

STUDY OF EXISTING
AND
FUTURE FOREST DEVELOPMENTS
BY INDIANS
IN
MEADOW LAKE AREA, SASKATCHEWAN

March 1971

RESTRICTED

FOR
THE DEPARTMENT OF INDIAN AFFAIRS
AND NORTHERN DEVELOPMENT
Regina, Saskatchewan, Canada

BY
C. D. SCHULTZ & COMPANY LIMITED

FORESTERS AND CONSULTING ENGINEERS
VANCOUVER, BRITISH COLUMBIA, CANADA

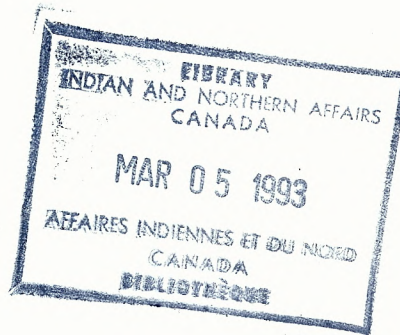


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Vancouver, British Columbia, Canada





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FORESTERS AND CONSULTING ENGINEERS

325 HOWE STREET, VANCOUVER 1, CANADA

March 29, 1971

Our File: CG080.004

Mr. W.R. Hickman,
Regional Superintendent of
Economic Development,
Department of Indian Affairs &
Northern Development,
McCallum Hill Building,
Regina, Saskatchewan.

Dear Sirs:

We have made a study of the existing and future forest developments by Indians in Meadow Lake area, Saskatchewan according to your instructions.

The three sawmills under study, Waterhen Lake Canoe Lake and Dillon will outlive their usefulness if they continue to operate on a long-term basis. We feel that greater benefits may be obtained for the Indian people by training the workers for employment in the new pulp mill and sawmill which are to be installed during the next two years.

We recommend a phase-out period of three years for Waterhen Lake and Dillon sawmills. Canoe Lake sawmill should be discontinued.

Education and training programs are extremely important to the future livelihood of the Indian people.

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Details of our findings with supporting data are outlined in the following text.

Yours truly,

C. D. SCHULTZ & COMPANY LIMITED



J.R. Blackstock

J. R. Blackstock,
Sawmill Consultant.



R. L. Caesar

R. L. Caesar, R. P. F.,
Manager,
Operations Department.

ACKNOWLEDGEMENT

The co-operation and assistance of members of the staff of Government agencies, Indian Bands and private companies have been important factors in the production of this report and is gratefully acknowledged.

Mr. W. R. Hickman, Regional Superintendent of Economic Development, and Mr. A. J. Gross, Resource Development Officer, Department of Indian Affairs and Northern Development co-ordinated the project, arranged the field visits and consultations with members of Indian Bands, private companies and regional Government officers.



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STUDY OF EXISTING
AND
FUTURE FOREST DEVELOPMENTS
BY INDIANS
IN
MEADOW LAKE AREA, SASKATCHEWAN

I SUMMARY AND RECOMMENDATIONS

- A. The existing sawmills at Waterhen Lake, Canoe Lake and Dillon are uneconomic and inefficient in utilizing the available timber.
- B. These mills have been useful in providing:
1. Employment for 100 Indian people for limited periods.
 2. The development of work habits and skills.
 3. Lumber for local needs from a renewable resource.
- C. During the next three years the announced pulp mill and sawmill are expected to absorb from 300 to 400 local Indian workers at higher wages than they now receive from the existing mills.
- D. Railroad, road building and other service industries will provide employment for many more people.



- E. Canoe Lake Sawmill should be closed down when the present inventory of logs is processed. The equipment should be distributed to Dillon and Waterhen Lake for a recommended upgrading program.
- F. Waterhen Lake and Dillon sawmills should be upgraded with existing Department owned equipment to produce 500 M B. M. each per year for the next three years and then be phased out.
- G. No recommendations are made to install new mills because:
1. A large amount of capital would be required.
 2. Competent management is not available and there has been no evidence in the past to indicate that this situation would change.
 3. Higher wages and better working conditions provided by the new pulp mill and sawmill will be more attractive to the working people.
- H. The training programs being planned for Meadow Lake as announced by Premier Ross Thatcher should be implemented as soon as possible.

II INTRODUCTION

Small semi-portable type sawmills have been installed by the Department of Indian Affairs and Northern Development at Waterhen Lake, Canoe Lake and Dillon.

These mills were installed to provide employment, training and lumber for local needs. The Department of Indian Affairs and Northern Development budgets funds for these projects for equipment, wages and supervision.



The purpose of this study is to determine the feasibility of Departmental milling and harvesting operations in view of the alternative benefits which may arise from Indian employment in the recently announded pulp mill and sawmill in the Meadow Lake area.

III FOREST RESOURCES

A. Area

The overall area referred to in this report consists of approximately 20,000 square miles bounded by the Alberta Saskatchewan border on the west, 107° E Longitude on the east, 54° N Latitude on the south and extends between 56° and 57° N Latitude on the north.

The land consists of flat areas which are broken by rolling hills, lakes and muskeg. Average elevation is approximately 1,400 feet above sea level.

B. Timber

The main species is quaking aspen, with an estimated volume of approximately two and one half billion board feet, and two billion board feet of softwood, principally spruce and pine. The timber is generally of good quality.

A Forest Management License has been negotiated recently for a large pulp mill complex which will utilize both softwood and hardwood species.

Based on past performance, timber has been made available for small operators. Exclusions from the Forest Management License Agreement areas on an annual basis are as follows:

White Spruce Sawtimber	2 Million f. b. m.
Jack Pine Sawtimber	1 Million f. b. m.
White Spruce Pulpwood	5,000 Cords
Jack Pine Pulpwood	10,000 Cords





Spruce and Pine Logs
in Storage at Waterhen Lake
(Old Sawmill Site)



Waterhen Lake Sawmill
at Log Infeed Deck



Untrimmed 2-inch Rough
Dimension Lumber Stripped for
Air-drying at Waterhen Lake
(Old Sawmill Site)



Using a conversion of two cords of pulpwood per thousand board feet of lumber, the total annual cut in the exclusions would be about 10.5 million board feet of white spruce and jack pine.

IV EXISTING OPERATIONS

A. General Description

The three sawmills under study, Waterhen Lake, Canoe Lake and Dillon were built during the past decade to provide lumber for local housing and other uses. Another purpose was to create work for Indian Band members who may otherwise be on welfare.

Training has been initiated on the job. A measure of success has been accomplished in promoting regular work habits.

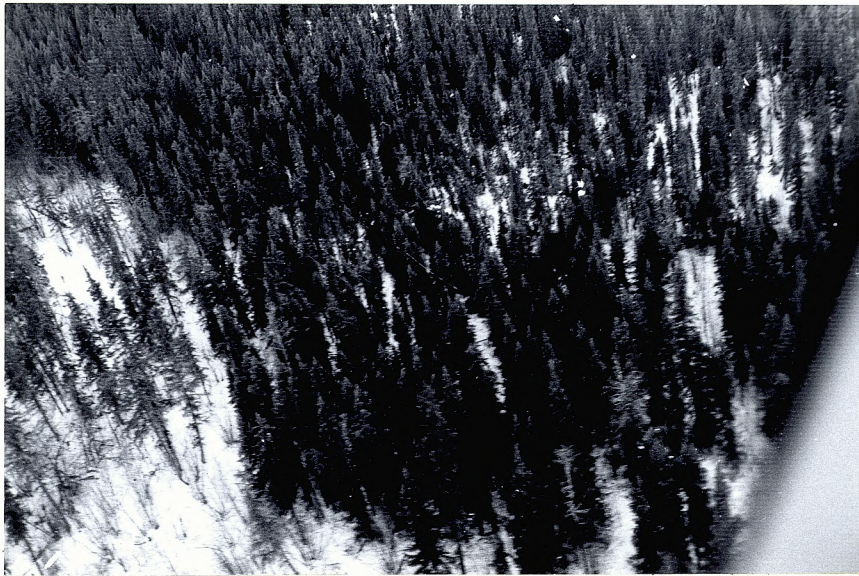
Education is being provided for the younger generation who will be absorbed in more sophisticated employment when the announced pulp mill complex becomes functional.

At the present time methods being used are extremely primitive. Logging is being done by hand loading on sleighs which are drawn by horses and tractors. Damage to regrowth is minimized by this method but the high use of manpower outweighs this advantage. Transportation is difficult during spring breakup. Summer logging is possible.

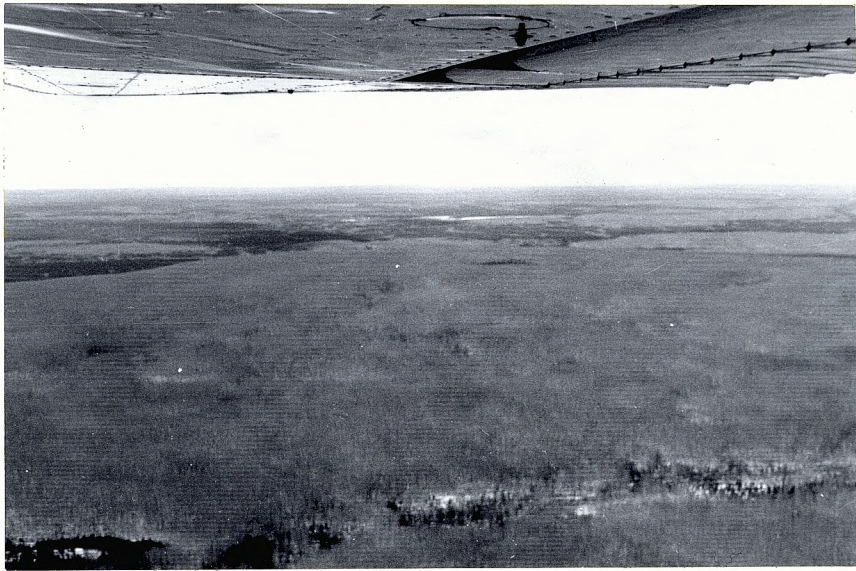
The sawmills are a portable type which were developed to salvage small stands of timber for farmers in off-season periods. This type of mill is very inefficient due to excessive use of manpower and a low recovery of lumber.

The manufacturing standards are below the industry level. Lumber is shipped ungraded.





White Spruce Timber
Near Dillon



Quaking Aspen Stand
North of Canoe Lake



Loading Logs by Hand
at Waterhen Lake
(Old Sawmill Site)



B. Waterhen Lake Sawmill

Waterhen Lake Sawmill has been relocated to a fairly good site within the community area of the Waterhen Lake Band. An area of four to five acres with a three percent slope has been cleared with access to the main road.

The mill is powered by a directly connected diesel engine and consists of a single 48-inch circular saw, hand set three block carriage and friction set works. There is no off bearing roll case, edger, trimmer or planer.

The logs were spruce and jack pine of excellent quality ranging from six to twenty-four inches in diameter, averaging about eleven inches.

The production was reported to be 100 M B.M. per year, of boards and dimension, with a working force of 35 people who work two to three months. The Department of Indian Affairs retains a millwright foreman who is available when required.

Fred Martel, Chief of the Waterhen Band, reported that there are 489 people in the village. They would like to improve the sawmill to cut and plane 500 M B.M. annually. He feels that this mill will be phased out in a few years and the people will find more remunerative work in the proposed pulp mill or, other employment which may be generated as a result of the pulp mill.

C. Canoe Lake Sawmill

Canoe Lake Sawmill is located on the shore of Canoe Lake, about one mile from the village. The site is about three acres of relatively unimproved swampy ground which extends to the Lake shore with a four percent grade.

The sawmill consists of a diesel unit, directly connected to a Coutts Sawmill consisting of a single circular saw, hand set carriage, friction feed works, off bearing rolls, edger, and outfeed table.





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Waterhen Lake Sawmill Set Up on New
Site Adjacent to the Village

The planer mill consists of a directly connected diesel engine, mechanized feed table, Alco planer, (which is to be replaced by a larger machine at the site), outfeed table and Canadian type trimmer. A circular resaw is set up adjacent to the planer mill for splitting dimension and recovering lumber from slabs.

The logs stored at the mill were merchantable quality spruce and pine, approximately 10 inches average diameter, which were being recovered from a burned over area about 40 miles away.

The annual production was reported to be 400 M B. M. of rough and dressed boards and dimension. Suitable slabs were being used as outside sheathing to house the equipment. A working force of 24 people work about four months per year.

Logging is carried on in winter, two weeks in early December until the fishing season (two weeks), and during January and February until the Department of Indian Affairs' grant runs out. Due to the increased costs of salvaging burned timber, only 300 M B. M. will be logged in 1970/1971.

Frank Iron, Chief of the Canoe Lake Indian Band, reported that there are 362 people in the community. The working force could be increased to 60 people if additional jobs were provided.

He feels that the Band would work steadily and try to make a success of the sawmill operation if the incentive was provided.

The cost of producing lumber in the following table is \$67.00 per M B. M. board feet. The actual cost of processed lumber is reported to have been \$86.00 per M B. M. during 1970. The increase is due to lack of planning in the location of the mills, unnecessary transportation of logs, interruptions due to breakdowns and lack of proper management.



LOGGING COSTS

	<u>Per M B. M.</u>
Log stumpage cost, burned timber, (normal cost unburned \$6.00)	\$ 2.00
Falling and bucking piece work, (4 men)	4.00
Skidding	2.00
Loading and trucking, burned timber	22.00
TOTAL LOG COST	<u><u>\$30.00</u></u>
Millwright Sawyer	\$375.00 per month
General Mill Workers	\$ 1.80 per hour

ESTIMATED COST OF PROCESSING LUMBER

	<u>Per M B. M.</u>
Log Cost	\$30.00
Milling Labor - 6 men \$106.66 - 8 M B. M./day	13.33
Planing Labor - 6 men \$106.66 - 10 M B. M./day	10.67
Fuel and Supplies	7.00
Administration and Overhead	6.00
TOTAL LUMBER COST	<u><u>\$67.00</u></u>





Eli Opekakew, Councillor of
Canoe Lake Indian Band, Beside
Truckload of Spruce and Jack
Pine Logs at Burned Area
Fifty Miles from Canoe Lake
Sawmill



Canoe Lake Sawmill at Log
Infed Deck. Key Personnel
Houses in Background



Outfeed Table and Trimmer at
Canoe Lake Planer Mill



D. Dillon Sawmill

Dillon Sawmill is located on three acres of firm, well cleared ground with a two percent grade, about three miles from the main settlement. It is a fairly good site for a portable mill. (During the inspection some mention was made of moving the mill closer to the log supply in the woods).

The sawmill consists of a gasoline driven engine directly connected to a single circular saw, hand set carriage and friction networks. There is no outfeed roll case from the headsaw. The floor at the tail sawyer's station is too high in relation to the height of the carriage bunks. The feed works lack positive control. These factors make for dangerous working conditions. It was reported that a man had been killed in a similarly equipped mill.

The log inventory consisted of high quality spruce, averaging 12 inches diameter.

The annual production was reported to be about 100 M B. M. of rough boards and dimension. Slabs are being used for firewood in settlement houses. The lumber is used for local consumption.

The total population of Dillon is reported to be 460 people. The working force is about 20 men, 12 logging and 8 in the sawmill, who are employed about two months during the year.

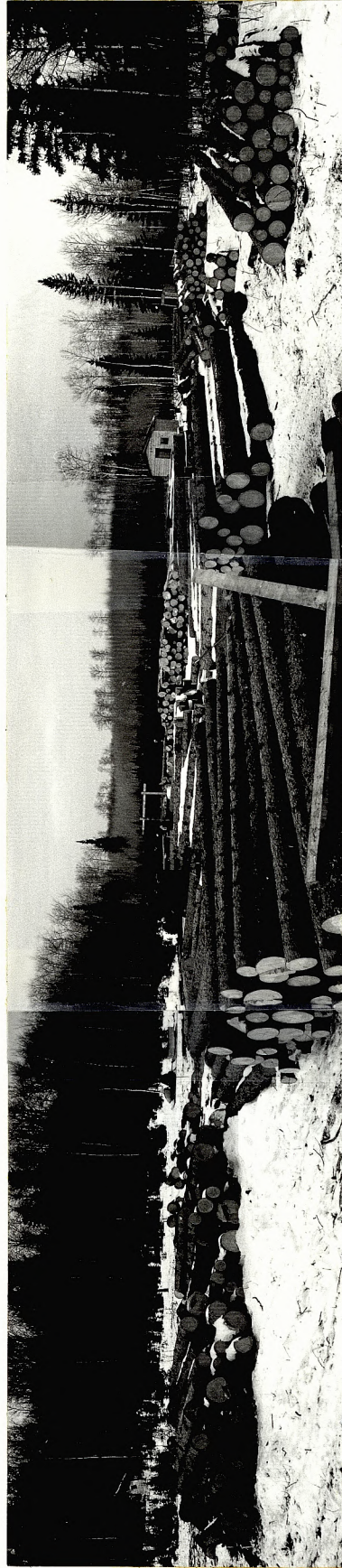
Logging is done during winter with horses and sleighs. Logs are hand loaded. Logging operations are about two miles from the mill site.

Lawrence Chanalquay, Chief of Dillon Band, reported that the men like logging and sawmill work. They would like to have better equipment and continue with the sawmill operation for longer periods.

This year, a shortage of local hay due to flood conditions has curtailed the logging program.

There is ample high quality timber available in Dillon area on the reservation.





Dillon Sawmill Set Up at Site About
Three Miles from the Village



A winter road is under construction from Meadow Lake to Dillon which should be completed in March or April, 1971.

There is a local market for fish boxes, and it has been suggested that a box factory be established at Dillon. It is considered that such an operation would not be viable; however further investigations are required before a proper assessment can be made.

V PROPOSED OPERATIONS AT DORÉ LAKE AND MEADOW LAKE

A. Athabaska Forest Industries Limited

Final arrangements between Parsons & Whittemore, Incorporated, the parent company of Athabaska Forest Industries Limited, and the Saskatchewan Government to build a 1,400-ton per day pulp mill are almost completed. It is reported that construction will start in late spring of 1971 and the mill should be completed in 1973. It will take about two years to have the mill in full operation.

It is proposed that the Canadian Pacific Railroad will build a rail line from a point near Meadow Lake extending 63 miles to the site of the pulp mill on the Beaver River near Doré Lake.

It was announced that approximately 1,200 men will be employed during the construction period. Sixteen hundred people will be employed when the mill is in operation. Possibly 15 to 20 percent of those would be of Indian ancestry.

Training programs and facilities are being planned for Meadow Lake to prepare workers who will be drawn from outlying communities such as Ile a la Crosse, Buffalo Narrows and La Loche.

Approximately 2,800 cords per day of pulpwood will be required for the proposed pulp mill.





Lawrence Chanalquay, Chief of
Dillon Indian Band, Illustrates
Fresh Cut Spruce Logs
at Millsite



Dillon Sawmill at Lumber
Outfeed End



Village at Dillon, Peter Pond
Lake in Background



B. Meadow Lake Sawmill

3
The Meadow Lake Sawmill Company Limited is constructing a sawmill on the Canadian Pacific Railway five miles east of Meadow Lake. The production of this operation is expected to be 7 million f. b. m. per year. = 70

The estimated cost of the mill is \$4.3 million. Eighty men will be employed in the sawmill and 100 men in the logging operations.

VI ANALYSIS OF BENEFITS OF EXISTING OPERATIONS

Some of the benefits which accrue from the Waterhen Lake, Canoe Lake and Dillon Sawmills are as follows:

- A. An opportunity has been provided to operate a business.
- B. The three sawmills employ over 100 people for a limited period annually and provide income.
- C. People are employed in a useful enterprise until the new generation, who are better educated, may fit into the recently announced more sophisticated industry.
- D. Use is made of a resource.
- E. Work habits and skills are being developed.
- F. The workmen enjoy the work and develop a pride of accomplishment.



VII ANALYSIS OF THE BENEFITS OF THE PROPOSED OPERATIONS

A pulp mill is proposed for Doré Lake and a new sawmill is under construction east of Meadow Lake. These two mills will provide stable employment for a work force estimated to be 300 to 400 people of Indian ancestry.

An extensive railway and highway system will be built in the Meadow Lake area. This will provide access to the area and employment during the construction period. Workers will be employed in building and service industries.

Training programs will be set up at Meadow Lake to help prepare workers for the new jobs. Higher wages will upgrade the standards of living for the Indian people.

VIII FUTURE OF EXISTING OPERATIONS

A. General

Any alternative proposals to the existing operations at Waterhen Lake, Canoe Lake and Dillon should take into consideration the following:

1. Each operation should be a viable industry.
2. The proposed sawmill operations should not conflict with the announced pulp mill complex.
3. Close utilization practices should be implemented to allow full use of available timber.
4. Where a phase-out period is indicated, the existing operation should be upgraded in production and safety features at minimum capital cost, during the interim operating period.



B. Waterhen Lake

1. This operation should be phased out in approximately three years to allow people to re-adjust to the new conditions developing from the pulp mill complex.
2. In the meantime, an edger, trimmer, and planer should be provided to allow an annual production of 500 M B. M.
3. The logging would be done on a contract basis with equipment owned by the contractors, as at present.
4. The sawmill will require a capital expenditure of about \$6,000 for additions and renovations.
5. Working capital for the season will be about \$30,000. This should be recovered from sales during the year. (See Appendix I Cash Flow Schedule.)
6. A payout of the capital cost to upgrade the sawmill is indicated in the second year.

C. Canoe Lake

Unimproved roads, an inadequate mill site, lack of financing and poor management are some of the reasons why Canoe Lake Sawmill is uneconomic. The Canoe Lake Indian Band has asked for an estimate and layout of a permanent type of sawmill. Competent management would have to be provided.

A high utilization sawmill would require a suitable site of seven acres, a circular headsaw, cant gang saw, edger, trimmer, sorting chain, waste system and burner.

The existing planing mill and resaw would be installed in a new building. Future installations would include a barker, chipper, conveying system and chip storage bin would be required for salvaging pulp chips from wood residue. These could be sold to the proposed pulp mill complex.

The permanent sawmill described would require a capital cost of \$225,000 immediately and approximately \$60,000 in addition for barking and chipping equipment.



Lack of competent management and qualified operating personnel together with the high capital cost makes it inadvisable to proceed with a permanent type sawmill.

The present mill should be phased out when the log inventory is processed. The equipment should be distributed to Dillon and Waterhen Lake for the interim upgrading program.

Workmen should be trained to find suitable employment in the pulp mill. Some additional people may be required at Waterhen Lake and Dillon sawmills.

D. Dillon

Dillon Sawmill is inefficient and outdated. This mill should be phased out when it ceases to be useful, say in three to five years. In the meantime, the carriage feed works should be replaced by a clutch type feed works and the mill should be raised to allow for 30 inches of height between the mill floor and the carriage bunks. It is dangerous to operate in its present condition.

Additions to the mill include, clutch type feed works, outfeed roll case at headsaw, edger and trim saw at an estimated cost of \$15,000. Most of this equipment can be transferred from Canoe Lake when the existing mill is replaced.

The cash flow (Appendix III) indicates a payout of the capital cost to upgrade the sawmill in approximately four years.



APPENDICES



APPENDIX I

ECONOMICS OF UPGRADING
WATERHEN MILL



APPENDIX I

ECONOMICS OF UPGRADING
WATERHEN MILL

A. CAPITAL COST

1. Logging

Use existing equipment.

2. Sawmill

Prince Albert #1 Sawmill (existing)	
Edger - 3" x 36" Complete (addition)	\$ 3,500
Trim Saw	1,000
Planer (existing Canoe Lake) - Moving Cost	1,000
Power (existing)	-
Extra Drives etc. (new)	500

TOTAL \$ 6,000

3. Working Capital Allowance \$30,000

4. Recapitulation - Capital Requirements

Logging	-
Sawmill	\$ 6,000
Working Capital 100%, annual cost	30,000

TOTAL CAPITAL REQUIREMENTS \$36,000



B. OPERATING COST

1. Logging

	<u>Per M B. M.</u>
Stumpage	\$ 6.00
Falling, Bucking and Skidding to Mill	20.00
	<hr/>
TOTAL LOGGING COST	\$26.00

2. Sawing and Planing

Milling	\$13.50
Planing	10.50
Fuel and Supplies	7.00
Administration and Overhead	6.00
	<hr/>
TOTAL SAWING AND PLANING COST	\$37.00

TOTAL COST OF LUMBER PER
M B. M. \$63.00

3. Annual Gross Profit

Sales 500 M B. M. @ \$80.00	\$40,000
Cost of Lumber for Sale - 500 M B. M. @ \$63.00	31,500
	<hr/>
TOTAL GROSS PROFIT	<u><u>\$ 8,500</u></u>



C. CASH FLOW SCHEDULE - WATERHEN LAKE

Year	1	2	3
Percent Rated Production	100	100	100
Gross Profit	\$8,500	\$8,500	\$ 8,500
Interest @ 9% on \$36,000	3,240	3,240	3,240
Profit Before Depreciation and Income Tax	5,260	5,260	5,260
Depreciation 10%	600	540	490
Operating Profit Before Income Tax	4,660	4,720	4,770
Interest on Sinking Fund 7%	-	300	620
Total Profit Before Income Tax	4,660	5,020	5,390
Income Tax	980	1,060	1,130
Net Profit	3,680	3,960	4,260
Cash Flow	4,280	4,500	4,750
Cumulative Funds Available for Payout	4,280	8,780	13,530



APPENDIX II

ECONOMICS OF NEW SAWMILL
AT CANOE LAKE



APPENDIX II

ECONOMICS OF NEW SAWMILL
AT CANOE LAKE

A. CAPITAL COST

1. Logging

Existing contracts.

2. Sawmill and Planer

Power	\$ 15,000
Sawing Equipment	106,000
Planer Mill (existing)	-
Mobile Equipment	20,000

TOTAL \$141,000

3. Working Capital Allowance - 30 percent \$ 84,000

4. Recapitulation - Capital Requirements

Logging (existing)	\$ -
Sawmill and Planer	141,000
Working Capital - 30 Percent	84,000

TOTAL CAPITAL REQUIREMENTS \$225,000



B. OPERATING COST

1. Logging

	<u>Per M B. M.</u>	
Stumpage	\$ 6.00	
Logging (piece work)	28.00	
	<hr/>	
	\$34.00	
Less 20 Percent Overrun	6.80	
	<hr/>	
TOTAL LOGGING COST		\$27.20

2. Sawing and Planing

Milling	\$10.00	
Planing	8.00	
Fuel and Supplies	5.00	
Administration and Overhead	6.00	
	<hr/>	
TOTAL SAWING AND PLANING COST		\$29.00

TOTAL COST OF LUMBER PER
M B. M. \$56.20

3. Annual Gross Profit

Sales 5,000 M B. M. @ \$80.00	\$400,000
Cost of Lumber for Sale - 5,000 M B. M. @ \$56.20	281,000
	<hr/>
TOTAL GROSS PROFIT	<u><u>\$119,000</u></u>



C. CASH FLOW SCHEDULE - CANOE LAKE

Year	1	2	3
Percent Rated Production	100	100	100
Gross Profit	\$119,000	\$119,000	\$119,000
Interest @ 9% on \$225,000	20,250	20,250	20,250
Profit Before Depreciation and Income Tax	98,750	98,750	98,750
Depreciation 10%	14,100	12,690	11,420
Operating Profit Before Income Tax	84,650	86,060	87,330
Interest on Sinking Fund 7%	-	4,660	14,210
Total Profit Before Income Tax	84,650	90,720	101,540
Income Tax	32,170	35,210	40,620
Net Profit	52,480	55,510	60,920
Cash Flow	66,580	72,860	86,550
Cumulative Funds Available for Payout	66,580	139,440	225,990



APPENDIX III

ECONOMICS OF DILLON SAWMILL



APPENDIX III

ECONOMICS OF DILLON SAWMILL

A. CAPITAL COST

1. Logging

Existing contracts.

2. Sawmill and Planer

Power (secondhand unit)	\$ 5,000
Sawing Equipment (secondhand unit)	10,000
Planer Mill (existing)	-
Mobile Equipment (existing)	-

TOTAL	\$15,000
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3. <u>Working Capital Allowance</u>	\$30,000
-------------------------------------	----------

4. Recapitulation - Capital Requirements

Logging (existing)	\$ -
Sawmill	15,000
Working Capital	30,000

TOTAL CAPITAL REQUIREMENTS	\$45,000
----------------------------	----------



B. OPERATING COST

1. Logging

	<u>Per M B. M.</u>	
Stumpage	\$ 6.00	
Logging (piece work)	20.00	
	<hr/>	
TOTAL LOGGING COST		\$26.00

2. Sawing and Planing

Milling	\$15.00	
Planing	10.00	
Fuel and Supplies	7.00	
Administration and Overhead	6.00	
	<hr/>	
TOTAL SAWING AND PLANING COST		\$38.00

TOTAL COST OF LUMBER PER
M B. M. \$64.00

3. Annual Gross Profit

Sales 500 M B. M. @ \$80.00	\$40,000
Cost of Lumber for Sale - 500 M B. M. @ \$64.00	32,000
	<hr/>
TOTAL GROSS PROFIT	<u><u>\$ 8,000</u></u>



C. CASH FLOW SCHEDULE - DILLON

Year	1	2	3
Percent Rated Production	100	100	100
Gross Profit	\$8,000	\$8,000	\$ 8,000
Interest @ 9% on \$45,000	4,050	4,050	4,050
Profit Before Depreciation and Income Tax	3,950	3,950	3,950
Depreciation 10%	1,500	1,350	1,210
Operating Profit Before Income Tax	2,450	2,600	2,740
Interest on Sinking Fund 7%	-	240	490
Total Profit Before Income Tax	2,450	2,840	3,230
Income Tax	510	600	700
Net Profit	1,940	2,240	2,530
Cash Flow	3,440	3,590	3,740
Cumulative Funds Available for Payout	3,440	7,030	10,770



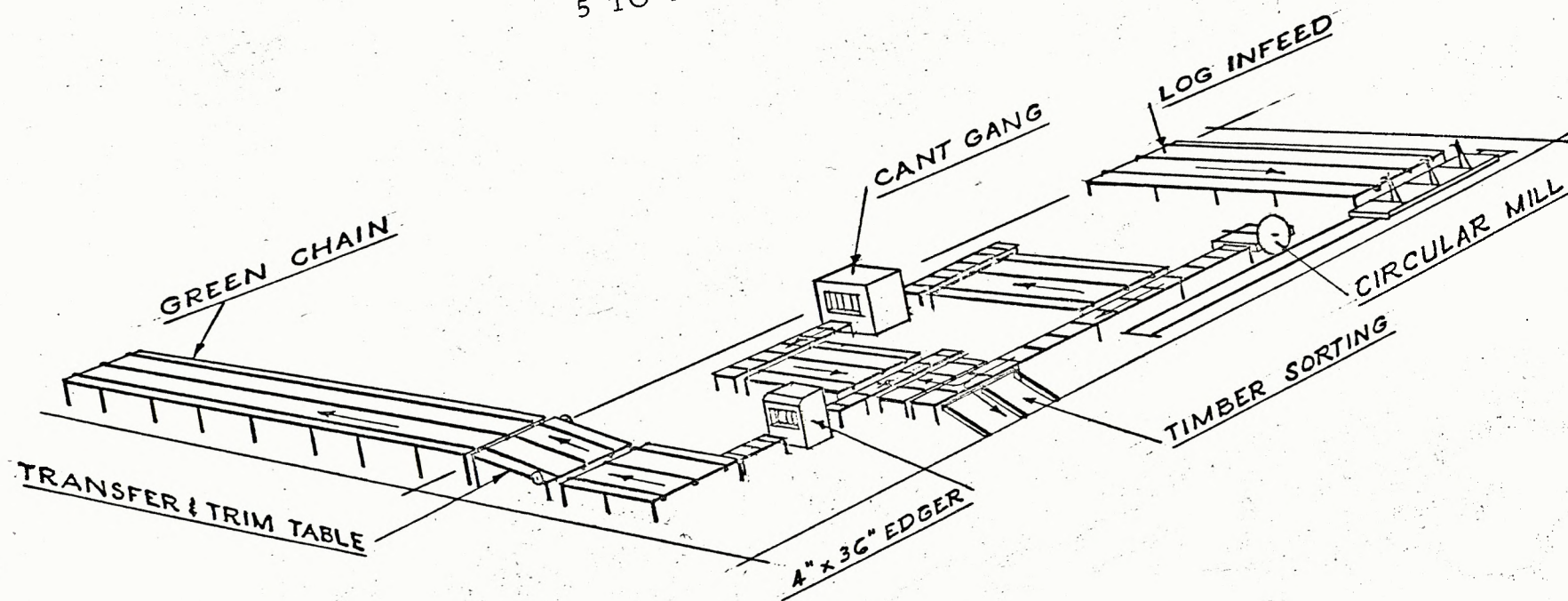
APPENDIX IV

LAYOUT OF PERMANENT TYPE SAWMILL



APPENDIX IV

LAYOUT OF PERMANENT TYPE SAWMILL
5 TO 10 MM B.M. PER ANNUM



NOTE:

A layout of permanent type sawmill as requested by
Canoe Lake Indian Band - see text Page 18.