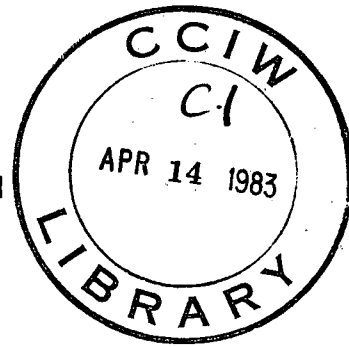


HYDRAULICS DIVISION
TECHNICAL NOTE



DATE: March 1983 **REPORT NO:** 83-10

TITLE: Particle Size Data Report, Southern Indian
Lake, Manitoba

AUTHOR: G.A. Duncan

REASON FOR REPORT: This report responds to a request for
particle size data from Dr. W.F. Warwick,
NWRI - W & NR, Winnipeg.

CORRESPONDENCE FILE NO: 5690 (Study No. 302)

1.0 INTRODUCTION

This report provides the results of particle size analysis on 14 samples from southern Indian Lake, part of a Churchill River diversion study of a Canada/Manitoba agreement.

The samples were analyzed for sand, silt and clay content after removal of organic matter by peroxide treatment.

The amount of loss (organic matter?) is reported as a comment at the bottom of the size analysis results.

2.0 PROCEDURE

The samples were treated with 27.5% tech-grade hydrogen peroxide, allowed to sit overnight to react on the decayed organic matter, next day boiled 10 to 15 minutes and prepared for size analysis.

The Sieve and Sedigraph Method which provides sand, silt, and clay percentages, was used on the samples (Duncan and LaHaie, 1979).

Briefly, the procedure consists of:

1. Splitting the sample to 2 g.
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)

NOTE: Two samples had a complete sieve analysis with the sedigraph, the remainder were wet sieved at 4 PHI (0.063 mm) and one sieve point determined.

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 percentages of the material occurring within each PHI unit.
3. Moment measures (Krumbein and Pettijohn, 1938) and graphic (Folk and Ward, 1957) statistics.
4. Percentiles.
5. Percent gravel, sand, silt and clay.
6. Ratios used to plot Folk's Ternary Classification.
7. Shepard (1954) and Folk (1974) Ternary Classifications.

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., 1974. "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.

APPENDIX 1

SIZDIST OUTPUT

SIL 1 09/03/83

SIEVE, SH. PIP., SEDIGRAPH SAMPLE WT.= 1.3422

PHI PCT. CUMFCT.

03/10/83

.50			
1.00	8.64	8.64	*****
1.50	4.51	13.15	*****
2.00	4.47	17.62	****
2.50	3.64	21.26	****
3.00	3.41	24.68	***
3.50	3.21	27.89	***
4.00	4.02	31.91	****
4.50	1.24	33.15	*
5.00	2.89	36.04	***
5.50	4.13	40.16	****
6.00	4.54	44.70	*****
6.50	4.95	49.65	*****
7.00	4.13	53.78	****
7.50	6.60	60.38	*****
8.00	4.95	65.34	*****
8.50	3.71	69.05	****
9.00	4.95	74.00	*****
9.50	5.36	79.37	*****
10.00	3.30	82.67	***
10.50	3.30	85.97	***
11.00	2.89	88.86	***
11.50	3.30	92.16	***
12.00	2.48	94.64	**
*****	5.36	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

5.94 3.33 -.04 -1.18 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	6.54	5TH	.79	16TH	1.82	25TH	3.05
			75TH	9.09	84TH	10.20	95TH	*****
PCT. GRAVEL	0.00	SAND	31.91	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
			(SEDIGRAPH)	33.43		(SEDIGRAPH)	34.66	

GRAVEL+SAND 31.91 SILT/(SILT+CLAY) 49.09 PCT.GRAV+SAND/SILT+CLAY .47

LABELS SHEPARD -SAN SIL CLY FOLK(GMS)-SANDY MUD (SCS)-SANDY MUD

COMMENTS -

SIL 1 6.85% LOST BY PEROXIDE TREATMENT.

AUTOREPORT

SIL2

09/03/83

SEDIGRAPH ANALYSIS

03/10/83

PHI PCT. CUMPCT.

3.50 ASSUMED UPPER LIMIT

4.00	2.27	2.27	**
4.50	.98	3.25	*
5.00	1.47	4.72	*
5.50	1.47	6.18	*
6.00	4.40	10.58	****
6.50	3.91	14.49	****
7.00	4.89	19.37	*****
7.50	4.89	24.26	*****
8.00	6.84	31.10	*****
8.50	7.33	38.43	*****
9.00	8.80	47.23	*****
9.50	8.80	56.02	*****
10.00	10.26	66.28	*****
10.50	8.31	74.59	*****
11.00	9.28	83.87	*****
11.50	6.35	90.23	*****
****	9.77	100.00	*****

MEAN ST.DEV. SKÉWNESS KURTOSIS

8.58 1.90 -.31 -.33

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	9.16	5TH	5.10	16TH	6.65	25TH	7.55
			75TH	10.52	84TH	11.01	95TH	*****

PCT. GRAVEL .00 SAND 2.27 SILT (PIPETTE) 0.00 CLAY (PIPETTE) 0.00 (SEDIGRAPH) 28.83 (SEDIGRAPH) 68.90

GRAVEL+SAND 2.27 SILT/(SILT+CLAY) 29.50PCT.GRAV+SAND/SILT+CLAY .02

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

COMMENTS - SIL 2 9.58% LOST BY PEROXIDE TREATMENT

AUTOREPORT

SIL 3

09/03/83

SIEVE, SH. PIP., SEDIGRAPH SAMPLE WT.= 1.1530

03/10/83

PHI PCT. CUMPCT.

-1.00			
	3.11		***
-0.50		3.11	
	3.79		****
0.00		6.90	
	4.92		*****
.50		11.82	
	6.16		*****
1.00		17.98	
	5.66		*****
1.50		23.64	
	5.84		*****
2.00		29.48	
	4.82		*****
2.50		34.30	
	3.45		***
3.00		37.75	
	2.72		***
3.50		40.48	
	2.02		**
4.00		42.50	
	.86		*
4.50		43.36	
	1.44		*
5.00		44.80	
	2.01		**
5.50		46.81	
	2.88		***
6.00		49.69	
	4.60		*****
6.50		54.29	
	4.31		****
7.00		58.60	
	7.48		*****
7.50		66.07	
	5.46		*****
8.00		71.54	
	4.60		*****
8.50		76.14	
	4.89		*****
9.00		81.02	
	4.03		****
9.50		85.05	
	3.16		***
10.00		88.21	
	2.59		***
10.50		90.80	
	2.01		**
11.00		92.81	
	1.73		**
11.50		94.54	
	5.46		*****
*****		100.00	

MEAN ST.DEV. SKEWNESS KURTOSIS

4.92 3.57 -.00 -1.39 KROMBEIN + PETTIJOHN (1938) MOMENT MEASURES FOR SIZE RANGE -.5 TO 11.5 PHI

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

PERCENTILES MEDIAN 6.03 5TH -.25 16TH .84 25TH 1.62 75TH 8.38 84TH 9.37 95TH*****

PCT. GRAVEL 0.00 SAND 42.50 SILT (PIPETTE) 0.00 CLAY (PIPETTE) 0.00 (SEDIGRAPH) 29.04 (SEDIGRAPH) 28.46

GRAVEL+SAND 42.50 SILT/(SILT+CLAY) 50.50PCT.GRAV+SAND/SILT+CLAY .74

LABELS SHEPARD -SAN SIL CLY FOLK(GMS)-SANDY MUD (SCS)-SANDY MUD

COMMENTS - SIL 3 8.57% LOST BY PEROXIDE TREATMENT

AUTOREPORT

Ref

03/10/83

PHI PCT. CUMPCT.

3.50 ASSUMED UPPER LIMIT

4.00	.39	.39	
4.50	.25	.64	
5.00	.25	.89	
5.50	1.25	2.14	*
6.00	3.00	5.14	***
6.50	4.49	9.63	****
7.00	7.99	17.62	*****
7.50	7.99	25.61	*****
8.00	8.49	34.10	*****
8.50	7.99	42.08	*****
9.00	7.49	49.57	*****
9.50	6.99	56.56	*****
10.00	8.99	65.55	*****
10.50	7.49	73.04	*****
11.00	6.99	80.03	*****
11.50	3.99	84.02	****
****	15.98	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

8.49 1.64 -.09 -.74

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	5.98	15TH	6.90	25TH	7.46
			75TH	10.64	84TH	11.50	95TH	*****

PCT. GRAVEL .00 SAND .39 SILT (PIPETTE) 0.00 CLAY (PIPETTE) 0.63
 (SEDIGRAPH) 33.70 (SEDIGRAPH) 65.90

GRAVEL+SAND .39 SILT/(SILT+CLAY) 33.83 PCT.GRAV+SAND/SILT+CLAY .00

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

COMMENTS

SIL 4 5.72% LOST BY PEROXIDE TREATMENT

AUTOREPORT

PHI PCT. CUMPCT.

3.50 ASSUMED UPPER LIMIT

4.00	.29	.29	
4.50	.44	.73	
5.00	.44	1.16	
5.50	1.75	2.91	**
6.00	2.62	5.54	***
6.50	4.37	9.91	****
7.00	7.00	16.91	*****
7.50	5.25	22.16	*****
8.00	7.00	29.15	*****
8.50	7.87	37.02	*****
9.00	7.87	44.90	*****
9.50	8.75	53.64	*****
10.00	7.87	61.51	*****
10.50	8.75	70.26	*****
11.00	8.75	79.01	*****
11.50	7.00	86.01	*****
****	13.99	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

8.72 1.71 -.18 -.70

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 9.29 5TH 5.90 16TH 6.94 25TH 7.70
 75TH 10.77 84TH 11.35 95TH*****

PCT. GRAVEL .00 SAND .29 SILT (PIPETTE) 0.00 CLAY (PIPETTE) 0.00
 (SEDIGRAPH) 28.86 (SEDIGRAPH) 70.85

GRAVEL+SAND .29 SILT/(SILT+CLAY) 28.95 PCT.GRAV+SAND/SILT+CLAY .00

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

COMMENTS

SIL 5 14.9% LOST BY PEROXIDE TREATMENT

AUTOREPORT

03/10/83

PHI PCT. CUMPCT.
3.50 ASSUMED UPPER LIMIT

4.00	.63	.63	
4.50	.19	.82	
5.00	.10	.92	
5.50	.48	1.40	
6.00	1.93	3.33	**
6.50	1.93	5.27	**
7.00	2.90	8.17	***
7.50	4.83	13.00	*****
8.00	3.87	16.87	****
8.50	5.80	22.67	*****
9.00	9.67	32.33	*****
9.50	8.70	41.03	*****
10.00	18.63	51.67	*****
10.50	9.67	61.33	*****
11.00	8.70	70.03	*****
11.50	6.77	76.80	*****
****	23.20	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

9.11 1.56 -.40 .38 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 9.92	5TH 6.43	16TH 7.89	25TH 8.62
		75TH 11.37	84TH*****	95TH*****
PCT. GRAVEL	.00	SAND .63	SILT (PIPETTE) 0.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 16.24	(SEDIGRAPH) 83.13
GRAVEL+SAND	.63	SILT/(SILT+CLAY)	16.34	PCT.GRAV+SAND/SILT+CLAY .01
LABELS SHEPARD	-CLAY	FOLK(GMS)-MUD		(SCS)-CLAY

COMMENTS

SIL 6 5.88% LOST BY PEROXIDE TREATMENT

AUTOREPORT

03/10/83

PHI PCT. CUMPCT.
3.50 ASSUMED UPPER LIMIT

4.00	.12	.12	
4.50	.50	.62	
5.00	.50	1.12	
5.50	1.50	2.61	*
6.00	3.50	6.11	***
6.50	3.00	9.11	***
7.00	3.50	12.60	***
7.50	5.49	18.10	*****
8.00	5.49	23.59	*****
8.50	8.99	32.58	*****
9.00	9.49	42.07	*****
9.50	7.99	50.06	*****
10.00	8.99	59.05	*****
10.50	7.49	66.54	*****
11.00	6.99	73.53	*****
11.50	4.49	78.03	****
****	21.97	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

8.70 1.63 -.23 -.42 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 9.50	5TH 5.84	16TH 7.31	25TH 8.08
		75TH 11.16	84TH*****	95TH*****
PCT. GRAVEL	.00	SAND .12	SILT (PIPETTE) 6.68	CLAY (PIPETTE) 8.65
			(SEDIGRAPH) 23.47	(SEDIGRAPH) 76.41
GRAVEL+SAND	.12	SILT/(SILT+CLAY)	23.50PCT.GRAV+SAND/SILT+CLAY	.00
LABELS SHEPARD	-CLAY	FOLK(GMS)-MUD		(SCS)-CLAY

COMMENTS
SIL 7 2.92% LOST BY PEROXIDE TREATMENT

AUTOREPORT

SIL 8.

09/03/83

SEDIGRAPH ANALYSIS

03/10/83

PHI PCT. CUMPCT.

3.50 ASSUMED UPPER LIMIT

4.00	.36	.36	*
4.50	.59	.94	*
5.00	1.47	2.41	***
5.50	3.22	5.63	*****
6.00	6.45	12.08	*****
6.50	7.03	19.11	*****
7.00	11.72	30.84	*****
7.50	10.55	41.39	*****
8.00	9.38	50.77	*****
8.50	6.45	57.21	*****
9.00	5.28	62.49	*****
9.50	4.10	66.59	*****
10.00	5.28	71.87	*****
10.50	4.10	77.14	*****
11.00	4.10	81.24	*****
11.50	4.10	85.35	*****
*****	14.65	100.00	*****

AUTOREPORT

MEAN ST.DEV. SKEWNESS KURTOSIS

7.85 1.74 .14 -.74

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	7.96	5TH	5.40	16TH	6.28	25TH	6.75
			75TH	10.30	84TH	11.34	95TH	*****

PCT. GRAVEL	.00	SAND	.36	SILT (PIPETTE)	6.00	CLAY (PIPETTE)	0.00
				(SEDIGRAPH)	50.41	(SEDIGRAPH)	49.23

GRAVEL+SAND .36 SILT/(SILT+CLAY) 50.59 PCT.GRAV+SAND/SILT+CLAY .00

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

COMMENTS

SIL 8 2.42% LOST BY PEROXIDE TREATMENT

03/10/83

PHI PCT. CUMPCT.

3.50 ASSUMED UPPER LIMIT

4.00	3.91	3.91	****
4.50	.96	4.87	*
5.00	.48	5.35	
5.50	1.92	7.27	**
6.00	2.40	9.67	**
6.50	3.36	13.03	***
7.00	3.84	16.88	****
7.50	3.84	20.72	****
8.00	4.32	25.05	****
8.50	5.77	30.81	*****
9.00	7.69	38.50	*****
9.50	7.69	46.19	*****
10.00	11.53	57.72	*****
10.50	9.13	66.85	*****
11.00	8.17	75.02	*****
11.50	6.73	81.74	*****
****	18.26	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

8.67 2.01 -.43 -.04 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 9.67 5TH 4.64 16TH 6.89 25TH 7.99
75TH 11.00 84TH***** 95TH*****

PCT. GRAVEL .00 SAND 3.91 SILT (PIPETTE) 0.00 CLAY (PIPETTE) 0.00
(SEDIGRAPH) 21.14 (SEDIGRAPH) 74.95

GRAVEL+SAND 3.91 SILT/(SILT+CLAY) 22.00 PCT.GRAV+SAND/SILT+CLAY .04

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

COMMENTS

SIL 101 8.52% LOST BY PEROXIDE TREATMENT

AUTOREPORT

SIL 102

10/03/83

SEDIGRAPH ANALYSIS

03/10/83

PHI PCT. CUMPCT.

3.50 ASSUMED UPPER LIMIT

4.00	.60	.60	
4.50	.33	.93	*
5.00	.66	1.59	*
5.50	1.32	2.91	*
6.00	1.32	4.23	*
6.50	5.28	5.55	*****
7.00	1.32	10.84	*
7.50	4.62	12.16	*****
8.00	4.62	16.78	*****
8.50	5.94	21.40	*****
9.00	5.28	27.35	*****
9.50	9.25	32.63	*****
10.00	8.59	41.88	*****
10.50	9.91	50.46	*****
11.00	7.93	60.37	*****
11.50	31.70	68.30	*****
*****	100.00		*****

AUTOREPORT

MEAN ST.DEV. SKEWNESS KURTOSIS

9.13 1.74 -.43 .08 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 10.47	5TH 6.29	16TH 7.92	25TH 8.80
		75TH*****	84TH*****	95TH*****
PCT. GRAVEL	.00	SAND .60	SILT (PIPETTE) 6.00	CLAY (PIPETTE) 0.00
			(SEDIGRAPH) 16.18	(SEDIGRAPH) 83.22
GRAVEL+SAND	.60	SILT/(SILT+CLAY)	16.28PCT.GRAV+SAND/SILT+CLAY	.01
LABELS SHEPARD	-CLAY	FOLK(GMS)-MUD	(SCS)-CLAY	

COMMENTS
SIL 102 1.48% LOST BY PEROXIDE TREATMENT

PHI PCT. CUMPGT.

03/10/83

3.50 ASSUMED UPPER LIMIT

4.00	.81	.81	
4.50	.50	1.31	
5.00	.50	1.81	
5.50	1.25	3.05	*
6.00	4.24	7.29	****
6.50	4.98	12.27	*****
7.00	5.98	18.25	*****
7.50	6.98	25.23	*****
8.00	7.48	32.71	*****
8.50	7.48	40.19	*****
9.00	7.48	47.66	*****
9.50	6.48	54.14	*****
10.00	7.48	61.62	*****
10.50	6.48	68.10	*****
11.00	6.48	74.58	*****
11.50	4.98	79.56	*****
*****	20.44	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

8.43 1.75 -.12 -.66 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	9.18	5TH	5.73	16TH	6.81	25TH	7.48
			75TH	11.04	84TH	*****	95TH	*****
PCT. GRAVEL	.00	SAND	.81	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00	
				(SEDIGRAPH)	31.90	(SEDIGRAPH)	67.29	
GRAVEL+SAND	.81	SILT/(SILT+CLAY)	32.16	PCT.GRAV+SAND/SILT+CLAY	.01			
LABELS SHEPARD	-SILTY CLAY	FOLK(GMS)-MUD		(SCS)-CLAY				

COMMENTS - SIL 104 5.38% LOST BY PEROXIDE TREATMENT

AUTOREPORT

SIL 105 10/03/83 SEDIGRAPH ANALYSIS

PHI PCT. CUMPCT.

03/10/83

3.50 ASSUMED UPPER LIMIT

4.00	.88	.88	*
4.50	.25	1.14	*
5.00	1.01	2.15	*
5.50	.51	2.66	*
6.00	2.53	5.19	***
6.50	2.53	7.73	***
7.00	5.07	12.80	*****
7.50	4.06	16.85	****
8.00	7.10	23.95	*****
8.50	6.59	30.54	*****
9.00	4.56	35.11	*****
9.50	8.11	43.22	*****
10.00	9.63	52.85	*****
10.50	9.63	62.48	*****
11.00	8.62	71.10	*****
11.50	5.58	76.68	*****
****	23.32	100.00	*****

AUTOREPORT

MEAN ST.DEV. SKEWNESS KURTOSIS

8.85 1.73 -.33 -.20

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 9.85 5TH 5.96 16TH 7.39 25TH 8.08
75TH 11.35 84TH***** 95TH*****

PCT. GRAVEL .00 SAND .88 SILT (PIPETTE) 0.00 CLAY (PIPETTE) 0.00
(SEDIGRAPH) 23.07 (SEDIGRAPH) 76.05

GRAVEL+SAND .88 SILT/(SILT+CLAY) 23.27PCT.GRAV+SAND/SILT+CLAY .01

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

COMMENTS

SIL 105 21.87% LOST BY PEROXIDE TREATMENT

SIL 106

10/03/83

SEDIGRAPH ANALYSIS

PHI PCT. CUMPCT.

03/10/83

3.50 ASSUMED UPPER LIMIT

4.00	8.75	8.75	*****
	.93		*
4.50		9.68	*
	1.39		*
5.00		11.07	*
	1.39		*
5.50		12.46	
	3.24		***
6.00		15.70	
	2.32		**
6.50		18.01	
	4.17		****
7.00		22.18	
	2.78		***
7.50		24.96	
	4.17		****
8.00		29.13	
	5.56		*****
8.50		34.69	
	6.48		*****
9.00		41.17	
	6.95		*****
9.50		48.12	
	8.80		*****
10.00		56.92	
	8.34		*****
10.50		65.26	
	7.41		*****
11.00		72.67	
	5.56		*****
11.50		78.23	
	21.77		*****
*****		100.00	

AUTOREPORT

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

PERCENTILES	MEDIAN	9.61	5TH*****	16TH	6.07	25TH	7.50
			75TH	11.21	84TH*****	95TH*****	
PCT. GRAVEL	.00	SAND	8.75	SILT (PIPETTE)	0.00	CLAY (PIPETTE)	0.00
				(SEDIGRAPH)	20.38	(SEDIGRAPH)	70.87
GRAVEL+SAND	8.75	SILT/(SILT+CLAY)	22.34	PCT.GRAV+SAND/SILT+CLAY			.10

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

COMMENTS -
SIL 106 7.29% LOST BY PEROXIDE TREATMENT
SAND FRACTION QUARTZ AND HIGH PERCENTAGE OF MICA

SIL 107 10/03/83 SEDIGRAPH ANALYSIS

PHI PCT. CUMPCT.

03/10/83

3.50 ASSUMED UPPER LIMIT

4.00	.59	.59	
4.50	.50	1.09	*
5.00	1.00	2.09	**
5.50	2.50	4.58	*****
6.00	6.99	11.58	*****
6.50	9.99	21.57	*****
7.00	13.49	35.06	*****
7.50	10.49	45.55	*****
8.00	7.99	53.54	*****
8.50	6.49	60.03	*****
9.00	3.50	63.53	***
9.50	4.00	67.53	****
10.00	3.50	71.03	***
10.50	3.50	74.52	***
11.00	3.00	77.52	***
11.50	3.00	80.52	***
*****	19.48	100.00	*****

MEAN ST.DEV. SKEWNESS KURTOSIS

7.59 1.65 .26 -.33

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 7.78 5TH 5.53 15TH 6.22 25TH 6.63 75TH 10.58 84TH***** 95TH*****

PCT. GRAVEL .00 SAND .59 SILT (PIPETTE) 0.00 CLAY (PIPETTE) 0.00 (SEDIGRAPH) 52.95 (SEDIGRAPH) 46.46

GRAVEL+SAND .59 SILT/(SILT+CLAY) 53.27 PCT.GRAV+SAND/SILT+CLAY .01

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

COMMENTS - SIL 107 2.18% LOST BY PEROXIDE TREATMENT

AUTOREPORT