

**HYDRAULICS DIVISION**

**Technical Note**

**DATE:** April 1981 **REPORT NO:** 81-11

**TITLE:** "Particle Size Data Report 81-05"

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**REASON FOR REPORT:** This report responds to a request for particle size data from the Department of Public Works under Hydraulics study 4349.

**CORRESPONDENCE FILE NO:**  
5690 (Study 4349)

## 1.0 INTRODUCTION

This report provides results of particle size analysis on sediments from Lake Erie off Port Burwell, Ontario.

The Department of Public Works submitted 50 samples, under Hydraulics study 4349, to the Sedimentology Laboratory for particle size analysis. The samples were analysed by Keith Salisbury and the results checked by George Duncan.

## 2.0 PROCEDURE

Three procedures were used to analyse the samples (Duncan and LaHaie, 1979).

- (1) Sieve Analysis which provides gravel and silt/clay percentages was used to analyse 31 samples.

Briefly, the procedure consists of:

- a) splitting the sample to 100-200 g.
- b) sieving the split at 1/2 or 1/4 PHI intervals.
- c) processing the results with SIZDIST: a FORTRAN IV computer program.

- (2) The Sieve, Short Pipette and Settling Tube Analysis, which provides gravel, sand, silt and clay percentages with 1/2 PHI resolution of the sand by the settling tube procedure was performed on four samples.

Briefly, the procedure consists of:

- a) splitting the sample to 20 g.
- b) sieving the split at -0.5 PHI (1.41 mm).
- c) dispersing the sample in 50 ml of Calgon solution (50 g/l) and mixing it for 15 minutes.
- d) recovering two pipette aliquots of 25 ml for sand, silt and clay percentages.
- e) wet sieving the remaining suspension at 4.5 PHI (0.044 mm).
- f) resolving the sand residue with settling tube analysis.

- (3) The Sieve and Short Pipette Method, which provides gravel, sand, silt and clay percentages was used to analyse 6 samples.

Briefly, the procedure consists of:

- a) splitting the sample to 20 g.
- b) sieving the split at -1 PHI (2.00 mm).
- c) dispersing the sample in 50 ml of Calgon solution (50 g/l) and mixing it for 15 minutes.
- d) recovering two pipette aliquots of 25 ml for sand, silt and clay percentages.
- e) processing the results with SIZDIST: a FORTRAN IV computer program.

### 3.0

### RESULTS

Appendix 1 lists the size analysis results for each sample.

- (1) For the Sieve Method, the output consists of:
  - a) a histogram of the frequency distribution.
  - b) the percentage and cumulative percentage of the material occurring within 1/2 PHI unit.
  - c) moment measures (Krumbein and Pettijohn, 1938) and graphic (Folk and Ward, 1957) statistics.
  - d) percentiles.
  - e) percent gravel, sand and silt/clay.
  - f) ratios used to plot Folk's Ternary Classification.
  - g) Shepard (1954) and Folk (1974) Ternary Classification.
- (2) For the Sieve, Short Pipette and Settling Tube Method, the output consists of:
  - a) a histogram of the frequency distribution.
  - b) the percentages and cumulative percentages of the material occurring within 1/2 PHI unit.
  - c) moment measures (Krumbein and Pettijohn, 1938) and graphic (Folk and Ward, 1957) statistics.
  - d) percentiles.
  - e) percent gravel, sand, silt and clay.
  - f) ratios used to plot Folk's Ternary Classification.
  - g) Shepard (1954) and Folk (1974) Ternary Classification.

- (3) For the Standard and Short Pipette Method, the output consists of:
- a) percent gravel, sand, silt and clay.
  - b) ratio used to plot Folk's Ternary Classification.
  - c) Shepard (1954) and Folk (1974) Ternary Classification.

#### 4.0 REFERENCES

- Duncan, G. A. and LaHaie, G. G., 1979. "Size Analysis Procedure Used in the Sedimentology Laboratory, NWRI". Hydraulics Division Manual, September 1979.
- Folk, R. L., 1968. "Petrology of Sedimentary Rocks". Hemphill Publishing Co., Austin, Texas, 182 p.
- Folk, R. L. and Ward, W. C., 1957. "Brazos River Bar: A Study in the Significance of Grain-Size Parameters". Jour. Sed. Petrology, Vol. 27, pp. 3-26.
- Krumbein, W. C. and Pettijohn, F. J., 1938. "Manual of Sedimentary Petrography". Appleton-Century-Crofts, New York, 549 p.
- Shepard, F. P., 1954. "Nomenclature Based on Sand-Silt Ratios". Jour. Sed. Petrology, Vol. 24, pp. 151-158.

**APPENDIX 1**  
**SIZE ANALYSIS DATA**

PBH 1-1 3 IN 160381 SIEVE, SETT. TUBE, PIPETTE ( 2 ) SAMPLE WT. = 27.4637

03/26/81

PHI	PCT.	CUMFCT.	
-0.50	0.00	0.00	
0.00	.17	.17	
.50	4.91	5.08	*****
1.00	9.31	14.39	*****
1.50	22.86	37.26	*****
2.00	39.80	77.06	*****
2.50	4.23	81.29	****
3.00	.85	82.14	*
3.50	0.00	82.14	
4.00	10.76	92.89	*****
8.00	7.11	100.00	*****

MEAN ST. DEV. SKEWNESS KURTOSIS

1.94 .56 -.33 .44

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURED FOR SIZE RANGE 0.0 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN 2.16	5TH .99	16TH 1.54	25TH 1.73
		75TH 2.47	84TH 4.69	95TH *****
PCT. GRAVEL	0.00	SAND 82.14	SILT (PIPETTE) 10.76	CLAY (PIPETTE) 7.11
			(SEDIGRAPH) 0.00	(SEDIGRAPH) 0.00
GRAVEL+SAND	82.14	SILT/(SILT+CLAY)	60.21	PCT. GRAV+SAND/SILT+CLAY 4.60
LABELS SHEPARD	SAND	FOLK (GMS)	MUDDY SAND	(SGS) MUDDY SAND

PBH 1-2 31-18 IN 110381

SIEVE ONLY

SAMPLE WT. = 73.7047

PHI PCT. CUMFCT.

03/26/81

-1.00			
-0.50	.25	.25	
0.00	1.71	1.96	**
.50	1.23	3.19	*
1.00	1.06	4.24	*
1.50	1.20	5.45	*
2.00	3.62	9.07	****
2.50	20.79	29.86	*****
3.00	54.33	84.19	*****
3.50	11.85	96.05	*****
4.00	1.64	97.68	**
****	2.32	100.00	**

MEAN ST.DEV. SKEWNESS KURTOSIS

2.55 .66 -1.16 7.33

2.62 .53 -.26 1.65

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURE FOR SIZE RANGE -.5 TO 4.0 PHI

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	2.69	5TH	1.31	16TH	2.17	25TH	2.36
			75TH	2.92	84TH	3.00	95TH	3.46

PCT. GRAVEL 6.00 SAND 97.68 SILT+CLAY 2.32

GRAVEL+SAND 97.68

GRAV+SAND/SILT+CLAY 42.18

LABELS SHEPARD -SAND FOLK (GMS) -SAND (SCS)

PBH 1-3 1.5-3 FT 110381

SIEVE ONLY

SAMPLE WT.= 73.255

PHI PCT. CUMPT.

03/26/81

-1.00			
-.50	.07		
0.00	.12	.07	
.50	.20	.19	
1.00	.61	.39	
1.50	2.98	1.00	*
2.00	11.33	3.98	***
2.50	32.72	15.31	*****
3.00	40.40	48.03	*****
3.50	8.63	88.44	*****
4.00	1.31	97.07	*****
****	1.62	98.38	*
		100.00	**

MEAN ST.DEV. SKEWNESS KURTOSIS

2.46	.52	-.48	2.51
2.49	.51	-.08	1.10

KRUMBEIN + PETTIJOHN (1938) MOMENT MEAS  
FOR SIZE RANGE -.5 TO 4.0 PHI

FOLK GRAPHIC STATISTICAL PARAMETERS  
FOLK AND WARD, 1957

PERCENTILES	MEDIAN	2.52	5TH	1.54	16TH	2.01	25TH	2.15
			75TH	2.83	84TH	2.95	95TH	3.38
PCT. GRAVEL	6.68	SAND	98.38	SILT+CLAY	1.62			
GRAVEL+SAND	98.38							
LABELS SHEPARD	SAND		FOLK (GMS) SAND		GRAV+SAND/SILT+CLAY			60.85
					(SGS)			

PB 1-4 3-4.6 FT 090381

SIEVE ONLY

SAMPLE WT.= 98.7320

03/26/31

PHI PCT. CUMPCT.

1.50			
-1.00	.04	.04	
	.09	.13	
-0.50	.06	.18	
0.00	.12	.30	
.50	.02	.32	
1.00	1.13		*
1.50	5.18	1.45	*****
2.00	24.38	6.63	*****
2.50	46.82	31.01	*****
3.00	13.44	77.83	*****
3.50	2.78	91.28	***
4.00	5.95	94.05	*****
*****	100.00		

MEAN ST.DEV. SKEWNESS KURTOSIS

2.64 .48 -.47 5.45

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -1.0 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.70	5TH	1.84	16TH	2.19	25TH	2.33
			75TH	2.97	84TH	3.23	95TH	*****

PCT. GRAVEL	.04	SAND	94.01	SILT+CLAY	5.95
GRAVEL+SAND	94.05			GRAV+SAND/SILT+CLAY	15.82
LABELS SHEPARD	-SAND	FOLK(GMS)-SAND		(SCS)-	

PBH 1-5 4.5-6 FT 110381

SIEVE ONLY

SAMPLE WT.= 96.3443

03/26/81

PHI	PCT.	CUMPCT.	
-1.00			
-.50	.09	.09	
0.00	.16	.25	
.50	.32	.57	
1.00	.48	1.06	
1.50	.69	1.74	*
2.00	1.89	3.63	**
2.50	6.21	9.84	*****
3.00	25.72	35.55	*****
3.50	50.19	85.74	*****
4.00	11.65	97.40	*****
****	2.60	100.00	***

MEAN ST.DEV. SKEWNESS KURTOSIS

3.84 .53 -1.64 8.29 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -.5 TO 4.0 PHI

3.08 .49 -.19 1.22 FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARE, 1957

PERCENTILES	MEDIAN	3.14	5TH	2.11	16TH	2.62	25TH	2.79
			75TH	3.39	84TH	3.43	95TH	3.90

PCT. GRAVEL 0.00 SAND 97.40 SILT+CLAY 2.60

GRAVEL+SAND 97.40 GRAV+SAND/SILT+CLAY 37.43

LABELS SHEPARD SAND FOLK(GMS) SAND (SCS)

PBH 1-6 6-8 FT 090381

SIEVE ONLY

SAMPLE WT.= 67.4312

03/26/81

PHI	PCT.	CUMPCT.	
1.50			*
-1.00	.99	.99	*
-.50	.63	1.62	*
0.00	.52	2.14	*
.50	.69	2.83	*
1.00	.89	3.71	**
1.50	2.37	6.08	**
2.00	6.09	12.18	*****
2.50	20.55	32.72	*****
3.00	47.53	80.25	*****
3.50	14.97	95.22	**
4.00	2.29	97.51	**
*****	2.49	100.00	**

MEAN ST.DEV. SKEWNESS KURTOSIS

2.53 .74 -1.22 8.76

KRUMEEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -1.0 TO 4.0 PHI

2.63 .59 -.21 1.44

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	2.68	5TH	1.27	16TH	2.09	25TH	2.31
			75TH	2.94	84TH	3.13	95TH	3.49

PCT. GRAVEL .99 SAND 96.52 SILT+CLAY 2.49

GRAVEL+SAND 97.51 GRAV+SAND/SILT+CLAY 39.13

LABELS SHEPARD -SAND FOLK (GMS)-SAND (SCS)-

PBH 1-7 8-10 FT 100481

SIEVE ONLY

SAMPLE WT.= 82.0442

03/26/81

PHI	PCT.	CUMFCT.	
2.50			
-2.00	.20	.20	
-1.50	.17	.38	
-1.00	.62	1.00	*
-.50	.45	1.45	
0.00	.54	1.98	*
.50	.57	2.55	*
1.00	.88	3.43	*
1.50	1.72	5.15	**
2.00	5.19	10.34	*****
2.50	18.82	29.16	*****
3.00	45.11	74.27	*****
3.50	15.79	90.06	*****
4.00	3.76	93.82	****
	6.18	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.58 .76 -1.31 10.81 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES  
 FOR SIZE RANGE -2.0 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.73	5TH	1.46	16TH	2.15	25TH	2.35
			75TH	3.02	84TH	3.31	95TH	*****

PCT. GRAVEL 1.00 SAND 92.82 SILT+CLAY 6.18  
 GRAVEL+SAND 93.82 GRAV+SAND/SILT+CLAY 15.17  
 LABELS SHEPARD -SAND FOLK(GMS)-SAND (SCS)-

PBH 1-8 10-12 FT 100381

SIEVE ONLY

SAMPLE WT.= 88.6014

PHI PCT. CUMPCT.

03/26/81

-1.50			
-1.00	.03	.03	
-.50	.07	.10	
0.00	.06	.17	
.50	.15	.31	
1.00	.04	.36	
1.50	.41	.76	
2.00	.10	.87	
2.50	9.41	10.27	*****
3.00	49.95	60.23	*****
3.50	25.32	85.55	*****
4.00	6.37	91.92	*****
****	8.08	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.89 .43 -.65 10.39 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES  
 FOR SIZE RANGE -1.0 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.90	5TH	2.22	16TH	2.56	25TH	2.65
			75TH	3.29	84TH	3.47	95TH	****

PCT. GRAVEL	.03	SAND	91.89	SILT+CLAY	8.08
GRAVEL+SAND	91.92			GRAV+SAND/SILT+CLAY	11.37
LABELS SHEPARD	-SAND	FOLK(GMS)-SAND		(SCS)-	

PBH 1-9 12-14 FT 110381

SIEVE ONLY

SAMPLE WT.= 86.0325

03/26/81

PHI PCT. CUMFCT.

1.50			*
-1.00	.81	.81	
	.13		
-0.50		.95	
	.16		
0.00		1.10	
	.24		
.50		1.34	
	.09		
1.00		1.43	*
	.82		
1.50		2.25	*
	1.05		
2.00		3.29	*****
	6.39		
2.50		9.68	*****
	45.12		
3.00		54.80	*****
	31.57		
3.50		86.38	*****
	6.84		
4.00		93.22	*****
	6.78		
*****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

2.88 .62 -1.70 19.27

KRUMHEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -1.0 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.95	5TH	2.13	16TH	2.57	25TH	2.67
			75TH	3.32	84TH	3.46	95TH	*****

PCT. GRAVEL .81 SAND 92.41 SILT+CLAY 6.78

GRAVEL+SAND 93.22 GRAV+SAND/SILT+CLAY 13.75

LABELS SHEPARD -SAND FOLK(GMS)-SAND (SCS)-

PBH 1-10 14-16 FT 110381

SIEVE ONLY

SAMPLE WT.= 84.7575

03/26/81

PHI	PCT.	CUMPCT.	
2.00			*****
-1.50	12.03	12.03	*
-1.00	.61	12.64	*
-.50	.56	13.21	
0.00	.42	13.63	
.50	.61	14.23	*
1.00	.56	14.79	*
1.50	.99	15.79	**
2.00	1.68	17.47	*****
2.50	9.85	27.32	*****
3.00	32.96	60.28	*****
3.50	23.09	83.38	*****
4.00	6.16	89.54	*****
*****	10.46	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.16 1.70 -.81 1.11 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES  
 FOR SIZE RANGE -1.5 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.84	5TH	-1.79	16TH	1.56	25TH	2.38
			75TH	3.32	84TH	3.55	95TH	*****

PCT. GRAVEL 12.64 SAND 76.89 SILT+CLAY 10.46

GRAVEL+SAND 89.54 GRAV+SAND/SILT+CLAY 8.56

LABELS SHEPARD -SAND FOLK(GMS)-GRAVELLY MUDDY SAND (SCS)-

PBH 1-11 16-18 FT 100381

SIEVE ONLY

SAMPLE WT.= 83.4607

03/26/81

PHI	PCT.	CUMFCT.	
1.50			*
-1.00	.69	.69	*
	.74		*
-.50	.81	1.43	*
0.00	.81	2.24	*
	.81		*
.50	1.04	3.05	*
1.00	1.57	4.10	**
1.50	3.61	5.67	****
2.00	25.07	9.28	*****
2.50	44.63	34.35	*****
3.00	15.23	78.98	*****
3.50	3.52	94.21	****
4.00	2.27	97.73	**
*****	100.00		

MEAN ST.DEV. SKEWNESS KURTOSIS

2.55 .74 -1.17 8.34 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -1.0 TO 4.0 PHI

2.66 .61 -.12 1.49 FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	2.58	5TH	1.29	16TH	2.13	25TH	2.31
			75TH	2.96	84TH	3.16	95TH	3.61

PCT. GRAVEL .69 SAND 97.03 SILT+CLAY 2.27  
 GRAVEL+SAND 97.73 GRAV+SAND/SILT+CLAY 42.97

LABELS SHEPARD -SAND FOLK (GMS) -SAND (SCS)-

PBH 1-12 20-22 FT100381

SIEVE ONLY

SAMPLE WT.= 93.9353

03/26/81

PHI PCT. CUMPCT.

2.00		
-1.50	.05	.05
-1.00	.09	.14
-.50	.08	.22
0.00	.07	.29
.50	.20	.48
1.00	.37	.85
1.50	.57	1.42
2.00	1.52	2.94
2.50	8.95	11.89
3.00	43.65	55.54
3.50	32.09	87.62
4.00	7.23	94.85
****	5.15	100.00

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MEAN ST.DEV. SKEWNESS KURTOSIS

2.90 .51 -1.63 12.40

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -1.5 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.94	5TH	2.11	16TH	2.55	25TH	2.65
			75TH	3.30	84TH	3.44	95TH	****
PCT. GRAVEL	.14	SAND	94.71	SILT+CLAY	5.15			
GRAVEL+SAND	94.85			GRAV+SAND/SILT+CLAY	18.42			
LABELS SHEPARD	-SAND	FOLK (GMS)	-SAND	(SCS)	-			

PBH 1-13 22-24 FT 130381 SIEVE,SETT.TUBE,PIPETTE ( 2) SAMPLE WT.= 21.1910

03/26/81

PHI	PCT.	CUMPCT.	
1.00			**
-0.50	1.69	1.69	
0.00	0.00	1.69	
.50	0.00	1.69	
1.00	0.00	1.69	
1.50	2.16	3.85	**
2.00	4.68	8.53	*****
2.50	16.92	25.45	*****
3.00	39.60	65.05	*****
3.50	23.76	88.82	*****
4.00	9.22	98.04	**
6.00	1.96	100.00	**

MEAN ST.DEV. SKEWNESS KURTOSIS

3.12 .71 -1.57 14.08 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -.5 TO 4.0 PHI

3.31 .99 .24 2.59 FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	3.31	5TH	2.12	16TH	2.72	25TH	2.99
			75TH	3.71	84TH	3.90	95TH	6.68

PCT. GRAVEL 0.00 SAND 88.82 SILT (PIPETTE) 9.22 CLAY (PIPETTE) 1.96  
 (SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 88.82 SILT/(SILT+CLAY) 82.44 PCT.GRAV+SAND/SILT+CLAY 7.94

LABELS SHEPARD -SAND FOLK(GMS)-MUDDY SAND (SCS)-SILTY SAND

PBH 1-14 170381 SIEVE AND PIPETTE ( 2) SAMPLE WT. = 20.2433  
PCT. GRAVEL 0.00 SAND 8.44 SILT (PIPETTE) 43.20 CLAY (PIPETTE) 48.35  
(SEDIGRAPH) 6.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 8.44 SILT/(SILT+CLAY) 47.19 PCT. GRAV+SAND/SILT+CLAY .09

LABELS SHEPARD -SILTY CLAY FOLK(GMS)-MUD (SCS)-MUD

PBH 1-15 160381 SIEVE AND PIPETTE ( 2 ) SAMPLE WT. = 20.2433  
PCT. GRAVEL 0.00 SAND 12.39 SILT (PIPETTE) 41.69 CLAY (PIPETTE) 45.91  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 12.39 SILT/(SILT+CLAY) 47.59 PCT. GRAV+SAND/SILT+CLAY .14

LABELS SHEPARD -SILTY CLAY FOLK(GMS)-SANDY MUD (SCS)-SANDY MUD

PBH 2-1 1.6-3 FT 100391

SIEVE ONLY

SAMPLE WT.= 73.1256

PHI PCT. CUMFCT.

03/26/81

-1.00			
-0.50	.07		
0.00	.08	.15	
.50	.45	.60	
1.00	1.30	1.91	*
1.50	4.06	5.96	****
2.00	15.83	21.79	*****
2.50	40.47	62.26	*****
3.00	31.38	93.64	*****
3.50	4.29	97.92	****
4.00	.83	98.76	*
*****	1.24	100.00	*

MEAN ST.DEV. SKEWNESS KURTOSIS

2.31 .53 -.39 2.27

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -.5 TO 4.0 PHI

2.34 .53 -.06 1.10

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	2.35	5TH	1.33	16TH	1.82	25TH	2.00
			75TH	2.70	84TH	2.65	95TH	3.16

PCT. GRAVEL 0.00 SAND 98.76 SILT+CLAY 1.24

GRAVEL+SAND 98.76 GRAV+SAND/SILT+CLAY 79.38

LABELS SHEPARD -SAND FOLK (GMS) -SAND (SGS) -

PBH 2-2 3-5 FT 100381

SIEVE ONLY

SAMPLE WT.= 69.9291

PHI PCT. CUMPCT.

03/26/81

-0.50			
0.00	.02	.02	
.50	.07	.09	
1.00	.08	.17	
1.50	.67	.84	*
2.00	6.72	7.56	*****
2.50	39.85	47.41	*****
3.00	41.96	89.38	*****
3.50	7.17	96.55	*****
4.00	1.29	97.84	*
*****	2.16	100.00	**

MEAN ST.DEV. SKEWNESS KURTOSIS

2.51 .41 -.06 1.59

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 0.0 TO 4.0 PHI

2.52 .45 .03 1.06

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	2.53	5TH	1.81	16TH	2.11	25TH	2.22
			75TH	2.83	84TH	2.94	95TH	3.39

PCT. GRAVEL 0.00 SAND 97.84 SILT+CLAY 2.16

GRAVEL+SAND 97.84 GRAV+SAND/SILT+CLAY 45.33

LABELS SHEPARD -SAND FOLK (GMS) -SAND (SCS) -

PBH 2-3 5-7 FT 130381

SIEVE ONLY

SAMPLE WT.= 84.8177

03/26/81

PHI	PCT.	CUMFCT.	
1.00			
.50	.04	.04	
0.00	.05	.10	
.50	.07	.17	
1.00	.21	.38	
1.50	1.62	2.01	**
2.00	6.30	8.31	*****
2.50	26.99	35.30	*****
3.00	52.30	87.60	*****
3.50	10.31	97.91	*****
4.00	1.10	99.01	*
****	.99	100.00	*

MEAN ST.DEV. SKEWNESS KUFTOSIS

2.58	.45	-.47	3.51	KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -.5 TO 4.0 PHI
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2.58	.45	-.16	1.17	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARE, 1957
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PERCENTILES	MEDIAN	2.64	5TH	1.74	16TH	2.14	25TH	2.31
			75TH	2.83	84TH	2.97	95TH	3.36

PCT. GRAVEL	0.00	SAND	99.01	SILT+CLAY	.99
GRAVEL+SAND	99.01			GRAV+SAND/SILT+CLAY	99.67
LABELS SHEPARD	-SAND		FOLK(GMS)-SAND		(SCS)-

PBH 2-4 7-9 FT 100381

SIEVE ONLY

SAMPLE WT.= 77.1701

PHI PCT. CUMFCT.

03/26/81

-1.00			
-0.50	.04	.04	
0.00	.12	.16	
.50	.29	.45	
1.00	.84	1.29	*
1.50	2.29	3.57	**
2.00	8.67	12.25	*****
2.50	21.47	33.72	*****
3.00	45.85	79.56	*****
3.50	13.23	92.80	*****
4.00	2.48	95.20	**
****	4.80	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.57	.55	-.49	2.65	KRUMBEIN + PETTIJOHN (1938) MOMENT MEASU FOR SIZE RANGE -.5 TO 4.0 PHI
2.64	.63	-.01	1.49	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARE, 1957

PERCENTILES	MEDIAN	2.68	5TH	1.58	16TH	2.09	25TH	2.30
			75TH	2.95	84TH	3.17	95TH	3.96

PCT. GRAVEL	0.00	SAND	95.20	SILT+CLAY	4.80
GRAVEL+SAND	95.20			GRAV+SAND/SILT+CLAY	19.81
LABELS SHEPARD	SAND		FOLK (GMS) SAND		(SGS)

PBH 2-5 9-11 FT 110381

SIEVE ONLY

SAMPLE WT.=107.2011

PHI PCT. CUMFCT.

03/26/81

2.50			
-2.00	.20		
-1.50	.37	.20	
-1.00	.69	.57	*
-.50	.66	1.26	*
0.00	.62	1.93	*
.50	1.05	2.55	*
1.00	2.31	3.60	**
1.50	5.43	5.91	*****
2.00	8.17	11.34	*****
2.50	15.95	19.51	*****
3.00	43.14	35.46	*****
3.50	15.04	78.59	*****
4.00	2.71	93.63	***
****	3.66	96.34	****
****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

2.43	.88	-1.02	5.89	KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -2.0 TO 4.0 PHI
2.54	.80	-.27	1.54	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	2.67	5TH	.80	16TH	1.79	25TH	2.17
			75TH	2.96	84TH	3.18	95TH	3.75

PCT. GRAVEL	1.26	SAND	95.07	SILT+CLAY	3.66
GRAVEL+SAND	96.34			GRAV+SAND/SILT+CLAY	26.35
LABELS SHEPARD	-SAND	FOLK(GMS)-SAND		(SCS)-	

PBH 2-6 11-13 FT 100381

SIEVE ONLY

SAMPLE WT.= 71.0861

03/26/81

PHI	PCT.	CUMPGT.	
1.50			
-1.00	.11	.11	
-.50	.16	.27	
0.00	.37	.65	
.50	.47	1.12	
1.00	.89	2.01	*
1.50	2.38	4.39	**
2.00	8.95	13.34	*****
2.50	38.77	44.11	*****
3.00	37.98	82.09	*****
3.50	9.13	91.22	*****
4.00	2.57	93.79	***
****	6.21	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.47 .60 -.66 5.17 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES  
 FOR SIZE RANGE -1.0 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.58	5TH	1.53	16TH	2.04	25TH	2.13
			75TH	2.91	84TH	3.10	95TH	*****

PCT. GRAVEL	.11	SAND	93.68	SILT+CLAY	6.21
GRAVEL+SAND	93.79			GRAV+SAND/SILT+CLAY	15.10
LABELS SHEPARD	-SAND	FOLK(GMS)-SAND		(SCS)-	

PBH 2-7 13-15 FT 100381

SIEVE ONLY

SAMPLE WT.= 70.1937

PHI PCT. CUM PCT.

03/26/81

-2.00			
-1.50	.09	.09	
-1.00	.68	.77	*
-.50	.79	1.56	*
0.00	1.84	2.59	**
.50	1.83	4.43	***
1.00	2.98	7.40	*****
1.50	4.98	12.38	*****
2.00	8.84	21.22	*****
2.50	20.57	41.60	*****
3.00	32.98	74.77	*****
3.50	14.02	88.80	*****
4.00	4.31	93.10	*****
****	6.90	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.38 .90 -.74 2.96

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -1.5 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.62	5TH	.60	16TH	1.70	25TH	2.09
			75TH	3.01	84TH	3.33	95TH	****

PCT. GRAVEL .77 SAND 92.33 SILT+CLAY 6.90

GRAVEL+SAND 93.10

GRAV+SAND/SILT+CLAY 13.50

LABELS SHEPARD -SAND

FOLK(GMS)-SAND

(SCS)-

PBH 2-8 15-17 FT 100381

SIEVE ONLY

SAMPLE WT.= 89.0680

03/26/81

PHI	PCT.	CUMPCT.	
2.50			
-2.00	2.42	2.42	**
-1.50	1.95	4.37	**
-1.00	1.31	5.68	*
-.50	2.42	8.09	**
0.00	1.84	9.93	**
.50	2.39	12.31	**
1.00	3.45	15.76	***
1.50	3.59	19.36	****
2.00	5.06	24.42	*****
2.50	9.83	33.45	*****
3.00	38.45	71.90	*****
3.50	19.55	91.45	*****
4.00	3.71	95.15	****
****	4.85	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.18	1.41	-.85	2.13	KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -2.0 TO 4.0 PHI
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2.35	1.36	-.50	2.05	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957
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PERCENTILES	MEDIAN	2.72	5TH	-1.26	16TH	1.03	25TH	2.03
			75TH	3.08	84TH	3.31	95TH	3.96

PCT. GRAVEL 5.68 SAND 89.48 SILT+CLAY 4.85

GRAVEL+SAND 95.15 GRAV+SAND/SILT+CLAY 19.63

LABELS SHEPARD -SAND FOLK(GMS)-GRAVELLY SAND (SCS)-

PBH 2-9 17-19 FT 130381

SIEVE ONLY

SAMPLE WT.= 79.1079

03/26/81

PHI PCT. CUMPT.

-2.50			*
-2.00	.88	.88	**
-1.50	1.77	2.64	**
-1.00	1.79	4.43	**
-.50	1.58	6.01	*
0.00	.82	6.83	*
.50	.74	7.57	*
1.00	.78	8.35	*
1.50	1.32	9.68	****
2.00	3.60	13.28	*****
2.50	16.53	29.80	*****
3.00	40.97	70.77	*****
3.50	18.90	89.68	****
4.00	4.32	94.00	*****
*****	6.00	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.42 1.18 -1.19 5.44

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -2.0 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.75	5TH	-.92	16TH	2.00	25TH	2.35
			75TH	3.11	84TH	3.35	95TH	*****

PCT. GRAVEL	4.43	SAND	89.56	SILT+CLAY	6.00
GRAVEL+SAND	94.00			GRAV+SAND/SILT+CLAY	15.65

LABELS SHEPARD -SAND FOLK(GMS)-SAND (SCS)-

PBH 2-10 19-21FT 160381

SIEVE ONLY

SAMPLE WT.= 86.3408

PHI PCT. CUMPGT.

03/26/81

-3.00			
-2.50	.39	.39	
-2.00	1.30	1.69	*
-1.50	1.50	3.19	**
-1.00	1.96	5.15	**
-.50	1.55	6.70	*
0.00	.88	7.58	*
.50	1.02	8.60	*
1.00	1.46	10.06	*
1.50	2.74	12.80	***
2.00	6.03	18.84	*****
2.50	20.51	39.34	*****
3.00	35.15	74.49	*****
3.50	14.70	89.18	*****
4.00	4.21	93.39	****
****	6.61	93.39	*****
****	100.00	100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

2.26 1.26 -1.05 4.23

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -2.5 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.65	5TH	-1.04	16TH	1.76	25TH	2.15
			75TH	3.02	84TH	3.32	95TH	****

PCT. GRAVEL 5.15 SAND 88.24 SILT+CLAY 6.61

GRAVEL+SAND 93.39 GRAV+SAND/SILT+CLAY 14.14

LABELS SHEPARD -SAND FOLK(GMS)-GRAVELLY SAND (SGS)-

PBH 2-11 21-23 FT 110381

SIEVE ONLY

SAMPLE WT.= 90.5871

PHI PCT. CUMPCT.

03/26/81

3.00			
-2.50	.36	.36	
-2.00	.83	1.19	*
-1.50	1.68	2.67	**
-1.00	1.69	4.56	**
-.50	.47	5.03	
0.00	.42	5.45	
.50	.41	5.86	
1.00	.49	6.35	
1.50	1.26	7.61	*
2.00	3.77	11.38	****
2.50	11.73	23.11	*****
3.00	52.76	75.87	*****
3.50	17.66	93.53	*****
4.00	3.85	97.38	****
*****	2.62	100.00	***

MEAN ST.DEV. SKEWNESS KURTOSIS

2.50	1.10	-1.45	8.72	KRUMHOLTZ + PETTIJOHN (1939) MOMENT MEASURES FOR SIZE RANGE -2.5 TO 4.0 PHI
2.73	.90	-.32	3.65	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARE, 1957

PERCENTILES	MEDIAN	2.75	5TH	-.53	16TH	2.20	25TH	2.52
			75TH	2.99	84TH	3.23	95TH	3.69

PCT. GRAVEL	4.56	SAND	92.82	SILT+CLAY	2.62			
GRAVEL+SAND	97.38					GRAV+SAND/SILT+CLAY	37.13	
LABELS SHEPARD -SAND			FOLK (GMS) -SAND			(SCS) -		

PBH 2-12 160381 SIEVE AND PIPETTE ( 2 ) SAMPLE WT.= 21.1972  
PCT. GRAVEL 0.00 SAND 17.27 SILT (PIPETTE) 40.85 CLAY (PIPETTE) 41.88  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00  
GRAVEL+SAND 17.27 SILT/(SILT+CLAY) 49.37 PCT.GRAV+SAND/SILT+CLAY .21  
LABELS SHEPARD -SILTY CLAY FOLK(GMS)-SANDY MUD (SCS)-SANDY MUD

PBH 2-13 170381 SIEVE AND PIPETTE ( 2) SAMPLE WT. = 21.5565  
PCT. GRAVEL 0.00 SAND 13.49 SILT (PIPETTE) 40.82 CLAY (PIPETTE) 45.69  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 13.49 SILT/(SILT+CLAY) 47.19PCT.GRAV+SAND/SILT+CLAY .16

LABELS SHEPARD -SILTY CLAY FOLK(GMS)-SANDY MUD (SCS)-SANDY MUD

PBH 3-1 2-4 FT 130381

SIEVE ONLY

SAMPLE WT.= 83.4397

03/26/81

PHI	PCT.	CUMPCT.	
3.00			
-2.50	1.30	1.30	*
-2.00	1.96	3.26	**
-1.50	1.95	5.21	**
-1.00	3.37	8.58	***
-.50	4.07	12.65	****
0.00	4.86	16.72	****
.50	3.60	20.32	****
1.00	3.22	23.53	***
1.50	9.69	33.23	*****
2.00	19.83	53.06	*****
2.50	25.52	78.58	*****
3.00	15.77	94.35	*****
3.50	3.17	97.52	***
4.00	.90	98.41	*
****	1.59	100.00	**

MEAN ST.DEV. SKEWNESS KURTOSIS

1.47	1.40	-.62	.81	KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -2.5 TO 4.0 PHI
1.50	1.40	-.48	1.41	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	1.92	5TH	-1.55	16TH	-.89	25TH	1.08
			75TH	2.43	84TH	2.67	95TH	3.10
PCT. GRAVEL	8.58	SAND	89.83	SILT+CLAY	1.59			
GRAVEL+SAND	98.41			GRAV+SAND/SILT+CLAY	62.03			
LABELS SHEPARD	SAND		FOLK (GMS)	GRAVELLY SAND		(SCS)		

PBH 3-2 4-6 FT 110381

SIEVE ONLY

SAMPLE WT.= 87.3094

PHI PCT. CUM.PCT.

03/26/81

-2.00			
-1.50	.07	.07	
-1.00	.15	.21	
-.50	.16	.37	
0.00	.23	.60	
.50	.23	.83	
1.00	.43	1.26	
1.50	.93	2.20	*
2.00	3.22	5.42	***
2.50	13.58	18.99	*****
3.00	44.24	63.23	*****
3.50	25.05	88.29	*****
4.00	6.12	94.40	*****
*****	5.60	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.79 .58 -1.03 10.54

KRUMHOLTZ + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -1.5 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.85	5TH	1.94	16TH	2.39	25TH	2.57
			75TH	3.23	84TH	3.41	95TH	*****

PCT. GRAVEL .21 SAND 94.19 SILT+CLAY 5.60

GRAVEL+SAND 94.40

GRAV+SAND/SILT+CLAY 16.87

LABELS SHEPARD -SAND

FOLK (GMS)-SAND

(SCS)-

PBH 3-3 7-8 FT 160381

SIEVE ONLY

SAMPLE WT.=118.0371

03/26/81

PHI	PCT.	CUMFCT.	
-3.50			
-3.00	3.30	3.30	***
-2.50	1.81	5.11	**
-2.00	2.78	7.89	***
-1.50	3.74	11.63	****
-1.00	5.01	16.64	*****
-.50	7.83	24.47	*****
0.00	9.27	33.74	*****
.50	9.85	43.60	*****
1.00	9.41	53.01	*****
1.50	11.66	64.67	*****
2.00	10.59	75.25	*****
2.50	11.92	87.17	*****
3.00	9.25	96.42	**
3.50	2.23	98.65	
4.00	.49	99.14	
	.86	100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

.62 1.64 -.25 -.46

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -3.0 TO 4.0 PHI

.71 1.68 -.17 .91

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	.84	5TH -2.53	16TH -1.06	25TH -.47
			75TH 1.99	84TH 2.37	95TH 2.92

PCT. GRAVEL 16.64 SAND 82.50 SILT+CLAY .86

GRAVEL+SAND 99.14 GRAV+SAND/SILT+CLAY 115.45

LABELS SHEPARD -SAND FOLK(GMS)-GRAVELLY SAND (SCS)-

PBH 3-4 8-16 FT 110381

SIEVE ONLY

SAMPLE WT. = 77.7682

03/26/81

PHI PCT. CUMPCT.

2.50			
-2.00	.35	.35	
-1.50	.11	.46	
-1.00	.44	.90	
-.50	.52	1.43	
0.00	.45	1.88	
.50	.72	2.60	**
1.00	1.88	4.47	**
1.50	5.56	10.04	*****
2.00	35.53	45.57	*****
2.50	17.54	63.11	*****
3.00	24.36	87.47	*****
3.50	7.30	94.77	*****
4.00	2.11	96.88	**
****	3.12	100.00	***

MEAN ST.DEV. SKEWNESS KURTOSIS

2.13 .79 -.66 5.36

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -2.0 TO 4.0 PHI

2.21 .72 .17 .99

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	2.13	5TH	1.05	16TH	1.53	25TH	1.71
			75TH	2.74	84TH	2.93	95TH	3.55

PCT. GRAVEL .90 SAND 95.98 SILT+CLAY 3.12

GRAVEL+SAND 96.88 GRAV+SAND/SILT+CLAY 31.09

LABELS SHEPARD -SAND FOLK (GMS)-SAND (SCS)-

PBH 3-5 10-12 FT 110381

SIEVE ONLY

SAMPLE WT.= 75.0313

PHI PCT. CUMPCT.

03/26/81

2.00	.43	.43	*
-1.50	.94	1.37	*
-1.00	.78	2.15	*
-.50	1.62	3.17	**
0.00	1.74	4.91	*
.50	1.31	6.22	*****
1.00	9.71	15.93	*****
1.50	22.97	38.90	*****
2.00	31.90	70.80	*****
2.50	18.22	89.02	*****
3.00	5.08	94.09	**
3.50	2.88	96.09	****
4.00	3.91	100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

2.05	.84	-.71	4.18	KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -1.5 TO 4.0 PHI
2.18	.82	-.01	1.43	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARE, 1957

PERCENTILES	MEDIAN	2.17	5TH	.53	16TH	1.50	25TH	1.70
			75TH	2.62	84TH	2.85	95TH	3.73

PCT. GRAVEL	1.37	SAND	94.72	SILT+CLAY	3.91
GRAVEL+SAND	96.09			GRAV+SAND/SILT+CLAY	24.61
LABELS SHEPARD	SANE	FOLK (GMS)	SAND	(SGS)	

PBH 3-6 12-14 FT 110381

SIEVE ONLY

SAMPLE WT.=100.9931

03/26/81

PHI	PCT.	CUMPCT.	
2.50			
-2.00	.46	.46	*
-1.50	.74	1.20	*
-1.00	.73	1.93	*
-.50	.86	2.79	*
0.00	.95	3.74	*
.50	.97	4.71	*
1.00	.77	5.47	*
1.50	1.04	6.51	*
2.00	4.15	10.66	****
2.50	26.33	37.00	*****
3.00	38.16	75.16	*****
3.50	14.64	89.80	*****
4.00	3.95	93.75	****
****	6.25	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.47 .92 -1.30 8.76

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -2.0 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.67	5TH	.69	16TH	2.18	25TH	2.27
			75TH	3.00	84TH	3.30	95TH	*****

PCT. GRAVEL	1.93	SAND	91.82	SILT+CLAY	6.25
GRAVEL+SAND	93.75			GRAV+SAND/SILT+CLAY	15.00
LABELS SHEPARD	-SAND	FOLK(GMS)-SAND		(SOS)-	

PBH 3-7 14-16 FT 110381

SIEVE ONLY

SAMPLE WT.=126.0019

03/26/81

PHI	PCT.	CUMPCT.	
3.50			*****
-3.00	9.60	9.60	*****
-2.50	7.25	16.85	*****
-2.00	7.43	24.27	*****
-1.50	9.35	33.63	*****
-1.00	9.79	43.42	*****
-.50	9.21	52.63	*****
0.00	6.15	58.79	*****
.50	3.95	62.74	****
1.00	2.20	64.93	**
1.50	4.86	68.99	****
2.00	5.59	74.58	*****
2.50	8.44	83.02	*****
3.00	10.79	93.81	*****
3.50	3.75	97.56	****
4.00	.92	98.48	*
*****	1.52	100.00	**

MEAN ST.DEV. SKEWNESS KURTOSIS

-0.23 2.11 .11 -1.30

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -3.0 TO 4.0 PHI

-0.22 2.25 .22 .66

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	-0.64	5TH	-3.24	16TH	-2.56	25TH	-1.96
			75TH	2.02	84TH	2.55	95TH	3.16

PCT. GRAVEL 43.42 SAND 55.06 SILT+CLAY 1.52

GRAVEL+SAND 98.48 GRAV+SAND/SILT+CLAY 64.64

LABELS SHEPARD -SAND FOLK(GMS)-SANDY GRAVEL (SCS)-

PBH 3-8 16-18 FT 100381

SIEVE ONLY

SAMPLE WT. = 77.1855

03/26/81

PHI	PCT.	CUM PCT.	
-1.50			
-1.00	.31	.31	
-.50	.19	.51	
0.00	.20	.71	
.50	.22	.92	
1.00	.21	1.13	
1.50	.63	1.76	*
2.00	3.78	5.55	****
2.50	17.79	23.33	*****
3.00	40.11	63.44	*****
3.50	24.72	88.16	*****
4.00	6.11	94.26	*****
****	5.74	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

2.76 .59 -.99 10.20

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -1.0 TO 4.0 PHI

> 5 PERCENT OF THE FINES ARE NOT RESOLVED, OBTAIN FOLK STATS. GRAPHICALLY

PERCENTILES	MEDIAN	2.93	5TH	1.93	16TH	2.29	25TH	2.52
			75TH	3.23	84TH	3.42	95TH	*****

PCT. GRAVEL	.31	SAND	93.95	SILT+CLAY	5.74
GRAVEL+SAND	94.26			GRAV+SAND/SILT+CLAY	16.44
LABELS SHEPARD -SAND		FOLK(GMS)-SAND		(SCS)-	

PBH 3-10 20-22 FT100381

SIEVE ONLY

SAMPLE WT.= 81.2005

PHI PCT. CUMFCT.

03/26/81

-2.50			
-2.00	.29		
-1.50	1.53	1.83	**
-1.00	3.78	5.61	****
-.50	2.54		***
0.00	1.96	8.15	**
.50	2.35	10.10	**
1.00	2.63	12.45	***
1.50	1.74	15.08	**
2.00	2.70	16.82	***
2.50	12.86	19.52	*****
3.00	48.00	32.38	*****
3.50	16.78	80.38	*****
4.00	2.09	97.17	**
	.74	99.26	*
*****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

2.24 1.28 -.91 2.34

KRUMBEIN + PETTIJOHN (1936) MOMENT MEASURE FOR SIZE RANGE -2.0 TO 4.0 PHI

2.35 1.14 -.60 2.53

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	2.66	5TH	-1.08	16TH	1.26	25TH	2.21
			75TH	2.94	84TH	3.11	95TH	3.44

PCT. GRAVEL 5.61 SAND 93.66 SILT+CLAY .74

GRAVEL+SAND 99.26

GRAVEL+SAND/SILT+CLAY 134.45

LABELS SHEPARD -SAND

FOLK(GMS)-GRAVELLY SAND

(SCS)-

PBH 3-11 170381 SIEVE AND PIPETTE ( 2 ) SAMPLE WT. = 21.5071  
PCT. GRAVEL 0.00 SAND 13.66 SILT (PIPETTE) 46.04 CLAY (PIPETTE) 46.30  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 13.66 SILT/(SILT+CLAY) 46.38 PCT. GRAV+SAND/SILT+CLAY .16

LABELS SHEPARD -SILTY CLAY FOLK(GMS)-SANDY MUD (SCS)-SANDY MUD

PBH 3-12 170381 SIEVE AND PIPETTE ( 2 ) SAMPLE WT. = 21.6902  
PCT. GRAVEL 0.00 SAND 47.80 SILT (PIPETTE) 12.07 CLAY (PIPETTE) 40.13  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 47.80 SILT/(SILT+CLAY) 23.12 PCT. GRAV+SAND/SILT+CLAY .92  
LABELS SHEPARD -CLAYEY SAND FOLK(GMS)-SANDY MUD (SCS)-SANDY CLAY

PBH 4-1

160381 SIEVE, SETT. TUBE, PIPETTE ( 2 ) SAMPLE WT. = 21.2368

03/26/81

PHI	PCT.	CUMPCT.	
0.50	0.00	0.00	
1.00	0.00	0.00	
1.50	0.73	0.73	*
2.00	1.45	1.45	*
2.50	1.82	1.82	*
3.00	3.27	3.27	*****
3.50	8.72	8.72	*****
4.00	34.17	34.17	*****
8.00	96.84	96.84	*****
10.00	100.00	100.00	***

MEAN ST.DEV. SKEWNESS KURTOSIS

3.52	.52	-1.42	8.18	KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 0.5 TO 4.0 PHI
5.28	1.60	.22	.69	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	5.01	5TH	3.16	16TH	3.64	25TH	3.82
			75TH	6.61	84TH	7.13	95TH	7.83
PCT. GRAVEL	0.00	SAND	34.17	SILT (PIPETTE)	62.67	CLAY (PIPETTE)		3.16
				(SEDIGRAPH)	0.00	(SEDIGRAPH)		0.00
GRAVEL+SAND	34.17	SILT/(SILT+CLAY)		95.21	PCT.GRAV+SAND/SILT+CLAY			.52
LABELS SHEPARD	-SANDY SILT	FOLK (GMS)	-SANDY MUD		(SCS)	-SANDY SILT		

PBH 4-2 170381 SIEVE AND PIPETTE ( 2 ) SAMPLE WT. = 21.6248  
PCT. GRAVEL 0.00 SAND 47.76 SILT (PIPETTE) 48.42 CLAY (PIPETTE) 3.82  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 47.76 SILT/(SILT+CLAY) 92.68 PCT.GRAV+SAND/SILT+CLAY .91

LABELS SHEPARD -SANDY SILT FOLK(GMS)-SANDY MUD (SCS)-SANDY SILT

PBH 4-3 170381 SIEVE AND PIPETTE ( 2) SAMPLE WT.= 21.9633  
PCT. GRAVEL 0.00 SAND 25.22 SILT (PIPETTE) 61.03 CLAY (PIPETTE) 13.75  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 25.22 SILT/(SILT+CLAY) 81.61 PCT.GRAV+SAND/SILT+CLAY .34

LABELS SHEPARD -SANDY SILT FOLK(GMS)-SANDY MUD (SCS)-SANDY SILT

PBH 4-6 170381 SIEVE AND PIPETTE ( 2) SAMPLE WT. = 21.6024  
PCT. GRAVEL 0.00 SAND 14.17 SILT (PIPETTE) 43.09 CLAY (PIPETTE) 42.74  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 14.17 SILT/((SILT+CLAY) 50.20PCT.GRAV+SAND/SILT+CLAY .17

LABELS SHEPARD -CLAYEY SILT FOLK(GMS)-SANDY MUD (SCS)-SANDY MUD

PBH 5-1 26-28 FT 130379 SIEVE,SETT.TUBE,PIPETTE ( 2) SAMPLE WT.= 21.4507

PHI PCT. CUM.PCT.

03/26/81

-0.50		
0.00	0.00	0.00
.50	0.00	0.00
1.00	0.00	0.00
1.50	0.00	0.00
2.00	.11	.11
2.50	.95	1.05
3.00	5.26	6.32
3.50	33.16	39.47
4.00	30.00	69.47
8.00	29.31	98.79
****	1.21	100.00

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MEAN ST.DEV. SKEWNESS KURTOSIS

3.41 .34 -.44 1.11

KRUMBEIN + PETTIJOHN (1936) MOMENT MEASURES FOR SIZE RANGE 0.0 TO 4.0 PHI

4.27 1.41 .64 1.28

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES MEDIAN 3.66 5TH 2.87 16TH 3.15 25TH 3.25

75TH 4.75 84TH 5.93 95TH 7.48

PCT. GRAVEL 0.00 SAND 69.47 SILT (PIPETTE) 29.31 CLAY (PIPETTE) 1.21

(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 69.47 SILT/(SILT+CLAY) 96.03 PCT.GRAV+SAND/SILT+CLAY 2.28

LABELS SHEPARD -SILTY SAND FOLK(GMS)-MUDDY SAND (SCS)-SILTY SAND

PBH 5-2 28-30 FT160381 SIEVE,SETT.TUBE,PIPETTE ( 2) SAMPLE WT.= 22.4168

03/26/81

PHI	PCT.	CUM.PCT.	
-0.50	0.00	0.00	
0.00	.07	.07	
.50	.67	.75	*
1.00	.75	1.50	*
1.50	.75	2.25	*
2.00	3.75	5.99	****
2.50	14.98	20.97	*****
3.00	26.59	47.57	*****
3.50	24.35	71.91	*****
4.00	27.00	98.91	*****
8.00	1.09	100.00	*

MEAN ST.DEV. SKEWNESS KURTOSIS

3.20 .57 -.78 3.82 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 0.0 TO 4.0 PHI  
 4.06 1.50 .52 1.50 FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	3.55	5TH	2.37	16TH	2.83	25TH	3.08
			75TH	4.46	84TH	5.79	95TH	7.42
PCT. GRAVEL	0.00	SAND	71.91	SILT (PIPETTE)	27.00	CLAY (PIPETTE)		1.00
				(SEDIGRAPH)	0.00	(SEDIGRAPH)		0.00
GRAVEL+SAND	71.91	SILT/(SILT+CLAY)		96.12	PCT.GRAV+SAND/SILT+CLAY			2.56
LABELS SHEPARD	-SILTY SAND	FOLK(GMS)-MUDDY SAND				(SCS)-SILTY SAND		

PBH 5-3 31.33 FT 160381 SIEVE,SETT.TUBE,PIPETTE ( 2) SAMPLE WT.= 21.9229

PHI PCT. CUMFCT.

03/26/81

-.50			
0.00	0.00	0.00	
.50	0.00	0.00	
1.00	0.00	0.00	
1.50	.09	.09	
2.00	.78	.87	*
2.50	2.18	3.05	**
3.00	.87	3.92	*
3.50	12.64	16.56	*****
4.00	37.48	54.05	*****
8.00	45.56	99.61	*****
****	.39	100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

3.52	.43	-1.21	6.89	KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 0.0 TO 4.0 PHI
4.68	1.48	.65	.84	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	3.95	5TH	3.04	16TH	3.48	25TH	3.61
			75TH	5.84	84TH	6.63	95TH	7.60

PCT. GRAVEL	0.00	SAND	54.05	SILT (PIPETTE)	45.56	CLAY (PIPETTE)	.39
				(SEDIGRAPH)	0.00	(SEDIGRAPH)	0.00
GRAVEL+SAND	54.05	SILT/(SILT+CLAY)	99.14	PCT.GRAV+SAND/SILT+CLAY	1.16		
LABELS SHEPARD	-SILTY SAND	FOLK(GMS)-MUDDY SAND		(SCS)-SILTY SAND			

PBH 5-4 170381 SIEVE AND PIPETTE ( 2 ) SAMPLE WT. = 21.1941  
PCT. GRAVEL 0.00 SAND 19.14 SILT (PIPETTE) 67.49 CLAY (PIPETTE) 13.37  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 19.14 SILT/(SILT+CLAY) 83.46 PCT. GRAV+SAND/SILT+CLAY .24

LABELS SHEPARD -SANDY SILT FOLK(GMS)-SANDY MUD (SCS)-SANDY SILT

PBH 5-5 170381 SIEVE AND PIPETTE ( 2) SAMPLE WT. = 20.9594  
PCT. GRAVEL 0.00 SAND 10.90 SILT (PIPETTE) 22.27 CLAY (PIPETTE) 66.83  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 10.90 SILT/(SILT+CLAY) 25.00PCT.GRAV+SAND/SILT+CLAY .12  
LABELS SHEPARD -SILTY CLAY FOLK(GMS)-SANDY MUD (SCS)-SANDY CLAY

PBH 5-6 160381 SIEVE AND PIPETTE ( 2) SAMPLE WT. = 20.7590  
PCT. GRAVEL 0.00 SAND 15.98 SILT (PIPETTE) 40.13 CLAY (PIPETTE) 43.89  
(SEDIGRAPH) 0.00 (SEDIGRAPH) 0.00

GRAVEL+SAND 15.98 SILT/(SILT+CLAY) 47.76 PCT. GRAV+SAND/SILT+CLAY .19  
LABELS SHEPARD -SILTY CLAY FOLK(GMS)-SANDY MUD (SCS)-SANDY MUD

