

| VIBRACORE LOG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|---|--|--|-------|-------|--------|-------------|----------|---------|-------|-----|--|--|--|--|-------|-----|---|--|--------------------|--|-------|-----|---|--|--------------------|--|-------|-----|---|--|--------------------|--|-------|-----|-------------|---|--------------------|---|-------|------|--------------|------|--|--|
| PROJECT: <u>LIDO KEY SAND SEARCH BORROW AREA 1</u> CORE NO: <u>LKVC - 4</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>COORDINATES:</u> N = 1074822 E = 280063 | DATE: JAN. 26, 1995 START TIME: 1050 END TIME: 1053 | WATER DEPTH: 32.0 Ft. NGVD DRILLER: EXMAR CLIENT REP: M. D. ANDREWS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CORE DIAMETER: 2.5" LENGTH OF BARREL: 12.0' PENETRATION DEPTH: 10.0' LENGTH RECOVERED: 6.7' LENGTH RETAINED : 6.7' | SUPPORT VESSEL: EXMAR II POSITIONING: DGPS MOTOROLA LGT 1000 / USCG BEACON | <u>WEATHER:</u> <u>WIND:</u> DIR : NW SPEED : 5 Kt <u>WAVES:</u> DIR : NW HEIGHT: 1 Ft. <u>CURRENT:</u> DIR : SOUTH SPEED : LIGHT | ANALYSIS BY : MDA ANALYSIS METHOD: VISUAL LOGGING MECHANICAL SIEVE | <div style="display: flex; justify-content: space-around; font-size: 0.8em;"> <div style="text-align: center;"> SAND </div> <div style="text-align: center;"> SHELLS </div> </div> <div style="display: flex; justify-content: space-around; font-size: 0.8em;"> <div style="text-align: center;"> ROCK FRAG. </div> <div style="text-align: center;"> SHELL HASH </div> </div> <div style="text-align: center; font-size: 0.8em;"> ROCK </div> | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">ELEV.</th> <th style="width: 10%;">DEPTH</th> <th style="width: 10%;">LEGEND</th> <th style="width: 30%;">DESCRIPTION</th> <th style="width: 10%;">SAMP NO.</th> <th style="width: 10%;">REMARKS</th> </tr> </thead> <tbody> <tr> <td>32.0'</td> <td>0.0</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>33.5'</td> <td>1.5</td> <td style="text-align: center;">~</td> <td>GRAY (N6), FINE / MEDIUM GRAINED SAND WITH CALCAREOUS SHELL HASH</td> <td style="text-align: center;">1 1.0' 33.0'</td> <td>2.51 Phi 0.18 mm 2.8 % SILT (SP)</td> </tr> <tr> <td>34.8'</td> <td>2.5</td> <td style="text-align: center;">~</td> <td>GRAY (N6), FINE / MEDIUM GRAINED SAND WITH CALCAREOUS SHELL HASH</td> <td style="text-align: center;">2 2.0' 34.0'</td> <td>2.07 Phi 0.24 mm 2.8 % SILT (SP)</td> </tr> <tr> <td>37.5'</td> <td>5.0</td> <td style="text-align: center;">~</td> <td>LIGHT GREENISH GRAY (10Y 7/1) FINE / MEDIUM GRAINED SAND</td> <td style="text-align: center;">3 4.0' 36.0'</td> <td>2.88 Phi 0.14 mm 10.0 % SILT (SP - SM)</td> </tr> <tr> <td>38.7'</td> <td>6.7</td> <td style="text-align: center;">@ A A</td> <td>LIGHT GREENISH GRAY (10Y 7/1) FINE / MEDIUM GRAINED SAND WITH 1-2 cm ROCK & SHELL FRAGMENTS</td> <td style="text-align: center;">4 5.5' 37.5'</td> <td>2.38 Phi 0.19 mm 15.6 % SILT (SS)</td> </tr> <tr> <td>42.0'</td> <td>10.0</td> <td style="text-align: center;">X X X X X</td> <td>ROCK</td> <td></td> <td></td> </tr> </tbody> </table> | ELEV. | DEPTH | LEGEND | DESCRIPTION | SAMP NO. | REMARKS | 32.0' | 0.0 | | | | | 33.5' | 1.5 | ~ | GRAY (N6), FINE / MEDIUM GRAINED SAND WITH CALCAREOUS SHELL HASH | 1 1.0' 33.0' | 2.51 Phi 0.18 mm 2.8 % SILT (SP) | 34.8' | 2.5 | ~ | GRAY (N6), FINE / MEDIUM GRAINED SAND WITH CALCAREOUS SHELL HASH | 2 2.0' 34.0' | 2.07 Phi 0.24 mm 2.8 % SILT (SP) | 37.5' | 5.0 | ~ | LIGHT GREENISH GRAY (10Y 7/1) FINE / MEDIUM GRAINED SAND | 3 4.0' 36.0' | 2.88 Phi 0.14 mm 10.0 % SILT (SP - SM) | 38.7' | 6.7 | @ A A | LIGHT GREENISH GRAY (10Y 7/1) FINE / MEDIUM GRAINED SAND WITH 1-2 cm ROCK & SHELL FRAGMENTS | 4 5.5' 37.5' | 2.38 Phi 0.19 mm 15.6 % SILT (SS) | 42.0' | 10.0 | X X X X X | ROCK | | |
| ELEV. | DEPTH | LEGEND | DESCRIPTION | SAMP NO. | REMARKS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32.0' | 0.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 33.5' | 1.5 | ~ | GRAY (N6), FINE / MEDIUM GRAINED SAND WITH CALCAREOUS SHELL HASH | 1 1.0' 33.0' | 2.51 Phi 0.18 mm 2.8 % SILT (SP) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34.8' | 2.5 | ~ | GRAY (N6), FINE / MEDIUM GRAINED SAND WITH CALCAREOUS SHELL HASH | 2 2.0' 34.0' | 2.07 Phi 0.24 mm 2.8 % SILT (SP) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37.5' | 5.0 | ~ | LIGHT GREENISH GRAY (10Y 7/1) FINE / MEDIUM GRAINED SAND | 3 4.0' 36.0' | 2.88 Phi 0.14 mm 10.0 % SILT (SP - SM) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38.7' | 6.7 | @ A A | LIGHT GREENISH GRAY (10Y 7/1) FINE / MEDIUM GRAINED SAND WITH 1-2 cm ROCK & SHELL FRAGMENTS | 4 5.5' 37.5' | 2.38 Phi 0.19 mm 15.6 % SILT (SS) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42.0' | 10.0 | X X X X X | ROCK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

NOTE: MEAN WAS CALCULATED USING MOMENT METHOD
NOTE: COORDINATE SYSTEM - FLORIDA STATE PLANE NAD 1927
NOTE : CORE WEIGHTED COMPOSITE 0.18 mm

COASTAL PLANNING & ENGINEERING, INC

GRADATION ANALYSIS REPORT
LIDO KEY VIBRACORE JAN. 1995
TESTED BY: MDA ON: 02-27-95

SAMPLE NO.: LKVC-4 S#1
SAMPLE ELEV. (FT. NGVD): -33.0
SAMPLE DEPTH (FT.): -1.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 66.50
SAMPLE WEIGHT AFTER WASH (GRAMS): 64.80

| SIEVE SIZE | PHI SIZE | MESH SIZE (mm) | RETAINED (GRAMS) | RETAINED (%) | PASSED (%) |
|---------------|-------------|-------------------|---------------------|-----------------|---------------|
| 5/8 | -4.0 | 16.000 | .00 | .00 | 100.00 |
| 5/16 | -3.0 | 8.000 | .00 | .00 | 100.00 |
| 5 | -2.0 | 4.000 | .00 | .00 | 100.00 |
| 7 | -1.5 | 2.800 | .05 | .08 | 99.92 |
| 10 | -1.0 | 2.000 | .17 | .26 | 99.74 |
| 14 | -0.5 | 1.400 | .28 | .42 | 99.58 |
| 18 | 0.0 | 1.000 | .51 | .77 | 99.23 |
| 25 | 0.5 | .710 | 1.27 | 1.91 | 98.09 |
| 35 | 1.0 | .500 | 3.02 | 4.54 | 95.46 |
| 45 | 1.5 | .355 | 5.20 | 7.82 | 92.18 |
| 60 | 2.0 | .250 | 10.17 | 15.29 | 84.71 |
| 80 | 2.5 | .180 | 24.35 | 36.62 | 63.38 |
| 120 | 3.0 | .125 | 53.96 | 81.14 | 18.86 |
| 170 | 3.5 | .090 | 63.84 | 96.00 | 4.00 |
| 200 | 3.75 | .075 | 64.64 | 97.20 | 2.80 |
| 230 | 4.0 | .063 | 65.59 | 98.63 | 1.37 |
| PAN | | | 66.45 | 99.92 | .08 |

PHI(5): 1.07 PHI(16): 2.02 PHI(25): 2.23
PHI(50): 2.65 PHI(75): 2.93 PHI(84): 3.10
PHI(95): 3.47

SIEVE LOSS(g): .05 SILT/CLAY: 2.80%
SKEWNESS: -.764 KURTOSIS: 1.396

GRAPHIC METHOD

MEAN (PHI): 2.46 SORTING: .54
MEAN (mm): .18 MEDIAN (mm): .16
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.51 SORTING: .70
MEAN (mm): .18

DATA FILE NAME: LKVC4-S1.TAB

GRADATION ANALYSIS REPORT
LIDO KEY VIBRACORE JAN. 1995
TESTED BY: MDA ON: 02-27-95

SAMPLE NO.: LKVC-4 S#2
SAMPLE ELEV. (FT. NGVD): -34.0
SAMPLE DEPTH (FT.): -2.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 59.82
SAMPLE WEIGHT AFTER WASH (GRAMS): 58.27

| SIEVE SIZE | PHI SIZE | MESH SIZE (mm) | RETAINED (GRAMS) | RETAINED (%) | PASSED (%) |
|---------------|-------------|-------------------|---------------------|-----------------|---------------|
| 5/8 | -4.0 | 16.000 | .00 | .00 | 100.00 |
| 5/16 | -3.0 | 8.000 | .00 | .00 | 100.00 |
| 5 | -2.0 | 4.000 | .00 | .00 | 100.00 |
| 7 | -1.5 | 2.800 | .07 | .12 | 99.88 |
| 10 | -1.0 | 2.000 | .34 | .57 | 99.43 |
| 14 | -0.5 | 1.400 | .82 | 1.37 | 98.63 |
| 18 | 0.0 | 1.000 | 1.62 | 2.71 | 97.29 |
| 25 | 0.5 | .710 | 4.09 | 6.84 | 93.16 |
| 35 | 1.0 | .500 | 9.98 | 16.68 | 83.32 |
| 45 | 1.5 | .355 | 15.10 | 25.24 | 74.76 |
| 60 | 2.0 | .250 | 21.95 | 36.69 | 63.31 |
| 80 | 2.5 | .180 | 33.92 | 56.70 | 43.30 |
| 120 | 3.0 | .125 | 52.43 | 87.65 | 12.35 |
| 170 | 3.5 | .090 | 57.76 | 96.56 | 3.44 |
| 200 | 3.75 | .075 | 58.15 | 97.21 | 2.79 |
| 230 | 4.0 | .063 | 58.99 | 98.60 | 1.40 |
| PAN | | | 59.78 | 99.93 | .07 |

PHI(5): .28 PHI(16): .97 PHI(25): 1.49
PHI(50): 2.33 PHI(75): 2.80 PHI(84): 2.94
PHI(95): 3.41

SIEVE LOSS(g): .04 SILT/CLAY: 2.79%
SKEWNESS: -.975 KURTOSIS: .981

GRAPHIC METHOD

MEAN (PHI): 1.99 SORTING: .99
MEAN (mm): .25 MEDIAN (mm): .20
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.07 SORTING: .96
MEAN (mm): .24

DATA FILE NAME: LKVC4-S2.TAB

GRADATION ANALYSIS REPORT
LIDO KEY VIBRACORE JAN. 1995
TESTED BY: MDA ON: 02-27-95

SAMPLE NO.: LKVC-4 S#3
SAMPLE ELEV. (FT. NGVD): -36.0
SAMPLE DEPTH (FT.): -4.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP-SM

DRY SAMPLE WEIGHT (GRAMS): 71.29
SAMPLE WEIGHT AFTER WASH (GRAMS): 64.97

| SIEVE SIZE | PHI SIZE | MESH SIZE (mm) | RETAINED (GRAMS) | RETAINED (%) | PASSED (%) |
|---------------|-------------|-------------------|---------------------|-----------------|---------------|
| 5/8 | -4.0 | 16.000 | .00 | .00 | 100.00 |
| 5/16 | -3.0 | 8.000 | .00 | .00 | 100.00 |
| 5 | -2.0 | 4.000 | .45 | .63 | 99.37 |
| 7 | -1.5 | 2.800 | .58 | .81 | 99.19 |
| 10 | -1.0 | 2.000 | .81 | 1.14 | 98.86 |
| 14 | -0.5 | 1.400 | .97 | 1.36 | 98.64 |
| 18 | 0.0 | 1.000 | 1.15 | 1.61 | 98.39 |
| 25 | 0.5 | .710 | 1.45 | 2.03 | 97.97 |
| 35 | 1.0 | .500 | 1.95 | 2.74 | 97.26 |
| 45 | 1.5 | .355 | 2.37 | 3.32 | 96.68 |
| 60 | 2.0 | .250 | 3.71 | 5.20 | 94.80 |
| 80 | 2.5 | .180 | 9.85 | 13.82 | 86.18 |
| 120 | 3.0 | .125 | 35.17 | 49.33 | 50.67 |
| 170 | 3.5 | .090 | 58.93 | 82.66 | 17.34 |
| 200 | 3.75 | .075 | 64.16 | 90.00 | 10.00 |
| 230 | 4.0 | .063 | 67.98 | 95.36 | 4.64 |
| PAN | | | 71.23 | 99.92 | .08 |

PHI(5): 1.95 PHI(16): 2.53 PHI(25): 2.66
PHI(50): 3.01 PHI(75): 3.39 PHI(84): 3.55
PHI(95): 3.98

SIEVE LOSS(g): .06
SKEWNESS: -.091

SILT/CLAY: 10.00%
KURTOSIS: 1.148

GRAPHIC METHOD
MEAN (PHI): 3.00
MEAN (mm): .12

SORTING: .51
MEDIAN (mm): .12

NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD
MEAN (PHI): 2.88
MEAN (mm): .14

SORTING: .80

DATA FILE NAME: LKVC4-S3.TAB

GRADATION ANALYSIS REPORT
LIDO KEY VIBRACORE JAN. 1995
TESTED BY: MDA ON: 02-27-95

SAMPLE NO.: LKVC-4 S#4
SAMPLE ELEV. (FT. NGVD): -37.5
SAMPLE DEPTH (FT.): -5.5
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SS

DRY SAMPLE WEIGHT (GRAMS): 69.45
SAMPLE WEIGHT AFTER WASH (GRAMS): 59.28

| SIEVE SIZE | PHI SIZE | MESH SIZE (mm) | RETAINED (GRAMS) | RETAINED (%) | PASSED (%) |
|---------------|-------------|-------------------|---------------------|-----------------|---------------|
| 5/8 | -4.0 | 16.000 | .00 | .00 | 100.00 |
| 5/16 | -3.0 | 8.000 | .00 | .00 | 100.00 |
| 5 | -2.0 | 4.000 | 1.89 | 2.72 | 97.28 |
| 7 | -1.5 | 2.800 | 3.41 | 4.91 | 95.09 |
| 10 | -1.0 | 2.000 | 4.56 | 6.57 | 93.43 |
| 14 | -0.5 | 1.400 | 5.73 | 8.25 | 91.75 |
| 18 | 0.0 | 1.000 | 6.98 | 10.05 | 89.95 |
| 25 | 0.5 | .710 | 8.55 | 12.31 | 87.69 |
| 35 | 1.0 | .500 | 10.15 | 14.61 | 85.39 |
| 45 | 1.5 | .355 | 11.13 | 16.03 | 83.97 |
| 60 | 2.0 | .250 | 13.05 | 18.79 | 81.21 |
| 80 | 2.5 | .180 | 19.05 | 27.43 | 72.57 |
| 120 | 3.0 | .125 | 36.17 | 52.08 | 47.92 |
| 170 | 3.5 | .090 | 53.93 | 77.65 | 22.35 |
| 200 | 3.75 | .075 | 58.62 | 84.41 | 15.59 |
| 230 | 4.0 | .063 | 64.21 | 92.45 | 7.55 |
| PAN | | | 69.35 | 99.86 | .14 |

PHI(5): -1.47 PHI(16): 1.49 PHI(25): 2.36
PHI(50): 2.96 PHI(75): 3.45 PHI(84): 3.73
PHI(95): 4.08

SIEVE LOSS(g): .10 SILT/CLAY: 15.59%
SKEWNESS: -3.309 KURTOSIS: 2.090

GRAPHIC METHOD

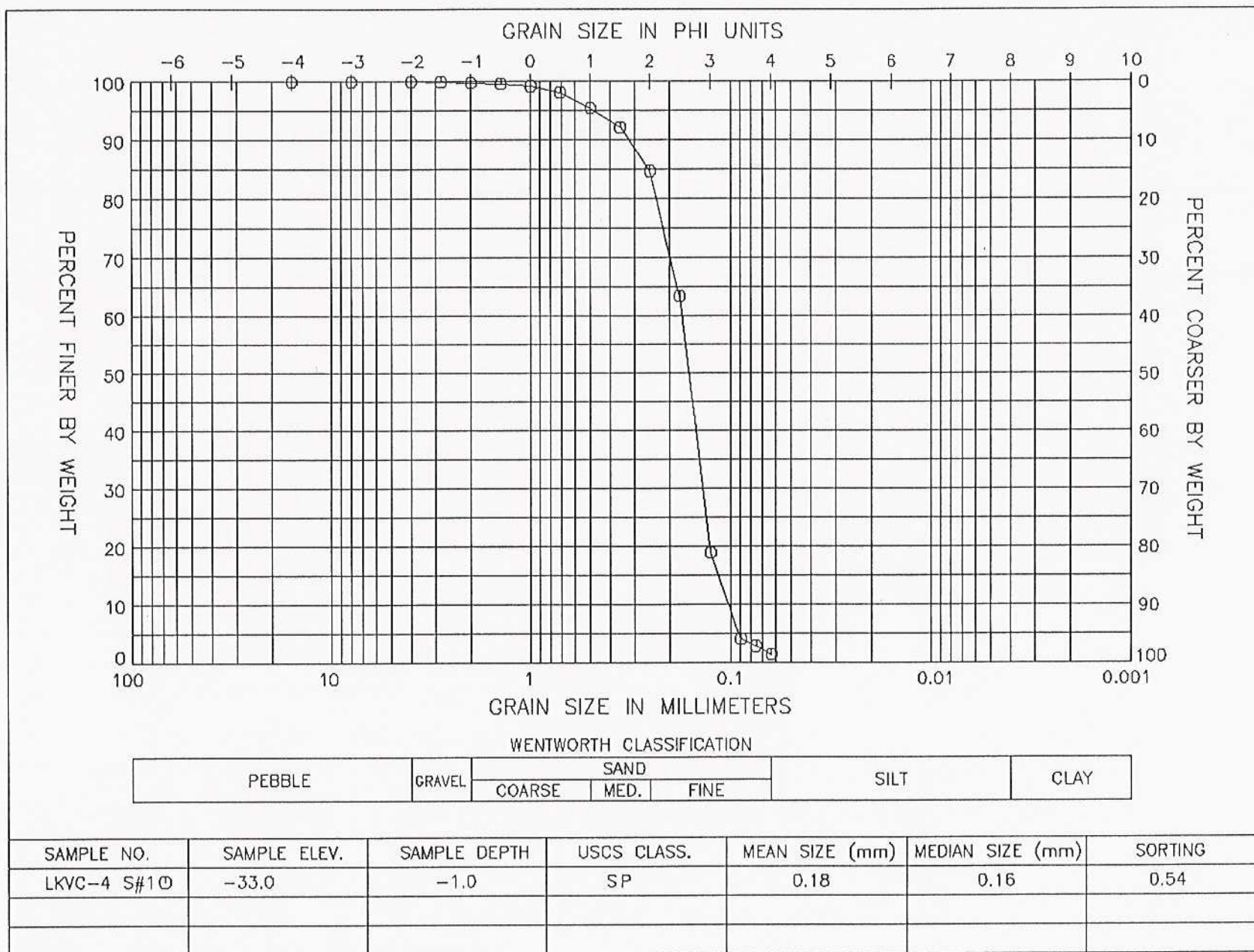
MEAN (PHI): 2.16 SORTING: 1.12
MEAN (mm): .22 MEDIAN (mm): .13
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

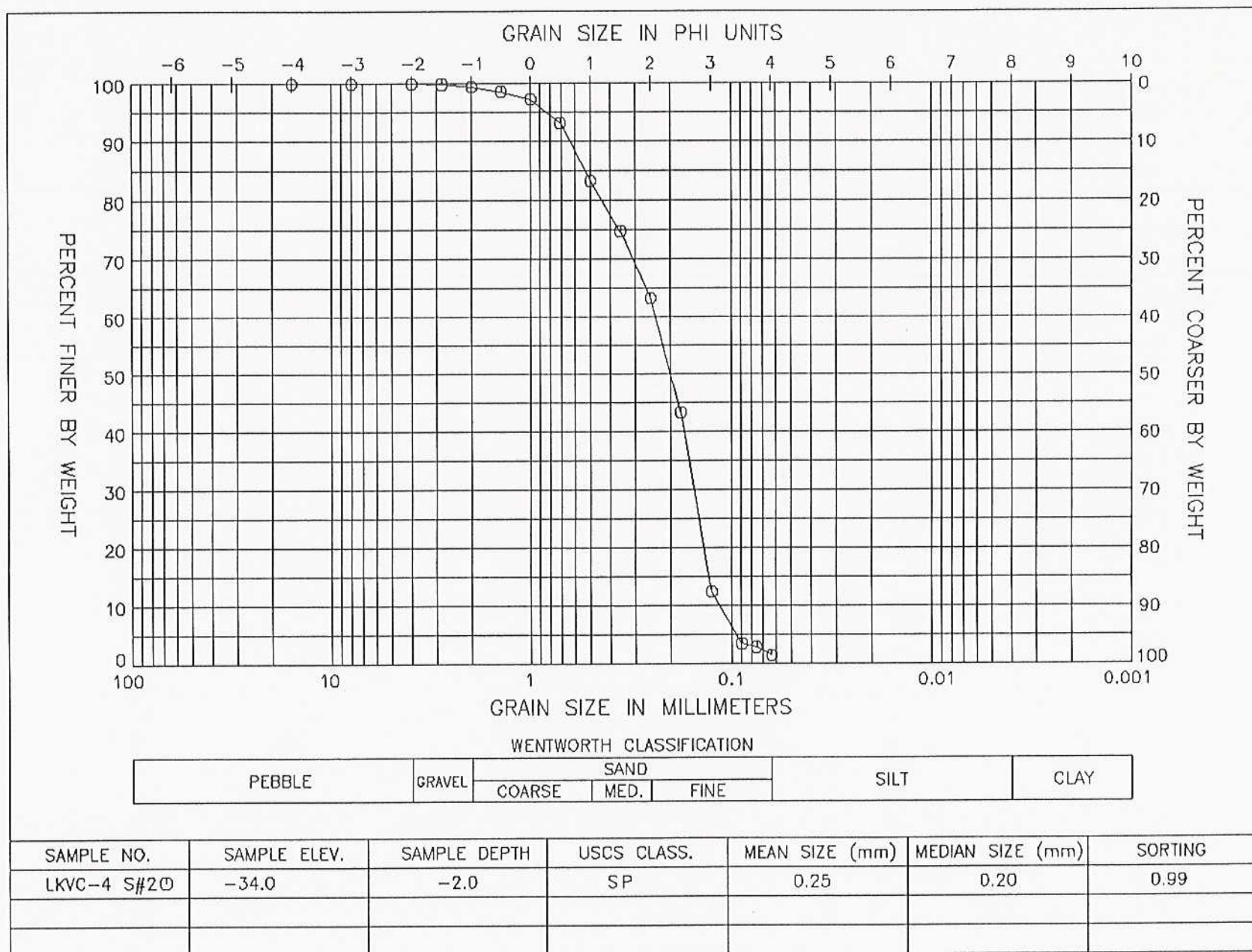
MEAN (PHI): 2.38 SORTING: 1.55
MEAN (mm): .19

DATA FILE NAME: LKVC4-S4.TAB

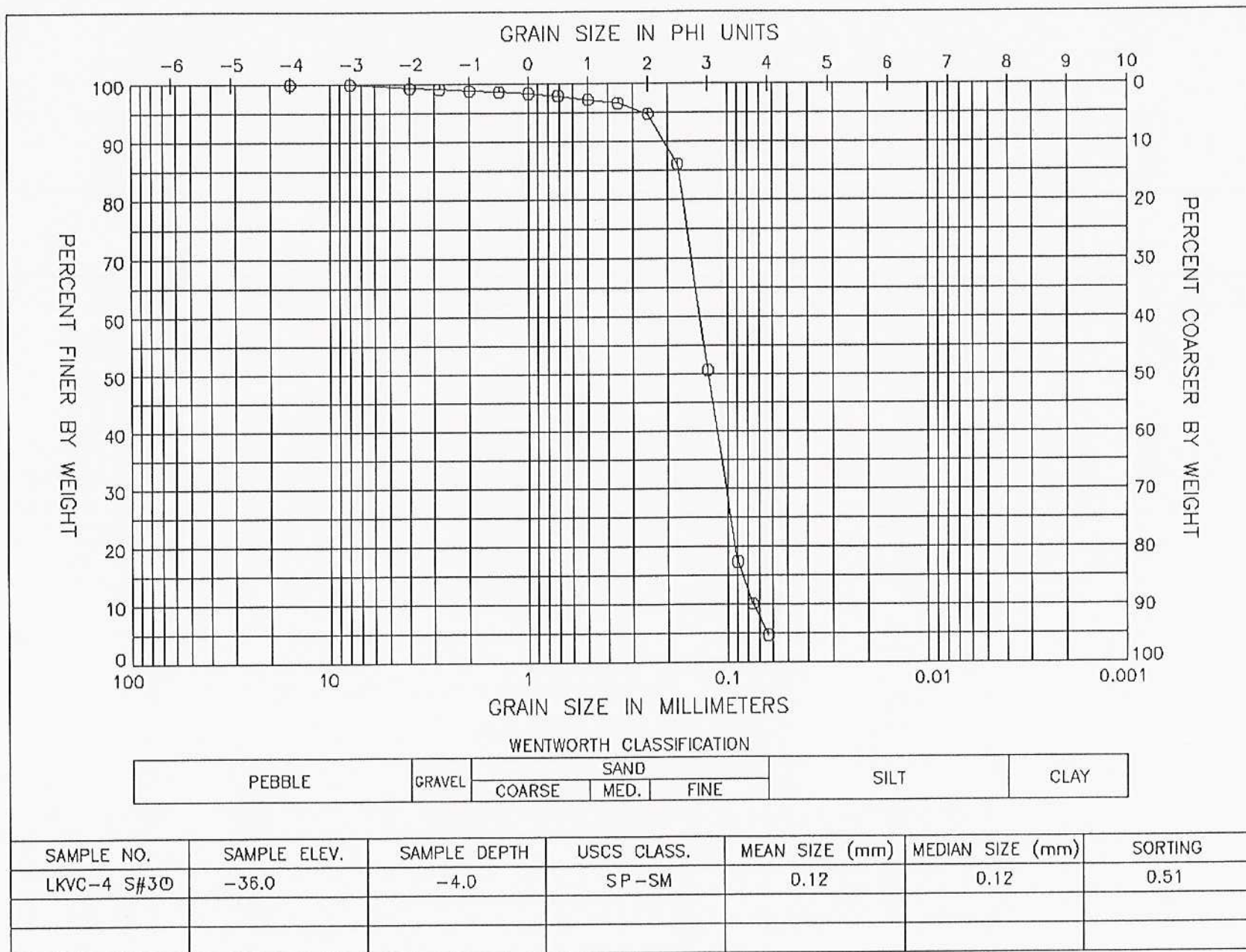
GRAIN SIZE DISTRIBUTION CURVE
LIDO KEY VIBRACORE JAN. 1995



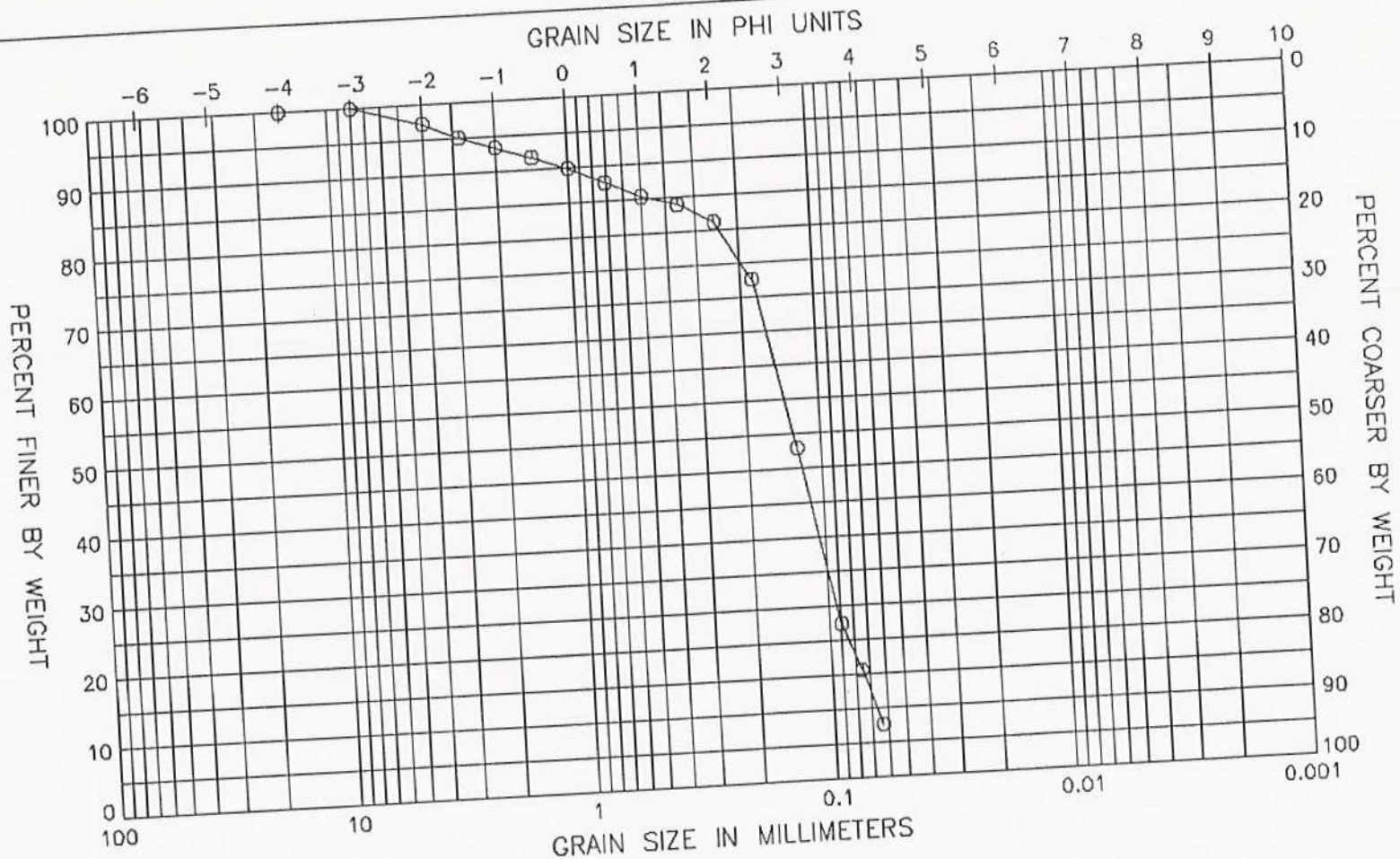
GRAIN SIZE DISTRIBUTION CURVE
LIDO KEY VIBRACORE JAN. 1995



GRAIN SIZE DISTRIBUTION CURVE
LIDO KEY VIBRACORE JAN. 1995

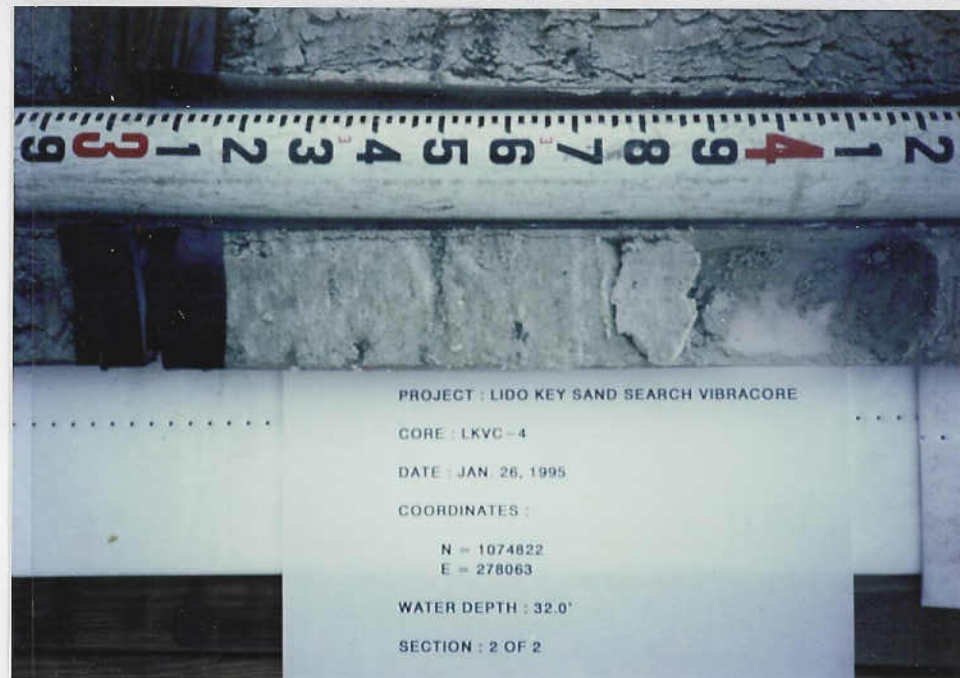
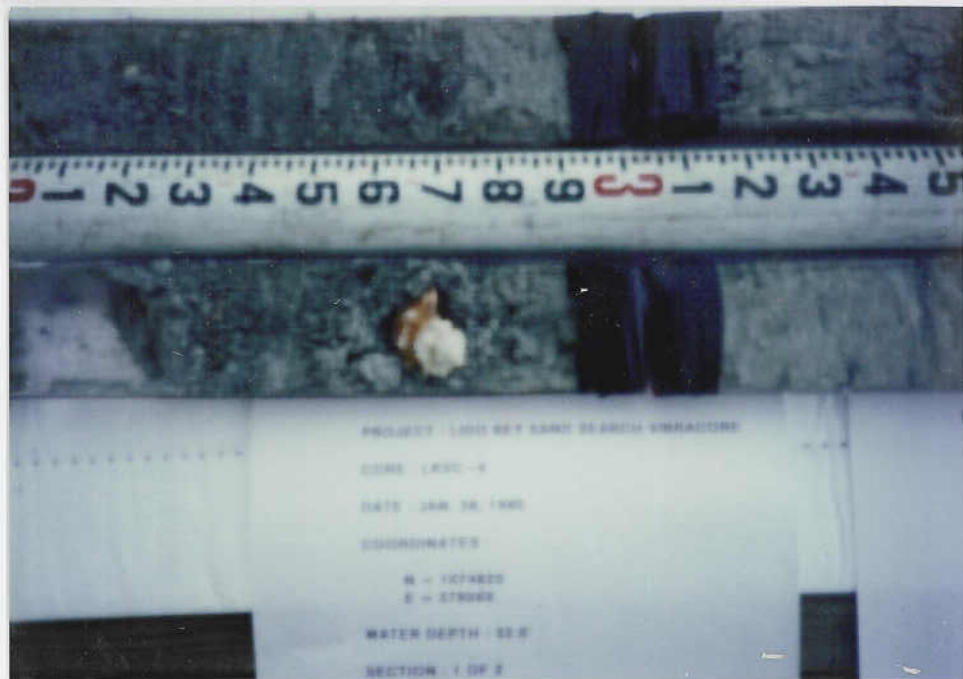


GRAIN SIZE DISTRIBUTION CURVE
LIDO KEY VIBRACORE JAN. 1995



| WENTWORTH CLASSIFICATION | | | | | | SILT | CLAY |
|--------------------------|--------|--------|------|------|--|------|------|
| PEBBLE | GRAVEL | SAND | | | | | |
| | | COARSE | MED. | FINE | | | |

| SAMPLE NO. | SAMPLE ELEV. | SAMPLE DEPTH | USCS CLASS. | MEAN SIZE (mm) | MEDIAN SIZE (mm) | SORTING |
|-------------|--------------|--------------|-------------|----------------|------------------|---------|
| LKVC-4 S#40 | -37.5 | -5.5 | SS | 0.22 | 0.13 | 1.12 |
| | | | | | | |
| | | | | | | |



LKVC-4

