TEXTURAL PROPERTIES OF SURFICIAL SEDIMENTS OF LOWER BAY OF NEW YORK HARBOR

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marine sciences research center
state university of new york

SPECIAL REPORT 21

sea grant
new york institute
suny and cornell

REFERENCE 79-4

MARINE SCIENCES RESEARCH CENTER

STATE UNIVERSITY OF NEW YORK

STONY BROOK, NEW YORK 11794

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MARCH 1979

Sponsored by the New York Sea Grant Institute through a contract with the Office of General Services and by S.U.N.Y.

Special Report 21

Reference 79-4

Approved for Distribution

J.R. Schubel

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ACKNOWLEDGEMENTS

This work was supported by the New York Sea Grant Institute through a contract with the Office of General Services and by the State University of New York. We thank Edward Saxby, James Marotta, and Donald Squires for their advice and assistance. Samples from December 1977 through June 1978 were collected by B.H. Brinkhuis in conjunction with "An assessment of the biological effects of sand and gravel mining in the outer bay of New York Harbor and the inner bight." We thank Thomas Bianchi, Steve Goldberg, and Samuel Albrecht who did much of the size analyses. Steve Covell and Denise Curran assisted in graphing and computations. The figures were drafted by Marie Eisel and Carol Cassidy. The tables were typed by Edie Jones and the report was typed by Hirlsa White. Preparation of the report for printing was supervised by Jeri Schoof.

INTRODUCTION

This is one of a series of reports on the sand and gravel resources of the Lower Bay of New York Harbor and the environmental effects of mining in this area. The objective of this report is to describe the textural properties of the surficial sediments.

METHODS

Sampling

Station locations were determined by taking horizontal sextant angles on prominent shoreline features; Loran and radar ranging were used to check positions. The accuracy of station locations is better than ±100 m.

Shipek and Petersen samplers were used to sample approximately the upper 5 cm of sediment at 254 stations between 1973 and 1978. The vessel was not anchored, but a buoy was deployed at each station. At each station, approximately 1000 cm^3 of sediment were saved for analyses. In most cases, a single drop of the sampler brought up enough sediment, but a few stations 2-3 drops in rapid succession were needed to obtain 1000 cm^3 of sediment.

Textural Analysis

Each sample was thoroughly mixed and two subsamples withdrawn; one for wet-sieving, the second for dry mechanical sieving. The wet-sieving was used to determine the partitioning of the total sample among the following classes: gravel, sand, silt plus clay. In 46 of the samples taken between December 1977-June 1978, the split between silt and clay was also determined by pipetting. Dry mechanical sieving of the sand fraction of the second subsample was used to obtain a detailed characterization of its particle size distribution.

Wet-Sieving

A sample of approximately 30-100 gm, depending on the amount necessary to yield 5-15 gm of mud, was placed in a plastic bottle with 10 mℓ of dispersant per estimated gram of mud. A 1% Calgon (sodium hexametaphosphate) solution was used as a dispersant. The mixture was shaken for one hour and wet-sieved through a stack of two-sieves--a 2 mm mesh sieve and a 62 μm mesh sieve. The coarser sieve retained the gravel, the finer sieve the sand, and the mud was collected in a 1000 mℓ graduated cylinder. The sand and gravel fractions were dried and weighed. The mud fraction was either dried and weighed or, in 46 samples, it was further split by the standard pipette sedimentation method into two components, silt and clay.

Dry Mechanical Sieving

Each subsample of 30-100 gm of sediment was washed with tap water through a stack of two sieves--a 2 mm mesh sieve and a 62 μm mesh sieve--to separate the sand from the coarser and finer materials. Only the sand was retained for analysis. It was dried at 65-75°C, cooled, and weighed.

The grain size distribution of the sand fraction was determined by sieving through one-quarter phi interval sieves in a Ro-Tap shaker for 15 minutes. The sand retained on each sieve was weighed and expressed as a percentage by mass of the sand fraction, and of the total sediment sample. All weighings were made to ±1 mg.

Statistical Parameters

There are two basic methods of obtaining statistical parameters of particle size distributions. The easier and more commonly used method is to plot the cumulative distribution curve and to determine statistical parameters graphically. The second method, the moment

method, is more sophisticated, but any gains in the precision and accuracy of the calculated statistical parameters is probably small. The moment method has the disadvantage that one must have a characterization of the entire particle size distribution. We elected to use the graphical method and selected Folk's (1964) statistical parameters.

The grade scale most commonly used for sediments is a modified Wentworth scale, a geometric scale in which each grade limit is twice as large as the next smaller one. Krumbein et al. (1938) applied a logarithmic transformation to the Wentworth scale and obtained a "phi scale" which has integers for the class limits that increase with decreasing grain size. This grade scale was developed specifically as a statistical device to permit the direct application of conventional statistical practices to sedimentary data. The transformation Krumbein et al. (1938) used was

$$\phi = - \log_2 \text{Diameter (mm)}$$

The Wentworth scale and the corresponding ϕ scale are shown in Table 1 and in Fig. 1.

TABLE 1

Wentworth Grade Scale and Corresponding ϕ Values

Wentworth Grades (mm)	ϕ
32	- 5
16	- 4
8	- 3
4	- 2
2	- 1
1	0
1/2	+ 1
1/4	+ 2
1/8	+ 3
1/16	+ 4
1/32	+ 5
1/64	+ 6
1/128	+ 7
1/256	+ 8
1/512	+ 9
1/1024	+10

Central Tendency

Perhaps the most descriptive statistical measure of a particle size distribution is a measure of central tendency, the value about which all other values cluster. In general, this value corresponds to the size which occurs most frequently, although if the distribution is very asymmetrical this may not be so. Measures of central tendency are called averages and include such diverse measures as the arithmetric mean, geometric mean, median, and the mode.

The median particle diameter is defined as the middle-most member of the particle size distribution; half of the sample (by mass) is accounted for by particles with diameters larger than the median, and half by particles with smaller diameters. The median diameter can be determined readily from the cumulative size distribution. It is the diameter that corresponds to the point where the 50% line crosses the cumulative curve.

$$Md = \text{Diameter}_{50\%} = \phi_{50}$$

The concept of the mean is akin to the concept of the "center of mass" (center of gravity) in physics for a flat object. If one plots the size distribution as a frequency distribution curve, the mean is the x-coordinate of the center of gravity of the area under the curve.

Folk's Graphical Mean is defined by

$$M = \frac{\phi_{16} + \phi_{50} + \phi_{84}}{3}$$

and can be readily determined from cumulative distribution curves.

Sorting or Uniformity

Measures of sorting describe the spread or range of the size distribution curve. Folk's Inclusive Graphic Standard Deviation or sorting index is defined by

$$\sigma_I = \frac{\phi_{84} - \phi_{16}}{4} + \frac{\phi_{95} - \phi_5}{6.6}$$

Figure 1 gives a conversion chart for diameters in phi units and millimeters. The phi (ϕ) scale is used to describe particle grain size. Phi diameter is defined:

$$\phi = - \log_2 (D)$$

where D is the diameter in millimeters.

Notice that a larger ϕ indicates a smaller diameter. Zero ϕ units equal one mm. Adding 1ϕ corresponds to halving the diameter in mm.: 0ϕ = 1 mm, 1ϕ = 1/2 mm, 2ϕ = 1/4 mm. Subtracting 1ϕ doubles the diameter in mm.: 0ϕ = 1 mm, -1ϕ = 2 mm, -2ϕ = 4 mm.

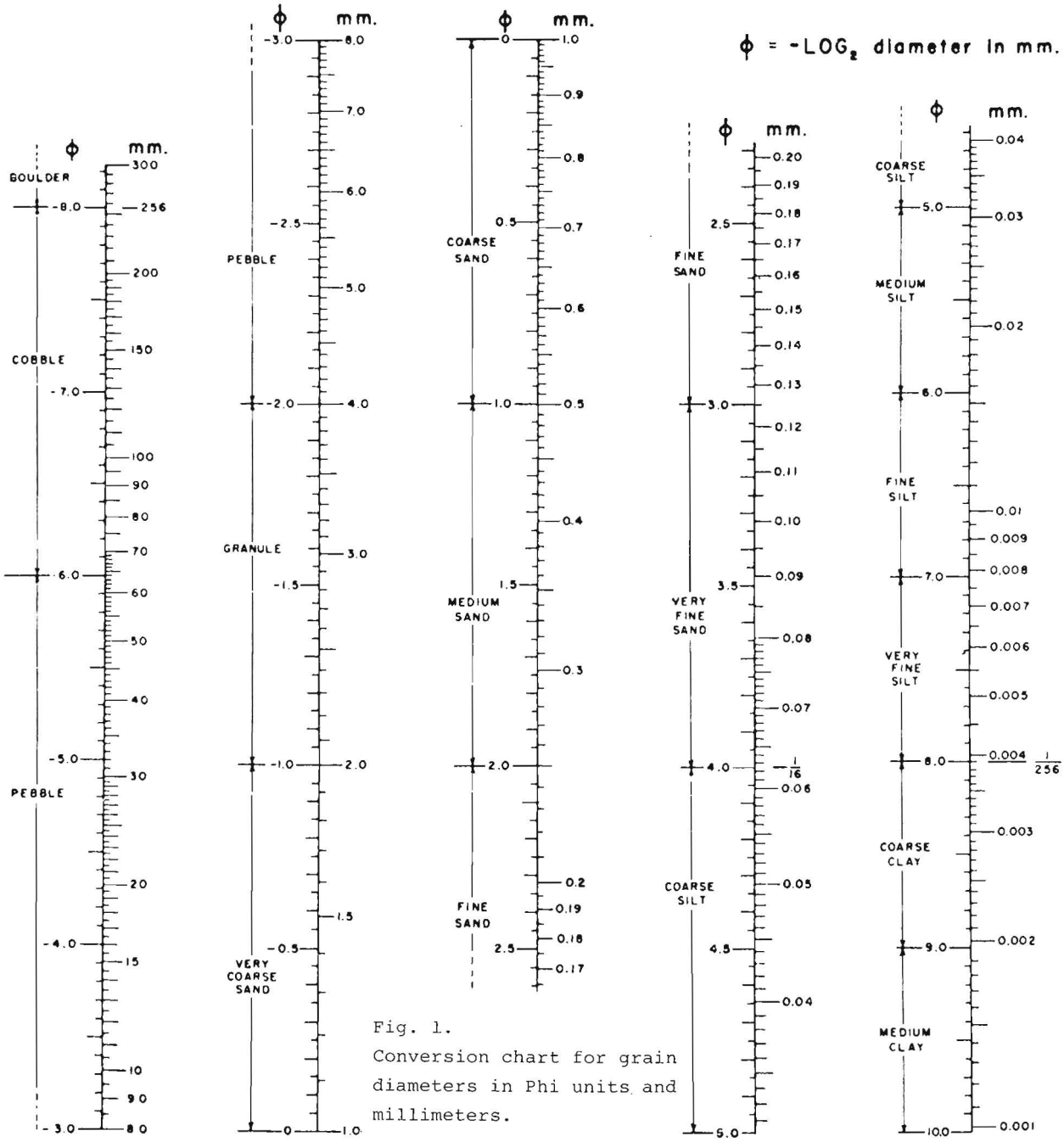

Fig. 1.
Conversion chart for grain diameters in Phi units and millimeters.

The interpretation of σ_I given in Table 2 was suggested by Folk (1964).

TABLE 2

Classification of Folk's Inclusive Graphic Standard Deviation

σ_I (ϕ)	Sorting
<0.35	very well sorted
0.35-0.50	well sorted
0.50-0.71	moderately well sorted
0.71-1.00	moderately sorted
1.00-2.00	poorly sorted
2.00-4.00	very poorly sorted
>4.00	extremely poorly sorted

The best sorting reported for sediments is about 0.20-0.25ϕ. Beach and dune sands frequently run about 0.25-0.35ϕ. River sediments are less well sorted. The most poorly sorted sediments, such as glacial tills and mudflow deposits, have σ_I values from 5ϕ to as much as 10ϕ.

Skewness or Asymmetry

Folk's (1964) Inclusive Graphic Skewness, Sk_I, is defined by

$$Sk_I = \frac{\phi_{16} + \phi_{84} - 2\phi_{50}}{2(\phi_{84} - \phi_{16})} + \frac{\phi_5 + \phi_{95} - 2\phi_{50}}{2(\phi_{95} - \phi_5)}$$

Symmetrical curves have an $Sk_I = 0.0$; those with excess fine material (a tail of the size frequency distribution to the right) have a positive skewness and those with excess coarse material (a tail to the left) have negative skewness. The more the skewness departs from zero, the greater the degree of asymmetry. The limits suggested by Folk (1964) are summarized in Table 3. The mathematical limits of Sk_I are +1.00 and -1.00; few distributions have Sk_I values beyond +0.80 and -0.80.

TABLE 3

Classification of Skewness, Folk (1964)

Sk_I	Description
+1.00 to +0.30	strongly fine-skewed
+0.30 to +0.10	fine-skewed
+0.10 to -0.10	near-symmetrical
-0.10 to -0.30	coarse-skewed
-0.30 to -1.00	strongly coarse-skewed

Kurtosis

Kurtosis is a measure of the peakedness of a frequency distribution curve relative to that of the normal, "bell-shaped," distribution. It measures the ratio between the sorting in the tails of the distribution to that in the central portion. If the central portion is better sorted than the tails--relative to a normal curve--the curve is said to be peaked or leptokurtic. If the tails are better sorted than the central portion, the curve is flatter than a normal curve and is said to be platykurtic. In the normal probability curve, the phi diameter interval between the ϕ_5 and ϕ_{95} points is exactly 2.44 times the phi diameter interval between the ϕ_{25} and ϕ_{75} points. Folk's (1964) Graphic Kurtosis is given by:

$$K_G = \frac{\phi_{95} - \phi_5}{2.44(\phi_{75} - \phi_{25})}$$

For normal curves $K_G = 1.00$; leptokurtic curves have $K_G > 1.00$ and platykurtic curves have $K_G < 1.00$. Folk suggested the classification scheme shown in Table 4.

TABLE 4

Folk's Classification of Graphic Kurtosis, K_G

K_G	Description
<0.67	very platykurtic
0.67-0.90	platykurtic
0.90-1.11	mesokurtic
1.11-1.50	leptokurtic
1.50-3.00	very leptokurtic
>3.00	extremely leptokurtic

RESULTS

A regional location map is presented in Fig. 2 and station locations are plotted in Fig. 3. The grain size distributions are summarized in Appendices A, B and C, in tabular form and in Figs. 4-8 and Fig. A-1.

Figures 4-8 summarize the spatial distributions of selected statistical parameters: median diameter, mean diameter, standard deviation, skewness, and kurtosis. Figure A-1 delimits 25 areas in the Lower Bay of New York Harbor on the basis of sediment texture. The textural properties of samples within each of these 25 areas are summarized in Tables A-1 through A-27.

Cumulative particle size distribution curves for each station may be obtained at the cost of reproduction from the Marine Sciences Research Center.

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Krumbein, W.C., and Pettijohn, F.J. 1938. Manual of Sedimentary Petrography, Appleton-Century, New York. 549 p.

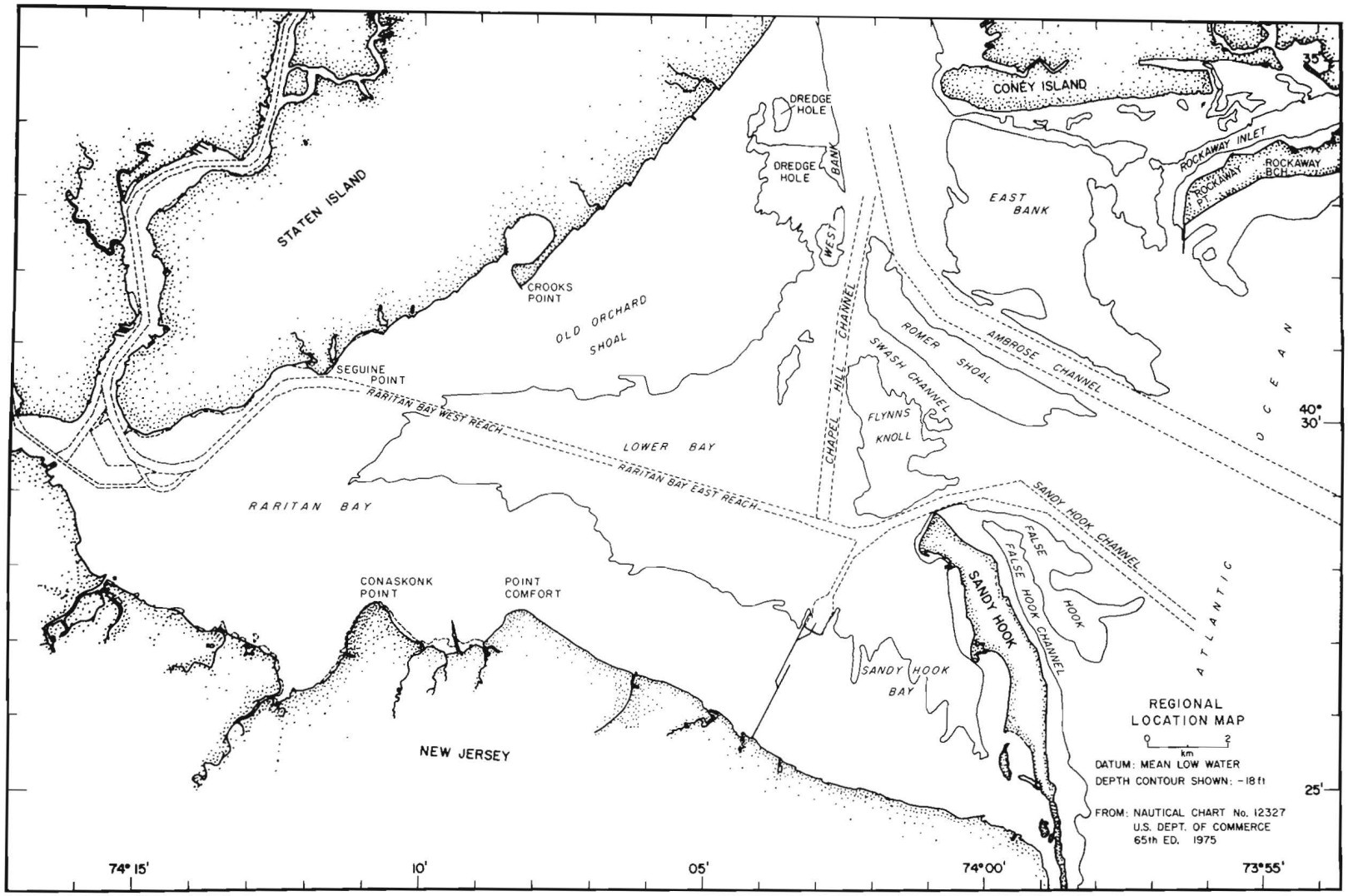

Fig. 2. Regional location map

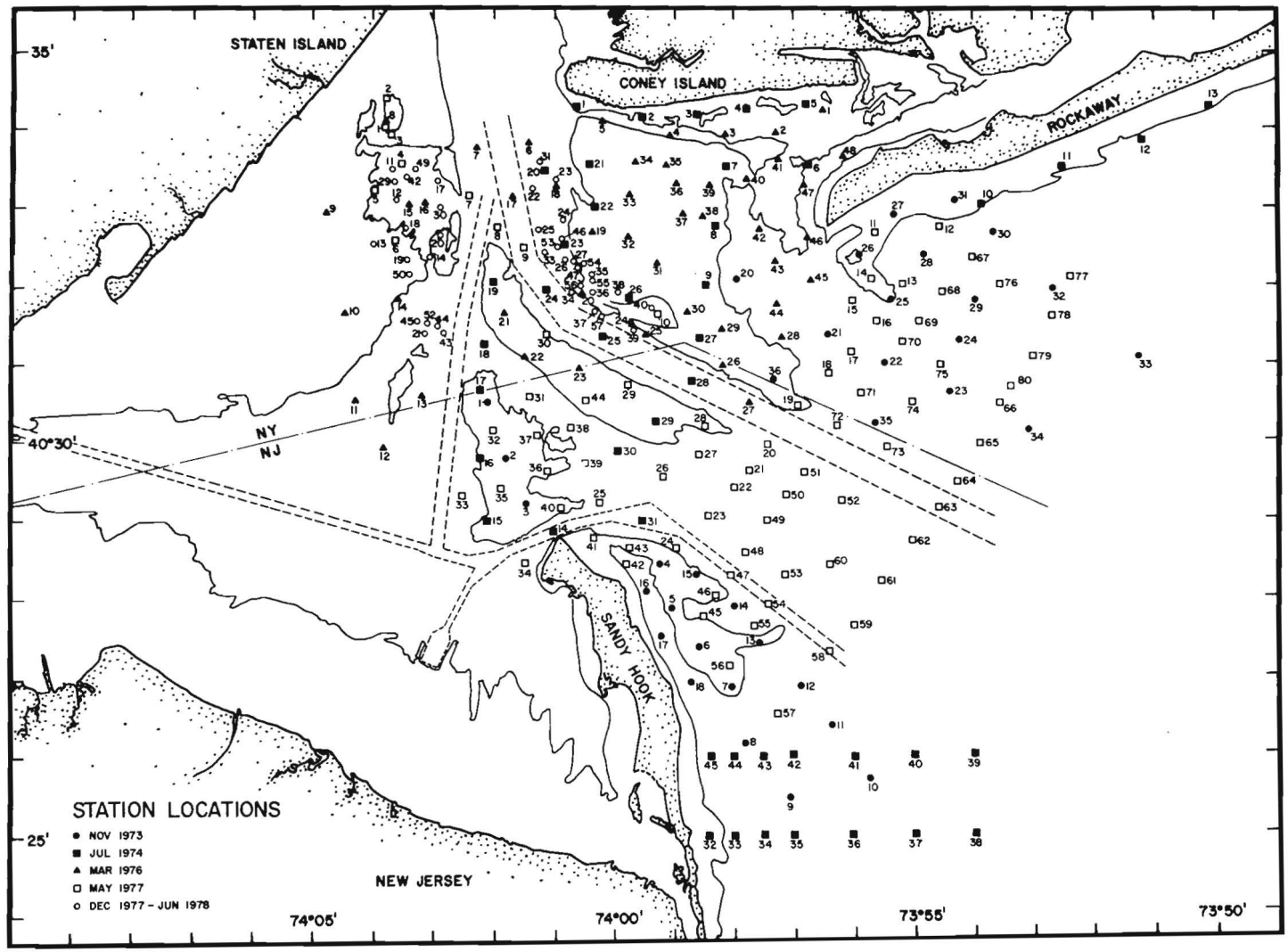

Fig. 3. Station location map

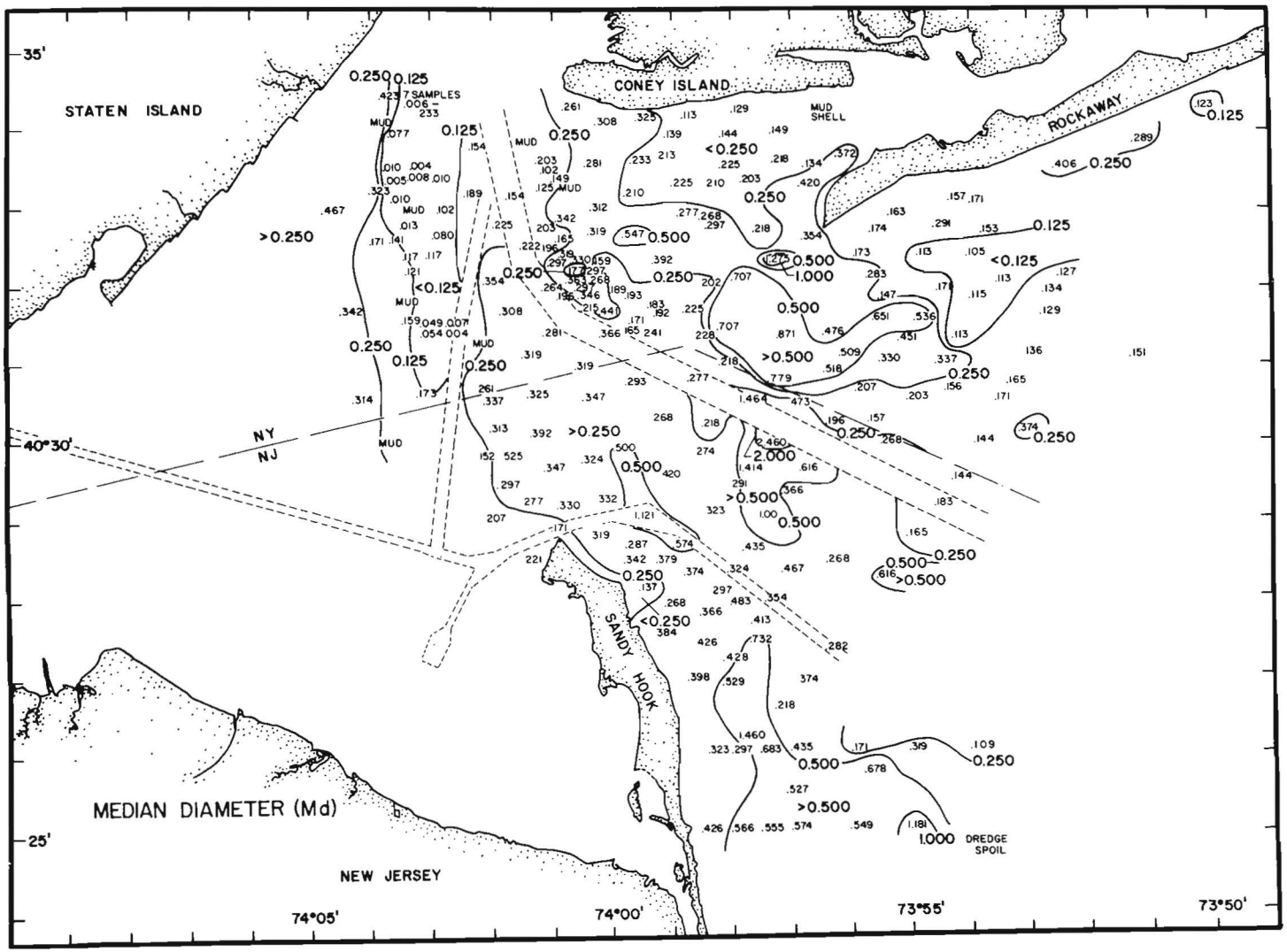

Fig. 4. Distribution of median particle diameter (mm)

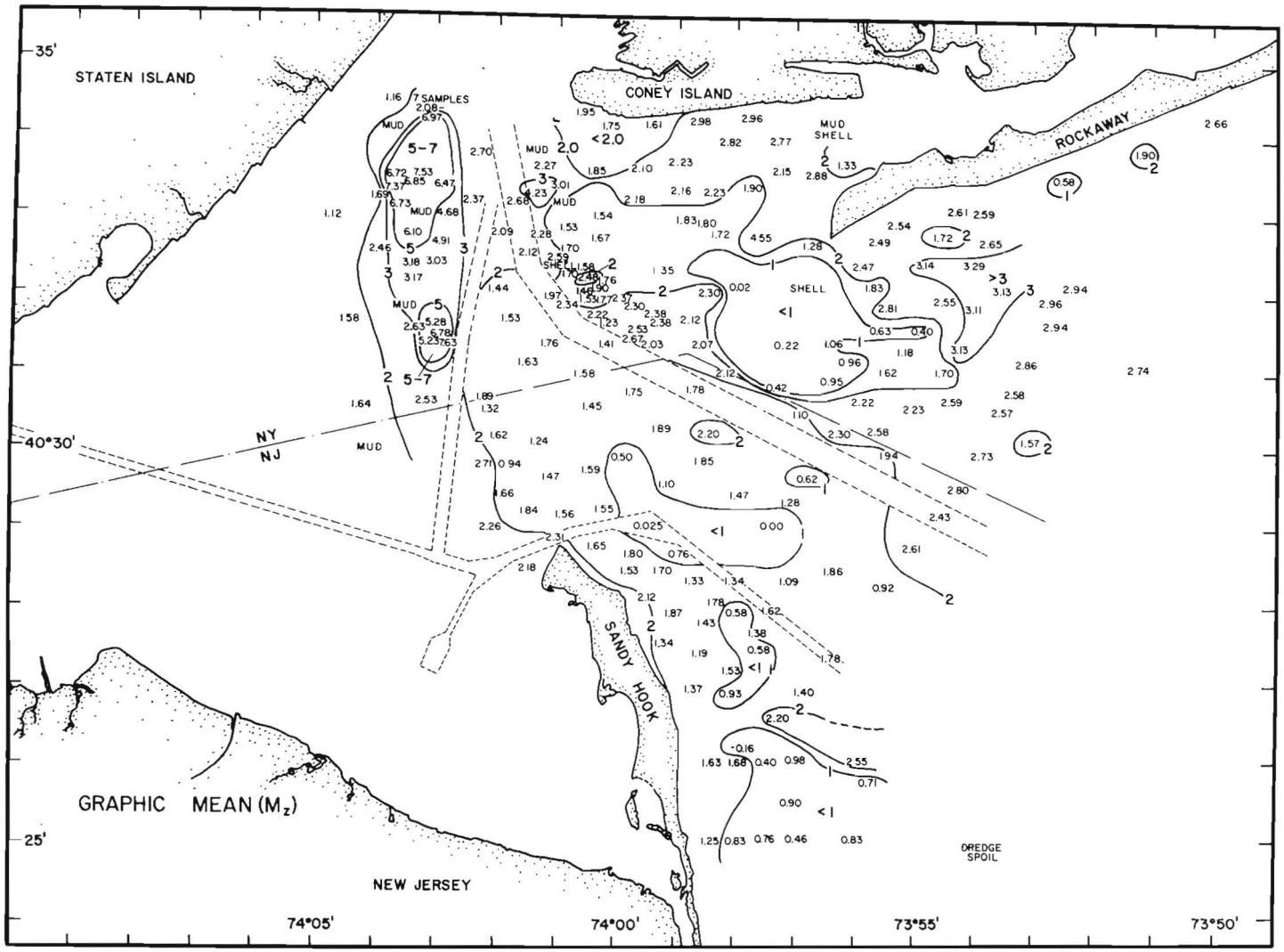

Fig. 5. Distribution of Folk's Graphic Mean; particle diameter (M_z) in ϕ-units

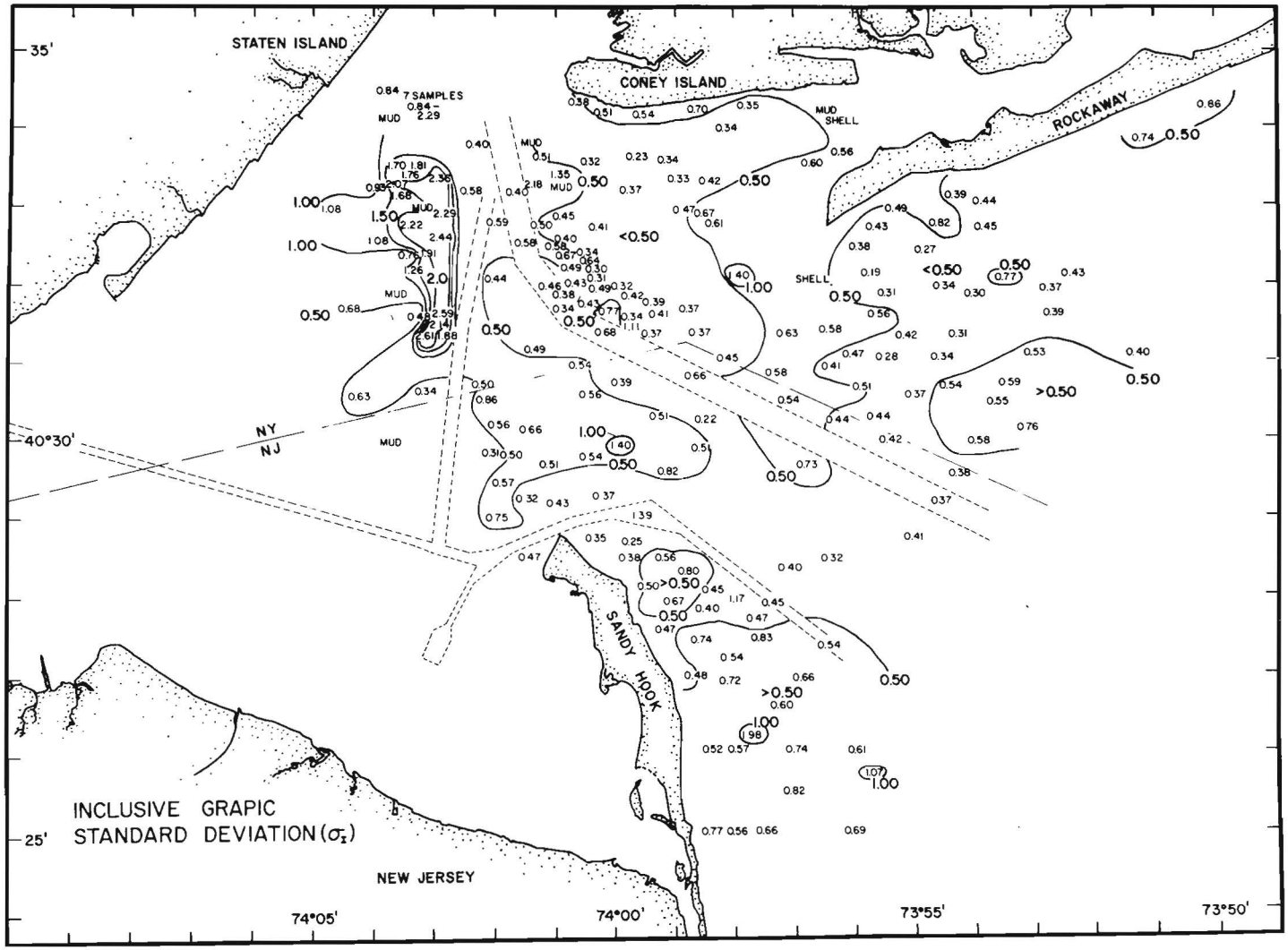

Fig. 6. Distribution of Folk's Inclusive Graphic Standard Deviation (σ_I) in ϕ-units

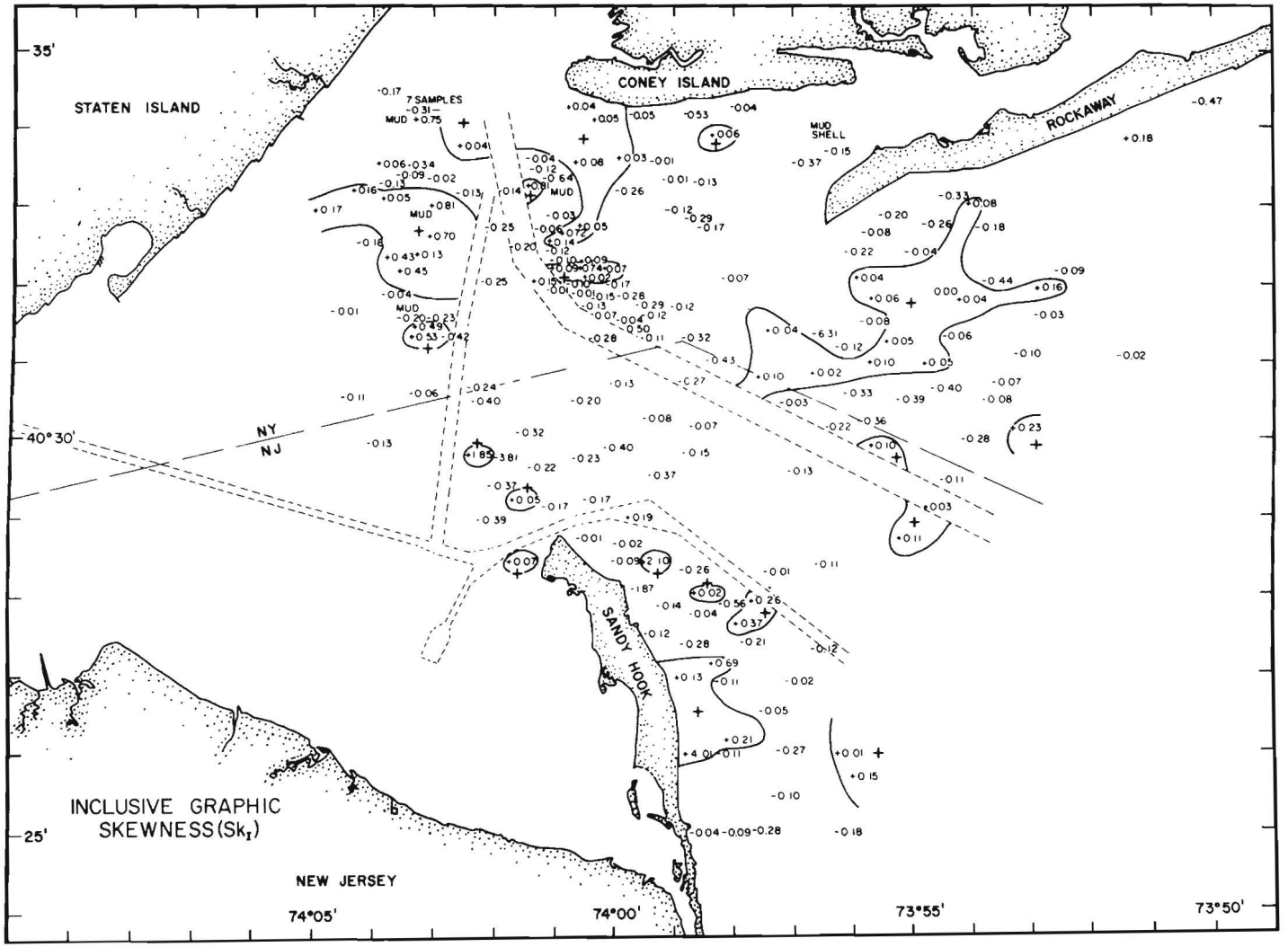

Fig. 7. Distribution of Folk's Inclusive Graphic Skewness (Sk_I)

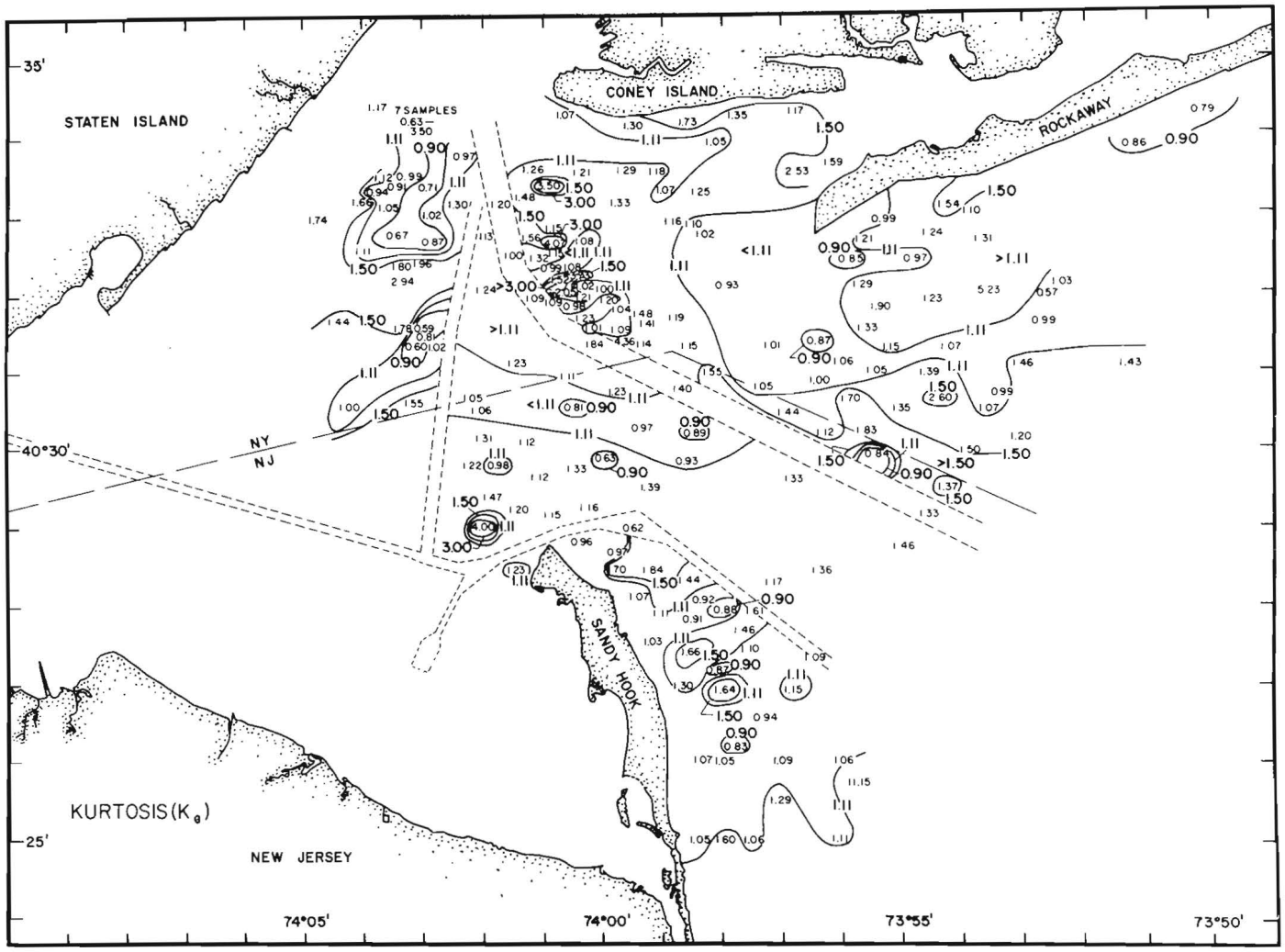

Fig. 8. Distribution of Folk's Graphic Kurtosis (K_G)

APPENDIX A

AREA TEXTURAL MAP

AREA SUMMARIES

AREA STATISTICS

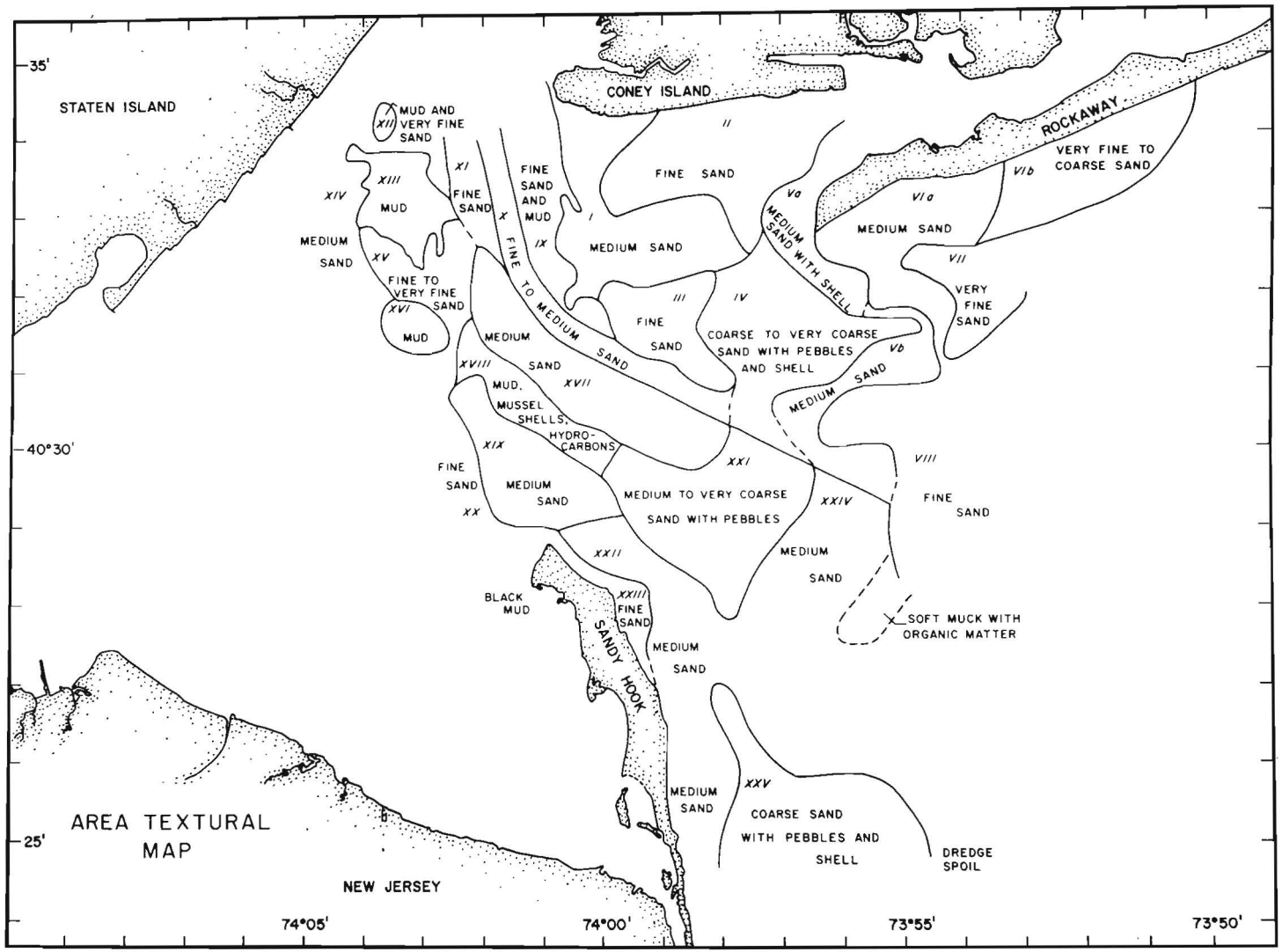

Fig. A-1. Area Textural Map

AREA I: MEDIUM SAND

EAST BANK (CENTRAL AND NORTHWESTERN PART)

Location:	This area includes the central section of East Bank, and the northwestern edge north to Coney Island. Water depths, in general, are less than 5.6 m.
Number of Samples:	16
Grain Size:	Average median diameter, 0.314 mm (medium sand). Range in median diameter, 0.159-0.547 mm (fine sand to coarse sand). Average grain size based upon central 68 percent of each sample, 0.308 mm (medium sand). Range, 0.258-0.392 mm (medium sand).
Grain Size Distribution:	Sand is very well sorted to moderately well sorted. Sediment samples containing several percent shell fragments are skewed toward the coarse sizes.
Coarse Fraction:	Consists of shell fragments, and amounts to only a few percent, in general.
Fine Fraction:	The amount of fine material in the sediment is insignificant, generally less than 1 percent.

TABLE A-1

AREA I: MEDIUM SAND

EAST BANK (CENTRAL & NORTHWESTERN PART)

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN M_z(ϕ)	INCLUSIVE GRAPHIC STANDARD DEVIATION σ_I(ϕ)	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
74-1	2.7	0.1 SH	97.3	2.6	0.261	1.95	0.38	+ 0.04	1.07
74-2	6.1	1.4	98.3	0.3	0.325	1.61	0.54	- 0.05	1.30
74-8	4.3	1.7	98.1	0.2	0.297	1.72	0.61	- 0.17	1.02
74-21	4.3	0.1	99.9	0.0	0.281	1.85	0.32	+ 0.08	1.21
74-22	5.5	6.2	93.8	<0.1	0.312	1.54	*	*	*
74-23	7.9	2.4	97.4	0.2	0.319	1.70	0.40	+ 0.14	1.15
76-5	4.3	0.3	99.4	0.3	0.308	1.75	0.51	+ 0.05	1.17
76-19	4.0	1.1	98.8	0.1	0.319	1.67	0.41	+ 0.05	1.08
76-20	4.3	<0.1	99.8	0.2	0.346	1.53	0.34	- 0.01	0.98
76-31	2.4	6.7	93.3	0.0	0.392	1.35	*	*	*
76-32	3.6	25.0	74.9	0.1	0.547	*	*	*	*
76-37	3.4	1.0	98.9	0.1	0.277	1.83	0.47	- 0.12	1.16
76-38	3.6	1.8	98.0	0.2	0.268	1.80	0.67	- 0.29	1.10
78-27	7.6	0.1 SH <0.1 P	99.2	0.8	0.330	1.58	0.34	- 0.09	1.08
78-35	3.7	0.0	99.0	1.0	0.297	1.76	0.30	+ 0.07	1.02
78-55	5.2	<0.1 SH 0.0 P	98.9	1.2	0.159	1.90	0.31	+ 0.02	1.08

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

AREA II: FINE SAND

EAST BANK (NORTHERN PART)

Location:	Northern part of East Bank directly south of Coney Island and west of Rockaway Inlet. Water depths vary between 2.4-6.1 m.
Number of Samples:	17
Grain Size:	Average median diameter, 0.185 mm (fine sand). Range in median diameter, 0.113-0.233 mm (very fine to medium sand). Average grain size based upon central 68 percent of each sample, 0.164 mm (fine sand). Range in grain size, 0.043-0.268 mm (silt to medium sand).
Grain Size Distribution:	On the average the sand is well sorted, with individual samples ranging from very well sorted to moderately well sorted. In general, the size distribution is slightly skewed towards the coarse end. This is due probably to the presence of considerable amounts of shell fragments in some samples.
Coarse Fraction:	Consists entirely of shell fragment with amount in individual samples varying from 0-28 percent.
Fine Fraction:	Averages less than 2 percent and consists mainly of silt-size mineral grains.
Remarks:	Two samples were not analyzed since they were composed predominantly of shell, silt, and clay. These two samples are located immediately offshore of the eastern end of Coney Island. The source of this fine sediment is almost certainly the marshes bordering Rockaway Inlet farther east.

TABLE A-2

AREA II: FINE SAND

EAST BANK (NORTHERN PART)

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
74-3	4.3	2.2 SH	93.1	4.7	0.113	2.98	0.70	- 0.53	1.73
74-4	3.0	2.7	95.6	1.7	0.129	2.96	0.35	- 0.04	1.35
74-5	3.4	S H E L L, S I L T A N D C L A Y					(N O T S I E V E D)		
74-6	6.1	4.8 SH	94.1	1.1	0.134	2.88	0.60	- 0.37	2.53
74-7	4.9	28.2 SH	71.4	0.4	0.225	*	*	*	*
76-1	3.0	S H E L L, S I L T A N D C L A Y					(N O T S I E V E D)		
76-2	5.2	7.2 SH	92.0	0.8	0.149	2.77	*	*	*
76-3	5.2	0.4 SH	99.1	0.5	0.144	2.82	0.34	+ 0.06	1.05
76-4	6.1	17.1 SH	80.0	2.9	0.139	*	*	*	*
76-33	4.0	0.0	99.9	0.1	0.210	2.18	0.37	- 0.26	1.33
76-34	2.4	0.0	99.7	0.3	0.233	2.10	0.23	+ 0.03	1.29
76-35	3.0	0.0	100.0	0.0	0.213	2.23	0.34	- 0.01	1.18
76-36	2.4	0.0	100.0	0.0	0.225	2.16	0.33	- 0.01	1.07
76-39	4.9	0.8 SH	99.0	0.2	0.210	2.23	0.42	- 0.13	1.25
76-40	4.9	13.6 SH	85.6	0.8	0.203	1.90	*	*	*
76-41	4.6	3.3	89.1	7.6	0.218	2.15	*	*	*
76-42	6.1	11.3 SH	88.5	0.2	0.218	4.55	*	*	*

* - Insufficient data to calculate statistical parameters
SH - Shell

AREA III: FINE SAND

EAST BANK (SOUTHERN PART)

Location:	Southern part of East Bank immediately to the north of Ambrose Channel. It includes a large part of the authorized commercial dredging area on East Bank. Except for dredge holes, water depth vary between 4.0-7.6 m. Within the dredge hole there are water depths of up to 22.9 m.
Number of Samples:	11
Grain Size:	Average median diameter, 0.201 mm (fine sand). Range in median diameter, 0.165-0.241 mm (fine sand). Average grain size based upon central 68 percent of each sample, 0.203 mm (fine sand). Range in grain size, 0.157-0.245 mm (fine sand).
Grain Size Distribution:	The sand is well sorted except for that represented in one sample, which was poorly sorted. The grain size distribution is slightly skewed towards the coarse end.
Coarse Fraction:	Represents less than 2 percent of the sediment, and consists mainly of shell fragments.
Fine Fraction:	Varies from 0-7.7 percent, and averages about 2 percent. Consists of particles of silt.

TABLE A-3

AREA III: FINE SAND

EAST BANK (SOUTHERN PART)

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN M_z (ϕ)	INCLUSIVE GRAPHIC STANDARD DEVIATION σ_I (ϕ)	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
74-9	4.0	1.8	93.0	5.2	0.202	2.30	*	*	*
74-26	4.6	0.0	99.1	0.9	0.193	2.30	0.42	- 0.28	1.04
74-27	4.6	0.9	99.1	0.0	0.228	2.07	0.37	- 0.32	1.15
76-24	5.5	0.0	98.4	1.6	0.171	2.53	0.34	- 0.04	1.09
76-25	5.5	0.0	99.9	0.1	0.241	2.03	0.37	- 0.11	1.14
76-26	4.6	1.8	98.1	0.1	0.218	2.12	0.45	- 0.43	1.55
76-30	4.9	0.0	99.9	0.1	0.225	2.12	0.37	- 0.12	1.19
77-10	22.9	0.0	96.8	3.2	0.192	2.38	0.41	+ 0.12	1.41
78-38	7.6	0.0	98.9	1.1	0.189	2.37	0.32	- 0.17	1.20
78-39	15.2	0.0	92.2	7.8	0.165	2.67	1.11	+ 0.50	4.36
78-40	5.5	0.1	99.0	0.9	0.183	2.38	0.39	- 0.29	1.43

* - Insufficient data to calculate statistical parameters

AREA IV: COARSE TO VERY COARSE SAND WITH PEBBLES AND SHELL

BETWEEN ROCKAWAY JETTY AND AMBROSE CHANNEL

Location:	This area is located south of Rockaway jetty, and extends to Ambrose Channel. It includes the south-eastern portion of East Bank. Water depths are variable, with a minimum of 4.3 m, and a maximum of 13.7 m.
Number of Samples:	14
Grain Size:	Average median diameter, 0.875 mm (coarse sand). Range in median diameter, 0.476->2.000 mm (medium sand to larger than very coarse sand). Average grain size based upon central 68 percent of each sample, 0.624 mm (coarse sand). Range in grain size, 0.441-0.986 mm (medium to coarse sand). For a number of samples it was impossible to determine this parameter because of the large percentage of coarse fraction. The values above should be considered as representative of the small end of the size distribution.
Grain Size Distribution:	Sand containing less than 5 percent coarse fraction is well sorted. It was not possible to determine the degree of sorting for those samples containing a large coarse fraction. However, there is some indication that they are poorly sorted. Grain size distribution is symmetrical in those samples containing less than 5 percent coarse fraction.
Coarse Fraction:	Seven of the samples contain 15 percent or more coarse fraction, with a maximum of 54 percent. Many samples contain a significant amount of small rounded pebbles. Shell fragments constitute up to 40 percent of the coarse fraction.
Fine Fraction:	In general, represents less than 2 percent of the sediment.
Remarks:	This area is significant in that the sediment contains a significant percent of coarse aggregate as small rounded pebbles.

TABLE A-4

AREA IV: COARSE TO VERY COARSE SAND WITH PEBBLES AND SHELL

BETWEEN ROCKAWAY JETTY AND AMBROSE CHANNEL

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE		% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN M_z (¢)	INCLUSIVE GRAPHIC STANDARD DEVIATION σ_I (¢)	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-20	7.0	13.4 SH	7.2 P	76.9	2.5	0.707	0.02	1.40	- 0.07	0.93
73-21	7.3	0.2 SH	1.8 P	97.5	0.3	0.476	1.06	0.58	- 6.31	0.87
73-36	4.9	0.2 SH	1.8 P	97.3	0.7	0.779	0.42	0.58	+ 0.10	1.05
76-27	13.7	0.0 SH	45.7 P	53.6	0.7	1.464	*	*	*	*
76-28	6.4	0.1 SH	2.7 P	97.1	0.1	0.871	0.22	0.63	+ 0.04	1.01
76-29	4.3	0.8 SH	24.5 P	74.6	0.1	0.707	*	*	*	*
76-43	7.3	29.3 SH	18.0 P	51.9	0.8	1.275	*	*	*	*
76-44	7.3	39.8 SH	14.7 P	43.6	1.8	>2.000	*	*	*	*
76-45	7.9	S H E L L A N D P E B B L E S						(N O T S I E V E D)		
77-15	9.1	N O T S I E V E D								
77-16	9.8	0.3 SH	3.7 P	96.0	0.0	0.651	0.63	0.56	- 0.08	1.33
77-17	8.2	1.5 SH	0.2 P	98.3	0.0	0.509	0.96	0.47	- 0.12	1.06
77-18	6.1	0.1 SH	0.3 P	99.6	0.0	0.518	0.95	0.41	+ 0.02	1.00
77-69	10.7	15.8 SH		84.0	0.2	0.540	1.18	0.42	+ 0.05	1.15

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

AREA Va: MEDIUM SAND WITH SHELL

ROCKAWAY INLET

Location:	Main Channel, Rockaway Inlet.
Number of Samples:	4
Grain Size:	Average median diameter, 0.362 mm (medium sand). Range in median diameter, 0.283-0.420 mm (medium sand). Average grain size based upon central 68 percent of each sample, 0.358 mm (medium sand). Range in grain size, 0.281-0.412 mm (medium sand).
Grain Size Distribution:	Sediment is moderately well sorted, and is slightly skewed towards the coarser sizes.
Coarse Fraction:	Varies from 0-29 percent, and consists of shell fragments.
Fine Fraction:	Constitutes less than 2 percent of sediment.

TABLE A-5

AREA Va: MEDIUM SAND WITH SHELL

ROCKAWAY INLET

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
76-46	7.0	10.4 SH	89.5	0.1	0.354	1.28	*	*	*
76-47	5.7	29.3 SH	69.4	1.3	0.420	*	*	*	*
76-48	10.0	3.7 SH	95.9	0.4	0.392	1.33	0.56	- 0.15	1.59
77-14	4.6	0.0	100.0	0.0	0.283	1.83	0.19	+ 0.04	1.29

* - Insufficient data to calculate statistical parameters
SH - Shell

AREA Vb: MEDIUM SAND

SOUTH OF ROCKAWAY JETTY

Location:	A narrow band extending from Area Va to Ambrose Channel.
Number of Samples:	5
Grain Size:	Average median diameter, 0.372 mm (medium sand). Range in median diameter, 0.268-0.473 mm (medium sand). Average grain size based upon central 68 percent of each sample, 0.351 mm (medium sand). Range, 0.261-0.466 mm (medium sand).
Grain Size Distribution:	Sand is very well sorted to moderately well sorted, with no significant skewness.
Coarse Fraction:	Constitutes less than 2 percent of sediment, and includes both small rounded pebbles and shell fragments.
Fine Fraction:	In general, represents 0.1 percent or less of the sediment.

TABLE A-6

AREA Vb: MEDIUM SAND

SOUTH OF ROCKAWAY JETTY

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md (mm)	GRAPHIC MEAN M_z (ϕ)	INCLUSIVE GRAPHIC STANDARD DEVIATION σ_I (ϕ)	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-22	8.5	0.0†	98.5	1.5	0.330	1.62	0.28	+ 0.10	1.05
77-19	4.6	0.7 SH&P	99.3	0.0	0.473	1.10	0.54	- 0.03	1.44
77-70	9.1	1.5 SH&P	98.5	<0.1	0.451	1.18	0.42	+ 0.05	1.15
77-73	12.2	0.2 P	99.7	0.1	0.268	1.94	0.42	+ 0.10	0.84
77-75	9.1	0.9 SH	99.1	0.1	0.337	1.70	0.34	+ 0.05	1.39

† - Coarse fractions reported as 0.0% may be ≤5.0%
SH - Shell
P - Pebble

AREA VIa: FINE SAND

OFF ROCKAWAY BEACH

Location:	Parallels Rockaway Beach, and extends southward off the western end of Rockaway Beach.
Number of Samples:	10
Grain Size:	Average median diameter, 0.178 mm (fine sand). Range in median diameter, 0.147-0.291 mm (fine to medium sand). Average grain size based upon central 68 percent of each sample, 0.178 mm (fine sand). Range 0.143-0.304 mm (fine to medium sand).
Grain Size Distribution:	In general, sand is well sorted, and is slightly skewed towards the coarser sizes.
Coarse Fraction:	Represents less than 1 percent of sediment in the majority of samples. Consists of shell fragments with a trace of small pebbles.
Fine Fraction:	Constitutes less than 1 percent.

TABLE A-7

AREA VIa: FINE SAND

OFF ROCKAWAY BEACH

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-25	5.8	0.0†	98.7	1.3	0.147	2.81	0.31	+ 0.06	1.90
73-26	5.5	0.0†	99.4	0.6	0.173	2.47	0.38	- 0.22	0.85
73-27	5.2	0.0†	99.4	0.6	0.163	2.54	0.49	- 0.20	0.99
73-30	7.9	0.0†	99.5	0.5	0.153	2.65	0.45	- 0.18	1.31
73-31	4.6	0.0†	99.9	0.1	0.157	2.61	0.39	- 0.33	1.54
74-10	5.8	0.3	99.3	0.4	0.171	2.59	0.44	+ 0.08	1.10
77-11	6.7	1.4 SH	98.0	0.6	0.174	2.49	0.43	- 0.08	1.21
77-12	6.7	4.3 SH	95.4	0.2	0.291	1.72	0.82	- 0.26	1.24
77-13	9.1	N O T S I E V E D							
77-68	8.5	0.4 SH&P	99.4	0.2	0.171	2.55	0.34	0.00	1.23

† - Coarse fractions reported as 0.0% may be ≤5.0%
SH - Shell
P - Pebble

AREA VIb: VERY FINE TO MEDIUM SAND

EASTERN END ROCKAWAY BEACH

Location:	Parallels eastern end of Rockaway Beach.
Number of Samples:	3
Grain Size:	Average median diameter, 0.273 mm (medium sand). Range in median diameter, 0.123-0.406 mm (very fine to medium sand). Average grain size based upon central 68 percent of each sample, 0.306 mm (medium sand). Range, 0.158-0.669 mm (fine to coarse sand).
Grain Size Distribution:	Sand is moderately well sorted, and is skewed towards the coarser sizes.
Coarse Fraction:	One sample contains 14.3 percent small pebbles and 2.5 percent shell fragments. The other samples contain less than 2 percent coarse fraction.
Fine Fraction:	Varies from 0.2-3.9 percent.
Remarks:	Sediment characteristics vary considerable in this small area.

TABLE A-8

AREA VIb: VERY FINE TO COARSE SAND

EASTERN END ROCKAWAY BEACH

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
74-11	5.5	2.5 SH 14.3 P	83.0	0.2	0.406	0.58	*	*	*
74-12	6.1	1.4	97.4	1.2	0.289	1.90	0.74	+ 0.18	0.86
74-13	6.4	0.2	95.9	3.9	0.123	2.66	0.86	- 0.47	0.79

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

AREA VII: VERY FINE SAND

OFF ROCKAWAY BEACH

Location:	Parallels Rockaway Beach seaward of Area VIa.
Number of Samples:	5
Grain Size:	Average median diameter, 0.112 mm (very fine sand). Range in median diameter, 0.105-0.115 mm (very fine sand). Average grain size based upon central 68 percent of each sample, 0.112 mm (very fine sand). Range, 0.102-0.116 mm (very fine sand).
Grain Size Distribution:	In general, sediment is very well sorted with no significant skewness.
Coarse Fraction:	Most samples contain less than 0.1 percent coarse fraction. One sample contains 4.7 percent shell.
Fine Fraction:	Varies from 0.5-8.2 percent, and consists of silt size mineral grains.

TABLE A-9

AREA VII: VERY FINE SAND

OFF ROCKAWAY BEACH

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-24	10.4	0.0†	98.7	1.3	0.113	3.13	0.31	- 0.06	1.07
73-28	8.8	0.0†	99.5	0.5	0.113	3.14	0.27	- 0.04	0.97
73-29	8.8	0.0†	98.9	1.1	0.115	3.11	0.30	+ 0.04	1.10
77-67	12.2	<0.1 SH	91.8	8.2	0.105	3.29	*	*	*
77-76	9.8	4.7 SH	93.5	1.8	0.113	3.13	0.77	- 0.44	5.23

† - Coarse fractions reported as 0.0% may be ≤5.0%
* - Insufficient data to calculate statistical parameters
SH - Shell

AREA VIII: FINE SAND

SOUTH OF ROCKAWAY BEACH

Location:	Fairly large area on the inner continental shelf seaward of Rockaway Beach.
Number of Samples:	17
Grain Size:	Average median diameter, 0.173 mm (fine sand). Range in median diameter, 0.127-0.374 mm (fine to medium sand). Average grain size based upon central 68 percent of each sample, 0.168 mm (fine sand). Range, 0.128-0.337 mm (fine to medium sand).
Grain Size Distribution:	Sand is well sorted to moderately well sorted. The majority of the samples are slightly skewed towards the coarser sizes.
Coarse Fraction:	Sediment, in general, contains less than 1 percent coarse fraction, with a maximum of 3.3 percent in one sample. Shell fragments are predominant, with a trace of small pebbles.
Fine Fraction:	Ranges from 0.1-3.3 percent. Consists mainly of silt size mineral grains.

TABLE A-10

AREA VIII: FINE SAND

SOUTH OF ROCKAWAY BEACH

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN M_z(ϕ)	INCLUSIVE GRAPHIC STANDARD DEVIATION σ_I(ϕ)	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-23	9.4	0.0†	99.8	0.2	0.156	2.59	0.54	- 0.40	2.60
73-32	10.7	0.0†	97.0	3.0	0.134	2.96	0.37	+ 0.16	0.57
73-33	12.5	0.0†	99.1	0.9	0.151	2.74	0.40	- 0.02	1.43
73-34	12.2	0.9	98.3	0.8	0.374	1.57	0.76	+ 0.23	1.20
73-35	10.1	0.0†	99.5	0.5	0.157	2.58	0.44	- 0.36	1.83
77-62	17.7	0.7 SH&P	95.9	3.3	0.165	2.61	0.41	+ 0.11	1.46
77-63	15.2	0.2 SH	98.4	1.4	0.183	2.43	0.37	+ 0.03	1.33
77-64	15.2	0.4	97.4	2.2	0.144	2.80	0.38	- 0.11	1.37
77-65	10.7	0.9 SH	97.1	2.0	0.144	2.73	0.58	- 0.28	1.50
77-66	10.7	0.5 SH	97.7	1.8	0.171	2.57	0.55	- 0.08	1.07
77-71	9.8	3.3 SH&P	96.5	0.2	0.207	2.22	0.51	- 0.33	1.70
77-72	11.3	0.1 SH	99.8	0.1	0.196	2.30	0.44	- 0.22	1.12
77-74	9.4	2.2 SH	97.6	0.2	0.203	2.23	0.37	- 0.39	1.35
77-77	11.6	2.1 SH	94.9	3.0	0.127	2.94	0.43	- 0.09	1.03
77-78	12.2	0.1 SH	97.9	2.0	0.129	2.94	0.39	- 0.03	0.99
77-79	11.0	1.5 SH	95.4	3.1	0.136	2.86	0.53	- 0.10	1.46
77-80	11.3	0.3 SH	97.9	1.8	0.165	2.58	0.59	- 0.07	0.99

† - Coarse fractions reported as 0.0% may be ≤5.0%
SH - Shell
P - Pebble

AREA IX: FINE SAND AND MUD

BETWEEN AMBROSE CHANNEL AND EAST BANK

Location:	Long narrow band between the western edge of East Bank and Ambrose Channel.
Number of Samples:	19
Grain Size:	Average median diameter, 0.227 mm (fine sand). Range in median diameter, 0.102-0.441 mm (very fine to medium sand). Average grain size based upon central 68 percent of each sample, 0.193 mm (fine sand). Range, 0.053-0.426 mm (silt to medium sand).
Grain Size Distribution:	Uniformity of grain sizes is variable with a range in sorting from well sorted to very poorly sorted. Some samples are skewed towards the finer sizes, and others are skewed towards the coarser end.
Coarse Fraction:	In general, sediment contains less than 1 percent coarse fraction, which consists of shell fragments and small pebbles.
Fine Fraction:	Varies in amount from 1.0-34.8 percent with an average of 6.6 percent.
Remarks:	Two samples were not analyzed because they consisted mainly of mud, and a third sample consisting of all shell was not sieved. There appears to be considerable mixing of sediment types within this area with some influx of mud from the Hudson River.

TABLE A-11

AREA IX: FINE SAND AND MUD

BETWEEN AMBROSE CHANNEL AND EAST BANK

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE		% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
74-20	10.4	0.6		64.6	34.8	0.102	*	*	*	*
76-6	9.1	M U C K						(N O T S I E V E D)		
76-18	10.0	S I L T A N D C L A Y						(N O T S I E V E D)		
78-22	7.9	0.4 SH	0.0 P	72.7	27.3	0.125	4.23	2.18	+ 0.81	1.48
78-23	10.7	<0.1 SH	0.0 P	85.3	14.7	0.149	3.01	1.35	+ 0.64	3.50
78-24	13.7	0.2 SH	0.1 P	98.5	1.4	0.342	1.53	0.45	- 0.03	1.15
78-25	11.3	1.0 SH	1.4 P	95.6	3.0	0.203	2.28	0.50	- 0.06	1.56
78-26	21.3	0.1 SH	0.1 P	98.5	1.4	0.297	1.70	0.67	- 0.10	0.99
78-31	7.9	0.2 SH	0.2 P	98.0	1.8	0.203	2.27	0.51	- 0.04	1.26
78-33		A L L S H E L L						(N O T S I E V E D)		
78-34	22.9	<0.1 SH	0.0 P	99.0	1.0	0.196	2.34	0.38	- 0.01	1.09
78-36	16.8	0.5 SH	0.1 P	98.8	1.1	0.297	1.77	0.49	- 0.15	1.21
78-37	19.8	<0.1 SH	0.1 P	98.5	1.2	0.215	2.22	0.43	- 0.13	1.23
78-46	20.4	0.1 SH	0.0 P	81.7	18.3	0.165	3.28	1.79	+ 0.72	4.07
78-47	22.3	<0.1 SH	0.0 P	95.9	4.2	0.177	2.48	0.49	+ 0.09	1.52
78-53	13.7	0.1 SH	0.0 P	97.4	2.7	0.196	2.53	0.58	- 0.12	1.32
78-54	22.3	0.1 SH	0.0 P	82.0	18.0	0.159	3.23	1.64	+ 0.74	3.73
78-56	15.2	0.6 SH	0.0 P	98.2	1.0	0.363	1.46	0.43	- 0.10	2.05
78-57	19.8	0.4 SH	1.3 P	97.5	1.2	0.441	1.23	0.77	+ 0.07	1.01

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

AREA X: FINE TO MEDIUM SAND

AMBROSE CHANNEL

Location:	Within Ambrose Channel at its upper end.
Number of Samples:	5
Grain Size:	Average median diameter, 0.257 mm (medium sand). Range in median diameter, 0.154-0.366 mm (fine to medium sand). Average grain size based upon central 68 percent of sample, 0.252 mm (medium sand). Range, 0.156-0.376 mm (fine to medium sand).
Grain Size Distribution:	Sediment is well sorted to moderately well sorted, and is generally skewed towards the coarser sizes.
Coarse Fraction:	Averages less than 2 percent, with the exception of one sample containing 4.2 percent.
Fine Fraction:	Represents less than 1 percent of the sediment.

TABLE A-12

AREA X: FINE TO MEDIUM SAND

AMBROSE CHANNEL

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
74-24	13.7	0.2	99.7	0.1	0.264	1.97	0.46	+ 0.15	1.09
74-25	13.7	4.2	95.7	0.1	0.366	1.41	0.68	- 0.28	1.84
74-28	13.7	1.7	98.3	<0.1	0.277	1.78	0.66	- 0.27	1.40
76-17	13.7	0.3	98.9	0.8	0.154	2.68	0.40	- 0.14	1.20
77-9	13.7	0.3	99.6	0.1	0.222	2.12	0.58	- 0.20	1.00

AREA XI: FINE SAND

BETWEEN AMBROSE CHANNEL AND WEST BANK

Location:	Small area immediately west of the northern end of Ambrose Channel.
Number of Samples:	3
Grain Size:	Average median diameter, 0.189 mm (fine sand). Range in median diameter, 0.154-0.225 mm (fine sand). Average grain sizes based upon central 68 percent of each sample, 0.191 mm (fine sand). Range, 0.154-0.235 mm (fine sand).
Grain Size Distribution:	Sediment in moderable well sorted, with a slight skewness towards the coarser sizes.
Coarse Fraction:	Amounts to less than 1 percent, and consists of shell fragments and small pebbles.
Fine Fraction:	Varies from less than 1 percent to 3.1 percent.

TABLE A-13

AREA XI: FINE SAND

BETWEEN AMBROSE CHANNEL AND WEST BANK

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
76-7	10.0	0.0	98.3	1.7	0.154	2.70	0.40	+ 0.04	0.97
77-7	8.5	0.4 SH&P	96.5	3.1	0.189	2.37	0.58	- 0.13	1.30
77-8	7.6	0.7 SH&P	99.2	0.1	0.225	2.09	0.59	- 0.25	1.13

SH - Shell
P - Pebble

AREA XII: MUD AND VERY FINE SAND

NORTHERN DREDGE HOLE, WEST BANK

Location:	Small dredge hole at the northern end of West Bank. In general, water depths exceed 10 m.
Number of Samples:	10
Grain Size:	Average median diameter, 0.068 mm (very fine sand). Range in median diameter, 0.006-0.233 mm (fine silt to fine sand). Average grain size based upon central 68 percent of each sample, 0.028 mm (silt). Range, 0.008-0.236 mm (fine silt to fine sand).
Grain Size Distribution:	In general, the sediment is poorly sorted to very poorly sorted. The majority of the samples are skewed towards the finer sizes.
Coarse Fraction:	Constitutes less than 1 percent, and consists of shell fragments.
Fine Fraction:	In general, silt and clay comprise more than 50 percent of the sediment.
Remarks:	Black mud carried by the Hudson River is accumulating in the former dredge hole.

TABLE A-14

AREA XII: MUD AND VERY FINE SAND

NORTHERN DREDGE HOLE, WEST BANK

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
76-8	9.8	S I L T A N D C L A Y					(N O T S I E V E D)		
77-1	12.2	<0.1 SH&P	29.0	71.0	*	*	*	*	*
77-3	11.6	<0.1 SH	51.6	48.4	0.077	*	*	*	*
78-8	10.0	0.1 SH 0.0 P	72.8	27.2	0.098	4.18	1.84	+ 0.75	1.68
78-9	11.3	<0.1 SH 0.0 P	11.4	88.6	0.009	6.25	2.19	+ 0.57	0.96
78-15	12.2	0.1 SH 0.0 P	16.2	83.8	0.006	6.97	2.29	- 0.31	0.71
78-16	12.2	0.1 SH 0.0 P	27.6	72.4	0.012	6.18	2.79	- 0.10	0.71
78-28	7.6	0.2 SH 0.0 P	26.2	73.8	0.038	5.58	1.92	+ 0.47	0.46
78-41	10.4	0.1 SH 0.0 P	95.3	4.6	0.233	2.08	0.84	+ 0.04	1.12
78-48	12.2	0.1 SH 0.0 P	49.2	50.8	0.067	5.03	2.35	+ 0.63	0.63

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

AREA XIII: MUD

LARGE DREDGE HOLE, WEST BANK

Location:	Large dredge hole cut in West Bank. Water depths are greater than 7.6 m.
Number of Samples:	11
Grain Size:	Average median diameter, 0.029 mm (silt). Range in median diameter, 0.004-0.102 mm (clay to very fine sand). Average grain size based upon central 68 percent of each sample, 0.012 mm (fine silt). Range, 0.005-0.039 mm (very fine silt to coarse silt).
Grain Size Distribution:	The sediment is poorly to very poorly sorted. Skewness is variable ranging from strongly coarse-skewed to strongly fine-skewed.
Coarse Fraction:	Negligable; 0.1 percent or less, consisting of shell fragments.
Fine Fraction:	Many samples are 90-95 percent mud, and all contain more than 33 percent mud.
Remarks:	Three samples were not sieved as they consisted mainly of mud. Mud carried by the Hudson River is accumulating in the hole created by dredging.

TABLE A-15

AREA XIII: MUD

LARGE DREDGE HOLE, WEST BANK

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE		% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
76-15	8.8	M U C K						(N O T S I E V E D)		
76-16	7.6	M U C K						(N O T S I E V E D)		
77-4	9.1	M U D						(N O T S I E V E D)		
78-11	9.1	0.0 SH	0.0 P	4.8	95.2	0.010	6.72	1.70	+ 0.06	1.12
78-12	10.0	0.1 SH	0.0 P	4.4	95.6	0.010	6.73	1.68	+ 0.05	1.05
78-17	8.5	0.0 SH	0.0 P	21.5	78.5	0.010	6.47	2.36	- 0.02	0.71
78-20	12.2	<0.1 SH	0.0 P	61.8	38.2	0.080	4.91	2.44	+ 0.70	0.87
78-29	7.6	0.0 SH	0.0 P	7.5	92.5	0.005	7.37	2.07	- 0.13	0.94
78-30	12.2	0.1 SH	0.0 P	66.6	33.4	0.102	4.68	2.29	+ 0.81	1.02
78-42	9.1	0.0 SH	0.0 P	6.7	93.3	0.008	6.85	1.76	- 0.09	0.91
78-49	9.1	0.0	0.0	5.4	94.5	0.004	7.53	1.81	- 0.34	0.99

SH - Shell
P - Pebble

AREA XIV: MEDIUM SAND

OLD ORCHARD SHOAL

Location:	Eastern portion of Old Orchard Shoal. Water depths are 5.5 m or less.
Number of Samples:	4
Grain Size:	Average median diameter, 0.389 mm (medium sand). Range in median diameter, 0.323-0.467 mm (medium sand). Average grain size based upon central 68 percent of each sample, 0.382 mm (medium sand). Range, 0.310-0.460 mm (medium sand).
Grain Size Distribution:	The sand is moderately sorted to poorly sorted, and in general, is slightly skewed towards the finer sizes.
Coarse Fraction:	Shell fragments and small pebbles constitute less than 3 percent of the sediment.
Fine Fraction:	Amounts to 5 percent or less of the sediment.
Remarks:	The samples included in this area are widely scattered. Additional samples, more closely spaced, are required to accurately determine the sediment characteristics of Old Orchard Shoal.

TABLE A-16

AREA XIV: MEDIUM SAND

OLD ORCHARD SHOAL

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
76-9	4.0	2.6 P	92.5	4.9	0.467	1.12	1.08	+ 0.17	1.74
76-10	4.0	1.9	96.2	1.9	0.342	1.58	0.68	+ 0.18	1.44
77-2	5.5	2.6 SH&P	97.0	0.4	0.423	1.16	0.84	- 0.17	1.17
77-5	3.6	1.6 SH&P	93.4	5.0	0.323	1.69	0.93	+ 0.16	1.66

SH - Shell
P - Pebble

AREA XV: FINE TO VERY FINE SAND

SOUTHERN EDGE OF LARGE DREDGE HOLE

Location:	Narrow section of Old Orchard Shoal which borders the southern edge of the large dredge hole. Water depths vary from 3.7 m-10.7 m.
Number of Samples:	6
Grain Size:	Average median diameter, 0.133 mm (fine sand). Range in median diameter, 0.117-0.171 mm (very fine sand to fine sand). Average grain size based upon central 68 percent of each sample, 0.128 mm (fine sand). Range, 0.110-0.182 mm (very fine sand to fine sand). One sample, 78-18, has been excluded from the computation of the above values as it probably represents sediment from the adjacent dredge hole. The median diameter of this sample is 0.013 mm (fine silt).
Grain Size Distribution:	The sediment is moderately sorted to poorly sorted, and is skewed towards the finer sizes.
Coarse Fraction:	Small pebbles and shell fragments comprise less than 2 percent of the sediment.
Fine Fraction:	Silt and clay size material represent a significant amount of the sediment. The percentage of fine fraction varies from 4.5-16.8 percent, except for sample 78-18. The percentage in this sample is 74.1 percent.

TABLE A-17

AREA XV: FINE TO VERY FINE SAND

SOUTHERN EDGE OF LARGE DREDGE HOLE

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md (mm)	GRAPHIC MEAN M_Z (ϕ)	INCLUSIVE GRAPHIC STANDARD DEVIATION σ_I (ϕ)	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
77-6	4.6	1.6 SH&P	87.8	10.6	0.141	*	*	*	*
78-13	3.7	0.7 SH 0.4 P	95.1	4.5	0.171	2.46	1.08	- 0.18	1.11
78-14	4.9	1.1 SH 1.9 P	81.2	16.8	0.117	3.03	1.91	+ 0.13	1.96
78-18	10.7	0.7 SH 0.0 P	25.9	74.1	0.013	6.10	2.22	- 0.02	0.67
78-19	4.9	0.6 SH 0.1 P	93.7	6.2	0.117	3.18	0.76	+ 0.43	1.80
78-50	6.1	1.3 SH 0.0 P	87.1	12.8	0.121	3.17	1.26	+ 0.45	2.94

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

AREA XVI: MUD AND VERY FINE SAND

BETWEEN CHAPEL HILL CHANNEL AND OLD ORCHARD SHOAL

Location:	This is a small area located about midway along Chapel Hill Channel, between the channel and Old Orchard Shoal. With one exception, water depths exceed 14 m.
Number of Samples:	6
Grain Size:	Average median diameter, 0.055 mm (coarse silt). Range in median diameter, 0.004-0.159 mm (very fine silt to fine sand). Average grain size based upon central 68 percent of each sample, 0.022 mm (medium silt). Range, 0.005-0.162 mm, (very fine silt to fine sand).
Grain Size Distribution:	In general, the sediment is poorly sorted to very poorly sorted. Skewness values indicate sediment is variable, with some samples skewed towards the coarser sizes and other samples skewed towards the finer sizes.
Coarse Fraction:	The majority of the sediment samples contain no coarse fraction. One sample, 78-45, has a coarse fraction amounting to 9.6 percent consisting of shell fragments and small pebbles.
Fine Fraction:	With the exception of one sample which contains only 1.9 percent, the fine fraction constitutes 51-94 percent of the sediment. One sample was not sieved because it is predominantly silt and clay.
Remarks:	The data suggest that the sediment in this area is derived from more than one source, and that mixing of sediment types is continuing.

TABLE A-18

AREA XVI: MUD AND VERY FINE SAND

BETWEEN CHAPEL HILL CHANNEL AND OLD ORCHARD SHOAL

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE		% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN M_z (ϕ)	INCLUSIVE GRAPHIC STANDARD DEVIATION σ_I (ϕ)	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
76-14	5.8	S I L T		A N D	C L A Y			(N O T	S I E V E D)	
78-21	18.3	0.0 SH	0.0 P	48.7	51.3	0.054	5.23	2.61	+ 0.53	0.60
78-43	19.8	0.0 SH	0.0 P	6.4	93.6	0.004	7.63	1.88	- 0.42	1.02
78-44	18.9	0.0 SH	0.0 P	13.9	86.1	0.007	6.78	2.14	- 0.23	0.81
78-45	14.3	7.2 SH	2.4 P	95.0	1.9	0.159	2.63	0.48	- 0.20	1.78
78-52	16.8	0.1 SH	0.0 P	47.6	52.2	0.049	5.28	2.59	+ 0.49	0.59

SH - Shell
P - Pebble

AREA XVII: MEDIUM SAND

ROMER SHOAL

Location:	Elongated shoal that parallels Ambrose Channel to the west. Water depths vary from 3.0-6.1 m.
Number of Samples:	10
Grain Size:	Average median diameter, 0.298 mm (medium sand). Range in median diameter, 0.218-0.354 mm (fine sand to medium sand). Average grain size based upon central 68 percent of each sample, 0.306 mm (medium sand). Range, 0.218-0.368 mm (fine sand to medium sand).
Grain Size Distribution:	The sand is well sorted, with a slight skewness towards the coarser sizes.
Coarse Fraction:	A coarse fraction consisting of shell fragments and small pebbles comprises less than 1 percent in the majority of the samples. In two samples it amounts to 6-8 percent.
Fine Fraction:	Constitutes less than 1 percent of the sediment.
Remarks:	The sediment is essentially a clean medium sand with little or no coarse or fine fractions.

TABLE A-19

AREA XVII: MEDIUM SAND

ROMER SHOAL

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md (mm)	GRAPHIC MEAN M_z (ϕ)	INCLUSIVE GRAPHIC STANDARD DEVIATION σ_I (ϕ)	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
74-19	4.9	0.0	99.5	0.5	0.354	1.44	0.44	- 0.25	1.24
74-29	4.6	0.1	99.6	0.3	0.268	1.89	0.51	- 0.08	0.97
76-21	4.6	8.0	91.7	0.3	0.308	1.53	*	*	*
76-22	4.0	0.8	99.1	0.1	0.319	1.63	0.49	- 0.13	1.23
76-23	4.3	1.8	98.1	0.1	0.319	1.58	0.54	- 0.23	1.11
77-27	6.1	<0.1 SH&P	99.9	0.0	0.274	1.85	0.51	- 0.15	0.93
77-28	4.6	0.0	100.0	0.0	0.218	2.20	0.22	- 0.07	0.89
77-29	5.5	0.3 SH	99.6	0.1	0.293	1.75	0.39	- 0.13	1.23
77-30	4.6	6.1 SH&P	93.7	0.2	0.281	1.76	*	*	*
77-44	3.0	0.2 SH&P	99.8	<0.1	0.347	1.45	0.56	- 0.20	0.81

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

AREA XVIII: MUD, MUSSEL SHELLS, AND HYDROCARBONS

SWASH CHANNEL

This is a natural, narrow, elongated depression between Romer Shoal and Flynns Knoll. Three samples taken within this area indicate the bottom is a mixture of mud and sand, with mussel beds and large amounts of shell fragments. No living specimens were recovered from the mussel bed, and all shells were coated with hydrocarbons.

TABLE A-20

AREA XVIII: MUD, MUSSEL SHELLS AND HYDROCARBONS

SWASH CHANNEL

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS	GRAPHIC KURTOSIS K_G
74-18	7.6	M U D A N D S H E L L							
77-31	6.1	34.9 SH	49.1	16.0	0.325	*	*	*	*
77-38	11.6	61.4 SH	35.3	3.3	*	*	*	*	*

* - Insufficient data to calculate statistical parameters
SH - Shell

AREA XIX: MEDIUM SAND

FLYNNS KNOLL

Location:	Shoal located north of Sandy Hook tip. water depths vary from 4.6-10.7 m.
Number of Samples:	11
Grain Size:	Average median diameter, 0.340 mm (medium sand). Range in median diameter, 0.261-0.525 mm (medium sand to coarse sand). Average grain size based upon central 68 percent of each sample, 0.349 mm (medium sand). Range, 0.270-0.521 mm (medium sand to coarse sand).
Grain Size Distribution:	The sand is well sorted to moderately well sorted. Grain size distribution is moderately skewed towards the coarser sizes.
Coarse Fraction:	The coarse fraction comprises less than 2 percent of the sediment in most samples. In two samples it amounts to 3.1 and 3.9 percent. It consists of shell fragments and some small pebbles.
Fine Fraction:	It is negligable, amounting to less than 0.5 percent.

TABLE A-21

AREA XIX: MEDIUM SAND

FLYNNS KNOLL

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-1	5.2	0.0†	95.5	4.5	0.337	1.32	0.86	- 0.40	1.06
73-2	4.9	0.0†	99.8	0.2	0.525	0.94	0.50	- 3.81	0.98
73-3	4.9	0.0†	99.6	0.4	0.277	1.84	0.32	+ 0.05	1.20
74-17	4.9	1.5	98.5	0.0	0.261	1.89	0.50	- 0.24	1.05
77-25	10.7	0.6 SH&P	99.4	0.0	0.332	1.55	0.37	- 0.17	1.16
77-32	4.6	1.7 SH&P	98.2	0.1	0.313	1.62	0.56	- 0.25	1.31
77-35	4.6	3.1 SH	96.6	0.3	0.297	1.66	0.57	- 0.37	1.47
77-36	4.6	0.7 SH&P	99.3	<0.1	0.347	1.47	0.51	- 0.22	1.12
77-37	6.1	1.1 SH&P	98.9	0.0	0.392	1.24	0.66	- 0.32	1.12
77-39	5.5	3.9 SH&P	96.1	<0.1	0.324	1.59	0.54	- 0.23	1.33
77-40	7.6	1.5 SH&P	98.5	<0.1	0.330	1.56	0.43	- 0.17	1.15

† - Coarse fractions reported as 0.0% may be ≤5.0%
SH - Shell
P - Pebble

AREA XX: MUD, SHELL, FINE TO MEDIUM SAND

NORTHWEST OF SANDY HOOK TIP

Six scattered samples are included in this area. Three samples are from the west edge of Flynns Knoll. Two samples consist of moderately well sorted, medium sand. The third sample consisted of sludge and was not analyzed.

Three scattered samples were collected in the area north of Raritan Bay East Reach and west of Chapel Hill Channel. One sample, that was not sieved, consisted of shell, silt, and clay. Of the other two samples, one was fine sand and the other a medium sand.

TABLE A-22

AREA XX: MUD, SHELL, FINE TO MEDIUM SAND

NORTHWEST OF SANDY HOOK TIP

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
74-15	4.9	5.3	94.2	0.5	0.207	2.26	0.75	- 0.39	4.00
74-16	5.2	0.4	99.6	0.0	0.152	2.71	0.31	+ 1.85	1.22
77-33	6.7	S L U D G E					(N O T S I E V E D)		

WEST OF CHAPEL HILL CHANNEL

76-11	6.4	1.2	98.1	0.7	0.314	1.64	0.63	- 0.11	1.00
76-12	7.0	S H E L L, S I L T A N D C L A Y					(N O T S I E V E D)		
76-13	6.4	1.5	96.9	1.6	0.173	2.53	0.34	- 0.06	1.55

AREA XXI: MEDIUM TO VERY COARSE SAND WITH PEBBLES AND SHELL BETWEEN SANDY HOOK AND AMBROSE CHANNELS

Location:	Area lies northeast of Sandy Hook tip. Between Sandy Hook Channel and Ambrose Channel. It is directly southeast of Romer Shoal. The depth of water varies from 5.2 m-14.0 m.
Number of Samples:	14
Grain Size:	Average median diameter, 0.738 mm (coarse sand). Range in median diameter, 0.291-2.460 mm (medium sand to granules). Average grain size based upon central 68 percent of each sample, 0.586 mm (coarse sand). Range, 0.361-1.000 mm (medium sand to coarse sand). These values do not include samples of the coarser sediment as the size distribution curve was too open to compute this parameter.
Grain Size Distribution:	Due to the open ended distribution curve, the degree of sorting and skewness could be determined for only 5 of the 14 samples. Values for these 5 samples indicate that the sediment is moderately to poorly sorted, and is coarsely-skewed.
Coarse Fraction:	The coarse fraction is a very significant portion of the sediment, ranging from 1.1 percent to 50.6 percent. In many samples, the coarse fraction is mainly or entirely small pebbles; in other samples it is a mixture of shell fragments and small pebbles.
Fine Fraction:	For most samples, amounts to less than 0.5 percent.
Remarks:	This area of coarse sand containing significant amounts of small rounded pebbles is continuous with Area IV located north of Ambrose Channel. Together, the two areas form a band of coarse sediment along the transect between Sandy Hook and Rockaway Point.

TABLE A-23

AREA XXI: MEDIUM TO VERY COARSE SAND WITH PEBBLES AND SHELL

BETWEEN SANDY HOOK AND AMBROSE CHANNELS

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md (mm)	GRAPHIC MEAN M_z (ϕ)	INCLUSIVE GRAPHIC STANDARD DEVIATION σ_I (ϕ)	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-14	5.2	14.5	84.7	0.8	0.483	0.58	1.17	- 0.56	0.88
74-30	7.3	30.0	69.8	0.2	0.500	0.50	1.40	- 0.40	0.63
74-31	13.7	41.7	58.0	0.3	1.121	0.03	1.39	+ 0.19	0.62
77-20	7.3	50.6 P	49.4	0.0	2.460	*	*	*	*
77-21	7.6	43.0 P	57.0	0.0	1.414	*	*	*	*
77-22	13.7	10.6 SH&P	89.0	0.4	0.291	1.47	*	*	*
77-23	9.1	19.3 SH&P	80.5	0.2	0.323	*	*	*	*
77-24	10.7	6.2 SH&P	93.7	0.1	0.574	0.76	*	*	*
77-26	7.6	4.1 SH&P	95.9	0.0	0.420	1.10	0.82	- 0.37	1.39
77-47	14.0	8.6 P	91.0	0.4	0.324	1.34	*	*	*
77-48	7.6	31.5	68.2	0.3	0.435	*	*	*	*
77-49	6.1	11.9 P	88.1	<0.1	1.000	0.00	*	*	*
77-50	10.7	0.3 SH 6.0 P	93.6	0.1	0.366	1.28	*	*	*
77-51	6.1	1.1 P	98.9	0.0	0.616	0.62	0.73	- 0.13	1.33

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

AREA XXII: MEDIUM SAND

FALSE HOOK AND FALSE HOOK CHANNEL

Location:	This area lies south and west of Sandy Hook Channel. It includes the shoal False Hook, and False Hook Channel. Water depths vary from 3.0-9.8 m.
Number of Samples:	14
Grain Size:	Average median diameter, 0.354 mm (medium sand). Range in median diameter, 0.268-0.428 mm (medium sand). Average grain size based upon central 68 percent of each sample, 0.344 mm (medium sand). Range, 0.274-0.438 mm (medium sand).
Grain Size Distribution:	Sand is well sorted to moderately well sorted. The sediment in the majority of samples is slightly skewed towards the coarser sizes. In three samples the sediment is strongly skewed towards the finer sizes.
Coarse Fraction:	All samples contain 3.0 percent or less coarse fraction, and most samples contain less than 1.0 percent. Coarse fraction consists of shell fragments and some small pebbles.
Fine Fraction:	Amounts to less than 1.5 percent in all samples.

TABLE A-24

AREA XXII: MEDIUM SAND

FALSE HOOK AND FALSE HOOK CHANNEL

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_Z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-4	4.3	2.5	97.0	0.5	0.379	1.70	0.56	+ 2.10	1.84
73-5	4.9	0.0†	98.6	1.4	0.268	1.87	0.67	- 0.14	1.11
73-6	4.6	0.0†	98.8	1.2	0.426	1.19	0.74	- 0.28	1.66
73-15	5.8	3.0	94.0	1.0	0.374	1.33	0.80	- 0.26	1.44
73-17	6.7	0.0†	99.5	0.5	0.384	1.34	0.47	- 0.12	1.03
73-18	6.1	0.0†	99.5	0.5	0.398	1.37	0.48	+ 0.13	1.30
74-32	4.0	1.5	98.5	<0.1	0.426	1.25	0.77	- 0.04	1.05
74-44	6.7	0.6	99.4	<0.1	0.297	1.68	0.57	- 0.11	1.05
74-45	9.8	1.1	98.9	0.0	0.323	1.63	0.52	+ 4.01	1.07
77-41	4.6	0.1 SH	99.9	<0.1	0.319	1.65	0.35	- 0.01	0.96
77-42	7.6	1.1 SH&P	98.9	0.0	0.342	1.53	0.38	- 0.09	1.70
77-43	3.0	<0.1 SH&P	99.9	<0.1	0.287	1.80	0.25	- 0.02	0.97
77-45	5.5	0.0	100.0	0.0	0.366	1.43	0.40	- 0.04	0.91
77-46	6.1	0.5 SH	99.5	<0.1	0.297	1.78	0.45	+ 0.02	0.92

† - Coarse fractions reported as 0.0% may be ≤5.0%
SH - Shell
P - Pebble

AREA XXIII: FINE SAND

BETWEEN SANDY HOOK AND FALSE HOOK

Location:	Long narrow area parallel to the northern end of Sandy Hook. Water depths 7.0-14.6 m.
Number of Samples:	3
Grain Size:	Average median diameter, 0.176 mm (fine sand). Range in median diameter, 0.137-0.221 mm (fine sand). Average grain size based upon central 68 percent of each sample, 0.218 mm (fine sand). Range, 0.202-0.230 mm (fine sand).
Grain Size Distribution:	The limited data indicate the sediment is well sorted. There is insufficient data to determine the skewness.
Coarse Fraction:	Represents less than 1 percent of the sediment; consists of shell fragments.
Fine Fraction:	Varies up to a maximum of 7.4 percent. Sample 77-34 at the western tip of Sandy Hook shows a one inch thick layer of black mud overlying sand. This suggests a recent influx of mud to the west of Sandy Hook.

TABLE A-25

AREA XXIII: FINE SAND

BETWEEN SANDY HOOK AND FALSE HOOK

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_Z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-16	7.0	0.0+	99.5	0.5	0.137	2.12	0.50	- 1.87	1.07
74-14	13.7	0.9	91.7	7.4	0.171	2.31	*	*	*
77-34	14.6	0.9 SH	96.1	3.0	0.221	2.18	0.47	+ 0.07	1.23

+ - Coarse fractions reported as 0.0% may be $\leq$5.0%
* - Insufficient data to calculate statistical parameters
SH - Shell

AREA XXIV: MEDIUM SAND

SHELF EAST OF FALSE HOOK

Location:	Inner continental shelf east of Sandy Hook and southwest of Ambrose Channel. Water depths within the area vary from 4.9 m-23.5 m.
Number of Samples:	17
Grain Size:	Average median diameter, 0.428 mm (medium sand). Range in median diameter, 0.171-1.231 mm (fine sand to very coarse sand). Average grain size based upon central 68 percent of each sample, 0.356 mm (medium sand). Range, 0.171-0.669 mm (fine sand to coarse sand).
Grain Size Distribution:	The degree of sorting and skewness parameters could be determined only for ten samples. The distribution in the remaining samples were too open ended to determine these parameter. The sediment represented in the ten samples is well sorted to moderately well sorted. Skewness values indicate the sediment is variable with both coarse-skewed and fine-skewed size distribution represented in the samples.
Coarse Fraction:	The coarse fraction consisting of both shell fragments and small pebbles, varies in amount from 0-18.9 percent. A considerable amount of slag comprised the coarse fraction in sample 74-39, probably derived from dredge spoil.
Fine Fraction:	With the exception of two samples, the fine fraction amounts to less than 3 percent. The two exceptions were taken at the site of a dredge spoil dump.
Remarks:	A dredge spoil dump, and an area of soft muck containing organic matter are located within this area. These are shown on the sediment distribution map.

TABLE A-26

AREA XXIV: MEDIUM SAND

SHELF EAST OF FALSE HOOK

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN M_z (ϕ)	INCLUSIVE GRAPHIC STANDARD DEVIATION σ_I (ϕ)	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-11	13.4	17.4	82.1	0.5	1.231	*	*	*	*
73-12	8.8	0.0†	97.0	3.0	0.374	1.40	0.66	- 0.02	1.15
73-13	4.9	6.7	92.4	0.9	0.732	0.58	0.83	- 0.21	1.10
74-38	23.2	D R E D G E S P O I L					(N O T S I E V E D)		
74-39	23.5	2.4 SH 9.8 SLAG	61.1	26.7	0.109	*	*	*	*
74-40	19.2	0.0 SH 18.9 P	59.8	21.3	0.319	*	*	*	*
74-41	15.5	0.1	97.9	2.0	0.171	2.55	0.61	+ 0.01	1.06
74-42	10.4	0.6	99.3	0.1	0.435	0.98	0.74	- 0.27	1.09
77-52	9.1	N O T S I E V E D							
77-53	6.1	0.1 SH&P	97.8	2.1	0.467	1.09	0.40	- 0.01	1.17
77-54	10.7	0.3 SH&P	99.5	0.2	0.354	1.62	0.45	+ 0.26	1.61
77-55	6.1	0.0	99.9	<0.1	0.413	1.38	0.47	+ 0.37	1.46
77-57	8.5	<0.1 SH&P	99.4	0.6	0.218	2.20	0.60	- 0.05	0.94
77-58	14.0	0.6 SH&P	99.1	0.3	0.282	1.79	0.54	- 0.12	1.09
77-59	13.7	S O F T S A N D Y M U C K					(N O T S I E V E D)		
77-60	6.1	0.0	99.9	0.1	0.268	1.86	0.32	- 0.11	1.36
77-61	15.2	1.4 SH 7.7 P	88.1	2.8	0.616	0.92	*	*	*

† - Coarse fractions reported as 0.0% may be ≤5.0%
* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

AREA XXV: COARSE SAND

SOUTH OF FALSE HOOK

Location:	Inner continental shelf east of the base of Sandy Hook and south of False Hook.
Number of Samples:	10
Grain Size:	Average median diameter, 0.730 mm (coarse sand). Range in median diameter, 0.527-1.460 mm (coarse sand to very coarse sand). Average grain size based upon central 68 percent of each sample, 0.646 mm (coarse sand). Range, 0.525-1.117 mm (coarse sand to very coarse sand).
Grain Size Distribution:	The sediment varies from moderately well sorted to poorly sorted. Skewness varies from coarse-skewed to fine-skewed.
Coarse Fraction:	There is a wide range in percentage of coarse fraction, from zero to a maximum of 44.2 percent. Pebbles constitute much of the coarse fraction in those samples with the highest percentages. Shell fragments also comprise part of the coarse fraction.
Fine Fraction:	Amounts to less than 3.4 percent.
Remarks:	The sediment characteristics within this area vary considerably in the distribution of coarse material. Some samples indicate the sediment is composed of a significant amount of pebbles.

TABLE A-27

AREA XXV: COARSE SAND

SOUTH OF FALSE HOOK

YEAR-SAMPLE NO.	DEPTH (M)	% COARSE	% SAND	% SILT & CLAY	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
73-7	5.2	0.0+	99.0	1.0	0.529	0.93	0.72	- 0.11	1.64
73-8	6.7	44.2	55.3	0.5	1.464	-0.16	1.98	+ 0.21	0.83
73-9	7.9	0.5	96.0	3.5	0.527	0.90	0.82	- 0.10	1.29
73-10	15.2	6.4	90.1	3.5	0.678	0.71	1.07	+ 0.15	11.15
74-33	7.6	0.0	99.1	<0.1	0.566	0.83	0.56	- 0.09	1.60
74-34	7.7	2.8	96.9	0.3	0.555	0.76	0.66	- 0.28	1.06
74-35	9.4	14.3	85.7	<0.1	0.574	0.46	*	*	*
74-36	14.3	3.5	96.5	<0.1	0.547	0.83	0.69	- 0.18	1.11
74-37	18.3	32.7	67.1	0.2	1.181	*	*	*	*
74-43	6.7	14.5	85.5	<0.1	0.683	0.40	*	*	*

+ - Coarse fractions reported as 0.0% may be $\leq$5.0%
* - Insufficient data to calculate statistical parameters

APPENDIX B
TABULAR SUMMARY OF SEDIMENT GRAIN SIZE DISTRIBUTIONS

TABLE NO. B-1

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, NOV. 1973

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 1	2	3	4	5	6	7	8	9	10
Pebble	8	2.38	-1.25	--	--	--	--	--	--	--	--	--	--
	10	2.00	-1.00	0.0	--	--	2.5	--	--	--	44.2	0.5	6.4
Very Coarse Sand	12	1.68	-0.75	--	--	--	--	--	--	--	--	--	--
	14	1.41	-0.50	7.2	1.1	--	3.6	--	--	0.6	49.8	0.7	10.9
	16	1.19	-0.25	--	--	--	--	--	--	--	--	--	--
	18	1.00	0.00	12.3	4.5	--	6.2	--	5.2	5.4	56.2	10.5	20.8
	20	.840	0.25	15.1	9.8	--	8.6	--	8.3	10.5	60.7	18.6	36.8
Coarse Sand	25	.710	0.50	18.4	18.9	0.1	11.2	5.0	13.2	20.1	67.1	29.1	46.5
	30	.590	0.75	23.3	37.8	0.3	16.4	--	23.1	--	78.1	42.0	58.0
	35	.500	1.00	29.2	55.9	0.4	25.1	11.8	36.8	56.5	--	54.7	78.0
	40	.420	1.25	--	--	--	--	--	--	--	--	--	--
Medium Sand	45	.350	1.50	42.0	86.3	14.4	58.4	25.2	71.7	84.7	--	80.5	79.5
	50	.300	1.75	--	--	--	--	--	--	--	--	--	--
	60	.250	2.00	78.7	99.1	66.3	86.6	55.2	93.8	94.5	78.8	92.8	88.9
Fine Sand	70	.210	2.25	92.9	99.7	89.3	90.6	73.8	98.1	--	86.3	95.4	92.2
	80	.177	2.50	95.8	99.8	95.0	91.6	82.7	98.8	--	89.9	96.5	93.9
	100	.149	2.75	--	--	99.4	--	95.1	--	--	97.7	--	96.5
	120	.125	3.00	--	--	99.6	--	98.4	--	--	99.1	--	--
Very Fine Sand	140	.105	3.25	--	--	--	--	98.6	--	--	99.5	--	--
	170	.088	3.50	--	--	--	--	--	--	--	--	--	--
	200	.074	3.75	--	--	--	--	--	--	--	--	--	--
	230	.062	4.00	--	--	--	--	--	--	--	--	--	--
Silt-Clay				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO. B-1 (CONT'D)
MARINE SCIENCES RESEARCH CENTER
PETERSEN BOTTOM GRAB SAMPLES, NOV. 1973
SEDIMENT GRAIN SIZE DISTRIBUTION
PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 11	12	13	14	15	16	17	18	19	20
Pebble	8	2.38	-1.25	--	--	--	--	--	--	--	--		--
	10	2.00	-1.00	17.4	--	6.7	14.5	3.0	--	--	--	N	20.6
	12	1.68	-0.75	--	--	--	--	--	--	--	--	O	--
Very Coarse Sand	14	1.41	-0.50	35.8	--	21.0	21.7	5.1	--	--	--		45.2
	16	1.19	-0.25	--	--	--	--	--	--	--	--		--
	18	1.00	0.00	71.6	2.4	37.2	28.6	8.2	--	1.4	1.9	S	51.2
	20	.840	0.25	85.1	4.7	43.6	33.1	11.0	--	1.9	2.5	A	56.7
Coarse Sand	25	.710	0.50	91.9	8.6	51.3	37.5	14.3	2.9	4.6	4.4	M	--
	30	.590	0.75	95.0	15.7	59.7	--	19.8	4.8	12.3	8.3	P	56.9
	35	.500	1.00	--	25.8	69.1	49.7	27.2	7.2	24.1	18.6	L	65.5
	40	.420	1.25	--	--	--	--	--	--	--	--	E	--
Medium Sand	45	.350	1.50	--	57.2	85.6	80.2	56.0	25.9	61.1	66.2		85.4
	50	.300	1.75	--	--	--	93.9	73.9	40.8	82.8	83.1		--
	60	.250	2.00	--	83.4	96.4	97.5	86.4	62.5	93.2	88.2		95.1
Fine Sand	70	.210	2.25	--	89.9	98.5	98.8	95.8	85.9	98.6	93.4		--
	80	.177	2.50	--	92.2	99.1	99.0	97.5	94.2	99.0	--		--
	100	.149	2.75	--	97.0	--	99.2	99.0	99.3	99.5	--		--
	120	.125	3.00	--	--	--	--	--	99.5	--	--		--
Very Fine Sand	140	.105	3.25	--	--	--	--	--	--	--	--		--
	170	.088	3.50	--	--	--	--	--	--	--	--		--
	200	.074	3.75	--	--	--	--	--	--	--	--		--
	230	.062	4.00	--	--	--	--	--	--	--	--		--
Silt-Clay				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		100.0

TABLE NO. B-1 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, NOV. 1973

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 21	22	23	24	25	26	27	28	29	30
Pebble	8	2.38	-1.25	--	--	--	--	--	--	--	--	--	--
	10	2.00	-1.00	2.2	--	--	--	--	--	--	--	--	--
Very Coarse Sand	12	1.68	-0.75	--	--	--	--	--	--	--	--	--	--
	14	1.41	-0.50	--	--	--	--	--	--	--	--	--	--
	16	1.19	-0.25	--	--	--	--	--	--	--	--	--	--
	18	1.00	0.00	--	--	--	--	--	--	--	--	--	--
Coarse Sand	20	.840	0.25	6.6	--	--	--	--	--	--	--	--	--
	25	.710	0.50	19.0	0.3	--	--	--	--	--	--	--	--
	30	.590	0.75	31.9	0.5	--	--	--	--	--	--	--	--
	35	.500	1.00	45.9	1.5	4.8	--	0.4	0.4	--	0.2	--	--
Medium Sand	40	.420	1.25	--	--	--	--	--	--	--	--	--	--
	45	.350	1.50	74.8	35.1	8.3	1.5	0.9	1.6	2.9	0.4	0.3	1.3
	50	.300	1.75	--	--	--	2.7	1.9	--	7.7	0.6	0.4	3.4
Fine Sand	60	.250	2.00	94.9	91.4	11.7	3.4	3.4	12.3	14.9	0.9	0.4	7.2
	70	.210	2.25	97.5	96.0	19.3	3.9	7.7	30.2	29.5	1.2	0.9	19.4
	80	.177	2.50	98.6	97.0	25.1	4.2	12.2	44.7	39.3	1.6	2.0	28.1
	100	.149	2.75	99.7	98.5	62.8	12.3	46.5	77.6	65.9	9.3	10.8	56.8
Very Fine Sand	120	.125	3.00	--	--	86.3	32.1	79.3	93.9	84.5	29.1	35.9	80.5
	140	.105	3.25	--	--	95.7	64.7	92.7	98.2	94.1	65.6	64.7	92.6
	170	.088	3.50	--	--	98.8	89.1	97.9	99.0	98.6	90.4	89.6	98.4
	200	.074	3.75	--	--	--	97.7	98.7	99.4	99.4	98.6	95.1	99.5
	230	.062	4.00	--	--	99.8	98.7	--	--	--	99.5	98.9	--
Silt-Clay				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO. B-1 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, NOV. 1973

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 31	32	33	34	35	36
Pebble	8	2.38	-1.25	--	--	--	--	--	--
	10	2.00	-1.00	--	--	--	0.9	--	2.0
	12	1.68	-0.75	--	--	--	--	--	--
Very Coarse Sand	14	1.41	-0.50	--	--	--	--	--	6.0
	16	1.19	-0.25	--	--	--	--	--	--
	18	1.00	0.00	--	--	--	2.9	--	24.2
	20	.840	0.25	--	--	--	--	--	43.2
Coarse Sand	25	.710	0.50	--	--	--	7.0	--	60.1
	30	.590	0.75	--	--	--	--	--	74.6
	35	.500	1.00	0.4	--	--	19.3	2.4	82.0
	40	.420	1.25	0.6	--	--	--	--	--
Medium Sand	45	.350	1.50	1.3	0.2	2.6	34.5	4.8	97.5
	50	.300	1.75	--	1.4	3.5	53.4	7.5	99.3
	60	.250	2.00	8.6	1.8	5.3	75.1	10.3	--
Fine Sand	70	.210	2.25	--	5.2	13.5	--	19.2	--
	80	.177	2.50	29.3	9.0	22.2	84.3	28.5	--
	100	.149	2.75	--	29.7	52.6	--	69.7	--
	120	.125	3.00	83.8	57.4	76.4	95.6	89.6	--
Very Fine Sand	140	.105	3.25	--	78.4	90.6	--	96.1	--
	170	.088	3.50	98.7	92.7	98.6	99.2	98.8	--
	200	.074	3.75	99.8	97.0	99.1	--	99.5	--
	230	.062	4.00	99.9	--	--	--	--	--
Silt-Clay				100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO. B-2

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, JUL. 1974

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 1	2	3	4	5	6	7	8	9	10	11
Pebble	8	2.38	-1.25	--	--	--	--	N	--	--	--	--	--	16.5
	10	2.00	-1.00	0.08	1.4	2.22	2.7	O	4.81	28.2	1.7	1.8	0.3	16.8
	12	1.68	-0.75	--	1.5	2.28	--		--	--	--	--	0.4	--
Very Coarse Sand	14	1.41	-0.50	--	1.7	2.32	--		--	30.0	--	--	0.5	17.8
	16	1.19	-0.25	--	2.4	2.36	--		--	--	2.1	--	0.6	--
	18	1.00	0.00	--	--	2.42	--	S	--	31.6	2.6	2.4	0.7	19.5
	20	.840	0.25	--	3.2	2.5	--	A	5.00	32.3	3.7	2.7	0.8	20.9
Coarse Sand	25	.710	0.50	0.1	4.4	2.6	--	M	5.09	32.8	5.4	3.0	0.8	23.1
	30	.590	0.75	0.3	6.9	2.7	--	P	5.18	33.4	8.4	3.4	0.9	27.5
	35	.500	1.00	1.6	13.4	5.2	--	L	5.20	34.3	13.9	3.8	1.1	36.1
	40	.420	1.25	4.0	21.6	8.2	3.1	E	5.22	35.0	21.0	4.4	1.3	46.6
Medium Sand	45	.350	1.50	12.4	35.2	8.5	3.3		5.3	36.5	38.3	6.9	1.8	64.5
	50	.300	1.75	27.5	62.4	13.4	3.6		5.4	39.1	51.1	11.8	4.5	77.0
	60	.250	2.00	53.1	77.5	15.7	4.0		5.9	43.4	65.4	23.8	9.2	86.3
Fine Sand	70	.210	2.25	78.9	89.0	16.1	5.0		7.3	57.6	81.8	43.4	20.9	92.2
	80	.177	2.50	92.2	95.0	17.8	8.9		13.5	76.6	93.0	66.8	42.8	95.6
	100	.149	2.75	96.7	97.0	23.2	25.7		36.5	89.8	98.7	88.1	65.7	97.3
	120	.125	3.00	97.3	98.1	39.1	58.3		66.9	95.2	99.8	93.9	82.3	98.2
Very Fine Sand	140	.105	3.25	--	--	--	82.8		87.4	97.3	--	94.4	--	98.8
	170	.088	3.50	--	99.4	84.0	95.3		96.4	99.0	--	94.7	97.7	99.2
	200	.074	3.75	--	99.7	95.2	98.5		98.9	99.6	--	--	99.6	99.8
	230	.062	4.00	--	--	--	--		--	--	--	--		--
Silt-Clay				100.0	100.0	100.0	100.0		100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO. B-2 (CONT'D)
MARINE SCIENCES RESEARCH CENTER
PETERSEN BOTTOM GRAB SAMPLES, JUL. 1974
SEDIMENT GRAIN SIZE DISTRIBUTION
PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 12	13	14	15	16	17	18	19	20	21	22
Pebble	8	2.38	-1.25	--	--	--	--	--	--		--	--	--	--
	10	2.00	-1.00	1.4	0.20	0.9	5.3	0.4	1.5	M	--	0.6	0.07	6.2
	12	1.68	-0.75	--	0.35	--	5.4	--	--	U	--	--	--	6.5
Very Coarse Sand	14	1.41	-0.50	--	0.41	--	5.5	--	--	D	--	--	--	7.0
	16	1.19	-0.25	--	0.45	--	5.6	--	--		--	--	0.08	7.9
	18	1.00	0.00	--	0.5	--	5.7	--	--	A	--	1.5	0.09	9.0
	20	.840	0.25	2.6	0.6	1.5	6.0	--	3.1	N	--	1.8	0.1	10.8
Coarse Sand	25	.710	0.50	3.2	0.8	1.6	6.2	--	3.7	D	--	2.0	0.2	13.0
	30	.590	0.75	5.0	1.2	2.0	6.4	--	5.2		--	2.2	0.3	15.2
	35	.500	1.00	10.1	2.5	3.3	6.6	--	7.9	S	--	2.3	0.9	20.2
	40	.420	1.25	19.8	5.6	5.1	6.8	0.7	11.4	H	2.2	2.4	3.5	27.1
Medium Sand	45	.350	1.50	37.0	12.4	9.5	7.1	1.1	22.4	E	5.7	2.6	11.6	38.2
	50	.300	1.75	49.6	23.4	14.9	8.9	1.6	37.0	L	10.5	2.9	36.3	56.7
	60	.250	2.00	57.8	34.6	21.2	19.4	3.0	55.6	L	17.0	3.4	72.4	75.4
Fine Sand	70	.210	2.25	66.0	42.7	28.8	47.9	7.6	78.6		30.1	5.1	89.6	87.0
	80	.177	2.50	75.2	48.8	36.4	77.2	24.0	95.0		50.4	10.0	96.0	93.4
	100	.149	2.75	85.1	55.6	42.5	93.0	54.8	99.6		79.1	18.5	97.9	97.9
	120	.125	3.00	92.7	62.9	49.2	96.9	84.4	99.9		94.3	31.1	98.9	99.3
Very Fine Sand	140	.105	3.25	96.4	79.6	60.2	98.5	94.0	--		97.0	40.9	99.6	99.7
	170	.088	3.50	98.8	87.7	81.8	99.0	98.4	--		98.7	55.3	99.8	99.9
	200	.074	3.75	--	--	92.6		--100.0	100.0		99.5	65.2	--	--
	230	.062	4.00	--	96.1	--	99.5				--	--	100.0	99.98
Silt-Clay				100.0	100.0	100.0	100.0				100.0	100.0		100.0

TABLE NO. B-2 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, JUL. 1974

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size φ	SAMPLE NUMBER 23	24	25	26	27	28	29	30	31
Pebble	8	2.38	-1.25	--	--	--	--	--	--	--	--	--
	10	2.00	-1.00	2.4	0.19	4.2	--	0.87	1.7	0.1	30.0	41.7
	12	1.68	-0.75	--	--	--	--	--	2.1		31.3	43.8
Very Coarse Sand	14	1.41	-0.50	--	0.23	5.1	--	--	2.5		32.4	46.8
	16	1.19	-0.25	--	0.25	--	--	--	3.2		33.9	49.6
	18	1.00	0.00	--	0.29	7.1	0.2	0.89	4.1		35.3	52.3
	20	.840	0.25	--	0.4	8.6	--	0.97	5.6	0.7	37.5	55.7
Coarse Sand	25	.710	0.50	--	0.6	10.6	0.4	1.05	7.6	1.2	40.3	59.0
	30	.590	0.75	2.9	1.0	14.2	--	1.45	9.6	2.9	43.3	62.1
	35	.500	1.00	5.0	2.4	21.8	0.9	2.6	13.6	6.2	50.5	67.3
	40	.420	1.25	11.2	5.1	33.9	1.7	4.6	18.3	11.0	59.7	72.3
Medium Sand	45	.350	1.50	33.5	12.2	56.6	5.8	11.2	26.3	24.3	70.6	78.2
	50	.300	1.75	59.2	32.6	75.6	12.0	18.5	42.5	39.1	82.0	85.5
	60	.250	2.00	80.1	56.5	89.0	22.6	35.8	61.7	57.9	89.1	92.0
Fine Sand	70	.210	2.25	91.6	76.0	96.6	40.1	67.6	78.4	76.4	93.1	96.1
	80	.177	2.50	97.1	87.3	98.4	64.5	93.5	90.3	89.6	96.0	98.1
	100	.149	2.75	98.6	94.7	99.4	90.5	99.3	96.2	97.8	98.2	99.1
	120	.125	3.00	99.1	98.2	99.7	97.8	99.97	98.0	99.7	99.0	99.5
Very Fine Sand	140	.105	3.25	99.4	--	99.9	99.1	--	99.2	--	99.4	99.6
	170	.088	3.50	99.7	99.8	--	--	--	99.7	--	99.6	99.7
	200	.074	3.75	99.8	99.9	--	--	--	--	--	--	--
	230	.062	4.00	--	--	--	--	--	99.97	--	99.8	99.72
Silt-Clay				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO. B-2 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, JUL. 1974

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 32	33	34	35	36	37	38	39	40
Pebble	8	2.38	-1.25	--	--	--	--	--	--		--	--
	10	2.00	-1.00	1.5	--	2.8	14.3	3.5	32.7	D	12.2	18.9
	12	1.68	-0.75	1.9	0.1	--	16.6	4.2	36.8	R	13.3	20.7
Very Coarse Sand	14	1.41	-0.50	2.9	0.5	6.3	20.3	5.9	42.3	E	14.6	22.6
	16	1.19	-0.25	4.4	1.8	--	24.1	8.1	49.4	D	16.1	24.9
	18	1.00	0.00	7.0	4.5	14.0	28.8	12.2	57.1	G	17.5	27.3
	20	.840	0.25	10.9	10.8	20.8	34.8	19.2	65.6	E	19.4	30.4
Coarse Sand	25	.710	0.50	16.2	22.5	29.4	41.6	29.1	73.4		21.2	33.9
	30	.590	0.75	22.5	43.3	43.7	48.2	43.0	79.0	S	22.7	36.8
	35	.500	1.00	37.1	68.1	61.2	63.2	60.3	87.4	P	25.1	41.7
	40	.420	1.25	51.6	82.3	76.2	78.0	74.4	92.7	O	27.3	45.3
Medium Sand	45	.350	1.50	62.6	90.0	91.9	90.3	86.2	96.0	I	29.6	48.8
	50	.300	1.75	72.9	95.5	97.6	97.3	95.1	98.0	L	32.2	52.4
	60	.250	2.00	83.4	97.4	99.2	99.1	98.3	98.9		34.6	55.6
Fine Sand	70	.210	2.25	92.2	98.3	99.4	99.5	99.4	99.3		36.7	58.5
	80	.177	2.50	97.6	99.2	99.5	99.6	99.7	99.5		39.2	61.3
	100	.149	2.75	99.4	99.6	99.6	99.8	99.8	99.6		42.5	65.2
	120	.125	3.00	99.7	99.8	99.7	99.87	99.9	99.7		45.9	68.3
Very Fine Sand	140	.105	3.25	99.88	--	--	99.93	--	99.72		52.4	71.5
	170	.088	3.50	99.94	99.91	--	99.95	99.95	99.75		59.1	73.8
	200	.074	3.75	--	99.96	--	--	99.97	--		--	--
	230	.062	4.00	99.97	--	--	99.97	--	99.84		73.3	78.7
Silt-Clay				100.0	100.0	100.0	100.0	100.0	100.0		100.0	100.0

TABLE NO. B-2 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, JUL. 1974

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 41	42	43	44	45
Pebble	8	2.38	-1.25	--	--	--	--	--
	10	2.00	-1.00	0.10	0.6	14.5	0.6	1.14
	12	1.68	-0.75	--	--	18.4	0.7	1.27
Very Coarse Sand	14	1.41	-0.50	0.12	1.8	23.0	0.8	1.34
	16	1.19	-0.25	0.17	--	28.0	0.9	1.4
	18	1.00	0.00	0.2	6.1	33.6	1.2	1.6
	20	.840	0.25	0.3	11.3	41.6	1.7	2.0
Coarse Sand	25	.710	0.50	0.4	17.6	50.0	2.8	2.9
	30	.590	0.75	0.6	27.9	56.9	4.7	4.7
	35	.500	1.00	1.2	41.0	67.7	10.7	11.8
	40	.420	1.25	2.4	55.3	76.5	20.4	22.9
Medium Sand	45	.350	1.50	4.4	75.9	85.0	33.9	40.2
	50	.300	1.75	11.0	87.6	92.3	54.0	63.4
	60	.250	2.00	19.1	94.1	96.3	73.3	78.3
Fine Sand	70	.210	2.25	32.0	96.6	97.9	86.1	89.6
	80	.177	2.50	47.9	97.9	98.8	93.9	95.9
	100	.149	2.75	64.3	98.9	99.5	98.3	98.6
	120	.125	3.00	78.9	99.6	99.8	99.5	99.6
Very Fine Sand	140	.105	3.25	--	99.8	99.9	99.86	--
	170	.088	3.50	94.7	99.9	99.96	99.93	100.0
	200	.074	3.75	98.0	--	--	--	
	230	.062	4.00	--	--	99.98	99.97	
Silt-Clay				100.0	100.0	100.0	100.0	

TABLE NO. B-3

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAR. 1976

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ		SAMPLE NUMBER 1	2	3	4	5	6	7	8	9	10
Pebble	8	2.38	-1.25	S	--	--	--	--	--	M	--	S	--	--
	10	2.00	-1.00	H	7.2	0.43	17.1	0.3		U	0.00	I	2.6	1.9
	12	1.68	-0.75	E	--	--	--	--		C	--	L	--	--
Very Coarse Sand	14	1.41	-0.50	L	7.4	0.48	17.6	0.5		K	0.05	T	3.4	2.1
	16	1.19	-0.25	L	--	--	--	--			--		--	--
	18	1.00	0.00	S	7.5	0.51	18.5	1.0			0.09	&	10.4	2.5
	20	.840	0.25	I	7.6	0.54	19.1	1.6		N	0.10		16.0	3.1
Coarse Sand	25	.710	0.50	L	7.7	0.6	19.7	2.8		O	0.14	C	23.8	4.6
	30	.590	0.75	T	7.8	0.7	20.3	5.3		T	0.24	L	34.3	8.3
	35	.500	1.00	&	8.0	0.8	20.8	9.2			0.33	A	45.4	14.8
	40	.420	1.25	C	8.2	0.9	21.2	17.3			0.42	Y	59.9	27.9
Medium Sand	45	.350	1.50	L	8.4	1.0	21.8	32.9		S	0.61		72.5	45.1
	50	.300	1.75	A	8.7	1.3	22.5	52.8		I	1.1	N	80.3	60.8
	60	.250	2.00	Y	9.4	2.0	23.6	73.3		E	3.2	O	84.6	76.2
Fine Sand	70	.210	2.25	N	11.3	5.2	25.8	86.4		V	11.6	T	87.0	86.7
	80	.177	2.50	O	19.7	17.0	31.3	93.8		E	29.9		88.1	91.7
	100	.149	2.75	T	49.5	44.7	44.4	97.6		D	53.9	S	88.9	93.4
	120	.125	3.00	S	77.7	69.4	60.1	98.4			74.9	I	89.8	94.2
Very Fine Sand	140	.105	3.25	I	92.6	88.8	80.2	99.0			90.9	E	91.2	95.2
	170	.088	3.50	E	97.6	97.4	93.0	99.4			96.6	V	93.4	96.7
	200	.074	3.75	V	98.9	99.1	96.4	99.6			97.9	E	94.8	97.6
	230	.062	4.00	E	99.2	99.5	97.1	99.7			98.3	D	95.1	98.1
Silt-Clay				D	100.0	100.0	100.0	100.0			100.0		100.0	100.0

TABLE NO. B-3 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAR. 1976

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 11	12	13	14	15	16	17	18	19	20	21	22
Pebble	8	2.38	-1.25	--	S	--	S	M	M	--	S	--	--	--	--
	10	2.00	-1.00	1.2	I	1.5	I	U	U	0.3	I	1.1	<0.1	8.0	0.8
	12	1.68	-0.75	--	L	--	L	C	C	--	L	--	--	--	--
Very Coarse Sand	14	1.41	-0.50	1.3	T	1.7	T	K	K	0.4	T	1.2	0.5	8.6	0.9
	16	1.19	-0.25	--		--				--		--	--	--	--
	18	1.00	0.00	2.2	&	2.0	&	N	N	0.5	&	1.3	0.7	9.8	1.2
	20	.840	0.25	3.4		2.1		O	O	0.6		1.5	0.8	10.8	1.8
Coarse Sand	25	.710	0.50	5.6	C	2.3	C	T	T	0.7	C	1.9	1.2	12.6	3.2
	30	.590	0.75	9.9	L	2.6	L			0.8	L	3.0	2.6	15.1	6.0
	35	.500	1.00	15.8	A	2.9	A	S	S	1.1	A	6.1	6.4	18.3	10.9
Medium Sand	40	.420	1.25	26.2	Y	3.3	Y	I	I	1.5	Y	13.9	20.5	24.1	18.9
	45	.350	1.50	40.1		3.9		E	E	2.4		32.0	47.2	34.6	36.2
	50	.300	1.75	53.7	N	4.7	N	V	V	4.1	N	57.3	73.7	54.7	56.6
Fine Sand	60	.250	2.00	68.1	O	7.2	O	E	E	7.3	O	80.4	91.8	76.4	77.6
	70	.210	2.25	83.2	T	16.7	T	D	D	13.3	T	91.1	98.1	91.3	92.3
	80	.177	2.50	93.4		44.6				26.7		96.3	99.5	97.1	98.1
	100	.149	2.75	97.1	S	79.4	S			54.6	S	98.8	99.7	98.5	99.6
Very Fine Sand	120	.125	3.00	97.9	I	92.3	I			79.5	I	99.4	99.8	99.4	99.8
	140	.105	3.25	98.8	E	96.5	E			94.8	E	99.7	--	99.6	99.9
	170	.088	3.50	99.1	V	97.8	V			98.4	V	99.8	--	99.7	--
	200	.074	3.75	99.2	E	98.3	E			99.0	E	99.9	--	--	--
	230	.062	4.00	99.3	D	98.4	D			99.2	D	99.92	--	--	--
Silt-Clay				100.0		100.0				100.0		100.0	100.0	100.0	100.0

TABLE NO. B-3 (CONT'D)
MARINE SCIENCES RESEARCH CENTER
SHIPEK BOTTOM GRAB SAMPLES, MAR. 1976
SEDIMENT GRAIN SIZE DISTRIBUTION
PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 23	24	25	26A	26B	27	28	29	30	31
Pebble	8	2.38	-1.25	--	--	--	--	--	--	--	--	--	--
	10	2.00	-1.00	1.8	--	--	1.8	1.8	45.7	2.8	25.3	--	6.7
	12	1.68	-0.75	--	--	--	--	--	--	--	--	--	--
Very Coarse Sand	14	1.41	-0.50	2.0	--	--	2.1	2.1	50.4	10.1	31.7	--	7.1
	16	1.19	-0.25	--	--	--	--	--	--	--	--	--	--
	18	1.00	0.00	2.6	--	0.3	2.6	2.8	55.9	36.6	38.9	0.3	8.0
Coarse Sand	20	.840	0.25	3.6	0.1	0.4	3.1	3.4	58.7	52.3	43.7	0.4	9.3
	25	.710	0.50	5.3	0.2	0.7	3.8	4.2	62.3	67.4	48.9	0.6	12.2
	30	.590	0.75	9.0	0.3	1.2	4.6	5.1	67.0	79.5	56.0	0.8	18.7
	35	.500	1.00	14.6	0.4	1.9	5.5	6.1	71.2	87.5	63.3	1.2	27.8
Medium Sand	40	.420	1.25	25.2	0.6	3.7	7.4	8.2	73.9	94.0	72.7	2.5	43.6
	45	.350	1.50	41.8	1.0	9.1	11.3	12.2	75.9	97.4	81.0	6.5	60.2
	50	.300	1.75	59.3	2.2	21.0	17.5	18.6	77.9	98.5	86.0	15.0	73.7
	60	.250	2.00	77.6	6.7	42.1	30.6	30.8	82.6	99.0	89.0	30.3	84.3
Fine Sand	70	.210	2.25	91.6	19.4	73.6	62.1	62.2	89.7	99.6	92.0	60.4	91.8
	80	.177	2.50	97.6	45.7	91.2	90.2	89.6	95.2	99.8	96.5	85.0	97.3
	100	.149	2.75	99.2	74.9	97.6	97.9	98.0	98.0	99.84	99.1	96.8	99.4
	120	.125	3.00	99.6	90.1	99.1	97.3	99.4	98.6	99.86	99.6	99.1	99.8
Very Fine Sand	140	.105	3.25	99.8	96.5	99.7	99.8	99.8	99.0	99.88	99.82	99.7	99.95
	170	.088	3.50	99.9	98.1	99.8	99.9	99.9	99.1	99.90	99.89	99.85	99.98
	200	.074	3.75	--	98.4	99.9	--	--	99.2	--	99.90	99.88	100.0
Silt+Clay	230	.062	4.00	--	--	--	--	--	99.3	--	--	99.90	
				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

TABLE NO. B-3 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAR. 1976

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size φ	SAMPLE NUMBER 32	33A	33B	34	35	36	37	38	39	40
Pebble	8	2.38	-1.25	--	--	--	--	--	--	--	--	--	--
	10	2.00	-1.00	25.0	--	--	--	--	--	1.0	1.8	0.8	13.6
	12	1.68	-0.75	--	--	--	--	--	--	--	--	--	--
Very Coarse Sand	14	1.41	-0.50	26.0	--	--	--	--	--	1.1	2.0	0.9	--
	16	1.19	-0.25	--	--	--	--	--	--	--	--	--	--
	18	1.00	0.00	29.0	0.02	--	--	--	--	1.5	2.9	1.1	14.6
	20	.840	0.25	31.6	0.03	0.09	--	0.07	0.08	1.8	4.1	1.2	15.0
Coarse Sand	25	.710	0.50	35.1	0.05	0.13	--	0.10	0.19	2.5	6.1	1.5	15.4
	30	.590	0.75	39.8	0.14	0.21	0.01	0.15	0.38	4.1	9.3	1.9	15.9
	35	.500	1.00	46.0	0.38	0.47	0.03	0.28	0.75	6.6	13.5	2.6	16.4
	40	.420	1.25	56.2	1.5	1.7	0.18	0.77	1.7	10.8	20.1	4.2	17.1
Medium Sand	45	.350	1.50	70.7	6.3	6.6	1.2	2.4	4.5	21.8	29.9	7.2	18.2
	50	.300	1.75	82.5	14.3	15.1	7.3	8.1	11.5	39.2	41.6	12.3	20.0
	60	.250	2.00	91.5	25.3	26.8	31.0	22.4	29.6	63.1	57.4	24.3	23.9
Fine Sand	70	.210	2.25	96.5	51.7	53.4	79.9	52.4	61.7	83.4	76.4	40.4	40.8
	80	.177	2.50	98.6	83.3	84.6	94.6	78.8	85.5	93.5	89.8	77.4	71.9
	100	.149	2.75	99.5	95.0	96.4	98.0	92.7	96.2	98.2	97.1	91.4	89.9
	120	.125	3.00	99.7	98.4	98.7	98.8	97.7	99.2	99.4	98.9	96.9	95.1
Very Fine Sand	140	.105	3.25	99.86	99.4	99.5	99.3	99.4	99.8	99.8	99.6	98.8	97.6
	170	.088	3.50	99.89	99.8	99.8	99.6	99.9	99.96	99.85	99.7	99.5	98.8
	200	.074	3.75	99.90	99.88	99.88	99.7	99.98	100.0	99.86	99.8	99.7	99.18
	230	.062	4.00	--	99.90	99.90	--	100.0		99.88	--	99.8	99.21
Silt-Clay				100.0	100.0	100.0	100.0			100.0	100.0	100.0	100.0

TABLE NO.B-3 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAR. 1976

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 41	42	43	44	45	46	47	48
Pebble	8	2.38	-1.25	--	--	--	--		--	--	--
	10	2.00	-1.00	3.3	11.3	47.3	54.6	A	10.4	29.3	3.7
	12	1.68	-0.75	--	--	--	--	L	--	--	--
Very Coarse Sand	14	1.41	-0.50	3.6	11.8	51.4	60.1	L	11.7	30.8	4.1
	16	1.19	-0.25	--	--	--	--		--	--	--
	18	1.00	0.00	4.0	13.1	55.9	69.7		13.7	34.2	5.0
	20	.840	0.25	4.2	13.9	58.2	74.2	S	15.1	35.8	6.1
Coarse Sand	25	.710	0.50	4.6	14.7	60.7	78.8	H	17.3	37.7	8.3
	30	.590	0.75	5.5	15.5	63.5	83.2	E	21.2	40.1	13.1
	35	.500	1.00	6.0	16.3	66.0	86.4	L	26.3	43.1	22.1
	40	.420	1.25	8.2	17.4	68.4	88.9	L	35.8	49.1	40.2
Medium Sand	45	.350	1.50	13.5	19.1	70.7	90.3		50.3	60.7	64.7
	50	.300	1.75	22.1	22.8	73.7	90.9	N	68.0	73.3	82.3
	60	.250	2.00	35.1	33.8	78.4	91.3	O	84.6	83.9	92.0
Fine Sand	70	.210	2.25	54.6	63.6	85.5	91.8	T	95.1	89.6	96.5
	80	.177	2.50	76.1	90.1	91.2	92.5		98.2	92.0	97.9
	100	.149	2.75	87.1	96.6	95.1	93.6	S	99.2	94.5	98.5
	120	.125	3.00	90.1	98.6	96.7	94.7	I	99.6	96.3	98.9
Very Fine Sand	140	.105	3.25	91.6	99.3	98.2	96.4	E	99.8	97.9	99.3
	170	.088	3.50	92.2	99.6	98.9	97.6	V	99.89	98.5	99.5
	200	.074	3.75	92.37	99.7	99.18	98.11	E	99.90	98.7	99.6
	230	.062	4.00	92.39	99.8	99.23	98.25	D	--	98.73	--
Silt-Clay				100.0	100.0	100.0	100.0		100.0	100.0	100.0

TABLE NO. B-4

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAY 1977

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 1	2	3	4	5	6	7	8	9	10
Pebble	8	2.38	-1.25	0.02	--	0.03	N	1.6	1.6	--	0.7	0.30	--
	10	2.00	-1.00	--	2.6	--	O	--	--	0.5	--	--	--
Very Coarse Sand	12	1.68	-0.75	0.03	3.1	0.04		2.0	2.0	--	0.8	0.32	--
	14	1.41	-0.50	0.04	5.0	0.06		2.5	2.6	0.7	1.0	0.34	--
	16	1.19	-0.25	--	7.5	0.11		3.1	3.5	1.0	1.2	0.36	--
	18	1.00	0.00	--	10.7	--	S	--	--	1.2	--	--	--
Coarse Sand	20	.840	0.25	0.05	14.6	0.17	A	5.3	6.4	1.6	2.5	0.8	--
	25	.710	0.50	0.06	19.7	0.19	M	7.5	8.3	2.1	3.7	1.4	0.1
	30	.590	0.75	0.09	27.1	0.21	P	10.5	9.9	2.8	5.0	2.3	0.2
	35	.500	1.00	0.12	38.1	0.25	L	18.8	13.1	4.0	8.2	5.9	0.3
	40	.420	1.25	0.15	50.2	0.27	E	27.9	16.0	5.5	11.7	9.6	0.5
Medium Sand	45	.350	1.50	0.2	63.4	0.31		41.2	20.2	8.2	17.0	15.6	1.1
	50	.300	1.75	0.3	77.9	0.41		59.8	27.0	14.6	26.4	26.1	3.8
	60	.250	2.00	0.4	87.1	0.58		73.6	33.4	23.9	38.7	41.5	13.8
Fine Sand	70	.210	2.25	0.6	93.1	0.95		80.5	38.9	38.3	57.6	54.9	37.3
	80	.177	2.50	1.3	96.0	2.8		84.6	43.5	58.4	77.8	72.0	69.7
	100	.149	2.75	5.2	97.6	12.4		87.3	48.1	78.3	92.1	90.1	85.0
	120	.125	3.00	10.5	98.4	26.9		88.5	53.7	88.3	97.1	97.4	92.6
Very Fine Sand	140	.105	3.25	17.0	99.2	38.9		90.1	68.0	94.7	99.2	99.4	94.3
	170	.088	3.50	21.9	99.6	44.9		92.2	80.4	96.8	99.7	99.8	95.9
	200	.074	3.75	28.9	--	51.6		95.0	89.4	--	99.9	99.9	96.7
	230	.062	4.00	--	--	--		--	--	--	--	--	--
Silt-Clay				100.0	100.0	100.0		100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO.B-4 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAY 1977

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 11	12	13	14	15	16	17	18	19	20
Pebble	8	2.38	-1.25	1.40	4.3	N	--	N	4.0	1.7	0.40	0.7	50.6
	10	2.00	-1.00	--	--	O	--	O	--	--	--	--	--
Very Coarse Sand	12	1.68	-0.75	1.44	4.8		--		4.4	1.9	0.44	1.5	55.2
	14	1.41	-0.50	1.46	5.0		--		4.8	2.0	0.5	2.2	57.4
	16	1.19	-0.25	1.50	5.4		--		5.8	2.4	0.6	3.2	60.0
	18	1.00	0.00	--	--	S	--	S	--	--	--	--	--
Coarse Sand	20	.840	0.25	1.54	6.6	A	--	A	12.8	8.2	4.5	8.3	66.0
	25	.710	0.50	1.56	7.9	M	--	M	22.4	17.9	14.8	13.4	68.2
	30	.590	0.75	--	9.6	P	0.02	P	34.7	29.9	29.1	20.5	70.9
	35	.500	1.00	1.9	14.9	L	0.15	L	59.9	51.5	55.7	41.5	75.0
Medium Sand	40	.420	1.25	2.1	21.4	E	0.9	E	77.0	72.3	75.0	64.0	78.2
	45	.350	1.50	2.6	30.8		6.0		88.3	88.1	89.5	81.1	80.5
	50	.300	1.75	4.9	49.1		33.3		95.9	98.4	97.5	91.8	84.6
Fine Sand	60	.250	2.00	13.8	66.8		83.6		98.5	99.8	99.2	95.6	89.7
	70	.210	2.25	26.6	80.4		97.1		99.5	100.0	99.6	97.0	95.0
	80	.177	2.50	47.2	89.2		99.7		99.8		99.8	98.6	98.4
	100	.149	2.75	75.3	94.8		99.9		99.9		100.0	99.6	99.6
Very Fine Sand	120	.125	3.00	88.9	97.5		99.9		100.0			99.8	99.9
	140	.105	3.25	96.6	98.9		100.0					99.9	100.0
	170	.088	3.50	98.7	99.4							99.9	
	200	.074	3.75	99.5	99.8							100.0	
	230	.062	4.00	--	--								
Silt-Clay				100.0	100.0								

TABLE NO. B-4 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAY 1977

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size φ	SAMPLE NUMBER 21	22	23	24	25	26	27	28	29	30
Pebble	8	2.38	-1.25	43.0	10.6	19.3	6.2	0.6	4.1	<0.1	--	--	6.1
	10	2.00	-1.00	--	--	--	--	--	--	--	--	0.3	--
Very Coarse Sand	12	1.68	-0.75	47.2	11.9	20.2	8.1	--	5.7	0.1	--	--	6.4
	14	1.41	-0.50	50.0	12.8	20.9	10.5	0.8	7.2	0.2	--	--	7.0
	16	1.19	-0.25	53.6	13.6	21.9	14.2	0.9	9.3	0.3	--	0.4	7.5
	18	1.00	0.00	--	--	--	--	--	--	0.4	--	0.5	--
Coarse Sand	20	.840	0.25	62.8	16.2	23.8	26.0	1.4	14.9	0.8	--	0.7	8.7
	25	.710	0.50	68.3	17.9	25.2	35.5	2.0	19.4	1.3	0.04	1.0	9.7
	30	.590	0.75	73.5	19.9	26.8	45.4	3.2	24.7	3.0	0.08	2.0	10.9
	35	.500	1.00	82.2	24.7	30.5	63.7	9.4	39.0	7.6	0.15	5.0	14.2
Medium Sand	40	.420	1.25	87.7	29.7	35.2	74.3	19.9	51.1	14.6	0.3	11.1	18.2
	45	.350	1.50	91.6	36.6	43.3	81.1	41.7	67.2	26.0	0.7	22.8	25.5
	50	.300	1.75	95.3	48.2	61.1	90.3	71.9	84.9	43.4	3.1	46.8	42.1
Find Sand	60	.250	2.00	97.1	63.1	83.9	96.9	90.7	93.5	59.2	21.7	72.4	64.7
	70	.210	2.25	97.9	77.6	95.0	99.0	96.9	96.9	77.5	58.0	92.1	82.8
	80	.177	2.50	98.7	90.8	98.5	99.5	99.1	98.3	94.3	91.6	98.6	93.6
	100	.149	2.75	99.4	97.7	99.5	99.7	99.8	99.5	99.2	99.4	99.8	98.1
Very Fine Sand	120	.125	3.00	99.6	99.0	99.7	99.8	100.0	99.8	99.6	99.9	99.9	99.2
	140	.105	3.25	99.7	99.4	99.8	99.8		99.9	99.7	99.9	--	99.8
	170	.088	3.50	100.0	99.5	99.8	--		--	99.7	--	--	--
	200	.074	3.75		99.6	--	--		--	--	--	--	--
	230	.062	4.00		--	--	--		--	--	--	--	--
Silt-Clay					100.0	100.0	100.0		100.0	100.0	100.0	100.0	100.0

TABLE NO. B-4 (CONT'D)
MARINE SCIENCES RESEARCH CENTER
SHIPEK BOTTOM GRAB SAMPLES, MAY 1977
SEDIMENT GRAIN SIZE DISTRIBUTION
PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 31	32	33	34	35	36	37	38	39	40
Pebble	8	2.38	-1.25	34.9	1.7	N	0.9	3.1	0.7	--	61.4	--	1.5
	10	2.00	-1.00	--	--	O	--	--	--	1.1	--	3.9	--
Very Coarse Sand	12	1.68	-0.75	36.6	2.3		1.0	3.3	0.9	1.7	67.8	--	1.7
	14	1.41	-0.50	37.7	2.7		1.1	3.7	1.1	2.9	71.6	4.0	1.8
	16	1.19	-0.25	38.7	3.3		1.3	4.0	1.5	4.6	75.1	4.2	2.0
	18	1.00	0.00	--	--	S	--	--	--	7.2	--	4.5	--
Coarse Sand	20	.840	0.25	40.8	4.9	A	1.6	5.1	3.4	10.7	80.9	5.0	2.6
	25	.710	0.50	41.8	6.2	M	1.9	6.0	6.4	15.3	83.6	5.8	3.5
	30	.590	0.75	42.7	8.2	P	2.1	7.4	9.5	21.7	86.0	7.8	5.1
	35	.500	1.00	44.2	14.9	L	2.6	12.4	19.2	31.7	89.4	13.2	10.9
	40	.420	1.25	45.8	21.5	E	3.4	19.9	30.7	43.0	91.4	21.9	21.5
Medium Sand	45	.350	1.50	48.1	33.4		5.8	31.4	48.2	59.1	92.8	37.3	37.7
	50	.300	1.75	51.5	55.2		15.2	50.7	71.8	80.0	93.8	60.9	68.4
	60	.250	2.00	55.0	79.6		35.1	74.9	89.3	93.0	94.4	80.7	87.4
Fine Sand	70	.210	2.25	60.4	93.4		58.7	92.4	97.0	98.3	95.0	94.8	96.0
	80	.177	2.50	72.5	97.9		76.7	98.4	99.7	99.5	96.2	99.1	98.6
	100	.149	2.75	80.4	99.3		89.0	99.5	99.9	99.8	96.8	99.8	99.7
	120	.125	3.00	82.3	99.6		93.8	99.6	--	99.9	96.9	99.95	99.9
Very Fine Sand	140	.105	3.25	82.9	99.7		96.1	99.7	--	100.0	97.0	99.98	--
	170	.088	3.50	83.5	--		96.8	--	--		97.1	--	--
	200	.074	3.75	84.1	--		97.0	99.7	--		97.2	--	--
	230	.062	4.00	--	--		--	--	--		--	--	--
Silt-Clay				100.0	100.0		100.0	100.0	100.0		100.0	100.0	100.0

TABLE NO. B-4 (CONT'D)
MARINE SCIENCES RESEARCH CENTER
SHIPEK BOTTOM GRAB SAMPLES, MAY 1977
SEDIMENT GRAIN SIZE DISTRIBUTION
PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 41	42	43	44	45	46	47	48	49	50
Pebble	8	2.38	-1.25	--	--	--	--	--	--	8.6	31.5	11.9	6.3
	10	2.00	-1.00	0.1	1.1	<0.1	0.2	--	0.4	--	--	--	--
Very Coarse Sand	12	1.68	-0.75	--	1.2	--	--	<0.1	--	9.7	33.6	26.5	6.4
	14	1.41	-0.50	0.2	1.4	--	0.3	0.1	--	10.5	35.4	34.7	6.8
	16	1.19	-0.25	0.3	1.6	--	0.5	0.2	0.5	11.9	36.8	42.4	7.5
	18	1.00	0.00	0.4	1.9	--	0.9	--	0.7	--	--	--	--
Coarse Sand	20	.840	0.25	0.5	2.3	--	2.4	0.5	1.0	16.8	39.8	58.2	11.9
	25	.710	0.50	0.8	2.9	--	5.7	1.3	1.6	20.7	41.7	65.8	17.1
	30	.590	0.75	1.4	4.5	0.1	13.2	3.5	3.0	24.5	43.4	72.6	22.4
	35	.500	1.00	4.6	9.8	0.4	25.5	16.9	7.0	31.4	46.9	82.2	32.7
Medium Sand	40	.420	1.25	12.7	20.4	2.3	36.6	34.0	15.4	37.7	50.3	90.5	41.7
	45	.350	1.50	31.1	45.7	11.6	47.3	54.7	31.2	44.1	56.4	95.0	53.5
	50	.300	1.75	63.3	76.0	40.4	65.3	77.9	50.6	54.2	67.8	98.3	72.8
	60	.250	2.00	84.7	90.9	78.0	84.4	93.4	67.2	72.4	82.9	99.3	88.6
Fine Sand	70	.210	2.25	96.4	96.9	97.0	96.3	97.0	85.6	88.2	94.0	99.9	95.9
	80	.177	2.50	99.2	98.8	99.5	99.1	98.8	95.8	97.0	98.2	--	98.6
	100	.149	2.75	99.8	99.6	99.9	99.7	99.6	99.3	99.0	99.3	--	99.6
	120	.125	3.00	99.9	99.7	99.96	99.8	99.8	99.8	99.3	99.5	--	99.7
Very Fine Sand	140	.105	3.25	100.0	100.0	99.98	99.9	99.9	99.9	99.5	99.6	--	99.8
	170	.088	3.50			--	99.98	100.0	99.98	99.6	99.7	--	99.9
	200	.074	3.75			--	--		--	99.67	--	--	--
	230	.062	4.00			--	--		--	--	--	--	--
Silt-Clay						100.0	100.0		100.0	100.0	100.0	100.0	100.0

TABLE NO. B-4 (CONT'D)
MARINE SCIENCES RESEARCH CENTER
SHIPEK BOTTOM GRAB SAMPLES, MAY 1977
SEDIMENT GRAIN SIZE DISTRIBUTION
PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size φ	SAMPLE NUMBER 51	52	53	54	55	56	57	58	59	60
Pebble	8	2.38	-1.25	1.1	N	--	0.3	--	--	0.02	0.6	N	--
	10	2.00	-1.00	--	O	<0.1	--	--	--	--	--	O	--
Very Coarse Sand	12	1.68	-0.75	2.6		--	--	<0.1	<0.1	--	0.9		0.02
	14	1.41	-0.50	6.8		0.2	0.5	0.1	0.1	0.04	1.0		--
	16	1.19	-0.25	14.1		0.6	0.7	--	0.2	0.06	1.1		--
	18	1.00	0.00	22.4	S	1.2	--	--	--	--	--	S	--
Coarse Sand	20	.840	0.25	31.2	A	3.0	1.9	0.4	1.3	0.2	1.8	A	0.04
	25	.710	0.50	40.3	M	7.4	3.0	1.1	3.7	0.5	2.8	M	0.1
	30	.590	0.75	52.3	P	18.0	4.6	3.1	8.9	1.2	4.4	P	0.3
	35	.500	1.00	65.9	L	41.3	9.9	18.1	24.1	3.8	9.1	L	1.8
Medium Sand	40	.420	1.25	78.1	E	64.0	16.8	46.1	37.3	7.2	15.7	E	3.8
	45	.350	1.50	87.9		86.2	51.3	70.2	50.7	13.0	26.7		8.1
	50	.300	1.75	95.8		94.6	75.9	81.9	67.9	25.4	45.8		28.9
Fine Sand	60	.250	2.00	98.5		95.9	79.7	87.7	85.4	39.0	66.8		68.4
	70	.210	2.25	99.6		96.5	91.8	92.3	93.3	51.5	82.3		88.4
	80	.177	2.50	99.7		97.3	97.8	96.1	97.5	65.3	91.8		96.7
	100	.149	2.75	100.0		97.7	99.3	99.0	99.2	82.8	97.4		99.1
Very Fine Sand	120	.125	3.00			97.8	99.6	99.7	99.6	94.1	98.9		99.7
	140	.105	3.25			97.9	99.7	99.9	99.8	97.8	99.5		99.87
	170	.088	3.50			--	99.8	99.94	100.0	99.1	99.6		99.89
	200	.074	3.75			--	--	99.96		99.4	99.7		--
	230	.062	4.00			--	--	--		--	--		--
Silt-Clay						100.0	100.0	100.0		100.0	100.0		100.0

TABLE NO. B-4 (CONT'D)
MARINE SCIENCES RESEARCH CENTER
SHIPEK BOTTOM GRAB SAMPLES, MAY 1977
SEDIMENT GRAIN SIZE DISTRIBUTION
PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size φ	SAMPLE NUMBERS 61	62	63	64	65	66	67	68	69	70
Pebble	8	2.38	-1.25	9.1	0.74	0.2	0.46	0.9	0.6	--	0.43	15.8	1.5
	10	2.00	-1.00	--	--	--	--	--	--	--	--	--	--
Very Coarse Sand	12	1.68	-0.75	12.1	--	--	0.53	1.0	0.7	--	--	18.4	--
	14	1.41	-0.50	14.6	0.86	0.3	0.6	1.2	0.8	--	0.45	20.4	1.6
	16	1.19	-0.25	18.2	0.94	0.5	0.7	1.3	0.9	--	0.49	23.3	1.9
	18	1.00	0.00	--	--	--	--	--	--	--	--	--	--
Coarse Sand	20	.840	0.25	31.1	1.1	0.8	1.0	1.8	1.3	0.06	0.53	29.5	3.5
	25	.710	0.50	41.6	1.3	1.0	1.1	2.1	1.6	0.08	0.57	35.0	6.9
	30	.590	0.75	51.6	1.5	1.3	1.3	2.5	2.1	0.10	0.61	41.9	13.5
	35	.500	1.00	64.9	1.8	1.5	1.7	3.3	3.0	0.12	0.71	58.5	35.9
Medium Sand	40	.420	1.25	70.5	2.0	1.7	2.1	4.9	4.2	0.14	0.86	73.3	58.7
	45	.350	1.50	76.3	2.4	2.1	2.6	7.2	5.8	0.19	1.2	85.9	79.2
	50	.300	1.75	79.3	3.4	3.5	3.9	10.4	8.9	0.24	2.6	94.6	92.6
Fine Sand	60	.250	2.00	80.9	6.1	9.8	5.6	13.4	14.7	0.30	6.0	97.8	97.5
	70	.210	2.25	82.2	15.0	29.6	9.0	17.0	28.7	0.39	17.9	98.8	99.0
	80	.177	2.50	84.4	36.7	55.6	17.9	26.9	46.3	0.74	44.9	99.40	99.6
Fine Sand	100	.149	2.75	88.6	68.2	84.6	45.0	45.5	64.9	3.8	78.8	99.61	99.89
	120	.125	3.00	91.9	86.4	92.8	72.6	68.1	79.7	15.4	91.2	99.73	99.97
Very Fine Sand	140	.105	3.25	94.0	92.5	95.2	91.0	87.2	91.9	50.5	97.4	99.79	--
	170	.088	3.50	95.5	94.6	97.3	97.7	95.1	97.5	77.6	99.77	--	--
	200	.074	3.75	97.2	96.6	98.7	97.8	98.1	98.2	91.8	99.81	99.83	--
	230	.062	4.00	--	--	--	--	--	--	--	--	--	--
Silt-Clay				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO. B-4 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAY 1977

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ¢	SAMPLE NUMBER 71	72	73	74	75	76	77	78	79	80
Pebble	8	2.38	-1.25	3.3	0.14	0.18	2.24	0.88	4.70	2.10	0.11	1.5	0.35
	10	2.00	-1.00	--	--	--	--	--	--	--	--	--	--
	12	1.68	-0.75	3.6	--	--	2.33	--	4.87	--	--	1.7	0.37
Very Coarse Sand	14	1.41	-0.50	3.8	0.16	0.23	2.38	0.97	5.00	--	0.13	1.8	0.44
	16	1.19	-0.25	4.0	0.20	0.25	2.43	1.04	5.06	2.15	0.15	1.9	0.46
	18	1.00	0.00	--	--	--	--	--	--	--	--	--	--
	20	.840	0.25	4.3	0.24	0.30	2.54	1.24	5.15	2.28	0.19	2.2	0.7
Coarse Sand	25	.710	0.50	4.6	0.43	0.37	2.65	1.46	5.19	2.37	0.41	2.4	0.9
	30	.590	0.75	4.9	0.8	0.54	2.79	1.72	5.23	2.44	0.54	2.5	1.2
	35	.500	1.00	5.7	2.1	1.9	3.5	3.4	5.27	2.53	0.65	2.7	2.2
	40	.420	1.25	6.8	3.8	4.6	4.7	7.8	5.29	2.60	0.74	3.0	3.5
Medium Sand	45	.350	1.50	9.4	6.5	14.2	7.2	23.8	5.33	2.71	0.83	3.4	5.2
	50	.300	1.75	15.3	12.4	35.0	12.5	58.9	5.40	2.91	1.1	4.7	9.0
	60	.250	2.00	25.5	23.7	58.5	21.7	85.0	5.51	3.4	1.7	7.4	15.1
Fine Sand	70	.210	2.25	48.2	41.4	74.4	43.5	93.2	5.79	5.6	4.8	13.1	26.4
	80	.177	2.50	77.6	63.9	90.3	81.8	97.0	6.5	16.4	13.8	23.9	43.7
	100	.149	2.75	94.4	89.6	97.9	96.3	99.0	13.4	33.6	34.7	41.2	61.9
	120	.125	3.00	97.8	96.9	99.4	98.4	99.58	26.6	53.0	56.0	58.5	77.4
Very Fine Sand	140	.105	3.25	99.0	98.7	99.90	99.25	99.91	71.7	78.3	80.4	79.2	90.3
	170	.088	3.50	99.5	99.85	99.92	99.74	--	88.4	90.8	92.1	90.6	96.1
	200	.074	3.75	99.7	99.89	99.94	99.88	99.93	98.2	97.0	98.1	96.9	98.2
	230	.062	4.00	--	--	--	--	--	--	--	--	--	--
Silt-Clay				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO. B-5

MARINE SCIENCES REARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, DEC. 1977 - JUN. 1978

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 8	9	10	11	12	13	14A	14B	15	16	17
Pebble	8	2.38	-1.25	--	--		--	--	--	--	--	--	--	--
	10	2.00	-1.00	--	--	N	--	--	0.4	1.9	0.8	--	--	--
	12	1.68	-0.75	--	--	O	--	--	--	--	--	--	--	--
Very Coarse Sand	14	1.41	-0.50	--	--		--	--	1.0	2.5	1.9	--	0.02	--
	16	1.19	-0.25	--	--		--	--	--	--	--	--	--	--
	18	1.00	0.00	<0.1	<0.01	S	<0.01	--	3.1	3.6	3.3	--	0.08	--
	20	.840	0.25	0.1	0.01	A	<0.01	<0.01	5.0	4.5	4.4	<0.01	0.1	<0.01
Coarse Sand	25	.710	0.50	0.2	0.06	M	0.01	0.01	7.2	5.5	5.6	0.01	0.2	<0.01
	30	.590	0.75	0.3	0.07	P	0.01	0.02	9.0	6.4	6.8	0.02	0.4	0.01
	35	.500	1.00	0.4	0.09	L	0.02	0.04	12.2	8.7	9.8	0.03	0.8	0.03
	40	.420	1.25	0.5	0.11	E	0.03	0.05	15.0	10.9	12.4	0.04	1.5	0.04
Medium Sand	45	.350	1.50	0.7	0.13		0.04	0.06	18.4	13.9	16.0	0.05	2.6	0.06
	50	.300	1.75	1.0	0.19		0.06	0.10	24.3	18.8	22.0	0.08	4.6	0.1
	60	.250	2.00	1.4	0.25		0.10	0.14	31.6	24.0	28.1	0.1	7.0	0.2
Fine Sand	70	.210	2.25	1.9	0.33		0.12	0.2	39.7	29.0	33.9	0.2	9.5	0.3
	80	.177	2.50	3.0	0.47		0.17	0.3	48.2	33.8	39.4	0.4	11.5	0.4
	100	.149	2.75	9.2	0.52		0.24	0.4	56.4	39.6	45.8	2.2	13.2	0.9
	120	.125	3.00	23.3	1.6		0.38	0.5	62.1	45.5	52.2	5.4	15.3	2.1
Very Fine Sand	140	.105	3.25	46.2	4.0		0.91	1.0	77.6	58.2	64.4	8.9	21.9	6.0
	170	.088	3.50	58.3	6.2		1.7	1.7	85.4	66.4	73.0	11.1	24.4	10.4
	200	.074	3.75	--	--		--	--	--	--	--	--	--	--
	230	.062	4.00	72.7	11.3		4.8	4.4	95.4	83.1	87.8	16.2	27.5	21.5
Silt-Clay				100.0	100.0		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO. B-5 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, DEC. 1977 - JUN. 1978

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 18	19	20	21	22	23	24	25	26	27
Pebble	8	2.38	-1.25	--	--	--	--	--	--	--	--	--	--
	10	2.00	-1.00	--	0.11	--	--	--	--	0.09	1.4	0.09	0.03
	12	1.68	-0.75	--	--	--	--	--	--	--	--	--	--
Very Coarse Sand	14	1.41	-0.50	--	0.11	0.03	--	--	--	0.12	1.7	0.18	0.04
	16	1.19	-0.25	--	--	--	--	--	--	--	--	--	--
	18	1.00	0.00	0.01	0.13	0.09	--	0.02	0.01	0.25	2.2	0.9	0.05
	20	.840	0.25	0.02	0.17	0.14	0.01	0.04	0.02	0.6	2.4	2.1	0.07
Coarse Sand	25	.710	0.50	0.04	0.21	0.20	0.03	0.07	0.05	1.5	2.7	4.3	0.18
	30	.590	0.75	0.05	0.26	0.29	0.04	0.12	0.07	3.9	2.9	7.6	0.6
	35	.500	1.00	0.08	0.37	0.44	0.06	0.21	0.12	13.0	3.6	16.2	5.3
	40	.420	1.25	0.12	0.47	0.61	0.09	0.33	0.22	25.2	4.6	25.1	17.0
Medium Sand	45	.350	1.50	0.16	0.59	0.82	0.14	0.51	0.42	43.6	6.2	34.7	35.5
	50	.300	1.75	0.2	0.90	1.2	0.27	0.98	1.4	69.9	12.5	48.8	71.8
	60	.250	2.00	0.3	1.3	1.6	0.61	1.9	4.1	86.6	23.7	65.3	91.3
Fine Sand	70	.210	2.25	0.4	1.9	2.2	1.7	4.4	11.1	93.3	43.9	79.5	97.1
	80	.177	2.50	0.7	4.4	3.9	5.4	10.5	23.7	96.5	67.8	89.5	98.6
	100	.149	2.75	1.5	20.1	12.0	18.6	33.5	50.1	98.0	87.5	95.8	99.1
	120	.125	3.00	3.2	41.7	22.7	30.9	51.9	63.6	98.3	92.9	97.6	99.13
Very Fine Sand	140	.105	3.25	7.7	62.0	37.4	40.8	65.6	74.8	98.4	95.4	98.2	99.15
	170	.088	3.50	12.1	71.5	45.8	44.2	69.0	79.2	98.46	96.2	98.4	99.16
	200	.074	3.75	--	--	--	--	--	--	--	--	--	--
	230	.062	4.00	25.9	93.8	61.7	48.7	72.7	85.3	98.5	96.9	98.6	99.17
Silt-Clay				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO. B-5 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, DEC. 1977 - JUN. 1978

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size φ	SAMPLE NUMBER 28	29	30	31	32	33	34	35	36	37	38
Pebble	8	2.38	-1.25	--	--	--	--			--	--	--	--	--
	10	2.00	-1.00	--	--	--	0.2	N	A	--	--	0.05	0.11	--
	12	1.68	-0.75	--	--	--	--	O	L	--	--	--	--	--
Very Coarse Sand	14	1.41	-0.50	--	--	<0.01	0.3		L	--	--	0.09	0.16	--
	16	1.19	-0.25	--	--	--	--			--	--	--	--	--
	18	1.00	0.00	--	<0.01	0.03	0.6			0.01	--	0.38	0.29	0.01
	20	.840	0.25	--	<0.01	0.07	0.9			0.04	0.02	1.1	0.43	0.03
Coarse Sand	25	.710	0.50	--	<0.01	0.11	1.3	S		0.07	0.05	2.8	0.67	0.05
	30	.590	0.75	0.01	0.01	0.17	1.6	A	S	0.10	0.16	5.2	1.0	0.08
	35	.500	1.00	0.02	0.01	0.27	2.2	M	H	0.18	0.27	10.0	2.0	0.24
	40	.420	1.25	0.04	0.02	0.41	3.4	P	E	0.40	5.0	15.8	3.6	0.60
Medium Sand	45	.350	1.50	0.07	0.03	0.65	7.0	L	L	1.3	20.0	28.4	7.1	2.3
	50	.300	1.75	0.12	0.06	0.96	13.6	E	L	6.0	50.8	46.4	13.5	5.1
	60	.250	2.00	0.18	0.09	1.4	27.3			18.0	82.3	71.1	27.3	13.1
Fine Sand	70	.210	2.25	0.29	0.14	2.0	46.3			39.1	94.1	87.5	52.0	31.0
	80	.177	2.50	0.44	0.18	3.3	67.8			65.4	97.0	95.0	76.8	63.3
	100	.149	2.75	1.0	0.28	11.6	86.2			87.7	98.4	97.8	93.1	93.1
	120	.125	3.00	2.5	0.49	26.2	92.1			94.8	98.8	98.4	96.9	97.4
Very Fine Sand	140	.105	3.25	7.1	1.2	47.5	95.4			97.7	98.95	98.7	98.1	98.6
	170	.088	3.50	12.0	2.5	59.1	96.7			98.5	99.00	98.79	98.4	98.9
	200	.074	3.75	--	--	--	--			--	--	--	--	--
	230	.062	4.00	26.2	7.5	66.6	98.2			99.0	99.02	98.88	98.6	99.1
Silt-Clay				100.0	100.0	100.0	100.0			100.0	100.0	100.0	100.0	100.0

TABLE NO. B-5 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, DEC. 1977 - JUN. 1978

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 39	40	41	42	43	44	45	46	47	48
Pebble	8	2.38	-1.25	--	--	--	--	--	--	--	--	--	--
	10	2.00	-1.00	--	0.13	--	--	--	--	2.4	--	--	--
	12	1.68	-0.75	--	--	--	--	--	--	--	--	--	--
Very Coarse Sand	14	1.41	-0.50	0.01	0.17	0.24	--	--	--	2.7	0.01	0.03	<0.01
	16	1.19	-0.25	--	--	--	--	--	--	--	--	--	--
	18	1.00	0.00	0.03	0.24	0.86	0.01	--	--	3.2	0.09	0.06	0.01
	20	.840	0.25	0.05	0.33	1.7	0.02	--	--	3.5	0.13	0.08	0.02
Coarse Sand	25	.710	0.50	0.09	0.42	2.9	0.04	--	--	3.8	0.19	0.13	0.04
	30	.590	0.75	0.14	0.54	4.5	0.06	--	--	4.0	0.28	0.18	0.05
	35	.500	1.00	0.31	1.0	8.6	0.08	--	--	4.4	0.54	0.33	0.07
	40	.420	1.25	0.58	2.0	15.1	0.10	--	--	4.8	1.0	0.60	0.10
Medium Sand	45	.350	1.50	--	4.6	22.6	0.14	<0.01	--	5.4	2.2	1.37	0.14
	50	.300	1.75	2.4	8.8	33.5	0.20	0.01	--	6.5	4.9	4.5	0.22
	60	.250	2.00	5.8	16.3	46.2	0.27	0.03	--	9.1	10.4	12.7	0.35
Fine Sand	70	.210	2.25	15.9	29.2	58.0	0.37	0.06	<0.01	16.6	20.9	29.2	0.62
	80	.177	2.50	38.0	54.1	67.0	0.48	0.25	1.17	31.9	38.5	51.9	1.7
	100	.149	2.75	67.9	89.7	79.3	0.71	0.87	1.25	65.5	62.3	78.3	9.6
	120	.125	3.00	79.7	96.0	88.1	1.1	1.7	3.3	84.7	73.3	88.5	21.6
Very Fine Sand	140	.105	3.25	86.9	98.2	92.7	1.8	3.0	6.3	94.3	78.9	93.4	33.2
	170	.088	3.50	89.4	98.8	94.0	3.0	4.0	8.6	96.3	80.4	94.9	38.7
	200	.074	3.75	--	--	--	--	--	--	--	--	--	--
	230	.062	4.00	92.2	99.1	95.3	6.7	6.4	13.9	97.4	81.7	95.9	49.2
Silt-Clay				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE NO.B-5 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, DEC. 1977 - JUN. 1978

SEDIMENT GRAIN SIZE DISTRIBUTION

PERCENT COARSER THAN BY MASS

	U.S. Std. Sieve Mesh No.	Sieve Size (mm.)	Sieve Size ϕ	SAMPLE NUMBER 49	50	51	52	53	54	55	56	57
Pebble	8	2.38	-1.25	--	--		--	--	--	--	--	--
	10	2.00	-1.00	--	--	N	--	--	--	--	--	1.3
	12	1.68	-0.75	--	--	O	--	--	--	--	--	--
Very Coarse Sand	14	1.41	-0.50	--	0.25		<0.01	0.08	--	--	0.14	2.8
	16	1.19	-0.25	--	--		--	--	--	--	--	--
	18	1.00	0.00	<0.01	0.59	S	0.04	0.45	<0.01	0.02	0.59	7.1
	20	.840	0.25	0.01	0.94	A	0.07	0.83	0.01	0.11	1.3	11.8
Coarse Sand	25	.710	0.50	--	1.3	M	0.10	1.3	0.03	0.15	2.9	17.8
	30	.590	0.75	--	1.6	P	0.13	2.0	0.04	0.25	6.0	24.8
	35	.500	1.00	--	2.1	L	0.17	3.5	0.08	0.84	14.6	36.6
	40	.420	1.25	0.02	2.5	E	0.22	5.6	0.16	2.5	26.5	49.6
Medium Sand	45	.350	1.50	--	3.1		0.30	8.9	0.39	9.1	52.0	62.2
	50	.300	1.75	0.03	4.0		0.45	14.9	1.5	29.0	78.4	75.1
	60	.250	2.00	0.05	5.4		0.80	24.6	5.8	63.6	92.0	86.6
Fine Sand	70	.210	2.25	0.08	8.1		1.8	41.2	17.1	88.4	96.1	94.1
	80	.177	2.50	0.10	14.0		4.4	61.7	36.9	96.6	97.4	97.2
	100	.149	2.75	0.18	30.3		14.4	81.9	62.8	98.6	98.0	98.4
	120	.125	3.00	0.35	46.6		25.6	90.2	73.3	98.8	98.1	98.6
Very Fine Sand	140	.105	3.25	0.91	65.8		36.2	94.9	78.2	98.86	98.16	98.7
	170	.088	3.50	1.8	74.6		40.5	96.4	79.8	98.88	98.18	98.76
	200	.074	3.75	--	--			--	--	--	--	--
	230	.062	4.00	5.4	87.0		47.6	97.4	82.0	98.9	98.20	98.80
Silt-Clay				100.0	100.0		100.0	100.0	100.0	100.0	100.0	100.0

APPENDIX C
TABULAR SUMMARY OF STATISTICAL PARAMETERS

TABLE NO. C-1

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, NOV. 1973

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.00mm COMPOSITION	% SAND	% SILT & CLAY <.062mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
1	40°30'38" 74°02'06" XIX	5.2	0.0	95.5	4.5	0.337	1.32	0.86	- 0.40	1.06
2	40°29'45" 74°01'46" XIX	4.9	0.0	99.8	0.2	0.525	0.94	0.50	- 3.81	0.98
3	40°29'12" 74°01'27" XIX	4.9	0.0	99.6	0.4	0.277	1.84	0.32	+ 0.05	1.20
4	40°28'26" 73°59'14" XXII	4.3	2.5	97.0	0.5	0.379	1.70	0.56	+ 2.10	1.84
5	40°27'54" 73°59'00" XXII	4.9	0.0	98.6	1.4	0.268	1.87	0.67	- 0.14	1.11
6	40°27'22" 73°58'35" XXII	4.6	0.0	98.8	1.2	0.426	1.19	0.74	- 0.28	1.66
7	40°26'52" 73°58'04" XXV	5.2	0.0	99.0	1.0	0.529	0.93	0.72	- 0.11	1.64
8	40°26'11" 73°57'50" XXV	6.7	44.2 P	55.3	0.5	1.464	-0.16	1.98	+ 0.21	0.83
9	40°25'29" 73°57'07" XXV	7.9	0.5	96.0	3.5	0.527	0.90	0.82	- 0.10	1.29
10	40°25'44" 73°55'46" XXV	15.2	6.4	90.1	3.5	0.678	0.71	1.07	+ 0.15	11.15
11	40°26'25" 73°56'24" XXIV	13.4	17.4 SH	82.1	0.5	1.231	*	*	*	*
12	40°26'54" 73°56'55" XXIV	8.8	0.0	97.0	3.0	0.374	1.40	0.66	- 0.02	1.15
13	40°27'27" 73°57'34" XXIV	4.9	6.7 SH&P	92.4	0.9	0.732	0.58	0.83	- 0.21	1.10
14	40°27'50" 73°57'59" XXI	5.2	14.5 SH&P	84.7	0.8	0.483	0.58	1.17	- 0.56	0.88
15	40°28'19" 73°58'35" XXII	5.8	3.0	94.0	1.0	0.374	1.33	0.80	- 0.26	1.44
16	40°28'05" 73°59'25" XXIII	7.0	0.0	99.5	0.5	0.137	2.12	0.50	- 1.87	1.07
17	40°27'32" 73°59'10" XXII	6.7	0.0	99.5	0.5	0.384	1.34	0.47	- 0.12	1.03
18	40°26'55" 73°58'42" XXII	6.1	0.0	99.5	0.5	0.398	1.37	0.48	+ 0.13	1.30

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

TABLE NO. C-1 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, NOV. 1973

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.00mm COMPOSITION	% SAND	% SILT & CLAY <0.062mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
19	N O S A M P L E									
20	40°32'04" 73°57'55" IV	7.0	20.6 SH&P	76.9	2.5	0.707	0.02	1.40	- 0.07	0.93
21	40°31'20" 73°56'28" IV	7.3	2.2 P	97.5	0.3	0.476	1.06	0.58	- 6.31	0.87
22	40°30'59" 73°55'30" Vb	8.5	0.0	98.5	1.5	0.330	1.62	0.28	+ 0.10	1.05
23	40°30'37" 73°54'29" VIII	9.4	0.0	99.8	0.2	0.156	2.59	0.54	- 0.40	2.60
24	40°31'16" 73°54'13" VII	10.4	0.0	98.7	1.3	0.113	3.13	0.31	- 0.06	1.07
25	40°31'47" 73°55'22" VI	5.8	0.0	98.7	1.3	0.147	2.81	0.31	+ 0.06	1.90
26	40°32'21" 73°55'54" VI	5.5	0.0	99.4	0.6	0.173	2.47	0.38	- 0.22	0.85
27	40°32'51" 73°55'18" VI	5.2	0.0	99.4	0.6	0.163	2.54	0.49	- 0.20	0.99
28	40°32'16" 73°54'47" VII	8.8	0.0	99.5	0.5	0.113	3.14	0.27	- 0.04	0.97
29	40°31'47" 73°53'57" VII	8.8	0.0	98.9	1.1	0.115	3.11	0.30	+ 0.04	1.10
30	40°32'38" 73°53'38" VI	7.9	0.0	99.5	0.5	0.153	2.65	0.45	- 0.18	1.31
31	40°33'04" 73°54'15" VI	4.6	0.0	99.9	0.1	0.157	2.61	0.39	- 0.33	1.54
32	40°31'58" 73°52'42" VIII	10.7	0.0	97.0	3.0	0.134	2.96	0.37	+ 0.16	0.57
33	40°31'03" 73°51'18" VIII	12.5	0.0	99.1	0.9	0.151	2.74	0.40	- 0.02	1.43
34	40°30'05" 73"53'07" VIII	12.2	0.9	98.3	0.8	0.374	1.57	0.76	+ 0.23	1.20
35	40°30'12" 73°55'38" VIII	10.1	0.0	99.5	0.5	0.157	2.58	0.44	- 0.36	1.83
36	40°30'46" 73°57'19" IV	4.9	2.0	97.3	0.7	0.779	0.42	0.58	+ 0.10	1.05

SH - Shell
P - Pebble

TABLE NO. C-2

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, JULY 1974

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSER >2.00mm COMPOSITION	% SAND	% SILT & CLAY <0.062mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
1	40°34'14" 74°00'35" I	2.7	0.1 SH	97.3	2.6	0.261	1.95	0.38	+ 0.04	1.07
2	40°34'05" 73°59'29" I	6.1	1.4 SH-P	98.3	0.3	0.325	1.61	0.54	- 0.05	1.30
3	40°34'08" 73°58'33" II	4.3	2.2 SH	93.1	4.7	0.113	2.98	0.70	- 0.53	1.73
4	40°34'13" 73°57'45" II	3.0	2.7	95.6	1.7	0.129	2.96	0.35	- 0.04	1.35
5	40°34'16" 73°56'46" II	3.4	N O T S I E V E D							
6	40°33'30" 73°56'43" II	6.1	4.8 SH	94.1	1.1	0.134	2.88	0.60	- 0.37	2.53
7	40°33'29" 73°58'05" II	4.9	28.2 SH	71.4	0.4	0.225	*	*	*	*
8	40°32'43" 73°58'16" I	4.3	1.7 SH	98.1	0.2	0.297	1.72	0.61	- 0.17	1.02
9	40°31'58" 73°58'25" III	4.0	1.8	93.0	5.2	0.202	2.30	*	*	*
10	40°33'00" 73°53'54" VI	5.8	0.3	99.3	0.4	0.171	2.59	0.44	+ 0.08	1.10
11	40°33'23" 73°52'29" VI	5.5	16.8	83.0	0.2	0.406	0.58	*	*	*
12	40°33'52" 73°51'18" VI	6.1	1.4	97.4	1.2	0.289	1.90	0.74	+ 0.18	0.86
13	40°34'16" 73°50'06" VI	6.4	0.2	95.9	3.9	0.123	2.66	0.86	- 0.47	0.79
14	40°28'52" 74°01'00" XIII	13.7	0.9	91.7	7.4	0.171	2.31	*	*	*
15	40°28'59" 74°02'07" XX	4.9	5.3	94.2	0.5	0.207	2.26	0.75	- 0.39	4.00
16	40°29'46" 74°02'14" XX	5.2	0.4	99.6	0.0	0.152	2.71	0.31	+ 1.85	1.22
17	40°30'40" 74°02'15" XIX	4.9	1.5	98.5	0.0	0.261	1.89	0.50	- 0.24	1.05

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

TABLE NO. C-2 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, JULY 1974

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.00mm COMPOSITION	% SAND	% SILT & CLAY <0.062mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
18	40°31'13" 74°02'11" XVIII	7.6	M U D A N D S H E L L							
19	40°32'00" 74°02'02" XVII	4.9	0.0	99.5	0.5	0.354	1.44	0.44	- 0.25	1.24
20	40°33'25" 74°01'09" IX	10.4	0.6	64.6	34.8	0.102	*	*	*	*
21	40°33'29" 74°00'23" I	4.3	<0.1	99.9	0.0	0.281	1.85	0.32	+ 0.08	1.21
22	40°32'57" 74°00'19" I	5.5	6.2	93.8	0.0	0.312	1.54	*	*	*
23	40°32'29" 74°00'48" I	7.9	2.4	97.4	0.2	0.319	1.70	0.40	+ 0.14	1.15
24	40°31'54" 74°01'09" X	13.7	0.2	99.7	0.1	0.264	1.97	0.46	+ 0.15	1.09
25	40°31'19" 74°00'10" X	13.7	4.2	95.7	0.1	0.366	1.41	0.68	- 0.28	1.84
26	40°31'48" 73°59'40" III	4.6	0.0	99.1	0.9	0.193	2.30	0.42	- 0.28	1.04
27	40°31'18" 73°58'32" III	4.6	0.9	99.1	0.0	0.228	2.07	0.37	- 0.32	1.15
28	40°30'44" 73°58'39" X	13.7	1.7	98.3	<0.1	0.277	1.78	0.66	- 0.27	1.40
29	40°30'14" 73°59'14" XVII	4.6	0.1	99.6	0.3	0.268	1.89	0.51	- 0.08	0.97
30	40°29'52" 73°59'53" XXI	7.3	30.0	69.8	0.2	0.500	0.50	1.40	- 0.40	0.63
31	40°28'59" 73°59'28" XXI	13.7	41.7	58.0	0.3	1.121	0.03	1.39	+ 0.19	0.62
32	40°25'01" 73°58'26" XXII	4.0	1.5	98.5	<0.1	0.426	1.25	0.77	- 0.04	1.05
33	40°25'01" 73°58'00" XXV	7.6	0.0	99.1	<0.1	0.566	0.83	0.56	- 0.09	1.60
34	40°25'01" 73°57'30" XXV	7.7	2.8	96.9	0.3	0.555	0.76	0.66	- 0.28	1.06

* - Insufficient data to calculate statistical parameters

TABLE NO.C-2 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

PETERSEN BOTTOM GRAB SAMPLES, JULY 1974

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.00mm COMPOSITION	% SAND	% SILT & CLAY <0.062mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
35	40°25'01" 73°57'00" XXV	9.4	14.3	85.7	<0.1	0.574	0.46	*	*	*
36	40°25'01" 73°56'00" XXV	14.3	3.5	96.5	<0.1	0.547	0.83	0.69	- 0.18	1.11
37	40°25'02" 73°55'00" XXV	18.3	32.7	67.1	0.2	1.181	*	*	*	*
38	40°25'02" 73"54'00" XXIV	23.2	D R E D G E S P O I L							
39	40°26'01" 73°54'01" XXIV	23.5	12.2	61.1	26.7	0.109	*	*	*	*
40	40°26'01" 73°55'00" XXIV	19.2	18.9 P	59.8	21.3	0.319	*	*	*	*
41	40°26'00" 73°56'00" XXIV	15.5	0.1	97.9	2.0	0.171	2.55	0.61	+ 0.01	1.06
42	40°26'01" 73°57'02" XXIV	10.4	0.6	99.3	0.1	0.435	0.98	0.74	- 0.27	1.09
43	40°26'00" 73°57'32" XXV	6.7	14.5 P	85.5	<0.1	0.683	0.40	*	*	*
44	40°26'00" 73°58'01" XXII	6.7	0.6	99.4	<0.1	0.297	1.68	0.57	- 0.11	1.05
45	40°26'00" 73°58'24"	9.8	1.1	98.9	0.0	0.323	1.63	0.52	+ 4.01	1.07

* - Insufficient data to calculate statistical parameters
P - Pebble

TABLE NO. C-3

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MARCH 1976

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.00mm COMPOSITION	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
1	40°34'13" 73°56'29" II	3.0	SHELL, SILT AND CLAY				(NOT SIEVED)			
2	40°33'56" 73°57'16" II	5.2	7.2 SH	92.0	0.8	0.149	2.77	*	*	*
3	40°33'56" 73°58'07" II	5.2	0.4 SH	99.1	0.5	0.144	2.82	0.34	+ 0.06	1.05
4	40°33'52" 73°59'03" II	6.1	17.1 SH	80.0	2.9	0.139	*	*	*	*
5	50°34'07" 74°00'08" I	4.3	0.3	99.4	0.3	0.308	1.75	0.51	+ 0.05	1.17
6	40°34'02" 74°01'15" IX	9.1	MUCK				(NOT SIEVED)			
7	40°33'45" 74°02'14" XI	10.0	0.0	98.3	1.7	0.154	2.70	0.40	+ 0.04	0.97
8	40°34'07" 74°03'43" XII	9.8	SILT AND CLAY				(NOT SIEVED)			
9	40°32'58" 74°04'42" XIV	4.0	2.6 P	92.5	4.9	0.467	1.12	1.08	+ 0.17	1.74
10	40°31'40" 74°04'25" XIV	4.0	1.9	96.2	1.9	0.342	1.58	0.68	+ 0.18	1.44
11	40°30'35" 74°04'14" XX	6.4	1.2	98.1	0.7	0.314	1.64	0.63	- 0.11	1.00
12	40°29'57" 74°03'46" XX	7.0	SHELL, SILT AND CLAY				(NOT SIEVED)			
13	40°30'37" 74°03'07" XX	6.4	1.5	96.9	1.6	0.173	2.53	0.34	- 0.06	1.55
14	40°31'50" 74°03'32" XVI	5.8	SILT AND CLAY				(NOT SIEVED)			
15	40°33'03" 74°03'22" XIII	8.8	MUCK				(NOT SIEVED)			
16	40°33'03" 74°03'05" XIII	7.6	MUCK				(NOT SIEVED)			
17	40°33'08" 74°01'38" X	13.7	0.3	98.9	0.8	0.154	2.68	0.40	- 0.14	1.20
18	40°33'17" 74°00'55" IX	10.0	SILT AND CLAY				(NOT SIEVED)			

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

TABLE NO.C-3(CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MARCH 1976

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.00mm COMPOSITION	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
19	40°32'40" 74°00'17" I	4.0	1.1	98.8	0.1	0.319	1.67	0.41	+ 0.05	1.08
20	40°31'53" 74°00'30" I	4.3	<0.1	99.8	0.2	0.346	1.53	0.34	- 0.01	0.98
21	40°31'40" 74°01'47" XVII	4.6	8.0	91.7	0.3	0.308	1.53	*	*	*
22	40°31'07" 74°01'25" XVII	4.0	0.8	99.1	0.1	0.319	1.63	0.49	- 0.13	1.23
23	40°30'58" 74°00'31" XVII	4.3	1.8 SH	98.1	0.1	0.319	1.58	0.54	- 0.23	1.11
24	40°31'31" 73°59'37" III	5.5	0.0	98.4	1.6	0.171	2.53	0.34	- 0.04	1.09
25	40°31'27" 73°59'27" III	5.5	0.0	99.9	0.1	0.241	2.03	0.37	- 0.11	1.14
26a	40°30'58" 73°58'10" III	4.6	1.8	98.1	0.1	0.218	2.12	0.45	- 0.43	1.55
26b	40°30'58" 73°58'10" III	4.6	1.8	98.1	0.1	0.218	2.08	0.47	- 0.51	1.70
27	40°30'31" 73°57'44" IV	13.7	45.7 SH&P	53.6	0.7	1.464	*	*	*	*
28	40°31'19" 73°57'13" IV	6.4	2.8 P	97.1	0.1	0.871	0.22	0.63	+ 0.04	1.01
29	40°31'27" 73°58'12" IV	4.3	25.3 P	74.6	0.1	0.707	*	*	*	*
30	40°31'38" 73°58'47" III	4.9	0.0	99.9	0.1	0.225	2.12	0.37	- 0.12	1.19
31	40°32'19" 73°59'15" I	2.4	6.7	93.3	0.0	0.392	1.35	*	*	*
32	40°32'38" 73°59'44" I	3.6	25.0 SH&COAL	74.9	0.1	0.547	*	*	*	*
33a	40°33'10" 73°59'42" II	4.0	0.0	99.9	0.1	0.210	2.18	0.37	- 0.26	1.33
33b	40°33'10" 73°59'42" II	4.0	0.0	99.9	0.1	0.213	2.17	0.37	- 0.25	1.09
34	40°33'33" 73°59'36" II	2.4	0.0	99.7	0.3	0.233	2.10	0.23	+ 0.03	1.29

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

TABLE NO. C-3(CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MARCH 1976

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.00mm COMPOSITION	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
35	40°33'32" 73°59'06" II	3.0	0.0	100.0	0.0	0.213	2.23	0.34	- 0.01	1.18
36	40°33'20" 73°58'54" II	2.4	0.0	100.0	0.0	0.225	2.16	0.33	- 0.01	1.07
37	40°32'54" 73°58'47" I	3.4	1.0	98.9	0.1	0.277	1.83	0.47	- 0.12	1.16
38	40°32'53" 73°58'30" I	3.6	1.8	98.0	0.2	0.268	1.80	0.67	- 0.29	1.10
39	40°33'17" 73°58'22" II	4.9	0.8 SH	99.0	0.2	0.210	2.23	0.42	- 0.13	1.25
40	40°33'22" 73°57'46" II	4.9	13.6 SH	85.6	0.8	0.203	1.90	*	*	*
41	40°33'35" 73°57'13" II	4.6	3.3	89.1	7.6	0.218	2.15	*	*	*
42	40°32'43" 73°57'33" II	6.1	11.3 SH	88.5	0.2	0.218	4.55	*	*	*
43	40°32'19" 73°57'19" IV	7.3	47.3 SH&P	51.9	0.8	1.275	*	*	*	*
44	40°31'45" 73°57'17" IV	7.3	54.6 SH&P	43.6	1.8	*	*	*	*	*
45	40°32'05" 73°56'43" IV	7.9	A L L S H E L L				(N O T S I E V E D)			
46	40°32'36" 73°56'43" Va	7.0	10.4 SH	89.5	0.1	0.354	1.28	*	*	*
47	40°33'17" 73°56'41" Va	5.7	29.3 SH	69.4	1.3	0.420	*	*	*	*
48	40°33'38" 73°56'10" Va	10.0	3.7 SH	95.9	0.4	0.392	1.33	0.56	- 0.15	1.59

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

TABLE NO.C-4

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAY 1977

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.38mm COMPOSITION	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
1	40°34'00" 74°03'46" XII	12.2	<0.1 SH&P	29.0	71.0	*	*	*	*	*
2	40°34'22" 74°03'46" XIV	5.5	2.6 SH&P	97.0	0.4	0.423	1.16	0.84	- 0.17	1.17
3	40°33'55" 74°03'42" XII	11.6	<0.1 SH	51.6	48.4	0.077	*	*	*	*
4	40°33'32" 74°03'31" XIII	9.1	M U D				(N O T S I E V E D)			
5	40°33'12" 74°03'56" XIV	3.6	1.6 SH&P	93.4	5.0	0.323	1.69	0.93	+ 0.16	1.66
6	40°32'32" 74°02'36" XV	4.6	1.6 SH&P	87.8	10.6	0.141	*	*	*	*
7	40°33'08" 74°02'23" XI	8.5	0.4 SH&P	96.5	3.1	0.189	2.37	0.58	- 0.13	1.30
8	40°32'42" 74°01'55" XI	7.6	0.7 SH&P	99.2	0.1	0.225	2.09	0.59	- 0.25	1.13
9	40°32'26" 74°01'28" X	13.7	0.3 SH&P	99.6	0.1	0.222	2.12	0.58	- 0.20	1.00
10	40°31'37" 73°59'18" III	22.9	0.0	96.8	3.2	0.192	2.38	0.41	+ 0.12	1.41
11	40°32'38" 73°55'39" VI	6.7	1.4 SH	98.0	0.6	0.174	2.49	0.43	- 0.08	1.21
12	40°32'43" 73°54'35" VI	6.7	4.3 SH	95.4	0.2	0.291	1.72	0.82	- 0.26	1.24
13	40°31'59" 73°55'12" VI	9.1	N O T S I E V E D							
14	40°32'03" 73°55'43" Va	4.6	0.0	100.0	0.0	0.283	1.83	0.19	+ 0.04	1.29
15	40°31'46" 73°56'02" IV	9.1	N O T S I E V E D							
16	40°31'31" 73°55'37" IV	9.8	0.7 SH 3.3 P	96.0	0.0	0.651	0.63	0.56	- 0.08	1.33
17	40°31'08" 73°56'02"	8.2	1.5 SH 0.2 P	98.3	0.0	0.509	0.96	0.47	- 0.12	1.06

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

TABLE NO. C-4 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAY 1977

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.38mm COMPOSITION	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md (mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
18	40°30'51" 73°56'25" IV	6.1	0.1 SH 0.3 P	99.6	0.0	0.518	0.95	0.41	+ 0.02	1.00
19	40°30'27" 73°56'56" Vb	4.6	0.7 SH&P	99.3	0.0	0.473	1.10	0.54	- 0.03	1.44
20	40°29'57" 73°58'25" XXI	7.3	50.6 P	49.4	0.0	2.460	*	*	*	*
21	49°29'38" 73°57'45" XXI	7.6	43.0 P	57.0	0.0	1.414	*	*	*	*
22	40°29'25" 73°59'00" XXI	13.7	1.2 SH 9.4 P	89.0	0.4	0.291	1.47	*	*	*
23	40°29'04" 73°58'25" XXI	9.1	2.9 SH 16.4 P	80.5	0.2	0.323	*	*	*	*
24	40°28'38" 73°58'57" XXI	10.7	1.6 SH 4.6 P	93.7	0.1	0.574	0.76	*	*	*
25	40°29'13" 74°00'13" XIX	10.7	0.6 SH&P	99.4	0.0	0.332	1.55	0.37	- 0.17	1.16
26	40°29'33" 73°59'11" XXI	7.6	0.9 SH 3.2 P	95.9	0.0	0.420	1.10	0.82	- 0.37	1.39
27	40°27'50" 73°58'34" XVII	6.1	0.1 SH&P	99.9	<0.1	0.274	1.85	0.51	- 0.15	0.93
28	40°30'12" 73°58'26" XVII	4.6	0.0	100.0	0.0	0.218	2.20	0.22	- 0.07	0.89
29	40°30'44" 73°59'45" XVII	5.5	0.3 SH	99.6	0.1	0.293	1.75	0.39	- 0.13	1.23
30	40°31'21" 74°01'05" XVII	4.6	5.2 SH 0.9 P	93.7	0.2	0.281	1.76	*	*	*
31	40°30'33" 74°01'23" XVIII	6.1	34.9 SH	49.1	16.0	0.325	*	*	*	*
32	40°30'08" 74°01'58" XIX	4.6	1.7 SH&P	98.2	0.1	0.313	1.62	0.56	- 0.25	1.31
33	40°29'20" 74°02'29" XX	6.7	S L U D G E					(N O T S I E V E D)		
34	40°28'27" 74°01'27" XXIII	14.6	0.9 SH	96.1	3.0	0.221	2.18	0.47	+ 0.07	1.23

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

TABLE NO. C-4 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAY 1977

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.38mm COMPOSITION	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
35	40°29'25" 74°01'52" XIX	4.6	3.1 SH	96.6	0.3	0.297	1.66	0.57	- 0.37	1.47
36	40°29'38" 74°01'04" XIX	4.6	0.7 SH&P	99.3	<0.1	0.347	1.47	0.51	- 0.22	1.12
37	40°30'05" 74°01'15" XIX	6.1	1.1 SH&P	98.9	0.0	0.392	1.24	0.66	- 0.32	1.12
38	40°30'11" 74°00'42" XVIII	11.6	61.4 SH	35.3	3.3	*	*	*	*	*
39	40°29'44" 74°00'27" XIX	5.5	3.9 SH&P	96.1	<0.1	0.324	1.59	0.54	- 0.23	1.33
40	40°29'11" 74°00'52" XIX	7.6	1.5 SH&P	98.5	<0.1	0.330	1.56	0.43	- 0.17	1.15
41	40°28'46" 74°00'18" XXII	4.6	0.1 SH	99.9	<0.1	0.319	1.65	0.35	- 0.01	0.96
42	40°28'25" 73°59'47" XXII	7.6	1.1 SH&P	98.9	0.0	0.342	1.53	0.38	- 0.09	1.70
43	40°28'38" 73°59'44" XXII	3.0	<0.1 SH&P	99.9	<0.1	0.287	1.80	0.25	- 0.02	0.97
44	40°30'31" 74°00'27" XVII	3.0	0.2 SH&P	99.8	<0.1	0.347	1.45	0.56	- 0.20	0.81
45	40°27'47" 73°58'30" XXII	5.5	0.0	100.0	0.0	0.366	1.43	0.40	- 0.04	0.91
46	40°28'03" 73°58'19" XXII	6.1	0.5 SH	99.5	<0.1	0.297	1.78	0.45	+ 0.02	0.92
47	40°28'17" 73°58'03" XXI	14.0	0.3 SH / 8.3 P	91.0	0.4	0.324	1.34	*	*	*
48	40°28'35" 73°57'49" XXI	7.6	4.1 SH / 27.4 P	68.2	0.3	0.435	*	*	*	*
49	40°29'00" 73°58'27" XXI	6.1	0.4 SH / 11.5 P	88.1	<0.1	1.000	0.00	*	*	*
50	40°29'20" 73°57'10" XXI	10.7	0.3 SH / 6.0 P	93.6	0.1	0.366	1.28	*	*	*
51	40°29'36" 73°56'50" XXI	6.1	0.0 SH / 1.1 P	98.9	0.0	0.616	0.62	0.73	- 0.13	1.33

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

TABLE NO. C-4 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAY 1977

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.38mm COMPOSITION	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
52	40°29'14" 73°56'13" XXIV	9.1	N O T S I E V E D							
53	40°28'18" 73°57'09" XXIV	6.1	0.1 SH&P	97.8	2.1	0.467	1.09	0.40	- 0.01	1.17
54	40°27'56" 73°57'27" XXIV	10.7	0.3 SH&P	99.5	0.2	0.354	1.62	0.45	+ 0.26	1.61
55	40°27'39" 73°57'40" XXIV	6.1	0.0	99.9	<0.1	0.413	1.38	0.47	+ 0.37	1.46
56	40°27'10" 73°58'04" XXII	4.6	0.0	100.0	0.0	0.428	1.53	0.54	+ 0.69	0.87
57	40°26'33" 73°57'18" XXIV	8.5	<0.1 SH&P	99.4	0.6	0.218	2.20	0.60	- 0.05	0.94
58	40°27'19" 73°56'26" XXIV	14.0	0.6 SH&P	99.1	0.3	0.282	1.79	0.54	- 0.12	1.09
59	40°27'39" 73°56'02" XXIV	13.7	N O T S I E V E D							
60	40°28'25" 73°56'25" XXIV	6.1	0.0	99.9	0.1	0.268	1.86	0.32	- 0.11	1.36
61	40°28'13" 73°55'34" XXIV	15.2	1.4 SH 7.7 P	88.1	2.8	0.616	0.92	*	*	*
62	40°28'43" 73°55'04" VIII	17.7	0.7 SH&P	95.9	3.3	0.165	2.61	0.41	+ 0.11	1.46
63	40°29'09" 73°54'36" VIII	15.2	0.2 SH	98.4	1.4	0.183	2.43	0.37	+ 0.03	1.33
64	40°29'28" 73°54'18" VIII	15.2	0.4 SH	97.4	2.2	0.144	2.80	0.38	- 0.11	1.37
65	40°29'59" 73°53'55" VIII	10.7	0.9 SH	97.1	2.0	0.144	2.73	0.58	- 0.28	1.50
66	40°30'29" 73°53'37" VIII	10.7	0.5 SH	97.7	1.8	0.171	2.57	0.55	- 0.08	1.07
67	40°32'02" 73°54'02" VII	12.2	<0.1 SH	91.8	8.2	0.105	3.29	*	*	*
68	40°31'54" 73°54'33" VI	8.5	0.4 SH&P	99.4	0.2	0.171	2.55	0.34	+ 0.00	1.23

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

TABLE NO. C-4 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, MAY 1977

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.38mm COMPOSITION	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
69	40°31'32" 73°54'56" IV	10.7	15.8 SH	84.0	0.2	0.536	0.40	*	*	*
70	40°31'17" 73°55'12" Vb	9.1	1.5 SH&P	98.5	<0.1	0.451	1.18	0.42	+ 0.05	1.15
71	40°30'37" 73°55'54" VIII	9.8	3.3 SH&P	96.5	0.2	0.207	2.22	0.51	- 0.33	1.70
72	40°30'11" 73°56'17" VIII	11.3	0.1 SH	99.8	0.1	0.196	2.30	0.44	- 0.22	1.12
73	40°29'55" 73°55'27" Vb	12.2	0.2 P	99.7	0.1	0.268	1.94	0.42	+ 0.10	0.84
74	40°30'30" 73°55'02" VIII	9.4	2.2 SH	97.6	0.2	0.203	2.23	0.37	- 0.39	1.35
75	40°30'58" 73°54'34" Vb	9.1	0.9 SH	99.1	0.1	0.337	1.70	0.34	+ 0.05	1.39
76	40°32'00" 73°53'35" VII	9.8	4.7 SH	93.5	1.8	0.113	3.13	0.77	- 0.44	5.23
77	40°32'07" 73°52'21" VIII	11.6	2.1 SH	94.9	3.0	0.127	2.94	0.43	- 0.09	1.03
78	40°31'36" 73°52'44" VIII	12.2	0.1 SH	97.9	2.0	0.129	2.94	0.39	- 0.03	0.99
79	40°31'06" 73°53'03" VIII	11.0	1.5 SH	95.4	3.1	0.136	2.86	0.53	- 0.10	1.46
80	40°30'43" 73°53'21" VIII	11.3	0.3 SH	97.9	1.8	0.165	2.58	0.59	- 0.07	0.99

* - Insufficient data to calculate statistical parameters
SH - Shell
P - Pebble

TABLE NO. C-5

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, DEC. 1977-JUN. 1978

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.00mm COMPOSITION SHELL	% COARSE >2.00mm COMPOSITION PEBBLE	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_Z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
8	40°34'21" 74°03'40" XII	10.0	0.1	0.0	72.8	27.2	0.098	4.18	1.84	+ 0.75	1.68
9	40°34'18" 74°03'37" XII	11.3	<0.1	0.0	11.4	88.6	0.009	6.25	2.19	+ 0.57	0.96
10	N O S A M P L E	--	--	--	--	--	--	--	--	--	--
11	40°33'28" 74°03'38" XIII	9.1	0.0	0.0	4.8	95.2	0.010	6.72	1.70	+ 0.06	1.12
12	40°33'07" 74°03'33" XIII	10.0	0.1	0.0	4.4	95.6	0.010	6.73	1.68	+ 0.05	1.05
13	40°32'30" 74°04'00" XV	3.7	0.7	0.4	95.1	4.5	0.171	2.46	1.08	- 0.18	1.11
14A	40°32'20" 74°03'00" XV	4.9	1.1	1.9	81.2	16.8	0.117	3.03	1.91	+ 0.13	1.96
14B	40°32'20" 74°03'00" XV	4.9	1.2	0.8	87.0	12.1	0.134	2.75	1.68	+ 0.07	1.79
15	40°34'11" 74°03'38" XII	12.2	0.1	0.0	16.2	83.8	0.006	6.97	2.29	- 0.31	0.71
16	40°34'13" 74°03'30" XII	12.2	0.1	0.0	27.6	72.4	0.012	6.18	2.79	- 0.10	0.71
17	40°33'19" 74°02'55" XIII	8.5	0.0	0.0	21.5	78.5	0.010	6.47	2.36	- 0.02	0.71
18	40°32'42" 74°03'28" XV	10.7	0.7	0.0	25.9	74.1	0.013	6.10	2.22	- 0.02	0.67
19	40°32'18" 74°03'25" XV	4.9	0.6	0.1	93.7	6.2	0.117	3.18	0.76	+ 0.43	1.80
20	40°32'38" 74°02'52" XIII	12.2	<0.1	0.0	61.8	38.2	0.080	4.91	2.44	+ 0.70	0.87
21	40°31'20" 74°03'08" XVI	18.3	0.0	0.0	48.7	51.3	0.054	5.23	2.61	+ 0.53	0.60
22	40°32'20" 74°00'37" IX	7.9	0.4	0.0	72.7	27.3	0.125	4.23	2.18	+ 0.81	1.48
23	40°33'19" 74°00'58"	10.7	0.1	0.0	85.3	14.7	0.149	3.01	1.35	+ 0.64	3.50

TABLE NO. C-5 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, DEC. 1977-JUN. 1978

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.00mm COMPOSITION SHELL	% COARSE >2.00mm COMPOSITION PEBBLE	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
24	40°32'49" 74°00'49" IX	13.7	0.2	0.1	98.5	1.4	0.342	1.53	0.45	- 0.03	1.15
25	40°32'42" 74°01'12" IX	11.3	1.0	1.4	95.6	3.0	0.203	2.28	0.50	- 0.06	1.56
26	40°32'18" 74°00'47" IX	21.3	0.1	0.1	98.5	1.4	0.297	1.70	0.67	- 0.10	0.99
27	40°33'13" 74°01'20" I	7.6	0.1	<0.1	99.2	0.8	0.330	1.58	0.34	- 0.09	1.08
28	40°34'02" 74°03'38" XII	7.6	0.2	0.0	26.2	73.8	0.038	5.58	1.92	+ 0.47	0.46
29	40°33'19" 74°03'37" XIII	7.6	0.0	0.0	7.5	92.5	0.005	7.37	2.07	- 0.13	0.94
30	40°33'00" 74°02'51" XIII	12.2	0.1	0.0	66.6	33.4	0.102	4.68	2.29	+ 0.81	1.02
31	40°33'33" 74°01'14" IX	7.9	0.2	0.2	98.0	1.8	0.203	2.27	0.51	- 0.04	1.26
32	N O S A M P L E	--	--	--	--	--	--	--	--	--	--
33	A L L S H E L L	--	--	--	--	--	--	--	--	--	--
34	40°31'56" 74°00'38" IX	22.9	<0.1	0.0	99.0	1.0	0.196	2.34	0.38	- 0.01	1.09
35	40°32'08" 74°00'21" IX	3.7	0.0	0.0	99.0	1.0	0.297	1.76	0.30	+ 0.07	1.02
36	40°31'51" 74°00'23" I	16.8	0.5	0.1	98.8	1.1	0.297	1.77	0.49	- 0.15	1.21
37	40°31'40" 74°00'16" IX	19.8	<0.1	0.1	98.5	1.2	0.215	2.22	0.43	- 0.13	1.23
38	40°31'53" 73°59'55" IX	7.6	0.0	0.0	98.9	1.1	0.189	2.37	0.32	- 0.17	1.20
39	40°31'23" 73°59'41" III	15.2	0.0	0.0	92.2	7.8	0.165	2.67	1.11	+ 0.50	4.36
40	40°31'40" 73°59'20" III	5.5	1.0	0.1	99.0	0.9	0.183	2.38	0.39	- 0.29	1.43

TABLE NO. C-5 (CONT'D)

MARINE SCIENCES RESEARCH CENTER

SHIPEK BOTTOM GRAB SAMPLES, DEC. 1977-JUN. 1978

SEDIMENT CHARACTERISTICS

SAMPLE NO.	NORTH LATITUDE / WEST LONGITUDE / AREA	DEPTH (M)	% COARSE >2.00mm COMPOSITION SHELL	% COARSE >2.00mm COMPOSITION PEBBLE	% SAND	% SILT & CLAY <0.62mm	MEDIAN DIAMETER Md(mm)	GRAPHIC MEAN $M_z(\phi)$	INCLUSIVE GRAPHIC STANDARD DEVIATION $\sigma_I(\phi)$	INCLUSIVE GRAPHIC SKEWNESS Sk_I	GRAPHIC KURTOSIS K_G
41	40°34'05" 74°03'35" XII	10.4	0.8	0.0	95.3	4.6	0.233	2.08	0.84	+ 0.04	1.12
42	40°33'22" 74°03'27" XIII	9.1	0.0	0.0	6.7	93.3	0.008	6.85	1.76	- 0.09	0.91
43	40°31'20" 74°02'48" XVI	19.8	0.0	0.0	6.4	93.6	0.004	7.63	1.88	- 0.42	1.02
44	40°31'27" 74°02'54" XVI	18.9	0.0	0.0	13.9	86.1	0.007	6.78	2.14	- 0.23	0.81
45	40°31'31" 74°03'14" XVI	14.3	7.2	2.4	95.0	1.9	0.157	2.63	0.48	- 0.20	1.78
46	40°32'32" 74°00'47" IX	20.4	0.1	0.0	81.7	18.3	0.165	3.28	1.79	+ 0.72	4.07
47	40°32'13" 74°00'34" IX	22.3	<0.1	0.0	95.9	4.2	0.177	2.48	0.49	+ 0.09	1.52
48	40°34'07" 74°03'42" XII	12.2	0.1	0.0	49.2	50.8	0.067	5.03	2.35	+ 0.63	0.63
49	40°33'28" 74°03'16" XIII	9.1	0.0	0.0	5.4	94.5	0.004	7.53	1.81	- 0.34	0.99
50	40°32'08" 74°03'22" XV	6.1	1.3	0.0	87.1	12.8	0.121	3.17	1.26	+ 0.45	2.94
51	N O S A M P L E	--	--	--	--	--	--	--	--	--	--
52	40°31'29" 74°03'04" XVI	16.8	0.1	0.0	47.6	52.2	0.049	5.28	2.59	+ 0.49	0.59
53	40°32'27" 74°00'54" IX	13.7	0.1	0.0	97.4	2.7	0.196	2.53	0.58	- 0.12	1.32
54	40°32'15" 74°00'28" IX	22.3	0.1	0.0	82.0	18.0	0.159	3.23	1.64	+ 0.74	3.73
55	40°32'04" 74°00'18" I	5.2	<0.1	0.0	98.9	1.2	0.268	1.90	0.31	+ 0.02	1.08
56	40°31'58" 74°00'32" IX	15.2	0.6	0.0	98.2	1.0	0.363	1.46	0.43	- 0.10	2.05
57	40°31'37" 74°00'12" IX	19.8	0.4	1.3	97.5	1.2	0.441	1.23	0.77	+ 0.07	1.01