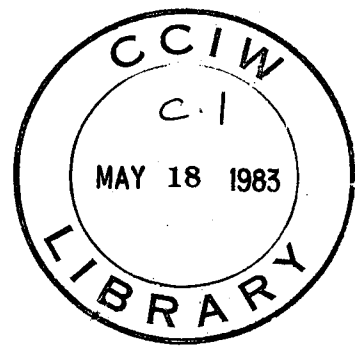


HYDRAULICS DIVISION
TECHNICAL NOTE



DATE: April 1983 **REPORT NO:** 83-14

TITLE: Particle Size Data Report, Tobin Lake

AUTHOR: G.A. Duncan

REASON FOR REPORT: This report responds to a request for particle size data from Dr. W.F. Warwick, National Water Research Institute, Western and Northern Region, Winnipeg.

CORRESPONDENCE FILE NO: Study H83-302

1.0 INTRODUCTION

This report provides the results of particle size analysis on sediments submitted to the laboratory by Dr. Bill Warwick, Freshwater Institute, Winnipeg.

Thirty three samples from the Tobin Lake Project were analyzed for sand, silt, and clay percentages. Thirty one samples were analysed using the Sedigraph after the sand fraction had been removed by wet sieving. The sand was recorded as one data point. On two samples a complete sand analyses along with Sedigraph analyses was run, (Duncan & LaHaie, 1979).

2.0 PROCEDURES

The Sieve and Sedigraph Method which provides sand, silt, and clay percentages was used to analyze the samples. Briefly, the procedure consists of:

1. Splitting the sample to 2g.
2. Removing particles large enough to block Sedigraph Suction Tube (0.088 mm).
3. Dispersing sample in a Calgon suspension.
4. Automatic analysis with the Sedigraph.
5. Processing the results with SIZDIST: a FORTRAN IV computer program (Sandilands and Duncan, 1980)

3.0 RESULTS

For the Sieve and Sedigraph Method, the output consists of:

1. A histogram of the frequency distribution.
2. The percentage and cumulative percentage of the material occurring within 1/2 PHI unit.

3. Moment measures (Krumbein and Pettijohn, 1938) and graphic (Folk and Ward, 1957) statistics.
4. Percentiles.
5. Percent gravel, sand and silt/clay.
6. Ratios used to plot Folk's Ternary Classification.
7. Shepard (1954) and Fold (1974) Ternary Classification.

PHI CONVERSION

The results of samples analyzed in the Sedimentology Lab are presented using the PHI scale (Krumbein, 1934). The conversion from this PHI equation, $\phi = -\log$ (where d is the diameter in millimeters) to the Wentworth scale is listed below.

PHI (ϕ)	Millimeters	Microns	Wentworth Size Class
-5.0	32		
-4.5	24		
-4.0	16		Pebble (-2 to -6)
-3.5	12		
-3.0	8		
-2.5	6		
-2.0	4		
-1.5	2.83		Granule
-1.0	2.00		
-0.5	1.41		Very coarse sand
0.0	1.00		
0.5	0.71		Coarse sand
1.0	0.51	500	
1.5	0.35	350	Medium sand
2.0	0.25	250	
2.5	0.177	177	Fine sand
3.0	0.125	125	
3.5	0.088	88	Very fine sand
4.0	0.0625	62.5	
8.0	0.0039	3.9	Silt Clay

4.0 REFERENCES

- Duncan, G.A. AND LaHaie, G.G. 1979. Size Analysis Procedures used in the Sedimentology Laboratory, NWRI. NWRI, CCIW, Hydraulic 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, V. 27, pp 3-26.
- Krumbein, W.C. and Pettijohn, F.J. 1938. Manual of Sedimentary Petrography. Appleton-Century-Crofts, New York, 549 p.
- Sandilands, R.G. and Duncan, G.A. 1980. SIZDIST - A Computer Program for Size Analysis. NWRI, CCIW, Hydraulics Division Technical Note, Report No. 80-08.
- Shepard, F.P. 1954. Nomenclature Based on Sand-Silt Ratios. Jour. Sed. Petrology, V. 24, pp. 151-158.

04/20/83

PHI PCT. CUMFCT.

.50			*
1.00	.82	.82	
1.50	.48	1.22	*
2.00	.75	1.97	*
2.50	1.15	3.12	***
3.00	3.33	6.45	*****
3.50	16.70	23.15	*****
4.00	9.73	32.89	*
4.50	.86	33.75	*****
5.00	8.64	42.39	*****
5.50	11.52	53.91	*****
6.00	9.22	63.13	*****
6.50	6.91	70.04	****
7.00	3.74	73.79	***
7.50	3.17	76.96	***
8.00	2.59	79.55	**
8.50	2.02	81.57	***
9.00	2.59	84.16	**
9.50	2.02	86.17	***
10.00	2.59	88.77	***
10.50	3.17	91.93	**
11.00	2.30	94.24	***
11.50	2.88	97.12	**
12.00	1.73	98.85	*
****	1.15	100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

5.75	2.54	.36	-.30
5.86	2.69	.34	.95

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 1.0 TO 12.0 PHI
 FOLK GRAPHIC STATISTICAL PARAMETERS
 FOLK AND WARD, 1957

PERCENTILES	MEDIAN	5.33	5TH	2.78	16TH	3.29	25TH	3.59
			75TH	7.19	84TH	8.97	95TH	11.13
PCT. GRAVEL	0.00	SAND	32.89	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	46.66	(SEDIGRAPH)	20.45	
GRAVEL+SAND	32.89	SILT/(SILT+CLAY)	69.53	PCT.GRAV+SAND/(SILT+CLAY)			.49	
LABELS SHEPARD	-SAN	SIL	CLY	FOLK(GMS)-SANDY MUD		(SCS)-SANDY SILT		

04/21/83

PHI	FCT. CUMFCT.		
3.50	2.42	2.42	**
4.00	.58	2.42	*
4.50	2.89	3.00	***
5.00	5.20	5.59	*****
5.50	5.20	11.08	*****
6.00	5.77	16.28	*****
6.50	6.35	22.05	*****
7.00	6.35	28.40	*****
7.50	6.35	34.76	*****
8.00	6.93	41.11	*****
8.50	5.77	48.04	*****
9.00	4.62	53.81	*****
9.50	4.04	58.43	****
10.00	3.46	62.47	***
10.50	4.04	65.93	****
11.00	4.04	69.98	****
11.50	25.98	74.02	*****
****	100.00		

MEAN ST.DEV. SKEWNESS KURTOSIS

7.71 1.97 .01 -.63

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.67	5TH	4.35	16TH	5.97	25TH	6.73
			75TH	*****	84TH	*****	95TH	*****
FCT. GRAVEL	.00	SAND	2.42	SILT (PIPETTE)	6.00	CLAY (PIPETTE)	0.00	
			(SEDIGRAPH)	38.68	(SEDIGRAPH)	58.89		
GRAVEL+SAND	2.42	SILT/(SILT+CLAY)	39.64	PCT.GRAV+SAND/SILT+CLAY	.02			
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-MUD				

04/21/83

PHI PCT. CUMFCT.

3.50 ASSUMED UPPER LIMIT

4.00	.35	.35	
4.50	.47	.82	
5.00	.94	1.77	*
5.50	1.89	3.65	**
	4.72		*****
6.00		6.38	
	7.56		*****
6.50		15.93	
	7.56		*****
7.00		23.49	
	10.39		*****
7.50		33.88	
	10.39		*****
8.00		44.27	
	10.39		*****
8.50		54.66	
	9.45		*****
9.00		64.11	
	7.56		*****
9.50		71.66	
	7.56		*****
10.00		79.22	
	5.67		*****
10.50		84.89	
	4.72		*****
11.00		89.61	
	3.78		****
11.50		93.39	
	6.61		*****
*****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

8.16 1.62 -.01 -.63

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.28	5TH	5.64	16TH	6.50	25TH	7.07
			75TH	9.72	84TH	10.42	95TH	*****
PCT. GRAVEL	.00	SAND	.35	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	43.92	(SEDIGRAPH)	55.73	
GRAVEL+SAND	.35	SILT/(SILT+CLAY)	44.08	PCT.GRAV+SAND/SILT+CLAY	.00			
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-MUD				

TCBIN LAKE 4

SEDIGRAPH ANALYSIS

04/21/83

PHI FCT. CUMFCT.

3.50 ASSUMED UPPER LIMIT

4.00	1.08	1.08	*
4.50	.80	1.88	*
5.00	.80	2.68	**
5.50	1.60	4.28	*****
6.00	5.58	9.86	*****
6.50	5.58	15.44	*****
7.00	7.98	23.42	*****
7.50	9.57	32.99	*****
8.00	9.57	42.57	*****
8.50	8.77	52.14	*****
9.00	7.18	60.91	*****
9.50	6.38	68.09	*****
10.00	4.79	74.47	*****
10.50	6.38	79.26	*****
11.00	6.38	85.64	*****
11.50	7.98	92.02	*****
****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

8.24 1.76 -.04 -.60

KRUMBEIN + PETTIJOHN (1936) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.39	5TH	5.56	16TH	6.53	25TH	7.03
			75TH	10.05	84TH	10.87	95TH	*****
PCT. GRAVEL	.00	SAND	1.08	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
			(SEDIGRAPH)	41.48	(SEDIGRAPH)	57.43		
GRAVEL+SAND	1.08	SILT/(SILT+CLAY)	41.94	PCT.GRAV+SAND/SILT+CLAY	.01			
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-MUD				

04/21/63

PHI PCT. CUMFCT.

3.50 ASSUMED UPPER LIMIT

4.00	.42	.42	
4.50	.29	.71	
5.00	.29	1.01	
5.50	2.65	3.66	***
6.00	5.60	9.26	*****
6.50	6.48	15.74	*****
7.00	11.20	26.93	*****
7.50	12.96	39.89	*****
8.00	10.61	50.50	*****
8.50	10.61	61.11	*****
9.00	8.25	69.36	*****
9.50	5.30	74.66	*****
10.00	4.71	79.37	*****
10.50	5.89	85.27	*****
11.00	4.12	89.39	*****
11.50	4.71	94.11	*****
*****	5.89	100.00	*****

MEAN ST. DEV. SKEWNESS KURTOSIS

8.02 1.62 .12 -.57

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	7.98	5TH	5.62	16TH	6.51	25TH	6.91
			75TH	9.54	84TH	10.39	95TH	*****
PCT. GRAVEL	.00	SAND	.42	SILT (PIPETTE)	50.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	50.09	(SEDIGRAPH)	49.50	
GRAVEL+SAND	.42	SILT/(SILT+CLAY)	50.30PCT.GRAV+SAND/SILT+CLAY				.00	
LABELS SHEPARD	-CLAYEY	SILT FOLK(GMS)-MUD				(SCS)-MUD		

04/21/83

PHI PCT. CUM PCT.

3.50 ASSUMED UPPER LIMIT

4.00	0.00	1.23	
4.50	.35	1.23	
5.00	.35	1.58	
5.50	1.38	1.92	*
6.00	2.76	3.30	***
6.50	4.14	6.06	****
7.00	6.91	10.21	*****
7.50	10.36	17.12	*****
8.00	14.50	27.46	*****
8.50	12.43	41.96	*****
9.00	8.98	54.41	*****
9.50	8.29	63.39	*****
10.00	6.91	71.68	*****
10.50	5.53	78.59	*****
11.00	5.53	84.11	*****
11.50	10.36	89.64	*****
****		100.00	

MEAN ST.DEV. SKEWNESS KUPTOSIS

8.66 1.49 -.21 .50

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN 8.82	5TH 6.31	16TH 7.42	25TH 7.68
		75TH 10.24	94TH 10.99	95TH+*****
PCT. GRAVEL	.00	SAND 1.23	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 26.25	(SEDIGRAPH) 72.52
GRAVEL+SAND	1.23	SILT/(SILT+CLAY)	26.57	PCT.GRAV+SAND/SILT+CLAY .01
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-CLAY

TOBIN LAKE 7

SEDIGRAPH ANALYSIS

04/21/63

PHI PCT. CUM PCT.

3.50 ASSUMED UPPER LIMIT

4.00	0.00	.70	
4.50	.94	.70	*
5.00	.94	1.63	*
5.50	3.75	2.57	****
6.00	3.75	6.32	****
6.50	6.56	13.07	*****
7.00	8.43	16.62	*****
7.50	11.30	25.06	*****
8.00	13.12	35.36	*****
8.50	10.30	48.48	*****
9.00	10.30	56.78	*****
9.50	11.24	69.09	*****
10.00	8.43	80.33	*****
10.50	8.43	88.76	*****
11.00	2.34	97.19	**
11.50	.47	99.53	
****		100.00	

MEAN ST. DEV. SKEWNESS KURTOSIS

8.53	1.54	-.19	-.29	KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI
8.58	1.58	-.04	.91	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	8.57	5TH	5.82	16TH	6.95	25TH	7.50
			75TH	9.76	84TH	10.22	95TH	10.87
PCT. GRAVEL	.00	SAND	.70	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	34.66	(SEDIGRAPH)	64.64	
GRAVEL+SAND	.70	SILT/(SILT+CLAY)		34.91	PCT. GRAV+SAND/SILT+CLAY		.01	
LABELS SHEPARD	-SILTY CLAY	FOLK (GMS)-MUD			(SCS)-MUD			

TOBIN LAKE 6

SEDIGRAPH ANALYSIS

04/21/83

PHI PCT. CUM PCT.

3.50 ASSUMED UPPER LIMIT

4.00	1.23	1.23	
4.50	0.00	1.23	
5.00	.35	1.58	
5.50	.35	1.92	
6.00	1.38	3.30	*
6.50	2.76	6.06	***
7.00	4.14	10.21	****
7.50	6.91	17.12	*****
8.00	10.36	27.46	*****
8.50	14.50	41.96	*****
9.00	12.43	54.41	*****
9.50	8.98	63.39	*****
10.00	8.29	71.68	*****
10.50	6.91	78.59	*****
11.00	5.53	84.11	*****
11.50	5.53	89.64	*****
****	10.36	100.00	

MEAN ST.DEV. SKEWNESS KUFTOSIS

8.66 1.49 -.21 .50

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.82	5TH	6.31	16TH	7.42	25TH	7.68
			75TH	10.24	84TH	10.99	95TH	*****
PCT. GRAVEL	.00	SAND	1.23	SILT (PIPETTE)	6.40	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	26.25	(SEDIGRAPH)	72.52	
GRAVEL+SAND	1.23	SILT/(SILT+CLAY)	26.57	PCT.GRAV+SAND/SILT+CLAY			.01	
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-CLAY				

TOBIN LAKE 8

SEDIGRAPH ANALYSIS

04/21/83

PHI PCT. CUMECT.

3.50 ASSUMED UPPER LIMIT

4.00	0.00	4.37	****
4.50	0.00	4.37	
5.00	.91	4.37	*
5.50	1.82	5.28	**
6.00	3.64	7.10	****
6.50	3.64	10.75	****
7.00	5.46	14.39	*****
7.50	5.46	19.65	*****
8.00	10.93	25.32	*****
8.50	10.93	36.25	*****
9.00	10.02	47.16	*****
9.50	10.02	57.19	*****
10.00	7.29	67.21	*****
10.50	8.20	74.50	*****
11.00	7.29	82.70	*****
11.50	10.02	89.98	*****
*****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

8.69 1.53 -.43 .55

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	9.14	5TH	5.35	16TH	7.15	25TH	7.97
			75TH	10.53	84TH	11.09	95TH	*****
PCT. GRAVEL	.00	SAND	4.37	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	20.95	(SEDIGRAPH)	74.68	
GRAVEL+SAND	4.37	SILT/(SILT+CLAY)	21.90	PCT.GRAV+SAND/SILT+CLAY	.05			
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-CLAY				

TOBIN LAKE 9

SEDIGRAPH ANALYSIS

04/21/83

PHI	FCT.	CUMFCT.	
3.50	ASSUMED UPPER LIMIT		*
	1.25		
4.00	0.00	1.25	
4.50	2.31	1.25	**
5.00	3.09	3.56	***
5.50	3.26	6.85	****
6.00	3.09	10.90	***
6.50	4.63	13.59	*****
7.00	6.17	12.22	*****
7.50	9.26	24.39	*****
8.00	10.80	33.85	*****
8.50	11.57	44.45	*****
9.00	8.49	56.02	*****
9.50	6.94	64.51	*****
10.00	6.17	71.45	*****
10.50	5.40	77.63	*****
11.00	3.86	83.03	****
11.50	13.12	80.88	*****
*****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

6.31 1.72 -.21 -.30

KRUMBEIN + PETTIJOHN (1936) MOMENT MEASURES FOR SIZE RANGE 2.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN 8.74	5TH 5.23	16TH 6.76	25TH 7.53
		75TH 10.29	84TH 11.23	95TH*****
PCT. GRAVEL	.00	SAND 1.25	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
		(SEDIGRAPH) 32.40	(SEDIGRAPH) 68.35	
GRAVEL+SAND	1.25	SILT/(SILT+CLAY)	32.01PCT.GRAV+SAND/SILT+CLAY	.01
LABELS SHEPARD	-SILTY CLAY	FOLK (GMS)-MUD	(SCS)-CLAY	

TOBIN LAKE 10

SEDIGRAPH ANALYSIS

04/21/83

PHI PCT. CUMPCT.

3.50 ASSUMED UPPER LIMIT

4.00	.57	.57	
4.50	.38	.95	
5.00	.36	1.33	
5.50	3.04	4.37	***
6.00	3.79	8.16	****
6.50	3.79	11.96	****
7.00	3.79	15.75	****
7.50	4.55	20.31	*****
8.00	5.31	25.62	*****
8.50	6.35	33.97	*****
9.00	9.87	43.84	*****
9.50	6.35	52.19	*****
10.00	7.59	59.77	*****
10.50	6.35	67.36	*****
11.00	7.59	75.71	*****
11.50	16.70	83.30	*****
*****	100.00		

MEAN ST.DEV. SKEWNESS KURTOSIS

8.72 1.78 -.24 -.53 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN 9.37	5TH 5.58	16TH 7.03	25TH 7.94
		75TH 10.96	84TH*****	95TH*****
PCT. GRAVEL	.00	SAND .57	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
		(SEDIGRAPH) 25.05	(SEDIGRAPH) 74.38	
GRAVEL+SAND	.57	SILT/(SILT+CLAY)	25.19PCT.GRAV+SAND/SILT+CLAY	.01
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD	(SCS)-CLAY	

TOBIN LAKE 11

SEDIGRAPH ANALYSIS

04/21/83

PHI PCT. CUMFCT.

3.50 ASSUMED UPPER LIMIT

4.00	1.64	1.64	**
4.50	.79	2.43	*
5.00	.79	3.22	*
5.50	3.93	7.15	****
6.00	4.72	11.87	*****
6.50	4.72	16.59	*****
7.00	9.44	26.04	*****
7.50	9.44	35.48	*****
8.00	11.02	46.49	*****
8.50	10.23	56.72	*****
9.00	8.66	65.38	*****
9.50	5.51	70.89	*****
10.00	5.51	76.39	*****
10.50	4.72	81.12	****
11.00	2.36	83.48	**
11.50	.79	84.26	*
****	15.74	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

7.78 2.60 -.09 -.28

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.17	5TH	5.23	16TH	6.44	25TH	6.95
			75TH	9.87	84TH	11.33	95TH	*****
PCT. GRAVEL	.00	SAND	1.64	SILT (PIPETTE)	6.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	44.85	(SEDIGRAPH)	53.51	
GRAVEL+SAND	1.64	SILT/(SILT+CLAY)	45.60	PCT.GRAV+SAND/SILT+CLAY			.02	
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD				(SCS)-MUD		

TOBIN LAKE 12

SEDIGRAPH ANALYSIS

04/21/83

PHI PCT. CUMECT.

3.50 ASSUMED UPPER LIMIT

9.62

4.00 8.22 9.62

4.50 6.39 17.83

5.00 5.48 24.22

5.50 5.48 29.70

6.00 4.56 35.18

6.50 3.65 39.74

7.00 3.65 43.40

7.50 3.65 47.05

8.00 4.56 50.70

8.50 4.56 55.27

9.00 3.65 59.83

9.50 3.65 63.48

10.00 3.65 67.13

10.50 4.56 70.79

11.00 4.56 75.35

11.50 20.09 79.91

***** 100.00

NO STATISTICS ARE COMPUTED BECAUSE THE UPPER SIZE LIMIT IS ASSUMED AND THIS AFFECTS MORE THAN 5 PERCENT OF THE SAMPLE

PERCENTILES MEDIAN 7.90 5TH ***** 16TH 4.39 25TH 5.07

75TH 10.96 84TH ***** 95TH *****

PCT. GRAVEL .00 SAND 9.62 SILT (PIPETTE) 5.00 CLAY (PIPETTE) 0.00

(SEDIGRAPH) 41.00 (SEDIGRAPH) 49.30

GRAVEL+SAND 9.62 SILT/(SILT+CLAY) 45.45 PCT. GRAV+SAND/SILT+CLAY .11

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

TOBIN LAKE 13

SEDIGRAPH ANALYSIS

04/21/83

PHI FCT. CUM.FCT.

3.50 ASSUMED UPPER LIMIT

4.00	0.00	3.45	***
4.50	1.34	3.45	*
5.00	4.02	4.79	****
5.50	5.36	9.81	*****
6.00	5.36	14.18	*****
6.50	8.05	19.54	*****
7.00	6.70	27.59	*****
7.50	6.70	34.29	*****
8.00	8.05	41.85	*****
8.50	9.39	49.04	*****
9.00	6.70	53.43	*****
9.50	2.68	65.13	***
10.00	2.68	67.82	***
10.50	1.34	70.50	*
11.00	.67	71.84	*
11.50	27.49	72.51	*****
*****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

7.53 1.69 -.13 -.39 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.55	5TH	5.03	16TH	6.17	25TH	6.64
			75TH	*****	84TH	*****	95TH	*****
PCT. GRAVEL	.00	SAND	3.45	SILT (PIPETTE)	37.55	CLAY (PIPETTE)	59.00	0.00
				(SEDIGRAPH)	37.55	(SEDIGRAPH)	59.00	
GRAVEL+SAND	3.45	SILT/(SILT+CLAY)	39.89	PCT.GRAV+SAND/SILT+CLAY	.04			
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-MUD				

TOBIN LAKE 14

SEDIGRAPH ANALYSIS

04/21/63

PHI PCT. CUMFCT.

3.50 ASSUMED UPPER LIMIT

2.53

4.00 1.12 2.53

*

4.50 1.12 3.65

*

5.00 1.12 4.77

*

5.50 4.46 5.69

6.00 5.60 10.37

6.50 5.60 15.97

7.00 5.60 21.57

7.50 5.60 27.16

8.00 6.72 32.78

8.50 10.08 39.50

9.00 6.72 49.58

9.50 6.72 56.31

10.00 7.84 63.03

10.50 7.84 70.67

11.00 6.72 76.71

11.50 14.56 85.44

100.00

MEAN ST.DEV. SKEWNESS KURTOSIS

6.43 1.95 -.23 -.55

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES MEDIAN 9.03 5TH 5.10 16TH 6.53 25TH 7.31

75TH 10.76 84TH 11.39 95TH*****

PCT. GRAVEL .00 SAND 2.53 SILT (PIPETTE) 6.00 CLAY (PIPETTE) 0.00

(SEDIGRAPH) 30.25 (SEDIGRAPH) 67.22

GRAVEL+SAND 2.53 SILT/(SILT+CLAY) 31.03PCT.GRAV+SAND/SILT+CLAY .03

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

TOBIN LAKE 15

SEDIGRAPH ANALYSIS

04/21/83

PHI	FCT. CUMFCT.	
3.50	ASSUMED UPPER LIMIT	*****
4.00	4.61	***
4.50	2.73 7.33	***
5.00	2.73 10.06	***
5.50	2.73 12.79	****
6.00	4.09 16.87	*****
6.50	5.45 22.32	*****
7.00	5.45 27.78	*****
7.50	6.81 34.59	*****
8.00	10.90 45.49	*****
8.50	6.16 53.67	*****
9.00	5.45 59.12	*****
9.50	5.45 64.57	*****
10.00	6.81 71.38	*****
10.50	6.81 78.20	*****
11.00	6.81 85.01	*****
11.50	6.81 91.82	*****
*****	8.16 100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

8.02 2.12 -.15 -.79 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.28	5TH	4.07	16TH	5.89	25TH	6.75
			75TH	10.27	84TH	10.93	95TH	*****
PCT. GRAVEL	.00	SAND	4.61	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	40.58	(SEDIGRAPH)	54.51	
GRAVEL+SAND	4.61	SILT/(SILT+CLAY)	42.86	PCT.GRAV+SAND/SILT+CLAY	.05			
LABELS SHEPARD -SILTY CLAY				FOLK(GMS)-MUD		(SCS)-MUD		

TOBIN LAKE 16

SIEVE, SH. PIP., SEDIGRAPH SAMPLE WT.= 1.6343

04/21/83

PHI FCT. CUMFCT.

.50

1.49

1.49

1.00

1.01

2.50

1.50

.84

3.35

2.00

1.00

4.35

2.50

1.38

5.73

3.00

2.91

6.64

3.50

4.36

13.00

4.00

2.84

15.53

4.50

15.13

30.97

5.00

13.71

44.68

5.50

7.09

51.77

6.00

6.62

59.39

6.50

3.78

62.17

7.00

3.78

65.96

7.50

2.84

69.79

8.00

2.84

71.63

8.50

3.31

74.94

9.00

2.36

77.30

9.50

1.89

79.20

10.00

1.89

81.69

10.50

1.89

82.98

11.00

1.89

84.87

11.50

3.31

86.16

12.00

11.62

100.00

MEAN ST.DEV. SKEWNESS KURTOSIS

6.14

2.47

.26

-.02

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 1.0 TO 12.0 PHI

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

PERCENTILES	MEDIAN	5.86	5TH	2.74	16TH	4.51	25TH	4.80
			75TH	9.01	84TH	11.27	95TH	*****
FCT. GRAVEL	0.00	SAND	13.00	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	55.79	(SEDIGRAPH)	31.21	
GRAVEL+SAND	13.00	SILT/(SILT+CLAY)	64.13	PCT.GRAV+SAND/SILT+CLAY				.15
LABELS SHEPARD	-CLAYEY SILT	FOLK(GMS)-SANDY MUD						(SCS)-SANDY MUD

TOBIN LAKE 17

SEDIGRAPH ANALYSIS

04/21/63

PHI	PCT. CUMFCT.	
3.50	ASSUMED UPPER LIMIT	
4.00	2.10	**
4.50	1.09	*
5.00	1.09	*
5.50	4.35	****
6.00	6.53	*****
6.50	4.35	****
7.00	7.61	*****
7.50	5.44	****
8.00	5.44	****
8.50	7.61	*****
9.00	5.44	****
9.50	4.35	****
10.00	5.44	****
10.50	4.35	****
11.00	5.44	****
11.50	6.53	*****
*****	22.84	*****
	100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

8.01 2.03 -.04 -.93 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN 8.90	5TH 5.03	16TH 6.10	25TH 6.86
		75TH 11.33	84TH*****	95TH*****
PCT. GRAVEL	.00	SAND 2.10	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 35.90	(SEDIGRAPH) 62.00
GRAVEL+SAND	2.10	SILT/(SILT+CLAY)	36.67	PCT.GRAV+SAND/SILT+CLAY .02
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-MUD

TOBIN LAKE 18

SEDIGRAPH ANALYSIS

04/21/83

PHI FCT. CUMFCT.

3.50 ASSUMED UPPER LIMIT
1.26

4.00		1.26	*
4.50	1.01	2.26	**
5.00	2.02	4.26	*****
5.50	7.05	11.33	*****
6.00	8.06	19.39	*****
6.50	7.05	26.45	*****
7.00	7.05	33.50	*****
7.50	6.05	39.54	*****
8.00	8.06	47.61	*****
8.50	7.05	54.66	*****
9.00	6.05	60.70	*****
9.50	5.04	65.74	*****
10.00	5.04	70.78	*****
10.50	4.03	74.81	*****
11.00	5.04	79.85	*****
11.50	5.04	84.89	*****
*****	15.11	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

7.76 1.95 .07 -.95

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES
FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.17	5TH	5.05	16TH	5.79	25TH	6.40
			75TH	10.52	94TH	11.41	95TH	*****

PCT. GRAVEL	.00	SAND	1.26	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00
				(SEDIGRAPH)	46.35	(SEDIGRAPH)	52.39

GRAVEL+SAND	1.26	SILT/(SILT+CLAY)	46.9	PCT.GRAV+SAND/SILT+CLAY	.01
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LABELS SHEPARD -SILTY CLAY FOLK(GMS)-MUD (SCS)-MUD

TOBIN LAKE 18

SEDIGRAPH ANALYSIS

04/21/83

PHI FCT. CUMFCT.

3.50 ASSUMED UPPER LIMIT
1.26

4.00	1.01	1.26	*
4.50	2.02	2.26	**
5.00	7.05	4.26	*****
5.50	8.06	11.33	*****
6.00	7.05	19.39	*****
6.50	7.05	26.45	*****
7.00	6.05	33.50	*****
7.50	8.06	39.54	*****
8.00	7.05	47.61	*****
8.50	6.05	54.66	*****
9.00	5.04	60.70	*****
9.50	5.04	65.74	*****
10.00	4.03	70.78	****
10.50	5.04	74.81	*****
11.00	5.04	79.85	*****
11.50	15.11	84.89	*****
*****	100.00		

MEAN ST.DEV. SKEWNESS KURTOSIS

7.76 1.95 .07 -.95

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES
FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN 8.17	5TH 9.05	16TH 9.79	25TH 6.40
		75TH 10.52	84TH 11.41	95TH*****

PCT. GRAVEL	.00	SAND 1.26	SILT (PIPETTE) 6.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 46.35	(SEDIGRAPH) 52.39

GRAVEL+SAND	1.26	SILT/(SILT+CLAY)	46.9+PCT.GRAV+SAND/SILT+CLAY	.01
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LABELS SHEPARD -SILTY CLAY FOLK(GMS)-MUD (SCS)-MUD

TOBIN LAKE 19

SEDIGRAPH ANALYSIS

04/21/83

PHI FCT. CUMPCT.

3.50 ASSUMED UPPER LIMIT

4.00	.75	.75	
4.50	0.00	.75	
5.00	0.00	.75	
5.50	.64	1.40	*
6.00	1.93	3.33	**
6.50	3.22	6.55	***
7.00	3.97	10.42	****
7.50	10.31	20.73	*****
8.00	11.60	32.33	*****
8.50	14.82	47.15	*****
9.00	12.69	60.04	*****
9.50	7.73	67.78	*****
10.00	7.09	74.87	*****
10.50	5.80	80.67	*****
11.00	6.44	87.11	*****
11.50	5.80	92.91	*****
****	7.09	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

8.59 1.47 -.06 -.01 KEUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN 8.61	5TH 8.26	16TH 7.27	25TH 7.68
		75TH 10.01	84TH 10.76	95TH*****
PCT. GRAVEL	.00	SAND .75	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 31.58	(SEDIGRAPH) 67.67
GRAVEL+SAND	.75	SILT/(SILT+CLAY)	31.82PCT.GRAV+SAND/SILT+CLAY	.01
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-CLAY

TOBIN LAKE 20

SEDIGRAPH ANALYSIS

04/21/83

PHI PCT. CUMPCT.

3.50 ASSUMED UPPER LIMIT

4.00	1.14	1.14	
4.50	0.00	1.14	
5.00	0.00	1.14	
5.50	1.14	2.27	*
6.00	3.41	5.68	***
6.50	3.41	9.09	***
7.00	5.68	14.77	*****
7.50	8.52	23.30	*****
8.00	10.23	33.52	*****
8.50	13.07	46.59	*****
9.00	11.36	57.95	*****
9.50	8.52	66.48	*****
10.00	7.95	74.43	*****
10.50	5.11	79.55	*****
11.00	6.25	85.80	*****
11.50	7.39	93.19	*****
****	6.82	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

8.55 1.60 -.11 -.17 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.65	5TH	5.93	16TH	7.07	25TH	7.58
			75TH	10.36	84TH	10.86	95TH	*****
PCT. GRAVEL	.00	SAND	1.14	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	32.39	(SEDIGRAPH)	66.43	
GRAVEL+SAND	1.14	SILT/(SILT+CLAY)	32.76	PCT.GRAV+SAND/SILT+CLAY	.01			
LABELS SHEPARD	-SILTY CLAY	FOLK (GMS)-MUD		(SCS)-CLAY				

COMMENTS -

T.L. 20 SAND FRACTION MAINLY BROKEN SHELL

TOBIN LAKE 21

SEDIGRAPH ANALYSIS

04/21/63

PHI PCT. CUMFCT.

3.50 ASSUMED UPPER LIMIT

4.00	.93	.93	
4.50	.42	1.35	
5.00	.42	1.77	
5.50	.42	2.19	
6.00	1.69		**
6.50	3.37	3.88	***
7.00	3.37	7.25	***
7.50	10.12	10.62	*****
8.00	6.43	20.74	*****
8.50	11.60	23.17	*****
9.00	9.28	40.98	*****
9.50	7.59	50.25	*****
10.00	9.25	57.54	*****
10.50	10.96	67.12	*****
11.00	10.12	78.03	*****
11.50	5.90	83.20	*****
	5.90	94.10	*****
*****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

8.80 1.60 -.24 -.07 KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES
 FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.99	5TH	6.17	16TH	7.27	25TH	7.75
			75TH	10.35	84TH	10.79	95TH	*****
PCT. GRAVEL	.00	SAND	.93	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	26.25	(SEDIGRAPH)	70.83	
GRAVEL+SAND	.93	SILT/(SILT+CLAY)	23.51	PCT.GRAV+SAND/SILT+CLAY			.31	
LABELS SHEPARD -SILTY CLAY				FOLK(GMS)-MUD		(SCS)-CLAY		

TOBIN LAKE 22

SEDIGRAPH ANALYSIS

04/21/83

PHI	PCT. CUMFCT.	
3.50	ASSUMED UPPER LIMIT	**
4.00	2.01	*
4.50	.53 2.54	*
5.00	.53 3.08	*
5.50	.53 3.61	**
	2.13	
6.00	5.74	***
6.50	2.66 5.40	***
7.00	2.66 11.06	*****
7.50	5.86 16.92	*****
	8.52	
8.00	25.44	*****
8.50	12.25 37.69	*****
9.00	13.31 51.01	*****
9.50	9.59 60.59	*****
	8.59	
10.00	70.18	*****
10.50	6.39 76.57	*****
11.00	7.46 84.02	*****
11.50	7.46 91.48	*****
	6.52	
*****	100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

8.74 1.65 -.35 .65

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	8.96	5TH	5.53	16TH	7.42	25TH	7.97
			75TH	10.33	84TH	11.00	95TH	*****
PCT. GRAVEL	.00	SAND	2.01	SILT (PIPETTE)	2.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	23.43	(SEDIGRAPH)	74.56	
GRAVEL+SAND	2.01	SILT/(SILT+CLAY)	23.91	PCT.GRAV+SAND/(SILT+CLAY)			.02	
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD				(SCS)-CLAY		

TOBIN LAKE 23

SEDIGRAPH ANALYSIS

04/21/83

FHI	PCT. CUMFCT.	
3.50	ASSUMED UPPER LIMIT	***
4.00	3.22	*
4.50	1.25	**
5.00	2.49	**
5.50	1.66	***
6.00	3.32	***
6.50	3.32	***
7.00	3.32	****
7.50	4.15	*****
8.00	5.82	*****
8.50	7.48	*****
9.00	9.14	*****
9.50	7.48	*****
10.00	7.48	*****
10.50	6.65	*****
11.00	7.48	*****
11.50	5.82	*****
	19.94	*****
	100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

8.41 2.02 -.31 -.41

KRUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 11.5 PHI

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

PERCENTILES	MEDIAN	9.32	5TH	4.61	16TH	6.61	25TH	7.63
			75TH	11.06	84TH	*****	95TH	*****
PCT. GRAVEL	.00	SAND	3.22	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	25.34	(SEDIGRAPH)	71.44	
GRAVEL+SAND	3.22	SILT/(SILT+CLAY)	26.18	PCT.GRAV+SAND/SILT+CLAY	.03			
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-CLAY				

TOBIN LAKE 24

SEDIGRAPH ANALYSIS

04/21/83

PHI	PCT. CUMFCT.	
3.50	ASSUMED UPPER LIMIT	*****
4.00	8.35	*****
4.50	2.92 9.35	***
5.00	4.87 11.28	*****
5.50	5.85 16.15	*****
6.00	6.82 22.00	*****
6.50	6.82 29.83	*****
7.00	5.85 35.65	*****
7.50	5.85 41.50	*****
8.00	4.87 47.35	*****
8.50	6.82 52.23	*****
9.00	6.82 59.05	*****
9.50	4.87 65.88	*****
10.00	4.87 70.75	*****
10.50	3.90 75.63	****
11.00	2.92 79.53	***
11.50	1.95 82.45	**
	15.60 84.40	*****
	100.00	*****

NO STATISTICS ARE COMPUTED BECAUSE THE UPPER SIZE LIMIT IS ASSUMED AND THIS AFFECTS MORE THAN 5 PERCENT OF THE SAMPLE

PERCENTILES	MEDIAN 7.77	5TH*****	16TH 4.98	25TH 5.72
		75TH 9.94	84TH 11.40	95TH*****
PCT. GRAVEL	.00	SAND 8.35	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 43.87	(SEDIGRAPH) 47.77
GRAVEL+SAND	8.35	SILT/(SILT+CLAY)	47.87	PCT.GRAV+SAND/SILT+CLAY .09
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-MUD

TCBIN LAKE 25

SEDIGRAPH ANALYSIS

04/21/63

PHI FCT. CUMFCT.

3.50	0.00		
4.00	0.00	0.00	
4.50	0.00	0.00	
5.00	0.00	0.00	
5.50	0.00	0.00	
6.00	2.98	2.98	*
6.50	4.76	3.57	***
7.00	3.57	8.33	*****
7.50	4.76	11.90	*****
8.00	4.76	16.67	*****
8.50	13.10	21.43	*****
9.00	14.29	34.52	*****
9.50	10.71	48.51	*****
10.00	11.90	59.52	*****
10.50	9.52	71.43	*****
11.00	10.71	80.95	*****
11.50	5.05	91.67	*****
12.00	2.38	97.62	**
*****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

9.45 1.46 -.22 -.49

KEUMBEIN + PETTICORN (1936) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 12.0 PHI

9.54 1.56 -.07 1.03

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	9.56	5TH	6.65	16TH	7.93	25TH	8.64
			75TH	10.69	84TH	11.14	95TH	11.70
FCT. GRAVEL	.00	SAND	0.00	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	16.67	(SEDIGRAPH)	83.33	
GRAVEL+SAND	.00	SILT/(SILT+CLAY)	16.67	PCT.GRAV+SAND/SILT+CLAY	.00			
LABELS SHEPARD	-CLAY	FOLK(GMS)-MUD		(SCS)-CLAY				

TOBIN LAKE 26

SEDIGRAPH ANALYSIS

04/21/53

PHI	FCT.	CUMFCT.	
3.50	0.00	0.00	
4.00	0.00	0.00	
4.50	0.00	0.00	
5.00	.64	0.64	*
5.50	3.21	3.85	***
6.00	3.85	7.69	****
6.50	2.56	10.26	***
7.00	3.85	14.10	****
7.50	3.85	17.95	****
8.00	3.85	21.79	****
8.50	7.69	29.49	*****
9.00	8.97	38.46	*****
9.50	10.26	48.72	*****
10.00	8.97	57.69	*****
10.50	7.69	65.38	*****
11.00	10.26	75.64	*****
11.50	11.54	87.18	*****
12.00	12.82	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

9.50 1.75 -.30 -.55 KUMBEIN + PETTIJOHN (1936) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 12.0 PHI

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

PERCENTILES	MEDIAN	5TH	16TH	25TH
	10.07	6.15	7.75	8.71
		75TH	84TH	95TH
		11.47	11.85	*****
PCT. GRAVEL	.00	SAND 0.00	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 17.95	(SEDIGRAPH) 82.05
GRAVEL+SAND	.00	SILT/(SILT+CLAY)	17.95	PCT.GRAV+SAND/SILT+CLAY .00
LABELS SHEPARD	-CLAY	FOLK (GMS)-MUD		(SCS)-CLAY

TOBIN LAKE 27

SEDIGRAPH ANALYSIS

04/21/83

PHI	PCT. COMPCT.	
3.50		
4.00	0.00	
4.50	0.00	0.00
5.00	0.00	0.00
5.50	0.00	0.00
6.00	3.64	3.64
6.50	3.64	7.27
7.00	3.64	10.91
7.50	4.55	15.45
8.00	4.55	20.00
8.50	3.64	23.64
9.00	9.09	32.73
9.50	8.18	40.91
10.00	8.18	49.09
10.50	9.09	58.18
11.00	8.18	66.36
11.50	9.09	75.45
12.00	14.55	89.90
****	14.55	100.00

MEAN ST.DEV. SKEWNESS KUPTOSIS

9.39 1.75 -.23 -.80 KRUMBEIN + PETTIGRAPH (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 12.0 PHI

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

PERCENTILES	MEDIAN 10.05	5TH 6.19	16TH 7.56	25TH 6.58
		75TH 11.48	84TH 11.93	95TH *****
PCT. GRAVEL	.00	SAND 0.00	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 20.00	(SEDIGRAPH) 60.00
GRAVEL+SAND	.00	SILT/(SILT+CLAY)	20.00	PCT.GRAV+SAND/SILT+CLAY .00
LABELS SHEPARD -CLAY		FOLK (GMS)-MUD		(SCS)-CLAY

TOBIN LAKE 29

SEDIGRAPH ANALYSIS

04/21/83

PHI	PCT. CUMFCT.	
3.50	0.00	
4.00	0.00	0.00
4.50	0.00	0.00
5.00	0.00	0.00
5.50	1.02	1.02
6.00	3.06	4.08
6.50	4.08	8.16
7.00	4.08	12.24
7.50	7.14	19.39
8.00	7.14	26.53
8.50	10.20	36.73
9.00	12.24	48.98
9.50	13.27	62.24
10.00	9.18	71.43
10.50	8.16	79.59
11.00	6.12	85.71
11.50	6.12	91.84
12.00	4.08	95.92
****	4.06	100.00

MEAN ST.DEV. SKEWNESS KURTOSIS

8.89	1.57	-.09	-.60	KSUMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 12.0 PHI
9.05	1.77	-.03	1.02	FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN 9.04	5TH 6.11	16TH 7.26	25TH 7.89
		75TH 10.22	84TH 10.85	95TH 11.89
PCT. GRAVEL	.00	SAND 0.00	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 26.53	(SEDIGRAPH) 73.47
GRAVEL+SAND	.00	SILT/(SILT+CLAY)	26.53PCT.GRAV+SAND/SILT+CLAY	.00
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-CLAY

PHI	FCT.	CUMFCT.	
3.50	0.00	0.00	
4.00	0.00	0.00	
4.50	1.72	0.00	**
5.00	1.72	1.72	**
5.50	6.90	3.45	*****
6.00	5.17	10.34	*****
6.50	5.17	15.52	*****
7.00	6.90	23.69	*****
7.50	6.90	27.59	*****
8.00	6.90	34.48	*****
8.50	6.90	41.38	*****
9.00	6.90	48.28	*****
9.50	5.17	55.17	*****
10.00	6.90	63.34	*****
10.50	6.90	67.24	*****
11.00	6.90	74.14	*****
11.50	6.90	81.03	*****
12.00	8.62	89.66	*****
*****	10.34	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

8.73 2.00 -0.05 -1.12

KEUMBEIN + PETTIJOHN (1936) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 12.0 PHI

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

PERCENTILES	MEDIAN 9.13	5TH 5.61	16TH 6.55	25TH 7.31
		75TH 11.06	84TH 11.87	95TH*****
PCT. GRAVEL	.00	SAND 0.00	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 34.48	(SEDIGRAPH) 65.52
GRAVEL+SAND	.00	SILT/(SILT+CLAY)	34.48	PCT.GRAV+SAND/SILT+CLAY .00
LABELS SHEPARD	-SILTY CLAY	FOLK (GMS)-MUJ		(SCS)-MUG

TOBIN LAKE 31

SEDIGRAPH ANALYSIS

04/21/63

FHI FCT. CUMFCT.

3.50	0.00	0.00	
4.00	0.00	0.00	
4.50	.73	0.00	*
5.00	2.92	.73	***
5.50	5.64	3.65	*****
6.00	11.68	9.49	*****
6.50	11.68	21.17	*****
7.00	13.87	32.65	*****
7.50	18.95	46.72	*****
8.00	6.57	57.66	*****
8.50	7.30	64.23	*****
9.00	6.57	71.53	*****
9.50	5.11	78.10	*****
10.00	5.64	83.21	*****
10.50	4.38	89.05	****
11.00	2.92	93.43	***
11.50	.73	96.35	*
12.00	2.92	97.08	***
*****	100.00		

MEAN ST.DEV. SKEWNESS KURTOSIS

7.90	1.62	.21	-.71
6.00	1.80	.28	.89

KEUBERT + PETTJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 12.0 PHI

FOLK GRAPHIC STATISTICAL PARAMETERS FOLK AND WARD, 1957

PERCENTILES	MEDIAN	7.65	5TH	5.62	16TH	6.23	25TH	6.66
			75TH	9.26	84TH	10.07	95TH	11.27
FCT. GRAVEL	.00	SAND	0.00	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	57.66	(SEDIGRAPH)	42.34	
GRAVEL+SAND	.00	SILT/(SILT+CLAY)	57.66	PCT.GRAV+SAND/SILT+CLAY			.00	
LABELS SHEPARD	-CLAYEY SILT	FOLK(GMS)-MUD				(SCS)-MUD		

TOBIN LAKE 32

SEDIGRAPH ANALYSIS

04/21/83

PHI	PCT. CUMFCT.	
3.50	0.00	
4.00	0.68	*
4.50	0.68	*
5.00	1.37	***
5.50	4.11	****
6.00	8.22	*****
6.50	16.44	*****
7.00	23.29	*****
7.50	31.51	*****
8.00	39.73	*****
8.50	47.95	*****
9.00	57.53	*****
9.50	64.36	*****
10.00	71.23	*****
10.50	78.08	*****
11.00	83.56	*****
11.50	89.04	*****
12.00	93.15	*****
*****	100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

8.24 1.93 .01 -.69 KEULMBEIN + PETTIJOHN (1939) MOMENT MEASURES
 FOR SIZE RANGE 4.0 TO 12.0 PHI

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

PERCENTILES	MEDIAN	5TH	16TH	25TH
	6.61	5.61	6.47	7.10
		75TH	84TH	95TH
		10.28	11.04	*****

PCT. GRAVEL .00 SAND 0.00 SILT (PIPETTE) 0.00 CLAY (PIPETTE) 0.00
 (SEDIGRAPH) 39.73 (SEDIGRAPH) 60.27

GRAVEL+SAND .00 SILT/(SILT+CLAY) 39.73 PCT.GRAV+SAND/SILT+CLAY .00

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

TOBIN LAKE 33

SEDIGRAPH ANALYSIS

04/21/83

PHI	PCT.	CUMFCT.	
3.50	0.00		
4.00	.77	0.00	*
4.50	4.09	.77	****
5.00	7.16	4.86	*****
5.50	9.72	12.02	*****
6.00	8.70	21.74	*****
6.50	7.16	30.43	*****
7.00	5.12	37.60	*****
7.50	6.14	42.71	*****
8.00	5.12	48.85	*****
8.50	5.12	53.96	*****
9.00	4.60	59.08	*****
9.50	4.00	63.68	*****
10.00	3.07	67.77	***
10.50	3.58	70.84	****
11.00	3.07	74.42	***
11.50	3.07	77.49	***
12.00	19.44	80.56	*****
****	100.00		*****

MEAN ST.DEV. SKEWNESS KUFTOSIS

7.62 2.02 .22 -.90

KEILBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 12.0 PHI

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

PERCENTILES	MEDIAN	8.11	5TH	5.01	16TH	5.70	25TH	6.15
			75TH	11.09	84TH	*****	95TH	*****
PCT. GRAVEL	.00	SAND	0.00	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	48.85	(SEDIGRAPH)	51.15	
GRAVEL+SAND	.00	SILT/(SILT+CLAY)	49.85	PCT.GRAV+SAND/SILT+CLAY			.00	
LABELS SHEPARD -SILTY CLAY				FOLK(GMS)-MUD				(SCS)-MUD

TOBIN LAKE 34

SEDIGRAPH ANALYSIS

04/21/83

PHI	FCT.	CUMFCT.	
3.50	0.00		
4.00	0.00	0.00	
4.50	0.00	0.00	
5.00	0.00	0.00	
5.50	0.00	0.00	
6.00	5.56		*****
6.00	5.56	5.56	
6.50	6.94	12.50	*****
6.50	9.72	22.22	*****
7.00	6.94	29.17	*****
7.50	6.94	29.17	*****
8.00	6.94	36.11	*****
8.50	6.94	43.06	*****
9.00	6.94	50.00	*****
9.50	5.56	55.56	*****
9.50	6.94	55.56	*****
10.00	5.56	62.50	*****
10.50	5.56	68.06	*****
11.00	5.56	73.61	*****
11.50	6.94	80.56	*****
11.50	2.78	80.56	***
12.00	16.67	83.33	*****
****	100.00		*****

MEAN ST.DEV. SKEWNESS KURTOSIS

8.52 1.78 .28 -1.17 KEUMBEIN + PETTICORN (1938) MOMENT MEASURES FOR SIZE RANGE 4.0 TO 12.0 PHI

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

PERCENTILES	MEDIAN	9.00	5TH	5.95	16TH	6.68	25TH	7.20
			75TH	11.10	84TH	*****	95TH	*****
PCT. GRAVEL	.00	SAND	0.00	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	36.11	(SEDIGRAPH)	63.69	
GRAVEL+SAND	.00	SILT/(SILT+CLAY)	36.11	PCT.GRAV+SAND/SILT+CLAY			.00	
LABELS SHEPARD	-SILTY CLAY	FOLK (GMS)-MUD		(SCS)-MUD				

11.12.38.UCLF, 7022,

2.560KLNS.

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