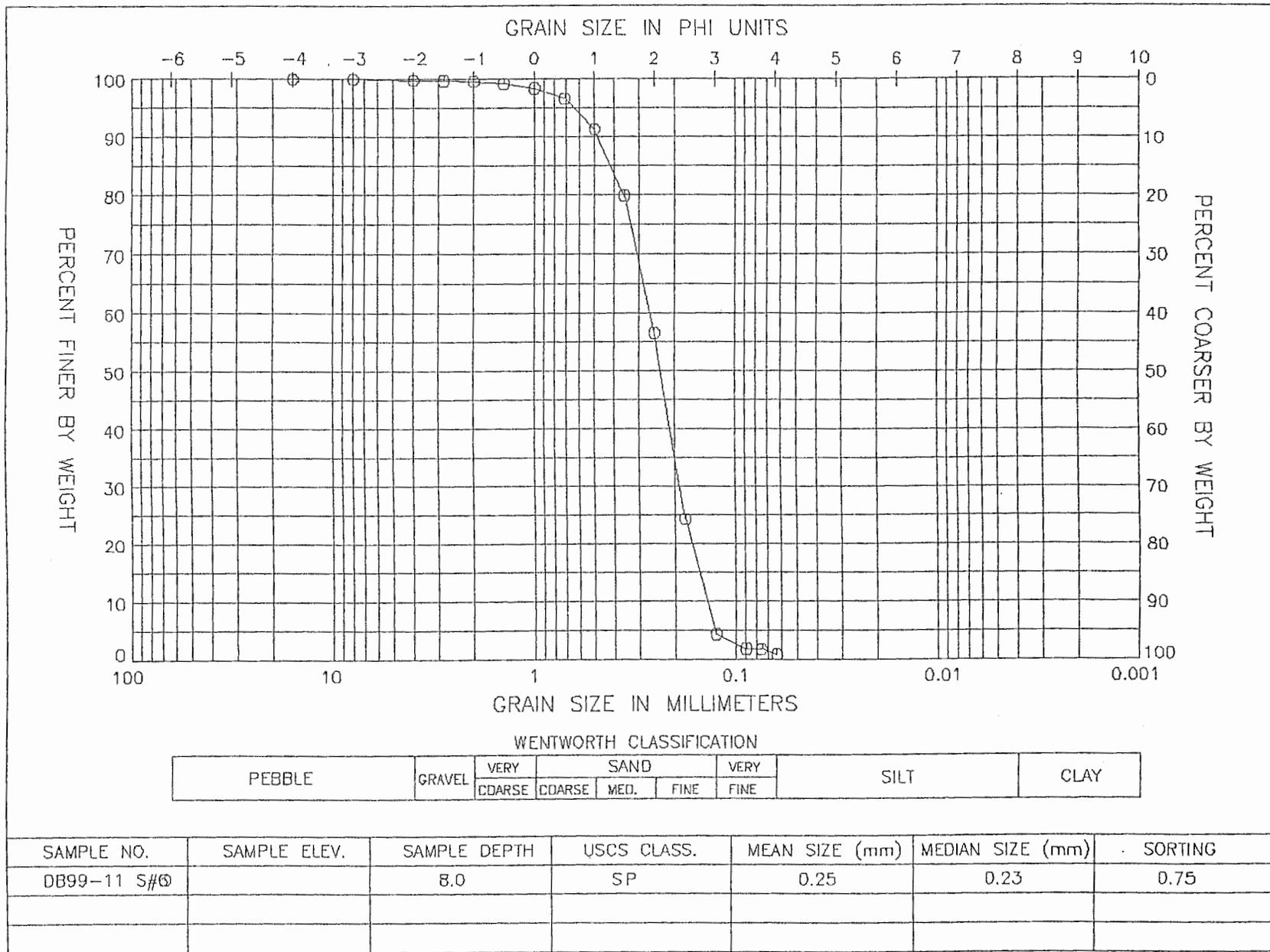
PEBBLE	GRAVEL	VERY	SAND			VERY	SILT	CLAY
		COARSE	COARSE	MED.	FINE	FINE		

SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
DB99-11 S#0	..	3.2	SP	0.49	0.47	1.24

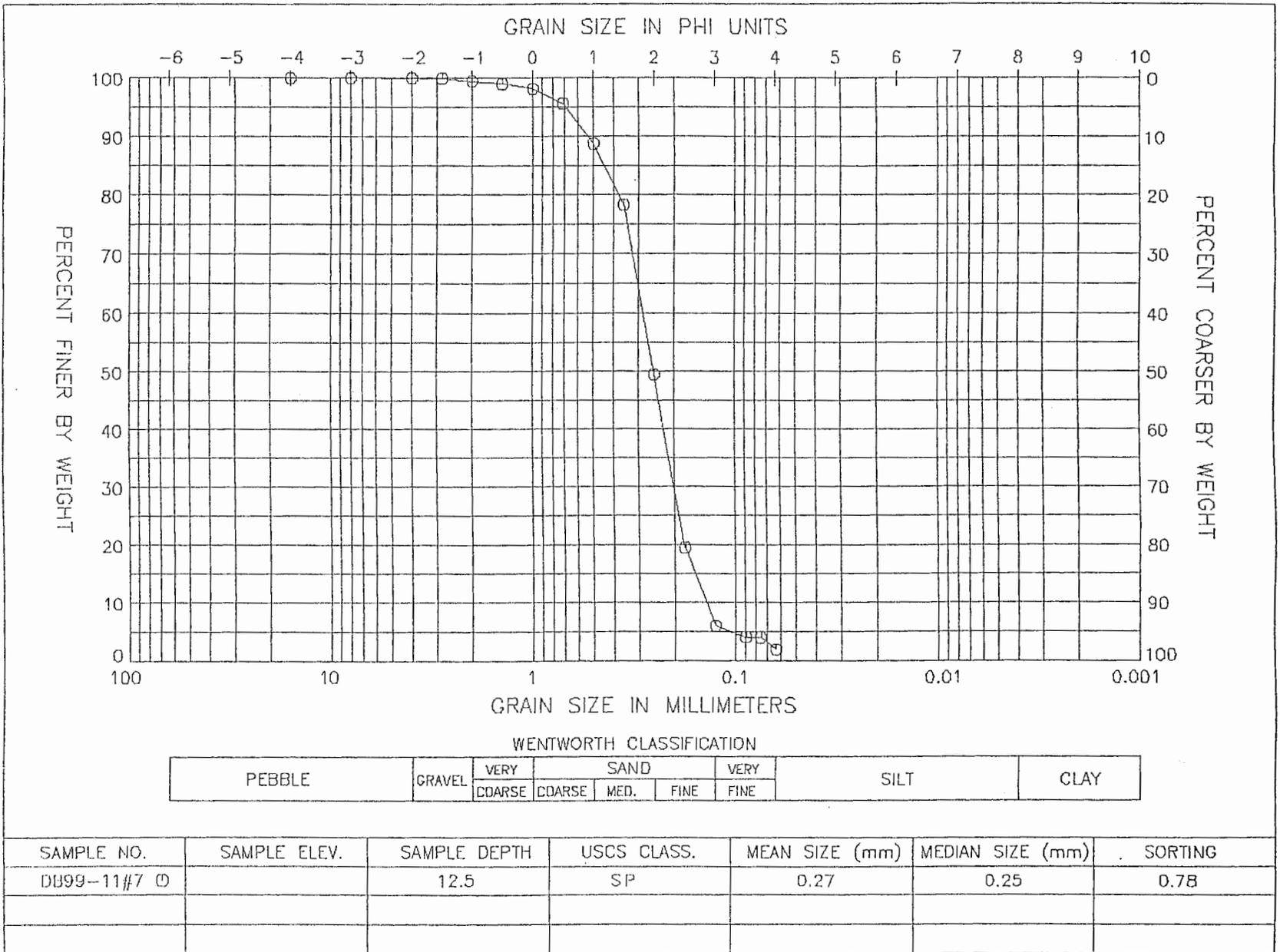
GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999



GRAIN SIZE DISTRIBUTION CURVE
 DELRAY BEACH VIBRACORES 1999

