Book A Lake

6. That the said United States also claims the right to keep in repair and to enlarge said means of water appropriation at any time.

CLAIMING THE SAME ALL AND SINGULAR, under any and all laws National and State, and in accordance with the rulings and decisions thereunder, in the matter of water rights.

TOGETHER WITH ALL AND SINGULAR, the hereditaments and appurtenances thereunto belonging and appertaining, or to accrue to the same.

The United States of America,

By A. R. Hodges,
Its officer and Agent in that behalf and thereunto duly authorized.

State of Montana)
) ss
County of Missoula)

A. R. Hodges, having first been duly sworn deposes and says: That he is of lawful age and an officer and agent of the United States of America, the appropriator and claimant of the water and the water right mentioned in the foregoing notice of appropriation and claim, and that affiant makes the said appropriation of said water and claims the said water right for and on behalf of the said United States, as its agent thereunto duly authorized; that affiant is the person whose name is subscribed thereunto as officer and agent of the appropriator and claimant, the said United States; that he knows the contents of said foregoing notice and that the matters and things therein stated are true.

A. R. Hodges,

Subscribed and sworn to before me, this 11th day of March A. D. 1910.

(SEAL)

F. W. Kuphal,
Clerk and recorder in and for Missoula County,
State of Montana.

I certify that I received and filed this Instrument for record on the 11th day of March, 1910 at 10:30 o'clock A. M.

F. W. Kuphal,
County Recorder.

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Transcribed from Missoula County Records, Book "D" Water Rights, Page 564.
Compared.

Compared

13096.

NOTICE OF APPROPRIATION

The United States of America,

State of Montana)
) ss
County of Missoula)

TO ALL WHOMS THESE PRESENTS MAY CONCERN:

BE IT KNOWN, That the United States of America under and by virtue of an Act of the Legislative Assembly of the State of Montana, entitle "An act authorising the Government of the United States to appropriate the water of the streams in the State of Montana, subject to certain restrictions", approved February 27, 1906, and acting by and through H. N. Savage, Supervising Engineer, thereunto duly authorized by the Secretary of the Interior of the said United States in that behalf, does hereby publish and declare, as a legal notice to all the world, as follows, to-wit:

I. That the said United States has a legal right to the use, possession and control of and claim one hundred thousand cubic feet per second of the water of Flathead River in said County and State, for irrigating and other purposes.

WATER POLICY INTERIM COMMITTEE. 2013-14

March 18, 2014 Exhibit No. 13

D-1061—Bennette-Stark Co. Butte

II. That the purpose for which said water is claimed, and the place of intended use is for the purpose of irrigating 50,000 acres of land on the Flathead Indian Reservation, for domestic uses, and for developing power for pumping and other purposes.

III. That the means of diversion, with size of flume, ditch, pipe or acquedact, by which it is intended to divert the said water is as follows: A dam across the river near this notice and canals and tunnels leading therefrom to a power house below dam, said conduits to have a capacity of ten thousand second feet also suitable hydraulic and electric machinery to develop power and pump water at this point and by electric transmission line, at other points together with pumps, pipes, flumes, reservoirs and canals, to raise, convey and distribute water over the lands described, also suitable works as above located at other points on this stream within the Flathead Indian Reservation for the purposes of irrigation and development of power for other purposes the lands to be irrigated lie in Tps. 18 & 19, N., Rg. 19 to 24 W. M. P. M. the development of power is contemplated by turbines placed as above described and at other suitable points within the reservation.

IV. That the said United States of America is the appropriator of said water, and said appropriation was made on the 29" day of March A. D. 1910, and said appropriation and the diversion of said waters is to be effected and consummated by means of said dams, canals, tunnels, pumps, pipes, flumes, reservoirs and other hydraulic and other electric machinery.

V. That the said United States also hereby claims said ditch and the right of way therefor and for said water by it conveyed, or to be conveyed, from said point of appropriation to said land or point of final discharge, also the right of location upon any lands of any dams, flumes, reservoirs, constructed or to be constructed by the United States in appropriating, and in using said water.

VI. That the said United States also claims the right to keep in repair and to enlarge said means of water appropriation at any time, and the right to dispose of said right, water, ditch or said appurtenances in part or whole, at any time.

Claiming the same, all and singular, under any and all laws, National and State, and in accordance with the rulings and decisions thereunder, in the matter of water right.

Together with all and singular, the hereditaments and appurtenances thereunto belonging and appertaining or to accrue to the same.

The United States of America,

By H. N. Savage,
Its officer and agent in that behalf and thereunto duly authorized by the Secretary of the Interior.

State of Montana }
} ss
County of Lewis & Clark }

H. N. Savage, having first been duly sworn, deposes and says, that he is of lawfull age, and an officer and agent of the United States of America, the appropriator and claimant of the water and the water right mentioned in the foregoing notice of appropriation and claim, and that affiant makes the said appropriation of said water and claims the said water right for and on behalf of the said United States as its agent thereunto duly authorized that affiant is the person whose name is subscribed thereto as officer and agent of the appropriator and claimant, the said United States: that he knows the contents of the said foregoing notice and that the matters and things therein stated are true.

H. N. Savage,

Subscribed and sworn to before me, this 29" day of March A. D. 1910.

(SEAL) Julius Barney,

Book A Lake

Notary Public in and for the State of Montana,
Residing at Helena, Mont.,
My commission expires June 19th, 1910.

I certify that I received and filed this Instrument for record on the 11th day of April, 1910, at 1:36 o'clock P. M.

F. W. Kuphal,
County Recorder.

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Transcribed from Missoula County Records, Book "D" Water Rights, Page 556. Compared.

12097. 93.

NOTICE OF APPROPRIATION

The United States of America }
State of Montana } SS
County of Missoula }

TO ALL WHOM THESE PRESENTS MAY CONCERN:

Be it Known, that the United States of American under and by virtue of an Act of the Legislative Assembly of the State of Montana, entitled "An Act authorizing the Government of the United States to appropriate the water of the streams in the State of Montana, subject to certain restrictions", approved February 27, 1905, and acting by and through H. N. Savage, Supervising Engineer thereunto duly authorized by the Secretary of the Interior, of the said United States in that behalf does hereby publish and declare, as a legal notice to all the world, as follows, to-wit:

I. That the said United States has a legal right to the use, possession and control and claims 100 cubic feet per second of the waters of Agency Creek in said county and State for irrigating and other purposes.

II. That the purpose for which said water is claimed and the place of intended use is for the purpose of irrigating 2000 acres of land on the Flathead Indian Reservation, for domestic uses, and for developing power for pumping and other purposes.

III. That the means of diversion, with size of flume, ditch, pipe or acqueduct, by which it is intended to divert the said water is as follows: A diverting dam, canal 6 by 3 feet and laterals leading to the land described. The lands to be irrigated lie in T. 16 N., Rs. 19 & 20 W., M. P. M. the development of power is contemplated by turbines at and above this notice on the stream and at drops in the canal line below.

IV. That the said United States of America is the appropriator of said water, and said appropriation was made on the 2nd day of April A. D. 1910, and said appropriation and the diversion of said waters is to be effected and consummated by means of said diverting dam, canal and laterals.

V. That the said United States also hereby claims said ditch and the right of way therefor, and for said water by it conveyed, or to be conveyed, from said point of appropriation to said land or point of final discharge, and also the right of location upon any lands of any dams, flumes, reservoirs, constructed or to be constructed by the United States in appropriating and in using said water.

VI. That the said United States also claims the right to keep in repair and to enlarge said means of water appropriation at any time and the right to dispose of said right water, ditch or said appurtenances in part or whole, at any time, claiming the same, all and singular under and and all laws, National and State, and in accordance with the rulings and decisions thereunder, in the matter of water rights.

D-1661-Rosette Stock Co. Butte

Together with all and singular the hereditaments and appurtenances thereunto belonging and appertaining, or to accrue to the same.

The United States of America.

By H. N. Savage,
Its officer and agent in that behalf and thereunto duly authorized by the Secretary of the Interior.

State of Montana }
} ss
County of Missoula }

H. N. Savage having first been duly sworn, deposes and says, that he is of lawful age and an officer and agent of the United States of America, the appropriator and claimant of the water and the water right mentioned in the foregoing notice of appropriation and claim, and that affiant makes the said appropriation of said water and claims the said water right for and on behalf of the said United States, as its agent thereunto duly authorized, that affiant is the person whose name is subscribed thereto as officer and agent of the appropriator and claimant, the said United States; that he knows the contents of the said foregoing notice and that the matters and things therein stated are true.

H. N. Savage,

Subscribed and sworn to before me this 2nd day of April A. D. 1910.

(SEAL) George H. Beckwith,
Notary Public in and for the State of Montana,
Residing at St. Ignatius, Montana,
My commission expires Sept. 9th, 1911.

I certify that I received and filed this instrument for record on the 11th day of April, 1910, at 1:37 o'clock P. M.

F. W. Kuphal,
County Recorder,

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Transcribed from Missoula County Records, Book "D" Water Rights, Page 557. Compared. Compared

13098.

NOTICE OF APPROPRIATION

The United States of America,

State of Montana }
} ss
County of Missoula }

TO ALL TO WHOM THESE PRESENTS MAY CONCERN:

BE IT KNOWN, That the United States of America, under and by virtue of an act of the Legislative Assembly of the State of Montana, entitled "An Act authorizing the Government of the United States to appropriate the water of the Streams in the State of Montana, subject to certain restrictions", approved February 27, 1905, and acting by and through H. N. Savage, Supervising Engineer, thereunto duly authorized by the Secretary of the Interior of the said United States in that behalf, does hereby publish and declare as a legal notice to all the world, as follows, to-wit:

I. That the said United States has a legal right to the use, possession and control of and claims 100,000 cubic feet per second of the waters of the Flathead River in said County and State for irrigating and other purposes.

II. That the purpose for which said water is claimed and the place of intended use is for the purpose of irrigating 60,000 acres of land on the Flathead Indian Reservation for domestic uses, and for developing power for pumping and other purposes.

III. That the means of diversion, with size of flume, ditch, pipe or aqueduct, by which it is intended to divert the said waters is as follows: A dam across the river

New Rights

Appendix A2: Minimum Reservoir Pool Elevations *pg A-10*

Appendix A3: River Diversion Allowances *pg A-11*

Jocko Area *pg A-11*

1. Tabor Feeder Canal Administrative Area
2. Upper Jocko River Administrative Area
3. Agency / Finley Creek Administrative Area
4. Lower Jocko River Administrative Area
5. Revais Creek Administrative Area

Mission Area *pg A-12*

1. Pablo Feeder Canal Administrative Area
2. Upper Mission Creek Administrative Area
3. Lower Mission Creek Administrative Area
4. Upper Crow Creek Administrative Area
5. Lower Crow Creek Administrative Area
6. Hellroaring / Centipede / Bisson Creeks Administrative Area
7. Flathead River Pumping Plant

Little Bitterroot Area *pg A-14*

1. Little Bitterroot River Administrative Area

Off-Reservation Areas *pg A-15*

1. Placid Canal Diversion
2. McGinnis Diversion
3. Alder Diversion

Appendix A4: Farm Turnout Allowances for the Jocko, Mission and Little Bitterroot Areas *pg A-16*

Appendix A5: Irrigation Return Flow Sites *pg A-17*

Mission Area *pg A-20*

1. Coleman Coulee near mouth
2. Dublin Gulch near mouth
3. Waichuck Coulee near mouth
4. West Miller Coulee near mouth
5. Hopkins Draw near mouth
6. Westphal Coulee near mouth

Little Bitterroot Area *pg A-20*

1. Camas C wasteway near mouth
2. Garden Creek near mouth
3. Dry Fork Creek near mouth

STATE OF MONTANA
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

1424 9TH AVENUE P.O.BOX 201601 HELENA, MONTANA 59620-1601

GENERAL ABSTRACT

****** THIS IS AN INTERBASIN TRANSFER ******

THIS APPROPRIATION OF WATER TAKES WATER FROM THE FLATHEAD RIVER, BELOW FLATHEAD LAKE (BASIN 76L) AND TRIBUTARIES TO THE CLARK FORK RIVER BELOW THE FLATHEAD RIVER (BASIN 76N), AND USED THE WATER IN THE FLATHEAD RIVER DRAINAGE, BELOW FLATHEAD LAKE (BASIN 76L).

Water Right Number: 76L 30052927 COMPACT
Version: 1 – ORIGINAL RIGHT
Version Status:

Owners: USA (DEPT OF INTERIOR BUREAU OF INDIAN AFF)
IN TRUST FOR CONFEDERATED SALISH & KOOTENAI TRIBES
OF THE FLATHEAD INDIAN RESERVATION, MONTANA
911 NE 11TH AVENUE
PORTLAND, OR 97232-4169

ALL COMMUNICATION SHALL BE COPIED TO THE CS&KT TRIBAL CHAIRMAN AS THE BENEFICIAL OWNER AT PO BOX 278, PABLO, MT 59855-0278.

Priority Date: JULY 16, 1855 at 12:00 A.M.

Enforceable Priority Date: JULY 16, 1855 at 12:00 A.M.

Purpose (use): FISH AND WILDLIFE

Maximum Flow Rate:

THE MAXIMUM FLOW RATE IS SUBJECT TO APPENDIX A OF THE FIIP WATER USE AGREEMENT.

Maximum Volume: 1,296.00 AC-FT

Source Name: ALDER CREEK
Source Type: SURFACE WATER

Source Name: DRY FORK CREEK
Source Type: SURFACE WATER

Source Name: LITTLE BITTERROOT RIVER
Source Type: SURFACE WATER

Source Name: MILL CREEK
Source Type: SURFACE WATER

Source Name: MILL POCKET CREEK
Source Type: SURFACE WATER

Source Name: UNNAMED TRIBUTARY OF ALDER CREEK
Source Type: SURFACE WATER

MILL CREEK IS A TRIBUTARY OF LITTLE BITTERROOT RIVER.

Point of Diversion and Means of Diversion:

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1	4		3	22N	24W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 55.00 CFS
Source Name: DRY FORK CREEK
Diversion Means: DAM
Diversion Type: PRIMARY

2		SESW	16	23N	24W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: DRY FORK CREEK
Diversion Means: DAM
Diversion Type: PRIMARY
Ditch Name: DRY FORK FEEDER CANAL

3		NWSW	15	23N	25W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 25.00 CFS
Source Name: UNNAMED TRIBUTARY OF ALDER CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: ALDER DITCH

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
4		NWSW	15	23N	25W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 25.00 CFS
Source Name: UNNAMED TRIBUTARY OF ALDER CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: ALDER DITCH

5		NESW	16	23N	25W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 25.00 CFS
Source Name: ALDER CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: ALDER DITCH

6		NWSE	16	24N	24W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 89.00 CFS
Source Name: LITTLE BITTERROOT RIVER
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: CAMAS A CANAL

7		NENW	21	24N	24W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 89.00 CFS
Source Name: MILL CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: CAMAS A CANAL

8		NWNW	34	24N	24W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 89.00 CFS
Source Name: MILL POCKET CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: CAMAS A CANAL

WATER DIVERTED AT #6 (LITTLE BITTERROOT RIVER), 7 (MILL CR), AND 8 (MILL POCKET CR) IS CONVEYED THROUGH CAMAS A CANAL TO DRY FORK CREEK WHICH IS USED AS A NATURAL CARRIER TO THE PLACE OF USE AT DIVERSION #1 (LOWER DRY FORK RESERVOIR). WATER DIVERTED AT #5 (ALDER CR), 4 (ALDER CR TRIB), & 3 (ALDER CR TRIB) IS CONVEYED THROUGH ALDER DITCH TO DRY FORK CREEK WHICH IS USED AS A NATURAL CARRIER TO THE PLACE OF USE AT DIVERSIONS #2 (UPPER DRY FORK RESERVOIR) AND 1 (LOWER DRY FORK RESERVOIR). WATER IN DRY FORK CREEK IS IMPOUNDED IN THE PLACE OF USE AT DIVERSIONS #2 (UPPER DRY FORK RESERVOIR) AND 1 (LOWER DRY FORK RESERVOIR).

LOWER DRY FORK IS ALSO SUPPLIED BY DIVERSION(S) #3 (ALDER CR TRIB), 4 (ALDER CR TRIB), 5 (ALDER CR), 6 (CAMAS A AT LTL BITTERROOT R), 7 (CAMAS A AT MILL CR), AND 8 (CAMAS A AT MILL POCKET CR).

UPPER DRY FORK RESERVOIR IS ALSO SUPPLIED BY DIVERSION(S) #3 (ALDER CR TRIB), 4 (ALDER CR TRIB), AND 5 (ALDER CR).

Reservoir: ON STREAM **Reservoir Name** LOWER DRY FORK RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
4		3	22N	24W	SANDERS

Diversion to Reservoir: DIVERSION # 1
Dam Height: 29.50 FEET
Surface Area: 370.00 ACRES
Current Capacity: 3,860.00 ACRE-FEET

Reservoir: ON STREAM **Reservoir Name** UPPER DRY FORK RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
	SESW	16	23N	24W	SANDERS

Diversion to Reservoir: DIVERSION # 2
Dam Height: 40.00 FEET
Surface Area: 320.00 ACRES
Current Capacity: 2,800.00 ACRE-FEET
SEE THE ATTACHED RESERVOIR DIAGRAMS.

Period of Use: JANUARY 1 to DECEMBER 31

Place of Use:

ID	Acres	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1				3	22N	24W	SANDERS
2				4	22N	24W	SANDERS
3				16	23N	24W	SANDERS
4				17	23N	24W	SANDERS
5				33	23N	24W	SANDERS
6				34	23N	24W	SANDERS

Remarks:

THE WATER RIGHTS FOLLOWING THIS STATEMENT ARE ASSOCIATED WHICH MEANS THE RIGHTS SHARE THE SAME POINT OF DIVERSION AND RESERVOIR.

30052927 30052930

THIS WATER RIGHT SHALL BE ADMINISTERED IN ACCORDANCE WITH THE CONDITIONS OF THE FIIP WATER USE AGREEMENT AMONG THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE FLATHEAD JOINT BOARD OF CONTROL, AND THE UNITED STATES OF AMERICA, WHICH IS ATTACHED AS APPENDIX 3 TO THE WATER RIGHTS COMPACT AMONG THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE STATE OF MONTANA, AND THE UNITED STATES OF AMERICA.

THE MAP DATA SOURCE FOR PLACE OF USE AND POINT OF DIVERSION FOR THIS WATER RIGHT ARE CONTAINED IN A GIS DATABASE FILE ENTITLED "CSKT-MT WATER RIGHTS COMPACT 2013." THIS FILE MAY BE DOWNLOADED FROM THE MONTANA STATE LIBRARY (NRIS.MT.GOV) OR OBTAINED IN HARDCOPY FORM FROM THE OFFICE OF THE ENGINEER OF THE FLATHEAD RESERVATION WATER MANAGEMENT BOARD.

SEE 30052927 MAP EXHIBIT(S) 1 THROUGH 5.

THE MAXIMUM ANNUAL VOLUME DIVERTED SHALL BE LIMITED TO A MAXIMUM ANNUAL DEPLETION OF 247 ACRE-FEET, BASED ON THE NET EVAPORATION FROM THE TOTAL RESERVOIR SURFACE AREAS AT THE SPECIFIED MINIMUM POOL ELEVATIONS.

THE EXERCISE OF THIS WATER RIGHT IS SUBJECT TO THE TERMS AND CONDITIONS OF THE WATER RIGHTS COMPACT ENTERED INTO BY THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE STATE OF MONTANA, AND THE UNITED STATES OF AMERICA.

THE FOLLOWING ADMINISTRATIVE AREAS IN THE FIIP WATER USE AGREEMENT ARE PERTINENT TO THIS WATER RIGHT: LITTLE BITTERROOT RIVER, ALDER DIVERSION.

THE MINIMUM POOL LEVEL FOR UPPER DRY FORK RESERVOIR SHALL BE MAINTAINED AT 2,915 FEET MEAN SEA LEVEL, EQUALING 413 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR LOWER DRY FORK RESERVOIR SHALL BE MAINTAINED AT 2,842 FEET MEAN SEA LEVEL, EQUALING 636 ACRE-FEET OF STORAGE.

THIS WATER RIGHT IS LOCATED IN WHOLE OR IN PART WITHIN THE EXTERIOR BOUNDARY OF THE FLATHEAD INDIAN RESERVATION.

STATE OF MONTANA
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

1424 9TH AVENUE P.O.BOX 201601 HELENA, MONTANA 59620-1601

GENERAL ABSTRACT

****** THIS IS AN INTERBASIN TRANSFER ******

THIS APPROPRIATION OF WATER TAKES WATER FROM THE FLATHEAD RIVER, BELOW AND INCLUDING FLATHEAD LAKE (BASINS 76L AND 76LJ) AND FROM TRIBUTARIES TO THE BLACKFOOT RIVER (BASIN 76F) AND USES THE WATER IN THE FLATHEAD RIVER, BELOW AND INCLUDING FLATHEAD LAKE (BASINS 76L AND 76LJ).

Water Right Number: 76L 30052929 COMPACT
Version: 1 – ORIGINAL RIGHT
Version Status:

Owners: USA (DEPT OF INTERIOR BUREAU OF INDIAN AFF)
IN TRUST FOR CONFEDERATED SALISH & KOOTENAI TRIBES
OF THE FLATHEAD INDIAN RESERVATION, MONTANA
911 NE 11TH AVENUE
PORTLAND, OR 97232-4169

ALL COMMUNICATION SHALL BE COPIED TO THE CS&KT TRIBAL CHAIRMAN AS THE BENEFICIAL OWNER AT PO BOX 278, PABLO, MT 59855-0278.

Priority Date: JULY 16, 1855 at 12:00 A.M.

Enforceable Priority Date: JULY 16, 1855 at 12:00 A.M.

Purpose (use): FISH AND WILDLIFE

Maximum Flow Rate:

THE MAXIMUM FLOW RATE IS SUBJECT TO APPENDIX A OF THE FIIP WATER USE AGREEMENT.

Maximum Volume: 28,248.00 AC-FT

Source Name: ASHLEY CREEK
Source Type: SURFACE WATER

Source Name: BISSON CREEK
Source Type: SURFACE WATER

Source Name: CENTIPEDE CREEK
Source Type: SURFACE WATER

Source Name: COURVILLE CREEK
Source Type: SURFACE WATER

Source Name: CROW CREEK
Source Type: SURFACE WATER

Source Name: DRY CREEK
Source Type: SURFACE WATER

Source Name: EAGLE PASS CREEK
Source Type: SURFACE WATER

Source Name: FALLS CREEK
Source Type: SURFACE WATER

Source Name: FLATHEAD RIVER
Source Type: SURFACE WATER

Source Name: FLATHEAD RIVER (IMPOUNDMENTS BEHIND KERR DAM)
Source Type: SURFACE WATER

Source Name: GRIZZLY CREEK
Source Type: SURFACE WATER

Source Name: HELLROARING CREEK
Source Type: SURFACE WATER

Source Name: JOCKO RIVER, MIDDLE FORK
Source Type: SURFACE WATER

Source Name: JOCKO RIVER, NORTH FORK
Source Type: SURFACE WATER

Source Name: LOST CREEK
Source Type: SURFACE WATER

Source Name: MARSH CREEK
Source Type: SURFACE WATER

Source Name: MIDDLE CROW CREEK
Source Type: SURFACE WATER

Source Name: MIKES CREEK
Source Type: SURFACE WATER

Source Name: MISSION CREEK
Source Type: SURFACE WATER

Source Name: MOLLMAN CREEK
Source Type: SURFACE WATER

Source Name: MUD CREEK
Source Type: SURFACE WATER

Source Name: NORTH CROW CREEK
Source Type: SURFACE WATER

Source Name: PLACID CREEK, NORTH FORK
Source Type: SURFACE WATER

Source Name: POIRIER CREEK
Source Type: SURFACE WATER

Source Name: POISON OAK CREEK
Source Type: SURFACE WATER

Source Name: POST CREEK
Source Type: SURFACE WATER

Source Name: ROCK CREEK
Source Type: SURFACE WATER

Source Name: S-14 CREEK
Source Type: SURFACE WATER

Source Name: SOUTH CROW CREEK
Source Type: SURFACE WATER

Source Name: VALENTINE CREEK
Source Type: SURFACE WATER

DRY CREEK IS A TRIBUTARY OF MISSION CREEK.

DRY CREEK, A TRIBUTARY OF ASHLEY CREEK, IS ALSO KNOWN AS NORTH DRY CREEK.

ASHLEY CREEK IS A TRIBUTARY OF POST CREEK

ASHLEY CREEK, A TRIBUTARY OF MUD CREEK, IS ALSO KNOWN AS NORTH ASHLEY CREEK.

WATER IMPOUNDED BY KERR DAM MAY BE DIVERTED PER ARTICLES 41 THROUGH 43 OF THE FERC LICENSE IN ORDER TO MEET THE MINIMUM POOL REQUIREMENTS OF PABLO RESERVOIR.

Point of Diversion and Means of Diversion:

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1		NWSE	29	17N	16W	MISSOULA

Period of Diversion: APRIL 15 TO SEPTEMBER 15 **Flow Rate:** 120.00 CFS
Source Name: PLACID CREEK, NORTH FORK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: PLACID CANAL

2		SWSW	20	17N	17W	MISSOULA

Period of Diversion: MARCH 1 TO OCTOBER 15 **Flow Rate:** 150.00 CFS
Source Name: JOCKO RIVER, MIDDLE FORK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: TABOR FEEDER CANAL

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
3	2		6	17N	18W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: DRY CREEK
Diversion Means: DAM
Diversion Type: PRIMARY
Ditch Name: DRY CREEK LINING

4		SESE	15	17N	18W	LAKE

Period of Diversion: MARCH 1 TO OCTOBER 15 **Flow Rate:** 450.00 CFS
Source Name: FALLS CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: TABOR FEEDER CANAL

5		SWSW	15	17N	18W	LAKE

Period of Diversion: MARCH 1 TO OCTOBER 15 **Flow Rate:** 450.00 CFS
Source Name: S-14 CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: TABOR FEEDER CANAL

6		NWNW	16	17N	18W	LAKE

Period of Diversion: MARCH 1 TO OCTOBER 15 **Flow Rate:** 450.00 CFS
Source Name: GRIZZLY CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: TABOR FEEDER CANAL

7		NWNE	24	17N	18W	LAKE

Period of Diversion: MARCH 1 TO OCTOBER 15 **Flow Rate:** 420.00 CFS
Source Name: JOCKO RIVER, NORTH FORK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: TABOR FEEDER CANAL

8	2		4	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 300.00 CFS
Source Name: ASHLEY CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

9		NWNW	10	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 300.00 CFS
Source Name: DRY CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

10	4		16	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: MISSION CREEK
Diversion Means: DAM
Diversion Type: PRIMARY

11	4		16	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 300.00 CFS
Source Name: MISSION CREEK
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
12		SWSE	21	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 255.00 CFS
Source Name: MIKES CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

13		SWSW	28	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 255.00 CFS
Source Name: DRY CREEK
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

14		SENE	4	19N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 220.00 CFS
Source Name: POST CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

15		SWNE	5	19N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 250.00 CFS
Source Name: POST CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: KICKING HORSE FEEDER CANAL

16	1		10	19N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: POST CREEK
Diversion Means: DAM
Diversion Type: PRIMARY

17		NWSE	16	19N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 300.00 CFS
Source Name: VALENTINE CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

18		SWNE	21	19N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 300.00 CFS
Source Name: POISON OAK CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

19		NWSW	4	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 270.00 CFS
Source Name: LOST CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

20		NESW	16	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 270.00 CFS
Source Name: SOUTH CROW CREEK
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
21		NENE	19	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 275.00 CFS
Source Name: SOUTH CROW CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: SOUTH CROW FEEDER CANAL

22		NWNE	28	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 220.00 CFS
Source Name: MOLLMAN CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

23		SWSE	28	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 220.00 CFS
Source Name: MARSH CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

24		NWSE	31	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 250.00 CFS
Source Name: MARSH CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: KICKING HORSE FEEDER CANAL

25		SESE	33	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 220.00 CFS
Source Name: EAGLE PASS CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

26		NESE	16	20N	20W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 22.00 CFS
Source Name: CROW CREEK
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: CROW PUMP CANAL

27		NWNW	34	20N	20W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name:
Diversion Means: DAM
Diversion Type: SECONDARY

28			36	20N	20W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name:
Diversion Means: DAM
Diversion Type: SECONDARY
Ditch Name: NINEPIPE FEEDER CANAL

29			11	20N	21W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: CROW CREEK
Diversion Means: DAM
Diversion Type: PRIMARY

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
30		NESE	20	21N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 470.00 CFS
Source Name: ROCK CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

31		NWNW	28	21N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 470.00 CFS
Source Name: NORTH CROW CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

32		NENW	33	21N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 270.00 CFS
Source Name: MIDDLE CROW CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

33	4		4	22N	19W	LAKE

Period of Diversion: APRIL 15 TO SEPTEMBER 15 **Flow Rate:** 15.00 CFS
Source Name: HELLROARING CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: TWIN FEEDER CANAL

34		NWNW	9	22N	19W	LAKE

Period of Diversion: APRIL 15 TO SEPTEMBER 15 **Flow Rate:** 15.00 CFS
Source Name: CENTIPEDE CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: TWIN FEEDER CANAL

35		NENW	16	22N	19W	LAKE

Period of Diversion: APRIL 15 TO SEPTEMBER 15 **Flow Rate:** 8.00 CFS
Source Name: BISSON CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: LOWER TWIN FEEDER CANAL

36			18	22N	19W	LAKE

Period of Diversion: APRIL 15 TO SEPTEMBER 15 **Flow Rate:** 15.00 CFS
Source Name:
Diversion Means: DAM
Diversion Type: SECONDARY

37		SENW	28	22N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 400.00 CFS
Source Name: POIRIER CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

38		NWSW	28	22N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 400.00 CFS
Source Name: ASHLEY CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
39		SESE	32	22N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 470.00 CFS
Source Name: COURVILLE CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

40		NWNW	33	22N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 400.00 CFS
Source Name: MUD CREEK
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

41	3		17	22N	20W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 210.00 CFS
Source Name: FLATHEAD RIVER
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: FLATHEAD PUMP CANAL

42		SWNE	27	22N	20W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 340.00 CFS
Source Name:
Diversion Means: DAM
Diversion Type: SECONDARY

43			12	22N	21W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: FLATHEAD RIVER (IMPOUNDMENTS BEHIND KERR DAM)
Diversion Means: DAM
Diversion Type: PRIMARY

WATER DIVERTED AT #1 (NORTH FORK PLACID) IS CONVEYED THROUGH PLACID CANAL TO JOCKO RIVER, MIDDLE FORK WHICH IS USED AS A NATURAL CARRIER TO DIVERSION #2 (TABOR FEEDER). WATER DIVERTED AT #2 (MIDDLE FORK JOCKO), 7 (N FORK JOCKO), 4 (FALLS CR), 5 (S-14 CR), AND 6 (GRIZZLY CR) IS CONVEYED THROUGH TABOR FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #3 (TABOR RESERVOIR) AND DRY CREEK (LINING) WHICH IS USED AS A NATURAL CARRIER TO DIVERSION #13 (PABLO FEEDER). WATER FROM DRY CREEK IS IMPOUNDED IN THE PLACE OF USE AT DIVERSION #3 (TABOR RESERVOIR). WATER DIVERTED AT #13 (DRY CR), 12 (MIKES CR), 11 (MISSION CR), 9 (N DRY CR), 8 (ASHLEY CR), 18 (POISON OAK CR), AND 17 (VALENTINE CR) IS CONVEYED THROUGH PABLO FEEDER CANAL TO DIVERSION #14 (PABLO FEEDER AT POST CR) AND POST CREEK WHICH IS USED AS A NATURAL CARRIER TO DIVERSION #15 (KICKING HORSE FEEDER).

WATER FROM MISSION CREEK IS IMPOUNDED IN THE PLACE OF USE AT DIVERSION #10 (MISSION RESERVOIR). WATER FROM POST CREEK IS IMPOUNDED IN THE PLACE OF USE AT DIVERSION #16 (MCDONALD RESERVOIR). WATER DIVERTED AT #15 (POST CR) AND 24 (MARSH CR) IS CONVEYED THROUGH KICKING HORSE FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #28 (KICKING HORSE RESERVOIR) AND THROUGH NINEPIPE FEEDER TO THE PLACE OF USE AT DIVERSION #27 (NINEPIPE RESERVOIR). WATER DIVERTED AT #14 (POST CR), 25 (EAGLE PASS CR), 23 (MARSH CR) AND 22 (MOLLMAN CR) IS CONVEYED THROUGH PABLO FEEDER CANAL TO DIVERSION #20 (PABLO FEEDER AT S CROW CR) AND TO SOUTH CROW CREEK (CROW CREEK) WHICH IS USED AS A NATURAL CARRIER TO DIVERSIONS #21 (S CROW FEEDER) AND 26 (CROW PUMP) AND THE PLACE OF USE AT DIVERSION #29 (LOWER CROW RESERVOIR).

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County

WATER DIVERTED AT #21 (S CROW CR) IS CONVEYED THROUGH SOUTH CROW FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #28 (KICKING HORSE RESERVOIR) AND THROUGH NINEPIPE FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #27 (NINEPIPE RESERVOIR). WATER DIVERTED AT #26 (CROW CR) IS CONVEYED THROUGH CROW PUMP CANAL AND POST A CANAL TO THE PLACE OF USE AT DIVERSION #27 (NINEPIPE RESERVOIR). WATER IN CROW CREEK IS IMPOUNDED IN THE PLACE OF USE AT DIVERSION #29 (LOWER CROW RESERVOIR). WATER DIVERTED AT #20 (S CROW CR), 19 (LOST CR), 32 (MIDDLE CROW CR), 31 (N CROW CR), 30 (ROCK CR), 39 (COURVILLE CR), 40 (MUD CR), 38 (N ASHLEY CR), AND 37 (POIRIER CR) IS CONVEYED THROUGH PABLO FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #42 (PABLO RESERVOIR). WATER IN FLATHEAD RIVER OR IMPOUNDED AT DIVERSION #43 (KERR DAM) IS DIVERTED AT #41 (FLATHEAD PUMPS) AND CONVEYED THROUGH FLATHEAD PUMP CANAL AND PABLO FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #42 (PABLO RESERVOIR).

WATER DIVERTED AT #35 (BISSON CR) IS CONVEYED THROUGH LOWER TWIN FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #36 (TURTLE RESERVOIR). WATER DIVERTED AT #33 (HELLROARING CR) AND 34 (CENTIPEDE CR) IS CONVEYED THROUGH TWIN FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #36 (TURTLE RESERVOIR).

THE MEANS OF DIVERSION FOR #13, 11, 20, AND 40 IS HEADWORKS.

THE MEANS OF DIVERSION FOR #26 IS DIVERSION DAM WITH PUMPING PLANT.

THE MEANS OF DIVERSION FOR #41 IS PUMPING PLANT AND PENSTOCK.

SECONDARY POINT OF DIVERSION WATER SOURCES ARE A MIX OF RELEASES FROM THE PRIMARY POINTS OF DIVERSION.

TABOR RESERVOIR IS ALSO SUPPLIED BY DIVERSION(S) #1 (N FK PLACID CR), 2 (TABOR FDR AT MDL FK JOCKO R), 7 (TABOR FDR AT N FK JOCKO R), 4 (TABOR FDR AT FALLS CR), 5 (TABOR FDR AT S-14 CR), AND 6 (TABOR FDR AT GRIZZLY CR).

KICKING HORSE RESERVOIR IS ALSO SUPPLIED BY DIVERSION(S) #1 (N FK PLACID CR), 2 (TABOR FDR AT MDL FK JOCKO R), 7 (TABOR FDR AT N FK JOCKO R), 4, TABOR FDR AT FALLS CR), 5 (TABOR FDR AT S-14 CR), 6 (TABOR FDR AT GRIZZLY CR), 13 (PABLO FDR AT DRY CR), 12 (PABLO FDR AT MIKES CR), 11 (PABLO FDR AT MISSION CR), 9 (PABLO FDR AT N DRY CR), 8 (PABLO FDR AT ASHLEY CR), 18 (PABLO FDR AT POISON OAK CR), 17 (PABLO FDR AT VALENTINE CR), 15 (KICKING HORSE FDR AT POST CR), 25 (PABLO FDR AT EAGLE PASS CR), AND 24 (KICKING HORSE FDR AT MARSH CR).

WATER IN KICKING HORSE RESERVOIR IS IMPOUNDED AT DIVERSION #28.

NINEPIPE RESERVOIR IS ALSO SUPPLIED BY DIVERSION(S) #1 (N FK PLACID CR), 2 (TABOR FDR AT MDL FK JOCKO R), 7 (TABOR FDR AT N FK JOCKO R), 4 (TABOR FDR AT FALLS CR), 5 (TABOR FDR AT S-14 CR), 6 (TABOR FDR AT GRIZZLY CR), 13 (PABLO FDR AT DRY CR), 12 (PABLO FDR AT MIKES CR), 11 (PABLO FDR AT MISSION CR), 9 (PABLO FDR AT N DRY CR), 8 (PABLO FDR AT ASHLEY CR), 18 (PABLO FDR AT POISON OAK CR), 17 (PABLO FDR AT VALENTINE CR), 15 (KICKING HORSE FDR AT POST CR), 25 (PABLO FDR AT EAGLE PASS CR), 24 (KICKING HORSE FDR AT MARSH CR), AND 21 (S CROW FDR AT S CROW CR).

WATER IN NINEPIPE RESERVOIR IS IMPOUNDED AT DIVERSION #27.

LOWER CROW RESERVOIR IS ALSO SUPPLIED BY DIVERSION(S) #1 (N FK PLACID CR), 2 (TABOR FDR AT MDL FK JOCKO R), 7 (TABOR FDR AT N FK JOCKO R), 4 (TABOR FDR AT FALLS CR), 5 (TABOR FDR AT S-14 CR), 6 (TABOR FDR AT GRIZZLY CR), 13 (PABLO FDR AT DRY CR), 12 (PABLO FDR AT MIKES CR), 11 (PABLO FDR AT MISSION CR), 9 (PABLO FDR AT N DRY CR), 8 (PABLO FDR AT ASHLEY CR), 18 (PABLO FDR AT POISON OAK CR), 17 (PABLO FDR AT VALENTINE CR), 14 (PABLO FDR AT POST CR), 25 (PABLO FDR AT EAGLE PASS CR), 23 (PABLO FDR AT MARSH CR), AND 22 (PABLO FDR AT MOLLMAN CR).

PABLO RESERVOIR IS ALSO SUPPLIED BY DIVERSIONS #1 (N FK PLACID CR), 2 (TABOR FDR AT MDL FK JOCKO R), 7 (TABOR FDR AT N FK JOCKO R), 4 (TABOR FDR AT FALLS CR), 5 (TABOR FDR AT S-14 CR), 6 (TABOR FDR AT GRIZZLY CR), 13 (PABLO FDR AT DRY CR), 12 (PABLO FDR AT MIKES CR), 11 (PABLO FDR AT MISSION CR), 9 (PABLO FDR AT N DRY CR), 8 (PABLO FDR AT ASHLEY CR), 18 (PABLO FDR AT POISON OAK CR), 17 (PABLO FDR AT VALENTINE CR), 14 (PABLO FDR AT POST CR), 25 (PABLO FDR AT EAGLE PASS CR), 23 (PABLO FDR AT MARSH CR), 22 (PABLO FDR AT MOLLMAN CR), 20 (PABLO FDR AT S CROW CR), 19 (PABLO FDR AT LOST CR), 32 (PABLO FDR AT MDL CROW CR), 31 (PABLO FDR AT N CROW CR), 30 (PABLO FDR AT ROCK CR), 39 (PABLO FDR AT COURVILLE CR), 40 (PABLO FDR AT MUD CR), 38 (PABLO FDR AT N ASHLEY CR), 37 (PABLO FDR AT POIRIER CR), AND 43 (KERR DAM).

WATER IN PABLO RESERVOIR IS IMPOUNDED AT DIVERSION #42.

TURTLE RESERVOIR IS ALSO SUPPLIED BY DIVERSIONS #33 (TWIN FDR AT HELLROARING CR) AND 35 (LWR TWIN FDR AT BISSON CR).

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County

WATER IN TURTLE RESERVOIR IS IMPOUNDED AT DIVERSION #36.

Reservoir: ON STREAM **Reservoir Name** TABOR (ST. MARY'S) RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
2		6	17N	18W	LAKE

Diversion to Reservoir: DIVERSION # 3
Dam Height: 53.00 FEET
Surface Area: 285.00 ACRES
Current Capacity: 23,200.00 ACRE-FEET

Reservoir: ON STREAM **Reservoir Name** MISSION RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
4		16	18N	19W	LAKE

Diversion to Reservoir: DIVERSION # 10
Dam Height: 83.00 FEET
Surface Area: 290.00 ACRES
Current Capacity: 7,250.00 ACRE-FEET

Reservoir: ON STREAM **Reservoir Name** MCDONALD RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1		10	19N	19W	LAKE

Diversion to Reservoir: DIVERSION # 16
Dam Height: 48.00 FEET
Surface Area: 200.00 ACRES
Current Capacity: 8,200.00 ACRE-FEET

Reservoir: OFF STREAM **Reservoir Name** KICKING HORSE RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
	NENE	19	20N	19W	LAKE

Diversion to Reservoir: DIVERSION # 21
Dam Height: 29.00 FEET
Surface Area: 800.00 ACRES
Current Capacity: 8,400.00 ACRE-FEET

Reservoir: OFF STREAM **Reservoir Name** NINEPIPE RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
	NESE	16	20N	20W	LAKE

Diversion to Reservoir: DIVERSION # 26
Dam Height: 38.00 FEET
Surface Area: 1,550.00 ACRES
Current Capacity: 15,000.00 ACRE-FEET

Reservoir: ON STREAM **Reservoir Name** LOWER CROW RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
		11	20N	21W	LAKE

Diversion to Reservoir: DIVERSION # 29
Dam Height: 99.00 FEET
Surface Area: 345.00 ACRES
Current Capacity: 1,035.00 ACRE-FEET

Reservoir: OFF STREAM **Reservoir Name** TURTLE (TWIN) RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
	NWNW	9	22N	19W	LAKE

Diversion to Reservoir: DIVERSION # 34
Dam Height: 20.00 FEET
Surface Area: 65.00 ACRES
Current Capacity: 1,900.00 ACRE-FEET

Reservoir: OFF STREAM **Reservoir Name** PABLO RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
3		17	22N	20W	LAKE

Diversion to Reservoir: DIVERSION # 41
Dam Height: 43.00 FEET
Surface Area: 205.00 ACRES
Current Capacity: 32,800.00 ACRE-FEET

SEE THE ATTACHED RESERVOIR DIAGRAMS.

Period of Use: JANUARY 1 to DECEMBER 31

Place of Use:

ID	Acres	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1				4	17N	18W	LAKE
2				5	17N	18W	LAKE
3				6	17N	18W	LAKE
4				14	18N	19W	LAKE
5				15	18N	19W	LAKE
6				16	18N	19W	LAKE
7				10	19N	19W	LAKE
8				11	19N	19W	LAKE
9				12	19N	19W	LAKE
10				1	19N	20W	LAKE
11				2	19N	20W	LAKE
12				3	19N	20W	LAKE
13				11	19N	20W	LAKE
14				19	20N	19W	LAKE
15				30	20N	19W	LAKE
16				31	20N	19W	LAKE
17				7	20N	20W	LAKE
18				18	20N	20W	LAKE
19				25	20N	20W	LAKE
20				34	20N	20W	LAKE
21				35	20N	20W	LAKE
22				36	20N	20W	LAKE
23				11	20N	21W	LAKE
24				12	20N	21W	LAKE
25				13	20N	21W	LAKE
26				18	22N	19W	LAKE
27				20	22N	20W	LAKE
28				21	22N	20W	LAKE
29				22	22N	20W	LAKE
30				26	22N	20W	LAKE
31				27	22N	20W	LAKE
32				28	22N	20W	LAKE
33				29	22N	20W	LAKE
34				32	22N	20W	LAKE
35				33	22N	20W	LAKE
36				34	22N	20W	LAKE

Remarks:

THE WATER RIGHTS FOLLOWING THIS STATEMENT ARE ASSOCIATED WHICH MEANS THE RIGHTS SHARE THE SAME POINT OF DIVERSION.

30052929 30052931 30052932

THE WATER RIGHTS FOLLOWING THIS STATEMENT ARE ASSOCIATED WHICH MEANS THE RIGHTS SHARE THE SAME RESERVOIR.

30052929 30052932

THIS WATER RIGHT SHALL BE ADMINISTERED IN ACCORDANCE WITH THE CONDITIONS OF THE FIIP WATER USE AGREEMENT AMONG THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE FLATHEAD JOINT BOARD OF CONTROL, AND THE UNITED STATES OF AMERICA, WHICH IS ATTACHED AS APPENDIX 3 TO THE WATER RIGHTS COMPACT AMONG THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE STATE OF MONTANA, AND THE UNITED STATES OF AMERICA.

THE MAP DATA SOURCE FOR PLACE OF USE AND POINT OF DIVERSION FOR THIS WATER RIGHT ARE CONTAINED IN A GIS DATABASE FILE ENTITLED "CSKT-MT WATER RIGHTS COMPACT 2013." THIS FILE MAY BE DOWNLOADED FROM THE MONTANA STATE LIBRARY (NRIS.MT.GOV) OR OBTAINED IN HARDCOPY FORM FROM THE OFFICE OF THE ENGINEER OF THE FLATHEAD RESERVATION WATER MANAGEMENT BOARD.

SEE 30052929 MAP EXHIBIT(S) 1 THROUGH 19.

THE MAXIMUM ANNUAL VOLUME DIVERTED SHALL BE LIMITED TO A MAXIMUM ANNUAL DEPLETION OF 2,000 ACRE-FEET, BASED ON THE NET EVAPORATION FROM THE TOTAL RESERVOIR SURFACE AREAS AT THE SPECIFIED MINIMUM POOL ELEVATIONS.

THE EXERCISE OF THIS WATER RIGHT IS SUBJECT TO THE TERMS AND CONDITIONS OF THE WATER RIGHTS COMPACT ENTERED INTO BY THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE STATE OF MONTANA, AND THE UNITED STATES OF AMERICA.

THE FOLLOWING ADMINISTRATIVE AREAS IN THE FIIP WATER USE AGREEMENT ARE PERTINENT TO THIS WATER RIGHT: PLACID CANAL DIVERSION, TABOR FEEDER CANAL, PABLO FEEDER CANAL, UPPER MISSION CREEK, UPPER CROW CREEK, HELLROARING / CENTIPEDE / BISSON CREEKS, FLATHEAD RIVER PUMPING PLANT.

Remarks:

THE MINIMUM POOL LEVEL FOR TABOR (ST. MARY'S) RESERVOIR SHALL BE MAINTAINED ACCORDING TO THE FOLLOWING SCHEDULE:
FROM NOVEMBER 15 UP TO AUGUST 1, THE MINIMUM POOL LEVEL SHALL BE MAINTAINED AT 4,006 FEET MEAN SEA LEVEL, EQUALING 18,162 ACRE-FEET OF STORAGE. THIS ANNUAL TARGET IS REQUIRED TO BE MET ONE YEAR OUT OF FOUR.
FROM AUGUST 1 UP TO AUGUST 15, THE MINIMUM POOL LEVEL SHALL BE MAINTAINED AT 3,980 FEET MEAN SEA LEVEL, EQUALING 12,119 ACRE-FEET OF STORAGE. THIS ANNUAL TARGET IS REQUIRED TO BE MET THREE YEARS OUT OF FOUR.
FROM AUGUST 15 UP TO NOVEMBER 15, THE MINIMUM POOL LEVEL SHALL BE MAINTAINED AT 3,927 FEET MEAN SEA LEVEL, EQUALING 2,416 ACRE-FEET OF STORAGE. THIS ANNUAL TARGET IS REQUIRED TO BE MET EVERY YEAR.

THE MINIMUM POOL LEVEL FOR MISSION RESERVOIR SHALL BE MAINTAINED AT 3,379 FEET MEAN SEA LEVEL, EQUALING 1,006 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR MCDONALD RESERVOIR SHALL BE MAINTAINED AT 3,549 FEET MEAN SEA LEVEL, EQUALING 385 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR KICKING HORSE RESERVOIR SHALL BE MAINTAINED AT 3,049 FEET MEAN SEA LEVEL, EQUALING 1,230 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR NINEPIPE RESERVOIR SHALL BE MAINTAINED AT 2,998 FEET MEAN SEA LEVEL, EQUALING 1,905 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR LOWER CROW RESERVOIR SHALL BE MAINTAINED AT 2,839 FEET MEAN SEA LEVEL, EQUALING 2,039 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR PABLO RESERVOIR SHALL BE MAINTAINED AT 3,188 FEET MEAN SEA LEVEL, EQUALING 1,425 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR TURTLE (TWIN) RESERVOIR SHALL BE MAINTAINED AT 3,068 FEET MEAN SEA LEVEL, EQUALING 96 ACRE-FEET OF STORAGE.

THIS WATER RIGHT IS LOCATED IN WHOLE OR IN PART WITHIN THE EXTERIOR BOUNDARY OF THE FLATHEAD INDIAN RESERVATION.

Town Ronan

Transcribed from Missoula County Records, Book "J" Water Rights, Page 117. Compared.

31160.

Book "J" Water Rights, Page 117.

NOTICE OF APPROPRIATION OF WATER RIGHT

State of Montana)
) ss
County of Missoula)

KNOW ALL MEN BY THESE PRESENTS, That the undersigned did on the 14th day of July, 1919, appropriate and claim, and do by these presents appropriate, locate, and claim Twenty (20) cubic feet per second of time legal measurement, of the waters of Crow Creek, in the County of Missoula, State of Montana, and did, on the above named date, mark the point of intended diversion by posting thereat a copy of this notice in a conspicuous place.

The said water is claimed for Power and other useful and beneficial purposes, and the place of intended use is in the Town of Ronan, Montana.

Said water to be diverted and conveyed to power house by means of a dam and pipe line said pipe line to be approximately two (2) feet in diameter, to be .....feet wide on bottom, ...feet wide on top, and .....feet deep...

That the stream from which said diversion is to be made is more particularly described as follows, to-wit: Origin in the Mission Range of Mountains. Flows in a south-westerly direction through Secs. 14, 15, 16, 21, 28, 29 and 32 T. 21 N. R. 19 W. and measured from said point of diversion as an initial point, the following well known natural objects and permanent monuments are distant as follows, to-wit: Sec. Cor. common to Secs. 14, 15, 22, and 23, T. 21 N. R. 19 W. is South 54° 10' W., 2912 ft. distant. is distant .....in a ....direction; ....is distant .....in a .....direction.

And the undersigned hereby claims a right of way over all unapportioned lands of the United States, through which said pipe line shall pass, together with the right to repair and enlarge said pipe line whenever and wherever the same may be necessary to convey the water hereby appropriated.

TOWN OF RONAN, MONTANA.
By Frank Faucett, Engineer,
Appropriator and Claimant.

STATE OF MONTANA)
) ss
County of Missoula)

Frank F. Faucett, being first duly sworn, says: That the Town of Ronan, Montana, is the appropriator and claimant named in the foregoing notice of Appropriation; that he, acting as agent for said town has read said Notice of Appropriation, and knows the contents thereof, and that said matters and statements contained therein are true.

Frank F. Faucett,

Subscribed and sworn to before me this 14 day of July, 1919.

((SEAL)) L. C. Hitchcock
Notary Public in and for Flathead County,
State of Montana,
Notary Public for State of Montana,
Residing at Polson,
My commission expires Sep. 9, 1919.

Filed for record this 15th day of July, 1919, at 10:00 o'clock A. M.

W. J. Babington, County Recorder,

By H. L. Sadler, Deputy.

- - - - - - - - -

TO HAVE AND TO HOLD, all and singular, the said premises, together with the appurtenances unto the said party of the second part and to his heirs and assigns, forever.

IN WITNESS WHEREOF, The said parties of the first part have hereunto set their hands and seals the day and year first above written.

Signed, Sealed and delivered in the Presence of

Dan H. Ross (SEAL)

Ida M. Ross (SEAL)

STATE OF MONTANA,)
) ss.
County of Missoula)

On this 30th day of December nineteen hundred and twenty two before me A. J. Violette a Notary Public for the State of Montana, residing at Missoula, Montana, personally appeared Dan H. Ross and Ida M. Ross, his wife known (or proved to me on oath of) to me to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

(SEAL)

A. J. Violette
Notary Public for the State of Montana
Residing at Missoula, Montana.
My Commission expires November 25th, 1923.

I certify that I received this instrument for record on the 23 day of June A. D. 1923, at 11:46 o'clock A. M.

W. J. Babington, County Recorder.
By Ed Le Vasseur, Deputy.

- -

TRANSCRIBED FROM MISSOULA COUNTY RECORDS, DEED BOOK 47, PAGE 46.

Compared

COMPARED
14142

Book A Deeds
Page 232

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

112543--09)
85324-09 1.0) ss.
1170)

WHEREAS, There has been deposited in the General Land Office of the United States an order of the Secretary of the Interior directing that a fee simple patent issue to Batiste Marengo for the South half of the south half of the Northwest quarter of Section Twenty nine and the Lot one of Section Thirty-one in Township Twenty-one North of Range Nineteen West of the Montana Meridian, Montana, containing Seventy-nine and Seventy-nine hundredths acres.

NOW KNOW YE, That the United States of America, in consideration of the premises, has given and granted, and by these presents DOES GIVE AND GRANT unto the said Batiste Marengo and to his heirs, the lands above described, TO HAVE AND TO HOLD, the same, together with all the rights, privileges immunities and appurtenances, of whatsoever nature thereunto belonging, unto the said Batiste Marengo and to his heirs and assigns forever. And there is reserved from the lands hereby granted a right of way thereon for ditches or canals constructed by the authority of the United States.

IN TESTIMONY WHEREOF, I, William H. Taft President of the United States of America, have caused these letters to be made Patent, and the Seal of the General Land Office to be hereunto affixed.

1661—Bessette-Stork Co. Butte

Given under my hand, at the City of Washington, the Twenty-fourth day of January, in the year of our Lord one thousand nine hundred and Ten, and of the Independence of the United States the one hundred and Thirty-fourth.

(SEAL)

By the President Wm H. Taft

By M. W. Young Secretary

H. W. Sanford, Recorder of the General Land Office.

RECORDED: Patent Number 106018

Filed for Record at 9:20 o'clock A. M. April 21 A. D. 1910, and recorded at the request of..... .

F. W. Kuphal

By.....Deputy.....

County Recorder

Entered 2--5--10 F. H. M.

- - - - - - - - - - - - - - - - - - -

Transcribed from Missoula County Records, Deed Book 47, page 48.

Compared

COMPARED
14299

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

27390--10)
20974--10 I.O) ss.
1796)

WHEREAS, There has been deposited in the General Land Office of the United States an order of the Secretary of the Interior directing that a fee simple patent issue to Margarita Gariepy a Flathead Indian for the East half of the South west quarter of Section Twenty-Six in Township Twenty North of Range Twenty one west of the Montana Meridian, Montana, containing eighty-acres.

NOW KNOW YE, That the United States of America, In consideration of the premises, HAS GIVEN AND GRANTED, and by these presents DOES GIVE AND GRANT, unto the said Margarita Gariepy and to her heirs, the lands above described. TO HAVE AND TO HOLD the same together with all the rights, privileges, immunities and appurtenances of whatsoever nature thereunto belonging unto the said Margarita Gariepy her heirs and assigns forever. And there is reserved from the lands hereby granted a right of way thereon for ditches or canals constructed by the authority of the United States.

IN TESTIMONY WHEREOF, I, William H. Taft President of the United States of America, have caused these letters to be made Patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the ninth day of April, in the year of our Lord one thousand nine hundred and Ten, and of the Independence of the United States the one hundred and Thirty-fourth.

(SEAL)

BY THE PRESIDENT Wm H. Taft

By M. P. LeRoy Secretary

H. W. Sanford, Recorder of the General Land Office.

RECORDED: Patent Number 123992

Filed for Record at 8:55 o'clock A. M., May 2nd A. D. 1910, and recorded at the request of .....

By.....Deputy

F. W. Kuphal, County Recorder

35 acres

Location of Water right 16292

D-166 - Gazette-Stock Co. Butte

Transcribed from Missoula County Records, Book "I" Water Rights, Page 111. Compared.

NOTICE OF APPROPRIATION

Compared

STATE OF MONTANA)
) ss
County of Missoula)
Flathead Reservation

TO ALL WHOM THESE PRESENTS MAY CONCERN:

BE IT KNOWN, That Baptiste Marengo (No. 724) for his wife Caroline and his minor son Herbert Marengo, of Flathead Reservation, in said County and State do hereby publish and declare, as a legal notice to all the world, as follows, to-wit:

I. That they have a legal right to the use, possession and control of and claim Three Hundred and sixty (360) inches of the waters of Crow Creek, in said County and State for irrigating and other purposes.

II. That the purpose for which said water is claimed, and the place of intended use is for domestic and irrigating purposes on the S/2 S/2 NW/4 and the entire S/2 of Sec. 29, Twp 21 N. R. 19 W. M. M.

III. That the means of diversion with size of flume, ditch, pipe, or aqueduct, by which they intend to divert the said water is as follows: A ditch 48 inches by 24 inches in size, which carries and conducts 360 inches of water from said Creek; which said ditch diverts the water from said stream at a point upon its North bank, and runs thence in a southwesterly direction (head of ditch in NW/4 SW/4 Sec. 21, Twp. 21 N. R. 19 W. M. M., thence over and upon said land (or mining claim.)

IV. That they appropriated andtook said water on the 15th day of November, 1895, A.D. by means of said ditch.

V. That the names of the appropriators of said water are as written above.

VI. That they also hereby claim said ditch and the right of way therefor, and for said water by it conveyed or to be conveyed, from said point of appropriation to said land or point of final discharge, and also the right of location upon any lands of any dams, flumes reservoirs, constructed or to be constructed, by they, in appropriating and in using said water.

VII. That they also claim the right to keep in repair and to enlarge said means of water appropriation at any time, and the right to dispose of said right, water, ditch or said appurtenances in part or whole, at any time.

CLAIMING THE SAME ALL AND SINGULAR, Under any and all laws, National and State, and local rulings and decisions thereunder, in the matter of water rights.

TOGETHER WITH ALL AND SINGULAR, The hereditaments and appurtenances thereunto belonging and appertaining, or to accrue to the same.

WITNESS Baptiste Marengo's hand at ...Montana, this 1st day of November, 1907,
Duplicate sign & return
to agency, Dont file Baptiste Marengo

STATE OF MONTANA)
) ss
County of Missoula)

Baptiste Marengo, having first been duly sworn, deposes and says that he is of lawful age and is the appropriator and claimant of the water and water right mentioned in the fore going notice of appropriation and claim, and the person whose name is subscribed thereto as the appropriator and claimant, that he know the contents of said foregoing notice and that the matters and things therein stated are true.

Baptiste Marengo.
Subscribed and sworn to before me, this 27th day of Aug. A. D. 1910.
(SEAL) D. D. Null,
Notary Public in and for State of Montana, residing at Ronan, Montana.
My commission expires February 27th, 1911, County, Montana.

Filed for record the 26 day of September A.D. 1910. at 10:50 o'clock A.M.
F. M. AUREL COUNTY RECORDER BY DEPUTY.

Water Right Number: **76L 122919 00**

Map Click Function

Select Identification Item

View

Help Abstract Map

Legend

Diversion Count: 1

Surface water diversion.

Ground water diversion.

Adjacent Diversions:

Surface water diversion.

Ground water diversion.

Place of Use Legal Land Descriptions

Adjacent POUs

Click Left to Show Cadastral ?

Click Left to Show PLSS Detail ?

Note:
The points of diversion (PODs) and places of use (POUs) are derived from water right legal land descriptions. PODs are placed at the center of their legal land description, not at their true geographic location. POUs are drawn as polygons of the entire legal land description.

About this data.

Printer Friendly Abstract

STATE OF MONTANA
DEPARTMENT OF NATURAL RESOURCES AND
1424 9TH AVENUE P.O.BOX 201601 HELENA, MON

GENERAL ABSTR

Water Right Number: 76L 122919 00 STATEMENT OF CLAIM
Version: -- ORIGINAL RIGHT
Version Status: ACTIVE

Owners:
PHILLIP J SCHMITZ
DECEASED
RT 1 BOX 40
RONAN, MT 59864

THOMAS F LINSE
1192 N FOOTHILLS DR
RONAN, MT 59864 9784

FLORENCE E SCHMITZ
% CHERRYL TAYLOR
8422 DIAMOND SPRINGS DR
HELENA, MT 59602

BEVERLY J LINSE
33830 LINSE LN
RONAN, MT 59864

OWNERSHIP UPDATE PROCESSED TO ADD NE
SPLIT INTO SEPARATE WATER RIGHTS UPON I

Priority Date: November 15, 1895
Enforceable Priority Date: November 15, 1895

Type of Historical Right: DECREE

Purpose (use): IRRIGATION
Irrigation Type: FLOOD

Maximum Flow Rate: 6.05 CFS

Maximum Volume: 100.00 AC-FT
Climatic Area: 3 - MODERATE

Maximum Acres: 40.00

Source Name: NORTH CROW CREEK
Source Type: SURFACE WATER

Points of Diversion and Means of Diversion:

ID	Govt Lot	Qtr Sec	Sec	Twp	Rg
1		SESWNW	21	21N	19

Period of Diversion: MAY 1 to OCTOBER 31
Diversion Means: HEADGATE

Period of Use: MAY 1 TO OCTOBER 31

Purpose (use): IRRIGATION
Place of Use: (1 total records)

ID	Acres	Govt Lot	Qtr Sec	Sec	Twp	Rg
1	40.00		S2S2NW	29	21N	19

STATE OF MONTANA
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
1424 9TH AVENUE P.O.BOX 201601 HELENA, MONTANA 59620-1601

GENERAL ABSTRACT

Water Right Number: 76L 122918 00 STATEMENT OF CLAIM
Version: -- ORIGINAL RIGHT
Version Status: ACTIVE

Owners:

PHILLIP J SCHMITZ
DECEASED
RT 1 BOX 40
RONAN, MT 59864

FLORENCE E SCHMITZ
% CHERRYL TAYLOR
8422 DIAMOND SPRINGS DR
HELENA, MT 59602

BEVERLY J LINSE
33830 LINSE LN
RONAN, MT 59864

THOMAS F LINSE
1192 N FOOTHILLS DR
RONAN, MT 59864 9784

OWNERSHIP UPDATE PROCESSED TO ADD NEW OWNERS. THE WATER RIGHT MAY BE SPLIT INTO SEPARATE WATER RIGHTS UPON REQUEST OF THE OWNERS.

Priority Date: November 15, 1895
Enforceable Priority Date: November 15, 1895

Type of Historical Right: FILED

Purpose (use): STOCK

Maximum Flow Rate: 6.05 CFS

Maximum Volume: 2.20 AC-FT

Source Name: NORTH CROW CREEK
Source Type: SURFACE WATER

Points of Diversion and Means of Diversion:

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1		SESWNW	21	21N	19W	LAKE

Period of Diversion: JANUARY 1 to DECEMBER 31
Diversion Means: HEADGATE

Period of Use: JANUARY 1 TO DECEMBER 31

Purpose (use): STOCK
Place of Use: (1 total records)

ID	Acres	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1			S2S2NW	29	21N	19W	LAKE

Geocodes/Valid: 15310429201130000 - Y 15310429201160000 - Y

Remarks:

THIS CLAIM IS LOCATED IN WHOLE OR IN PART WITHIN THE EXTERIOR BOUNDARY OF THE FLATHEAD INDIAN RESERVATION.

STARTING IN 2008, PERIOD OF DIVERSION WAS ADDED TO MOST CLAIM ABSTRACTS, INCLUDING THIS ONE.

OWNERSHIP UPDATE RECEIVED
OWNERSHIP UPDATE TYPE 608 # 32893 RECEIVED January 30, 2006

OWNERSHIP UPDATE TYPE 608 # 53236 RECEIVED January 11, 2008

NO REVIEW OR DETERMINATION OF THE ORIGIN OF THE CLAIMED TYPE OF HISTORICAL RIGHT OR OF ITS PRIORITY DATE, QUANTITY, VOLUME OR FLOW RATE HAS BEEN MADE. ADDITIONAL EVIDENCE WILL BE REQUIRED BEFORE THE CLAIM CAN BE DECREED.

Appendix A2: Minimum Reservoir Pool Elevations *pg A-10*

Appendix A3: River Diversion Allowances *pg A-11*

Jocko Area *pg A-11*

1. Tabor Feeder Canal Administrative Area
2. Upper Jocko River Administrative Area
3. Agency / Finley Creek Administrative Area
4. Lower Jocko River Administrative Area
5. Revais Creek Administrative Area

Mission Area *pg A-12*

1. Pablo Feeder Canal Administrative Area
2. Upper Mission Creek Administrative Area
3. Lower Mission Creek Administrative Area
4. Upper Crow Creek Administrative Area
5. Lower Crow Creek Administrative Area
6. Hellroaring / Centipede / Bisson Creeks Administrative Area
7. Flathead River Pumping Plant

Little Bitterroot Area *pg A-14*

1. Little Bitterroot River Administrative Area

Off-Reservation Areas *pg A-15*

1. Placid Canal Diversion
2. McGinnis Diversion
3. Alder Diversion

Appendix A4: Farm Turnout Allowances for the Jocko, Mission and Little Bitterroot Areas *pg A-16*

Appendix A5: Irrigation Return Flow Sites *pg A-17*

Mission Area *pg A-20*

1. Coleman Coulee near mouth
2. Dublin Gulch near mouth
3. Walchuck Coulee near mouth
4. West Miller Coulee near mouth
5. Hopkins Draw near mouth
6. Westphal Coulee near mouth

Little Bitterroot Area *pg A-20*

1. Camas C wasteway near mouth
2. Garden Creek near mouth
3. Dry Fork Creek near mouth

Exb #2

STATE OF MONTANA
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

1424 9TH AVENUE P.O.BOX 201601 HELENA, MONTANA 59620-1601

GENERAL ABSTRACT

****** THIS IS AN INTERBASIN TRANSFER ******

THIS APPROPRIATION OF WATER TAKES WATER FROM THE FLATHEAD RIVER, BELOW FLATHEAD LAKE (BASIN 76L) AND TRIBUTARIES TO THE CLARK FORK RIVER BELOW THE FLATHEAD RIVER (BASIN 76N), AND USED THE WATER IN THE FLATHEAD RIVER DRAINAGE, BELOW FLATHEAD LAKE (BASIN 76L).

Water Right Number: 76L 30052927 COMPACT
Version: 1 – ORIGINAL RIGHT

Version Status:

Owners: USA (DEPT OF INTERIOR BUREAU OF INDIAN AFF)
IN TRUST FOR CONFEDERATED SALISH & KOOTENAI TRIBES
OF THE FLATHEAD INDIAN RESERVATION, MONTANA
911 NE 11TH AVENUE
PORTLAND, OR 97232-4169

ALL COMMUNICATION SHALL BE COPIED TO THE CS&KT TRIBAL CHAIRMAN AS THE BENEFICIAL OWNER AT PO BOX 278, PABLO, MT 59855-0278.

Priority Date: JULY 16, 1855 at 12:00 A.M.

Enforceable Priority Date: JULY 16, 1855 at 12:00 A.M.

Purpose (use): FISH AND WILDLIFE

Maximum Flow Rate:

THE MAXIMUM FLOW RATE IS SUBJECT TO APPENDIX A OF THE FIIP WATER USE AGREEMENT.

Maximum Volume: 1,296.00 AC-FT

Source Name: ALDER CREEK
Source Type: SURFACE WATER

Source Name: DRY FORK CREEK
Source Type: SURFACE WATER

Source Name: LITTLE BITTERROOT RIVER
Source Type: SURFACE WATER

Source Name: MILL CREEK
Source Type: SURFACE WATER

Source Name: MILL POCKET CREEK
Source Type: SURFACE WATER

Source Name: UNNAMED TRIBUTARY OF ALDER CREEK
Source Type: SURFACE WATER

MILL CREEK IS A TRIBUTARY OF LITTLE BITTERROOT RIVER.

Point of Diversion and Means of Diversion:

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1	4		3	22N	24W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 55.00 CFS
Source Name: DRY FORK CREEK
Diversion Means: DAM
Diversion Type: PRIMARY

2		SESW	16	23N	24W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: DRY FORK CREEK
Diversion Means: DAM
Diversion Type: PRIMARY
Ditch Name: DRY FORK FEEDER CANAL

3		NWSW	15	23N	25W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 25.00 CFS
Source Name: UNNAMED TRIBUTARY OF ALDER CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: ALDER DITCH

ID	Govt Lot	Otr Sec	Sec	Twp	Rge	County
4		NWSW	15	23N	25W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 25.00 CFS
Source Name: UNNAMED TRIBUTARY OF ALDER CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: ALDER DITCH

5		NESW	16	23N	25W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 25.00 CFS
Source Name: ALDER CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: ALDER DITCH

6		NWSE	16	24N	24W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 89.00 CFS
Source Name: LITTLE BITTERROOT RIVER
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: CAMAS A CANAL

7		NENW	21	24N	24W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 89.00 CFS
Source Name: MILL CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: CAMAS A CANAL

8		NWNW	34	24N	24W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 89.00 CFS
Source Name: MILL POCKET CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: CAMAS A CANAL

WATER DIVERTED AT #6 (LITTLE BITTERROOT RIVER), 7 (MILL CR), AND 8 (MILL POCKET CR) IS CONVEYED THROUGH CAMAS A CANAL TO DRY FORK CREEK WHICH IS USED AS A NATURAL CARRIER TO THE PLACE OF USE AT DIVERSION #1 (LOWER DRY FORK RESERVOIR). WATER DIVERTED AT #5 (ALDER CR), 4 (ALDER CR TRIB), & 3 (ALDER CR TRIB) IS CONVEYED THROUGH ALDER DITCH TO DRY FORK CREEK WHICH IS USED AS A NATURAL CARRIER TO THE PLACE OF USE AT DIVERSIONS #2 (UPPER DRY FORK RESERVOIR) AND 1 (LOWER DRY FORK RESERVOIR). WATER IN DRY FORK CREEK IS IMPOUNDED IN THE PLACE OF USE AT DIVERSIONS #2 (UPPER DRY FORK RESERVOIR) AND 1 (LOWER DRY FORK RESERVOIR).

LOWER DRY FORK IS ALSO SUPPLIED BY DIVERSION(S) #3 (ALDER CR TRIB), 4 (ALDER CR TRIB), 5 (ALDER CR), 6 (CAMAS A AT LTL BITTERROOT R), 7 (CAMAS A AT MILL CR), AND 8 (CAMAS A AT MILL POCKET CR).

UPPER DRY FORK RESERVOIR IS ALSO SUPPLIED BY DIVERSION(S) #3 (ALDER CR TRIB), 4 (ALDER CR TRIB), AND 5 (ALDER CR).

Reservoir: ON STREAM **Reservoir Name** LOWER DRY FORK RESERVOIR

Govt Lot	Otr Sec	Sec	Twp	Rge	County
4		3	22N	24W	SANDERS

Diversion to Reservoir: DIVERSION # 1
Dam Height: 29.50 FEET
Surface Area: 370.00 ACRES
Current Capacity: 3,860.00 ACRE-FEET

Reservoir: ON STREAM **Reservoir Name** UPPER DRY FORK RESERVOIR

Govt Lot	Otr Sec	Sec	Twp	Rge	County
	SESW	16	23N	24W	SANDERS

Diversion to Reservoir: DIVERSION # 2
Dam Height: 40.00 FEET
Surface Area: 320.00 ACRES
Current Capacity: 2,800.00 ACRE-FEET
SEE THE ATTACHED RESERVOIR DIAGRAMS.

Period of Use: JANUARY 1 to DECEMBER 31

Place of Use:

ID	Acres	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1				3	22N	24W	SANDERS
2				4	22N	24W	SANDERS
3				16	23N	24W	SANDERS
4				17	23N	24W	SANDERS
5				33	23N	24W	SANDERS
6				34	23N	24W	SANDERS

Remarks:

THE WATER RIGHTS FOLLOWING THIS STATEMENT ARE ASSOCIATED WHICH MEANS THE RIGHTS SHARE THE SAME POINT OF DIVERSION AND RESERVOIR.

30052927 30052930

THIS WATER RIGHT SHALL BE ADMINISTERED IN ACCORDANCE WITH THE CONDITIONS OF THE FIIP WATER USE AGREEMENT AMONG THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE FLATHEAD JOINT BOARD OF CONTROL, AND THE UNITED STATES OF AMERICA, WHICH IS ATTACHED AS APPENDIX 3 TO THE WATER RIGHTS COMPACT AMONG THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE STATE OF MONTANA, AND THE UNITED STATES OF AMERICA.

THE MAP DATA SOURCE FOR PLACE OF USE AND POINT OF DIVERSION FOR THIS WATER RIGHT ARE CONTAINED IN A GIS DATABASE FILE ENTITLED "CSKT-MT WATER RIGHTS COMPACT 2013." THIS FILE MAY BE DOWNLOADED FROM THE MONTANA STATE LIBRARY (NRIS.MT.GOV) OR OBTAINED IN HARDCOPY FORM FROM THE OFFICE OF THE ENGINEER OF THE FLATHEAD RESERVATION WATER MANAGEMENT BOARD.

SEE 30052927 MAP EXHIBIT(S) 1 THROUGH 5.

THE MAXIMUM ANNUAL VOLUME DIVERTED SHALL BE LIMITED TO A MAXIMUM ANNUAL DEPLETION OF 247 ACRE-FEET, BASED ON THE NET EVAPORATION FROM THE TOTAL RESERVOIR SURFACE AREAS AT THE SPECIFIED MINIMUM POOL ELEVATIONS.

THE EXERCISE OF THIS WATER RIGHT IS SUBJECT TO THE TERMS AND CONDITIONS OF THE WATER RIGHTS COMPACT ENTERED INTO BY THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE STATE OF MONTANA, AND THE UNITED STATES OF AMERICA.

THE FOLLOWING ADMINISTRATIVE AREAS IN THE FIIP WATER USE AGREEMENT ARE PERTINENT TO THIS WATER RIGHT: LITTLE BITTERROOT RIVER, ALDER DIVERSION.

THE MINIMUM POOL LEVEL FOR UPPER DRY FORK RESERVOIR SHALL BE MAINTAINED AT 2,915 FEET MEAN SEA LEVEL, EQUALING 413 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR LOWER DRY FORK RESERVOIR SHALL BE MAINTAINED AT 2,842 FEET MEAN SEA LEVEL, EQUALING 636 ACRE-FEET OF STORAGE.

THIS WATER RIGHT IS LOCATED IN WHOLE OR IN PART WITHIN THE EXTERIOR BOUNDARY OF THE FLATHEAD INDIAN RESERVATION.

STATE OF MONTANA
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

1424 9TH AVENUE P.O.BOX 201601 HELENA, MONTANA 59620-1601

GENERAL ABSTRACT

****** THIS IS AN INTERBASIN TRANSFER ******

THIS APPROPRIATION OF WATER TAKES WATER FROM THE FLATHEAD RIVER, BELOW AND INCLUDING FLATHEAD LAKE (BASINS 76L AND 76LJ) AND FROM TRIBUTARIES TO THE BLACKFOOT RIVER (BASIN 76F) AND USES THE WATER IN THE FLATHEAD RIVER, BELOW AND INCLUDING FLATHEAD LAKE (BASINS 76L AND 76LJ).

Water Right Number: 76L 30052929 COMPACT
Version: 1 -- ORIGINAL RIGHT
Version Status:

Owners: USA (DEPT OF INTERIOR BUREAU OF INDIAN AFF)
IN TRUST FOR CONFEDERATED SALISH & KOOTENAI TRIBES
OF THE FLATHEAD INDIAN RESERVATION, MONTANA
911 NE 11TH AVENUE
PORTLAND, OR 97232-4169

ALL COMMUNICATION SHALL BE COPIED TO THE CS&KT TRIBAL CHAIRMAN AS THE BENEFICIAL OWNER AT PO BOX 278, PABLO, MT 59855-0278.

Priority Date: JULY 16, 1855 at 12:00 A.M.

Enforceable Priority Date: JULY 16, 1855 at 12:00 A.M.

Purpose (use): FISH AND WILDLIFE

Maximum Flow Rate:

THE MAXIMUM FLOW RATE IS SUBJECT TO APPENDIX A OF THE FIIP WATER USE AGREEMENT.

Maximum Volume: 28,248.00 AC-FT

Source Name: ASHLEY CREEK
Source Type: SURFACE WATER

Source Name: BISSON CREEK
Source Type: SURFACE WATER

Source Name: CENTIPEDE CREEK
Source Type: SURFACE WATER

Source Name: COURVILLE CREEK
Source Type: SURFACE WATER

Source Name: CROW CREEK
Source Type: SURFACE WATER

Source Name: DRY CREEK
Source Type: SURFACE WATER

Source Name: EAGLE PASS CREEK
Source Type: SURFACE WATER

Source Name: FALLS CREEK
Source Type: SURFACE WATER

Source Name: FLATHEAD RIVER
Source Type: SURFACE WATER

Source Name: FLATHEAD RIVER (IMPOUNDMENTS BEHIND KERR DAM)
Source Type: SURFACE WATER

Source Name: GRIZZLY CREEK
Source Type: SURFACE WATER

Source Name: HELLROARING CREEK
Source Type: SURFACE WATER

Source Name: JOCKO RIVER, MIDDLE FORK
Source Type: SURFACE WATER

Source Name: JOCKO RIVER, NORTH FORK
Source Type: SURFACE WATER

Source Name: LOST CREEK
Source Type: SURFACE WATER

Source Name: MARSH CREEK
Source Type: SURFACE WATER

Source Name: MIDDLE CROW CREEK
Source Type: SURFACE WATER

Source Name: MIKES CREEK
Source Type: SURFACE WATER

Source Name: MISSION CREEK
Source Type: SURFACE WATER

Source Name: MOLLMAN CREEK
Source Type: SURFACE WATER

Source Name: MUD CREEK
Source Type: SURFACE WATER

Source Name: NORTH CROW CREEK
Source Type: SURFACE WATER

Source Name: PLACID CREEK, NORTH FORK
Source Type: SURFACE WATER

Source Name: POIRIER CREEK
Source Type: SURFACE WATER

Source Name: POISON OAK CREEK
Source Type: SURFACE WATER

Source Name: POST CREEK
Source Type: SURFACE WATER

Source Name: ROCK CREEK
Source Type: SURFACE WATER

Source Name: S-14 CREEK
Source Type: SURFACE WATER

Source Name: SOUTH CROW CREEK
Source Type: SURFACE WATER

Source Name: VALENTINE CREEK
Source Type: SURFACE WATER

DRY CREEK IS A TRIBUTARY OF MISSION CREEK.

DRY CREEK, A TRIBUTARY OF ASHLEY CREEK, IS ALSO KNOWN AS NORTH DRY CREEK.

ASHLEY CREEK IS A TRIBUTARY OF POST CREEK

ASHLEY CREEK, A TRIBUTARY OF MUD CREEK, IS ALSO KNOWN AS NORTH ASHLEY CREEK.

WATER IMPOUNDED BY KERR DAM MAY BE DIVERTED PER ARTICLES 41 THROUGH 43 OF THE FERC LICENSE IN ORDER TO MEET THE MINIMUM POOL REQUIREMENTS OF PABLO RESERVOIR.

Point of Diversion and Means of Diversion:

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1		NWSE	29	17N	16W	MISSOULA

Period of Diversion: APRIL 15 TO SEPTEMBER 15 **Flow Rate:** 120.00 CFS
Source Name: PLACID CREEK, NORTH FORK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: PLACID CANAL

2		SWSW	20	17N	17W	MISSOULA

Period of Diversion: MARCH 1 TO OCTOBER 15 **Flow Rate:** 150.00 CFS
Source Name: JOCKO RIVER, MIDDLE FORK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: TABOR FEEDER CANAL

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
3	2		6	17N	18W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: DRY CREEK
Diversion Means: DAM
Diversion Type: PRIMARY
Ditch Name: DRY CREEK LINING

4	SESE	15	17N	18W	LAKE

Period of Diversion: MARCH 1 TO OCTOBER 15 **Flow Rate:** 450.00 CFS
Source Name: FALLS CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: TABOR FEEDER CANAL

5	SWSW	15	17N	18W	LAKE

Period of Diversion: MARCH 1 TO OCTOBER 15 **Flow Rate:** 450.00 CFS
Source Name: S-14 CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: TABOR FEEDER CANAL

6	NWNW	16	17N	18W	LAKE

Period of Diversion: MARCH 1 TO OCTOBER 15 **Flow Rate:** 450.00 CFS
Source Name: GRIZZLY CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: TABOR FEEDER CANAL

7	NWNE	24	17N	18W	LAKE

Period of Diversion: MARCH 1 TO OCTOBER 15 **Flow Rate:** 420.00 CFS
Source Name: JOCKO RIVER, NORTH FORK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: TABOR FEEDER CANAL

8	2	4	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 300.00 CFS
Source Name: ASHLEY CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

9	NWNW	10	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 300.00 CFS
Source Name: DRY CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

10	4	16	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: MISSION CREEK
Diversion Means: DAM
Diversion Type: PRIMARY

11	4	16	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 300.00 CFS
Source Name: MISSION CREEK
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
12		SWSE	21	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 255.00 CFS
Source Name: MIKES CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

13		SWSW	28	18N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 255.00 CFS
Source Name: DRY CREEK
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

14		SENE	4	19N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 220.00 CFS
Source Name: POST CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

15		SWNE	5	19N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 250.00 CFS
Source Name: POST CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: KICKING HORSE FEEDER CANAL

16	1		10	19N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: POST CREEK
Diversion Means: DAM
Diversion Type: PRIMARY

17		NWSE	16	19N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 300.00 CFS
Source Name: VALENTINE CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

18		SWNE	21	19N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 300.00 CFS
Source Name: POISON OAK CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

19		NWSW	4	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 270.00 CFS
Source Name: LOST CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

20		NESW	16	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 270.00 CFS
Source Name: SOUTH CROW CREEK
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
21		NENE	19	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 275.00 CFS
Source Name: SOUTH CROW CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: SOUTH CROW FEEDER CANAL

22		NWNE	28	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 220.00 CFS
Source Name: MOLLMAN CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

23		SWSE	28	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 220.00 CFS
Source Name: MARSH CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

24		NWSE	31	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 260.00 CFS
Source Name: MARSH CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: KICKING HORSE FEEDER CANAL

25		SESE	33	20N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 220.00 CFS
Source Name: EAGLE PASS CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

26		NESE	16	20N	20W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 22.00 CFS
Source Name: CROW CREEK
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: CROW PUMP CANAL

27		NWNW	34	20N	20W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name:
Diversion Means: DAM
Diversion Type: SECONDARY

28			36	20N	20W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name:
Diversion Means: DAM
Diversion Type: SECONDARY
Ditch Name: NINEPIPE FEEDER CANAL

29			11	20N	21W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: CROW CREEK
Diversion Means: DAM
Diversion Type: PRIMARY

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
30		NESE	20	21N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 470.00 CFS
Source Name: ROCK CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

31		NWNW	28	21N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 470.00 CFS
Source Name: NORTH CROW CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

32		NENW	33	21N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 270.00 CFS
Source Name: MIDDLE CROW CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

33	4		4	22N	19W	LAKE

Period of Diversion: APRIL 15 TO SEPTEMBER 15 **Flow Rate:** 15.00 CFS
Source Name: HELLROARING CREEK
Diversion Means: HEADGATE
Diversion Type: PRIMARY
Ditch Name: TWIN FEEDER CANAL

34		NWNW	9	22N	19W	LAKE

Period of Diversion: APRIL 15 TO SEPTEMBER 15 **Flow Rate:** 15.00 CFS
Source Name: CENTIPEDE CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: TWIN FEEDER CANAL

35		NENW	16	22N	19W	LAKE

Period of Diversion: APRIL 15 TO SEPTEMBER 15 **Flow Rate:** 8.00 CFS
Source Name: BISSON CREEK
Diversion Means: DIVERSION DAM
Diversion Type: PRIMARY
Ditch Name: LOWER TWIN FEEDER CANAL

36			18	22N	19W	LAKE

Period of Diversion: APRIL 15 TO SEPTEMBER 15 **Flow Rate:** 15.00 CFS
Source Name:
Diversion Means: DAM
Diversion Type: SECONDARY

37		SENW	28	22N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 400.00 CFS
Source Name: POIRIER CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

38		NWSW	28	22N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 400.00 CFS
Source Name: ASHLEY CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
39		SESE	32	22N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 470.00 CFS
Source Name: COURVILLE CREEK
Diversion Means: DITCH
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

40		NWNW	33	22N	19W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 400.00 CFS
Source Name: MUD CREEK
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: PABLO FEEDER CANAL

41	3		17	22N	20W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 210.00 CFS
Source Name: FLATHEAD RIVER
Diversion Means: OTHER
Diversion Type: PRIMARY
Ditch Name: FLATHEAD PUMP CANAL

42		SWNE	27	22N	20W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31 **Flow Rate:** 340.00 CFS
Source Name:
Diversion Means: DAM
Diversion Type: SECONDARY

43			12	22N	21W	LAKE

Period of Diversion: JANUARY 1 TO DECEMBER 31
Source Name: FLATHEAD RIVER (IMPOUNDMENTS BEHIND KERR DAM)
Diversion Means: DAM
Diversion Type: PRIMARY

WATER DIVERTED AT #1 (NORTH FORK PLACID) IS CONVEYED THROUGH PLACID CANAL TO JOCKO RIVER, MIDDLE FORK WHICH IS USED AS A NATURAL CARRIER TO DIVERSION #2 (TABOR FEEDER). WATER DIVERTED AT #2 (MIDDLE FORK JOCKO), 7 (N FORK JOCKO), 4 (FALLS CR), 5 (S-14 CR), AND 6 (GRIZZLY CR) IS CONVEYED THROUGH TABOR FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #3 (TABOR RESERVOIR) AND DRY CREEK (LINING) WHICH IS USED AS A NATURAL CARRIER TO DIVERSION #13 (PABLO FEEDER). WATER FROM DRY CREEK IS IMPOUNDED IN THE PLACE OF USE AT DIVERSION #3 (TABOR RESERVOIR). WATER DIVERTED AT #13 (DRY CR), 12 (MIKES CR), 11 (MISSION CR), 9 (N DRY CR), 8 (ASHLEY CR), 18 (POISON OAK CR), AND 17 (VALENTINE CR) IS CONVEYED THROUGH PABLO FEEDER CANAL TO DIVERSION #14 (PABLO FEEDER AT POST CR) AND POST CREEK WHICH IS USED AS A NATURAL CARRIER TO DIVERSION #15 (KICKING HORSE FEEDER).

WATER FROM MISSION CREEK IS IMPOUNDED IN THE PLACE OF USE AT DIVERSION #10 (MISSION RESERVOIR). WATER FROM POST CREEK IS IMPOUNDED IN THE PLACE OF USE AT DIVERSION #16 (MCDONALD RESERVOIR). WATER DIVERTED AT #15 (POST CR) AND 24 (MARSH CR) IS CONVEYED THROUGH KICKING HORSE FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #28 (KICKING HORSE RESERVOIR) AND THROUGH NINEPIPE FEEDER TO THE PLACE OF USE AT DIVERSION #27 (NINEPIPE RESERVOIR). WATER DIVERTED AT #14 (POST CR), 25 (EAGLE PASS CR), 23 (MARSH CR) AND 22 (MOLLMAN CR) IS CONVEYED THROUGH PABLO FEEDER CANAL TO DIVERSION #20 (PABLO FEEDER AT S CROW CR) AND TO SOUTH CROW CREEK (CROW CREEK) WHICH IS USED AS A NATURAL CARRIER TO DIVERSIONS #21 (S CROW FEEDER) AND 26 (CROW PUMP) AND THE PLACE OF USE AT DIVERSION #29 (LOWER CROW RESERVOIR).

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County

WATER DIVERTED AT #21 (S CROW CR) IS CONVEYED THROUGH SOUTH CROW FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #28 (KICKING HORSE RESERVOIR) AND THROUGH NINEPIPE FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #27 (NINEPIPE RESERVOIR). WATER DIVERTED AT #26 (CROW CR) IS CONVEYED THROUGH CROW PUMP CANAL AND POST A CANAL TO THE PLACE OF USE AT DIVERSION #27 (NINEPIPE RESERVOIR). WATER IN CROW CREEK IS IMPOUNDED IN THE PLACE OF USE AT DIVERSION #29 (LOWER CROW RESERVOIR). WATER DIVERTED AT #20 (S CROW CR), 19 (LOST CR), 32 (MIDDLE CROW CR), 31 (N CROW CR), 30 (ROCK CR), 39 (COURVILLE CR), 40 (MUD CR), 38 (N ASHLEY CR), AND 37 (POIRIER CR) IS CONVEYED THROUGH PABLO FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #42 (PABLO RESERVOIR). WATER IN FLATHEAD RIVER OR IMPOUNDED AT DIVERSION #43 (KERR DAM) IS DIVERTED AT #41 (FLATHEAD PUMPS) AND CONVEYED THROUGH FLATHEAD PUMP CANAL AND PABLO FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #42 (PABLO RESERVOIR).

WATER DIVERTED AT #35 (BISSON CR) IS CONVEYED THROUGH LOWER TWIN FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #36 (TURTLE RESERVOIR). WATER DIVERTED AT #33 (HELLROARING CR) AND 34 (CENTIPEDE CR) IS CONVEYED THROUGH TWIN FEEDER CANAL TO THE PLACE OF USE AT DIVERSION #36 (TURTLE RESERVOIR).

THE MEANS OF DIVERSION FOR #13, 11, 20, AND 40 IS HEADWORKS.

THE MEANS OF DIVERSION FOR #26 IS DIVERSION DAM WITH PUMPING PLANT.

THE MEANS OF DIVERSION FOR #41 IS PUMPING PLANT AND PENSTOCK.

SECONDARY POINT OF DIVERSION WATER SOURCES ARE A MIX OF RELEASES FROM THE PRIMARY POINTS OF DIVERSION.

TABOR RESERVOIR IS ALSO SUPPLIED BY DIVERSION(S) #1 (N FK PLACID CR), 2 (TABOR FDR AT MDL FK JOCKO R), 7 (TABOR FDR AT N FK JOCKO R), 4 (TABOR FDR AT FALLS CR), 5 (TABOR FDR AT S-14 CR), AND 6 (TABOR FDR AT GRIZZLY CR).

KICKING HORSE RESERVOIR IS ALSO SUPPLIED BY DIVERSION(S) #1 (N FK PLACID CR), 2 (TABOR FDR AT MDL FK JOCKO R), 7 (TABOR FDR AT N FK JOCKO R), 4, TABOR FDR AT FALLS CR), 5 (TABOR FDR AT S-14 CR), 6 (TABOR FDR AT GRIZZLY CR), 13 (PABLO FDR AT DRY CR), 12 (PABLO FDR AT MIKES CR), 11 (PABLO FDR AT MISSION CR), 9 (PABLO FDR AT N DRY CR), 8 (PABLO FDR AT ASHLEY CR), 18 (PABLO FDR AT POISON OAK CR), 17 (PABLO FDR AT VALENTINE CR), 15 (KICKING HORSE FDR AT POST CR), 25 (PABLO FDR AT EAGLE PASS CR), AND 24 (KICKING HORSE FDR AT MARSH CR).

WATER IN KICKING HORSE RESERVOIR IS IMPOUNDED AT DIVERSION #28.

NINEPIPE RESERVOIR IS ALSO SUPPLIED BY DIVERSION(S) #1 (N FK PLACID CR), 2 (TABOR FDR AT MDL FK JOCKO R), 7 (TABOR FDR AT N FK JOCKO R), 4 (TABOR FDR AT FALLS CR), 5 (TABOR FDR AT S-14 CR), 6 (TABOR FDR AT GRIZZLY CR), 13 (PABLO FDR AT DRY CR), 12 (PABLO FDR AT MIKES CR), 11 (PABLO FDR AT MISSION CR), 9 (PABLO FDR AT N DRY CR), 8 (PABLO FDR AT ASHLEY CR), 18 (PABLO FDR AT POISON OAK CR), 17 (PABLO FDR AT VALENTINE CR), 15 (KICKING HORSE FDR AT POST CR), 25 (PABLO FDR AT EAGLE PASS CR), 24 (KICKING HORSE FDR AT MARSH CR), AND 21 (S CROW FDR AT S CROW CR).

WATER IN NINEPIPE RESERVOIR IS IMPOUNDED AT DIVERSION #27.

LOWER CROW RESERVOIR IS ALSO SUPPLIED BY DIVERSION(S) #1 (N FK PLACID CR), 2 (TABOR FDR AT MDL FK JOCKO R), 7 (TABOR FDR AT N FK JOCKO R), 4 (TABOR FDR AT FALLS CR), 5 (TABOR FDR AT S-14 CR), 6 (TABOR FDR AT GRIZZLY CR), 13 (PABLO FDR AT DRY CR), 12 (PABLO FDR AT MIKES CR), 11 (PABLO FDR AT MISSION CR), 9 (PABLO FDR AT N DRY CR), 8 (PABLO FDR AT ASHLEY CR), 18 (PABLO FDR AT POISON OAK CR), 17 (PABLO FDR AT VALENTINE CR), 14 (PABLO FDR AT POST CR), 25 (PABLO FDR AT EAGLE PASS CR), 23 (PABLO FDR AT MARSH CR), AND 22 (PABLO FDR AT MOLLMAN CR).

PABLO RESERVOIR IS ALSO SUPPLIED BY DIVERSIONS #1 (N FK PLACID CR), 2 (TABOR FDR AT MDL FK JOCKO R), 7 (TABOR FDR AT N FK JOCKO R), 4 (TABOR FDR AT FALLS CR), 5 (TABOR FDR AT S-14 CR), 6 (TABOR FDR AT GRIZZLY CR), 13 (PABLO FDR AT DRY CR), 12 (PABLO FDR AT MIKES CR), 11 (PABLO FDR AT MISSION CR), 9 (PABLO FDR AT N DRY CR), 8 (PABLO FDR AT ASHLEY CR), 18 (PABLO FDR AT POISON OAK CR), 17 (PABLO FDR AT VALENTINE CR), 14 (PABLO FDR AT POST CR), 25 (PABLO FDR AT EAGLE PASS CR), 23 (PABLO FDR AT MARSH CR), 22 (PABLO FDR AT MOLLMAN CR), 20 (PABLO FDR AT S CROW CR), 19 (PABLO FDR AT LOST CR), 32 (PABLO FDR AT MDL CROW CR), 31 (PABLO FDR AT N CROW CR), 30 (PABLO FDR AT ROCK CR), 39 (PABLO FDR AT COURVILLE CR), 40 (PABLO FDR AT MUD CR), 38 (PABLO FDR AT N ASHLEY CR), 37 (PABLO FDR AT POIRIER CR), AND 43 (KERR DAM).

WATER IN PABLO RESERVOIR IS IMPOUNDED AT DIVERSION #42.

TURTLE RESERVOIR IS ALSO SUPPLIED BY DIVERSIONS #33 (TWIN FDR AT HELLROARING CR) AND 35 (LWR TWIN FDR AT BISSON CR).

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County

WATER IN TURTLE RESERVOIR IS IMPOUNDED AT DIVERSION #36.

Reservoir: ON STREAM **Reservoir Name** TABOR (ST. MARY'S) RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
2		6	17N	18W	LAKE

Diversion to Reservoir: DIVERSION # 3
Dam Height: 53.00 FEET
Surface Area: 285.00 ACRES
Current Capacity: 23,200.00 ACRE-FEET

Reservoir: ON STREAM **Reservoir Name** MISSION RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
4		16	18N	19W	LAKE

Diversion to Reservoir: DIVERSION # 10
Dam Height: 83.00 FEET
Surface Area: 290.00 ACRES
Current Capacity: 7,250.00 ACRE-FEET

Reservoir: ON STREAM **Reservoir Name** MCDONALD RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1		10	19N	19W	LAKE

Diversion to Reservoir: DIVERSION # 16
Dam Height: 48.00 FEET
Surface Area: 200.00 ACRES
Current Capacity: 8,200.00 ACRE-FEET

Reservoir: OFF STREAM **Reservoir Name** KICKING HORSE RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
	NENE	19	20N	19W	LAKE

Diversion to Reservoir: DIVERSION # 21
Dam Height: 29.00 FEET
Surface Area: 800.00 ACRES
Current Capacity: 8,400.00 ACRE-FEET

Reservoir: OFF STREAM **Reservoir Name** NINEPIPE RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
	NESE	16	20N	20W	LAKE

Diversion to Reservoir: DIVERSION # 26
Dam Height: 38.00 FEET
Surface Area: 1,550.00 ACRES
Current Capacity: 15,000.00 ACRE-FEET

Reservoir: ON STREAM **Reservoir Name** LOWER CROW RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
		11	20N	21W	LAKE

Diversion to Reservoir: DIVERSION # 29
Dam Height: 99.00 FEET
Surface Area: 345.00 ACRES
Current Capacity: 1,035.00 ACRE-FEET

Reservoir: OFF STREAM **Reservoir Name** TURTLE (TWIN) RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
	NWNW	9	22N	19W	LAKE

Diversion to Reservoir: DIVERSION # 34
Dam Height: 20.00 FEET
Surface Area: 65.00 ACRES
Current Capacity: 1,900.00 ACRE-FEET

Reservoir: OFF STREAM **Reservoir Name** PABLO RESERVOIR

Govt Lot	Qtr Sec	Sec	Twp	Rge	County
3		17	22N	20W	LAKE

Diversion to Reservoir: DIVERSION # 41
Dam Height: 43.00 FEET
Surface Area: 205.00 ACRES
Current Capacity: 32,800.00 ACRE-FEET

SEE THE ATTACHED RESERVOIR DIAGRAMS.

Period of Use: JANUARY 1 to DECEMBER 31

Place of Use:

ID	Acres	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1				4	17N	18W	LAKE
2				5	17N	18W	LAKE
3				6	17N	18W	LAKE
4				14	18N	19W	LAKE
5				15	18N	19W	LAKE
6				16	18N	19W	LAKE
7				10	19N	19W	LAKE
8				11	19N	19W	LAKE
9				12	19N	19W	LAKE
10				1	19N	20W	LAKE
11				2	19N	20W	LAKE
12				3	19N	20W	LAKE
13				11	19N	20W	LAKE
14				19	20N	19W	LAKE
15				30	20N	19W	LAKE
16				31	20N	19W	LAKE
17				7	20N	20W	LAKE
18				18	20N	20W	LAKE
19				25	20N	20W	LAKE
20				34	20N	20W	LAKE
21				35	20N	20W	LAKE
22				36	20N	20W	LAKE
23				11	20N	21W	LAKE
24				12	20N	21W	LAKE
25				13	20N	21W	LAKE
26				18	22N	19W	LAKE
27				20	22N	20W	LAKE
28				21	22N	20W	LAKE
29				22	22N	20W	LAKE
30				26	22N	20W	LAKE
31				27	22N	20W	LAKE
32				28	22N	20W	LAKE
33				29	22N	20W	LAKE
34				32	22N	20W	LAKE
35				33	22N	20W	LAKE
36				34	22N	20W	LAKE

Remarks:

THE WATER RIGHTS FOLLOWING THIS STATEMENT ARE ASSOCIATED WHICH MEANS THE RIGHTS SHARE THE SAME POINT OF DIVERSION.

30052929 30052931 30052932

THE WATER RIGHTS FOLLOWING THIS STATEMENT ARE ASSOCIATED WHICH MEANS THE RIGHTS SHARE THE SAME RESERVOIR.

30052929 30052932

THIS WATER RIGHT SHALL BE ADMINISTERED IN ACCORDANCE WITH THE CONDITIONS OF THE FIIP WATER USE AGREEMENT AMONG THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE FLATHEAD JOINT BOARD OF CONTROL, AND THE UNITED STATES OF AMERICA, WHICH IS ATTACHED AS APPENDIX 3 TO THE WATER RIGHTS COMPACT AMONG THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE STATE OF MONTANA, AND THE UNITED STATES OF AMERICA.

THE MAP DATA SOURCE FOR PLACE OF USE AND POINT OF DIVERSION FOR THIS WATER RIGHT ARE CONTAINED IN A GIS DATABASE FILE ENTITLED "CSKT-MT WATER RIGHTS COMPACT 2013." THIS FILE MAY BE DOWNLOADED FROM THE MONTANA STATE LIBRARY (NRIS.MT.GOV) OR OBTAINED IN HARDCOPY FORM FROM THE OFFICE OF THE ENGINEER OF THE FLATHEAD RESERVATION WATER MANAGEMENT BOARD.

SEE 30052929 MAP EXHIBIT(S) 1 THROUGH 19.

THE MAXIMUM ANNUAL VOLUME DIVERTED SHALL BE LIMITED TO A MAXIMUM ANNUAL DEPLETION OF 2,000 ACRE-FEET, BASED ON THE NET EVAPORATION FROM THE TOTAL RESERVOIR SURFACE AREAS AT THE SPECIFIED MINIMUM POOL ELEVATIONS.

THE EXERCISE OF THIS WATER RIGHT IS SUBJECT TO THE TERMS AND CONDITIONS OF THE WATER RIGHTS COMPACT ENTERED INTO BY THE CONFEDERATED SALISH AND KOOTENAI TRIBES, THE STATE OF MONTANA, AND THE UNITED STATES OF AMERICA.

THE FOLLOWING ADMINISTRATIVE AREAS IN THE FIIP WATER USE AGREEMENT ARE PERTINENT TO THIS WATER RIGHT: PLACID CANAL DIVERSION, TABOR FEEDER CANAL, PABLO FEEDER CANAL, UPPER MISSION CREEK, UPPER CROW CREEK, HELLROARING / CENTIPEDE / BISSON CREEKS, FLATHEAD RIVER PUMPING PLANT.

Remarks:

THE MINIMUM POOL LEVEL FOR TABOR (ST. MARY'S) RESERVOIR SHALL BE MAINTAINED ACCORDING TO THE FOLLOWING SCHEDULE:
FROM NOVEMBER 15 UP TO AUGUST 1, THE MINIMUM POOL LEVEL SHALL BE MAINTAINED AT 4,006 FEET MEAN SEA LEVEL, EQUALING 18,162 ACRE-FEET OF STORAGE. THIS ANNUAL TARGET IS REQUIRED TO BE MET ONE YEAR OUT OF FOUR.
FROM AUGUST 1 UP TO AUGUST 15, THE MINIMUM POOL LEVEL SHALL BE MAINTAINED AT 3,980 FEET MEAN SEA LEVEL, EQUALING 12,119 ACRE-FEET OF STORAGE. THIS ANNUAL TARGET IS REQUIRED TO BE MET THREE YEARS OUT OF FOUR.
FROM AUGUST 15 UP TO NOVEMBER 15, THE MINIMUM POOL LEVEL SHALL BE MAINTAINED AT 3,927 FEET MEAN SEA LEVEL, EQUALING 2,416 ACRE-FEET OF STORAGE. THIS ANNUAL TARGET IS REQUIRED TO BE MET EVERY YEAR.

THE MINIMUM POOL LEVEL FOR MISSION RESERVOIR SHALL BE MAINTAINED AT 3,379 FEET MEAN SEA LEVEL, EQUALING 1,006 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR MCDONALD RESERVOIR SHALL BE MAINTAINED AT 3,549 FEET MEAN SEA LEVEL, EQUALING 385 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR KICKING HORSE RESERVOIR SHALL BE MAINTAINED AT 3,049 FEET MEAN SEA LEVEL, EQUALING 1,230 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR NINEPIPE RESERVOIR SHALL BE MAINTAINED AT 2,998 FEET MEAN SEA LEVEL, EQUALING 1,905 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR LOWER CROW RESERVOIR SHALL BE MAINTAINED AT 2,839 FEET MEAN SEA LEVEL, EQUALING 2,039 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR PABLO RESERVOIR SHALL BE MAINTAINED AT 3,188 FEET MEAN SEA LEVEL, EQUALING 1,425 ACRE-FEET OF STORAGE.

THE MINIMUM POOL LEVEL FOR TURTLE (TWIN) RESERVOIR SHALL BE MAINTAINED AT 3,068 FEET MEAN SEA LEVEL, EQUALING 96 ACRE-FEET OF STORAGE.

THIS WATER RIGHT IS LOCATED IN WHOLE OR IN PART WITHIN THE EXTERIOR BOUNDARY OF THE FLATHEAD INDIAN RESERVATION.

71st Congress
2d Session

SENATE

Document
No. 153

FLATHEAD POWER DEVELOPMENT

MEMORANDUM ON THE DEVELOPMENT OF FLATHEAD RIVER POWER SITES, MONTANA

PRESENTED BY MR. WALSH, OF MONTANA

MAY 23, 1930.—Ordered to be printed with an illustration

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON: 1930

Eb 73

PREPARED BY

J. HENRY SCATTERGOOD

ASSISTANT COMMISSIONER

THE BUREAU OF INDIAN AFFAIRS

FLATHEAD POWER DEVELOPMENT

DECEMBER 30, 1929.

Hon. RAY LYMAN WILBUR,
Secretary of the Interior.

Hon. FEDERAL POWER COMMISSION.

GENTLEMEN: You have before you for consideration applications for the development of Flathead River power sites, Montana, from (1) Rocky Mountain Power Co., of Montana, application No. 5; (2) Walter H. Wheeler, of Minneapolis, Minn., application No. 868.

Hearings upon these applications were held before the full commission beginning October 28, 1929, and lasting 11 days. The record covers 2,295 pages.

SPECIAL LEGAL PROVISIONS RELATING TO FLATHEAD

Under the act of March 7, 1928 (45 Stat. 212–213), provision is made—

> That the Federal Power Commission is authorized in accordance with the Federal water power act, and upon terms satisfactory to the Secretary of the Interior, to issue a permit or permits or a license or licenses for the use, for the development of power or power sites on the Flathead Reservation and of water rights reserved or appropriated for the irrigation projects.

And it is—

> *Provided further,* That the rentals from such licenses for the use of Indian lands shall be paid to the Indians of said reservation as a tribe, which money shall be deposited in the Treasury of the United States to the credit of said Indians and to draw interest at the rate of 4 per cent.

It has also been enacted in the act of March 4, 1929, that—

> The Federal Power Commission in issuing any permits or licenses for the development of power or power sites on the Flathead Indian Reservation in the State of Montana, as authorized by the act of March 7, 1928, is hereby authorized and directed to waive payment of the usual administrative fees or commissions charged under existing laws relating to or under regulations of said Federal Power Commission in the issuance of any such permits or licenses.

Thus in the case of the Flathead River power development on the Flathead Indian Reservation, Congress has made two unique provisions in addition to the general application of the Federal water power act. These are (1) that the permits or licenses shall be "upon terms satisfactory to the Secretary of the Interior," and (2) that the usual fees charged by the Federal Power Commission for admistration and for use of lands shall be waived in favor of the Indians.

Lands

GENERAL PROVISION AS TO POWER SITES ON INDIAN RESERVATIONS

Under regulation 14, section 3, of the regulations of the Federal Power Commission, it is provided that—

> When licenses are issued involving the use of tribal lands embraced within Indian reservations, the commission will fix a reasonable annual charge for the

use thereof, based upon the commercial value of the land for the most profitable purpose for which suitable, including power development. The charge shall commence upon date license is issued.

In order, therefore, to fix the proper rental basis for the use of Indian lands, it is necessary to determine the value of the power sites from their earning standpoint for power purposes. This involves a careful study of (1) the two applicants' proposals; (2) the actual earning power of the Montana Power Co. system, guarantor of one of the applicants; and (3) suggested modifications of the two applicants' proposals.

GENERAL DESCRIPTION OF THE FLATHEAD POWER DEVELOPMENT

The Flathead River power sites, five in number, and all within the Flathead Reservation, are among the most important undeveloped power sites of the United States. This is because of (1) the existence of Flathead Lake, a very large natural reservoir which can be very easily enlarged in capacity, and which will serve as storage for all five power sites; (2) the relatively low cost of development; (3) the possible development of Hungry Horse Reservoir upon the head waters of South Flathead River above Flathead Lake, and which would increase the potential capacity of all five sites by 50 per cent; (4) the additional power to be created at the existing Thompson Falls plant of the Montana Power Co. down the Flathead River below the five power sites by the immediate increased storage to be created by the raising of Flathead Lake and the eventual increase of this by the potential development of Hungry Horse Reservoir. Thus these Flathead sites form the key to a very large and cheap development.

Flathead Lake, southwest of Glacier National Park in northwestern Montana, lies on the western side of the Rocky Mountain watershed and is 120,000 acres in area. The south half of the lake is in the Indian reservation. By the building of a dam in the Flathead River Canyon about 4 miles below the present lake outlet, a head of 185 feet at site No. 1 can be developed, and the lake level can thus be raised about 10 feet so as to develop about 1,200,000 acre-feet. By dredging 3 feet from the present lake outlet the draw-down of the lake can be further increased so as to provide almost 1,600,000 acre-feet. Both applicants propose to build such a dam; one proposes also to do as much dredging as will create 1,400,000 acre-feet, giving 6,000 cubic feet per second. As will be shown later, one applicant estimates an average annual output of 68,000 horsepower, the other 105,000 horsepower, both of prime power. The immediate proposals concern site No. 1, but the ultimate development of the other four sites should together involve about as much additional power as site No. 1, the head for each site being as follows:

Site No. 2, 51 feet, located 5 miles below site No. 1.
Site No. 3, 26 feet, located 12 miles below site No. 1.
Site No. 4, 88 feet, located 39 miles below site No. 1.
Site No. 5, 17 feet, located 43 miles below site No. 1.

This would be based on Flathead storage alone and would be increased 50 per cent with Hungry Horse in addition.

THE APPLICANTS

Two present applicants under your consideration are:

(1) Rocky Mountain Power Co., a subsidiary of the Montana Power Co. and guaranteed by the latter. The Montana Power Co. is a very large and powerful company with capital of nearly $100,000,000 and with a long record of great success. It now operates nine hydro plants with total installed capacity of 327,750 horsepower, and a further capacity will shortly be completed of 60,000 horsepower. It described itself in the hearings as in urgent need of immediate further development to provide for its present service to the public and its constant growth. It was stated that by the time Flathead site No. 1 could be built its system could immediately absorb at least 50,000 horsepower. Mr. Kerr also indicated (p. 1141) that "for a short period, perhaps a year or so, we might be able to dispose of 30,000 horsepower to the West." This company has been an applicant for the Flathead power site since 1920 when the Federal water power act was passed. It is anxious immediately to fully develop site No. 1 by the installation of 150,000 horsepower.

The Montana Power Co. would, if granted the license, merge the Flathead power into its general system; and would connect it up so that not only all of its plants west (including Flathead) as well as east of the Rocky Mountains (p. 457) would be connected up together, but also they would be tied in with its allied companies to the west (p. 1350), namely, Washington Water Power Co., Pacific Power & Light Co., and also further west with Puget Sound Power & Light Co., a Stone & Webster Co. The first two, like the Montana Power Co. itself, are parts of the American Power & Light Co., which in turn forms one of the Electric Bond & Share Co. groups. The Montana Power Co. has offered a yearly rental to the Indians of $1 per measured horsepower.

(2) Walter H. Wheeler, of Minneapolis. Mr. Wheeler is a civil engineer of good standing and with an excellent record of accomplishment. He has been interested in the Flathead power development since 1927 and proposes to develop through a corporation to be formed all five sites through the sale of very cheap power, viz, at $15 per horsepower-year to new industries to be attracted there. These would be chiefly fertilizer and electrochemical plants which would use raw materials to be found in Montana and neighboring States. The sale of power to other than industrial plants would be only of secondary consideration in Mr. Wheeler's plans, although he would be prepared to sell wholesale to other power companies at the same rate. He expects that the industries would locate in close proximity to Flathead and that they would bring largely increased population, enlarged markets, and other material advantages to the neighborhood. Mr. Wheeler's plan, if successful, would also introduce new industries in competition with the Anaconda Copper Co. interests, which latter have always been very closely allied with the Montana Power Co. Mr. Wheeler expects, if granted the license, to be able to market the power from and also to finance the construction of not only site No. 1 at Flathead but also the other four sites by the attraction of new industries through his low-cost power offers. He claims this plan would call for a much higher load factor than the other applicant; in fact, he expects a continuous demand for all the prime power possible

to be delivered, and he estimates a much higher capacity for the Flathead development than the other applicant.

In point of time, if granted the preliminary permit, Mr. Wheeler hopes to proceed immediately to sign up parties to take the power and also to close with banking interests to finance the proposition. He would simultaneously complete preliminary borings and then proceed with construction work. It will, of course, not be possible for Mr. Wheeler to get the plant at site No. 1 in operation at as early a date as the Rocky Mountain Power Co. can even if all of his plans materialize, because that company has already made its preliminary borings and is ready now to do actual construction work. Mr. Wheeler has made an agreement with the Indians to pay an annual rental of $1.12½ per measured horsepower.

The Indian Bureau is limiting this memorandum regarding the two applications to an analysis of their power features and to necessary regulatory provisions for proper control in their relation to the question of rentals for the Indian power sites. No attempt is here made to consider the feasibility of the plans of either applicant for marketing the power or their respective ability to finance their proposals. For purposes of comparison these factors are here assumed. Nor is any effort here made to analyze the possibility or probability of applicant Wheeler's fertilizer and electrochemical industrial demands. It is our understanding that Government experts in these fields are being consulted on these subjects.

IMMEDIATE NEED OF MONTANA POWER CO. FOR ADDED CAPACITY AND ITS CONSEQUENT ANXIETY TO LEASE THE FLATHEAD SITE

There is one feature, however, which was stressed in the hearings, and being of large public interest in Montana, should be mentioned. This is the immediate need for a large amount of added capacity of the Montana Power Co. system. Mr. Kerr, its vice president, stated that because of the dry season last summer the company's reservoirs were at present very low and that a shut down this winter of some of their capacity seemed inevitable. Since the hearings this has actually resulted and already 40,000 horsepower has shut down. But it has not been only the water shortage that was the cause; even more of a factor was the fact that the company's load has outgrown its production capacity, as is also shown by the high utilization factor of 103 per cent in 1928. The company must immediately have another plant to render its service to the public. Being for a long time one of the applicants for the Flathead site, and waiting for the matter to be brought to a decision, it has not seen fit to make other present plans. In fact, from what Mr. Kerr represents, it would appear that it would be almost impracticable for the company to obtain from any other site than Flathead the amount of new power development that it must have as fast as construction can take place. Their other sites that are undeveloped are much smaller units and less desirable, and to fill the immediate and early future requirements more than one development would no doubt have to be made. As the Flathead is a cheaper as well as a larger site, it is naturally to their interests to develop that first. Mr. Kerr stated in regard to Flathead (p. 469): "It is the next logical one to be added to the present system." He then

was asked by Secretary Wilbur: "Is it the most economical one to add?" and replied, "I think so, Mr. Secretary. The first cost of the plant is low, and it has a little disadvantage in transmission. But that is pretty much the case with what power is left, although there is a large amount of power left." The undeveloped power sites controlled by the Montana Power Co., and to which Mr. Kerr was referring, were shown later to be the following (pp. 1044–1047):

	Horsepower
Site C, Great Falls	40, 000
Canyon Ferry enlargement	40, 000
Canyon Ferry affecting other plants	13, 000
Fish Creek	24, 000
Snake River	40, 000
Total	157, 000

As stated, none of these are as desirable as Flathead, and none of them appear to be able to produce as much added capacity as the company immediately needs, nor to approach the capacity of even site No. 1 at Flathead, not to speak of the future ahead in the other four sites, should these be also obtainable. Mr. Kerr also stated (p. 1070) that Flathead "is the cheapest power at the power house."

The Canyon Ferry "redevelopment" was represented by Mr. Kerr (p. 1070) as "very close to the same cost (as Flathead), and far better located because it is in the center of the system." But thus to redevelop Canyon Ferry would first involve providing other capacity while it is out of commission during rebuilding, which Mr. Kerr stated (p. 479) could not be done. "We could not shut it (Canyon Ferry) down even if we wanted to, because we have got to have every kilowatt we can get, and we can not rebuild that plant or build another one." He later repeated (p. 1155) that he "did not think it would be a wise move. We can't afford to tear it down (Canyon, Ferry); but we have got to start something new." Even this plan he said (p. 1056) would only provide "five-eighths" of the capacity of Flathead. The shortage of present power for the system was stressed many times. (See pp. 460, 461, 466, 1567.) It is also to be noted that at Canyon Ferry a yearly charge must be paid to the Forest Service (p. 1136) for water stored in Hebgen Reservoir.

It is very clear, therefore, that the Montana Power Co., is very anxious that its next and immediate development should be at Flathead through its subsidiary, the Rocky Mountain Power Co. This is further shown by Mr. Kerr's expressed anxiety that if his company should be granted the license prompt decision should be made so that the work of enlarging the Newell Tunnel can be started in January, 1930, in order thereby to deflect the Flathead River in the low water season of 1930 and thus save a year's time in the construction of the dam and thus of the whole proposition. He stated that his company has a large construction gang that he could immediately start upon this work. So far as site No. 1 is concerned, there was no evidence to indicate that the Montana Power Co. does not need it, and is merely attempting to control it and "sit on it" without using it. The use of the other four sites is further referred to below.

FLATHEAD IS FIRST IMPORTANT POWER SITE ON INDIAN LANDS

The Flathead power development is the first important one upon an Indian reservation wherein power is the controlling factor. In the Coolidge Dam in Arizona power has, of course, been developed, but there it was only as an incidental factor in connection with a great irrigation and reclamation project. This Flathead case is therefore of great importance to the Indians in establishing principles. It has attracted wide attention, and at the hearings two United States Senators and two Congressmen addressed the commission. The Federal Power Commission itself is newly constituted and it has a new executive secretary and new general counsel. Accordingly it would seem unusually appropriate that special care be taken to develop the factors for regulation under the Federal water power act and upon terms satisfactory to the Secretary of the Interior, and for the preparation of a model lease.

In an ordinary power site lease under the Federal water power act there would be only two parties having an interest in the financial results of operating, viz, the successful licensee and the general consuming public. In such a case the power site is either purchased outright by the licensee, and its cost made a part of the developmental cost of the project, or if on Government lands other than Indian, the title to the site remains vested in the United States Government, and the site is leased for 50 years for the nominal fees charged by the Government by way of rental. In this latter case the licensee is saved the necessity of using any capital in the securing of the site.

In the case of a power development upon Indian lands, the title to the site also remains vested in the United States Government but in trust for the Indian tribe, and the site is rented for the 50-year period of the lease to the licensee. Thus the licensee is here also saved the necessity of using any capital in the acquiring of the site, and in lieu thereof pays an annual rental to the Government for the benefit of the Indians. Thus in an ordinary Indian case there are three interests to be adjusted, viz, the successful licensee, the United States for the Indian tribe, and the general consuming public.

Allotted land?

In the particular case of the Flathead there is a fourth interest, viz., a special part of the consuming public consisting of (1) individual Indian land holders and (2) white settlers who have bought Indian lands, which two groups together comprise the Flathead irrigation project. It is this irrigation project that is referred to in the legislation already referred to. Thus in the case of Flathead, the Federal Power Commission and the Secretary of the Interior are called upon to make an adjustment between four interests, viz, (*a*) the successful licensee, which is, of course, entitled to the usual return of 8 per cent under the practice of the Montana Public Service Commission; (*b*) the Indian tribe, which is entitled to a fair rental for the use of the power sites; (*c*) the particular part of the public forming the irrigation project, and to which certain low rates for power up to 15,000 horsepower have been promised by one applicant as further explained below; (*d*) the general consuming public.

who is this?

CORPORATE SET-UP AND COMMISSION REGULATION

Under the Wheeler set-up, there will be a very simple plan of incorporation and of Federal and State commissions' regulation. Applicant Wheeler proposes to have one corporation which will be the licensee of the Federal Power Commission. Its securities are to be issued for actual values only and there is to be no bonus stock. It will be directly subject in its engineering and accounting features to the Federal Power Commission. Its rates made to consumers will, of course, have to be filed with the Montana Public Service Commission.

In the case of applicant, Rocky Mountain Power Co., however, the situation involves two corporations and is more complicated. There will be the Rocky Mountain Power Co., which will be the holder of the Federal license and which will be the generating company. There will also be the Montana Power Co., of which the Rocky Mountain Power Co. will be a controlled subsidiary. The latter's financing and performance are guaranteed by the former. The Montana Power Co. will buy the current (except 15,000 horsepower reserved by the United States as explained below) from the Rocky Mountain Power Co., presumably at the latter's plant, and will transmit and sell same to its consumers. The Rocky Mountain Power Co. will, as stated, hold the Federal license and be accountable to the Federal Power Commission. The Montana Power Co. will be subject to the regulations of the Montana Public Service Commission, as will also the Rocky Mountain Power Co.

It is suggested that the regulation of these two interlocking corporations be accomplished, and the conditions herein stated be appropriately set forth in the license, if granted to this applicant, as follows:

(1) That the Rocky Mountain Power Co. be required to continue its separate existence under the regulations of the Federal Power Commission, and that it shall not be allowed to merge with any other corporation without the approval of the Federal Power Commission.

(2) That the securities of the Rocky Mountain Power Co. be issuable only under regulation of the Federal Power Commission. The Montana State law does not give to the Montana Public Service Commission jurisdiction over the issuance of securities. Hence, the Federal Power Commission upon its own motion can and should properly assume said jurisdiction over these security issues.

(3) That the legitimate investment in the project including prelicense costs of Rocky Mountain Power Co. as determined by the Federal Power Commission under the law and its regulations, shall be accepted as the base upon which return of said Rocky Mountain Power Co. is to be calculated, and that the license shall so provide.

(4) That said return allowed Rocky Mountain Power Co. shall be limited to the percentage allowed from time to time by the Montana Public Service Commission in its regulation of public utility companies. At present this is 8 per cent.

(5) That to accomplish this limitation of return a suitable contract be required between Rocky Mountain Power Co., the seller of the electricity, and Montana Power Co., the buyer of same. Said contract to be satisfactory to the Federal Power Commission and to be filed by said companies for approval by Montana Public Service

Commission. Said contract to arrange for fixing from year to year or as may be satisfactory to the Federal Power Commission the intercompany price of electricity but always at a price sufficient and only sufficient to cover the Rocky Mountain Power Co.'s expenses, overhead, repairs, taxes, insurance, depreciation and obsolescence, amortization, rentals to Indians, and a reasonable return. Said contracts also to provide that all electric current generated by Rocky Mountain Power Co. shall be sold to and bought by the Montana Power Co. with the exception of a maximum of 15,000 horsepower as may be required, to be reserved for sale to the United States Government for account of the Flathead irrigation district in its various parts, as more fully described below.

(6) That all of the common stock to be issued by Rocky Mountain Power Co. be subscribed for by Montana Power Co. and be retained by same unless and until authorized by Federal Power Commission to sell same.

(7) That voting power in the Rocky Mountain Power Co.'s securities be limited to its common stock, all of which will be held as above provided in the ownership of Montana Power Co.

It may be said that this plan is substantially in accordance with the precedent of the Conowingo case in its regulation by the Federal Power Commission and the State commissions concerned. The above arrangement will put full control in the hands of the parent company, where it belongs. It will also provide under regulation by the Federal Power Commission a full return (at present of 8 per cent) on the Rocky Mountain Power Co.'s actual investment after payment of all expenses and rentals to the Indians. And it will bring to the Montana Power Co., under regulation by the Montana Public Service Commission, all of the revenues obtained by it from the resale of the electricity which will be sold to it, as generated by the Rocky Mountain Power Co.

(8) That any and all contracts of Montana Power Co. with Electric Bond & Share Co. or others for management and supervision of its affairs, or for construction, which involve the Rocky Mountain Power Co. and the Flathead project shall be subject to review and approval of the State and Federal commission. This is a very important feature of regulation at the present time, and it is one to which the State commissions pay very little attention. It is possible, under present conditions, for a large part of the revenues of a public utility controlled by a holding company to be diverted directly or indirectly to the controlling company or its affiliated concerns through the payments of fees, commissions, refunds of expenses, reimbursement for salaries, payments of overheads, etc.

(9) That bearing in mind the special powers vested by law in the Secretary of the Interior in this case, provision should be made for the complete amortization of the entire development cost within the 50-year period of the lease. This can readily be done by the requirement and allowance as an annual operating expense of a charge of 0.6 per cent to be used annually either (1) to create a sinking fund for the purchase and keeping alive the securities of the licensee until fully redeemed, or (2) to build up an amortization fund to be annually invested and kept invested. This amount of 0.6 per cent will be large enough to pay off the whole investment at the end of the 50-year lease if annually invested at about 4¼ per cent or better. This would

enable the project in addition to the annual rental to the Indians to pay itself off during the lease and to be turned over to the Government for the Indians as a going concern, to be at that time retained or released as may seem best. Federal Racketeering?

SUGGESTED METHOD FOR FIXING RATE OF INDIAN RENTALS WHICH ARE FIRST SET UP FOR 20 YEARS WITH REVISIONS THEREAFTER EVERY 10 YEARS

Under section 6 of regulation 14 of the Federal Power Commission it is provided that Indian rentals "may be readjusted at the end of 20 years after the beginning of operation and at periods of not less than 10 years thereafter in a manner to be prescribed in each license." This regulation thus calls for a prescription for calculating the Indian rental. The Indian Bureau accordingly submits in this memorandum a suggested pro forma method of making this calculation to be used (1) in fixing the original rental for the first 20-year period; (2) for later readjustments; (3) for each additional Flathead site as and when developed.

The suggested method consists of determining (1) the estimated and later the actual average annual generating cost, including return but excluding rental per horsepower year; (2) the fixing by the Federal Power Commission of a fair wholesale bus bar price for the current generated at each Flathead site. In the case of Wheeler application, the applicant himself has proposed the single price of $15, which it would seem in justice to the value of the site and the interests of the Indian could not be made lower. In the case of the application of the Rocky Mountain Power Co., the commission would have to determine in the light of all the circumstances what would be a fair wholesale intercompany price at the bus bar of each site, of electricity generated and sold by Rocky Mountain Power Co. to its parent company, Montana Power Co. (3) The difference between the annual average generating cost so found and the intercompany price so determined represents the economic rental value of the site, and should be divided between the Indians and the general public in proportion to their respective interests. This pro forma method of calculation would thus fix the rate of rental for the period of the lease in question. The amount of rental based upon this rate will then be calculated and paid to the United States for the account of the Indian tribe under accounting supervision of the Federal Power Commission, said amounts to be found by using this rate upon the monthly measured kilowatt-hours generated at each plant. We suggest that payments of rentals should be made preferably monthly, but certainly at least quarterly.

PRO FORMA METHOD OF FINDING ANNUAL GENERATING COST

To determine item (1) above of fair annual average generating cost, the method suggested is set out in the accompanying comparative table marked "Flathead Power Applications—Analysis of Power Features for Site No. 1." (See table following p. 48.) In this table are set out in parallel columns: (1) The estimates of the two applicants; (2) the actual showing for the year 1926 of the Montana Power Co., as taken from its report to Federal Power Commission; (3) Indian

Bureau adaptations, as explained below, of the two applicants' set-ups. In each column are stated the following factors which are involved:

I. The factors affecting power capacity:
   (1) Water flow and storage.
   (2) Lake levels.
   (3) Head.
   (4) Efficiency factor.
   (5) Utilization factor.
   (6) Result in power capacity.
   (7) Installation.

II. Development costs:
   (1) Direct expenses.
   (2) Overhead expenses.
   (3) Interest during construction.
   (4) Financing cost.
   (5) Development cost.
   (6) Newell Tunnel.
   (7) Dredging.
   (8) Development cost per horsepower.

III. Annual generating costs:
   (1) Operating expenses.
   (2) Overhead expenses.
   (3) Repairs.
   (4) Taxes, insurance, etc.
   (5) Depreciation and obsolescence.
   (6) Amortization.
   (7) Return and excess earnings.
   (8) Annual generating costs per horsepower-year, including 8 per cent return at Flathead.

We will now briefly discuss these in order, and will refer in each factor to the two applicants' proposals.

I. Factors Affecting Power Capacity

By way of preliminary explanation, the Federal Power Commission defines average output of prime power (see line 7 of table) as "power capacity." Regulation 1, Section 15, reads: "The 'power capacity' of a project means the continued product of—

"A. The factor 0.08.[1]

"B. The average static head in feet; and

"C. The water supply in cubic feet per second and not in excess of the hydraulic capacity of the approved project works, estimated to be available from natural flow or from storage, or from both, for 90 per cent of the time."

(1) *Water flow and storage.*—The Geological Survey and Federal Power Commission surveys have completely covered this subject and repetition here would be useless. Suffice it to say here that the flow of Flathead River out of Flathead Lake for the years 1908 to 1924 was—

	Cubic feet per second
Minimum discharge	1, 360
Average discharge	11, 460
Maximum discharge	75, 400
90 per cent of time discharge	2, 550

100,000 was sold to the project

[1] The factor 0.08 represents the horsepower at 70 per cent efficiency of 1 cubic foot of water per second falling through a head of one foot.

Flathead Lake has an area of 1,200,000 acres. Its elevation ranges from 2,882 to upwards of 2,893 feet above sea level. At levels above 2,895 prohibitive damages to farms at the head of the lake would be occasioned, so that the engineers are not calculating upon the high level of the lake being above this point. On the other hand the low level could be reduced to 2,875 feet by dredging down the outlet of the lake. Very strong protests were presented by the town of Polson and others against dredging below 2,880. The possible range of draw down would seem, therefore, to be limited to 13 feet. Various studies of storage acreage have been made. Between 2,883 and 2,893, the range proposed by Rocky Mountain Power Co., these show:

	Acre-feet
By using Columbia River Board table	1, 243, 000
By Rocky Mountain Power applicant	1, 160, 000
By study of Federal Power Commission engineer	1, 205, 000

The capacity between 2,880 and 2,893 feet is 1,582,000 acre-feet as calculated by the Federal Power Commission's engineer, and 1,600,000 acre-feet as per Columbia River Board.

Applicant Rocky Mountain Power Co. calculates that the draw down of 10 feet between 2,883 and 2,893 levels will supply 5,400 cubic feet per second flow 90 per cent of the time. Applicant Wheeler proposes to dredge the outlet of the lake to 2,882 which he calculates will supply 6,000 cubic feet per second 90 per cent of the time. He estimates this dredging will cost $100,000.

During the hearings much discussion was had as to possible damages of various kinds at the head of the lake, especially those caused by floods in the upper river causing the lake to rise above the 2,893-foot level. It was shown that this difficulty could be largely obviated by enlarging the lake outlet by dredging, so as to enable the carrying off of the floods faster than can now be done with the outlet as it is. This important reason, together with the development of greater storage in accordance with the conservation principle of developing all power possible, would seem to be of such paramount consideration as to demand that dredging be done. This could be made a condition of the license to be done at the beginning or later. In either case it seems to the Indian Bureau so certain that dredging will be done that in calculating for the period of 20 years it feels safe in assuming a flow of 6,000 cubic feet per second as a minimum for 90 per cent of the time. It is to be noted that if the full draw down of 13 feet were thus to be made available the 1,600,000 acre-feet storage would create 6,400 cubic feet per second. Applicant Wheeler proposes to dredge for only 11 feet draw down, creating 6,000 cubic feet per second, and this basis seems conservative for the Indian rental calculation.

Revision.—The above was written before the determinations of the Federal Power Commission as to lake levels and estimated flow became available to the Indian Bureau on January 3, 1930. Accordingly it became necessary thereafter to revise this figure of 6,000 cubic feet per second to 5,440 cubic feet per second and to revise in accordance therewith the resulting calculations in this memorandum. This figure of 5,440 cubic feet per second arises from an expected storage of 1,200,000 acre-feet. However, the commission proposes at this time to guarantee only 1,100,000 acre-feet of storage using 10 feet of storage somewhere between levels 2,880 and 2,893. This

cautionary procedure seems necessary until experience will later show (1) the amount of dredging needed and possible and its results, (2) the water levels in the lands at the head of the lake, (3) the effects of floods on the lands at the head of the lake.

(2) *Lake levels and dredging.*—These have already been covered under (1).

(3) *Head and dam.*—Both applicants propose to build a dam about 4 miles down Flathead Canyon below the outlet of Flathead Lake. This is known as site No. 1 or "Newell" site, the latter because it is here that the Newell Tunnel was cut in 1911 by the Government to provide a small power development for pumping for the Flathead irrigation project. The static head to be produced at this site will be 185 feet. This figure has been used by Rocky Mountain Power Co. Wheeler uses effective head of 175 feet in his calculations. In Indian Bureau calculations 185-feet static head is used in accordance with the commission's formula.

In the plans of the Rocky Mountain Power Co., the dam will be constructed so that the top will be at elevation 2,875, with 18 feet of flashboards to bring the level up to 2,893.

(4) *Over-all efficiency factor.*—This represents the actual as compared to theoretically perfect output of water wheels and electric machinery. It covers losses in water regulation, entrance losses, conduit losses, gate losses, penstock losses, generator losses, and transformer losses. The formula used by the Federal Power Commission for its calculation of power capacity is based on 70 per cent efficiency with 100 per cent utilization factor. It was admitted by the engineer of Rocky Mountain Power Co. (pp. 1619 and 1624) that this basis is conservative. It is the basis used for calculating the Government fees, and is lower than is generally obtainable and obtained in power projects. A good deal of discussion took place in the hearings over efficiency factor and utilization factor, and their consequent effect on power capacity. The Rocky Mountain Power Co.'s estimate is admittedly conservative in both these regards, while Wheeler predicts very high figures for both factors. The former claimed only 70 per cent efficiency and 85 per cent utilization, or a total of 59½ per cent; while the latter predicted 87½ per cent efficiency and 100 per cent utilization, or a total of 87½ per cent. These small claims of the Rocky Mountain Power Co. were in the face of repeated statements that it would be in a position not only to do as well as any other developer of the site (pp. 345, 1331) and use every kilowatt-hour that could be developed (pp. 477, 1146, 1154), but also that it could make even better use of it than could an independent applicant. This would be because of the diversification of its own existing system (p. 1350) with which it would be hooked up, and also because of some of it being east and some of it being west of the Rockies with differing run-off periods (pp. 475, 452, 458, 148); and also because it would be tied in with Washington Water Power Co. and Pacific Power & Light Co., its allied companies, as well as Puget Sound Power & Light Co. of Seattle, all to the west with their still further different periods of run-off. Because of the combining of these "pots" of power it was claimed that every possible use of the site could be better developed than otherwise (p. 1352).

In the lengthy discussions of over-all efficiency in the hearings, several cases were cited of high efficiency up to 88 per cent. Mr.

Cochrane said the Montana Power Co.'s Volta plant, built in 1915, has 74 per cent efficiency and that new machinery would be about 2 per cent higher (p. 1504). No one will know better than the Executive Secretary of the Federal Power Commission, Mr. Bonner, about efficiency factors of varous plants. His own recently published book on "Water Powers of California" shows an average of plants in that State, similar in general characteristics to flathead, of 77 per cent. In this and in the utilization factor, the Indian Bureau is desirous of being safe and conservative in any proposals that it makes for the calculation of the Indian rentals. Accordingly, it feels safe in suggesting 77 per cent for the over-all efficiency factor for this calculation, believing that this figure will certainly be exceeded in the average during the first 20 years of flathead operation. (See also page 1505 for Mr. Bonner's discussion of these factors.)

(5) *Utilization factor.*—This factor indicates the amount of water actually used related to the water available; in other words, a ratio between output and prime power. Applicant Wheeler claims that the kind of load that he will have in large plants with continuous demand will enable him to use all the available water up to the prime capacity and thus have a utilization factor of 100 per cent. In addition, he expects to dispose of some secondary power produced at periods of excess water flow. Rocky Mountain Power Co. on the other hand presents a utilization factor of 85 per cent, which Mr. Cochrane, the chief engineer, explained as the average of the past 10 years plus 5 per cent for the diversification feature produced by the different run-off times west and east of the Rocky Mountains (p. 1578). Mr. Cochrane claimed a low percentage of use of plant capacity in order to allow for times when their plant capacity would be ahead of their market. As the market increases it catches up to the plant capacity (prime) and may even exceed it as was the case in 1928. On page 1706 the actual figures of the Montana Power Co. for the last 10 years were represented as follows:

Year	Prime power	Average load	Utilization factor	Year	Prime power	Average load	Utilization factor
	Kilowatts	*Kilowatts*	*Per cent*		*Kilowatts*	*Kilowatts*	*Per cent*
1919	156,600	98,000	[1] 63	1924	136,600	128,000	82
1920	156,600	123,000	[1] 78	1925	163,100	140,000	86
1921	156,600	65,000	42	1926	163,100	156,000	96
1922	156,600	110,000	70	1927	185,100	156,000	89
1923	156,600	128,000	82	1928	175,300	181,000	[2] 103

[1] Dry year. [2] Wet year.

Mr. Kerr, in speaking of the steady growth of the Montana Power Co. system, said "and it seems now that it makes no difference whether we get 10 per cent business, 20 per cent business, or 40 per cent business, it all gets back to the power houses; and the load factor year by year is growing higher and higher, meaning the more complete use of the equipment."

In view of this unusually uniform load of the Montana Power Co. system and this steady growth, it would seem conservative to take the average of the utilization factors for the last five years, namely, 91 per cent, as a proper figure for use in calculating the

Indian rental, and not go back 10 years which includes the very low year 1921 with 42 per cent utilization factor. That this figure of 91 per cent is very conservative is shown by the fact that the 5 per cent additional factor used by Mr. Cochrane for diversification feature might also be added for Flathead but is not included.

A further proof of conservatism in the suggested use of efficiency and utilization factors of 77 per cent and 91 per cent, respectively, is found in the fact that their combined effect is to give an efficiency of 70.07 per cent as compared with the admittedly conservative basis of 70 per cent used in the formula of the Federal Power Commission.

(6) *Resulting power capacity.*—Using the above factors as per the commission's formula, we have:

	Estimates as submitted			As adjusted above		
	Horsepower	Kilowatts	Kilowatt-hours generated	Horsepower	Kilowatts	Kilowatt-hours generated
Rocky Mountain Power Co.	68,000	51,000	[1] 446,000,000	[2] 80,500	60,375	528,885,000
Wheeler	105,000	78,750	689,000,000	[3] 105,000	78,750	689,000,000
				[2] 95,000	71,250	624,000,000

[1] Basis of 5,400 cubic feet of water.
[2] Revised basis of 5,440 cubic feet of water.
[3] Basis of 6,000 cubic feet of water.

For comparison the actual figures for the Montana Power Co. system for 1926, 1927, and 1928 are also added:

	Horsepower	Kilowatts	Kilowatt-hours generated
Montana Power Co.:			
1926	217,400	163,100	1,375,208,770
1927	217,400	163,100	1,362,157,457
1928	223,700	175,300	1,584,078,104

(7) *Installation.*—The Rocky Mountain Power Co. proposes to install three units of 50,000 horsepower each, making a total of 150,000 horsepower. It will also provide space and tunnel capacity for a fourth unit of 50,000 horsepower for possible further use of water flow. (See p. 1322.)

Wheeler proposes the same total installation of 150,000 horsepower, but in four units.

Figuring power capacity, that is, average power as calculated above to installed capacity, the ratios are:

	Estimates	As adjusted
	Per cent	*Per cent*
Rocky Mountain Power Co.	43	59
Wheeler	70	70
Montana system		[1] 71

[1] Actual.

II. Development Costs

The applicants' estimates are as follows:

	Rocky Mountain Power	Wheeler
Preliminary surveys and drilling	$40,000	$50,000
Roads and railroad	210,000	210,000
Camp and equipment	180,000	150,000
Construction plant	495,000	450,000
Cofferdams	----------	175,000
River diversion	255,000	----------
Dam	1,255,000	1,312,000
Intake	190,000	----------
Pressure tunnels	399,000	----------
Tailrace and widening channels	75,000	----------
Tunnel and trash racks	----------	435,000
Power house	540,000	606,650
Hydraulic machinery	355,000	1,700,000
Electrical machinery	1,195,000	
Miscellaneous power-house equipment	50,000	
Newell Tunnel purchase	101,000	----------
Dredging lake outlet	----------	100,000
Land and drainages, etc	424,100	500,000
General expenses of construction	775,700	----------
Engineering and contingencies	----------	$500,000
Overhead expenses	----------	350,000
Insurance, etc	----------	100,000
Contractor's profit	----------	300,000
		1,250,000
Interest during construction	915,600	1,000,000
Cost of financing	----------	873,180
"Development cost"	492,100	----------
Total	7,947,500	8,811,830

(1) *Direct expenses of development.*—The direct estimates of the two applicants are thus seen to be remarkably close together on the direct expenses of development and do not call for comment here.

(2) *Overhead expenses, including cost of financing.*—Both applicants appear to have figured liberally for overhead, especially Wheeler. In the case of Rocky Mountain Power Co. the figure of $775,700 is more than 13 per cent of the actual construction items. No doubt this includes contractor's profit, not mentioned separately, and perhaps also some additional prelicense costs beyond the $40,000 for preliminary survey and borings as listed. Wheeler's figure of $1,250,000 is nearly 22 per cent of actual construction items, and taken in conjunction with his high cost of interest during construction of 14 per cent and his cost of financing of 11 per cent (which through its high credit the other applicant is saved), he has total overhead of $3,123,180 on top of direct construction costs of $5,688,650, nearly 55 per cent. If these figures are not overestimates, this heavy loading on the development cost will handicap Wheeler as contrasted with the Rocky Mountain Power Co.'s cost as corrected below to the extent of about $12 per horsepower capacity, assuming Wheeler's output for both in order to make the comparison. This would be reflected in an annual handicap of about $1.70 per horsepower per year, assuming other factors the same for both applicants. On the reasonable assumption that the two applicants, in spite of their respective claims, can develop about the same output at about the same costs, this loss of $1.70 per horsepower per year would be very serious if it should result in the diminishing the Indian rental by even one-half of such an amount. ?

In this connection attention may be called to the agreement between Wheeler and the Flathead Indian Tribal Council (see Wheeler Exhibit 3) made in December, 1927, in which that council agreed to accept Wheeler's offer of $1.12½ per developed horsepower. This agreement has of course no standing in law, because the Secretary of the Interior alone has the legal right to bind the Government in its trust for these Indians. Naturally the Indians have never been then or now in a position to analyze the actual earnings of their power sites, and it would manifestly be unfair to them and to their interests for the Secretary now either to confirm on their behalf the bargain they themselves made two years ago, or to fail to take into consideration the above-mentioned handicap in annual power cost. This disadvantage of Wheeler will thus have to be weighed against the advantages that Wheeler's plan, if successful, would bring to the Indians in added opportunities for remunerative employment in the new industries to be established on or near their reservation, improved market for their products, etc.

It is to Wheeler's disadvantage that his amount of actual investment to be fixed by the commission will be more than $1,250,000 higher than the other applicant's, and that this will be just that much more to be amortized during the 50 years' lease. This factor is included, however, in the annual cost comparison that follows.

(3) *Interest during construction.*—Both applicants appear to be high in their estimates as to interest. The Rocky Mountain Power Co.'s estimate is $915,600; Wheeler's, $1,000,000. The usual estimate for this item is 6 per cent for half the construction period and some commissions allow four months additional. For three years' construction period this basis would mean 11 per cent for interest during construction. The above estimates of the applicants are about 14 per cent. However, the licensee in the final accounting of the net investment will be allowed under the commission's regulations, all the interest actually paid and no more. We therefore suggest no modifications.

(4) *Financing cost.*—(See under (2) overhead expenses, above.)

(5) *Development cost.*—In the estimated cost of the Rocky Mountain Power Co. there is an item of $492,100 put down as "Development cost" and explained on its Exhibit 10 as follows: "Development cost is the accumulated deficit below a fair return on the invested capital up to the time that a fair return begins."

This subject was discussed in the hearings (see pp. 1418, 1422–1428). It was made clear that under the Federal water power act only expenditures actually made can form a part of the "net investment" or project cost. As this item is only an estimate of alleged lag in return on this investment, and is not money paid out, there is no basis for its inclusion. Mr. Brown, counsel of the commission (p. 1428), asked the applicant to submit in its brief its view and authorities sustaining it, if it had any.

As the brief is silent on the subject, presumably none could be found. Accordingly, this item is omitted in the adjusted computation for calculating Indian rental.

(6) *Newell Tunnel.*—The Rocky Mountain Power Co. has offered (see Flathead irrigation district Exhibit 13, sec. D) to refund the Government $101,000 for its cost in constructing the unfinished Newell Tunnel. The applicant finds it to its advantage to complete

the small remaining unfinished part of the tunnel, and then to enlarge it and line it for use in the project. The Flathead River will be deflected through it during construction of the dam according to their plan. If it were not there already, another tunnel would have to be built. This tunnel was built by the Government in connection with the Flathead irrigation project and its cost charged against the project as reimbursable. If this amount is received by the Government, it will be credited to the irrigation project.

In Mr. Wheeler's proposals there appears no mention of the Newell Tunnel or whether he would pay anything for its use.

(7) *Dredging.*—The need of dredging the outlet of Flathead Lake has already been explained. Mr Wheeler has carefully confirmed (p. 2169) his original estimate of $100,000, as the cost of doing this work. The Rocky Mountain Power Co. did not plan to do this dredging, but stated its willingness to do so if required by the commission (p. 1220, 1325). On the assumption that this dredging will be done, the estimated cost of $100,000 should, therefore, be added to the Rocky Mountain estimate and this is done in the adjusted figures for calculating Indian rental.

(8) *Development cost per horsepower.*—After thus making the two adjustments of the Rocky Mountain estimate, viz., eliminating $492,100 for "development cost," and adding $100,000 for dredging the outlet of the lake, the following are found to be the comparable figures.

Rocky Mountain Power Co.:	
Estimate	$7, 947, 500
Adjusted	7, 555, 400
Wheeler	8, 611, 830

Dividing these by the respective power capacities, we reach the conclusion of the development cost at Flathead per horsepower or kilowatt as follows:

	Investment cost	Average prime power capacity horsepower	Investment cost	
			Per horsepower	Per kilowatt
Rocky Mountain Power Co.:				
Estimate	$7, 947, 500. 00	68, 000	$116. 97	$155. 83
Adjusted	7, 555, 400. 00	80, 500	93. 85	125. 13
Wheeler:				
Estimate	8, 811, 830. 00	105, 000	83. 92	111. 69
Adjusted (5,440 cubic feet of water)	8, 811, 830. 00	95, 000	92. 76	123. 68

For comparative purposes, the Montana Power Co. system is here added. The investment cost figures are taken from the company's report for 1926, made to the Federal Power Commission.

	Investment cost	Average prime power capacity, horsepower	Investment cost	
			Per horsepower	Per kilowatt
Montana Power Co. system:				
1927 [1]	$28, 374, 074. 00	[2] 233, 700. 00	$121. 41	$161. 88
1926	27, 626, 633. 00	[3] 217, 467. 00	127. 04	169. 39

[1] Later figures not at hand. [2] Year 1928. [3] Year 1926.

III. Annual Generating Costs

(1) *Operating expenses.*—The Rocky Mountain Power Co. estimates this item at $63,000 which is 0.8 per cent upon their development estimate of $7,947,500 and 0.85 per cent upon the adjusted figure of $7,555,400. Minor repairs are probably included. Mr. Wheeler figures his operating expenses at 1½ per cent of his development estimate, making $132,177.45. He also added one-half per cent for repairs, $44,059.05. These Wheeler figures seem very high when compared with the actual experience of the Montana Power Co. as given below.

(2) *Overhead expenses.*—The Rocky Mountain Power Co. estimates this item also at $63,000, which is 0.8 per cent upon their development estimate of $7,947,500 and 0.85 per cent upon the adjusted figure of $7,555,400. Mr. Wheeler figures his overhead expenses at 1 per cent of his development estimate, making $88,118.35, which is clearly high.

(3) *Repairs.*—See under (1) above.

(4) *Taxes, insurance, etc.*—The Rocky Mountain Power Co. estimates this item at 2 per cent of their development estimate, making $158,940. In the adjustment the rate of 2 per cent is retained; applied to adjusted development estimate it gives $151,080. Although this is the company's own rate, it is lower than the rate for all taxes in the Montana Power Co. system as given below. Perhaps the explanation is that the company's practice apportions to generation, etc., only the property taxes. Its New Jersey corporation tax, Montana State license tax, and Federal taxes on income, etc., are not apportioned. In the figures used below, however, Mr. King, the commission's accountant, included all taxes, apportioning them in the same ratios as the company's apportionment of property taxes.

Mr. Wheeler estimates his taxes, insurance, etc., at 1½ per cent, making $132,177.45. This probably is too low, in view of the above.

(5) *Depreciation, obsolescence.*—On this item, Rocky Mountain figures 2 per cent on development estimate, making $158,940. In the adjustment, the 2 per cent rate is retained; applied to adjusted development estimate, it gives $151,080. There was some discussion in the hearings upon the proper rate for depreciation, where major repairs should be charged, etc. Mr. Cochrane, the company's engineer, expressed the belief that 2 per cent was about right for an overall charge for all classes of property. This would include major repairs and obsolescence. The rate of 2.07 per cent for generating plants, including dams, of the Montana Power Co. system was recommended by their appraisal engineer, Mr. W. J. Hagenah, of Chicago, as of December 31, 1922. However, the actual amounts charged annually for depreciation upon the books of the company have been much smaller round sums; thus the $350,000 for all property in 1926 was at a rate of about three-fourths of 1 per cent. For further details see below under Montana Power Co., actual 1926.

We understand that the Federal Power Commission has not as yet determined or adopted a rate for depreciation and obsolescence. Although the 2 per cent rate seems high, and although it is not in the public interest, nor to the interest of the Indians, to build up an unnecessarily large depreciation fund, yet in the absence of further information, it seems wise to use the company's own suggestion of

2 per cent for the pro forma calculation of the Indian rental. It may be added, however, that it is to the interest of the Indians that the property be fully maintained and kept modern in view of the proposal for amortization within the 50-year period of the lease. The depreciation and obsolescence fund should therefore be large enough to accomplish this, without furnishing any excuse or justification for the licensee to let the property run down in the closing years of the lease. Any balance remaining in the depreciation fund at the close of the lease would of course be subject to the regulations of the commission.

Mr. Wheeler has estimated 3 per cent for sinking fund, a total of $264,354.90. This liberally covers depreciation, obsolescence, and amortization, which latter is referred to more particularly in the next section. In the adjustment for Indian rental calculation, Wheeler's 3 per cent is adjusted and divided between depreciation, obsolescence at 2 per cent and amortization, 0.6 per cent, reduced from 1 per cent.

(6) *Amortization.*[1]—Rocky Mountain Power Co. did not estimate an item for amortization separate from whatever may have been assignable to this from depreciation and obsolescence. Mr. Wheeler, as stated above, estimated 3 per cent for sinking fund, manifestly intending to cover amortization.

As already explained above, the Indian Bureau strongly recommends the establishment of an annual operating charge to be set aside in an amortization fund to be kept invested or to be used as a sinking fund for the redemption of the licensee's securities, said securities then to be kept alive in said sinking fund until all the securities are fully redeemed. This can be done [1] in this first Indian rental case under the special powers vested in the Secretary of the Interior. And it is especially appropriate in connection with the plan proposed in this memorandum for corporate set-up and regulation, under which the licensee will be limited to the allowed return upon the net investment after payment of all operating charges, depreciation, amortization and rental. Under this plan, it is to be noted that there will not develop either before or after 20 years, any "excess of a specified reasonable rate of return upon the actual, legitimate investment of a licensee," the disposition of which is provided for under the water power act and under regulation 17 of the commission. Under the year-to-year accounting to the Federal Power Commission, the licensee will be limited to the fair return of 8 per cent through the fixing of the wholesale rate to be charged to the parent company in the case of applicant Rocky Mountain Power Co., or to his own wholesale price of $15 to consumers in the case of applicant Wheeler, either case of course, being subject to the approval of the Montana Public Service Commission. In the case of Rocky Mountain Power Co., this approval would be had upon the approval of the proposed contract between Rocky Mountain Power Co. and Montana Power Co. as already explained. In the absence of any possible such excess above fair return, it would therefore seem appropriate, as stated, that provision for amortization should thus be made from year to year in lieu of the amortization contemplated in the act and the regulations from excess earnings after the twentieth year.

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[1] This was later determined not to be legally enforcible.

By this method assurance is had that the amortization fund will actually amortize the whole investment cost, and make possible the turning over of the project as a going concern at the end of the lease to the Government for the benefit of the Indians. The annual charge necessary to accomplish this is only 0.6 per cent—$45,324 for the Rocky Mountain Power Co. and $52,871 for Wheeler. This is on the assumption that the amortization fund will be invested annually at 4¼ per cent or better.

It may be suggested that the commission may determine that 2 per cent for depreciation and obsolescence is too high a rate. In such case the reduction for same might be applied toward this proposed charge for amortization, and thus bring the sum of the two charges approximately to the amounts suggested by the applicants themselves. In Wheeler's case, as already explained, his figures can be reduced. In any way that the Secretary and the commission may determine, it is to be hoped that provision will be separately made for this amortization fund.

(7) *Fair return and excess earnings.*—A return of 8 per cent upon Rocky Mountain Power's development estimate is $635,800. The applicant divides this into bond interest at 5⅓ per cent, $423,867, and net 2⅔ per cent, $211,933, in accordance with the usual practice of total earnings being one and one-half times bond interest. Mr. Wheeler has made a different kind of set-up. He calculates interest at 6 per cent upon his development estimate, $528,709.80, and finds a net surplus of $267,278, which is 3.03 per cent additional, making a total of $795,987.80. Under regulation and limitation to 8 per cent return this total would be reduced to $704,946.40.

It need hardly be stated that so long as either applicant remains within the limits of an 8 per cent return and issues securities under the regulation of the commission only for value, it may make any division between bonds, preferred stock and common stock that it may find to be to its advantage in facilitating its financing.

(8) *Annual estimated generating cost per horsepower-year, including 8 per cent* return at Flathead (this is before including Indian rental): Assembling the above annual operating charges, and using the average capacity outputs of prime power, we have:

Estimated annual revenue or generating cost including 8 per cent return

	Annual charge		Capacity in horsepower	Cost		
	Per cent	Amount		Per horsepower-year	Per kilowatt-year	Per kilowatt-hour (mills)
Rocky Mountain Power Co.:						
Estimated	13.6	$1,079,680.00	68,000	$15.88	$21.17	2.42
Adjusted	14.3	1,077,804.00	80,500	13.39	17.85	2.04
Wheeler:						
Estimate (includes 9.03 per cent return and based on 6,000 cubic feet water)	16.53	1,456,875.00	105,000	13.87	18.49	2.11
Adjusted to 8 per cent return and based on 6,000 cubic feet water	15.10	1,330,586.00	105,000	12.67	16.89	1.93
Adjusted to 8 per cent return and based on 5,440 cubic feet water	15.10	1,330,586.00	95,000	14.00	18.67	2.13

Against this for comparison is here inserted the actual for Montana Power Co. for the year 1926. (See also below.)

Annual revenue from generating 1,375,208,770 kilowatt-hours, i. e., cost including 13.84 per cent return

Montana Power Co. system (including 13.84 per cent return):	
Per cent	19. 23
Amount	$5, 325, 640
Actual horsepower generated	209, 316
Per horsepower	$25. 44
Per kilowatt	$33. 92
Per kilowatt-hour	3. 873

MONTANA POWER CO. SYSTEM

We now turn to the analysis of these Montana Power Co. costs, with a view to their guidance in helping to determine the proper basis of Indian rental.

Montana Power Co. system, year 1926.—The year 1926 is used for analysis. The reason is as follows: Toward the close of the hearings it was remembered that in March, 1928, responding to call from Mr. W. V. King, Chief accountant, the commission had received from the Montana Power Co. copies of the latter's reports to the Montana Public Service Commission for 1923, 1924, 1925, 1926, and 1927. The 1927 report was in somewhat different form than the others. Mr. King had then made from these reports a careful study of the costs for 1924, 1925, and 1926 of generating, transmission, and distribution per kilowatt-hour generated and kilowatt-hour sold. He had not determined these costs for 1927. In this study elimination had been made of all nonelectric or nonutility revenues and costs. The Indian Bureau exhibits presented at the hearings used these 1926 calculations, as there was not time to develop the figures for 1927, and 1928 data were not available. The year 1926 was therefore not "selected because it was a good year," as suggested in the Rocky Mountain Co.'s brief. (See also hearings, pp. 2279, 2280.) In fact, the year 1928 would probably make an even better showing. Then the company had 103 per cent utilization factor as against 96 per cent in 1926; its gross revenues from operation (see Wheeler Exhibit I) were $10,489,777 as against $8,635,755 in 1926; and its net return from operation was $6,877,138 as against $5,439,034 in 1926.

The figures relating to the Montana Power Co. follow:

Installation: 1928–29—327,750 horsepower; 245,000 kilowatts (see Wheeler Exhibit 17 and Major Butler's report); 1930 will be 387,750 horsepower, 290,000 kilowatts.

Average output capacity of prime power: 1928–29—233,700 horsepower, 175,300 kilowatts; 1926—217,467 horsepower, 163,100 kilowatts (see Major Butler's report); 1930 will be 268,400 horsepower, 201,300 kilowatts.

Kilowatt-hours generated: 1926—1,375,308,770 kilowatt-hours (company report); 1927—1,362,157,457 kilowatt-hours (company report); 1928—1,584,-078,104 kilowatt-hours (hearings, p. 1445).

Kilowatt-hours sold: 1926—1,165,227,847 (Indian Exhibit 3), average price realized 7.41122 mills; 1927—1,171,162,327 (company report), average price realized 7.55506 mills; 1928—1,500,000,000 approximate (hearings p. 1477), average price realized 7.20 mills.

Maximum demand factor: Maximum load for 15 minutes, 1926, 83 per cent; maximum capacity of system, 1927, 78 per cent. (Company reports.)

Load factor: Total kilowatt-hours generated in year 1926, 83 per cent; maximum load in kilowatts for 15 minutes by 8,760 kilowatt-hours, 1927, 81.4 per cent. (Company reports.)

"Plant values" (see Indian Exhibit 3 taken from company's statement to Federal Power Commission).

Plant values

	1926	Per cent	1927
Generating plants	$27, 626, 333. 37	60. 4	$28, 574, 074. 21
Transmission and transportation	6, 934, 635. 05	15. 2	7, 014, 046. 96
Other electric	5, 702, 214. 65	12. 5	5, 964, 403. 26
Nonelectric	5, 483, 415. 29	11. 9	5, 599, 514. 77
	45, 746, 598. 36	100. 0	46, 952. 039. 20
Water rights, contracts, franchises, etc	51, 491. 269. 56		51, 699, 423. 37
Total	97, 237, 867. 92		98, 651, 462. 57

These figures were built up by Mr. Hogenah, of Chicago, appraisal engineer, December 31, 1922, and book-cost additions have been added thereafter, as an "appraisal of physical property *determined* (italic supplied) as of December 31, 1913, plus additions to property from December 31, 1913, to December 31, 1922." Does this language mean that the *appraisal* was determined December 31, 1913, or that the *property* was determined historically as of December 31, 1913, plus additions to December 31, 1922, and then the property so determined was appraised as of December 31, 1922? Mr. Kelly, the company's attorney, took the former view very positively, but from the testimony of Mr. Cochrane, the company's chief engineer, it is clear that he considered the appraisal values as applying to December 31, 1922. Mr. Hogenah had been employed in 1913 and again in 1922 to make depreciation studies, and it would appear that he made a a fresh start on the valuations as of December 31, 1922. But how interpret the above language? In order to throw as much light as possible on this moot point, we submit the discussion which took place on the last day of the hearings (pp. 2247–2250):

Mr. SCATTERGOOD. Now, just for the purpose of explanation to the commission, that first set of figures, namely, tangibles, were calculated on the basis, were they not, of an engineer's report by Mr. Hogenah? That was made as of December 31, 1922, and thereafter book values of actual additions to property were added from year to year. Isn't that the way it was calculated?

Mr. COCHRANE. That is my understanding.

Mr. SCATTERGOOD. So that as a matter of fact, these first tangible figures represent that engineer's idea—and he was also your own engineer—of the real value of tangible property?

Mr. COCHRANE. Yes.

Mr. SCATTERGOOD. And the other items—water rights, contracts, franchises, etc.—were what you might call intangibles?

Mr. COCHRANE. Yes.

Mr. SCATTERGOOD. In other words, what those whole figures total for 1927, which is fifty-one millions and upward, really represents what is customarily called "water," doesn't it?

Mr. COCHRANE. I think somebody suggested that a column might be put for that water. But I don't think as a matter of fact that it is all water.

Mr. SCATTERGOOD. I don't suppose it is. I have no doubt that if you were asked to set a value (a "fair value") on it, you would maintain that you had a going-concern value and various other considerations that would have to be included, such as good will, that would be properly includible in the item of these intangibles, would you not?

Mr. COCHRANE. Yes.

Mr. SCATTERGOOD. So that that ("fair value"), as I understand, has never been determined—what is a fair value of the property?

Mr. COCHRANE. No.

Mr. SCATTERGOOD. Now, these represent the average 1922 reconstruction cost values plus actual investments afterwards?

Mr. COCHRANE. Yes.

Mr. SCATTERGOOD. Now, the prices prevailing about the end of 1922 were not quite the peak of the postwar prices, were they? They were a little under the peak?

Mr. COCHRANE. You mean that they had gone down a little by that time?

Mr. SCATTERGOOD. Yes.

Mr. COCHRANE. I think so.

Mr. SCATTERGOOD. But still they were fairly near the peak of 1921, were they not?

Mr. COCHRANE. I presume so.

Mr. SCATTERGOOD. So that those values that are given as of that date are probably outside of what would be a real reconstruction cost less depreciation to-day?

Mr. COCHRANE. Yes.

At this point Mr. Kelly, the company's attorney, called attention to a footnote on the engineer's valuation reading "Represents appraisal of physical property determined as of December 31, 1913, plus additions to property from December 31, 1913, to December 31, 1922." He then said:

Mr. KELLY. So that the original appraisals were made upon a basis of property values as of December, 1913, and not 1922; so that the question is misleading. The exhibit does not show that and it is not a fact.

Mr. SCATTERGOOD. Well, of course, in 1913 you did not have all of your plants built.

Mr. KELLY. No. This figure represents the 1913 valuation of such plants as were then built, plus the actual cost of such plants as were built since then, many of which were built before the war prices—the plants that were built between 1913 and 1918.

The status as to plants is as follows (see p. 1472 et seq. and Major Butler's report):

Montana Power Co.'s plants, 1929

Plant	Built	Maximum		Average		Capacity factor
		Kilowatts	Horsepower	Kilowatts	Horsepower	
Black Eagle	1927	18,000	24,000	15,200	20,300	0.84
Canyon Ferry		7,500	10,000	5,600	7,500	.75
Hauser Lake	1918	18,000	24,000	14,500	19,300	.80
Holter	1918	50,000	67,000	25,500	34,000	.51
Madison		9,000	12,000	8,500	11,300	.95
Mystic Lake		11,300	16,750	6,500	8,666	.56
Rainbow	1910 / 1916	36,000	48,000	30,500	40,667	.85
Thompson Falls	1916	35,000	47,000	22,000	29,300	.63
Volta	1916	60,000	80,000	47,000	62,667	.78
Total, 1929		245,000	327,750	175,300	233,700	.72
Maroney (now building)		45,000	60,000	26,000	34,700	.58
Total, 1930		290,000	388,750	201,300	268,400	.69

From this table it is evident that the larger plants have been built during or since the war. Allowing half of Rainbow to pre-war and half during the war, it is seen that about two-thirds of the capacity dates during or since the war.

Some light is also furnished by Mr. Kerr's and Mr. Cochrane's answers on pages 1153 and 1193–1194 in regard to basis of valuations. Mr. Kerr and Mr. Cochrane had testified, respectively, that in round

figures the installation cost of the Montana power system and of the Flathead would be about $100 per horsepower.

Mr. SCATTERGOOD. Did you use the same general scheme of valuation?
Mr. KERR. I would say so; yes.
Mr. SCATTERGOOD. Present-day reproduction costs?
Mr. KERR. Yes.

It was later shown by Mr. Cochrane that in the company's set-up of 68,000 horsepower and $7,947,500 development cost of Flathead, the installation cost per horsepower would be $116.87, not $100, as Mr. Kerr had roughly calculated it. Also it has been shown that the system's installation cost on their own figures of valuation for 1927 was $121.41 per horsepower. Inasmuch, therefore, as Mr. Kerr said that on a present-day reproduction cost basis the cost would be $100 horsepower, it is evident that the company's valuation figures of 1927 used above can not be less than reproduction cost figures of present day, as Mr. Kelly's interpretation would seem to indicate.

Whatever the proper interpretation of these figures may be, it can at least be said that they form the company's own statement of values as made to the Federal Power Commission. They are the only valuation figures in the record except the assessed valuation for taxation of all the property (electric and nonelectric) at $52,000,000 (see p. 1683). There has never been a rate case, nor has any "fair valuation" ever been placed upon this company either by the Federal Power Commission or the Montana Public Service Commission.

In the use of the word "return" as applied to the Montana Power Co., it will therefore be understood that the return is calculated upon the company's own figures, as above set forth. It is to be noted also that these valuations of the company certainly can not be less than the basis of actual investment provided in the Federal water power act, and they may and probably are much higher than said basis.

Investment cost.—Using the above generating plants figures of 1927 and the 1928 capacity figures, we have as the unit cost of development of the whole Montana Power Co.'s system: $121.41 per horsepower; $161.88 per kilowatt.

Actual generating revenue or generating cost including return and excess for year 1926

	Per cent on company valuation	Cost per kilowatt-hours generated	Amount	
		Mills		
Operating expenses	1.39	0.280	$384,566.82	
Overhead expenses (apportioned)	.44	.097	132,701.85	
All taxes, insurance, etc. (apportioned)	2.81	.564	776,868.06	
Depreciation, obsolescence	.75	.150	206,045.00	$1,500,181.73
Return at—				
8 per cent	13.84	1.607	2,210,106.64	3,825,459.00
5.84 per cent excess		1.175	1,615,352.36	
Total	19.23	3.873		5,325,640.73

	Per horsepower-year	Per kilowatt-year	Per kilowatt-hour
Generating cost, including—			*Mills*
Return, at 8 per cent	$17.72	$23.63	2.698
Excess, at 5.84 per cent	7.72	10.29	1.175
Total	25.44	33.92	3.873

The basis for the above figures is found in Mr. King's figures as set out in Indian Exhibit 3. He therein included the items general and undistributed expenses, totaling $466,335.58, entirely in "Distributing and all other costs." As this applies pro rata to generating and transmission costs, it is subdivided and prorated as follows:

Generating	60.4 per cent	$410,841.65
Transmission	15.2 per cent	
Distribution, etc	12.5 per cent	
Nonelectric	11.9 per cent	55,493.93
Total	[1] 100.0 per cent	466,335.58

This $410,841.65 for electric property is further subdivided in proportion to direct expenses as follows:

		Per ct.	
Generating	$384,566.82	32.3	$132,701.85
Transmission	237,869.02	19.9	81,757.49
Distribution, etc	567,801.48	47.8	196,382.31
Total	1,190,237.32	100.0	410,841.65

We then have adjusted costs for 1926 as follows:

Generating:	
Operating expenses (direct)	$384,566.82
General and undistributed (prorated)	132,701.85
Depreciation actually charged (prorated)	206,045.00
All taxes (prorated)	776,868.06
Total	1,500,181.73
Transmission:	
Operating expenses (direct)	237,869.02
General and undistributed (prorated)	81,757.49
Depreciation actually charged (prorated)	65,065.00
All taxes (prorated)	194,999.52
Total	579,691.03
Distribution and other costs (electric operations):	
Distributing, commercial, consumption	567,801.48
General and undistributed (prorated)	196,382.31
Depreciation actually charged (prorated)	54,845.00
All taxes (prorated)	160,382.93
Total	979,411.72

To divide return and excess between the three divisions, we proceed:

Income from electric operations, 1926 (from company report)		$8,635,755.33
Expenses as above:		
Generating	$1,500,181.73	
Transmission	579,691.03	
Distribution, etc	979,411.72	
		3,059,284.48
Return, 8 per cent	3,221,054.64	
Excess, 5.84 per cent	2,355,416.21	
		5,576,470.85

This shows that return and excess together are 64.6 per cent of gross revenue.

[1] In proportion to plant values, as per company statement.

This return and excess is then distributed in proportion to investments in plant values (electric only) as per company's statement, as follows:

Generating, 68.6 per cent:		
8 per cent return	$2, 210, 106. 64	
5.84 per cent excess	1, 615, 352. 36	
		$3, 825, 459. 00
Transmission, 17.2 per cent:		
8 per cent return	554, 770. 80	
5.84 per cent excess	404, 382. 19	
		959, 152. 99
Distribution, 14.2 per cent:		
8 per cent return	456, 177. 20	
5.84 per cent excess	335, 681. 66	
		791, 858. 86
Total		5, 576, 470. 85

Assembling the direct costs and the return and excess distributed, we then finally have:

Cost and profit of Montana Power Co. System, 1926

			Generated			Sold		
			Per kilowatt-hour	Per horsepower	Per kilowatt	Per kilowatt-hour	Per horsepower	Per kilowatt
			Mills			*Mills*		
Generating:								
Operating expenses	$384,566.82		0.280			0.330		
General expenses	132,701.85		.097			.114		
Depreciation actually charged	206,045.00		.150			.177		
All taxes	776,868.06		.564	$17.72	$23.63	.666	$20.92	$27.89
		$1,500,181.73						
Return 8 per cent	2,210,106.64		1.091			1.287		
Excess 5.84 per cent	1,615,352.36		1.607			1.897		
		3,825,459.00	1.175	7.72	10.29	1.387	9.11	12.15
		5,325,640.73	3.873	25.44	33.92	4.571	[1] 30.03	40.04
Transmission:								
Operating expenses	237,869.02					.204		
General expenses	81,757.49					.070		
Depreciation actually charged	65,065.00					.056	6.39	8.52
All taxes	194,999.52					.167		
		579,691.03				.497		
Return 8 per cent	554,770.80					.476		
Excess 5.84 per cent	404,382.19					.347	2.28	3.04
		959,152.99				1.320	[1] 8.67	11.56
		1,538,844.02						
Distribution, etc.:								
Distributing, etc	567,801.48					.487		
General expenses	196,382.31					.169		
Depreciation actually charged	54,845.00					.047	8.09	10.79
All taxes	160,382.93					.138		
		979,411.72				.841		
Return 8 per cent	456,177.20					.391		
Excess 5.84 per cent	335,681.66					.288	1.89	2.52
		791,858.86				1.520		13.31
		1,771,270.58					[1] 9.98	
Gross revenue from operations		8,635,755.33				7.411	[1] 48.68	64.91

Where these funds were

[1] These figures vary from Indian Exhibit No. 6 because of the distribution of general expenses and because of including here $87,655.42 miscellaneous earnings from operation which had been erroneously omitted.

From the above table it will be seen that in 1926 the earnings of the company showed per horsepower sold:

	Per horse-power-year	Mills per kilowatt-hour
Cost, including 8 per cent return	$35.40	5.29
Excess of 5.84 per cent	13.28	2.02
Gross	48.68	7.41

It also shows:

Actual direct cost on current sold

	Mills per kilowatt-hour	Per horse-power	Per kilowatt-
Generating cost	1.287	$8.45	$11.27
Transmission cost	.497	3.26	4.35
Distribution and other	.841	5.53	7.37
Total	2.625	17.24	22.99
And—			
8 per cent return	2.764	18.16	24.21
5.84 per cent excess	2.022	13.28	17.71
Total	4.786	31.44	41.92
Grand total	7.411	48.68	64.91

In other words, $31.44 out of $48.68 per horsepower-year is return including excess or 64.6 per cent, i. e. of every dollar in gross revenue, 64.8 cents is return on the company's own valuation basis.

In passing it is of general interest to note:

(1) Here is a public utility hydro power company with a remarkably low average selling price of its power. In 1926 it was 7.411 mills per killowatt-hour sold, i. e. $48.68 per horsepower-year. In 1928 it was 7.2 mills per killowatt-hour sold, i. e., $47.36 per horsepower-year. Mr. Kerr, its vice president, probably is well advised in his claim that it has the lowest general average selling price of any power company in the United States. He claims it is half a cent less in average selling price than the much discussed Province of Ontario Government project.

(2) Its prices to its special large load customers are very low indeed. To its largest customer it sells at $25 per horsepower-year with a sliding scale reducing this price even lower when certain metal prices go down. Also, its general prices to small customers throughout Montana are claimed to be uniform throughout the State, and to compare very favorably with such prices generally charged elsewhere by power companies.

(3) Yet in spite of these prices which compare so favorably with the rates for electricity generally charged throughout the United States, this company has been able to make current so cheaply through the natural advantages of its water-power sites that it actually earned 13.84 per cent in 1926 (taken as a sample year) upon its own valuation of about $41,350,000 for its tangible property.

(4) These earnings have supported and paid returns upon a securities structure of bonds and stock totalling about twice the value of all of its tangible property. Its own valuation of its intangibles, consisting of "water rights, contracts, franchises, etc.," was about $51,500,000.

(5) The valuation upon which this return is calculated is, as stated, the company's own valuation of its tangibles. As already pointed out, it is not entirely clear from the testimony just what the basis of values is. Assuming on the one hand that it represents the appraised value as of December 31, 1913, plus actual investments made since that date, then the tangibles approximate the basis of valuation provided for in the Federal water power act. If, on the other hand, it represents appraised values of the property December 31, 1922, plus actual investments made since then, it would represent approximately "present-day reproduction-cost values."

The so-called "fair value" fixed as a rate base by a commission in a rate case would probably be somewhere between these two ways of estimating values.

(6) No rate case has ever been brought to test this company's rates and no "fair value" basis of valuation has ever been established. Such reductions in rates as have been made have been made voluntarily by the company itself.

(7) It is apparent from the above figures that further rate reductions averaging $13.28 per horsepower-year, or 2.02 mills per kilowatt-hour—i. e., about 27 per cent—could be made and still the rates would provide to the company an allowed return of 8 per cent upon its own valuations of its tangible property.

(8) The Flathead site No. 1 reveals $4.33 lower generating cost per horsepower-year, including 8 per cent return, than the Montana Power Co. system generating cost in 1926, also including an 8 per cent return; and this does not include $7.22 per horsepower generated excess earnings actually made.

(9) In the face of these figures it is apparent that the $1 per horsepower-year offered by the company for Indian rental is far from proper compensation based on the value of the site. This will be referred to further.

(10) With regard to regulation, the jurisdiction of the Federal Power Commission and of the Secretary of the Interior in this case do not extend beyond the applicants. The Montana Power Co. is subject, as already stated, only to the jurisdiction of the Montana Public Service Commission. It would seem all the more important, therefore, that full powers of regulation be exercised by the Federal Power Commission upon the licensee, whether Rocky Mountain Power Co. or Wheeler.

IV. Intercompany Price

In the case of applicant Wheeler, this subject has no bearing because he sets up only one company, and fixes his output price wholesale at $15 per horsepower. He did quote, however, a price of 2½ mills, which is $16.34 per horsepower-year, to H. M. Byllesby & Co.'s Mountain States Power Co. at Kalispell, Mont., and found this price would interest them. Mr. Kerr, when asked, said this was a very favorable price, if there were no maximum demand.

In the case of applicant Rocky Mountain Co., the applicant's set-up in Exhibit 8 was based on $18 per horsepower-year, which is 2.75 mills per kilowatt-hour wholesale price at bus bar. See also Rocky Mountain brief, page 6, where the explanation is made "Total cost

(and proposed selling price) per horsepower sold, $18." Also see pages 1333–1334.

Further references to intercompany prices in the record are also cited as follows:

(1) Mr. Kerr told the story of the pick-up bargain rate of $10 per horsepower-year, or 1.52 mills per kilowatt-hour prevailing for a time from the Washington Water Power Co. to the Intermountain Power Co., not a criterion for present day conditions (p. 1192); also of a rate prevailing between a Stone & Webster Co. further west of $16 per horsepower for 10,000 horsepower, plus three-fourths mill per kilowatt-hour for high-water months and 2½ mills for low-water months, which figured out is $21 per horsepower-year, or 3.20 mills per kilowatt-hour.

(2) The price between Washington Water Power Co. and Montana Power Co. now prevailing when power is exchanged is 3 mills per kilowatt-hour (p. 1190). This is, according to Mr. Kerr, "so-called 'dump power' furnished when and as they have it, with nothing to bind them to furnish it." When asked, if it were primary power whether it would be an even higher price, he replied "Oh, yes; no doubt."

(3) Mr. Cochrane stated that if the Wheeler plan of selling only to large consumers were changed, and he developed a plan similar to that of the Rocky Mountain Power Co. and offered a price comparable to it, the Montana Power Co. might do business with him (p. 1402).

(4) Before the consolidation of its subsidiary operating companies with the Montana Power Co., the intercompany price for power exchanged was 5 mills or $32.84 per horsepower-year (p. 2091).

(5) Finally, as to the suggested price for power between Rocky Mountain Power Co. and Montana Power Co., the record on pages 2290 to 2292 is as follows:

Mr. SCATTERGOOD. What would be the right price, do you think, for the Rocky Mountain Power Co., if its entity were continued, to charge to the Montana Power Co.?

Mr. KERR. I can't say any figure. I can't make an offhand guess at a figure, because I told you here the other day that I didn't know what the final cost would be; but I can tell you what is a common price, one that is offered by the Government, for instance, at Boulder Dam, 3 mills (or $19.60 per horsepower); and in make dump power, so-called dump-power contracts where we charge 2½ mills (or $16.34 per horsepower) and 2 mills (or $13.07 per horsepower).

Mr. SCATTERGOOD. Would you feel that the commission would be well advised if it used that price of 3 mills as a price between the two companies at the bus bar?

Mr. KERR. If you charge 3 mills to the other company, I say that is all right, if it would give a proper return. It would have to be a proper return. You are asking generally what these kinds of prices are. I have told you.

Mr. SCATTERGOOD. That is what I want, because it would go into the whole picture.

Mr. KERR. And I want to emphasize that the Montana Power Co.'s 5-mill price was simply a convenient figure. It is easy to multiply by 5, and it don't make a bit of difference in the final answer.

Mr. SCATTERGOOD. Of course if you did offer the Montana Power Co. wholesale current at Flathead at 3 mills, you (the Montana Power Co.) would have to put on the additional transmission cost and your interest on your transmission machinery, and all your other charges, wouldn't you?

Mr. KERR. Yes, sir.

Mr. SCATTERGOOD. But that would be a fair price that you think could——

Mr. KERR. That is one of the prices that is around in the neighborhood that might be sold.

For purposes of easy comparison, the following conversion table is submitted:

Conversion table

Per kilowatt-hour	Horsepower year (at 6535 mills)	Kilowatt year	Per kilowatt-hour	Horsepower year (at 6535 mills)	Kilowatt year
2 mills	$13.07	$17.52	2.85 mills	$18.62	$24.97
2.10 mills	13.72	18.40	2.90 mills	18.95	25.40
2.20 mills	14.38	19.27	2.95 mills	19.28	25.88
2.25 mills	14.70	19.71	3 mills	19.60	26.28
2.30 mills	15.03	20.15	4 mills	26.14	35.04
2.35 mills	15.36	20.39	5 mills	32.68	43.80
2.40 mills	15.69	21.02	6 mills	39.21	52.56
2.45 mills	16.01	21.46	7 mills	45.74	61.32
2.50 mills	16.34	21.90	8 mills	52.28	70.08
2.55 mills	16.66	22.34	9 mills	58.81	78.84
2.60 mills	16.99	22.78	1 cent	65.35	87.60
2.65 mills	17.32	23.22	5 cents	326.75	438.00
2.70 mills	17.64	23.65	8 cents	522.80	700.80
2.75 mills	17.97	24.09	10 cents	653.50	876.00
2.80 mills	18.30	24.53			

V. Thompson Falls and its Savings to Montana Power Co. if Flathead Power Site No. 1 is Developed

One further feature remains to be considered. This is the benefit which will automatically accrue to the Thompson Falls plant of the Montana Power Co., located as it is down the Flathead River on Clarks Fork of the Columbia River, and which will be caused by the regulation of flow through the increased storage at Flathead. This increase of power at Thompson Falls will accrue whether the Rocky Mountain Power Co. or Wheeler is the developer of the Flathead site No. 1.

There was considerable reference in the hearings to Thompson Falls. Suffice it here to say that the Montana Power Co. itself admitted an estimated increase of 10,000 horsepower distributed over eight months of the year (pp. 1502, 1625), making about 66,000,000 kilowatt-hours additional (p. 1638). This is based on an increased flow of 2,600 cubic feet per second due to Flathead storage (p. 1626) and an average head of 50 feet and 70 per cent efficiency (pp. 1640, 1708). Taking the 1926 basis of sale and net return as already calculated, we have 66,000,000 kilowatt-hours by 7.411 mills, equals $488,400; and 64.8 per cent for return including excess shows $316,483 additional profit from Thompson Falls. This is on the admitted assumption that no additional transmission lines would have to be built (p. 2065), although if this added load were to be constantly transmitted east, it would be an economy to build an additional line to supplement the Milwaukee Railroad transmission line now used. If this extra Thompson Falls current were sold to the west to Washington Power Co. at 3 mills (p. 207), it would lower the average price used above.

At the hearings the increased amount shown to be available at Thompson Falls because of Flathead storage was conservatively calculated as only 43,000,000 kilowatt-hours additional, showing net gains of $193,000.

Based on the 1928 generated output of 1,584,000,000 kilowatt-hours this increase of 66,000,000 kilowatt-hours at Thompson Falls is an increase of more than 4.1 per cent for the whole system. Using again

the 1926 cost figures and adding the $316,483 added profit to the system shows the following:

Generating cost, 1926

	Mills per kilowatt-hour	Per horse-power	Per kilo-watt
Montana Power Co. system: 8 per cent return	2.698	$17.72	$23.63
5.84 per cent excess	1.175	7.72	10.29
Total, 13.84 per cent	3.873	25.44	33.92
Montana Power Co. system with Thompson Falls added production because of Flathead storage:			
8 per cent return	2.698	17.72	23.63
6.99 per cent excess	1.340	8.80	11.73
Total, 14.99 per cent	4.038	26.52	35.36

Thus Thompson Falls's increase because of Flathead storage would add $1.08 per horsepower-year to the Montana Power Co.'s system on the basis of the 1926 figures and would increase the return, including excess, to 14.99 per cent. Presumably this would be available for rate reductions to consumers. (See p. 1542.) It is not claimed here as available for the Indian rental, but, as will shortly be shown, it is an element that must enter into the calculation of the interests of the general public and of the irrigation project in particular.

VI. Indian Rental

We are now in position to assemble the elements already considered and to develop what they reveal to be available for (1) the company's return, (2) Indian rental, (3) general consumers, and (4) the special consumers in the irrigation projects. In order that full justice be done to the Indians, it is proposed here to consider the case first as if there were only the first three parties and no irrigation project, and thus to fix the proper intercompany price for the pro forma calculation of the Indian rental; then secondly to make such slight modification in said intercompany price as may be necessary to provide under existing conditions the reservation by the United States for the irrigation project of 15,000 horsepower at the prices agreed upon in advance by one of the applicants.

If the license is given to applicant Wheeler, and if the lake regulation permitted 6,000 cubic feet per second of water, as he estimated, there would then be a margin of $2.33 per horsepower-year between his price to consumers of $15 and his cost as adjusted to an 8 per cent return and 0.6 per cent amortization charge, of $12.67. Out of this the Indians and the irrigation project would have to be provided for. If, however, only 5,440 cubic feet per second of water is allowed in the lake regulation, Wheeler's prime power capacity will be reduced to 95,000 horsepower, and his cost will be increased to $14 per horsepower. There would then be a margin of only $1 per horsepower-year between his price to consumers of $15 and this $14 cost. Manifestly, so far as Indian rental goes, Wheeler's proposition of selling power at $15 per horsepower can not compare with applicant Rocky Mountain Power Co.'s intercompany price of $18 in advantage to the Indians. Furthermore, it is to be remembered, as already shown,

that applicant Wheeler's high cost of financing and overhead and his high operating estimates penalize him about $1.70 per horsepower-year when compared with the other applicant on the same basis of capacity, and which would otherwise be available at least in part for Indian rental.

If the license is given to Rocky Mountain Power Co., we have the following assembled elements:

Average annual generating cost

	Per horsepower year	Per kilowatt-hour (mills)
Rocky Mountain Power Co.'s estimate, at 8 per cent return excluding rentals	$15.88	2.42
Rocky Mountain Power Co.'s estimate as adjusted, at 8 per cent return, excluding rentals	13.39	2.04
Rocky Mountain Power Co.'s estimate, at 8 per cent return, including Indian rentals	16.88	2.56
Montana Power Co. system, 1926:		
8 per cent return	17.72	2.698
5.84 per cent excess	7.72	1.175
Total, 13.84 per cent	25.44	3.873
Montana Power Co. system, 1926, with Thompson Falls additional power added:		
8 per cent return	17.72	2.698
6.99 per cent excess	8.80	1.340
Total, 14.99 per cent	26.52	4.038

From the above it is to be seen that—

The adjusted estimated average generating cost for 80,500 horsepower including 8 per cent return at Flathead ($13.39 per horsepower) is:

(1) $2.49 per horsepower less than applicant's own estimate of $15.88 at 8 per cent return and excluding rentals, for 68,000 horsepower.

(2) $4.49 per horsepower less than applicant's own estimate of $17.88 (round figures $18) at 8 per cent return and including Indian rental and irrigation cost, at 68,000 horsepower.

(3) $4.33 per horsepower less than Montana Power Co.'s system generating cost of 1926 at 8 per cent return.

(4) $12.05 per horsepower less than Montana Power Co.'s system generating cost of 1926 at actual return and excess.

(5) $13.13 per horsepower less than Montana Power Co.'s system generating cost of 1926 with Thompson Falls additional power due to Flathead storage added at actual return and excess.

As already pointed out, the difference between the intercompany wholesale price and the annual average generating cost represents the economic rental value of the site and this should be divided between the Indians as a tribe and the general public interests (of which of course the Indians as individuals also form a part) in fair proportion. In other words, the Indians have the ownership of the five sites and of that portion of the Flathead Lake that lies within the reservation, while the State of Montana owns the remainder of Flathead Lake and the right to control the use of the waters in the lake and river over and above the prior rights of the Indians. Thus both the Indians and the general public have rightful interests in the

Flathead power development. Hence it would seem fair that whatever economic rental value this site has should be divided either approximately half to the Indians as a tribe and half to the public, or if it is really possible to determine their respective interests more exactly, that this rental value should be apportioned pro rata between them. In this connection it may be said that there are now being made in the Federal Power Commission and in the General Land Office studies of the Indian tribal lands and of Indian allotment lands, and that these seem to indicate that the Indian interests in the power development are 46.5 per cent and the non-Indian interests 53.5 per cent. However, as these studies appear to be somewhat tentative and perhaps open to certain legal uncertainties relating to the easements upon lands bordering on the lake, it seems best for the purposes of this memorandum to assume 50 per cent of the economic rental value of the site as belonging to the Flathead Indians as a tribe, and the other 50 per cent as belonging to the general public of the State of Montana. It is perhaps superfluous to add that the Indian rental will be paid to the Federal Government in trust for the Indians, and the public's interest will be under the care and protection of the Montana Public Service Commission in its regulation of the Rocky Mountain Power Co. and the Montana Power Co.

Applying the above, we have:

	Per horse-power	Round figures
Intercompany price as fixed by applicant	$17.88	$18.00
Average annual generating cost at Flathead	13.39	13.39
	4.49	4.61

Allottee lands

One-half for Indians would equal, say, $2.25 per horsepower as the proper rental, as calculated from an annual average of 80,500 per horsepower.

Another slightly more conservative way of estimating the economic rental value of Flathead site No. 1 would be to use as our intercompany wholesale price the average annual generating cost including the same basis of 8 per cent return of the Montana Power Co. system.

Thus we have:

	Per horse-power
Intercompany price, using cost of Montana Power Co. system	$17.72
Average annual generating cost at Flathead	13.39
	4.33

One-half for Indians would equal $2.16½ per horsepower as the proper rental, as calculated from an annual average of 80,500 horsepower.

Using the mean of these two calculations, we have $2.21 per horsepower as a fair rental for the Indians.

If we take $2.21 per horsepower as Indian rental we have $15.60 per horsepower, i. e., 2.387 mills per kilowatt-hour as the adjusted average generating cost, including 8 per cent return and Indian rental. This price of 2.387 mills per kilowatt-hour for an intercompany price would

pay to Rocky Mountain Power Co. a return of 8 per cent and provide all the operating expenses including depreciation of 2 per cent and amortization charge of 0.6 per cent, which will fully amortize the investment in 50 years, if invested at 4¼ per cent, and pay an annual rental to the Indians of $2.21 per horsepower per year. All of the public's share above referred to would under this basis through the low intercompany price be transferred from the Rocky Mountain Power Co. to the Montana Power Co. and be under regulation in that company. If, however, the higher intercompany price of 2.75 mills per kilowatt-hour, ($18 per horsepower) were utilized the public's share would remain in the Rocky Mountain Power Co., also under regulation. There would be no difference, so far as the public interest is concerned, because in the proposed license it will be required that the securities of the Rocky Mountain Power Co. shall be regulated by the Federal Power Commission and that no bonus stock will be possible, and that all the equity-carrying common stock of the Rocky Mountain Power Co. shall be owned and be retained by the Montana Power Co. This will make possible complete regulation.

As has been shown the Indian rental for Flathead site No. 1 is obtainable only from the licensee, Rocky Mountain Power Co., and to the amount of one-half of the advantage of this site over the average of the Montana Power Co.'s system. However, the other one-half from the Rocky Mountain Power Co. accruing to the public will be added to the existing excess of the Montana Power Co. and be available under regulation for the general consumers. Thus, combining the figures for the two companies, with such a price of 2.387 mills per killowatt-hour after paying the Rocky Mountain Power Co.'s 8 per cent return and the Indians' $2.21 per horsepower, there would still be available for the irrigation project and general consumers under regulation the following:

	Per horsepower
With 8 per cent return only	$2.18
With 8 per cent return and present excess	9.90
With 8 per cent return and excess, and including additional power at Thompson Falls due to Flathead	10.98

The above figures apply to generation alone. If the return on the whole system were limited under regulation to 8 per cent, the possible rate reductions might be still further increased, as already indicated. It is especially to be noted that the above figures, including $2.21 per horsepower to the Indians, make the estimated cost to the applicant less than its own estimated cost at Flathead by $1.88 per horsepower, or 0.288 mills per kilowatt-hour. Thus if it were to its advantage to lease Flathead under its own estimates rather than to develop another one of its smaller and less desirable sites, it remains so still even with this higher rental to the Indians.

Another opportunity to compare the low cost of current at Flathead with general costs for current, resulting in a difference in favor of an increased Indian rental, is found in the following extract from the hearings (p. 1549):

Mr. SCATTERGOOD. There is no more virtue in that figure of a dollar to the Indians per horsepower? There is no final virtue, I would say, because you offered it?

Mr. COCHRANE (chief engineer). That figure, I can explain, was a figure which was made because in our—without making any detailed estimate as to what

we could afford to pay for this particular site we said general power at a site like this may be worth $20 a horsepower. We are selling that at Great Falls and used that as a general figure without making any estimates, and that a dollar a horsepower—that is, 5 per cent of that probably would not be a ruinous figure.

Mr. Cochrane was here speaking "by the book" when he spoke of "power like this being worth $20 a horsepower at a site like this." As a matter of fact the system generating cost of current sold at their plants, including an 8 per cent return on the company's own valuation, has been shown above to have been, in 1926, $20.92; if the 5.84 per cent excess is added it was $9.11 per horsepower more, or a total of $30.03 per horsepower on all system sales.

Now if this general figure of "$20 per horsepower" is set over against the $13.39 cost conservatively estimated to be the cost, including 8 per cent return, at Flathead site No. 1, it would seem proved from Mr. Cochrane's own statement that $2.21 for the Indian rental could amply be afforded without reducing at all the company's present high basis of earnings.

Another slant on the "nominal" offer of $1 per horsepower made without regard to the site's earning power is found in its origin in the nominal charge of $1 per horsepower formerly made by the United States Forest Service, but now no longer in use.

The following developed in the hearings (p. 1549–1550):

Mr. KERR (when Mr. Cochrane was on the stand). Mr. Cochrane did not make that price (the $1 per horsepower rental). I made that price. I will tell you how I made it. It was the forest rule.

Mr. SCATTERGOOD. But that rule is no longer in existence.

Mr. KERR. It was at that time, and we are paying at that rate now. (He refers to some other plants of the system on forest lands.)

Mr. SCATTERGOOD. You have passed from that time, have you not?

Mr. KERR. Yes. They predicated that rule——

Mr. SCATTERGOOD. Because it was not an adequate rule?

Mr. KERR. That is what it was based on.

Mr. SCATTERGOOD. Thank you very much for enlightening us on that, Mr. Kerr. I thought it was not based on any calculation of the earning power of this site, because it is, of course, inadequate in that respect.

The next day the hearings proceeded (pp. 1615–1617):

Mr. SCATTERGOOD. Mr. Cochrane, you heard Mr. Kerr mention that the $1 a horsepower proposed to be paid to the Indians for rental had been taken from the scale that had been used by the Forestry Department. Do you know anything about that?

Mr. COCHRANE. Well, that refreshes my memory on the subject a little bit, and I presume that that was where the figure originated, but as for our average—that is, in assuming that figure, we assumed that it was not based on detailed calculations as to how much we thought this site was worth or how much we could be forced to pay for it, or anything of that kind; it was just a fair nominal figure taken without analysis.

Mr. SCATTERGOOD. That is just what I thought it was. Now, in the matter of this Forestry scale, do you know whether that scale is still in existence in the Forestry Department?

Mr. COCHRANE. I don't know for sure; no.

Mr. SCATTERGOOD. Do you know anything about it?

Mr. COCHRANE. No.

Mr. SCATTERGOOD. You don't know whether I am right in the impression that I gained from the head of the Forestry Service that it no longer exists?

Mr. COCHRANE. I don't know of my own knowledge; no.

Mr. SCATTERGOOD. Well, do you know whether or not, when it was in existence, it measured anything on the basis of actual values of sites, or was it, just as you say, nominal?

Mr. COCHRANE. That is my impression, that it was nominal, arbitrary.

Mr. SCATTERGOOD. Would there have been any particular reason for the United States Government on public lands to charge anything but a nominal

value? There would be no object in the Government doing it, would there? I mean nominal rental when I say value.

Mr. KELLY. Five per cent of the gross value of the product is hardly nominal.

Mr. COCHRANE. I think perhaps "arbitrary" should be used instead of the word "nominal" in this computation.

Mr. SCATTERGOOD. What I meant to say was wouldn't it be a fact that whatever charge was made by the United States Government would have to be carried through into the rate and be loaded upon the consumers.

Mr. COCHRANE. In the same way that any other charge would be; yes, sir.

Mr. SCATTERGOOD. So that in public lands and forestry cases, where there is no special ownership involved as there is in the case where Indian property is held in trust, there is no reason for the Government to make the consumer pay anything more than the real fair cost and the proper return to the company?

Mr. COCHRANE. I wouldn't think there would be any object in the Government requiring the customer to pay more than a fair charge in any event.

Mr. SCATTERGOOD. That is what I think, too, and I want to just bring it out, that so far as that nominal charge is concerned, it was nominal and was not meant to in any way measure the value of the site; and as a matter of fact that scale no longer exists.

From the above tracing of the origin of the $1 offer it is apparent that the company was working on the assumption that the basis of rental for an Indian site might be the same as for forest or public lands, overlooking the distinction between the Government trust for the Indians in the first case and outright ownership by the Government in the second. The company was accustomed to paying the nominal $1 per horsepower rental for the forest lands, and apparently assumed that this would be considered sufficient for Indian lands. Admittedly as Mr. Cochrane says, the company "did not base its offer on detailed calculations as to how much we thought this site was worth."

It is this lack of "detailed calculations" as to what the site is really worth to the Government in trust for the Indians that the Indian Bureau is now attempting to supply in this memorandum, and we believe a sound basis is found to be furnished for the rate of $2.21 per horsepower in the figures above presented on the basis of 80,500 horsepower.

It may also be added that so far as the Indians are concerned from a direct financial standpoint alone, the above rental payments would lie to the advantage of the Rocky Mountain Power Co. The general consumers of the State would also profit more in possible rate reductions from the Flathead development than would be the case if the license were given to Mr. Wheeler. On the other hand, Mr. Wheeler's plans, if successful, would bring real advantages of other kinds through the introduction of new industries, new employment, new markets, etc.

MINIMUM RENTAL PAYMENTS

Another phase of Indian rental besides its rate remains to be considered.

Under Regulation 14, section 5 of the commission, it is provided that "The charge (for Indian rental) shall commence upon date license is issued."

There will necessarily be a considerable period for construction before the power will be available and earnings begin. Both applicants estimate a construction period of three years. Mr. Wheeler will take longer to get started because he has not made preliminary borings. He will also have to complete his financing and marketing plans which will take some time. He will lose 1930 low-water season. Rocky Mountain Power Co., as already pointed out, has not only

made borings, but is ready to start a construction gang immediately to work, and hopes, if granted the license, to divert the Flathead River for building the foundation of the dam in the low-water season of 1930. It is also to be noted that Mr. Wheeler at this stage is applying only for a preliminary permit for all his sites, while Rocky Mountain Power Co. is applying for both preliminary permit for four sites, and license for site No. 1. Hence in Wheeler's case, rental to the Indians will be delayed; if Rocky Mountain Power Co. is given the license, a rental will begin immediately.

The basis of rental calculation and the rates for the first 20 years suggested above are upon the assumption of the actual development of the estimated prime power. The factors in the calculation are purposely conservative, and, as heretofore stated, the estimate will probably be exceeded over the 20-year period. However, a rental so calculated would clearly not be applicable to a long construction period when no income would be obtainable. Accordingly, the Indian Bureau would suggest that for said construction period, i. e., from the date of the license to the date when the first power from Flathead is sold, an arbitrary fair minimum amount be fixed in the license by the commission and the Secretary of the Interior, say at the rate of $20,000 per annum.

If the license is granted to the Rocky Mountain Power Co., another consideration must also be provided against for the proper protection of the Indians. That is to provide that the Flathead plant shall not be used any more than any of the other plants as a "peak load plant" in the Montana Power Co. system. This means that it should and must be so operated as to develop at least its pro rata share of the system annual load factor, and not be used only at peak times and "starved" at other times. It is not to be expected that the merging of the Flathead plant into the full-load factor of the system can be obtained the first year, probably not for three or four years. It would therefore seem fair to suggest that in the license it be provided that from the date when the first power from Flathead is sold, the rate of $2.21 per developed horsepower shall apply, but that the company be given time to develop its full-load factor at Flathead on the following basis of progressive minimums for the early years, viz:

First year, applicant shall operate Flathead at an annual load factor (calculated the same as for the system) of not less than 60 per cent, based on the actual peak for 15 minutes.

Second year, the same except of not less than 67½ per cent load factor.

Third year, the same except of not less than 75 per cent load factor.

Fourth year and thereafter at not less than the system load factor.

In case the load factors developed at Flathead should fall below these minimums, then rentals to be based at the $2.21 rate on the minimums, the same as if they had been reached.

If Mr. Wheeler is given the license, it would seem from his own plans that he hopes to be able to start off immediately with his load more fully developed than on the usual company basis. He should, however, be required to pay progressive minimum rentals, and after say the fourth year, be required to pay not less than 83 per cent of his full load, using there the same load factor as applies to the other applicant.

CAPITALIZED VALUE OF SITE NO. 1 BASED (1) ON INDIAN RENTALS; (2) ON MONTANA POWER CO.'S VALUATION OF "INTANGIBLES"

The full annual earning power of site No. 1 for the Indians from Mr. Wheeler would be:

(1) 105,000×$1.12½=$118,125 on his own basis of 6,000 cubic feet per second of water.

(2) 95,000×$1.12½=$106,875 on the basis of 5,440 cubic feet per second of water. Capitalizing these at 8 per cent (the return allowed the licensee) gives: (1) $1,476,562; (2) $1,335,937.

A similar calculation for Rocky Mountain Power Co. as adjusted gives: 80,500×$2.21=$177,905 per annum. Capitalizing this at 8 per cent (the return allowed the licensee) gives $2,223,812. It is clear that on this basis the latter applicant is better for the Indians on direct financial results.

Let us now make a further comparison with the Montana Power Co. system.

If this were a power development other than on Indian or public lands, the cost of site would be included in the prelicense cost of development allowed by the commission. For comparison let us add this to the estimated plant cost to find what the total investment cost per horsepower would be. We would have:

Estimated plant cost	$7, 555, 400
Site, if purchased	2, 223, 812
Total	9, 779, 212

$9,779,212÷80,500=$121.48 per horsepower as development cost. This compares with $127.04 for the Montana Power Co. system in 1926, assuming that the company's own valuation of its generating plants at $27,626,333 includes the values of power sites. Also it is to be seen that $121.48 is very reasonable and is in fact low as compared to the great majority of power sites.

If, however, these company valuations do not include the values of the sites, then the values of the sites must be included in the company's "intangibles," which it describes as "water rights, contracts, franchises, etc." For purposes of comparison, let us now apply to the Flathead project the company's own valuation of these intangibles and so determine a figure comparable to the company's valuation set up, and find what per horsepower the site would be worth on this basis.

In the Montana Power Co. system the 1927 report shows:

Tangibles	$46, 952, 039=47. 6%
Water rights, etc	51, 699, 423=52. 4%
Total	98, 651, 462= 100%

Assume the same proportion for Flathead.

Now the estimated plant cost at Flathead without any value for site is	$7, 555, 400
This is 47.6 per cent of	15, 872, 689
52.4 per cent of $15,872,689 is	8, 317, 289

We then have:

Tangible plant	$7, 555, 400
Intangibles, including water rights, etc., would be	8, 317, 289
Total value would be	15, 872, 689

The development cost would then be: $15,872,689 ÷ 80,500 horsepower = $197.18 per horsepower.

Using the same operating ratio of 14.3 per cent including the 8 per cent return as is used in the Rocky Mountain estimate as adjusted, we would have:

	Per horsepower
Annual generating cost, including 8 per cent return	$28.00
As compared to	13.39
Increase due to "Intangibles"	14.61

On this basis of the company's own "watered" valuations, Flathead site No. 1 would show $7.30, that is one-half of $14.61 per horsepower for the Indians instead of the proposed $2.21 per horsepower. Manifestly the company would not wish to see the Indians claim the same basis of valuation as it has used itself.

VII. The Flathead Indian Irrigation Project, and 15,000 Horsepower for Pumping and Other Uses

Early in this memorandum (p. 8) attention was called to the four interests involved in the Flathead power development, viz., (1) the company, which is entitled to its return of 8 per cent; (2) the Indian tribe, which is entitled to a fair rental for the power sites; (3) the general consuming public; (4) the special part of the public forming the irrigation project, being about 20 per cent Indian and 80 per cent white, and to whom have been promised by one of the applicants certain low rates for power up to 15,000 horsepower under certain restrictions.

Having considered the first three interests, we now turn to the fourth, the Flathead irrigation project.

Before considering the power features, however, it seems desirable at this point to insert a brief historical account of the Flathead Indian irrigation project with some comments on the water rights involved, which has been prepared by our counsel, Mr. Reeves:

HISTORY OF FLATHEAD IRRIGATION PROJECT

The Flathead Indian Reservation, Mont., embracing some 1,500,000 acres, was established in 1855 by treaty with the Confederated Flathead Tribes, being a part of the original area occupied and claimed by these Indians from time immemorial. The northern boundary of this reservation (from east to west) bisects Flathead Lake, a considerable body of navigable water some 30 miles long (north and south) by some 20 miles at its widest extremity, which is within the lower or south half of the lake and within the Indian reservation. The waters from this lake are discharged at its southern extremity into Flathead River, which traverses the reservation in a general southerly and westerly direction for a distance of some 60 miles or more. Without water for irrigation, the lands within this reservation are practically valueless for agricultural purposes and under a doctrine now well settled, the establishment of an Indian reservation, ipso facto also reserves for the Indians sufficient water for their needs for agricultural and other purposes. Of this paramount right the Indians can not be deprived by appropriation or application to beneficial use of such water by third parties. This remains true even though the application to beneficial use by third parties antedates such use of the water by the Indians themselves. As to this see Winters *v.* United States (204 U. S. 564), and Conrad Investment Co. *v.* United States (161 Fed. 829).

The reservation so established for these Indians remained practically intact until after the passage of the act of April 23, 1904. By this statute Congress directed that allotments in severalty be made to these Indians in accordance with the allotment laws of the United States and provided for the classification and disposal of the surplus or unallotted and unreserved lands for the benefit of

the Indians, under the homestead, mineral, and town site laws of the United States, at not less than the appraised value of such lands.

It appearing at an early date that some 135,000 acres within this reservation could be greatly enhanced in value by irrigation, of which approximately 78,000 acres could be furnished with water by gravity and the remainder by pumping, a comprehensive irrigation plan was inaugurated, which project has since been commonly known as the Flathead Indian irrigation project. In furtherance of the plans in connection with this work something over $5,000,000, reimbursable funds appropriated by Congress have already been expended in order to supply these lands with water. With a view of giving timely warning of the intention of the Government in this matter "notices of appropriation" of the waters of Flathead River, including of course, those from Flathead Lake, were duly filed by the Reclamation Service in behalf of the United States and placed of record pursuant to the statutes of the State of Montana. Such action was first had early in the year 1909 and renewal or additional notice filed from time to time in compliance with the laws of the State down to and inclusive of the year 1927. As such notices will show, the purposes for which said water was appropriated were for the irrigation of lands within the Flathead Indian Reservation, for domestic uses, and for developing power for pumping and other purposes. In furtherance of these plans under authority of section 22 of the act of March 3, 1909 (35 Stats. L. 795), some 2,500 acres of land chiefly valuable for power-site purposes along Flathead River within the reservation, were withdrawn from sale, entry, or any other form of appropriation. The most valuable of the power sites along this river, within the Indian reservation, commonly referred to as site No. 1, lies 4 miles below where Flathead Lake discharges into the river of the same name. With a view of utilizing the lake as a reservoir in connection with its plans for the development of power in connection with this project, by the act of March 3, 1911 (36 Stats. L. 1066), as amended August 24, 1912 (37 Stat. L. 527), Congress directed—

"That an easement in, to, and over all lands bordering on or adjacent to Flathead Lake, Montana, which lie below an elevation of nine feet above the high-water mark of said lake for the year nineteen hundred and nine, is hereby reserved for uses and purposes connected with storage for irrigation or development of water power, and all patents hereafter issued for any such lands shall recite such reservation."

Actual development of power by the Government at site No. 1, or elsewhere within the Flathead Reservation, has not yet been had, although considerable sums have been expended and much preliminary work done with that end in view. Subsequent to the passage of the Federal water power act of June 10, 1920 (41 Stats. L. 1063), it was suggested that the power possibilities at Flathead be developed by outside interests rather than by the Government. Accordingly, an item in the act of March 7, 1928 (45 Stats. L. 212–213) authorized the Federal Power Commission upon terms satisfactory to the Secretary of the Interior to issue licenses "for the use, for the development of power sites on the Flathead Reservation and of water rights reserved or appropriated for the irrigation projects."

It was also provided that the rentals from such licenses for the use of Indian lands should be deposited in the Treasury of the United States to the credit of these Indians as a tribe. It will be observed, however, that this statute contemplates the use of both the power sites on the reservation and of the water rights reserved or appropriated for this irrigation project.

Manifestly under this situation two interests are primarily involved, (*a*) that of the Indians and (*b*) the irrigation project, meaning, of course, the landowners under that project. More accurately speaking, the interests of the Indians are twofold, first, as a tribe in the revenue to be derived from these power resources developed from their tribal lands, and, secondly, as individual allottees owning lands under an irrigation project to be supplied in part with water by pumping, power at a cheap rate being essentially for the latter purpose. Approximately 20 per cent of the irrigable lands within the Flathead irrigation project are still owned by individual members of the tribe. Necessarily the Federal Government is concerned in seeing that the Indians receive adequate compensation for the use of their lands for power-site purposes and also that its obligation to the landowners under this project is fulfilled by supplying an adequate quantity of water for irrigation at a minimum cost, it being here borne in mind that the landowners under this system, both Indian and white, are obligated to repay to the United States the cost of irrigation, on a per acre basis.

The Rocky Mountain Power Co., in its brief in support of its application for a license to develop power at Flathead (pp.63 to 68), alleges that the lands included

within the power-site area constitute 50 per cent of the value of these power resources and water the remaining 50 per cent; that the water belongs to the State of Montana, and hence the Indians are without right therein. Further, that the Indians are without right or interest in the river and lake bed. This assumption, however, is erroneous. We have just shown that the Indians have a prior right to sufficient of the waters within their reservation for irrigation and other uses, which right is augmented in no small measure by the filings made on these waters by the Government in behalf of this project, pursuant to the statutes of the State. It is also to be recalled that the south half of this lake and the river into which these waters are discharged are within the Indian Reservation. The power-site withdrawal made by the Government in behalf of this project covers certain lands lying along both sides of this stream, and as to such lands, including the river bed embraced therein, the Indian title has not been extinguished. That is to say the withdrawal for power-site purposes in no way operated to extinguish the Indian title to such lands. These Indians, therefore, have a tremendously greater interest in this situation than as alleged or represented by the Rocky Mountain Power Co.

Basing its calculations on the erroneous assumption that the 2,500 acres or less of tribal Indian lands involved represents only 1 per cent of the value of power site No. 1, the Rocky Mountain Power brief proceeds to show that its offer of $1 for horsepower as rental for these lands would yield to the tribe a minimum annual rental of $68,000. On this basis (1 per cent of the value yielding $68,000 annually) the value of the entire site, including both land and water (100 per cent) would be equivalent to an annual yield in rental of $3,400,000—manifestly fallacious.

We now return to the matter of the cost of power for pumping, etc., for the irrigation project and its association with Indian rentals.

During the past few years much discussion as well as debates in congressional committees and on the floors of Congress have taken place in regard to these alleged conflicting interests of the Indians and of the irrigation project. It was vigorously argued, on the one hand, that the Indians' ownership of the power sites is absolute; that this carried with it the right of the Indians to every cent of rental moneys obtainable; and that any reduction of power rates to the irrigation project must necessarily come out of the Indians' rental and thereby cause an unwarranted reduction thereof. On the other hand, it was as stoutly maintained that the irrigation project can not be successful without pumping; that cheap power is essential for pumping; that the Indian owners of project lands and the white settlers who have purchased lands of the project from former Indian owners, are alike vitally interested in this cheap power; and have through all their years of ownership depended upon the government's plans and promises to secure it; that the United States Government itself through its Reclamation Bureau began even though it did not complete a pumping development known as the Newell project, to pump water to the irrigation projects; that the United States irrigation project itself had made water filings under the laws of Montana to make sure of the necessary water for this pumping project; that in an appropriation act approved January 12, 1927, and in every subsequent appropriation act, Congress has provided the money and authorized the procedure with a Government power project for pumping in the event that power is not procurable from the licensing of the Flathead site. Thus has arisen an unfortunate dispute on the question of the legality of the irrigation project's rights. Certainly no one has or can sucessfully contest the equitable grounds of the irrigation project to consideration in the matter of cheap power, even if the legal position has been questioned by some. One of the applicants, the Rocky Mountain Power Co., has recognized this equity from the beginning and has since 1927 put on record its willingness, if granted the license,

to supply 15,000 horsepower at special prices to the irrigation project. The revised terms for this 15,000 horsepower are set forth in Exhibit 13 of the Flathead irrigation district, an intervening party in this case, and are as follows:

A. The power company would agree to deliver at its plant to be erected at the Newell site (No. 1 site) electrical energy to be used by the irrigation project exclusively for pumping water for irrigation, power required by the Government for that purpose up to 5,000 horsepower, at the price of 1 mill per kilowatt-hour delivered, and also such power up to 5,000 horsepower as may be demanded by the United States for all project and farm uses and for sale at the price of 1 mill per kilowatt-hour delivered.

B. The power company will deliver either at the Newell plant or at some place more convenient on the project, to be agreed upon, such additional power up to 5,000 horsepower, as may be demanded by the United States for all project and farm uses and for sale at the price of 2½ mills per kilowatt-hour delivered.

The Indian Bureau has the double responsibility of protecting fully the tribal rights of the Indians in the matter of power rentals and also of doing everything possible to make a success of the Flathead Indian irrigation project committed to its care. It does not consider that these interests are really conflicting in the sense of the unfortunate dispute above referred to. We have therefore first considered in this memorandum the matter of the Indian rental on its merits just as if there were no irrigation district at all; we have accordingly proposed what seems to be a fair rate of rental, of $2.21 per horsepower; and we have indicated that in the pro forma estimated basis of calculation this involves, if the license is granted to the Rocky Mountain Power Co., an intercompany price of 2.387 mills for the current sold by the Rocky Mountain Power Co. to the Montana Power Co.

This Indian rate of rental having thus been fixed, we can properly turn to the irrigation project and consider it as one special group of general consumers that the United States Government is particularly interested in protecting to the extent of 15,000 horsepower for pumping and for the project and for sale. The justification for this is that the irrigation project is the Government's own project, and the Government's hope of reimbursement depends upon the project's success. The provision for sale of current in the above quotations was based on the expectation that a profit can be realized on the retail sale of electric current purchased at low wholesale prices, and that this profit will enable the Flathead irrigation district to be an assured success and thus reimburse the project's construction costs to the Government more rapidly than would otherwise be possible. In anticipation of this profit from power as first proposed to be made by the Government itself, Congress in the act of May 10, 1926, provided for its disposition in an order of precedence not necessary to state here, and which was fully explained in the hearings by Congressman Cramton, chairman of the House subcommittee on Appropriations for the Department of the Interior.

Now of the prices for power quoted above, that for 10,000 horsepower at 1 mill is lower that the above proposed intercompany price of 2.387 mills; but that for 5,000 horsepower at 2½ mills is actually a trifle higher. Our problem then is to see how much the intercompany price for the large amount of current sold to the Montana Power Co. needs to be raised in order to offset these relatively small amounts of current at these prices to be reserved by the applicant for the United States for the use of the irrigation project.

This involves an estimate of the load factors of pumping, of resale for farms, etc.; also the number of days of pumping required for the project and the dates. From this a study has been made of the overlap of the irrigation period with the surplus water period, and the consequent proportion of secondary power and of primary power. There was much discussion in the hearings on this subject. Suffice it here to say that the testimony showed an outside demand of 111 days for pumping for irrigation purposes, and that for the purpose of an estimate about 51 per cent would be secondary power and 49 per cent primary power. (See Indian Exhibit 7 prepared by the Rocky Mountain Power Co.) The Rocky Mountain Power Co. submitted in its Exhibit 12 an estimate of its loss through the sale of this block of 15,000 horsepower at the prices quoted. It showed (see below) that the sale of this power would bring $60,500, but that it would cost $123,000, showing a loss of $62,500. Allowing 4,000 horsepower as primary power for the irrigation project, the company deducted this from its estimated capacity of 68,000 horsepower and charged the remaining 64,000 horsepower with the above cost of $62,500, making its estimated cost for the irrigation power $0.98 per horsepower, or $1 in round figures. This estimate of $123,000 cost for this power was figured on a basis of arbitrarily including a maximum demand factor of—

15,000 maximum horsepower at $5.45	$82, 000
4,000 average horsepower at $10.20	41, 000
Total	123, 000

Attention should be called to the fact that in making the above quotations to the irrigation project no maximum demand factor was therein included, the quotations being straight kilowatt-hour prices. Why, then, should not a straight kilowatt-hour average cost be likewise used in reckoning the difference between actual revenue and actual cost? This average basis would surely be true to facts in this company's load, because what power under the maximum the irrigation project will not take will not thereby be lost, but will be otherwise absorbed into the system and realized on.

Assuming the company's own calculations of load as set forth in Exhibit 12, we then have:

Maximum horsepower	Average horsepower	Average kilowatts	Kilowatt-hours	Price	Revenue
10, 000	[1] 3, 000	2, 250	19, 600, 000	$0. 001	$19, 600
5, 000	[2] 2, 500	1, 875	16, 360, 000	. 0025	40, 900
15, 000	5, 500	4, 125	35, 960, 000	----------	60, 500

[1] 30 per cent load factor. [2] 50 per cent load factor.

For the sake of conservatism, let us assume that all of the 5,500 horsepower is prime power.

The average sale price of the 35,960,000 is $0.0016824 per kilowatt-hour; i. e., $11.05 per horsepower.

The estimated cost with 8 per cent return and including $2.21 Indian rental has been shown to be $15.60 per horsepower or 2.387 mills per kilowatt-hour.

Then 35,960,000 kilowatt-hours by 2.387 equals $85,836 is the cost of this power.

Hence, on the company's own basis of load factors, and even disregarding secondary power, and on the basis of average cost, this block of 15,000 horsepower at the prices quoted will produce an out-of-pocket loss of only $25,336. This represents about $0.32 per horsepower for the 80,500 capacity at Flathead instead of $0.98 per horsepower the way the company figured it.

Now returning to the necessary adjustment of the intercompany price to provide for these 15,000 horsepower for the irrigation district, we have:

528,800,000 kilowatt-hours at 2.387 mills (at $15.60 per horsepower)	$1, 262, 246
35,960,000 kilowatt-hours at 1.6824 mills	60, 500
492,840,000 kilowatt-hours at 2.439 mills (at $15.94 per horsepower)	1, 201, 746

Hence by the raising of the intercompany price from 2.387 mills to 2.439 mills; i. e., from $15.60 per horsepower to $15.94 per horsepower, for the 492,840,000 kilowatt-hours sold by Rocky Mountain Power Co. to Montana Power Co., the 15,000 horsepower for the irrigation project can be sold at the prices quoted and the Rocky Mountain Power Co. will still have its full average revenue of 2.387 mills; i. e., $15.60, which will enable it to pay the undiminished Indian rental of $2.21 and preserve its own 8 per cent return.

Mr. Wheeler stated at the hearings that if granted the license he would be willing to supply the irrigation district with power as the commission might require.

Assuming, then, the same power requirements and the load factors as used above for the other applicant, we would have for Wheeler on his estimate of 6,000 cubic feet per second of water:

(1) The same revenue, viz, $60,500, based on the average price of 1.6824 mills per kilowatt-hour.

(2) His cost of $15 per horsepower at 8 per cent return and including $2.33 for Indian rental is 2.2813 mills per kilowatt-hour.

We have then on Wheeler's estimated capacity of 689,000,000 kilowatt-hours:

689,000,000 kilowatt-hours at 2.2813 mills ($15 per horsepower)	$1, 571, 816
35,960,000 kilowatt-hours at 1.6824 mills	60, 500
653,040,000 kilowatt-hours at 2.3143 mills ($15.20 per horsepower)	1, 511, 316

This would mean either (1) Mr. Wheeler would have to raise his price to consumers from $15 to $15.20 per horsepower; or (2) he would have to cut the Indian rental by $0.20 as suggested above; or (3) he would have to be satisfied with $0.20 per horsepower less return than he is entitled to.

If only 5,440 cubic feet per second of water is available, a similar calculation will result in a cost of $15.23, so that there would be a $0.23 adjustment as above instead of $0.20.

CONCLUSION IN RE 15,000 HORSEPOWER FOR IRRIGATION PROJECT

The Indian Bureau believes that the matter of this 15,000 horsepower for the irrigation project has had far more adverse discussion than it deserves; that it would be most fortunate for the best interests

of the Indians and of their neighbors if all would realize that they have common interests in making the irrigation project a success for the good of all; that accordingly the obtaining of this cheap power for the project's use in pumping and for farms, etc., is highly desirable; and in fact that it is unthinkable that the opportunity to get it shall not be availed of. This does not mean, as some friends of the Indians may have feared, that the Indian Bureau does not recognize fully the rights of the Flathead Indian Tribe as the equitable owner of the power sites concerned. These rights are fully recognized and preserved and no precedent to the contrary can be set up from the disposition of this case. And further, while thus recognizing the tribal interest, the Indian Bureau also recognizes the rights and equities of individual members of the tribe as residents in and owners of land in the community chiefly to be benefited by the erection of the power project or projects including the Flathead irrigation project, dependent in part, as it is, on power at a reduced rate to supply water for irrigation and other purposes.

Accordingly, we urge the Secretary of the Interior and the Federal Power Commisson in granting a license for site No. 1 to either of the applicants, to insert in said license conditions for the reserving to the United States Government for the use and benefit of the Flathead irrigation project of 15,000 horsepower of electric power substantially as set forth in paragraphs A, B, D, E, K, L, and N of the Rocky Mountain Power Co.'s memorandum of February 17, 1927, as amended December 30, 1928, by agreement with the Flathead irrigation district, and on the terms and conditions therein stated. See Exhibit 13 of Flathead irrigation district, intervening party to the proceedings.

VIII. The Four Other Flathead Power Sites.

It is the task of the Indian Bureau to secure all possible advantages to the Indians while preserving the interests of the public. Hence, the fullest possible development of the Flathead sites would seem to be desirable from the standpoint of the Indians' interests.

Applicant Wheeler has applied for a preliminary permit for all five sites but is not ready to apply for a license to proceed with any immediate development. Applicant Rocky Mountain Power Co., on the other hand, has applied for a license for immediate development of site No. 1, and for a preliminary permit for the other four sites, but it stated in the hearings it could not tell when, if at all, it would develop these four sites.

In view of the immediate and financial advantage to the Indians in the development of site No. 1 by the Rocky Mountain Power Co., provided an adequate rental basis can be agreed upon, the Indians' interest would seem to be secured by the issuance of such a license for site No. 1. If site No. 1 should be thus licensed to this applicant, the Indian Bureau would hope that a preliminary permit for one or more of the other four sites for a limited period might also be issued to applicant Wheeler, so that if he can be successful in bringing new industries to the Flathead neighborhood, as he hopes, the chance may be given him to do so. It is the Indian Bureau's understanding that the license for site No. 1 would have in it an article that will provide for

regulation of the lake under such reasonable rules and regulations as the Federal Power Commission may prescribe for the fullest practicable utilization of the waters of Flathead River; and that under this protection, applicant Wheeler could successfully develop the lower sites. Such an arrangement would assure an early income to the Indians from site No. 1 and would also exploit the possibilities of the other sites for industrial development, which would furnish opportunities for development, the opening of a local market, etc.

So far as concerns the fixing of a rental to the Indians for these lower sites, the Indian Bureau believes that the facts concerning each site can best be considered separately at the time of the issuance of a license for it, and that the rental can then be fixed for it as a separate proposition following the precedent and the experience gained in the way that site No. 1 works out.

Conclusion

In concluding this memorandum on the Flathead power development, we are pleased to state that it seems possible at last to solve this complex problem which has been so fraught with disputes for such a long time, and do it to the satisfaction of all of the interests involved. Upon analysis it has developed that the advantages and resulting low costs of this power site will make it possible (1) to give the developing licensee a full return upon the investment; (2) to considerably increase the Indian rental beyond the offers made or even the expectations of the Indians; (3) to provide for the full amortization of the power development cost during the 50-year period of the lease and at the close of the lease its return to the Government for the Indians as a going concern fully paid for, then to be released or otherwise disposed of as may then seem best; (4) to accommodate the irrigation project by the granting in full of its request for cheap power; (5) should the license be granted to the Rocky Mountain Power Co., to make available from the Flathead development itself and from the beneficial effects therefrom upon the Thompson Falls plant of the Montana Power Co. certain further amounts which under the regulation of the Montana Public Service Commission will be available for rate reductions for the benefit of the general consumers of the latter company; (6) should the license be granted to Mr. Wheeler, to make available from the Flathead development advantages to the Indians and other people of that section from the introduction of new industries, with resulting opportunities for new employment, new markets, etc.; (7) to establish a method of calculation of Indian rentals for power sites; (8) to provide for proper regulation by the Federal Power Commission in conjunction with the State public service commission that is involved, of the licensee that makes the development.

Respectfully submitted.

J. Henry Scattergood,
Assistant Commissioner.

115134—S. Doc. 153, 71-2——4

SUPPLEMENTAL MEMORANDUM

MAY 14, 1930.

Hon. RAY LYMAN WILBUR,
Secretary of the Interior.

SIR: Supplementing Indian Bureau's revised memorandum dated December 30, 1929, in re Flathead power development, we now submit the following further statement:

APPLICANT ROCKY MOUNTAIN POWER CO. SELECTED FOR SITE NO. 1

It will be remembered that the applications received were—

(1) From Rocky Mountain Power Co. for final license for immediate development of Flathead site No. 1, and for preliminary permit for investigating sites Nos. 2, 3, 4, and 5.

(2) From Walter H. Wheeler for preliminary permit for investigating all five sites Nos. 1, 2, 3, 4, and 5.

In the Indian Bureau's memorandum just referred to, the facts and variables relating to power as to both applicants were set forth, without an effort to consider the ability to market and to finance, or the practicability of the plans of applicant Wheeler for fertilizer manufacture, etc. We understand that you have received reports in relation to the feasibility of the manufacture of fertilizer from the experts in the Agricultural Department; also that the Federal Power Commission on the showings made by the applicants have recommended that the Rocky Mountain Power Co. be awarded the license for site No. 1 as applied for, provided satisfactory terms of Indian rental could be agreed upon, and that applications from both applicants for preliminary permits upon the other four sites be rejected.

INDIAN RENTALS

Reference is made to our previous memorandum where we showed the inadequacy of the offers of Indian rentals made by either of the two applicants. We are pleased now to be able to state that this view has been amply supported by the separate studies made by the Federal Power Commission and by the Army Engineers, the latter having been requested by the Secretary of the Interior to make a fresh and independent study. For the sake of the record all of the different studies are here briefly summarized.

THREE METHODS OF CALCULATION OF INDIAN RENTAL

There are three methods by which Indian rentals can be set up: (1) At a fixed rate per horsepower produced; (2) at a combination of fixed charge and energy charge; and (3) at a flat rental basis, regardless of the amount of output. These are further described as follows:

(1) At a rate per horsepower and estimated at a "spot" of production.—The first method was prepared in the offers of the two applicants.

Rocky Mountain Power Co. offered $1 per horse-power-year. At the hearings it estimated on 5,400 cubic feet of water per second, resulting in 80,000 horsepower prime power for site No. 1, which is the same as per the Federal Power Commission formula. However, this

applicant further estimated a utilization factor of only 85 per cent, thus reducing the estimate of prime power capacity produced and taken to 68,000 horsepower, which at $1 per horsepower would have made $68,000 average Indian rental for site No. 1 on a "spot" basis of 68,000 horsepower.

Applicant Wheeler offered $1.12½ per horsepower-year. At the hearings he submitted, based on 6,000 cubic feet of water per second, an estimate of prime power capacity for site No. 1 of 105,000 horsepower using a higher over-all efficiency factor (87½ per cent) than the commission and a utilization factor of 100 per cent. On this "spot" basis of 105,000 horsepower, the Indian rental at $1.12½ per horsepower would be $118,125 for site No. 1. Applicant Wheeler's figures would, however, be subject to reduction on account of the commission's limitation to 1,100,000 acre-feet of storage (10 feet difference of levels) on account of certain as yet unsolved problems which will result from changing the levels of the lake. As stated in our revision of our previous memorandum, this would result in only 5,440 cubic feet of water per second instead of 6,000 cubic feet and would reduce applicant Wheeler's prime power capacity from 105,000 horsepower to 95,000 horsepower. At $1.12½ per horsepower Mr. Wheeler's Indian rental on the "spot" basis of 95,000 horsepower would be reduced to $106,875.

In our previous revised memorandum, an effort was made to develop an Indian rental rate per horsepower comparable to the two offers made by the applicants. This calculation was likewise based upon 5,440 cubic feet of water per second, resulting in a prime power capacity of 80,500 horsepower. On this basis, the cost per horsepower was estimated to be $13.39 per horsepower-year to Rocky Mountain Power Co., and $14 (for 95,000 horsepower) for Mr. Wheeler. Rocky Mountain Power Co. proposed in the hearings a selling price of $18 per horsepower including $1 per horsepower for the Indian rental and $1 estimated cost per horsepower of supplying the irrigation district with power at specified low rates. It was also shown that the cost per horsepower including 8 per cent return to Montana Power Co. in the year 1926 was $17.78, said return being based upon the company's valuation of tangible values. (It may be said in passing, that if this basis of valuation is a pre-war cost plus actual additions since 1913 at cost, it would be comparable with the net investment cost basis used in the above applicants' calculations).

On the further assumption that the Flathead Indian Tribe and the general public are each entitled to about one half (approximately in proportion to their interests in the Flathead River and Lake), this figures that for applicant Rocky Mountain Power Co. on a "spot" basis of 80,500 horsepower, the Indian rental would be $2.21 per horsepower, which equals $177,905 per annum. The irrigation district, if it actually costs anything other than secondary power, will be supplied from the public's share. As to applicant Wheeler, his selling price is limited by his plan to $15 per horsepower; his cost as adjusted would be $14, leaving only $1 for the Indians, assuming that they would get it all, and the public's share would be in the low price to the new industries that he would hope to attract. In this case, the irrigation district would not be considered at all.

(2) *Combination of a fixed rental plus an energy charge.*—This second plan of estimating Indian rental was used by (*a*) Federal Power Commission in its schedule of January 2, 1930; (*b*) Army engineers (when specially called upon by the Secretary of the Interior for an independent study of February 27, 1930 and revised March 29, 1930); and (*c*) by the Indian Bureau in its Schedule No. 2 dated April 1, 1930, and which was discussed by the Secretary of the Interior with the Montana congressional delegation. All of these estimates were based on studies of the variables with a view that after the production cost including fair return to the company had been covered, any further margin of profit should be divided between the Indians and the public (through the company under regulation). The variables were (1) development cost; (2) transmission line cost (in the Army schedule only); (3) annual operation charges; (4) annual transmission charges (in the Army schedule only); (5) revenue at Flathead, and at Anaconda (in the Army schedule only). In effect, this kind of a schedule of rates is one of adopting a minimum fixed rental charge up to a given horsepower development, plus an energy charge for development above that point and at such a rate as will divide the excess between the Indians and the public (through the company under regulation). This plan results in a constantly diminishing cost per kilowatt-hour to the company and in a steadily rising rate of rental per horsepower to the Indians, and is in effect a profit-sharing arrangement and is the kind that is often used in contracts for wholesale power.

The advantage in this plan is that in the higher brackets of power production, the Indians would be able to secure considerably greater rentals. The disadvantage is that in the lower brackets where the profit is insufficient even for a fair return to the company, the Indians must either run the risk of little or no rental or they must be given a fair minimum rental. Even this minimum will then show a heavier loss to the company than it proved willing to agree to. Furthermore a number of difficulties were encountered in all these profit-sharing plans in providing against any possibility of the use of the Flathead plant for peaking purposes only or in dull times the giving to it of only a reduced proportion of the entire system load, and in general the avoiding of the temptation to starve this plant in order to reduce the Indian rental. Four months of negotiations were consumed in discussing those various plans and the variables upon which they were based and we were never able to reach an agreement. Several deadlocks actually developed with the breaking off of negotiations. Finally efforts on these lines were abandoned and a new approach was entered upon with the plan of a flat rental.

For the record there are appended hereto the three schedules referred to above which were proposed for discussion respectively by Federal Power Commission, the Army engineers, and the Indian Bureau.

(3) *Flat rental.*—The third plan of a flat rental basis was finally agreed to on terms as set forth below. This plan of rental has the advantages of (1) reducing all risks to the Indians and providing an assured, definite and uniform rental regardless of the amount of use of the plant by the licensee; (2) it avoids the difficulties of assuring to the Flathead plant its fair porportion of system load; (3) it avoids

any inducement that Flathead be used for peaking purposes, or that it be starved unduly at high water periods when other plants of the system could carry an increased share of the load; (4) it avoids all problems arising from any form of partnership of the Indians with the licensee; and (5) it eliminates subjecting the Indians to the ups and downs of business and to industrial depressions, a feature which especially exists in Montana, where the electric demand is so largely industrial in character. In the case of applicant Wheeler, whose plan provided for an exclusively industrial load, this business variation of load would have had its maximum effect upon Indian rentals.

The basis of agreement as to Indian rentals reached with Rocky Mountain Power Co. is as follows:

Article 30: (*a*) The licensee shall pay into the United States Treasury as compensation for the use, in connection with this license, of the Flathead Indian tribal lands annual charges computed as follows:

(1) A charge at the rate of $1,000 per calendar month, beginning with the month in which the license is issued and extending to and including the month in which the project is placed in commercial operation. For the purpose of the payments under this article, the beginning of commercial operation shall be considered as the time when one of the licensee's generating units shall have been installed, tested, and demonstrated to be in suitable condition to produce electric energy for commercial purposes with a reasonable degree of reliability.

(2) A charge at the rate of $5,000 per month, beginning with the calendar month next succeeding the date on which the project is placed in commercial operation and extending to the end of the calendar year in which such commercial operation shall commence.

(3) For each full calendar year from and after the 1st of January next following the date on which the first unit is placed in commercial operation, annual charges will be as follows:

	Per year
For the first two years	$60, 000
For the third year	75, 000
For the fourth year	100, 000
For the fifth year	125, 000
For the next five years	150, 000
For the next five years	160, 000
For the next five years and/or until readjustment of the annual charges payable hereunder shall have been effected pursuant to the provisions of par. (D) of this article 30	175, 000

(B) Payments shall be made for each calendar year within 30 days after the close thereof on bills rendered by the commission.

(C) Pursuant to the provisions of the act of March 4, 1929 (45 Stat. 1640), all charges for reimbursing the United States for the cost of administration of the Federal water power act have been and are hereby expressly waived.

(D) The annual charges payable under this license may be readjusted at the end of 20 years after the beginning of operation under this license and at periods of not less than 10 years thereafter by mutual agreement between the commission and the licensee, with the approval of the Secretary of the Interior. In case the licensee, the commission, and the Secretary of the Interior can not agree upon the readjustment of such charges, it is hereby agreed that the fixing of

readjusted charges shall be submitted to arbitration in the manner provided for in the United States arbitration act (U. S. C., title 9), such readjusted annual charges to be reasonable charges fixed upon the basis provided in section 5 of regulation 14 of the commission, to wit, upon the commercial value of the tribal lands involved, for the most profitable purpose for which suitable, including power development.

The Indian Bureau believes this scale of rentals forms a very satisfactory settlement. It greatly exceeds the offers made by both applicants. For purposes of ready comparison we append a chart which shows the agreed rentals, the original offers, and also the estimates based upon studies of the variables made by the Indian Bureau, the Federal Power Commission, and the Army engineers.

From this it will be noticed how closely all the estimates converge in the zone of 70,000 to 85,000 horsepower, which are the probable points of usual development.

GUARANTY

The guaranty for performance of Rocky Mountain Power Co. is made—

(1) by Montana Power Co., the parent company, guaranteeing the completion of the installation by Rocky Mountain Power Co. (the subsidiary company) of three units of 50,000 horsepower each or a total of 150,000 horsepower within four years, i. e., to start construction within one year and to complete construction within three years thereafter;

(2) by Montana Power Co. entering into a contract with Rocky Mountain Power Co. for the 50-year period of the lease to take all of its production of electric energy except such current as is taken by the United States for the reservation and the irrigation district up to a maximum of 15,000 horsepower. Said electric energy is to be paid for by the Montana Power Co. on the basis of actual cost, including Indian rental plus 8 per cent return upon the net investment cost. This will be an assurance of a market for the entire period of the license and will in effect act as a guaranty that Rocky Mountain Power Co. will be able to carry out its obligations, including the payment of Indian rentals.

POSSIBLE INCREASE OF WATER FLOW IN FUTURE

As stated above, the Federal Power Commission has set a limit in the present license (and in accordance with the application) of 10 feet of storage in Flathead Lake, making a minimum of 1,100,000 acre-feet. If in the future, the problems of the lake levels can be safely solved, so that the Federal Power Commission will feel warranted in allowing a greater storage to be developed than 10 feet, then it will be in order for an application to be filed for the amending of the license. Such a proceeding will result in a corresponding increase of Indian rental based upon the increased earning power of site No. 1. It is hoped that at least by the time the first readjustment of rental is made at the end of 20 years, it will be possible that this increase of storage will have been found feasible.

CORPORATE SET-UP AND REGULATION IN THE PUBLIC INTEREST

It is especially gratifying to the Indian Bureau that the license as drawn carries out so fully its suggested plan of corporate set-up and regulation and which in these respects forms a model lease. This includes the continuance of the separate corporate existence of Rocky Mountain Power Co., which is a very important consideration in the simplification of accounting and future calculations for Indian rental readjustments. It has also been agreed by the applicant that all of its (the subsidiary's) securities are to be held unless otherwise allowed by the Federal Power Commission in the treasury of the Montana Power Co. (the parent company) or by a trustee for it, and that all of these securities shall be sold to Montana Power Co. for cash or its equivalent. This means no bonus securities and no over-capitalization.

It may be said in passing that so far as proper regulation and corporate set-up is concerned it is not necessary that all of the securities of the subsidiary should continue to be held in the parent company's treasury. It is sufficient that only the equity-bearing common stock be so held and the bonds and preferred stock, if any, could as well be sold to and be held by the public. In this case, however, the company prefers to sell to the public Montana Power Co. securities and to retain in its treasury or in the hands of a trustee all of the securities of the subsidiary.

The license also provides that in the intercompany agreement between the subsidiary and the parent companies, as already stated, the intercompany price of current will be sufficient and only sufficient approximately to cover the actual operating costs, including Indian rental plus an 8 per cent return upon the actual legitimate investment as established under the provisions of the Federal water power act. This means that this intercompany cost-plus-return price will be based upon the prudent investment valuation, and will be a bed-rock price. For regulation as between the Federal and State Commissions, this is an ideal arrangement in that under the Federal license the return will be limited to 8 per cent upon cost, 8 per cent being the prevailing allowed rate in Montana; and there will be turned over to the pool of the Montana Power Co. and be put under State regulation the entire production of the subsidiary (except the power taken by the United States) at this lowest possible price. We have already shown in Indian Bureau's memorandum of December 30, 1929, that this cost at Flathead site No. 1 will be less than the average cost of the Montana Power Co.'s system as shown in the year 1926. Hence the coming into the Montana Power Co.'s system of this lower cost current (with its return on generating investment already taken care of) should have the effect of lowering the average cost of the entire system, and, under the State regulation, be of advantage to all of the consumers on its lines. The gain at Thompson Falls will likewise have a favorable effect. Thus, not only the Indians but the general public of Montana should be the gainers by the Flat head development.

OUR Water Rights

In this connection it is important to note that this low intercompany price will be a matter of open publicity through the annual reports of the subsidiary and the parent companies as rendered to the

State commission. This will therefore serve as the "yardstick," so often referred to in public-ownership cases, by which the actual cost-plus return on cost will be always available. This clean cut and open publicity is one of the most important factors in successful regulation of public utilities. We believe that this Flathead case as arranged can be taken as a model lease in this respect.

IRRIGATION DISTRICTS

It will be remembered that in 1927, and again in 1928, the applicant had voluntarily agreed to sell to the United States for the irrigation district up to 15,000 horsepower at prices of 1 mill for 10,000 horsepower and 2½ mills for 5,000 horsepower. In Indian Bureau's memorandum of December 30, 1929, it was shown that the latter price of 2½ mills is greater than the estimated cost at Flathead site No. 1, including return and Indian rental. Hence, on the 5,000 horsepower block there will be no loss. On the block of 5,000 horsepower at 1 mill for pumping and 5,000 horsepower at 1 mill for general uses and for sale, there will probably be very small loss, if any, because much of this use will be at the time of secondary power. However, even if the load factors are as the applicant has estimated and a part is primary power, we have shown in our memorandum of December 30, 1929, that after the calculation of the Indian rental, by a slight increase in the intercompany price, the small cost of this power will be provided for without in any way affecting the Indian rental.

It may be added that in all our negotiations regarding the Indian rentals this matter of the irrigation power was completely ignored. It was recognized by the company's representatives, as well as by those representing the Government, that at Thompson Falls there will be developed, because of Flathead storage, more than twice as many additional kilowatt-hours than can possibly be used in the entire irrigation 15,000 horsepower demand. Hence, this delivery of this power can and will be provided without the slightest effect in reducing the Indian rental.

Accordingly there have been included in the license the features desired by the irrigation project and already agreed to, as stated, viz:

(1) The agreement to supply the 15,000 horsepower at the prices previously stated.

(2) To refund the $101,000 to the Government for the cost of Newell Tunnel, which will be completed and used by applicant for river diversion during construction.

(3) The supplying to the project up to 500 horsepower at line voltage during the construction period.

(4) The right to use Flathead Lake and River water above the dam for irrigation purposes, provided not more than 50,000 acre-feet shall be used after July 15 in any year.

AMORTIZATION

It will be recalled that in the Indian Bureau's memorandum of December 30, 1929, we recommended that if legally possible under the special powers of the Secretary of the Interior in this case it would be desirable to provide for an amortization charge of 0.6 per cent

to be included in the licensee's operating expenses and that such charges should be set aside in an amortization fund and kept invested and reinvested in such fund, so that at the end of the 50 years of the lease the property might be recaptured and be turned back to the Indians fully paid for. This desirable feature proved to be impossible of accomplishment because under the Federal water power act, no such setting up of an amortization charge is provided for, nor could the Secretary's powers be stretched to include such a power against the licensee's resistance. There is, however, provision that after 20 years of the license, certain provisions in reference to surplus earnings being used for amortization shall become operative. As under the set-up of this license there will be no appreciable surplus earnings, this provision will not be operative.

However, the right of recapture for the Indians at the end of 50 years exists under the Federal water power act, and can be exercised provided a fund will be available to meet the outstanding net investment cost to the licensee. To provide such a fund it would be possible, if thought desirable and if approved by the Indians, for Congress to set aside each year from the funds of the Indians an amount sufficient at compound interest to build up such an amortization fund.

RECOMMENDATIONS

(1) The Indian Bureau recommends the issuance of the license for site No. 1 for immediate development as now agreed upon to Rocky Mountain Power Co.

(2) The Indian Bureau repeats its hope, as expressed in the previous memorandum, that a way may be found for the early exploration with a view to development, of the Flathead sites Nos. 2 to 5 so that the Indians may have a revenue from them at the earliest possible date.

Applicant Rocky Mountain Power Co. has stated in the hearings that it would not soon proceed to such development even if granted the preliminary permit. Applicant Wheeler has urged that if granted a preliminary permit, he believes he could secure actual contracts for the sale of power. Although it is recognized that he has not yet made a sufficient showing of ability to market the power, yet it is hoped that he may be at least given an extension of time to do so, so far as sites Nos. 2 to 5 are concerned, rather than be rejected outright. If there is any real chance of his exploiting the possibilities of these other four sites for industrial development, it would seem desirable to give him opportunity for a limited time to show what he can do.

Respectfully submitted.

J. HENRY SCATTERGOOD,
Assistant Commissioner.

Approved:

C. J. RHOADS, *Commissioner.*

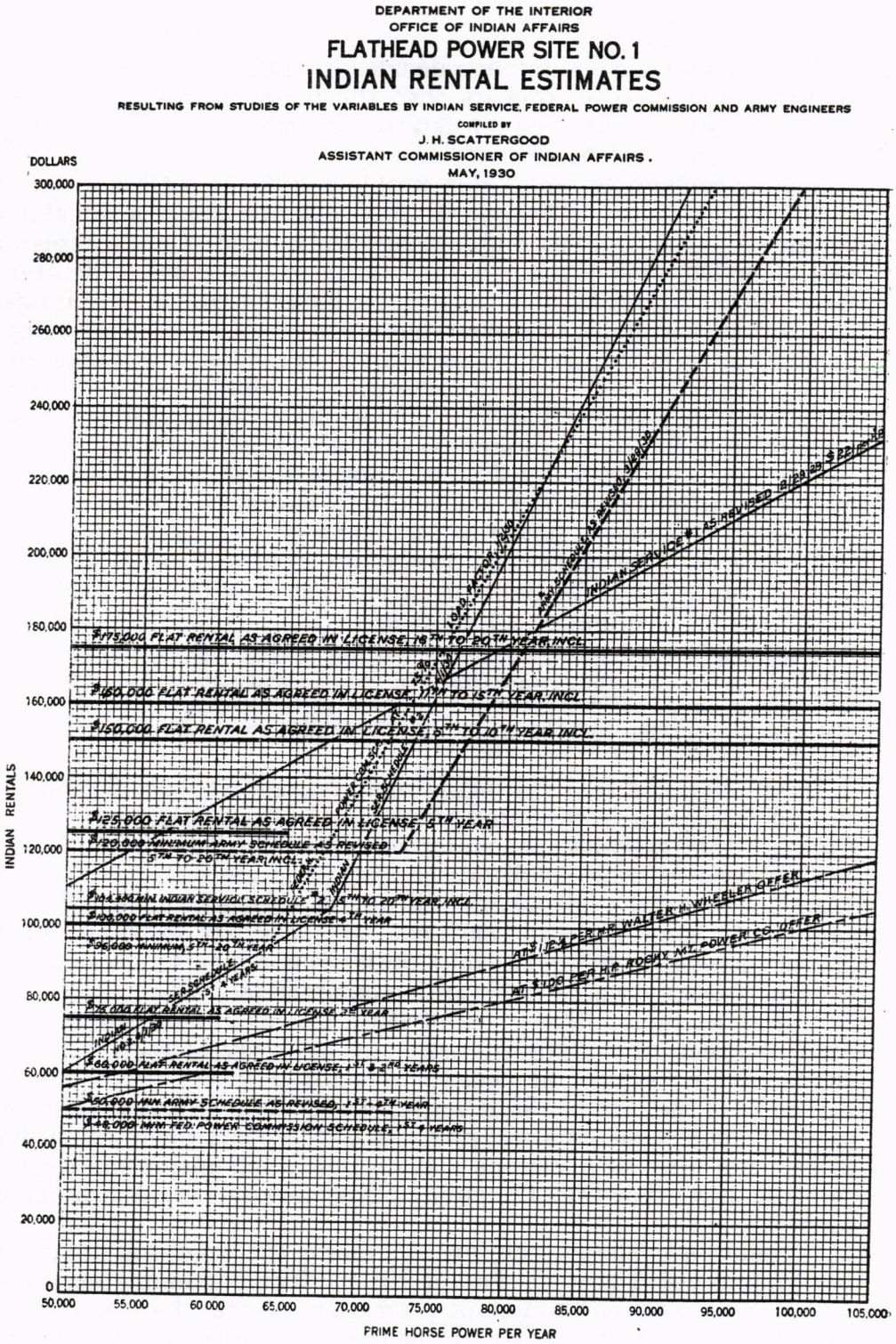
APPENDIXES

Federal Power Commission schedule, January 2, 1930.

Army Engineers' schedule, February 27, 1930; revised March 29, 1930.

Indian Bureau schedule No. 2, April 1, 1930.

Copy of license issued May 23, 1930, to Rocky Mountain Power Co. for site No. 1.


DEPARTMENT OF THE INTERIOR
OFFICE OF INDIAN AFFAIRS
FLATHEAD POWER SITE NO. 1
INDIAN RENTAL ESTIMATES
RESULTING FROM STUDIES OF THE VARIABLES BY INDIAN SERVICE, FEDERAL POWER COMMISSION AND ARMY ENGINEERS
COMPILED BY
J. H. SCATTERGOOD
ASSISTANT COMMISSIONER OF INDIAN AFFAIRS.
MAY, 1930
DOLLARS
INDIAN RENTALS
PRIME HORSE POWER PER YEAR
300,000
280,000
260,000
240,000
220,000
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
50,000
55,000
60,000
65,000
70,000
75,000
80,000
85,000
90,000
95,000
100,000
105,000
$175,000 FLAT RENTAL AS AGREED IN LICENSE, 18TH TO 20TH YEAR INCL.
$160,000 FLAT RENTAL AS AGREED IN LICENSE, 11TH TO 15TH YEAR INCL.
$150,000 FLAT RENTAL AS AGREED IN LICENSE, 5TH TO 10TH YEAR INCL.
$125,000 FLAT RENTAL AS AGREED IN LICENSE, 6TH YEAR
$120,000 MINIMUM ARMY SCHEDULE AS REVISED 5TH TO 20TH YEAR INCL.
$104,300 MIN. INDIAN SERVICE SCHEDULE #2, 5TH TO 20TH YEAR INCL.
$100,000 FLAT RENTAL AS AGREED IN LICENSE 4TH YEAR
$96,000 MINIMUM 5TH TO 20TH YEAR
$75,000 FLAT RENTAL AS AGREED IN LICENSE 3RD YEAR
$66,000 FLAT RENTAL AS AGREED IN LICENSE, 1ST & 2ND YEARS
$50,000 MIN. ARMY SCHEDULE AS REVISED, 1ST & 2ND YEAR
$48,000 MIN. FED. POWER COMMISSION SCHEDULE, 1ST & YEARS
INDIAN SERVICE #1 AS REVISED
AT $1.15 PER H.P. WALTER H. WHEELER OFFER
AT $1.00 PER H.P. ROCKY MT. POWER CO. OFFER

SUGGESTED FEDERAL POWER COMMISSION SCHEDULE

Proposed Charge for Indian Land

JANUARY 2, 1930.

In the event the commission decides to authorize a license for site 1 in the above case, it appears that the following may offer a rough outline of a logical method for determining the reasonable charge to be fixed for the use of the Indian land.

The uncertainties make this problem difficult. Obviously, there is no exact answer. The appraisal of a water-power site value constitutes a most complex engineering study under any circumstances and when the project is for public utility purposes the difficulties are magnified. This is because no tangible basis for comparison is offered. Any advantage of one site over another may not be capitalized by the developing public utility agency and, therefore, the value to the utility lies only in the more economical or reliable service it may be permitted to give the public. Under these circumstances it would appear that the four primary factors which will probably operate to limit, but not necessarily fix, the appraised value are the following:

1. Cost of power at load centers from alternate sources.
2. Present value of power at load centers.
3. Possibility of marketing power site with some other agency.
4. Value of lands for some other purpose than power development.

Section 5 of regulation 14 provides:

> When licenses are issued involving the use of tribal lands embraced within Indian reservations, the commission will fix a reasonable annual charge for the use thereof, based upon the commercial value of the land for the most profitable purpose for which suitable, including power development. The charge shall commence upon date license is issued.

It will be noted that the regulations contemplate specific consideration of the fourth factor noted above; but in the present case the value for any other purpose than water power, in so far as the Indian lands are concerned, may be dismissed from consideration. The Indian land bordering the lake shore will not be affected above the natural high-water level, and the very small area actually to be occupied by the project works below the lake outlet is confined to the precipitous canyon territory where there are no commercial values.

The third factor likewise is of little importance in this case. In many respects the Flathead Lake site is highly attractive but with the abundant supply of cheaply developed water power resources throughout the Northwest, it will probably be many years before the development of markets will progress to the point where the isolation of this site may be overcome and its full development warranted by some agency other than the public utility now serving that immediate territory.

It seems necessary, therefore, to relate the appraisal to the first two factors noted above. Factor No. 1, which contemplates comparison with an alternate source of power, has already been studied to a considerable extent by Mr. Henshaw. It appears that the most favorable alternate source for developing a block of power similar in

quantity and characteristics to that possible at Flathead will be a combination of site C on the Missouri River and the reconstruction of the Canyon Ferry project. Site C would have to be built first in order to provide spare capacity for the system and thus allow the existing Canyon Ferry plant to be dismantled. The main elements of these two units are presented by Table 1 and a comparison with Flathead by Table 2. These are based mainly on Mr. Henshaw's data. On this rough basis of comparison a differential of $2.19 per horsepower in favor of Flathead is indicated before consideration of the Indian charge.

Mr. Cochrane stated (Tr. p. 2284) that under present schedules, approved by the State regulatory agency, energy is being wholesaled in large blocks at Anaconda for from $25 to $30 a horsepower and at Great Falls for somewhat less. On this basis of about 4 mills per kilowatt-hour at Anaconda and 1.5 mills transmission cost, including losses, it would appear that the Flathead output might be valued at around 2.5 mills switchboard without increasing present rates.

The estimated cost of the Flathead development is approximately $7,500,000, which seems fair, although in my judgment this figure is more likely to be exceeded than reduced. The annual charges, adopting the 12 per cent basis, will be about $900,000 a year. The company estimates somewhat more. At 2½ mills a kilowatt-hour the annual generation must reach 360,000,000 kilowatt-hours to offset the annual charge exclusive of any Indian rental. The site is capable of producing a great deal more, and the most specific basis for the charge will be a schedule which makes equitable division of revenue beyond costs between the Indians on the one hand and the public interests of the State on the other. Necessarily, such a schedule must incorporate various safeguards such as minimum charges, etc., which protect the Indian interests, but at the same time encourage the company to make the largest practicable utilization of the available resources.

An approximation of an equitable division of interest between the Indians and the public may be derived as follows: As Mr. Henshaw points out, a development confined exclusively to tribal lands and without artificial regulation of the lake might be made which would have a primary capacity of 37,440 horsepower ($2,600 \times 180 \times 0.08$). Ownership of the resources for such a project lies entirely with the Indian tribe. Constructed to 60,000 horsepower installed capacity, such a project would probably cost around $5,000,000.

From preliminary calculations and subject to correction by the detailed status check now being made by Mr. Orcutt, it appears that tribal lands affected by regulation of the lake itself will amount to about 25 per cent of the total. The division of interest in the entire project between Indian and public interest combining these various factors may be calculated as follows:

$\frac{37,500}{80,000}$=46.875 per cent (of project exclusively Indian).

$\frac{\$5,000,000}{37,500}$=$133 per horsepower (for project without regulation).

$\frac{\$2,500,000}{42,500}$=$59.80 per horsepower (for additional power from regulation).

$\frac{\$133}{\$59.8}$=2.2 (ratio of value in favor of storage power).

Indian interest:		
46.875×1	46. 875	
53.125×2.2×0.25	29. 218	
Indian total	76. 093=	46. 5%
Public interest=53.125×2.2×0. 75	87. 654=	53. 5%
Combined total	163. 747=	100 %

Such computation is by no means conclusive, but it serves as an indication of the comparative interests.

The schedule of Indian charge, attached hereto, aims to apply the principles outlined in the foregoing discussion. While merely tentative and probably embracing some defects, it should at least be helpful in offering something tangible for further study and discussion. The schedule embodies the principles which by long experience have been found most sound for power sale contracts and at the same time it disposes automatically of the questions of efficiency factors, utilization factors, etc., regarding which there has been considerable futile discussion in this case. It will be desirable, of course, that the charge be divided between a peak charge and an energy charge in order to prevent the plant being utilized primarily for peak and stand-by purposes. Also, certain substantial minimum rentals are provided to protect the Indian interests. A discount of the energy charge during the season of high flow might be suggested with the thought that by such means more complete utilization would be attained and consequently larger revenue obtained for the Indian fund than the minimum charges which otherwise may logically result. This feature, however, has been omitted in this presentation in order that the schedule may be kept as simple as practicable. It will be noted that the plan provides for no deduction from the Indian charge on account of energy that may be furnished to the irrigation district. The company will be required to pay the same charges on such energy as it does on the energy transmitted to Anaconda and elsewhere. On the whole, the plan appeals to me as being eminently fair not only to the Indians but also to the company and the consuming public.

The following tabulation illustrates the operation of the schedule for varying rates of production at 75 per cent load factor:

Output at rate of kilowatt hours per month	Equivalent average horsepower	Peak load charge	Annual charge energy	Total rental	Average per horsepower
30, 000, 000	55, 074	$34, 056. 00		[1] $48, 000. 00	$0. 87
35, 000, 000	64, 253	41, 100. 00	$55, 200. 00	96, 300. 00	1. 50
40, 000, 000	73, 432	49, 140. 00	110, 400. 00	159, 540. 00	2. 17
45, 000, 000	82, 544	58, 176. 00	165, 600. 00	223, 776. 00	2. 72
50, 000, 000	91, 790	68, 196. 00	220, 800. 00	288, 996. 00	3. 15
55, 000, 000	100, 976	79, 176. 00	276, 000. 00	355, 176. 00	3. 52
60, 000, 000	110, 148	90, 120. 00	331, 200. 00	421, 320. 00	3. 83

[1] Established by minimum charge of $4,000 per month during first 5 years and would be doubled in case this low output occurred after fifth year of operation.

A chart which offers ready means for estimating the charges under different conditions is attached hereto. It is of interest to note that the Indian revenue from operation at the rate of 50,000,000 kilowatt-hours a month which reasonably may be anticipated as the market and

the site reach full development will amount to $289,000 a year. Capitalized at 6 per cent this represents a valuation of practically $5,000,000 for the Indian interest in the project.

F. E. BONNER,
Executive Secretary.

MR. BONNER'S PROPOSED SCHEDULE OF INDIAN CHARGE

The licensee shall pay into the United States Treasury as compensation for the use of Flathead Indian tribal lands (and administrative expenses of the United States) in connection with this license as annual charge for each calendar year subject to the following conditions:

A. The amount of the charge will be the sum of the 12 monthly charges each of which shall be calculated as follows:

(1) *Peak load charge.*—First 45,000 kilowatts or less of maximum load, $2,250 per month; next 15,000 kilowatts of maximum load, $0.06 per kilowatt; next 10,000 kilowatts of maximum load, $0.07 per kilowatt; next 10,000 kilowatts of maximum load, $0.08 per kilowatt; next 10,000 kilowatts of maximum load, $0.09 per kilowatt; all over 90,000 kilowatts of maximum load, $0.10 per kilowatt.

(2) *Energy charge* (to be added to demand charge): First 30,000,000 kilowatt-hours per month, no charge; all over 30,000,000 kilowatt-hours at following rates: First 400 kilowatt-hours per kilowatt of proportional peak load, $0.001 per kilowatt-hour; next 150 kilowatt-hours per kilowatt of proportional peak load, $0.0007 per kilowatt-hour; all over 550 kilowatt-hours per kilowatt of proportional peak load, $0.0004 per kilowatt-hour.

(3) *Minimum charge* will be $1,000 per month beginning with the month in which license is issued and extending to the month next preceding that within which the project is placed in commercial operation; thereafter the minimum charge (inclusive of the combined peak and energy charges) for each month shall be $4,000 per month until the beginning of the fifth calendar year after the date on which the project is placed in commercial operation; and thereafter the minimum monthly charge shall be $8,000 per month.

B. The licensee shall be required to install, operate, maintain, and periodically test such meters and other equipment as may be required for measuring, in terms of kilowatts of peak load and kilowatt-hours, the output of electric energy produced by the generating units of the plant, and representatives of the commission may at any time have the right to inspect and test such meters and other equipment in the presence of a representative of the licensee. The record of meter measurement shall be used as the basis of the charge calculations: *Provided, however,* That in case any installed meter shall during any period of time for any reason fail to register the output correctly the record of output for such period shall be estimated from the best data available.

C. Promptly after January 1 of each year the licensee shall forward to the commission a record of the peak load and total energy output for each month of the preceding calendar year. After such verification as may be deemed desirable by the commission this record will be made the basis of the annual charge and a statement rendered the licensee which shall be paid within 30 days of receipt.

D. For calculating the peak load charge the maximum load of each month will be considered as that average kilowatt output of the 30-minute interval in which the output of electric energy is greater than in any other 30-minute interval in the same month. For calculating the energy charge the proportional peak load will be derived by taking the proportion of the maximum load that the output for the month in excess of 30,000,000 kilowatt-hours bears to the total output for the month.

E. The annual charge may be readjusted at the end of 20 years after the beginning of operation under this license and at periods of not less than 10 years thereafter upon the basis used in the original determination and upon the facts as found by the commission at such times of readjustment.

SUGGESTED ARMY ENGINEERS' SCHEDULE

WAR DEPARTMENT,
Washington, February 27, 1930.

The SECRETARY OF THE INTERIOR,
Acting Chairman Federal Power Commission,
Department of the Interior, Washington, D. C.

DEAR MR. SECRETARY: 1. In response to your recent request for a recommendation on the amount which the Rocky Mountain Power Co. should pay to the Indian Bureau for flowage rights in connection with a license for the construction of a power plant on the Flathead River, you are advised that based on the data submitted I have had a study made under the direction of the Chief of Engineers, who advises that the conclusions of that study are as follows:

(*a*) That the revenue should be derived, first, from a fixed yearly demand charge, and second, from an energy charge, the latter to be sufficiently low to make it worth while for the company to generate as much power as can be absorbed in the system.

(*b*) That no unnecessary restrictions should be placed on the method of operating the plant by the power company, such as a peak load penalty, as it is believed that this will have the effect of reducing the usefulness of the plant and will not provide additional return to the Indian Bureau.

2. The following conditions are recommended as being fair to all parties concerned and are based on computations made from information supplied by your office:

Fixed charge: The power company shall pay to the Indian Bureau for the privileges granted under this license a fixed charge at the rate of $1,000 per month from the time that this license is issued until the time when the plant starts generating power for other than test purposes. As soon as the plant starts generating power for other than test purposes, the company shall pay at the rate of $60,000 per year until the beginning of the fifth calendar year, at which time the fixed charge shall be increased to $125,000 per year, and shall be continued until the expiration of this license, unless modified under the terms thereof.

Energy charge: In addition to the fixed charge, the company shall pay for energy generated as follows: For the first 420,000,000 kilowatt-hours per annum during the time that the fixed charge is $60,000 per

annum, and for the first 475,000,000 kilowatt-hours per annum thereafter, no additional charge shall be made. For all energy generated over these amounts, the company shall pay at the rate of 1 mill per kilowatt-hour.

The energy shall be metered at the plant at generator voltage.

3. In arriving at the above recommendations, certain assumptions were made and certain figures were accepted, as follows:

Cost of development, not including transmission line, $8,000,000.
Installed capacity, 150,000 horsepower.
Regulated low flow 90 per cent of time, 5,400 second-feet.
Average head, 185 feet.
Over-all plant efficiency, 85 per cent.
Prime power capacity, based on 90 per cent time flow, 71,000 kilowatts.
Prime power output per annum with 100 per cent load factor, 622,000,000 kilowatt-hours.
Sale price of power delivered at end of transmission line, $25 per horsepower-year, or 3.83 mills per kilowatt-hour.
Cost of 2-circuit, 132,000-volt transmission line 140 miles long from plant to Anaconda, $3,000,000.

4. Based on the above data and the details of the cost as stated by the power company, it was computed that the total annual fixed and operating charges on the plant, not including the transmission line, would be approximately $1,000,000, divided as follows:

Interest at 7 per cent	$560, 000
Operation, maintenance, and overhead	200, 000
Taxes at 2 per cent	160, 000
Depreciation, 1 per cent	80, 000

5. In order to arrive at the net revenue at the plant, a transmission line loss in energy of 12 per cent was assumed, and fixed and operating charges of the transmission line were computed as follows:

Interest at 7 per cent	$210, 000
Depreciation at 1½ per cent	45, 000
Patrol at $100 per mile per year	14, 000
Maintenance and repairs at 0.5 per cent	15, 000
Taxes at 2 per cent	60, 000
Overhead and contingencies	6, 000
Total	350, 000

6. From the above computations, the curves shown on the attached sheet were drawn to show the difference between annual charges and the revenue derived from power generated.

7. It was considered that the fixed charge should be sufficiently large to protect the Indian Bureau in case the company desired to maintain the plant in a stand-by condition, but should also be low enough so that the power company could earn this charge under any foreseen condition. The lowest flow of record, occurring for 8 months during 1919 and 1920, gave a regulated flow under the assumed conditions of 0.62 cubic foot per second per square mile of drainage area. This flow corresponds to a 100 per cent prime power capacity of 57,000 kilowatts, or an output at the rate of 500,000,000 kilowatt-hours per year. It is to be expected that during a dry period of this character the load factor on a storage project of this kind would be at least 95 per cent, and is was therefore concluded that the company could produce under the worst conditions at least 475,000,000 kilowatt-hours per year or 76.4 per cent of the 90 per cent time flow output.

8. From the curve it will be seen that the difference between the cost of producting this amount of power and the revenue derived therefrom would be approximately $250,000. Obviously, all of this difference should not be credited to the Indian Bureau. In order to arrive at the proportion which should be so credited, the value of storage derived from the use of Indian lands was computed as follows:

The 90 per cent time unregulated flow corresponds to a prime power capacity of 33,300 kilowatts, or an output of 291,000,000 kilowatt-hours per annum. Using 76.4 per cent of this figure of 220,000,000 kilowatt-hours per annum as the minimum power which would be generated with a run of river plant, the revenue derived from the curve is shown to be $400,000. The cost of a run of river plant of this kind is estimated at $5,000,000, on which the fixed and operating charges were calculated to be $650,000 per annum. Therefore, with the minimum output mentioned above, there would be a net loss of $250,000. The effect of storage therefore is to convert a loss of $250,000 per year into a profit of $250,000 per year based on a minimum output, or in other words the value of storage is $500,000 per annum.

9. It is estimated that 25 per cent of the storage lands belong to the Indian Bureau and therefore the minimum amount which should accrue to the bureau is $125,000 per year, which is the recommended fixed charge.

10. In arriving at the recommendations for the energy charge, a figure was selected which would encourage the power company to generate as much power as could be sold, and thus insure the maximum return to the Indian Bureau.

Sincerely yours,

PATRICK J. HURLEY,
Secretary of War.

MARCH 12, 1930.

Hon. B. K. WHEELER,
United States Senate.

MY DEAR SENATOR WHEELER: In response to your request when I appeared before the Senate Interstate Commerce Committee on March 5, I desire to assure you that the larger the development of the Flathead power site under the figures contained in the Army engineers' report the lower will be the estimated generating costs of current per kilowatt-hour.

I inclose two tables which set out, respectively, the approximate rentals and costs of current for the period before the fifth calendar year and for the period from the fifth year to the twentieth year when the rentals are subject to revaluation. These tables show the total rentals, the increasing rates per horsepower, and the decreasing estimated costs of current per kilowatt-hour.

From these tables it is easy to observe the basis for the Army engineers' statement that a schedule was recommended "which would encourage the power company to generate as much power as could be sold and thus insure the maximum return to the Indian Bureau." You will realize also that when the full installation has been made which both of the applicants have specified (viz, 150,000 horsepower) it will not be possible for either of them to obtain the needed current for their growth at as low a cost as one mill per kilowatt-hour through development elsewhere.

I also have your letter of the 6th, with inclosures from Mr. Walter H. Wheeler addressed to you and Senator Walsh, which I have noted and return herewith. Mr. Wheeler's figures do not readily convey the whole story of the Army engineers' recommended basis for Flathead Indian rentals.

As you are aware, the two propositions before the commission are entirely different and not directly comparable. One is an application for a license for and the prompt construction of the Flathead Lake storage and the upper power site at the foot of Flathead Lake. The other is for a preliminary permit granting the permittee the right to investigate during a period of three years the possibilities of the Flathead Lake storage, the upper power site at the foot of Flathead Lake and the four lower power sites on the Flathead River, with the option of applying for a license prior to the expiration of the permit, but with no obligation to apply for such license. The figures submitted by the Chief of Engineers, United States Army, show what he considers should be paid to the Indian Bureau for its interest in the Flathead Lake storage and the power site at the foot of Flathead Lake. The figures do not cover the four lower sites on Flathead River, nor can they be extended to apply to those sites. Neither of the applicants has the information on the physical conditions existing at the four lower sites to enable him to make even general estimates of the cost of development nor is such information in possession of the Government. Under these circumstances, you will appreciate, I think, that it is impossible at this time to fix upon a rental for the four lower sites with any degree of fairness to the Indians.

Mr. Wheeler bases the rental which he would pay for site No. 1 on an estimated average output of 105,000 horsepower, and that which the Rocky Mountain Power Co. would pay on 71,000 horsepower after the fifth year of operation. Obviously, the potential power of the site is the same in either case; the differences merely result from the judgment of the two applicants, and would not be realized in practice. The estimate of the engineers of the War Department assumes an average output of 95,000 horsepower, which seems more reasonable than estimated by either of the applicants.

For Senator Walsh's information, I am also sending him a copy of this letter.

Very sincerely,

RAY LYMAN WILBUR.

REVISION OF SUGGESTED ARMY ENGINEERS' SCHEDULE

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, March 29, 1930.

The EXECUTIVE SECRETARY FEDERAL POWER COMMISSION,
Department of the Interior, Washington, D. C.

DEAR SIR: 1. In accordance with your letter of March 26, 1930, Montana-Rocky Mountain Power Co., the estimate submitted by the Rocky Mountain Power Co. on the capital and annual cost of a transmission line proposed for the Flathead Lake project, has been reviewed.

2. It is considered that the costs as given by the Rocky Mountain Power Co. are higher than can be reasonably expected. An estimate based on such data as are available in this office has been made on a

double transmission line on wooden H-type supports, including a separate telephone line and a 100,000 kilovolt-ampere substation. The first cost of such a line, 140 miles long, and of the substation is estimated at $2,950,000. Annual fixed and operating charges, including interest at 7 per cent per annum, are estimated to be $369,000.

3. In the letter from the Secretary of War to the Secretary of the Interior, dated February 27, 1930, the fixed and operating charges on a double circuit line were given as $350,000. In view of the above increased cost of transmitting energy under the conditions outlined by the Rocky Mountain Power Co., the following modifications in the charges for flowage rights on the Indian lands as recommended in the letter referred to above are considered to be equitable:

(*a*) The fixed charge given as $60,000 per year should be reduced to $50,000 per year.

(*b*) The fixed charge given as $125,000 per year should be reduced to $120,000 per year.

(*c*) All other charges and conditions should remain as originally recommended.

4. A chart dated March 27, 1930, showing the difference between annual charges revised as above and the revenue derived at various rates of output, is inclosed.

Very truly yours,

HERBERT DEAKYNE,
Brigadier General,
Acting Chief of Engineers.

Interpretation of Flathead Site No. 1, Army engineers' rental recommendations

UNTIL FIFTH CALENDAR YEAR

Capacity developed			Estimated generating cost per kilowatt-hour before rental [1]	Indian rental					Estimated generating cost per kilowatt-hour, including rental [1]
Horsepower	Kilowatts	Kilowatt-hours		Fixed charge	Energy charge	Total	Rate per horsepower	Rate per kilowatt	
			Mills						*Mills*
65,000	48,750	427,050,000	2.42	$60,000.00	$7,050.00	$67,050.00	$1.03	$1.37	2.58
70,000	52,500	459,900,000	2.19	60,000.00	39,900.00	99,900.00	1.43	1.91	2.41
75,000	56,250	492,750,000	2.03	60,000.00	72,750.00	132,750.00	1.77	2.36	2.30
80,000	60,000	525,600,000	1.90	60,000.00	105,600.00	165,600.00	2.07	2.76	2.22
85,000	63,750	558,450,000	1.79	60,000.00	138,450.00	198,450.00	2.33	3.11	2.15
90,000	67,500	591,300,000	1.69	60,000.00	171,300.00	231,300.00	2.57	3.43	2.08
95,000	71,250	624,150,000	1.60	60,000.00	204,150.00	264,150.00	2.78	3.71	2.02
100,000	75,000	657,000,000	1.52	60,000.00	237,000.00	297,000.00	2.97	3.96	1.97
105,000	78,750	689,850,000	1.45	60,000.00	269,850.00	329,850.00	3.14	4.19	1.93
110,000	82,500	722,700,000	1.38	60,000.00	302,700.00	362,700.00	3.29	4.39	1.88

FIFTH TO TWENTIETH YEAR

65,000	48,750	427,050,000	2.42	$125,000	0	$125,000	$1.92	$2.56	2.71
70,000	52,500	459,900,000	2.19	125,000	0	125,000	1.78	3.37	2.46
75,000	56,250	492,750,000	2.03	125,000	$175,750	142,750	1.90	2.53	2.32
80,000	60,000	525,600,000	1.90	125,000	50,600	175,600	2.19	2.92	2.23
85,000	53,750	558,450,000	1.79	125,000	83,450	208,450	2.45	3.27	2.16
90,000	67,500	591,300,000	1.69	125,000	116,300	241,300	2.68	3.57	2.10
95,000	71,240	624,150,000	1.60	125,000	149,150	274,150	2.89	3.85	2.04
100,000	75,000	657,000,000	1.52	125,000	182,000	307,000	3.07	4.09	1.99
105,000	78,750	689,850,000	1.45	125,000	214,850	339,850	3.23	4.31	1.94
110,000	82,500	722,700,000	1.38	125,000	247,700	372,700	3.39	4.52	1.69

[1] Includes 7 per cent interest on $8,000,000 investment and 1 per cent interest for depreciation.

Suggested Indian Bureau's Schedule No. 2, April 1, 1930

Flathead site No. 1.—Revised rental recommendations

FIFTH TO TWENTIETH YEAR

Horsepower	Capacity developed (kilowatt-hours at 6535)	Revenue at switch at $18 (2.75 mills)	Return to company— Based on $7,555,400 development cost: Operating charges[1]	Rentals	Return: Amount	Return: Per cent	Return to company— Based on $8,000,000 development cost: Operating charges[2]	Rentals	Return: Amount	Return: Per cent	Cost to company, including rental and 8 per cent return— Based on $7,555,400: Amount	Per kilowatt-hour	Based on $8,000,000: Amount	Per kilowatt-hour	Indian rental: Fixed charge	Energy charge at 1¼ mills	Total	Per horsepower
												Mills		*Mills*				
60,000	392,100,000	$1,080,000	$352,662	$104,400	$622,938	8.24	$366,000	$104,400	$609,600	7.42	$1,061,494	2.71	$1,110,400	2.81	$104,400	--------	$104,400	$1.74
65,000	424,775,000	1,170,000	352,662	104,400	712,938	9.44	366,000	104,400	699,600	8.74	1,061,494	2.50	1,110,400	2.61	104,400	--------	104,400	1.60
68,000	444,380,000	1,224,000	352,662	104,400	766,938	10.15	366,000	104,400	753,600	9.42	1,061,494	2.39	1,110,400	2.49	104,400	--------	104,400	1.53
70,000	457,450,000	1,260,000	352,662	121,212	786,126	10.40	366,000	121,212	772,788	9.66	1,078,306	2.36	1,127,212	2.46	104,400	$16,812	121,212	1.73
75,000	490,125,000	1,350,000	352,662	162,056	835,282	11.05	366,000	162,056	821,944	10.27	1,119,150	2.28	1,168,056	2.38	104,400	57,656	162,056	2.16
80,000	522,800,000	1,440,000	352,662	202,900	884,438	11.71	366,000	202,900	871,100	10.89	1,159,994	2.22	1,208,900	2.31	104,400	98,500	202,900	2.54
85,000	555,475,000	1,530,000	352,662	243,744	933,594	12.35	366,000	243,744	929,256	11.50	1,200,838	2.16	1,249,744	2.25	104,400	139,344	243,744	2.87
90,000	588,150,000	1,620,000	352,662	284,587	982,751	13.01	366,000	284,587	969,413	12.12	1,241,681	2.11	1,290,587	2.20	104,400	180,187	284,587	3.16
95,000	620,825,000	1,710,000	352,662	325,431	1,031,907	13.66	366,000	325,431	1,018,569	12.73	1,282,525	2.06	1,331,431	2.14	104,400	221,031	325,431	3.43
100,000	653,500,000	1,800,000	352,662	366,275	1,081,063	14.31	366,000	366,275	1,067,725	13.34	1,323,369	2.02	1,372,275	2.10	104,400	261,875	366,275	3.66
105,000	686,175,000	1,890,000	352,662	407,119	1,130,219	14.96	366,000	407,119	1,116,881	13.96	1,364,213	1.99	1,413,119	2.06	104,400	302,719	407,119	3.88
110,000	718,850,000	1,980,000	352,662	447,962	1,179,476	15.61	366,000	447,962	1,116,038	14.57	1,405,056	1.96	1,453,962	2.02	104,400	343,562	447,962	4.07

Minimum, at $8,700. Begin energy charge at 37,000,000 kilowatt-hours per month.

[1] Operation and maintenance, $63,000; overhead, $63,000; taxes, 2 per cent, $151,108; depreciation, 1 per cent, $75,554; total, $352,662.
[2] Operation and maintenance, $63,000; overhead, $63,000; taxes, 2 per cent, $160,000; depreciation, 1 per cent, $80,000; total, $366,000.

The Federal Power Commission License on Government Lands Project No. 5, Montana—Rocky Mountain Power Co.

Whereas by act of Congress, approved June 10, 1920 (41 Stat. 1063) designated therein as the Federal water power act and hereinafter called the act, the Federal Power Commission, hereinafter called the commission, is authorized and empowered, inter alia, to issue licenses for the purpose of constructing, operating, and maintaining dams, water conduits, reservoirs, power houses, transmission lines, or other project works necessary or convenient for the development, transmission, and utilization of power across, along, from or in any of the navigable waters of the United States, or upon any part of the public lands and reservations of the United States (including the Territories), or for the purpose of utilizing the surplus water or water power from any Government dam; and

Whereas by act of Congress, approved March 7, 1928 (45 Stat. pp. 212, 213), the commission was specifically authorized, in accordance with the Federal water power act and upon terms satisfactory to the Secretary of the Interior, to issue a permit or permits or a license or licenses for the use, for the development of power, of power sites on the Flathead Reservation and of water rights reserved or appropriated for the irrigation projects; and

Whereas Rocky Mountain Power Co., hereinafter called the licensee, a corporation organized and existing under the laws of the State of Delaware and having its office and principal place of business in the city of Butte, in the State of Montana, has made application in due and proper form to the commission for a license for a power project designated as project No. 5 on the records of the commission, and for authority to construct, maintain, and operate, in Flathead River and Flathead Lake, in the vicinity of Polson, in the counties of Flathead and Lake, State of Montana, certain project works, as hereinafter described, necessary or convenient for the development and improvement of navigation and for the development, transmission and utilization of power across, along, from and in navigable waters of the United States; and to occupy and use therefor certain public lands and reservations of the United States, as hereinafter described, together with all riparian rights appurtenant thereto which are necessary or useful for the purposes of the project; and water rights for power purposes reserved or appropriated for Indian irrigation projects; and

Whereas the licensee has submitted to the commission satisfactory evidence of its compliance with the laws of the State of Montana as required by section 9, subsection (b) of the act, and the commission is satisfied as to the ability of the licensee to carry out the plans for said project as filed with said application; and

Whereas notice of said application has been given and published by the commission, as required by section 4 of the act; full opportunity has been given to all interested parties to be heard, and no application for said project, or in conflict therewith, has been filed by any State or municipality; and

Whereas the maps, plans, and specifications of said project and of said project works, as hereinafter described, have been approved by the commission, and the plans of the dam and other structures affecting navigation have been approved by the Chief of Engineers and the

Acting Secretary of War; and the terms set forth in this license are satisfactory to the Secretary of the Interior as required by the act of March 7, 1928 (45 Stat., pp. 212, 213); and

Whereas all charges for defraying the expense of administering the provisions of the Federal water power act were waived by the provisions of the act of March 4, 1929 (45 Stat. 1640); and

Whereas the commission has found that said project, as hereinafter described, will be best adapted to a comprehensive scheme of improvement and utilization of said waterway for the purposes of navigation, of water-power development, and other beneficial public uses; and

Whereas the licensee on the 20th day of May, 1930, pursuant to an authorization of its board of directors, a copy of the record thereof being hereto attached, accepted in writing all the terms and conditions of the act and of this license:

Now, therefore, the commission hereby issues this license to the licensee for the purpose of constructing, operating, and maintaining certain project works necessary or convenient for the development and improvement of navigation and for the development, transmission, and utilization of power across, along, from, or in the Flathead River and Flathead Lake, navigable waters of the United States, and constituting a part of the project hereinafter described, said license, including the period thereof, being subject to all the terms and conditions of the act and of the rules and regulations of the commission pursuant thereto as amended and made effective on the 1st day of May, 1928, as though fully set forth herein, which said rules and regulations are attached hereto and made a part hereof, and being subject also to the following express conditions and limitations, to wit:

ARTICLE 1. This license is issued for a period of 50 years from the date hereof, and in consideration of such license and the benefits and advantages accruing thereunder to the licensee, it is expressly agreed by the licensee that the entire project, project area, and project works as hereinafter designated and described, whether or not located in, on, or along said Flathead River and Lake or upon lands of the United States, shall be subject to all the terms and conditions of this license, including the terms and conditions of the act and of the rules and regulations of the commission pursuant thereto and made a part of this license.

ART. 2. The project covered by and subject to this license is designated as Flathead site No. 1, is located partly on public lands and reservations of the United States and consists of—

A. All lands constituting the project area and inclosed, or the location of which is shown, by the project boundary, and/or interests in such lands necessary or useful for the purposes of the project, whether such lands or interests therein are owned or held by the licensee or by the United States; such project area and project boundary being more fully shown and described by certain exhibits which accompanied said application for license and which are designated and described as follows:

Exhibit J.—Map in one sheet, designated Flathead development general map (F. P. C. No. 5–1).

Exhibit K.—Map in four sheets, designated Flathead development project map (F. P. C. No. 5–4, 5, 6, 7).

Exhibits J and K.—Signed Rocky Mountain Power Co., by F. M. Kerr, vice president.

B. All project works consisting of a concrete dam in and across the Flathead River, about 4 miles below the outlet of Flathead Lake; a reservoir in said Flathead River and Lake; water conduits about 770 feet long, including an intake at the upper end of each such conduit; a power house and appurtenant equipment; such project works being more fully shown and described by certain exhibits which accompanied said application for license and which are designated and described as follows:

Exhibits J and K.—Cited above.

Exhibit L.—Map in two sheets, designated Flathead development general plan (F. P. C. No. 5–8) and Flathead development dam analysis (F. P. C. No. 5–9).

Exhibit M.—Four typewritten sheets, designated general description of plant and equipment, Flathead development.

Exhibits L and M.—Signed Rocky Mountain Power Co., by F. M. Kerr, vice president.

C. All other structures, fixtures, equipment, or facilities used or useful in the maintenance and operation of the project and located upon the project area, including such portable property as may be used and useful in connection with the project or any part thereof, whether located on or off the project area, if and to the extent that the inclusion of such property as a part of the project works is approved or acquiesced in by the commission; also all other rights, easements, or interests, the ownership, use, occupancy, or possession of which is necessary or appropriate in the maintenance and operation of the project or appurtenant to the project area.

ART. 3. The maps, plans, specifications, and statements designated and described in article 2 hereof as Exhibits J, K, L, and M, respectively, and approved by the executive secretary for the commission in accordance with its authorization of May 19, 1930, are hereby made a part of this license, and no substantial change shall hereafter be made in said exhibits, or any of them, until such change shall have been approved by the commission: *Provided, however,* That if the licensee deems it necessary or desirable that said approved maps, plans, specifications, and statements, or any of them, be changed, there shall be submitted to the commission for approval amended, supplemental, or additional maps, plans, specifications, and statements covering the proposed changes, and upon approval by the commission of such proposed changes such amended, supplemental, or additional maps, plans, specifications, and statements shall become a part of this license and shall supersede, in whole or in part, such map, plan, specification, or statement, or part thereof, theretofore made a part of this license as may be specified, respectively, in the order or indorsement of approval.

ART. 4. Said project works shall be constructed in substantial conformity with the approved maps, plans, and specifications thereof made a part of this license and designated and described in articles 2 and 3 hereof, or as changed in accordance with the provisions of said article 3. Except when emergency shall require for the protection of navigation, life, health, or property, no substantial alteration or addition not in conformity with the approved plans shall be made to any dam or other project works constructed under this license

without the prior approval of the commission; and any emergency alteration or addition so made shall thereafter be subject to such modification and change as the commission shall direct. Minor changes in or divergence from such approved maps, plans, and specifications may be made in the course of construction, if such changes will not result in decrease in efficiency, in material increase in cost, or in impairment of the general scheme of development; but any such minor changes made without the prior approval of the commission which in its judgment have produced or will produce any of such results shall be subject to such alteration as the commission may direct.

ART. 5. The work of construction under this license, whether or not conducted upon lands of the United States, shall be subject to the inspection and approval of the district engineer, United States engineer office, Seattle, Wash., or of such other officer or agent as the commission may designate, who shall be the authorized representative of the commission for such purposes. The licensee shall notify such representative of the date upon which work will begin, and as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of construction for a period of more than one week, and of its resumption and completion.

ART. 6. Subject to the provisions of section 13 of the act, the licensee shall begin the construction of said project works within one year from the date of issuance hereof, shall thereafter, in good faith and with due diligence, prosecute such construction, and shall within three years thereafter complete the installation of three units of not less than 150,000 horsepower aggregate capacity.

ART. 7. Upon the completion of the project works, or at such other time as the commission may direct, the licensee shall submit to the commission for approval revised maps, plans, specifications, and statements, in so far as necessary to show any divergence from or variations in the project area as finally located or in the project works as constructed when compared with the area shown and the works designated or described in this license or in the maps, plans, specifications, and statements approved by the commission under the provisions of article 3 hereof, together with a statement in writing setting forth the reasons which in the opinion of the licensee necessitated or justified variations in or divergence from the approved maps, plans, specifications, and statements. Such revised maps, plans, specifications, and statements shall, if and when approved by the commission, be made a part of this license and shall, to the extent and in the particulars set forth in the order or indorsement of approval, be substituted for the maps, plans, specifications and statements theretofore approved by the commission under the provisions of article 3 hereof. The maps finally approved by the commission and made a part of this license under the provisions of article 3 and/or 7 hereof shall show the project area to an adequate scale and the boundary thereof either by legal subdivisions, by metes and bounds survey, or by uniform offsets from center-line survey. Said project area shall include all lands without respect to ownership and whether or not the exact boundaries can be definitely fixed and determined, the use and occupancy of which are or will be valuable or serviceable in the maintenance and operation of the project; on which are located or to which are appurtenant the

project works (other than portable property) and the rights, easements, or interests likewise valuable and serviceable; and the ownership or possession, or the right of use and occupancy, of which are subject to acquisition by the United States under the provisions of section 14 of the act. Said maps shall show the ownership of each parcel of land in said project area, and with respect to each parcel to which the licensee has not the fee title, the character of the right of use and occupancy possessed by the licensee together with the term of such right.

our lands

ART. 8. For the purpose of determining the stage and flow of the stream or streams from which water is to be diverted for the operation of said project works and of the amount of water held in and drawn from storage, the licensee shall install, as soon as practicable and thereafter maintain standard recording gages in Flathead Lake at the northern and southern ends, on Flathead River below the power plant, and on the principal streams tributary to Flathead Lake; and shall provide for the required readings of such gages and for the adequate rating of said station or stations. The licensee shall also install and maintain standard meters adequate for the determination of the amount of electric energy generated by said project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof may be altered from time to time if necessary to secure adequate determinations, but such alteration shall not be made except with the approval of the commission or its authorized representative or upon the specific direction of the commission. The installation of gages, the ratings of said stream or streams, and the determination of the flow thereof, shall be under the supervision of or in cooperation with the district engineer of the United States Geological Survey having charge of stream gaging operations in the region of said project, and the licensee shall advance to the said United States Geological Survey the amounts estimated to be necessary for such supervision or cooperation for such periods as may be mutually agreed upon. The licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the commission, shall make return of such records annually, at such time and in such form as the commission may prescribe.

ART. 9. The licensee shall be liable for all damages occasioned to the property of others, including lands allotted in severalty to the Indians, by the construction, maintenance, or operation of said project works, or of the works appurtenant or accessory thereto, and in no event shall the United States be liable therefor; nor does this license guarantee the validity of any reservations contained in the patent to any allottee or other grantee of Indian lands, whether in trust or in fee.

ART. 10. In the construction and maintenance of the project works herein specified, the licensee shall place and maintain suitable structures to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone, and other signal wires or power transmission lines not owned by the licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling and obstructing traffic and endangering life on highways, streets, or railroads.

ART. 11. The licensee shall allow officers and employees of the United States free and unrestricted access in, through, and across the said project and project works in the performance of their official duties.

ART. 12. The licensee shall be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands (except lands referred to in other provisions of this license), or other similar property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto constructed under the license. Arrangements to meet such liability either by compensation for such injury or destruction, reconstruction, or repair of damaged property, or otherwise, shall be made with the appropriate department or agency of the United States.

ART. 13. Timber upon public lands and reservations of the United States, to be used or destroyed in the construction of the project works, shall be paid for in accordance with the requirements and estimates of the department concerned.

ART. 14. The licensee shall, before placing any transmission line into operation, make provision satisfactory to the commission for avoiding inductive interference between such transmission line and any existing telephone line or lines of the United States, or with any such line or lines for which location has been made and specifications prepared but upon which construction has not begun at the time of erection of said transmission line. Such provisions may be applied either to the transmission line or to the telephone line or to both, as may be determined upon the basis of least cost. The licensee hereby agrees to assent to such changes in the location or design of any of its transmission lines as may in the opinion of the commission be necessary or desirable in order to avoid inductive interference with any telephone line or lines of the United States hereafter constructed or proposed to be constructed, provided such changes are made at the expense of the United States.

ART. 15. The licensee shall clear off all trees, logs, brush, or other débris, up to elevation 2,893, the margins of Flathead Lake and those portions of Flathead River which shall be used for reservoir purposes under this license, and shall dispose to the satisfaction of the commission, or its designated representative, of all the brush and débris resulting from such clearing, together with all temporary structures and refuse left on public lands and reservations of the United States from the construction and maintenance of said project works. In addition, the licensee shall cut and remove any trees or brush lying above elevation 2,893 which may be killed due to the regulation of Flathead Lake for storage purposes.

ART. 16. The licensee shall permit the use of any reservoir included in the project for the temporary storage or for the transportation of logs, ties, poles, lumber, or other forest products: *Provided*, That the use of said reservoir by owners of such logs, ties, poles, lumber, or other forest products, shall be under such rules and regulations adopted by the licensee as may be approved by the Secretary of Agriculture.

ART. 17. The licensee will interpose no objections to, and will in no way prevent, the use of water for domestic purposes by persons or corporations occupying public lands and reservations of the United States under permit along or near any stream or body of water, natural or artificial, used by the licensee in the operation of the project works covered by this license.

ART. 18. The licensee hereby recognizes the right of the United States to pump from the Flathead Lake or from Flathead River above licensee's dam for all purposes of irrigation on the Flathead irrigation project or the lands of the Flathead Reservation whether included in the irrigation project or not, not more than 50,000 acre-feet of water after July 15, of any one year.

ART. 19. The licensee shall do everything reasonably within its power and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon request of officers of the Forest Service, or other agents of the United States, to prevent and suppress fires on or near the lands to be occupied under this license.

ART. 20. Whenever the United States shall desire to construct, complete, or improve navigation facilities the licensee shall convey to the United States, free of cost, such of its lands and its rights of way and such right of passage through its dam or other structures, and permit such control of pools as may reasonably be required to construct, maintain, and operate such navigation facilities.

ART. 21. The operations of the licensee, in so far as they affect the use, storage, and discharge from storage of the water of Flathead Lake, shall at all times be controlled by such reasonable rules and regulations as the Secretary of War may prescribe in the interests of navigation, and as the Federal Power Commission may prescribe in the interests of flood control and of the fullest practicable utilization of the waters of Flathead River and Clark Fork for power, irrigation, and other beneficial public uses.

ART. 22. The licensee agrees that all rights acquired in connection with the project covered by this license and the use of water for the development of power shall be held subject to the rights which may be reasonably necessary for the complete development of the irrigable land, the domestic water supply requirements, and the water-power possibilities, in the watershed above the project works. The licensee further agrees to waive objections to the subtraction of such water up to a maximum flow of 200 cubic feet per second, as may be authorized under either Federal or State authority for diversion out of the watershed above the project works.

ART. 23. The licensee may regulate Flathead Lake between elevations 2,883 and 2,893; *Provided, however,* That the commission retains the right, at any time prior to the beginning of commercial operation of the project, to define limits of such regulation between elevations 2,880 and 2,893 in such manner as will make not less than 1,100,000 acre-feet of storage capacity available to the licensee, it being expressly understood that licensee shall not be restricted to less than 10 feet between the minimum and maximum elevations within which to carry on its regulations of Flathead Lake. It is expressly understood that variation by the commission of any limits of regulation which may be fixed as aforesaid, shall not affect the rentals provided for in article 30 hereof. It is expressly understood that if and when water is pumped from Flathead Lake or from Flathead River above licensee's dam after July 15, in any year, for purposes of irrigation as provided in article 18 hereof, the licensee shall be permitted, in the months of January, February, and March, of the next succeeding year, to regulate Flathead Lake, below the minimum elevation which may be fixed as aforesaid, to the extent necessary to enable it to recover

the amount of water so pumped for irrigation purposes. Said elevations are in feet above mean sea level as determined by reference to a certain United States Geological Survey bench mark, elevation 2,910.882 feet, stamped "2900 GN," as now located and established at Somers, Flathead County, or to such other bench marks as may be established by the United States Geological Survey having the same datum. As a basis of determination of the aforesaid storage limits, the licensee shall complete the mapping of lands bordering Flathead Lake and River and of the lake bed between elevations 2,878 and 2,900 uniform with the maps already completed by the Geological Survey at the north end of the lake, and shall continue to finance the collection of records of ground water elevations in the area at the head of Flathead Lake, and the study and interpretation of such records. The licensee also agrees to perform such channel excavation and other work as may reasonably be required by the commission for the purpose of flood control to the end that the normal flood levels of Flathead Lake shall not be increased by reason of the installation of the project works, and for the purpose of full utilization of storage and navigation.

ART. 24. In consideration of the use to be made of the partially completed Newell Tunnel, the licensee shall pay into the Treasury of the United States the sum of $101,685.11, such payment to be made within nine months from and after the date of this license and to be a part of and included in the licensee's net investment in the project.

ART. 25. For the purpose of preventing the entrance of fish into the turbines of the power plant, the licensee shall install and maintain such fish stops or other equipment as may reasonably be prescribed by the Secretary of Commerce.

ART. 26. Coincident with the beginning of commercial operation of the project works and thereafter throughout the remainder of the term of the license, licensee shall make available, at the project boundary at or near the licensee's generating station, and the United States, for and on behalf of the Flathead irrigation project or the Flathead irrigation district, may take and, having taken, shall pay for, at the price of 1 mill per kilowatt-hour: (1) Electrical energy in an amount not exceeding 5,000 horsepower of demand to be used exclusively for pumping water for irrigation; and (2) electrical energy in an amount not exceeding 5,000 horsepower of demand for all project and farm uses and for resale. Such deliveries shall be made at such standard voltage as may be selected by the commission. The licensee shall also make available, at the voltage of the line from which service is taken, either at the project boundary at or near the licensee's generating station or at some more convenient place on the project to be agreed upon, and the United States, for and on behalf of the Flathead irrigation project or the Flathead irrigation district, may take and, having taken, shall pay for, at the price of 2½ mills per kilowatt-hour, additional electrical energy in an amount not exceeding 5,000 horsepower of demand for all project and farm uses and for resale.

ART. 27. The licensee shall, during the period of construction, deliver at line voltage and at a point to be agreed upon on the line or lines which it will construct to supply power for construction purposes, power for farm and project purposes on the Flathead irrigation

project or the Flathead irrigation district in quantities required by the United States for said purposes up to a maximum demand of 500 horsepower, at the price of 2½ mills per kilowatt-hour.

ART. 28. The United States reserves to itself or to the Flathead irrigation project management the exclusive right to sell power within the boundaries of the Flathead Indian Reservation, to the extent of 10,000 horsepower to be delivered for use and/or sale as provided in article 26 hereof.

ART. 29. The licensee shall pay to the United States reasonable annual charges for recompensing it for the use, occupancy, and enjoyment of public and reserved lands (not including Indian tribal lands) or other property hereinbefore described. The payment by the licensee of such annual charges for any calendar year shall be made to the United States at the end of the year, or within 30 days thereafter, upon bills rendered or approved by the commission. Such charges shall be determined in accordance with the provisions of regulation 14 of said rules and regulations of the commission, and for the purposes of such determination the prime power capacity of the project shall be taken as 80,000 horsepower.

ART. 30. (A) The licensee shall pay into the United States Treasury as compensation for the use, in connection with this license, of the Flathead Indian tribal lands annual charges computed as follows:

(1) A charge at the rate of $1,000 per calendar month beginning with the month in which the license is issued and extending to and including the month in which the project is placed in commercial operation. For the purpose of the payments under this article, the beginning of commercial operation shall be considered as the time when one of the licensee's generating units shall have been installed, tested, and demonstrated to be in suitable condition to produce electric energy for commercial purposes with a reasonable degree of reliability.

(2) A charge at the rate of $5,000 per month beginning with the calendar month next succeeding the date on which the project is placed in commercial operation and extending to the end of the calendar year in which such commercial operation shall commence.

(3) For each full calendar year from and after the 1st of January next following the date on which the first unit is placed in commercial operation, annual charges will be as follows:

	Per year
For the first two years	$60, 000
For the third year	75, 000
For the fourth year	100, 000
For the fifth year	125, 000
For the next five years	150, 000
For the next five years	160, 000
For the next five years and/or until readjustment of the annual charges payable hereunder shall have been effected pursuant to the provisions of paragraph (D) of this article 30	175, 000

(B) Payments shall be made for each calendar year within 30 days after the close thereof on bills rendered by the commission.

(C) Pursuant to the provisions of the act of March 4, 1929 (45 Stat. 1640), all charges for reimbursing the United States for the cost of administration of the Federal water power act have been and are hereby expressly waived.

(D) The annual charges payable under this license may be readjusted at the end of 20 years after the beginning of operation under this license and at periods of not less than 10 years thereafter by mutual agreement between the commission and the licensee, with the approval of the Secretary of the Interior. In case the licensee, the commission, and the Secretary of the Interior can not agree upon the readjustment of such charges, it is hereby agreed that the fixing of readjusted charges shall be submitted to arbitration in the manner provided for in the United States arbitration act (U. S. C., title 9), such readjusted annual charges to be reasonable charges fixed upon the basis provided in section 5 of regulation 14 of the commission, to wit, upon the commercial value of the tribal lands involved, for the most profitable purpose for which suitable, including power development.

ART. 31. The licensee having submitted a claim of prelicense cost to January 31, 1929, of $183,312.47 and the solicitor of the commission having recommended the rejection of items contained therein aggregating a total of $85,088.76, the commission and the licensee hereby mutually agree that the sum of $98,223.71 shall be entered upon the fixed capital accounts of said project and included in the statement to be submitted to the commission, in accordance with the provisions of article 32 hereof as representing the actual legitimate investment in said project up to and including January 31, 1929: *Provided however*, That this agreement shall not deny or affect the licensee's right, within one year from and after the date of this license, to submit further evidence to the commission or to any court having jurisdiction for the purpose of establishing the propriety of any part of said $85,088.76.

ART. 32. Upon the completion of the construction of said project or of each of the separable parts thereof for which dates of completion are specified in article 6 hereof, or of any addition to or betterment of said project, the licensee shall file with the commission a statement under oath in duplicate showing the actual legitimate cost of construction thereof and the price paid for water rights, lands, or interest in lands appurtenant to such construction as required by regulation 20, section 2, of said rules and regulations of the commission. Any such statement shall include all proper and legitimate costs, whether incurred prior to issuance of license or on and after such date; and the licensee shall, if requested by the commission, show separately on any such statement, or on a special report or reports, the items and amounts of cost incurred prior to date of issuance of license, with such other details as the commission may require. Each and every item of cost included in any such statement shall be supported by proper voucher or other evidence; and any such voucher or evidence or certified copy thereof, in support of any item properly includable in said cost shall become a part of the permanent records of said project and shall be kept and retained by the licensee in the manner required by the commission. Any statement or report submitted to the commission under the provisions of this article shall be subject to the provisions of section 6 of said regulation 20.

ART. 33. Whenever the licensee is directly benefited by the construction work of another licensee, a permittee, or of the United States of a storage reservoir or other headwater improvement, the licensee shall reimburse the owner of such reservoir or other improvement for

such part of the annual charges for interest, maintenance, and depreciation thereon as the commission may deem equitable. The proportion of such charges to be paid by the licensee shall be determined from time to time by the commission. Whenever such reservoir or other improvement is constructed by the United States the licensee shall pay similar charges into the Treasury of the United States upon bills rendered by the commission.

ART. 34. After the first 20 years of operation of said project under this license, out of surplus earned thereafter, if any, accumulated in excess of a specified reasonable rate of return upon the actual, legitimate investment of the licensee in said project, all as defined in and determined by the provisions of regulation 17 of said rules and regulations of the commission, the licensee shall establish and maintain amortization reserves, which reserves shall, in the discretion of the commission, he held until the termination of the license or be applied from time to time in reduction of the net investment. Such specified rate of return shall, subject to the proviso of paragraph A, section 3, of said regulation, be one and one-half times the weighted average annual interest rate payable on the par value of the bona fide interest-bearing debt of the licensee actually outstanding, in whole or in part, on account of project property at the beginning of the period of amortization and of each calendar year thereafter; such weighted average annual interest rate being determined as provided in paragraphs B and C of section 3 of said regulation 17: *Provided*, That if at the beginning of the period of amortization or of any calendar year thereafter the outstanding interest-bearing debt of the licensee on account of the project or projects under license, together with any other works or property operated in connection therewith, is less than 25 per cent of the actual, legitimate investment of the licensee in said project or projects, then and in such event for the calendar year next following the specified rate of return shall be two times the legal rate of interest in the State in which the project or major part thereof is located.

Subject to the provisions of section 6 of said regulation, the following proportions of such surplus earnings shall be paid into and held in such amortization reserves: Of all surplus earnings up to and including 2 per cent upon the actual, legitimate investment, 30 per cent thereof shall be so paid; of all surplus earnings in excess of 2 per cent and not in excess of 4 per cent upon such investment, 50 per cent thereof shall be so paid; of all surplus earnings in excess of 4 per cent and not in excess of 6 per cent, 70 per cent thereof shall be so paid, and of all surplus earnings in excess of 6 per cent, 90 per cent thereof shall be so paid: *Provided*, That if at the end of any calendar year of the amortization period the commission shall find that the accumulated earnings of the licensee during the period of operation, including the first 20 years thereof, have not yielded a fair return upon the actual, legitimate investment in the project or projects under license, the proportion of such surplus earnings for such calendar year and for succeeding calendar years to be paid into such amortization reserves shall be 10 per cent thereof until such time as the accumulated earnings of the licensee represent, in the judgment of the commission, a fair return upon such investment for such period of operation.

ART. 35. No lease of said project or part thereof whereby the lessee is granted the exclusive occupancy, possession, or use of project works for purposes of generating, transmitting, or distributing power shall be made without the prior written approval of the commission; and the commission may, if in its judgment the situation warrants, require that all the conditions of this license, of the act, and of said rules and regulations of the commission shall be applicable to such lease and to such property so leased to the same extent as if the lessee were the licensee hereunder: *Provided*, That the provisions of this article shall not apply to parts of the project or project works which may be used by another jointly with the licensee under a contract or agreement whereby the licensee retains the occupancy, possession, and control of the property so used and receives adequate consideration for such joint use, or to leases of land while not required for purposes of generating, transmitting, or distributing power, or to buildings or other property not built or used for said purposes, or to minor parts of the project or project works the leasing of which will not interfere with the usefulness or efficient operation of the project by the licensee for said purposes. The licensee agrees that it will continue its separate corporate existence under the regulations of the Federal Power Commission, and that it will not enter into any merger with any other corporation or individual without the approval of the Federal Power Commission, previously obtained.

ART. 36. The licensee agrees that it will enter into a contract with the Montana Power Co. under which all electrical power or energy generated by the project covered by this license, except that delivered to or reserved for the United States pursuant to the provisions of this license, shall be delivered to or made available for said the Montana Power Co. or its nominee upon the payment to the licensee of an annual amount approximately sufficient to meet the operating expenses and maintenance costs, taxes, accruals for depreciation, and rentals (including the rental charges provided for by this license) and in addition an average return of 8 per cent per annum on its actual legitimate investment in all facilities and property covered by this license and used in the generation and delivery of such power, as established under the provisions of the Federal water power act and the rules and regulations of the commission issued in pursuance thereof. A duly certified copy of said power contract shall be filed with the commission.

ART. 37. It is hereby understood and agreed that the licensee, its successors and assigns will, during the period of this license, retain the possession of all project property covered by this license as issued or as hereafter amended, including the project area, the project works, and all franchises, easements, water rights, and rights of occupancy and use; and that none of such properties valuable and serviceable to the project and to the development, transmission, and distribution of power therefrom will be voluntarily sold, transferred, abandoned, or otherwise disposed of without the approval of the commission: *Provided*, That a mortgage or trust deed or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article. The licensee further agrees, on behalf of itself, its successors and assigns, that, in the event said project is taken over by the United States upon the termination of this license,

as provided in section 14 of the act, or is transferred to a new licensee under the provisions of section 15 of the act, it will be responsible for and will make good any defect of title to or of right of user in any such project property which is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and will pay and discharge or will assume responsibility for payment and discharge of all liens or incumbrances upon said project or project property created by said licensee or created or incurred after the issuance of this license: *Provided*, That the provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear, or to require the licensee for the purpose of transferring the project to the United States or to a new licensee to acquire any different title or right of user in any such project property than was necessary to acquire for its own purposes as licensee.

ART. 38. The licensee shall abide by such reasonable regulation of the services to be rendered to customers or consumers of power, and of rates and charges of payment therefor, as may from time to time be prescribed by any duly constituted agency of the State in which the service is rendered or the rate charged; and in case of the development, transmission, distribution, sale or use of power in public service by the licensee or by its customers engaged in public service within a State which has not authorized and empowered a commission or other agency or agencies within said State to regulate and control the services to be rendered by the licensee or by its customers engaged in public service, or the rates and charges of payment therefor, or the amount or character of securities to be issued by any of said parties, it is agreed as a condition of this license that jurisdiction is hereby conferred upon the commission, upon complaint of any person aggrieved or upon its own initiative, to exercise such regulation and control until such time as the State shall have provided a commission or other authority for such regulation and control: *Provided*, That the jurisdiction of the commission shall cease and determine as to each specific matter of regulation and control prescribed in this article as soon as the State shall have provided a commission or other authority for the regulation and control of that specific matter.

ART. 39. The licensee agrees that its securities shall be issued only (1) to the Montana Power Co. upon condition that they shall be retained by said the Montana Power Co., it being understood that none of such securities shall be disposed of by said the Montana Power Co. (except to a trustee or trustees under one of its mortgages or deeds of trust as hereinafter provided) without the express approval of the Commission previously had and obtained, and/or (2) to a trustee or trustees under any mortgage or deed of trust securing the issuance of bonds or other securities of said the Montana Power Co., to be held subject to the provisions of such mortgage or deed of trust. Such securities shall be sold to the Montana Power Co. for cash or its equivalent.

ART. 40. The licensee agrees that full and complete copies of rate schedules and all contracts of the licensee or of the Montana Power

Co. for management and supervision of its or their affairs, or for general construction, which involve the licensee or the project covered by this license, shall be filed with the Federal Power Commission promptly after execution. The licensee agrees to file annually with the Federal Power Commission copies of its annual reports and also copies of the Montana Power Co.'s annual reports as rendered to the Montana Public Service Commission.

ART. 41. With the written consent of the licensee, the commission may by order made under its seal, and after the public notice required by section 6 of the act, modify, alter, enlarge, or omit, in so far as authorized by law, any one or more of the conditions or provisions of this license; provided, however, that any such change in the terms of this license that may affect the interests of the Flathead Indians shall also be subject to approval by the Secretary of the Interior.

ART. 42. The enumeration herein of any rights reserved to the United States or to any State or municipality under the act, or of any requirements of the act, or of said rules and regulations of the commission shall not be construed in any degree as impairing any other rights so reserved by the act or as limiting the force of any other requirement of said act or of said regulations.

In witness whereof the Federal Power Commission has caused its name and seal to be hereto signed and affixed by its executive secretary, F. E. Bonner, this 23d day of May, 1930, pursuant to authority given at its meeting of May 19, 1930, a certified copy of the record thereof being hereto attached.

FEDERAL POWER COMMISSION,
By F. E. BONNER, *Executive Secretary.*

Approved May 23, 1930:

RAY LYMAN WILBUR,
Secretary of the Interior.

In testimony of acceptance of all the terms and conditions of the Federal water power act of June 10, 1920, and of the further conditions imposed in the foregoing license, the licensee, this 20th day of May, 1930, has caused its name and corporate seal to be hereto signed and affixed by John D. Ryan, its president, pursuant to a resolution of its board of directors, passed on the 20th day of May, 1930, a certified copy of the record thereof being hereto attached.

ROCKY MOUNTAIN POWER CO.,
By JOHN D. RYAN, *President.*

Attest:

J. F. DENISON, *Secretary.*

In consideration of the benefits to accrue to the Montana Power Co., a corporation organized and existing under the laws of the State of New Jersey, from the operation of the project which is the subject of the foregoing license, said the Montana Power Co., hereunto duly authorized by resolution of its board of directors, a certified copy of which is hereto attached, hereby guarantees the full performance by Rocky Mountain Power Co., licensee thereunder, of all the terms and conditions of article 6 of said license relating to the commencement of construction of the project works, to the due prosecution of such construction, and to the completion of the installation

of three units of not less than 150,000 horsepower aggregate capacity, all as provided in said license. The undersigned company further agrees that it will enter into a power contract with said licensee as provided for in article 36 of said license.

MONTANA POWER CO.,
By FRANK SILLIMAN, Jr., *Vice President.*

Attest: J. F. DENISON, *Secretary.*

Approved and accepted this 23d day of May, 1930.

FEDERAL POWER COMMISSION,
By F. E. BONNER, *Executive Secretary.*

Approved May 23, 1930:

RAY LYMAN WILBUR,
Secretary of the Interior.

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Flathead power applications—analysis of power features for site No. 1

Factors	Estimates: Rocky Mountain estimates		Estimates: Wheeler's estimates		Actual: Montana Power Co. System—Actual		Indian Office adaptations: Rocky Mountain Power Co.		Indian Office adaptations: Wheeler's	
Cubic feet per second, 90 per cent of the time.	Without dredging of lake outlet, 5,400		With dredging of outlet, 6,000				With dredging if required, 5,440		With dredging as estimated, 6,000. as adjusted, 5,440.	
Static head	185 feet						185 feet			
Effective head			175 feet						175 feet.	
Overall efficiency	Calculated on static head, 70 per cent		Calculated on effective head, 87½ per cent		Volta plant, 74 per cent		77 per cent		87½ per cent.	
Utilization factor	85 per cent		100 per cent		Company average for last 5 years, 91 per cent		91 per cent		100 per cent.	
Installation:										
Horsepower	150,000		150,000		1928, 327,750 [1]		150,000		150,000.	
Kilowatts	112,500		112,500		1928, 245,812 [1]		112,500		112,500.	
Average output:										
Prime, horsepower	68,000		105,000		1928, 233,700; 1926, 217,467 [2]		80,500		As estimated, 105,000.	
Prime, kilowatts	51,000		78,750		1928, 175,300; 1926, 163,100 [2]		60,375		As adjusted, 95,000.	
Average output, kilowatt-hours	446,000,000		689,000,000		Actual kilowatt-hours generated, 1926, 1,375,208,770; 1928, 1,584,078,104		528,885,000		As estimated, 689,000,000. As adjusted, 624,150,000.	
Actual output:										
Horsepower					209,316 [3]					
Kilowatts					156,987 [3]					
Peak load of plant on basis of 83 per cent annual load factor:										
Horsepower	82,000		126,000		83 per cent (1926 company report)		97,000		As estimated, 126,000.	
Kilowatts	61,500		94,500				72,750		As estimated, 94,500.	
Annual capacity factor based on installation.	68,000 / 150,000	43 per cent	105,000 / 150,000	70 per cent	233,700 / 327,750	71 per cent	80,500 / 150,000	53 per cent	105,000 / 150,000	as estimated, 70 per cent.
Total investment cost, site No. 1	$7,947,500		$8,811,830		1926 company report, $27,626,333.37; 1927 company report, $28,374,074.21		$7,555,400 [4]		$8,811,830.	
Investment cost per—										
Average prime horsepower	$116.87		$83.92		Based on average output: 1926, $127.04; 1927 investment cost, 1928 capacity, $121.41		$93.85		As estimated / As adjusted	$83.92 / 92.76
Average prime kilowatts	$155.83		$111.89		Based on average output: 1926, $169.39; 1927 investment cost, 1928 capacity, $161.88		$125.13		As estimated / As adjusted	111.89 / 123.68
Annual generating cost site No. 1 (including return):										
Operating expenses	0.8 per cent	$63,000	1.5 per cent	$132,177.45	1.39 per cent, 0.280 mill,[5]	$384,566.82	0.85 per cent	$63,000	1.5 per cent	132,177.45
Repairs			0.5 per cent	44,059.05	0.44 per cent, 0.097 mill,	132,701.85	0.85 per cent	63,000	0.5 per cent	44,059.05
Overhead expenses	0.8 per cent	63,000	1 per cent	88,118.35	2.81 per cent, 0.564 mill,[5 6]	776,868.06	2 per cent	151,080	1 per cent	88,118.35
Taxes, insurance, etc	2 per cent	158,940	1.5 per cent	132,177.45	0.75 per cent, 0.150 mill.[5]	206,045.00	2 per cent	151,080	1.5 per cent	132,177.45
Depreciation, obsolescence	2 per cent	158,940	3 per cent	264,354.90			0.60 per cent	45,324	2 per cent	176,236.60
Amortization									0.6 per cent [7]	52,871.00
Return on investment—										
Bond interest	5½ per cent	423,867	6 per cent [5]	528,709.80	13.84 per cent	1.607 mills, 1,103,088.15 (8 per cent return)		2,210,106.64	8 per cent	604,320	8 per cent [7]	704,946.40
Net	2⅔ per cent	211,933	3.03 per cent [8]	267.278.00		1.175 mills, 2,722,370.85 (5.84 per cent excess)		1,615,352.36				
		635,800		795,987.80								
Total	13.60 per cent	1,079,680	16.53 per cent	1,456,875	19.23 per cent, 3.873 mills,	3,825,459.00		5,325,640.73	14.30 per cent	1,077,804	15.1 per cent	1,330,586.30
Rentals (Indian)	0.85 per cent, at $1 per horsepower	68,000	1.34 per cent, 105,000 horsepower at $1.125	118,125								
Settlers allowance	0.85 per cent, at $1 per horsepower	68,000										
Revenue or generating cost, including rentals (including return).	15.3 per cent	1,215,680	17.87 per cent [5]	1,575,000								
Annual generating cost, including return and excluding rentals:										
Per horsepower year	$15.88		$13.87		Return, at 8 per cent / Excess at 5.84 per cent	17.72 / 7.72	$13.39		As estimated / As adjusted	12.67 / 14.00
Per kilowatt year	$21.17		$18.49		Return, at 8 per cent / Excess, at 5.84 per cent	23.63 / 10.29	$17.85		As estimated / As adjusted	16.89 / 18.67
Annual generating cost, including return and rentals:										
Per horsepower year	$17.88		$15.00				$15.60		Including rentals to Indians, $2.13 per horsepower (as estimated), $15. For settlers, $0.20 per horsepower (as estimated).	
Per kilowatt year	$23.84		$20.00				$20.80			
Generating cost per prime kilowatt-hour only, excluding rentals	2.42 mills		2.11 mills		Return, at 8 per cent, 2.698 mills / Excess, at 5.84 per cent, 1.175 mills	3.873 mills	2.04 mills		As estimated, 1.93 mills. As adjusted, 2.13 mills.	
Generating cost per prime kilowatt-hour only, including rentals.	2.72 mills		2.28 mills				Including Indian rentals, 2.387 mills; including Indian rentals and irrigation project, 2.439 mills.		As estimated, 2.28 mills.	

[1] Wheeler's Exhibit 17 and Major Butler's report.
[2] From Major Butler's supplemental report.
[3] Kilowatt-hours sold in 1926, 1,165,227,847.
[4] Changing company's figures by deducting development cost $492,100 and adding dredging cost, $100,000.
[5] Cost per kilowatt-hour generated.
[6] All taxes.
[7] Reduced.
[8] Wheeler's return is 9.03 per cent.

NOTE.—Actual kilowatt-hours generated 1927, 1,362,157,467; kilowatt-hours sold 1927, 1,171,162,327; kilowatt-hours generated 1928, 1,584,078,104; kilowatt-hours sold 1928, 1,500,000,000 (approximate).

NOTE.—No allowance is here included for Thompson Falls added profit to Montana Power Co. This will be under regulation of Montana Public Service Commission.

Flathead power applications—analysis of power features for site No. 1

Factors	Estimates				Actual		Indian Office adaptations			
	Rocky Mountain estimates		Wheeler's estimates		Montana Power Co. System—Actual		Rocky Mountain Power Co.		Wheeler's	
Cubic feet per second, 90 per cent of the time.	Without dredging of lake outlet, 5,400		With dredging of outlet, 6,000				With dredging if required, 5,440		With dredging as estimated, 6,000. as adjusted, 5,440.	
Static head	185 feet		175 feet				185 feet		175 feet.	
Effective head	Calculated on static head, 70 per cent		Calculated on effective head, 87½ per cent		Volta plant, 74 per cent		77 per cent		87½ per cent.	
Overall efficiency										
Utilization factor	85 per cent		100 per cent		Company average for last 5 years, 91 per cent		91 per cent		100 per cent.	
Installation:										
Horsepower	150,000		150,000		1928, 327,750 [1]		150,000		150,000.	
Kilowatts	112,500		112,500		1928, 245,812 [1]		112,500		112,500.	
Average output:										
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Actual output:										
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Peak load of plant on basis of 83 per cent annual load factor:										
Horsepower	82,000		126,000		83 per cent (1926 company report)		97,000		As estimated, 126,000.	
Kilowatts	61,500		94,500				72,750		As estimated, 94,500.	
Annual capacity factor based on installation.	68,000 / 150,000 43 per cent		105,000 / 150,000 70 per cent		233,700 / 327,750 71 per cent		80,500 / 150,000 53 per cent		105,000 / 150,000 as estimated, 70 per cent.	
Total investment cost, site No. 1	$7,947,500		$8,811,830		1926 company report, $27,626,333.37; 1927 company report, $28,374,074.21		$7,555,400 [4]		$8,811,830.	
Investment cost per—										
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									As adjusted	92.76
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Amortization						$1,500,181.73	0.60 per cent	45,324	0.6 per cent [7]	52,871.00
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		635,800		795,987.80		2,210,106.64 / 1,615,352.36				
Total	13.60 per cent	1,079,680	16.53 per cent	1,456,875	19.23 per cent, 3.873 mills,	3,825,459.00 / 5,325,640.73	14.30 per cent	1,077,804	15.1 per cent	1,330,586.30
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Annual generating cost, including return and excluding rentals:										
Per horsepower year	$15.88		$13.87		Return, at 8 per cent	17.72	$13.39		As estimated	12.67
					Excess at 5.84 per cent	7.72			As adjusted	14.00
Per kilowatt year	$21.17		$18.49		Return, at 8 per cent	23.63	$17.85		As estimated	16.89
					Excess, at 5.84 per cent	10.29			As adjusted	18.67
Annual generating cost, including return and rentals:										
Per horsepower year	$17.88		$15.00				$15.60		Including rentals to Indians, $2.13 per horsepower (as estimated), $15. For settlers, $0.20 per horsepower (as estimated).	
Per kilowatt year	$23.84		$20.00				$20.80			
Generating cost per prime kilowatt-hour only, excluding rentals	2.42 mills		2.11 mills		Return, at 8 per cent, 2.698 mills Excess, at 5.84 per cent, 1.175 mills	3.873 mills	2.04 mills		As estimated, 1.93 mills. As adjusted, 2.13 mills.	
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