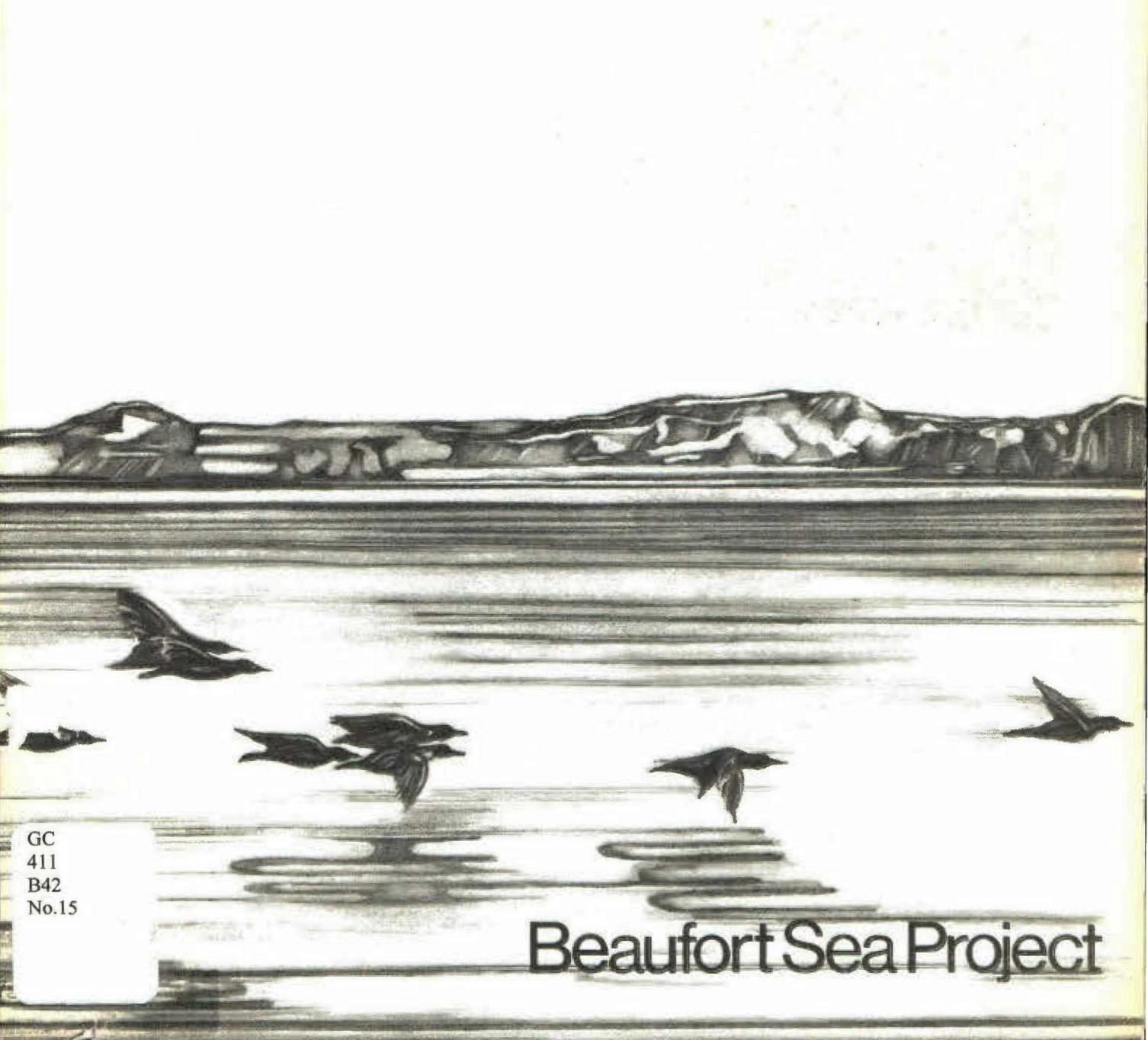


Mackenzie River Input to the Beaufort Sea

K.F. DAVIES

Technical Report No. 15



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Beaufort Sea Project

MACKENZIE RIVER INPUT TO
THE BEAUFORT SEA

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Beaufort Sea Technical Report #15

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SUMMARY

This report contains a summary of the findings under the study, "Mackenzie River Input to the Beaufort Sea," one of a series of studies comprising the Beaufort Sea Project.

Comprehensive descriptions of the gauging sites and methods used are included in the report. Distribution of flow in the main channels as a percentage of total flow has been determined on a month-by-month basis for the period July 1974 to June 1975.

Suspended sediment transport, ice thickness, and water temperature in the Delta are also discussed and the results shown.

All data contained in the report are provisional, subject to correction, pending publication in the Annual Departmental Reports.

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INTRODUCTION

MACKENZIE RIVER DRAINAGE BASIN

The Mackenzie River basin is one of the largest on the North American Continent, embracing an area of approximately 700,000 square miles (Figure 1). Its headwaters, covering parts of British Columbia, Alberta, Saskatchewan and the Northwest Territories, are collected by a vast system of rivers which flow into Great Slave Lake, from which the Mackenzie River proper flows in a northwesterly direction for about 1,000 miles before discharging through the Mackenzie Delta into the Beaufort Sea. The physical features of the basin vary widely from the rugged and mountainous country of the Rocky Mountain system to the flat, mainly treeless wastes of the barren lands which lie to the east of Lake Athabasca. The major lakes in the system, Lake Athabasca (3,100 square miles), Great Slave Lake (11,000 square miles), and Great Bear Lake (12,000 square miles) provide natural regulation to the system.

Mean annual flow exceeds 300,000 c.f.s. (or 200,000,000 acre-feet per year) which is equal to about seven inches of runoff over the basin (Morris¹, 1969). Peak flows of over one million c.f.s. have been recorded.

Mean daily suspended sediment loads of over one million tons per day are common during June to September. Peak loads of over 20 million tons per day of suspended sediment have been recorded.

MACKENZIE DELTA

The Mackenzie Delta is made up of a myriad of channels interwoven with each other, flooded and dry at different times of the year, and all used to transport Mackenzie River water to its final destination, the Beaufort Sea.

It is assumed that all the water entering the delta from the Mackenzie, Peel, and Arctic Red Rivers will eventually reach the Beaufort Sea. What is not known, however, is how the water moves, i.e., which channels carry how much water. Does all the water pass through the Middle Channel? How much goes out the East Channel? How much to Shallow Bay? These are some of the questions that prompted the establishment of the delta flow distribution study.



FIGURE 1

STUDY AREAS

The main study area was limited to the Mackenzie Delta as far downstream as the line between Aklavik and Inuvik. Flow and sediment distribution were monitored along this line at the following sites (see Figure 2):

- | | | |
|---|-----------|------------|
| 1) Peel Channel above Aklavik | 68°11'30" | 135°06'50" |
| 2) West Channel below Aklavik Channel | 68°15'50" | 135°04'30" |
| 3) Aklavik Channel above Schooner Channel | 68°15'50" | 134°48'00" |
| 4) Middle Channel above Napoiaq Channel | 68°26'00" | 134°06'50" |
| 5) Kalinek Channel above Oniak Channel | 68°23'50" | 133°59'00" |
| 6) East Channel at Inuvik | 68°20'37" | 133°44'40" |

Inflow to the delta was monitored at the following sites:

- | | | |
|---|-----------|------------|
| 7) Mackenzie River above Arctic Red River | 67°21'30" | 133°33'30" |
| 8) Arctic Red River near the Mouth | 66°47'10" | 133°06'00" |
| 9) Peel River above Fort McPherson | 67°13'15" | 134°56'45" |
| 10) Rengleng River near Dempster Highway | 67°45'05" | 133°53'00" |
| 11) Campbell Creek near Inuvik | 68°16'04" | 133°15'47" |

In March 1975, a small study was initiated to determine the distribution of flow in the Richards Island area.

A series of discharge measurements were made at the following sites (see Figure 3):

- | | | | |
|-----|--|------------|-------------|
| 12) | Middle Channel West of Williams Island | 68°42'30"N | 134°29'30"W |
| 13) | East Channel below Williams Island | 68°45'00"N | 134°20'00"W |
| 14) | Marcus Channel | 68°48'00"N | 134°40'00"W |
| 15) | Reindeer Channel | 68°54'00"N | 134°55'00"W |
| 16) | Neklek Channel West of Tununuk Point | 68°58'00"N | 134°44'00"W |
| 17) | East Channel below Tununuk Point | 69°02'00"N | 134°38'00"W |
| 18) | Channel West of Richards Island | 69°03'30"N | 135°07'00"W |
| 19) | Channel West of Richards Island | 69°05'00"N | 135°07'00"W |
| 20) | Channel West of Richards Island | 69°05'30"N | 135°00'00"W |

FIGURE 2

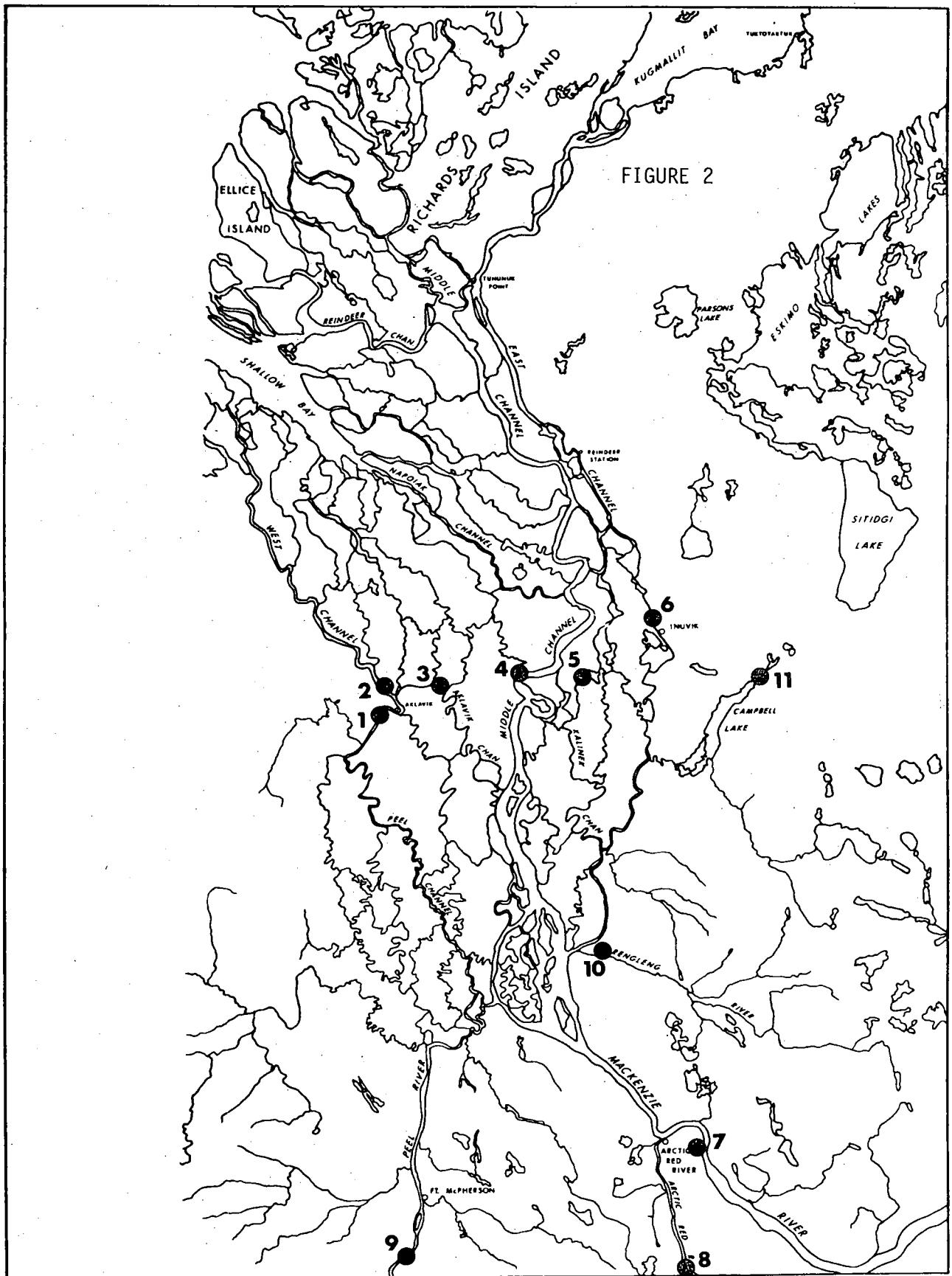
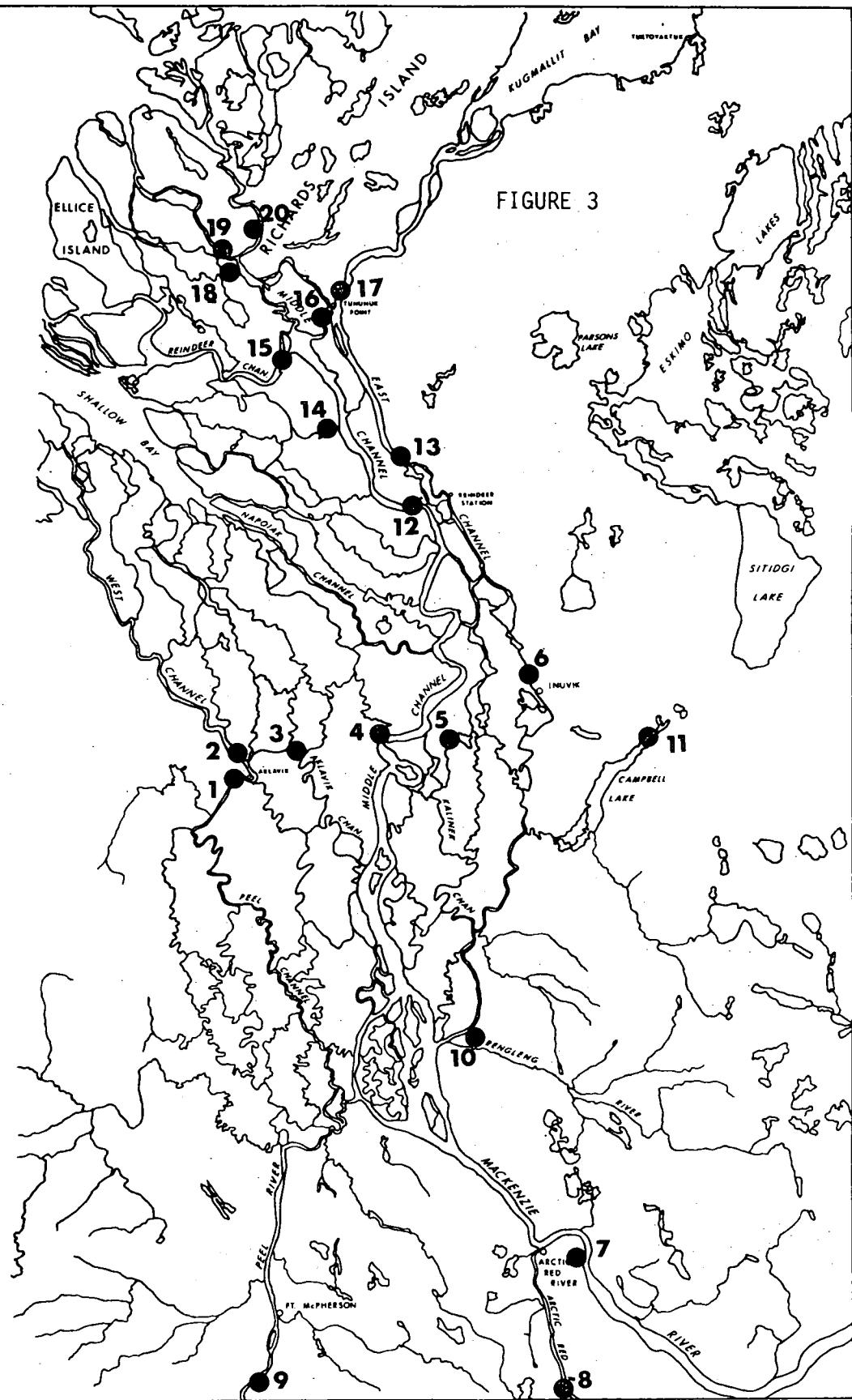


FIGURE 3



RESUME OF CURRENT STATE OF KNOWLEDGE

The availability of hydrometric data in the Mackenzie Basin in the early days is very limited. As of 1955, there were only nine hydrometric stations operating north of the 60th parallel, and of these only two provided daily streamflow data (Clark², 1958). Sediment data were not collected at all.

In the early 1960's, a number of water level gauges were located along the Mackenzie River to aid in forecasting water levels for navigation purposes on the Mackenzie waterway. Water transportation was then, and still is, the major method of transporting goods and services to the Mackenzie areas. Gauging stations were also located on some of the Mackenzie tributaries, the Liard, Nahanni, Redstone, Peel, and Arctic Red Rivers, for example.

By the end of 1970, 36 stations had been established in the Mackenzie drainage basin north of the 60th parallel, 27 of these providing daily streamflow data. Of these 36 stations, five were on the Mackenzie River itself, with two of these providing streamflow data.

Hydrometric data within the Mackenzie Delta proper are almost non-existent. Water levels, but not flows, were monitored at two sites in the early 1960's, near Reindeer Depot and at Aklavik.

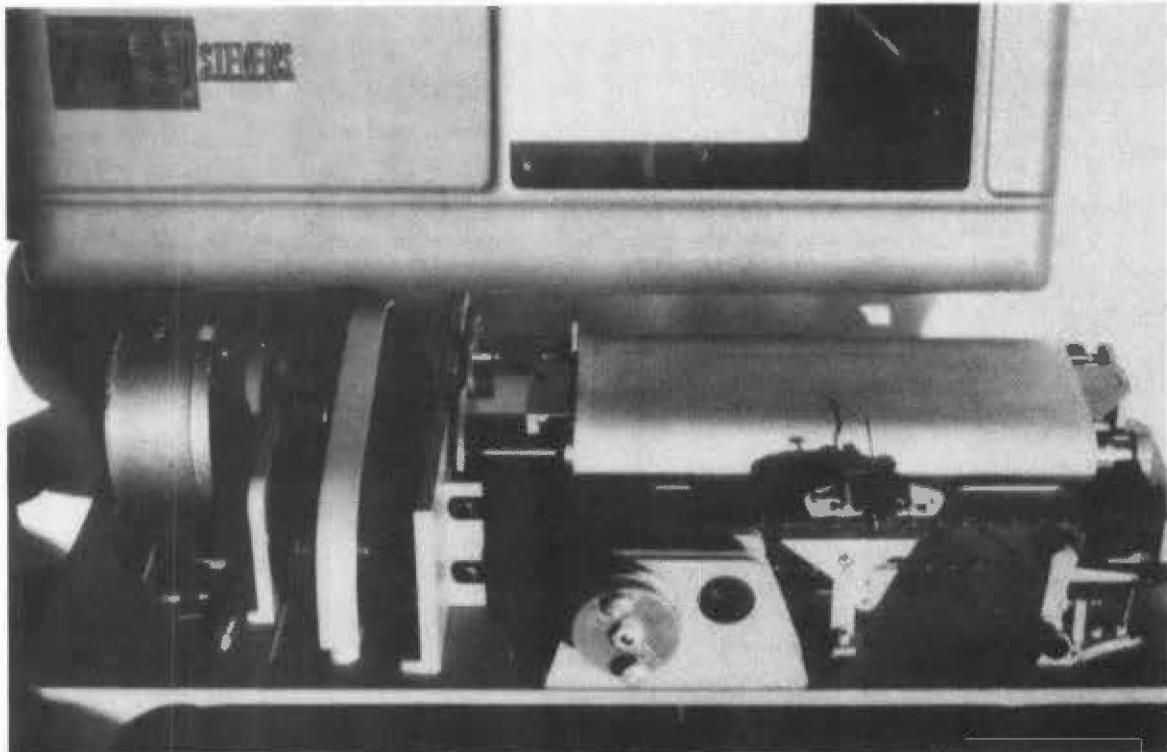
In 1971, a limited distribution study consisting of a series of miscellaneous measurements was commenced by the Department of the Environment.³ This study was carried out mainly in the low flow March and April period. Continuous monitoring, especially through the open water periods, did not commence until the present study was initiated in 1974.

METHODS OF DATA COLLECTION

1. FIELD TECHNIQUES

1.1 Water Level Recording

Most stream gauging stations are located at remote sites, necessitating the use of reliable equipment that can operate for several months without servicing. The piece of equipment normally used to collect stage or water level data is the Leupold-Stevens A-71 Analog Recorder. This recorder is driven by a servo manometer or pressure sensing device which senses the changes in river level and up-dates the recorder. Photograph No. 1 below shows the standard Leupold-Stevens A-71 Analog Recorder.



1.2 Flow Measuring

Discharge or flow measurements are made at monthly intervals at each stream gauge location. It is known that the velocity of the water varies from surface to stream bed, and from one side of the river to the other. The stream bed is also constantly shifting or changing in cross-sectional configuration. To get an accurate measurement of the total discharge through the cross-section, the section is first arbitrarily divided into a minimum of twenty sections. Measurements of width, depth and mean velocity are obtained for each section. Mean velocity may be derived from one position within the vertical section, usually at six-tenths of the depth, or from the average of the velocities at two points, usually two-tenths depth and eight-tenths depth.

The area "a" for each segment is obtained by multiplying the width "w" by the depth "d". The discharge "q" for the segment is then obtained by multiplying area "a" by mean velocity "v".

The total discharge for the river, at that particular time, is then obtained by summing the discharges from all the individual segments.

$$\begin{aligned} Q &= q_1 + q_2 + \dots + q_n \\ &= a_1 v_1 + a_2 v_2 + \dots + a_n v_n \end{aligned}$$

1.3 Sediment Measuring

Measurements are usually made by the depth-integrating method to determine the amount of suspended sediment load carried in the entire cross-section of the stream and to determine the average suspended sediment concentration in the cross-section. It is known that the concentration of suspended sediments tends to increase from the surface of the water in the stream to the stream bed, and to vary from side to side. When making depth-integrated sediment discharge measurements, the stream cross-section is divided into at least five equal-flow portions. A representative suspended sediment sample is taken in each portion by sampling from top to bottom at a constant rate. For each part of the cross-section, the suspended sediment discharge "r" may be computed by multiplying the flow "q" by the suspended sediment concentration "c".

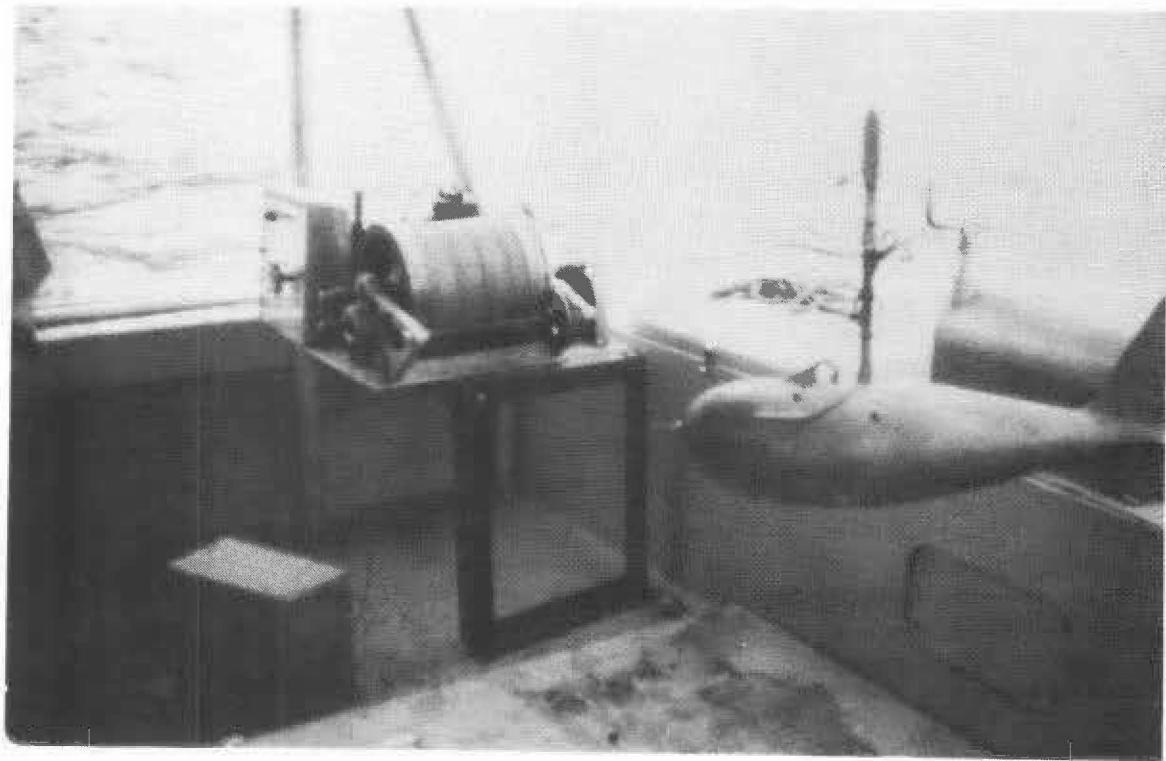
$$r = qc$$

For the whole cross-section, the suspended sediment discharge "R" may be computed by adding the suspended sediment discharges for the separate areas.

$$R = q_1 c_1 + q_2 c_2 + \dots + q_n c_n$$

Individual or "daily" suspended sediment samples, taken at a specific location in a cross-section, are collected daily during periods with average or high sediment concentration. In the periods with very heavy sediment concentration, two or three sediment samplings are taken per day, while in periods with low concentration, one individual sediment observation every few days is felt to be sufficient. The relationship between the suspended sediment concentration of the individual samples and the average concentration in the cross-section determined from the suspended sediment discharge is established for every station. Using this relationship, the sediment concentrations of the individual observations are adjusted to reflect the average suspended sediment concentration in the cross-section. The daily suspended sediment loads, in tons per day, are computed on the basis of stream discharges and the adjusted suspended sediment concentrations.

Photograph No. 2 below shows a sampler and powered reel assembly used in suspended sediment measurements.



1.4 Measuring Equipment

Heavy sediment samplers and sounding weights, ranging in weight to three hundred pounds, are required to properly sample flow rates and sediment loads in the large channels encountered in the Mackenzie Delta. To handle these loads, large, stable boats are required. Two of the standard Water Survey catamarans were used for this job. These units are twin-hulled, 33-foot vessels with a 14-foot beam. Powered winches are available fore and aft on the boats, allowing simultaneous sediment and flow measurements to be made. Limited accommodation for a crew of three is available on board. The boats are equipped with all the necessary radios, lights, etc., to comply with the communications and navigation regulations of the waterway.

Photograph No. 3 below shows the two Water Survey of Canada catamarans at the dock in the East Channel at Inuvik.



2. ANCILLARY DATA

During the course of a flow measurement, a number of vital parameters are recorded. River cross-sections at the measuring site are obtained at the time of each measurement. These cross-sections can be compared and changes in stream bed configuration can be detected. Velocity profiles can also be measured and plotted.

Ice thicknesses and rates of ice formation can be computed from the discharge measurements taken during the winter months.

Water temperatures taken at the time of each discharge measurement and sediment measurement are also available and can be used to determine seasonal changes in temperature.

RESULTS

1. FLOW DISTRIBUTION

The distribution of flow through the main channels varied with the season of the year.

Table 1 shows the variations on a monthly basis, expressed as a percentage of the total flow.

The largest percentage of the flow goes down the middle channel, varying from 85 percent in the summer to 94 percent of total flow in the winter. The higher percentage in the winter can be attributed to the fact that many of the smaller channels freeze to the bottom or are blocked by slush ice restricting flow through them and diverting the water into the main channel.

Daily flow data are available for 1974 in Departmental publications and for 1975 upon application to the Calgary district office of the Water Survey of Canada. Pictorial hydrographs for July 1974 to June 1975 have been included in the appendix to this report.

TABLE 1

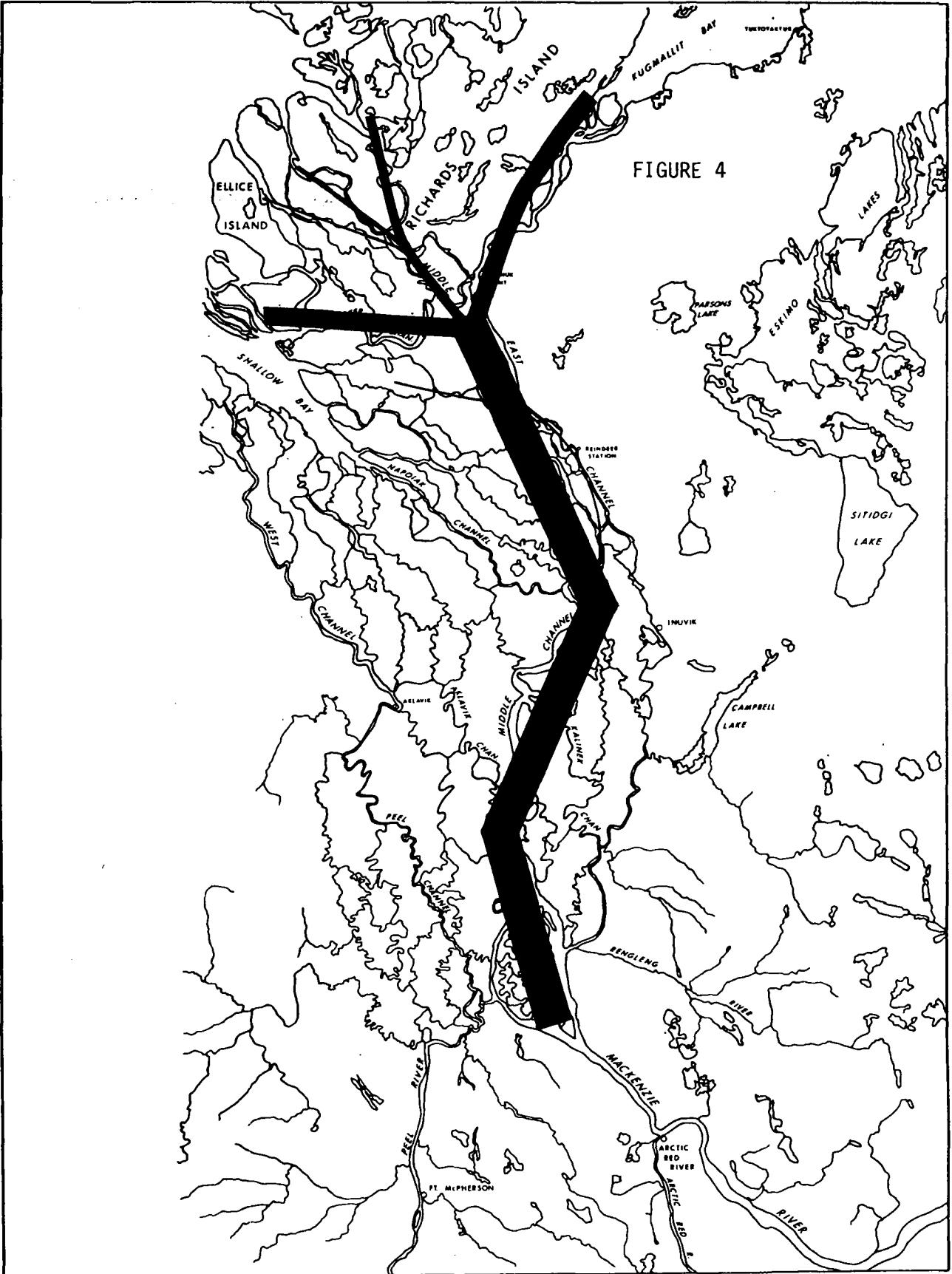
Distribution of flow through the delta channels on a monthly basis, expressed as a percentage of the total flow.

		Middle	East	Kalinek	Aklavik	Peel
1974	July	87	2	3	3	5
	Aug.	85	2	4	3.5	5.5
	Sept.	89	1	3	3	4
	Oct.	92	1	2	2	3
	Nov.	93	1	1.5	2	2.5
	Dec.	93	1	1	2.5	2.5
	Jan.	94	0.5	0.5	3	2
	Feb.	94	0.5	0.5	3	2
	Mar.	94	0.5	0.5	3	2
	Apr.	92	1	1.5	2.5	3
	May	86	2	2.5	2.5	7
	June	84	2	4	3	6

2. RICHARDS ISLAND AREA MEASUREMENTS

Figure 4 shows the results of the March 1975 series of measurements in the Richards Island area.

33.5 percent of the water went down the East Channel towards Kugmallit Bay. 37.5 percent went down the Reindeer Channel towards Shallow Bay. 28 percent of the flow went down the west side of Richards Island, with 20 percent staying in the middle channel through to Mackenzie Bay.



3. SEDIMENT DATA

Suspended sediment data collection was carried out at the six main delta stations, as well as the main inflow sites. Data were collected only during the open water periods, as the amount of sediment transported during the ice-covered period is a very small percentage of the total annual sediment load. Suspended sediment transport into the delta averaged over one million tons per day for the June to September 1974 period with a peak of 26 million tons per day recorded on August 12, 1974.

The suspended sediment consisted mainly of clay and silt particles with some small sand-sized particles. Clay-sized particles, those less than 0.004 mm. in size, constitute approximately 30 percent of the material found. Silt-sized particles, those from 0.004 mm. to 0.062 mm., constitute approximately 60 percent of the material. The balance of the material consists of sand-sized particles in sizes ranging from 0.062 mm. to 1.0 mm. in diameter.

Suspended sediment data in tons per day and particle size analysis results are included in the appendix at the back of this report.

4. OBSERVED WATER TEMPERATURES

Water temperatures are taken at the time of the sediment sampling and during the discharge measurements.

Figure 5 below shows the variation in water temperatures observed during the 1974 open water season. Similar temperatures were encountered during the 1975 open water season.

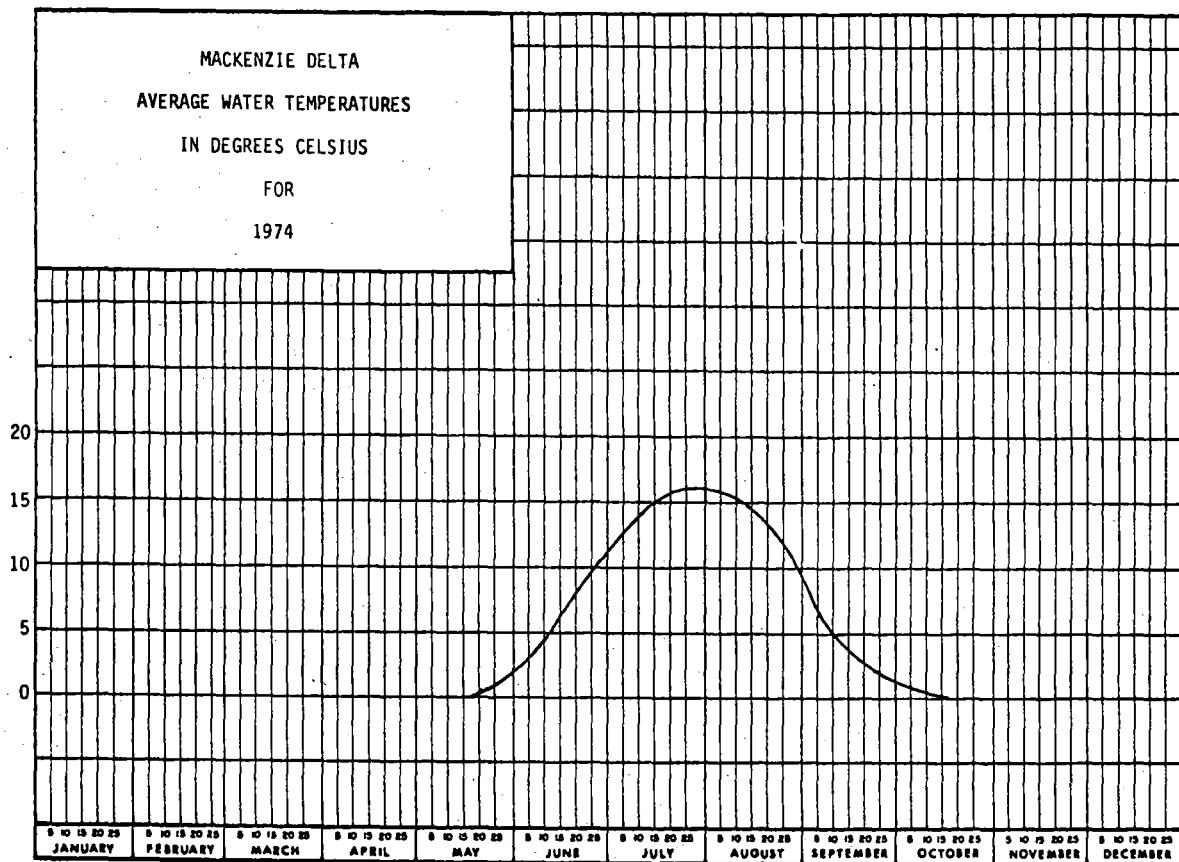


Figure 5.

5. ICE THICKNESS

Observations of ice thickness are made during the winter, as the ice cover is penetrated to give access to the water during flow measurements. Approximately twenty measurements of thickness are made at locations across the entire width of the channel. These observations are averaged and the one value used as the average for that date.

Figure 6 below shows the average ice thicknesses for the delta channels for 1972 to 1975. Little or no snow cover during the freeze-up period, October to early December, results in thick ice cover as represented by the High Year curve, while heavy snow cover during this period results in lesser ice build-up represented by the Low Year curve.

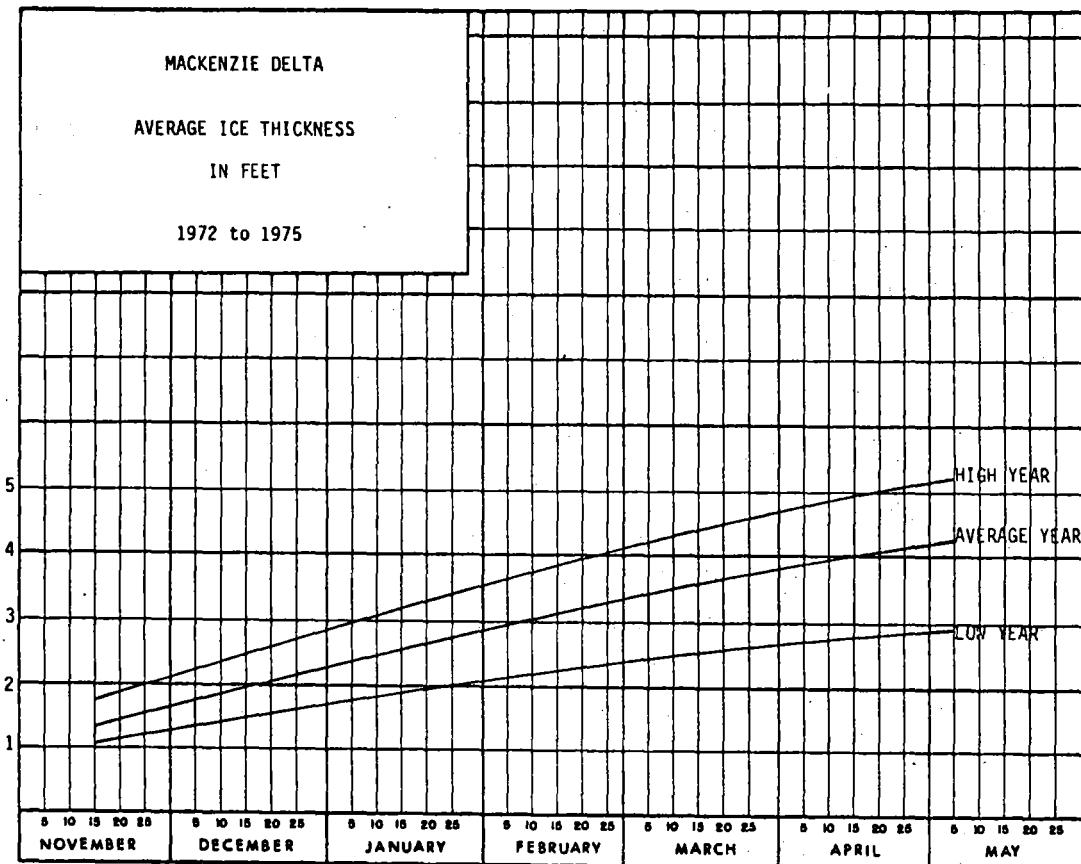


Figure 6.

CONCLUSIONS

Inflows to the delta from eastern tributaries, specifically Rengleng River and Campbell Creek, are insignificant compared to inflow from the three main rivers.

85 to 95 percent of the water flowing through the delta is carried by the main channel.

35 percent of the main channel water will go down the east side of Richards Island into Kugmallit Bay. The balance of the water ends up in Shallow Bay and Mackenzie Bay, transversing through the myriad of westerly flowing channels.

NEEDS FOR FURTHER STUDY

The data available to June 1975 gives us the distribution of flow for two winter periods and one open water period. This is sufficient to give a general overall idea of the flow distribution, but may not show the variation that can exist in some of the smaller channels.

The study determines distribution only as far down river as the Aklavik-Inuvik Line. Flow beyond this line can be generalized but cannot be studied in the specific without additional monitoring within the lower reaches.

An Index of eastern drainage to the delta is available with data from Rengleng River and Campbell Creek. No index of western drainage exists at this time, although it probably is also insignificant.

In general, the availability of hydrometric data within the Northwest Territories and Yukon Territory is still sparse.

REFERENCES

1. Morris, W. V., 1969: *Water*. Inland Waters Branch, Department of Energy, Mines and Resources, Ottawa.
2. Clark, R. H. *Notes on the Water Resources of the Mackenzie River Basin*. Water Resources Branch, Department NA & NR, Ottawa.
3. Anderson, R. J., and MacKay, D. K. *Seasonal Distribution of Flow in the Mackenzie Delta, N.W.T.* Technical Report 3 to Glaciology Division, Water Resources Branch, Department of the Environment, under the Environmental-Social Program. Northern Pipelines.

APPENDIX

DISCHARGE HYDROGRAPHS

July 1, 1974 to June 30, 1975

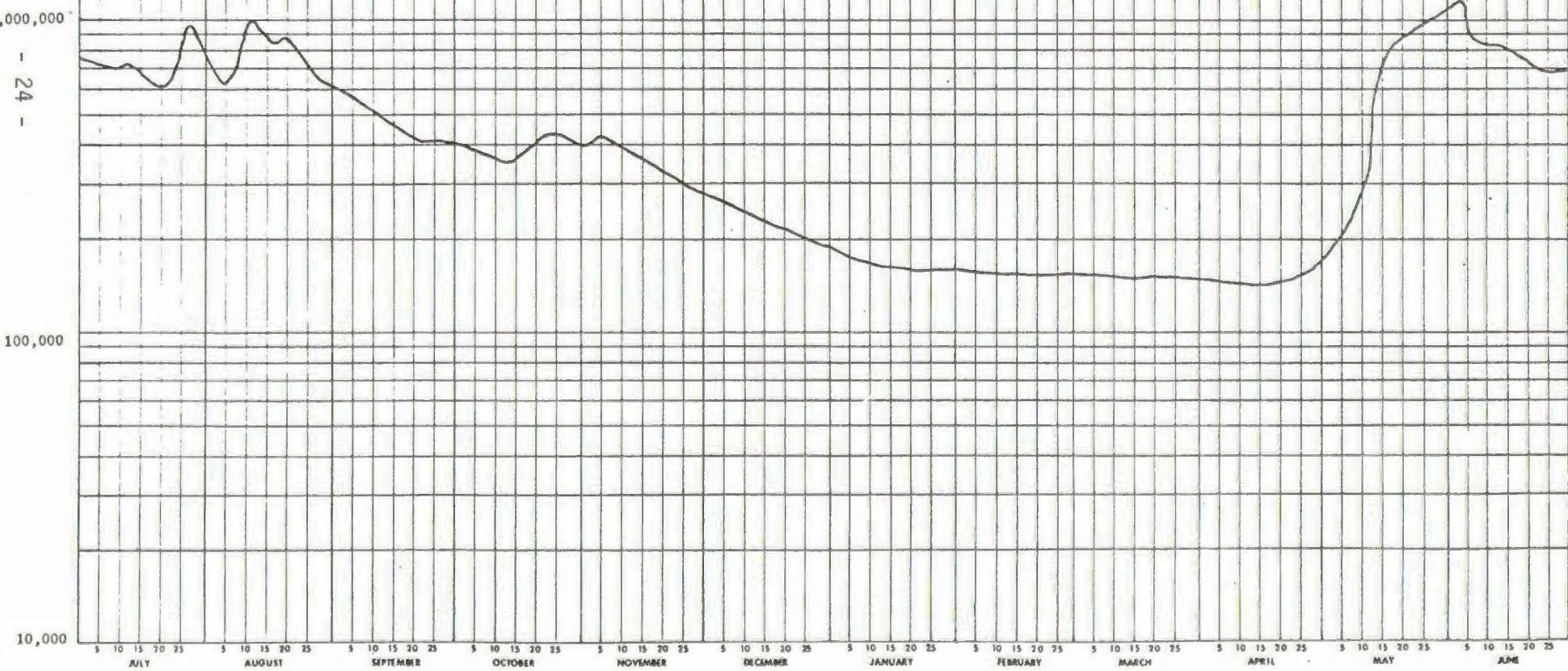
MACKENZIE RIVER ABOVE ARCTIC RED RIVER

DAILY DISCHARGE IN CFS.

FOR

JULY 1974 to JUNE 1975

- 24 -



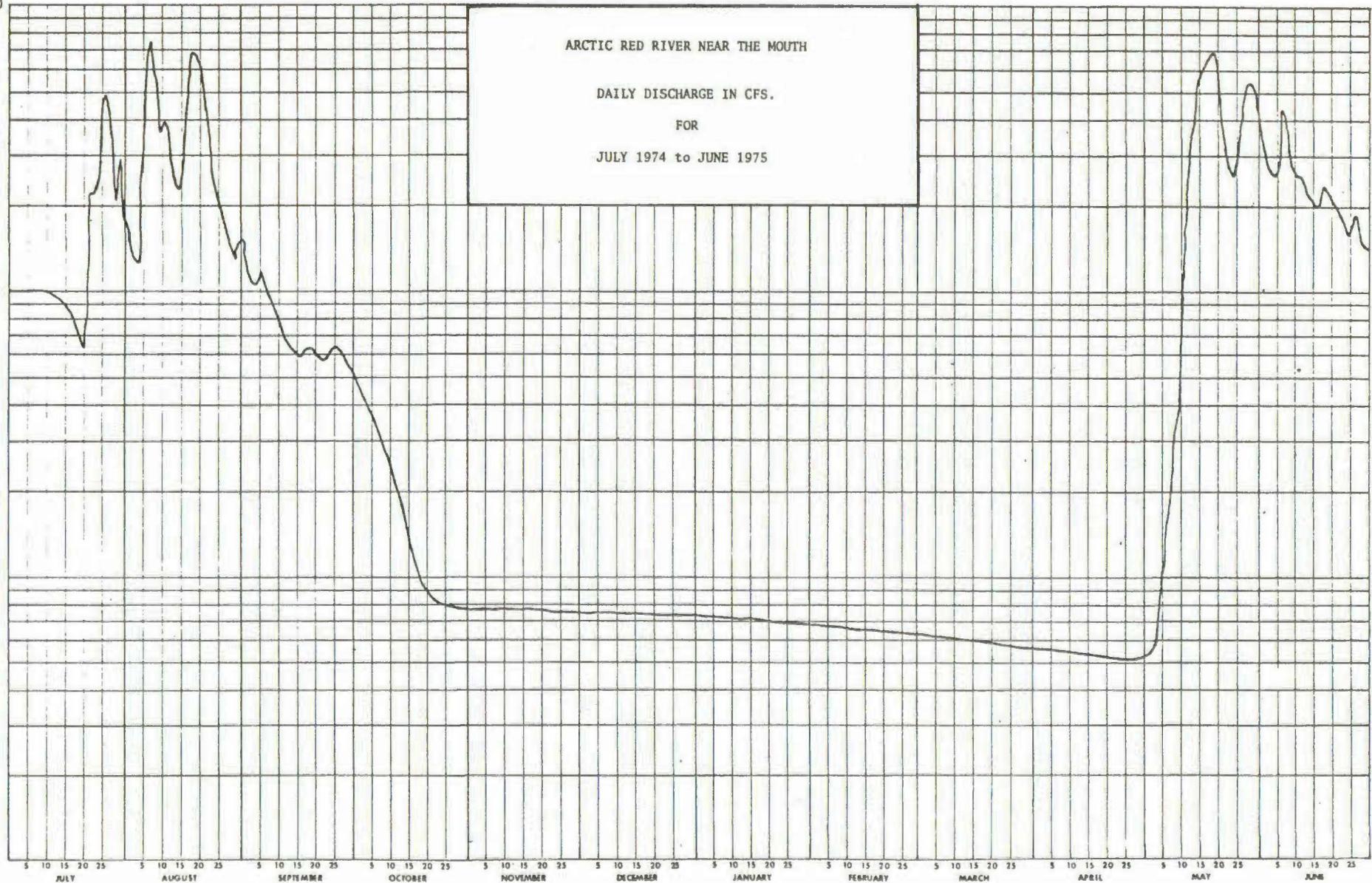
100,000

10,000

- 25 -

1,000

100



1,000,000

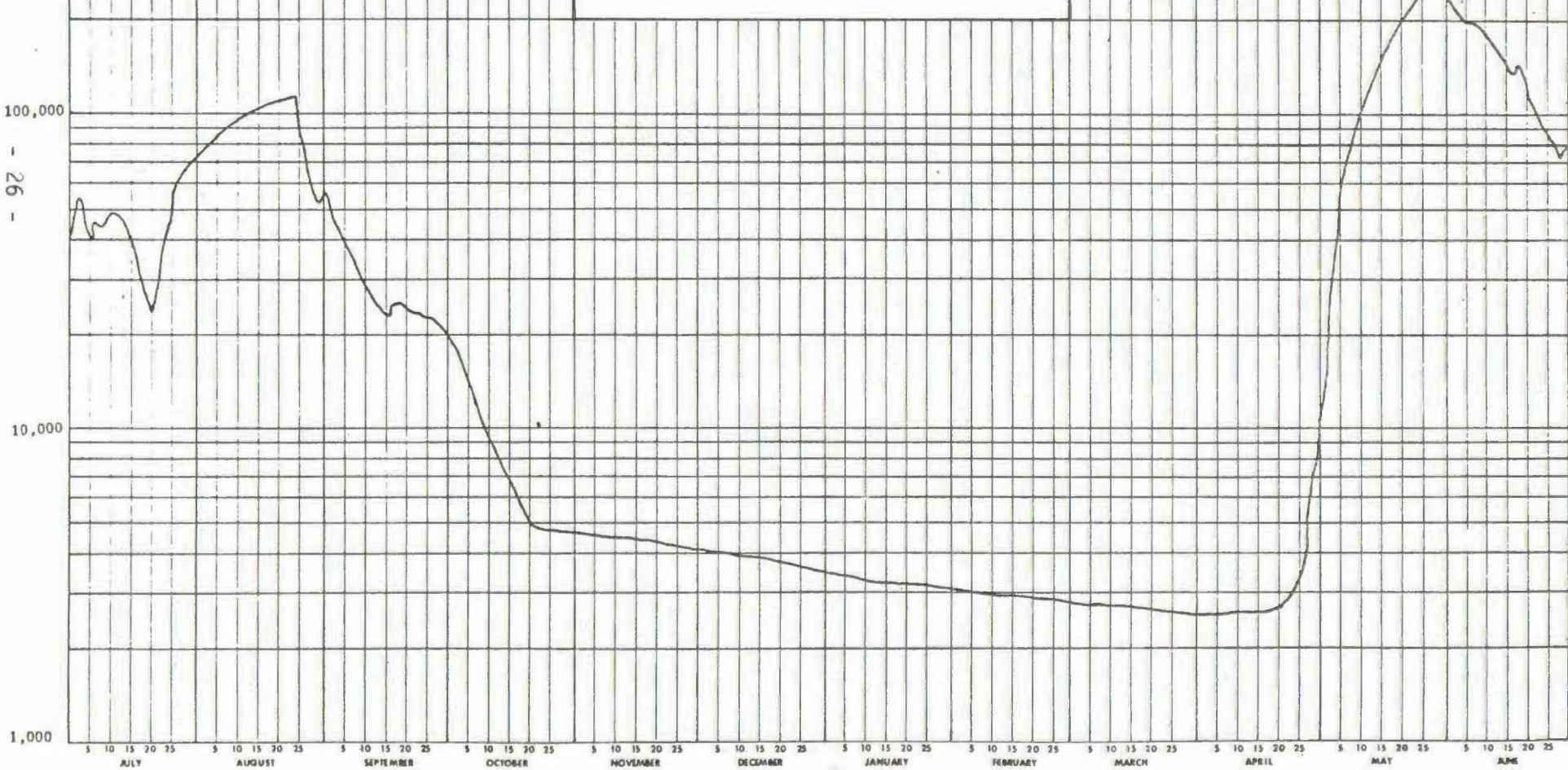
PEEL RIVER ABOVE FORT MCPHERSON

DAILY DISCHARGE IN CFS.

FOR

JULY 1974 to JUNE 1975

100
- 26 -



1,000,000

MACKENZIE RIVER PEEL CHANNEL ABOVE AKLAVIK

DAILY DISCHARGE IN CFS.

FOR

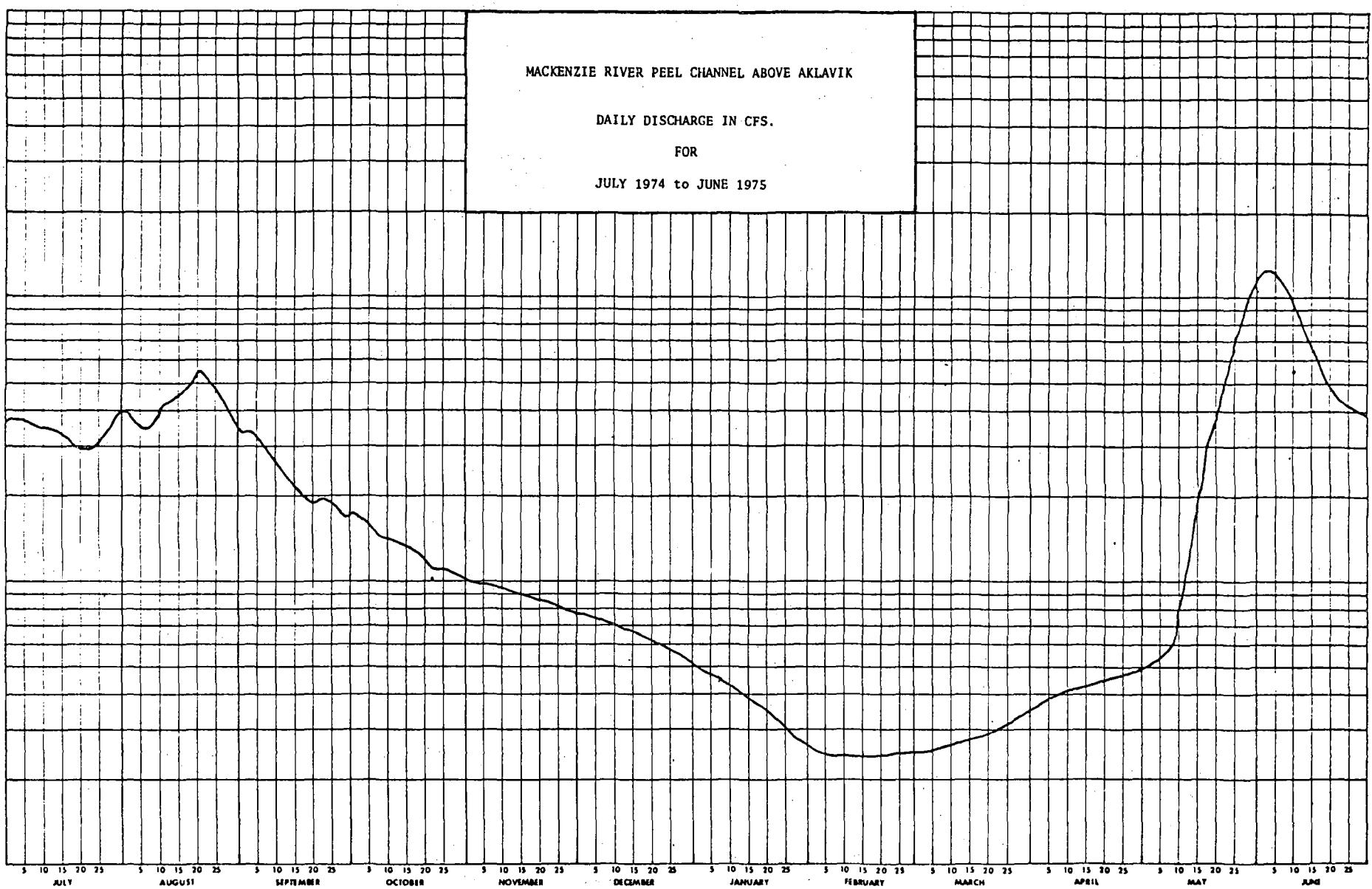
JULY 1974 to JUNE 1975

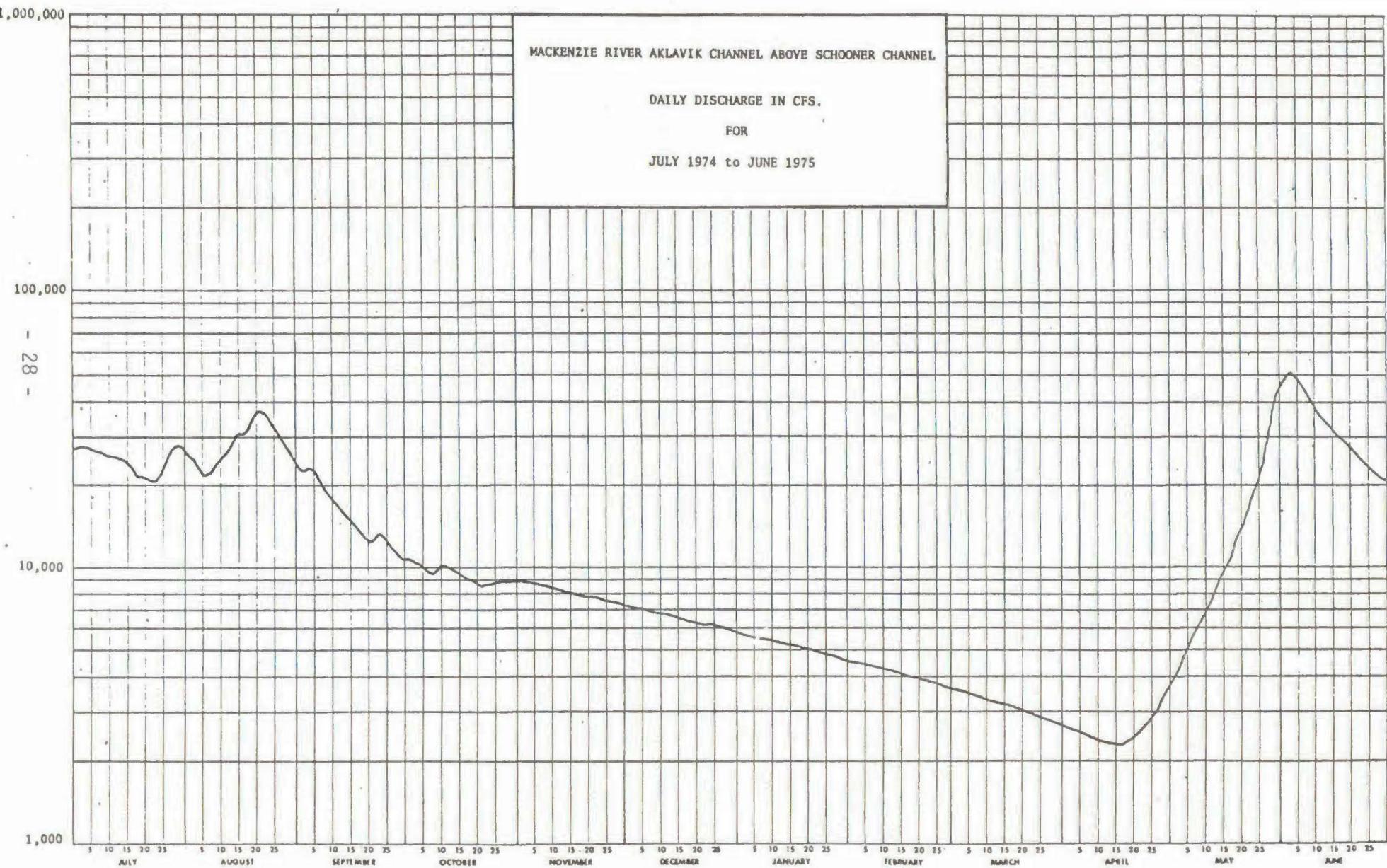
100,000

- 27 -

10,000

1,000





1,000,000

MACKENZIE RIVER WEST CHANNEL BELOW AKLAVIK CHANNEL

DAILY DISCHARGE IN CFS.

FOR

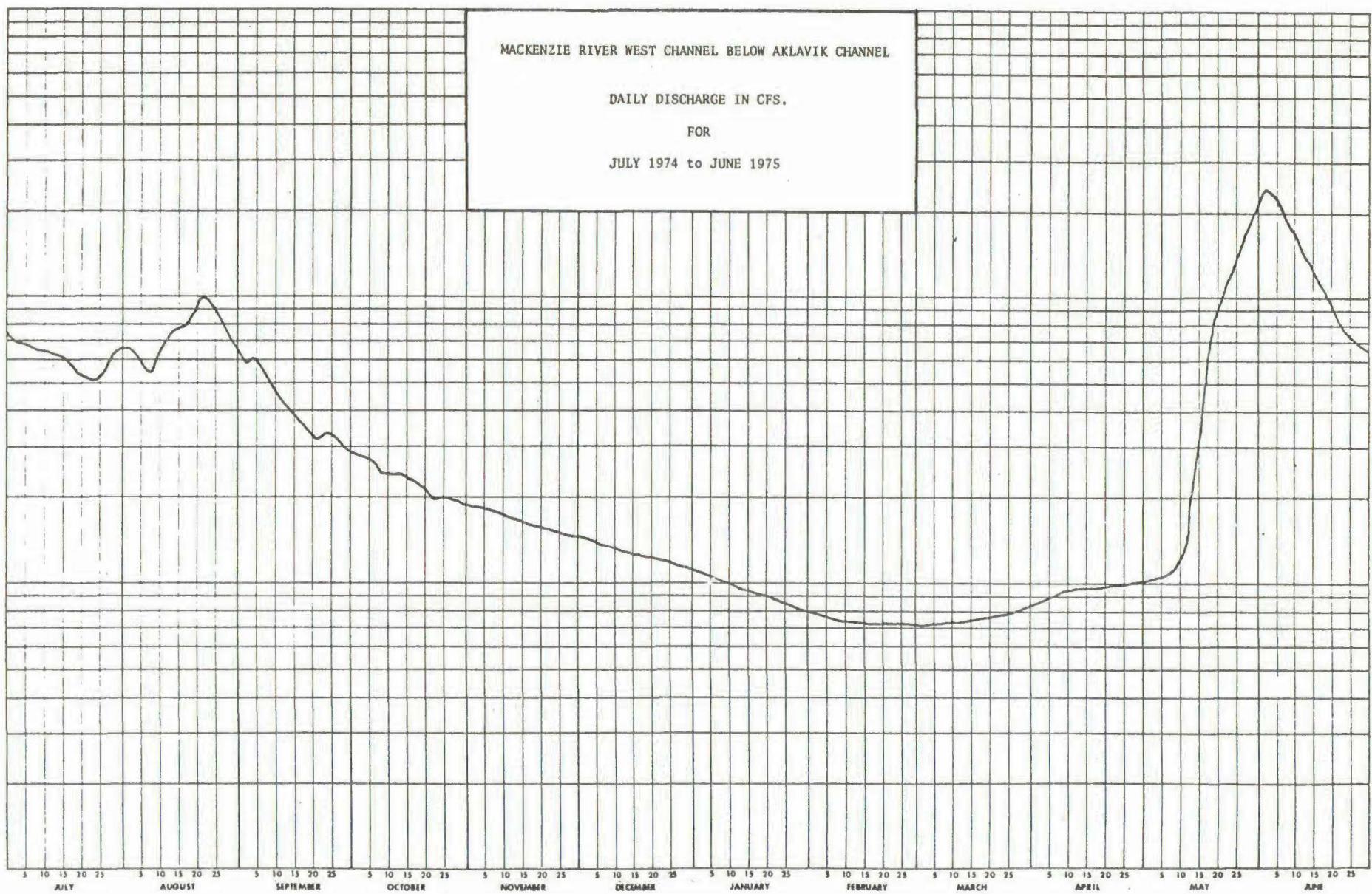
JULY 1974 to JUNE 1975

100,000

- 29 -

10,000

1,000



MACKENZIE RIVER MIDDLE CHANNEL ABOVE NAPOIK CHANNEL

DAILY DISCHARGE IN CFS.

FOR

JULY 1974 to JUNE 1975

1,000,000

30

100,000

10,000

5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25

JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

JANUARY

FEBRUARY

MARCH

APRIL

MAY

JUNE

1,000,000

MACKENZIE RIVER KALINEK CHANNEL
ABOVE ONIAK CHANNEL

DAILY DISCHARGE IN CPS.

FOR

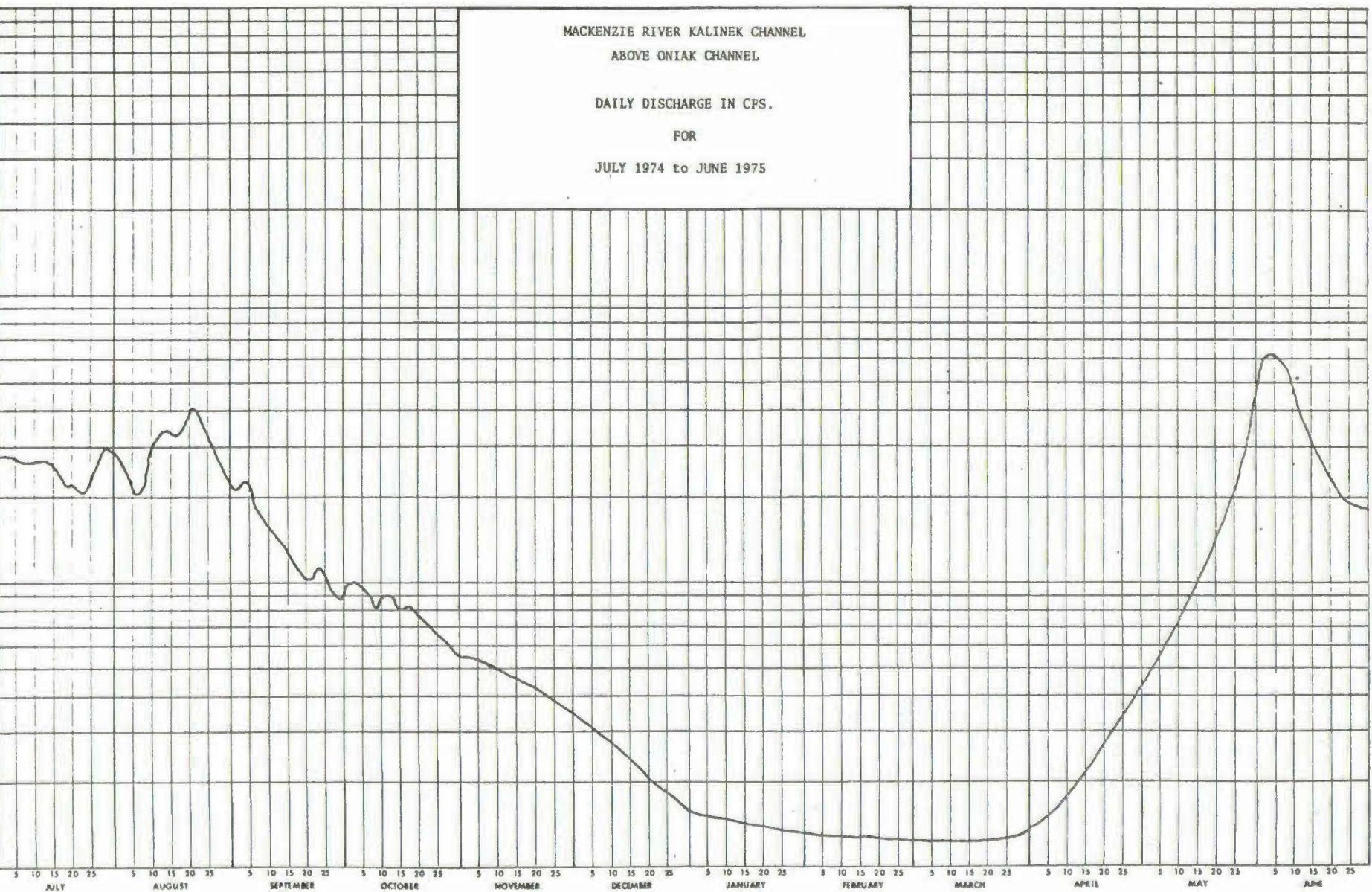
JULY 1974 to JUNE 1975

100,000

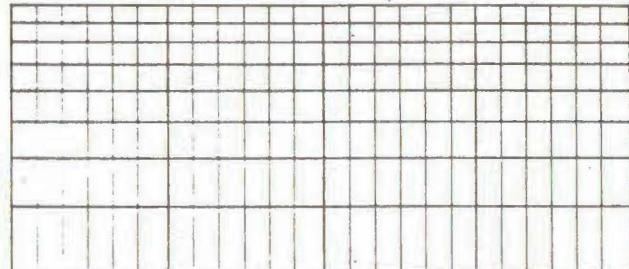
31

10,000

1,000



100,000



MACKENZIE RIVER EAST CHANNEL AT INUVIK

DAILY DISCHARGE IN CFS.

FOR

JULY 1974 to JUNE 1975

10,000

1

32

1

1,000

100

JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY JUNE

SUSPENDED SEDIMENT DATA

1974

MACKENZIE RIVER ABOVE ARCTIC RED RIVER - STATION NO. 10LA003

SUSPENDED SEDIMENT FOR 1974

	AFR	*	MAY	*	JUN							
DAY	TEMP.	DAILY DISCHARGE (C)	MEAN CCA- CENTRATION (MG/L)	TONS PFR DAY	TEMP. DAY	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. DAY	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY
1	100000 B	*	*	162000 B	*	*	*	835000 E	*	*	*	1
2	100000 B	*	*	170000 B	*	*	*	730000 E	*	*	*	2
3	100000 B	*	*	178000 B	*	*	*	705000 E	*	*	*	3
4	100000 B	*	*	184000 B	*	*	*	710000 E	*	*	*	4
5	100000 B	*	*	192000 B	*	*	*	705000 E	*	*	*	5
6	100000 B	*	*	200000 B	*	*	*	690000 E	*	*	*	6
7	100000 B	*	*	210000 B	*	*	*	685000 E	*	*	*	7
8	100000 B	*	*	220000 B	*	*	*	680000 E	*	*	*	8
9	100000 B	*	*	230000 B	*	*	*	685000 E	*	*	*	9
10	101000 B	*	*	242000 B	*	*	*	690000 E	*	*	*	10
11	103000 B	*	*	254000 B	*	*	*	700000 E	*	*	*	11
12	105000 B	*	*	270000 B	*	*	*	705000 E	*	*	*	12
13	107000 B	*	*	285000 B	*	*	*	710000 E	*	*	*	13
14	109000 B	*	*	305000 B	*	*	*	700000 E	*	*	*	14
15	111000 B	*	*	322000 B	*	*	*	680000 E	*	*	*	15
16	113000 B	*	*	350000 B	*	*	*	675000 E	*	*	*	16
17	115000 B	*	*	375000 B	*	*	*	690000 E	*	*	*	17
18	118000 B	*	*	400000 B	*	*	*	705000 E	*	*	*	18
19	121000 B	*	*	432000 B	*	*	*	737000 A	*	*	*	19
20	124000 B	*	*	465000 B	*	13.3	729000	319 S	628000	20		
21	126000 B	*	*	505000 B	*	*	*	747000	409	825000	21	
22	129000 B	*	*	550000 B	*	*	*	769000	695	1440000	22	
23	132000 B	*	*	600000 B	*	*	*	811000	1200	2630000	23	
24	135000 B	*	*	660000 B	*	*	*	841000	1800	4090000	24	
25	138000 B	*	*	720000 A	*	*	*	840000	1880	4260000	25	
26	142000 B	*	*	800000 E	*	*	*	816000	1390	3060000	26	
27	147000 B	*	*	890000 E	*	*	*	791000	941	2010000	27	
28	152000 B	*	*	965000 E	*	*	*	779000	651	1370000	28	
29	157000 B	*	*	102000 E	*	*	*	764000	495	1020000	29	
30	161000 B	*	*	107000 E	*	*	*	753000	365	742000	30	
31		*	*	102000 E	*	*	*				31	
TOTAL	3546000	*	*	11447000	*	*	*	22057000			TOTAL	
MEAN	118000	*	*	369000	*	*	*	735000			MEAN	

MACKENZIE RIVER ABOVE ARCTIC RED RIVER - STATION NO. 10LA003

SUSPENDED SEDIMENT FCR 1974

		JUL	*	AUG	*	SEP													
		DAY	TEMP.	DAILY DISCHARGE	MEAN CON- CENTRATION	TONS PER DAY		DAY	TEMP.	DAILY DISCHARGE	MEAN CON- CENTRATION	TONS PER DAY		DAY	TEMP.	DAILY DISCHARGE	MEAN CON- CENTRATION	TONS PER DAY	
		(C)	(C)	(CFS)	(MG/L)	(CFS)		(C)	(C)	(CFS)	(MG/L)	(CFS)		(C)	(C)	(CFS)	(MG/L)	(CFS)	
		1	745000	323	650000	*	735000	813	1610000	*	601000	346	565000	1					
		2	743000	308	610000	*	699000	768	1450000	*	597000	338	545000	2					
		3	744000	293	585000	*	663000	745	1330000	*	590000	325	518000	3					
		4	10.0	736000	272 S	541000	*	636000	722	1240000	*	578000	312	487000	4				
		5	725000	264	517000	*	623000	709 S	1190000	*	566000	295	457000	5					
		6	716000	258	495000	*	641000	848	1470000	*	553000	283 S	421000	6					
		7	713000	252	465000	*	673000	1160	2110000	*	541000	239	349000	7					
		8	713000	246	474000	*	736000	1730	3440000	*	532000	186 S	267000	8					
		9	13.9	715000	240 S	463000	*	844000	2790	6390000	*	524000	160	226000	9				
		10	716000	237	452000	*	945000	4720	12000000	*	515000	139	193000	10					
		11	725000	349	683000	*	989000	8460	2260000	*	502000	118	160000	11					
		12	725000	380	744000	*	989000	9640 S	2570000	*	491000	111	147000	12					
		13	713000	317	610000	*	953000	6010	1550000	*	479000	107	134000	13					
		14	695000	295	554000	*	907000	3420	9380000	*	464000	104	131000	14					
		15	674000	284	517000	*	870000	2060	4840000	*	459000	100	124000	15					
		16	654000	276	487000	*	841000	1290	2930000	*	450000	97	118000	16					
		17	637000	270	464000	*	837000	1000 S	2260000	*	440000	93	110000	17					
		18	626000	253	428000	*	851000	914	2100000	*	432000	90	105000	18					
		19	13.9	617000	244 S	406000	*	862000	831	1930000	*	426000	86	98500	19				
		20	611000	243	401000	*	865000	748	1750000	*	420000	83	94100	20					
		21	610000	243	400000	*	850000	665	1570000	*	416000	81	91000	21					
		22	623000	245	412000	*	819000	583	1290000	*	414000 E	78	87200	22					
		23	667000	296	533000	*	784000	507	1070000	*	412000 E	76	84500	23					
		24	730000	372	733000	*	751000	472	957000	*	410000 A	73 S	80800	24					
		25	816000	543 S	1200000	*	717000	444	860000	*	410000	70	77500	25					
		26	907000	1200	2940000	*	687000	419	777000	*	409000	66	72900	26					
		27	954000	2510	6450000	*	660000	400	713000	*	410000	63	69700	27					
		28	14.4	950000	3180 S	8160000	*	639000	384	663000	*	409000	59	65200	28				
		29	14.4	894000	2480 S	5960000	*	624000	365	615000	*	406000	55	60300	29				
		30	833000	1590	3580000	*	611000	353	582000	*	407000	52	57100	30					
		31	782000	1040	2200000	*	603000	352	573000	*				31					
		TOTAL	22713000		43226000	*	23909000		129850000	*	14267000		6002200	TOTAL					
		MEAN	733000		1390000	*	771000		4190000	*	476000		200000	MEAN					

ARCTIC RED RIVER NEAR THE MOUTH - STATION NO. 10LA002

SUSPENDED SEDIMENT FCR 1974

	JUL	AUG	SEP											
DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CCA- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY		
1			*	16800	1510	68500	*	13300	502	18000	1			
2			*	13900	1240	46500	*	11900	424	13600	2			
3			*	12400	1060	35500	*	10900	366	10800	3			
4			*	12300	854	28400	*	10800	338	5800	4			
5			*	36300	2360 S	231000	*	12000	374	12100	5			
6			*	64700	8360	1460000	*	11100	321 S	9620	6			
7			*	74400	9630 E	1930000	*	10100	276	7530	7			
8			*	57500	4370	678000	*	9250	260 S	6490	8			
9		16000 A	*	40900	2140	236000	*	8450	240	5420	9			
10			*	36300	1610	158000	*	7750	216	4520	10			
11			*	39900	2900	312000	*	7270	188	3650	11			
12			*	36900	2710 S	270000	*	6840 A	160	2950	12			
13			*	28500	1850	142000	*	6500	134	2350	13			
14			*	23300	1320	83000	*	6300	114	1940	14			
15			*	23100 A	957	59700	*	6100	94	1550	15			
16	13.3	8590 A	170 S	3940	*	33900	1030	94300	*	6010	78	1270	16	
17	15.0	8190	149 S	3290	*	60500	2160 S	353000	*	5980	69	1110	17	
18		7410	138	2760	*	70800	3410	652000	*	6080	74	1210	18	
19		6740	118	2150	*	66600	2800	503000	*	6330	88	1500	19	
20		6250	104	1760	*	61300	2100	348000	*	6200	91	1520	20	
21		8450	665	15200	*	48600	1340	176000	*	5980	77	1240	21	
22		21700	3130	183000	*	35900	1140	111000	*	5740	64	992	22	
23		21600	2250	131000	*	28600	1060	81900	*	5690	50	768	23	
24	11.1	22700	1750	107000	*	24100	984	64000	*	5910	54 S	862	24	
25		42300	5680	645000	*	21100	842	48000	*	6280	89	1510	25	
26	11.1	48000	6850 S	888000	*	18800	772	39200	*	6530	117	2060	26	
27		43200	3970	463000	*	10.0	16600	676 S	30300	0.6	6310	95 S	1620	27
28		35700	2460 S	237000	*	14600	600	23700	*	5810	70	1100	28	
29	13.3	20500	1820 S	101000	*	12000	559	19600	*	5610 A	60	509	29	
30		28200	1500	114000	*	14500	592	23200	*	5310 B	50	717	30	
31		17800	1590	76400	*	15500	603	25200	*				31	
TOTAL				*	1061600		8331000	*	228330		128868	TOTAL		
MEAN				*	34200		269000	*	7610		4300	MEAN		

PEEL RIVER ABOVE FORT MCPHERSON - STATION NO. 104C002

SUSPENDED SEDIMENT FCR 1974

	AFR	MAY	JUN									
DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CEN- TRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CEN- TRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CEN- TRATION (MG/L)	TONS PER DAY
1	1870	B	*	2260	B	*	*	126000				1
2	1880	B	*	2300	B	*	*	127000				2
3	1880	B	*	2350	B	*	*	129000				3
4	1880	B	*	2400	B	*	*	146000				4
5	1880	B	*	2450	B	*	*	152000				5
6	1890	B	*	2500	B	*	*	129000				6
7	1890	B	*	2550	B	*	*	85900				7
8	1890	9	*	2610	B	*	*	81600				8
9	1890	B	*	2700	B	*	*	73200				9
10	1900	B	*	2800	B	*	*	71600				10
11	1900	B	*	2900	B	*	*	63500				11
12	1900	B	*	3050	B	*	*	52400				12
13	1910	B	*	3200	B	*	*	45900				13
14	1910	B	*	3500	B	*	*	45000				14
15	1920	9	*	3700	B	*	*	46000				15
16	1920	B	*	4600	B	*	*	45600				16
17	1930	B	*	5700	B	*	*	45700				17
18	1940	9	*	7200	B	*	*	48300				18
19	1950	9	*	9000	B	*	*	52600				19
20	1960	B	*	11000	B	*	*	59500				20
21	1990	B	*	13000	B	*	*	58900				21
22	2000	B	*	15000	B	*	*	51000				22
23	2010	B	*	20000	B	*	*	43500				23
24	2030	B	*	24000	B	*	*	39800				24
25	2050	B	*	30000	B	*	13.3	37800	85 S	8680	25	
26	2100	B	*	37000	B	*	*	35800				26
27	2130	B	*	46000	B	*	*	33600				27
28	2160	B	*	57000	B	*	*	32300				28
29	2200	B	*	70000	B	*	12.2	31500	78 S	6630	29	
30	2220	B	*	83000	B	*	*	33500				30
31			*	100000	B	*	*					31
TOTAL	58980		*	574770		*		2023500				TOTAL
MEAN	1970		*	18500		*		67500				MEAN

PEEL RIVER ABOVE FORT MCPHERSON - STATION NO. 10MC002

SUSPENDED SEDIMENT FCR 1974

	JUL			AUG			SEP					
DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY
1		42900	*		72400	*			55800			1
2		52600	*		74800 E	*			49900			2
3	10.0	52800	3340 S	476000	77200 E	*			44800	209 S	25300	3
4	7.8	47500	428 S	54900	79600 E	*			41500			4
5		41000	*		82000 E	*			39200			5
6		39600	*		84300 E	*			37800			6
7		45100	*		86700 E	*			35800			7
8		44300	*		89100 E	*			33600			8
9		43200	*		91500 E	*			31600			9
10		46400	*		93900 E	*			29800			10
11		48400	*		96200 E	*			27800			11
12		47800	*		98600 E	*			26300			12
13		47100	*		101000 A	*			25100			13
14		45300	*		102000 E	*			24000			14
15		41400	*		103000 E	*			23200			15
16		36900	*		104000 E	*			22800			16
17	15.6	32300	166 S	14500	105000 E	*			24200			17
18		28700	*		106000 E	*			25300			18
19		26100	*		107000 E	*			25200			19
20		24600	*		108000 E	*			24800			20
21		23600	*		109000 E	*			23900			21
22		25100	*		110000 E	*			23300			22
23		34300	*		111000 E	*			23300			23
24		40300	*	4.4	113000	739 S	225000	*	22900			24
25		41800	*		93500	*	6.7	22800	87 S	5360		25
26		51400	*		80300				22800			26
27		60500 A	*		70000	210 S	39700	*	22600			27
28		62900 E	*		62100				22000			28
29		65100 E	*		55600	221 S	33200	*	20900			29
30		67700 E	*		51400				19600			30
31		70000 E	*		55300	219 S	32700	*				31
TOTAL		1376800	*		2773500	*			872500			TOTAL
MEAN		44400	*		89500	*			29100			MEAN

RENGLENG RIVER NEAR DEMPSTER HIGHWAY - STATION NO. 101 C003

SUSPENDED SEDIMENT FOR 1974

	APR	MAY	JUN									
DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY
1	0	0	B	*	20.2	B	*	*	130			1
2	0	0	B	*	21.0	B	*	*	135			2
3	0	0	B	*	22.0	B	*	*	138			3
4	0	0	B	*	23.0	B	*	*	140			4
5	10.0	8		*	24.1	B	*	*	148			5
6	10.1	B		*	25.2	B	*	*	150			6
7	10.2	B		*	26.5	B	*	*	153			7
8	10.5	R		*	28.1	B	*	*	150			8
9	10.7	B		*	29.8	B	*	*	148			9
10	10.9	B		*	31.4	B	*	*	145			10
11	11.1	B		*	33.3	B	*	*	148			11
12	11.4	B		*	35.5	B	*	*	150			12
13	11.6	B		*	38.0	B	*	*	150			13
14	11.9	B		*	40.8	B	*	*	143			14
15	12.1	B		*	43.8	B	*	*	130			15
16	12.4	B		*	47.5	B	*	*	125			16
17	12.7	B		*	51.7	B	*	*	115			17
18	13.1	B		*	56.0	B	*	*	113			18
19	13.5	B		*	61.0	B	*	*	115			19
20	13.9	B		1.1	67.5	B	107	S	19.5	*	115	20
21	14.3	R		*	75.0	B	*	*	113			21
22	14.7	B		*	85.0	B	*	*	108			22
23	15.1	B		*	97.0	B	*	*	100			23
24	15.6	B		*	113	B	*	*	96			24
25	16.1	B		*	131	B	*	*	94			25
26	16.7	B		*	155	B	*	*	90			26
27	17.2	B		*	197	B	*	*	88.7			27
28	17.9	B		*	242	B	*	*	86.1			28
29	18.6	B		*	251	B	*	*	82.2			29
30	19.3	B		1.7	248	B	99	S	66.3	*	80.9	30
31				*	184	B	*	*	*	*		31
TOTAL		351.6		*	2504.4		*	*	3679.9			TOTAL
MEAN		11.7		*	80.8		*	*	123			MEAN

RENGLENG RIVER NEAR DEMPSTER HIGHWAY - STATION NO. 10LC003

SUSPENDED SEDIMENT FOR 1974

	JUL	*	AUG	*	SEP								
DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TCNS FER DAY	
1	82.2	*	*	67.6 E	*	*	*	*	25.4	*	*	1	
2	83.5	*	*	61.6 E	*	*	*	*	25.4	*	*	2	
3	66.7	88.7	S S	1.2	*	55.6 E	*	*	25.2	*	*	3	
4	98.0	*	*	*	*	49.6 E	*	*	25.2	*	*	4	
5	108	*	*	43.5 E	*	*	*	*	25.2	*	*	5	
6	115	*	*	37.5 E	*	*	*	*	25.1	*	*	6	
7	118	A	*	*	31.5 A	*	*	*	25.1	*	*	7	
8	148	E	*	*	30.9	7 S	0.58	*	24.9	*	*	8	
9	178	E	*	*	30.5	*	*	*	24.8	*	*	9	
10	9.4	208	A	32 S	18.0	*	29.8	*	*	24.7	*	*	10
11	208	*	*	*	29.3	*	*	*	24.7	*	*	11	
12	188	A	*	*	28.8	*	*	*	24.7	*	*	12	
13	182	E	*	*	28.3	*	*	*	24.6	*	*	13	
14	176	E	*	*	27.6	*	*	*	24.6	*	*	14	
15	170	E	*	*	27.2	*	*	*	24.3	*	*	15	
16	164	E	*	11.1	26.3	10 S	0.71	*	24.3	*	*	16	
17	158	E	*	*	26.1	*	*	*	24.2	*	*	17	
18	152	E	*	*	25.9	*	*	*	24.2	*	*	18	
19	146	E	*	*	25.9	*	*	*	24.2	*	*	19	
20	140	E	*	*	25.9	*	*	*	24.1	*	*	20	
21	134	E	*	*	25.9	*	*	*	24.2	*	*	21	
22	128	E	*	*	26.0	*	*	*	24.1	*	*	22	
23	122	E	*	*	25.9	*	*	*	24.1	*	*	23	
24	116	E	*	*	25.9	*	*	*	24.0	*	*	24	
25	110	E	*	*	25.8	*	*	*	24.0	*	*	25	
26	104	E	*	*	25.8	*	*	*	24.0	*	*	26	
27	97.7	E	*	*	25.7	*	*	*	23.9	*	*	27	
28	91.7	E	*	*	25.7	*	*	*	24.3 B	*	*	28	
29	85.7	E	*	*	25.7	*	*	*	24.7 B	*	*	29	
30	79.7	E	*	*	25.6	*	*	0.6	25.2 B	S S	0.61	30	
31	73.6	E	*	*	25.6	*	*	*	*	*	*	31	
TOTAL	4053.8	*	*	993.0	*	*	*	*	737.4	*	*	TOTAL	
MEAN	131	*	*	32.0	*	*	*	*	24.6	*	*	MEAN	

CAMPBELL CREEK NEAR INUVIK - STATION NO. 10LC004

SUSPENDED SEDIMENT FCR 1974

DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	MAY			TONS PER DAY	JUN			
					TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)		TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	
1	0	0	8	*	0	0	0	*	73.9	0	1.8	1
2	0	0	8	*	0	0	0	*	72.7	0	1.8	2
3	0	0	9	*	0	0	0	*	71.5	0	1.7	3
4	0	0	8	*	0	0	0	*	70.3	0	1.5	4
5	0	0	8	*	0	0	0	*	69.1	0	1.5	5
6	0	0	8	*	0	0	0	*	67.9	0	1.5	6
7	0	0	8	*	0	0	0	*	66.7	0	1.4	7
8	0	0	8	*	0	0	0	*	65.5	0	1.4	8
9	0	0	8	*	0	0	0	*	64.3	0	1.2	9
10	0	0	8	*	0	0	0	*	63.1	0	1.2	10
11	0	0	9	*	0	0	0	*	62.0	0	1.2	11
12	0	0	8	*	0	0	0	*	60.8	0	0.98	12
13	0	0	8	*	0	0	0	*	59.6	0	0.97	13
14	0	0	8	*	0	0	0	*	58.4	0	0.95	14
15	0	0	8	*	0	0	0	*	57.2	0	0.93	15
16	0	0	8	*	0	0	0	*	56.0	0	0.76	16
17	0	0	8	*	0	0	0	*	54.8	0	0.74	17
18	0	0	8	*	0	0	0	*	53.6	0	0.72	18
19	0	0	8	*	0	0	0	*	52.4	0	0.71	19
20	0	0	8	*	0	0	0	*	51.2	0	0.69	20
21	0	0	8	*	0	0	0	*	50.0	0	0.68	21
22	0	0	8	*	0	0	0	*	48.9	0	0.53	22
23	0	0	8	*	84.6	8	10	2.3	47.7	0	0.39	23
24	0	0	8	*	83.4	10	2.3	*	46.5	0	0.38	24
25	0	0	8	*	82.2	10	2.2	*	45.3	0	0.49	25
26	0	0	8	*	81.0	10	2.2	*	44.1	0	0.83	26
27	0	0	8	*	79.8	10	2.2	*	42.9	0	0.81	27
28	0	0	8	*	78.6	10	2.1	*	41.7	0	0.79	28
29	0	0	8	*	77.4	9	1.9	*	40.5	0	0.77	29
30	0	0	8	*	76.2	9	1.9	*	39.3	0	0.74	30
31				*	75.1	9	1.8	*				31
TOTAL	0	0	*	718.3		18.9	*	1697.9		30.06	TOTAL	
MEAN	0	0	*	23.2		0.6	*	56.6		1.0	MEAN	

CAMPBELL CREEK NEAR INUVIK - STATION NO. 10LC004

SUSPENDED SEDIMENT FOR 1974

	JUL				AUG				SEP					
DAY	TEMP. (°C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (°C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (°C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY		
1		38.1	7	0.72	* 15.6	95.0 E	11 S	2.8	*	23.8	11	0.71	1	
2		36.9	7	0.70	*	91.4 E	10	2.5	*	22.4	11	0.67	2	
3		35.8	7	0.68	*	87.7 E	9	2.1	*	21.3	12	0.69	3	
4		34.6	6	0.56	*	84.1 E	7	1.6	*	20.2	12 S	0.65	4	
5	6.7	33.4	6 S	0.54	*	80.4 E	5	1.1	*	19.1	11	0.57	5	
6		32.2	5	0.43	* 13.9	76.8 E	4 S	0.83	*	6.1	18.0	10 S	0.49	6
7		31.0	4	0.33	*	73.1 E	5	0.99	*	17.2	7	0.33	7	
8	11.1	29.8	4 S	0.32	*	69.5 E	7	1.3	*	16.4	6	0.27	8	
9		48.0	7	0.91	* 16.1	65.8 A	8 S	1.4	*	15.5	6	0.25	9	
10	12.2	66.1	16 S	2.9	*	62.2	9	1.5	*	14.2	6	0.23	10	
11		84.3	16	3.6	*	58.5	9	1.4	*	8.9	13.0	6 S	0.21	11
12		102	14	3.9	*	54.9	9	1.3	*	12.3	7	0.23	12	
13		121	13	4.2	*	51.2	9	1.2	*	11.7	7	0.22	13	
14		139	12	4.5	*	47.6	9	1.2	*	11.1	8	0.24	14	
15	15.0	157	11 S	4.7	*	43.9	9	1.1	*	10.6	9	0.26	15	
16		153	13	5.4	* 16.7	40.3	9 S	0.98	*	15.6	10.0	10 S	0.27	16
17		150	23	5.3	*	39.3	9	0.95	*	10.2	10	0.28	17	
18	15.6	146	35 S	13.8	*	38.3	9	0.93	*	10.4	10	0.28	18	
19		142	31	11.9	*	37.2	9	0.90	*	10.6	10	0.29	19	
20		139	24	9.0	*	36.2	10	0.98	*	10.8	10	0.29	20	
21		135	19	6.9	* 9.4	35.1	10 S	0.95	*	11.0	10	0.30	21	
22		131	15	5.3	*	34.3	9	0.83	*	11.2	10	0.30	22	
23		128	12	4.1	* 9.4	33.2	7 S	0.63	*	11.4	11	0.34	23	
24	14.4	124	10 S	3.3	*	32.4	7	0.61	*	11.6	11	0.34	24	
25		121	10	3.3	*	31.6	7	0.60	*	11.8	11	0.35	25	
26		117	10	3.2	*	30.5	7	0.58	*	12.0	11	0.36	26	
27		113	10	3.1	*	29.4	8	0.64	*	12.2	11	0.36	27	
28		110	11	3.3	*	28.3	8	0.61	*	12.4	12	0.40	28	
29		106	11	3.1	*	27.1	9	0.66	*	12.7	12	0.41	29	
30		102	11	3.0	*	26.0	10	0.70	*	13.1	8	0.42	30	
31		98.7	11	2.9	*	24.9	11	0.74	*	*	*	*	31	
TOTAL		3004.9		119.89	*	1566.2		34.61	*	418.2		11.01	TOTAL	
MEAN		96.9		3.9	*	50.5		1.1	*	13.9		0.37	MEAN	

MACKENZIE RIVER (PFEL CHANNEL) ABOVE AKLAVIK - STATION NO. 10MC003

SUSPENDED SEDIMENT FCR 1974

	APR	MAY	JUN									
DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY
1	*	*	*	83600	326	74300	1					
2	*	*	*	87200	402	94600	2					
3	*	*	*	91600	488	121000	3					
4	*	*	*	96900	576	151000	4					
5	*	*	*	104000	665	187000	5					
6	*	*	*	104000	677	190000	6					
7	*	*	*	98300	574	152000	7					
8	*	*	*	91100	479	118000	8					
9	*	*	*	84400	395	90000	9					
10	*	*	*	79000	326	68700	10					
11	*	*	*	71900	269	52200	11					
12	*	*	6.1	66500	222 S	39900	12					
13	*	*	*	61500	188	31200	13					
14	*	*	*	57200	177	27300	14					
15	*	*	*	53400	184	26500	15					
16	*	*	*	50600	205	26000	16					
17	*	*	*	47900	245	31700	17					
18	*	*	*	45600	300	36500	18					
19	*	*	*	43400	350	41000	19					
20	*	*	*	41700	405	45600	20					
21	*	*	*	40600	457	50100	21					
22	*	*	*	39600	504	53900	22					
23	*	*	*	38900	547	57500	23					
24	*	*	*	38300	578	59800	24					
25	*	*	*	37900	603	61700	25					
26	*	*	*	37400	611	61700	26					
27	*	*	*	37000	607	60600	27					
28	*	*	*	37100	601	60200	28					
29	*	*	*	36600	594	58700	29					
30	*	*	*	36500	589	58000	30					
31	*	*	*	*	*	*	*	*	*	*	*	31
TOTAL	*	*	*	1838700		2189100	TOTAL					
MEAN	*	*	*	61300		73000	MEAN					

MACKENZIE RIVER (PEEL CHANNEL) ABOVE AKLAVIK - STATION NO. 10MC003

SUSPENDED SEDIMENT FOR 1974

DAY	JUL			AUG			SEP						
	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	
1		37300	585	59300	15.6	39400	A	349 S	37100	*	33600	161	14600 1
2		36900	584	58200	*	38000	F	246	25200	*	33000	164	14600 2
3		36900	575	57700	*	36500	E	180	17700	*	33900	185	16900 3
4		36800	575	57100	*	35500	F	132	12700	*	33600	16F	15100 4
5		36100	570	55600	*	34300	E	104	9630	*	32300	137	11900 5
6		35400	565	54000	*	34000	E	85	7800	*	30800	115	9900 6
7		35000	555	52800	*	34800	E	82	7700	*	29400	112	8890 7
8		34600	554	51800	16.1	35300	A	107 S	10200	*	28000	10E	8010 8
9		34700	545	51400	*	37800		179	18300	*	27000	99 S	7220 9
10		34400	545	50600	*	40000		281	30300	*	25900	91	6360 10
11		34000	540	49600	*	41200		394	43800	*	24700	83	5540 11
12	13.3	23600	536 S	48600	*	42300	A	510	58200	*	23800	75	4620 12
13		33400	521	47000	*	43500	E	624	73300	*	23200	67	4200 13
14		33500	477	43100	*	44500	F	719	86400	*	22400	60	3630 14
15		32700	368	32500	13.3	45500	E	749 S	92000	*	21600	52	3030 15
16		31500	214	18200	*	46000	E	693	86100	*	20900	44	2460 16
17		30400	110	9030	*	47000	E	681	86400	*	20000	37	2000 17
18	18.9	29400	71 S	5640	*	50000	E	759	102000	*	19500	A	33 S 18
19		29200	65	5120	*	52000	E	866	122000	*	19400	B	33 170 19
20		29700	63	5050	*	54000	E	904	132000	*	19100	B	34 1750 20
21		29700	62	4970	*	54000	F	815	119000	*	18900	E	37 1890 21
22		29300	61	4830	*	52000	E	707	99300	*	19900	B	53 2850 22
23		29300	60	4750	*	50000	E	599	80900	*	19900	B	44 2360 23
24		29900	64	5170	*	48500	E	509	65500	*	19400	E	41 2150 24
25		31000	110	9210	*	47000	E	413	52400	*	18700	B	35 1970 25
26		32700	205	18100	*	45000	E	332	40300	*	18100	B	37 1810 26
27		34900	316	29800	*	42500	E	270	31000	*	17500	B	34 1610 27
28		37100	425	42600	*	40000	E	232	25100	*	17000	E	32 1470 28
29		38500	531	55300	10.0	37600	A	193 S	19600	*	16800	E	30 1360 29
30		39400	584	62100	*	36400		173	17000	*	17800	B	38 1830 30
31		39600	487	52100	*	34800		169	15900	*			31
TOTAL		1047000		1101270	*	1319400			1624830	*	706100		163700 TOTAL
MEAN		33800		35500	*	42600			52400	*	23500		5460 MEAN

MACKENZIE RIVER (AKLAVIK CHANNEL) ABCVF SCHOONER CHANNEL - STATION NO. 10MC005

SUSPENDED SEDIMENT FOR 1974

	APR	MAY	JUN									
DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY
1	*	*	*	32000 E	250	21600	1					
2	*	*	*	34000 E	300	27500	2					
3	*	*	*	37500 E	350	35400	3					
4	*	*	*	40000 E	390	42100	4					
5	*	*	*	44000 E	484	57500	5					
6	*	*	*	46000 E	608	75500	6					
7	*	*	*	47000 E	700	88800	7					
8	*	*	*	44200	584	69700	8					
9	*	*	*	40600	443	48600	9					
10	*	*	*	36900	293	29200	10					
11	*	*	*	34300	195	18100	11					
12	*	*	*	404 30900	182 S	15200	12					
13	*	*	*	30900	166	13800	13					
14	*	*	*	30700	173	14300	14					
15	*	*	*	30600	197	16300	15					
16	*	*	*	30500	255	21000	16					
17	*	*	*	30400	304	25000	17					
18	*	*	*	30300	344	28100	18					
19	*	*	*	30200	388	31600	19					
20	*	*	*	30000	435	35200	20					
21	*	*	*	29200	476	37500	21					
22	*	*	*	25400	514	39400	22					
23	*	*	*	28100	569	43200	23					
24	*	*	*	28000	593	44800	24					
25	*	*	*	28000	595	45000	25					
26	*	*	*	27800	584	42800	26					
27	*	*	*	27000	572	41700	27					
28	*	*	*	26800	564	40800	28					
29	*	*	*	26900	555	40300	29					
30	*	*	*	26900	541	39300	30					
31	*	*	*	*	*	*	*	*	*	*	*	31
TOTAL				988000		1130300	TOTAL					
MEAN				32900		37700	MEAN					

MACKENZIE RIVER (AKLAVIK CHANNEL) ABOVE SCHOONER CHANNEL - STATION NO. 10MC005

SUSPENDED SEDIMENT FOR 1974

	JUL			AUG			SEP						
DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	
1		27000	533	38900	*	26300	1450	103000	*	22700	205	12600	1
2		27000	524	38200	* 15.6	25600	1310 S	90500	*	22400	201	12200	2
3		27100	506	37000	*	24500	1120	74100	*	22900	227	14000	3
4		27100	494	36100	*	23300	896	56400	*	23200	242	15200	4
5		26900	482	35000	*	22200	642	38500	*	22200	192	11500	5
6		26400	470	33500	*	21700	403	23600	*	21100	155	9060	6
7		26200	458	32400	*	21900	292	17300	*	19900	143	7680	7
8		25900	445	31100	* 16.1	22600 A	416 S	25400	*	19000	131	6720	8
9		25800	433	30200	*	23500 E	517	32800	* 7.2	18100	120 S	5860	9
10		25700	421	29200	*	24200 E	585	38200	*	17300	113	5280	10
11		25400	409	28000	*	25100 E	652	44200	*	16700	105	4730	11
12	13.9	25100	395 S	26800	*	26100 E	715	50400	*	16300	96	4220	12
13		24900	384	25800	*	27500 E	793	58900	*	15700	88	3730	13
14		24900	365	24400	*	29000 E	893	69900	*	15200	75	3240	14
15		24200	297	19400	* 14.4	30600 A	887 S	73300	*	14700	71	2820	15
16		23400	205	13200	*	30300	748	61200	*	14200	62	2320	16
17		22400	156	9430	*	30200	681	55500	*	13600	54	1980	17
18	17.8	21600	136 S	7930	*	31600	832	71000	* 6.1	13100	46 S	1630	18
19		21100	129	7290	*	33400	1130	103000	*	12900	43	1500	19
20		21300	126	7250	*	36600	1350	133000	*	12600	42	1430	20
21		21100	120	6840	*	37100	1200	120000	*	12400	40	1340	21
22		20700	114	6370	*	35900	1050	102000	*	13100	71	2510	22
23		20500	117	6480	*	34600	909	84900	*	13300	76	2730	23
24		21000	215	12200	*	33300	738	66400	*	12900	70	2440	24
25		22100	426	25500	*	31600	590	50300	*	12400	64	2140	25
26		23500	712	45200	*	30200	485	39500	*	11800	55	1820	26
27		25300	1080	73800	*	28500	392	30200	*	11400	53	1630	27
28		26500	1420	102000	*	27200	295	21700	*	11000	47	1400	28
29		27200	1680	123000	* 10.6	26000	234 S	16400	*	10700	41	1180	29
30		27400	1690	125000	*	24800	220	14700	*	10800 E	55	1600	30
31		27000	1580	115000	*	23500	213	13500	*			31	
TOTAL		761600		1152490	*	869300		1779800	*	473600		146610	TOTAL
MEAN		24600		37200	*	28000		57400	*	15800		4890	MEAN

MACKENZIE RIVER (WEST CHANNEL) BELCH AKLAVIK CHANNEL - STATION NO. 10MC004

SUSPENDED SEDIMENT FOR 1974

	JUL			AUG			SEP						
DAY	TEMP.	DAILY DISCHARGE (CFS)	MEAN CCR- CENTRATION (MG/L)	TONS PER DAY	TEMP. * 15.6	DAILY DISCHARGE (CFS)	MEAN CCR- CENTRATION (MG/L)	TONS PER DAY	TEMP. * 198	DAILY DISCHARGE (CFS)	MEAN CCR- CENTRATION (MG/L)	TONS PER DAY	
1	71000	292	56000	*	65000	691 S	121000	*	58400	198	31200	1	
2	69400	288	54000	*	63600	603	104000	*	57600	187	29100	2	
3	69100	291	54300	*	61000	533	87800	*	60600	232	38000	3	
4	68900	290	53500	*	59300	443	69700	*	59800	216	34900	4	
5	67200	278	50400	*	55500	347	52000	*	57100	176	27100	5	
6	65700	265	47000	*	53800	268	38900	*	54000	141	20600	6	
7	65100	257	45200	*	53500	207	29900	*	50800	103	14100	7	
8	64200	249	43200	*	16.1	56200	238 S	36100	*	48100	86	11400	8
9	64300	230	39900	*	63500	356	61000	*	46000	81 S	10100	9	
10	63700	218	37500	*	67300	428	77800	*	44000	78	9270	10	
11	62700	205	35400	*	69800	443	83500	*	42400	72	8240	11	
12	14.4	1900	209 S	34900	*	72200	518	101000	*	41500	63	7060	12
13	61900	208	34700	*	75400	614	125000	*	41200 A	56	6230	13	
14	62000	202	33400	*	76700	720	149000	*	39000 E	53	5580	14	
15	60500	197	32200	*	13.3	77100	831 S	173000	*	37000 E	52	5190	15
16	58400	188	29600	*	76500	831	172000	*	36000 E	47	4570	16	
17	55900	184	27800	*	76800	789	164000	*	35000 E	40	3780	17	
18	53600	179	25900	*	81000	825	180000	*	33100 A	34 S	3040	18	
19	52600	162	23000	*	89000	940	226000	*	33000	25	2230	19	
20	53400	154	22200	*	99000	974	200000	*	32300	22	1920	20	
21	52700	132	18800	*	98400	871	231000	*	31900	25	2150	21	
22	51200	123	17000	*	95900	758	196000	*	34200	30	2770	22	
23	50400	133	18100	*	92400	661	165000	*	34400	28	2600	23	
24	50900	126	25600	*	88300	577	138000	*	33300	26	2340	24	
25	52600	268	38100	*	87800	490 S	111000	*	31900	26	2240	25	
26	55500	367	55000	*	79100	413	88200	*	30800	25	2080	26	
27	59300	461	73800	*	74500	353	71000	*	29900	24	1940	27	
28	62500	555	94100	*	70900	302	57800	*	29000	20	1570	28	
29	65300	640	113000	*	10.0	67000	250	45200	*	28500	16	1230	29
30	65900	713	121000	*	63500	215	36900	*	28400 E	18	1380	30	
31	65600	752	133600	*	60400	205	33400	*	*	*	*	31	
TOTAL	1883500		1494400	*	2265400		3485200	*	1219200		293910	TOTAL	
MEAN	60800		48200	*	73100		112000	*	40600		9800	MEAN	

MACKENZIE RIVER (MIDDLE CHANNEL) ABOVE NAPOIAK CHANNEL - STATION NO. 18MC006

SUSPENDED SEDIMENT FCR 1974

		JUL			AUG			SEP							
		DAY	TEMP.	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	DAY	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	DAY	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	
48	1	677000	793	1450000	*	605000 E	1910	3120000	*	590000 E	357	569000	1		
	2	665000	778	1400000	*	570000 E	1560	2400000	*	590000 E	357	569000	2		
	3	666000	764	1370000	*	533000 E	1240	1780000	*	600000 E	400	648000	3		
	4	666000	750	1350000	*	536000 E	996	1440000	*	606000 E	338	553000	4		
	5	654000	736	1200000	*	495000 E	887	1190000	*	606000 A	280	458000	5		
	6	646000	722	1260000	*	511000 E	838	1160000	*	590000 E	250	398000	6		
	7	646000	708	1230000	*	563000 E	908	1330000	*	580000 E	230	360000	7		
	8	633000	692	1180000	*	594000 A	1100 S	1760000	*	570000 E	211	325000	8		
	9	642000	673	1170000	*	720000 E	1520	2950000	*	555000 A	192 S	288000	9		
	10	634000	655	1130000	*	810000 E	2110	4610000	*	540000 E	178	260000	10		
	11	14.4	634000	638 S	1090000	*	850000 E	2600	5970000	*	530000 E	177	253000	11	
	12	626000	647	1090000	*	850000 E	2260	5190000	*	520000 E	164	230000	12		
	13	629000	642	1070000	*	820000 E	1760	3900000	*	510000 E	149	205000	13		
	14	618000	596	995000	*	13.9 765000 A	1300 S	2870000	*	500000 E	135	182000	14		
	15	602000	532	865000	*	735000 E	1170	2320000	*	490000 E	121	160000	15		
	16	583000	383	603000	*	705000 E	1040	1980000	*	480000 E	108	140000	16		
	17	569000	312	475000	*	700000 E	1040	1970000	*	470000 E	95	121000	17		
	18	557000	265	399000	*	710000 E	1240	2380000	*	460000 E	84	104000	18		
	19	558000	249 S	375000	*	720000 E	1510	2940000	*	446000 A	81 S	97500	19		
	20	567000	220	337000	*	725000 E	1840	3600000	*	440000 A	79	93900	20		
	21	557000	190	286000	*	729000 E	1800	3500000	*	430000 E	77	89400	21		
	22	548000	222	328000	*	700000 E	1500	2840000	*	425000 E	76	87200	22		
	23	552000	290	432000	*	680000 E	1160	2170000	*	420000 E	74	83900	23		
	24	573000	569	880000	*	650000 E	909	1600000	*	415000 E	72	80700	24		
	25	594000	911	1460000	*	630000 E	725	1230000	*	415000 E	70	78400	25		
	26	632000	1360	2320000	*	615000 E	597	991000	*	410000 E	68	75300	26		
	27	663000	1850	3310000	*	600000 E	515	834000	*	410000 E	67	74200	27		
	28	685000	2350	4350000	*	590000 E	441	703000	*	405000 E	65	71100	28		
	29	708000	2780	5310000	*	588000 A	387 S	614000	*	405000 E	63	68900	29		
	30	689000	2730	5080000	*	585000 E	376	594000	*	400000 E	61	65900	30		
	31	15.6	670000 A	2320 S	4200000	*	585000 E	367	580000	*			31		
TOTAL		19338000		48103000	*	20440000		70516000	*	14808000		6789400	TOTAL		
MEAN		624000		1550000	*	659000		2270000	*	494000		226000	MEAN		

MACKENZIE RIVER (KALINEK CHANNEL) ABCVE ONIAK CHANNEL - STATION NO. 10LC006

SUSPENDED SEDIMENT FOR 1974

	JUL			AUG			SEP						
DAY	TEMP.	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP.	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP.	DAILY DISCHARGE (CFS)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	
1		27500	E 1050	78000	*	27400	905	67000	*	21100	105	5900	1
2		27800	E 1040	78100	*	26400	733	52200	*	21300	117	6730	2
3		27400	E 1030	76200	*	24400	580	38200	*	22900	165	10200	3
4		27000	E 1030	75100	*	22700	409	25100	*	22900	168	10400	4
5		26700	E 1020	73500	*	21100	278	15800	*	21000	111	6290	5
6		26200	E 1010	71400	*	20400	190	10500	*	19200	75	3890	6
7		26200	E 1000	70700	*	20900	171	9650	*	17700	60	2870	7
8		26100	E 995	70100	* 16.1	22200	219 S	13100	*	16800	54	2450	8
9		26100	E 985	69400	*	25700	305	21200	* 7.2	16000	51 S	2200	9
10		26300	E 975	69200	*	28700	404	31300	*	15200	49	2010	10
11	14.4	26900	A 965 S	70100	*	30800	507	42200	*	14700	47	1870	11
12		26800	920	66600	*	32500	608	53400	*	14400	44	1710	12
13		26500	777	55600	*	33700	707	64300	*	13700	44	1630	13
14		26500	570	40800	* 13.9	34300	741 S	68600	*	13100	42	1490	14
15		25500	370	25500	*	33700	611	55600	*	12600	41	1390	15
16		24300	209	13700	*	32900	481	42700	*	11900	36	1250	16
17	15.0	23100	95 S	5930	*	32300	489	42600	*	11300	38	1160	17
18		22100	72	4300	*	33900	712	65200	*	10900	36	1060	18
19		21600	71	4140	*	36900	1120	112000	*	10600	35	1000	19
20		22200	69	4140	*	40600	1550	170000	* 8.3	10400	33 S	927	20
21		21600	68	3970	*	40500	1530	167000	*	10300	31	862	21
22		20800	72	4040	*	38200	1100	113000	*	11100	34	1020	22
23		20400	152	8370	*	35900	784	76000	*	11400	29	893	23
24		21300	308	17700	*	33500	566	51200	*	10800	24	700	24
25		22600	503	30700	*	31300	407	34400	*	9920	21	562	25
26		24600	673	44700	*	29200	304	24000	*	9450	21	536	26
27		27000	672	63600	*	27100	231	16900	*	9150	20	494	27
28		28700	1110	86000	*	25700	191	13300	*	8910	18	433	28
29		30300	1310	107000	* 12.8	24600	171 S	11400	*	8790	16	380	29
30		29700	1290	103000	*	22800	155	9540	*	10100	18	491	30
31		28600	1110 S	85700	*	21800	129	7590	*			31	
TOTAL		788400		1577290	*	912100		1524980	*	417620		72878	TOTAL
MEAN		25400		50900	*	29400		49200	*	13900		2430	MEAN

MACKENZIE RIVER (EAST CHANNEL) AT INUVIK - STATION NO. 10LC002

SUSPENDED SEDIMENT FCR 1974

	APR	MAY	JUN						
DAY	TEMP. (C)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY	TEMP. (C)	MEAN CON- CENTRATION (MG/L)	TONS PER DAY
1	280 B	*	340 B	*	25700	273	18900	1	
2	282 B	*	342 B	*	25800	242	16900	2	
3	284 B	*	344 B	*	26400	264	18800	3	
4	286 B	*	468 B	*	27400	336	24900	4	
5	288 B	*	593 B	*	29200	457	36000	5	
6	290 B	*	717 B	*	31400	615	52500	6	
7	292 B	*	841 B	*	30800	610	50700	7	
8	294 B	*	966 B	*	28100	445	34100	8	
9	296 B	*	1090 B	*	25500	325	22700	9	
10	298 B	*	1210 B	3.9	23800	244 S	15700	10	
11	300 B	*	1340 B	*	22200	212	12700	11	
12	302 B	*	1460 B	*	20600	201	11200	12	
13	304 B	*	1590 B	*	19000	200	10300	13	
14	306 B	*	1710 B	*	17500	201	9500	14	
15	308 B	*	1840 B	*	16300	201	8850	15	
16	310 B	*	1950 B	*	15300	208	8590	16	
17	312 B	*	2830 B	*	14500	218	8530	17	
18	314 B	*	3180 B	*	13900	226	8480	18	
19	316 B	*	3620 B	*	13300	243	8730	19	
20	318 B	*	4370 B	*	12900	267	9300	20	
21	320 B	*	5770 B	*	12700 A	291	9980	21	
22	322 B	*	8110 B	*	12800 E	308	10600	22	
23	324 B	*	10700 B	*	12800 E	336	11600	23	
24	326 B	*	12900 B	*	12900 E	375	13100	24	
25	328 B	*	15000 B	7.8	12900 E	404 S	14100	25	
26	330 B	*	16500 B	*	13000 E	395	13900	26	
27	332 B	*	19100 B	*	12900 E	382	13300	27	
28	334 B	*	21900 B	*	12900 A	375	13100	28	
29	336 B	*	24400 B	*	12800	371	12800	29	
30	338 B	*	25200 B	*	12800	363	12500	30	
31		*	25500 B	*				31	
TOTAL	9270	*	215881	*	568100		512360	TOTAL	
MEAN	309	*	6960	*	18900		17100	MEAN	

MACKENZIE RIVER (EAST CHANNEL) AT INUVIK - STATION NO. 10LC002

SUSPENDED SEDIMENT FCR 1974

	JUL				AUG				SEP					
	DAY	TEMP.	DAILY DISCHARGE	MEAN CON- CENTRATION	TONS PER DAY	DAY	DAILY DISCHARGE	MEAN CON- CENTRATION	TONS PER DAY	DAY	DAILY DISCHARGE	MEAN CON- CENTRATION	TCNS PER DAY	
	(C)	(CFS)	(MG/L)	(MG/L)	(CFS)	(C)	(CFS)	(MG/L)	(CFS)	(C)	(CFS)	(MG/L)	(CFS)	
	1	13100	351	12400	*	14100	1540	58600	*	10500	130	3690	1	
	2	12900	332	11600	*	13700	1170	43300	*	10400	112	3140	2	
	3	12900	317	11000	*	13000	899	31600	*	10800	134	3910	3	
	4	12800	307	10600	*	12300	715	23700	*	10800	144	4200	4	
	5	12600	293	9970	*	11600	563	17600	*	10200	121	3330	5	
	6	12300	277	9200	*	11300	450	13700	*	9540	112	2880	6	
	7	12300	262	8700	*	11200	415	12500	*	8940	102	2460	7	
	8	12100	255	8330	*	11600	473	14800	*	8440	88	2010	8	
	9	12300	245	8140	15.0	12900	633 S	21900	*	8040	85	1850	9	
	10	12300	238	7900	*	13900	845	31700	6.7	7690	64 S	1330	10	
	11	12100	228	7450	*	14800	1060	42400	*	7380	56	1120	11	
	12	12000	214	6930	13.9	15800	1350 S	57600	*	7160	54	1040	12	
	13	12000	204	6610	*	16300	1410	62100	*	6890	50	930	13	
	14	12100	191	6240	13.9	15500	1130 S	50300	*	6560	48	850	14	
	15	11800	172	5510	*	16300	956	42100	*	6260	47	794	15	
	16	11200	159	4810	*	16000	892 S	38500	5.6	5950	44 S	707	16	
	17	11000	142	4220	*	15700	795	33700	*	5670	39	567	17	
	18	10600	123	3520	*	15900	723	31000	*	5390	38	553	18	
	19	10500	112 S	3180	*	17100	852	39300	*	5210	37	520	19	
	20	10700	108	3120	*	18400	1120	55600	*	4990	36	485	20	
	21	10600	104	2980	*	18500	1050	52400	*	4870	38	500	21	
	22	10400	107	3000	10.0	17800	791 S	38000	*	5090	40	550	22	
	23	10400	85	2390	*	17000	646	29700	*	5120	38	525	23	
	24	10700	85	2460	*	16000	537	23200	*	4890	26	343	24	
	25	11300	122	3720	*	15100	467	19000	*	4570	34	420	25	
	26	16.1	12100	209 S	6830	*	14200	410	15700	*	4380	36	426	26
	27	16.1	13200	540 S	19200	*	13300	337	12100	*	4200	35	397	27
	28	15.6	14000	871	32900	*	12600	267	9080	*	4090	33	364	28
	29	16.7	14800	1110	44400	11.1	12000	222 S	7190	*	3980	29	312	29
	30	16.7	15000	150 C S	60200	*	11300	178	5430	*	4340	24	281	30
	31	15.6	14700	1940 S	77000	*	10800	151	4400	*	*	*	31	
TOTAL			376800	405110	*	446900	938200	*	202340	40514	TOTAL			
MEAN			12200	13100	*	14400	30300	*	6740	1350	MEAN			

PARTICLE SIZE ANALYSIS
OF SUSPENDED SEDIMENT

1974

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA

Particle-size analyses of suspended sediment of Mackenzie River above Arctic Red River. Station No. 10LA003 for year 1974.
(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, In native water; W, In distilled water; C, chemically dispersed;
M, mechanically dispersed; V, visual accumulation tube)

Date of Collection	Time	Discharge Mast's (cfs)	Water tem- per- ature (°C)	Suspended sediment										Methods of analysis		
				Concen- tration of sample mg/l	Concen- tration of suspension analyzed mg/l	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	
June 20	1210	729000	13.3	322	R	22	28	41	51	67	79	89	95	98	100	B.N.W.
July 28	2345	931000	14.4	2910	R	41	51	69	86	94	97	98	99	100	100	B.N.W.
R - Samples collected from several verticals																

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA

Particle-size analyses of suspended sediment of Peel River above Fort McPherson Station No. 10NC002 for year 1974
 (Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
 M, mechanically dispersed; V, visual accumulation tube)

Date of Collection	Time	Discharge Mean ^a (cfs)	Water temp. per- sure (°C)	Suspended sediment										Methods of analysis	
				Concen- tra- tion of sample mg/l	Concen- tra- tion of suspen- sion analyzed mg/l	Percent finer than indicated size, in millimeters									
						0.002	0.004	0.008	0.016	0.031	0.067	0.125	0.250	0.500	1.000
DEPTH INTEGRATED															
July 4	1200	45800	7.5	428 R		28	37	57	79	89	91	96	99	100	B.N.W.
Aug. 24 ^f	1300	93400	4.4	*739 R		18	27	34	49	67	85	96	99	100	B.N.W.
R - Samples taken in several verticals															
* - Average of four samples only															
† - % are average of four samples and the daily															
Tabulated by: _____ Checked by: _____ Date: Apr. 8/75															

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA

Particle-size analyses of suspended sediment of Mackenzie River, Peel Channel above Aklavik Station No. 10NC003 for year 1974
 (Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
 M, mechanically dispersed; V, visual accumulation tube)

Date of Collection	Time	Discharge Mean ^a (cfs)	Water temp. per- sure (°C)	Suspended sediment										Methods of analysis	
				Concen- tra- tion of sample mg/l	Concen- tra- tion of suspen- sion analyzed mg/l	Percent finer than indicated size, in millimeters									
						0.002	0.004	0.008	0.016	0.031	0.067	0.125	0.250	0.500	1.000
DEPTH INTEGRATED															
July 12	1115	33600 H	13.3	536 K		21	32	46	61	75	85	97	100		B.N.W.
Aug. 1	2100	39500	15.9	302 R		49	63	80	95	99	100				B.N.W.
Aug. 15		45500 II	13.3	757 K		35	45	65	85	94	98	99	100		B.N.W.
H - Daily Mean Discharge															
K - Samples collected from a single vertical															
R - Samples collected from several verticals															
Tabulated by: _____ Checked by: _____ Date: Feb. 13/75															

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA
Mackenzie River, Akivik Channel

INLAND WATERS BRANCH-WATER SURVEY OF CANADA
 Mackenzie River, West Channel
 Particle-size analyses of suspended sediment at _____ below Atklavik Channel Station No. 104C004 for year 1974
 (Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
 M, mechanically dispersed; V, visual accumulation tube)

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA
Mackenzie River, Middle Channel above
Napoiak Channel Station No. 10NC006 for year 1974
(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
M, mechanically dispersed; V, visual accumulation tube)

Date of Collection	Time	Discharge Meas't (cfs)	Water temp. per- ature (°C)	Concen- tra- tion of sample mg/l	Concen- tra- tion of suspen- sion analyzed mg/l	Suspended sediment										Methods of analysis		
						Percent finer than indicated size, in millimeters												
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000			
DEPTH INTEGRATED																		
July 31	2030	671000	15.6	2180 R	48	57	74	87	91	98	99	100				B.N.W.		
Aug. 14	1250	765000H	17.9	1370 K	29	36	54	73	87	95	98	100				B.N.W.		
Aug. 29	1235	588000H	11.7	388 K	29	33	49	66	80	90	95	98	99	100		B.N.W.		
Tabulated by: _____ Checked by: _____ Date: Mar. 6/75																		

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA

Particle-size analyses of suspended sediment of Mackenzie River Kalinek Channel above Station No. 1010006 for year 1974
(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
M, mechanically dispersed; V, visual accumulation tube)

Date of Collection	Time	Discharge Meas't (cfs)	Water temp. per- ature (°C)	Concen- tra- tion of sample mg/l	Concen- tra- tion of suspen- sion analyzed mg/l	Suspended sediment										Methods of analysis		
						Percent finer than indicated size, in millimeters												
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000			
DEPTH INTEGRATED																		
July 11	1700	26000H	14.4	962 K	13	17	29	49	70	88	98	99	100			B.N.W.		
July 31	1330	28500	15.6	1090 R	52	65	84	97	99	100						B.N.W.		
Aug. 14	1115	51500H	15.9	753 K	41	53	71	92	98	99	100					B.N.W.		
Aug. 29	1115	24600H	12.8	177 K	51	62	79	91	97	99	100					B.N.W.		
H - Daily Mean Discharge K - Samples collected from a single vertical R - Samples collected from several verticals																		
Tabulated by: _____ Checked by: _____ Date: Feb. 13/74																		

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA

Particle-size analyses of suspended sediment of Mackenzie River East Channel at Inuvik Station No. 101.C002 for year 1974
(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
M, mechanically dispersed; V, visual accumulation tube)

PARTICLE SIZE ANALYSIS
OF BED MATERIAL

1974

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH - WATER SURVEY OF CANADA

Particle size analyses of bed ^{load} material of Mackenzie River above Arctic Red River. Station No. 101A003 for year 19 74.
(Methods of analysis: B. bottom withdrawal tube; P. pipette; S. sieve; N. in native water; W. in distilled water;
C. chemically dispersed; M. mechanically dispersed; V. visual accumulation tube; H. hydrometer)

Date	Time sample collected	Discharge Meas (cfs)	Number of sampling points in cross section	Bed Material/Load											Methods of analysis	Remarks		
				Percent finer than indicated size, in millimeters														
				0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	4.000	8.000	16.000				
Sept. 24/74	1245	410000H	7	10	17	24	30	43	70	87	93	97	99	100	SNOMH	Shipek		
H - Daily Mean Discharge																		
Tabulated by:				Checked by:				Date: June 5/75										

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH - WATER SURVEY OF CANADA

Particle-size analyses of bed ^{load} material of Arctic Red River near the Mouth. Station No. 101A002 for year 19 74.
(Methods of analysis: B. bottom withdrawal tube; P. pipette; S. sieve; N. in native water; W. in distilled water;
C. chemically dispersed; M. mechanically dispersed; V. visual accumulation tube; H. hydrometer)

Date	Time sample collected	Discharge Meas (cfs)	Number of sampling points in cross section	Bed Material/Load											Methods of analysis	Remarks		
				Percent finer than indicated size, in millimeters														
				0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	4.000	8.000	16.000				
Sept. 24/74	1800	5910H	7	19	27	35	50	94	99	100					SNOMH	Shipek		
H - Daily Mean Discharge																		
Tabulated by:				Checked by:				Date: June 5/75										

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH - WATER SURVEY OF CANADA

Particle-size analyses of bed material of Peel River above Fort McPherson Station No. 10MC002 for year 1974

(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water;
C, chemically dispersed; M, mechanically dispersed; V, visual accumulation tube; H, hydrometer)

Date	Time sample collected	Discharge Meast (cts)	Number of sampling points in cross section	Bed Material/Load												Methods of analysis	Remarks	
				Percent finer than indicated size, in millimeters														
				0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	4.000	8.000	16.000				
Sept. 25/74	1450	22800H	7	9	12	20	34	60	87	94	95	95	97	98	SNCMH	Shipek		
H - Daily Mean Discharge																		
Tabulated by:				Checked by:				Date: June 6/75										

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH - WATER SURVEY OF CANADA

Particle-size analyses of bed material of Mackenzie River Aklavik Channel above Schooner Channel Station No. 10MC005 for year 1974

(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water;
C, chemically dispersed; M, mechanically dispersed; V, visual accumulation tube; H, hydrometer)

Date	Time sample collected	Discharge Meast (cts)	Number of sampling points in cross-section	Bed Material/Load												Methods of analysis	Remarks	
				Percent finer than indicated size, in millimeters														
				0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	4.000	8.000	16.000				
Oct. 2/74	1830	10500H	7	21	31	48	79	100								SNCMH	Shipek	
H - Daily Mean Discharge																		
Tabulated by:				Checked by:				Date: June 4/75										

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH - WATER SURVEY OF CANADA

Particle-size analyses of bed material of Mackenzie River Middle Channel above Napoiaik Channel Station No. 10MC006 for year 1974

(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water;
 C, chemically dispersed; M, mechanically dispersed; V, visual accumulation tube; H, hydrometer)

**DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH - WATER SURVEY OF CANADA**

Particle-size analyses of bed material at Mackenzie River East Channel at Inuvik Station No. 10LC002 for year 1974
(Methods of analysis: B, bottom withdrawal tube; P, pipeite; S, sieve; N, in native water; W, in distilled water;
C, charnockite; D, dolomite; M, monzonitic granite; K, kyanite; A, andalusite; H, hematite; M, magnetite).

SUSPENDED SEDIMENT DATA

1975

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH WATER SURVEY OF CANADA

SUMMARY OF SUSPENDED SEDIMENT ANALYSIS RESULTS FOR YEAR 1975

Stream Peel River

Location above Fort McPherson

Date	Time	Water Level	Temperature °C	Sample Location	River Depth	Sample Depth	Type of Sample	Sample Number	Volume Sample (cc)	Total Sample Dry Weight (g)	Total Concentration (mg/l)	Total Sample D 50 (mm)	% Sand 0 to 4.7 mm	% Silt 0.05 to 0.5 mm	% Clay 0.05 mm	Described Solids (mg/l)	Method of Analysis
June 7	2330		M/S	15.0			D.I.	7001	704	1.0717	1522					123	Filt.
8	1210	30.68	8.0	103	11.6	"		02	625	.8102	1296					118	"
8				178	17.0	"		03	642	.8146	1209					120	"
8				253	24.3	"		04	780	1.0780	1382					116	"
8				328	27.0	"		05	765	1.2097	1581					120	"
8				403	39.0	"		06	797	1.2478	1566					127	"
8	1315	30.68	8.0	M/S	21.0	D.I.		7007	747	.9392	1257	.0090	11	53	36	125	R.N.W.

Computed by _____ Date _____

Checked By _____ Date _____

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH WATER SURVEY OF CANADA

SUMMARY OF SUSPENDED SEDIMENT ANALYSIS RESULTS FOR YEAR 1975

Stream Arctic Red River

Location near the Mouth

Date	Time	Water Level	Temperature °C	Sample Location	River Depth	Sample Depth	Type of Sample	Sample Number	Volume Sample (cc)	Total Sample Dry Weight (g)	Total Concentration (mg/l)	Total Sample D 50 (mm)	% Sand 0 to 4.7 mm	% Silt 0.05 to 0.5 mm	% Clay 0.05 mm	Described Solids (mg/l)	Method of Analysis
June 7	1750		M/S	22.0			D.I.	AR1	702	3.0692	4372	.0119	7	63	30	185	RNW
20	1205	12.5	"	8.0		"		2AB	713	1.0531	1477					176	Filt.
24	1415	16.0	"	15.3		"		3AB	442	.2794	632	.0039	1	41	58	195	RNW

Computed by _____ Date _____

Checked By _____ Date _____

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH WATER SURVEY OF CANADA

SUMMARY OF SUSPENDED SEDIMENT ANALYSIS RESULTS FOR YEAR TO 75

Stream Mackenzie River

Location above Arctic Red River

Computed by _____ Date _____

Checked By _____ Date _____

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH - WATER SURVEY OF CANADA

SUMMARY OF SUSPENDED SEDIMENT ANALYSIS RESULTS FOR YEAR 19 75

Mackenzie River Peel Channel

above Aklavik

Date	Time	Water Level	Temperature °C	Sample Location	River Depth	Sample Depth	Type of Sample	Sample Number(s)	Volume Sample (cc.)	Total Sample Dry Weight (gr.)	Total Concentration (mg/l)	Total Sample D50 (mm)	% Sand 0s to 7 mm	% Silt 0s to 0.5 mm	% Clay 0.5s mm	Disseved Solids (mg/l)	Method of Analysis
June																	
17	1640		11.0		37.0		D.I.	3001AB	855	.5052	.597	.0077	3	57	40	128	BNW
23	1400		16.0		38.0		"	3002AB	623	.1950	.317	.0067	3	55	42	134	BNW
July								NA									
17	1950		20.5	275	9.3		D.I.	3003AB	469	.0379	.81					185	Evap.
17			"	224	13.8		"	04	408	.0367	.90					193	"
17			"	156	22.8		"	05	647	.0606	.91					184	"
17			"	105	41.0		"	06	801	.1591	.199					181	"
17	2005		20.5	57	28.9		"	07	632	.1910	.302					173	"

Computed by _____ Date _____

Checked By _____ Date _____

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH WATER SURVEY OF CANADA

SUMMARY OF SUSPENDED SEDIMENT ANALYSIS RESULTS FOR YEAR 1975

Stream Hackenzie River Aklavik Channel Location above Schooner Channel

Date	Time	Water Level ft	Temperature °C	Sample Location	River Depth ft	Station Depth ft	Type of Sample	Sample Number	Volume Sample (cc.)	Total Sample Dry Weight (g.)	Total Concentration (mg/l)	Total Sample D-50 (mm)	% Sand in 4-7 mm	% Silt in 65 mm	% Clay 005 mm	Dissolved Salts (mg/l)	Method of Analysis
June							MA										
17	1915	11.0		30.0			D.I.	5001AB	621	.2348	378	.0031	1	37	62	152	BNW
	23	1120		16.0			D.I.	5002AB	618	.1626	263	.0048	8	41	51	146	BNW
July							MA										
	17	1550	20.5	205	5.0		D.I.	5003AB	456	.2149	471					172	Evap.
	17		"	163	12.2		"	04	451	.2182	484					166	"
	17		"	121	23.2		"	05	709	.3305	480					159	"
	17		"	79	29.1		"	06	651	.3086	474					159	"
	17	1610	20.5	37	28.7		"	07	791	.3653	462					167	"

Computed by _____ Date _____

Checked By _____ Date _____

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH WATER SURVEY OF CANADA

SUMMARY OF SUSPENDED SEDIMENT ANALYSIS RESULTS FOR YEAR 1975

Stream Mackenzie River West Channel Location below Aklavik Channel

Computed by _____ Date _____

Checked By _____ Date _____

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH - WATER SURVEY OF CANADA

SUMMARY OF SUSPENDED SEDIMENT ANALYSIS RESULTS FOR YEAR 1975

Stream Mackenzie River Middle Channel Location above Napoak Channel

Date	Time	Water Level	Temperature °C	Sample Location	River Depth	Sample Depth	Type of Sample	MA	Sample Number	Volume Sample (L)	Total Sample Dry weight (g)	Total Carbonation Total (mg/l)	Total Sample D ₅₀ (mm)	% Sand 0.5 to 4.7 mm	% Silt 0.05 to 0.5 mm	% Clay 0.05 mm	Dissolved Solids (mg/l)	Method of Analysis
June								MA										
13	1145			689	90.0		D. I.	6001	811	.7811	963					148	Evap.	
13				1180	70.0		D. I.	02	762	.7455	978					153	"	
13				1670	64.0		"	03	813	.7523	935					159	BNW	
13				2170	58.0		"	04	810	.6621	817					143	Evap.	
13	1245			2820	34.0		"	05	427	.3572	837					140	"	
17	1150				32.0			06AB	735	.5450	741					149	"	
23	0940		16.0		30.0		D. I.	6007AB	484	.1769	305	.0102	16	47	37	147	BNW	
July							MA											
	18	1245			38.0		D. I.	6008AB	733	.3604	492					154	Evap.	

Computed by _____ Date _____

Checked By _____ Date _____

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH WATER SURVEY OF CANADA

SUMMARY OF SUSPENDED SEDIMENT ANALYSIS RESULTS FOR YEAR 19 75

Stream Mackenzie River Kolinek Channel Location above Oniak Channel

Computed by _____ Date _____

Checked By _____ Date _____

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH WATER SURVEY OF CANADA

SUMMARY OF SUSPENDED SEDIMENT ANALYSIS RESULTS FOR YEAR 19 75

Stream Mackenzie River East Channel

Location at Inuvik

Computed by _____ Date _____

Checked By _____ Date _____

PARTICLE SIZE ANALYSIS
OF SUSPENDED SEDIMENT

1975

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA

Particle-size analyses of suspended sediment at Mackenzie River above Arctic Red River Station No. 101A003 for year 1975
(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
M, mechanically dispersed; V, visual accumulation tube)

**DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA**

Particle-size analyses of suspended sediment of Arctic Red River near the Mouth Station No 10LA002 for year 1975
(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
M, mechanically dispersed; V, visual accumulation tube)

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA

Particle-size analyses of suspended sediment of Peel River above Fort McPherson Station No. **10NC002** for year **19-75**
 (Methods of analyst B; bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
 M, mechanically dispersed; V, visual accumulation tube)

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA

Particle-size analyses of suspended sediment of Mackenzie River Peel Channel above Aklavik Station No. 10MC003 for year 1975
(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
M, mechanically dispersed; V, visual accumulation tube)

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA

Particle-size analyses of suspended sediment of Mackenzie River-Aklavik Channel above Schooner Ch. Station No. 10NC005 for year 1975
(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
M, mechanically dispersed; V, visual accumulation tube)

**DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH—WATER SURVEY OF CANADA**

Mackenzie River - West Channel below
 Aklavik Channel Station No 10MC004 for year 1975
 (Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
 M, mechanically dispersed; V, visual accumulation tube)

DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA
Nunavut River Middle Channel above
Mouth of Nipplak Channel Station No 10MK006 for year 1975
Total tube; P, pipette; S, sieve; H, In native water; W, In distilled water; C, chemically dispersed;
M, mechanically dispersed; V, visual accumulation tube)

**DEPARTMENT OF THE ENVIRONMENT
INLAND WATERS BRANCH-WATER SURVEY OF CANADA**

Particle-size analyses of suspended sediment of Mackenzie River East Channel at Inuvik Station No. 10LC002 for year 1975
(Methods of analysis: B, bottom withdrawal tube; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed;
M, mechanically dispersed; Y, visual accumulation tube)