No. U. S. 594-1

Office of State Engineer
DOCUMENT FILE

U. S. Dept. of Interior
Bureau of Reclamation
SHADEHILL DAM
Stream: Grand River
Project: Missouri
(River Basin)

Shaefer Paper
57-1-1

COMMISSION
John M. Gaffart, Spearfish
Lester Brue, Faulkton
Carl Cronin, Gettysburg
Lauren A. Davis, Belle Fourche
Milton E. Fischer, Milbank
Richard [illegible], Harrisburg
Clarence D. Mortenson, Hayes
Dick Tieber, Cresbard

South Dakota
WATER RESOURCES COMMISSION

State Office Building #2
PIERRE, SOUTH DAKOTA 57501

JAY GRIMES
Chief Engineer and Executive Officer

PHONE
224-3584
Area Code 605

October 7, 1969

Mr. Martin H. Oleson, Jr.
Bureau of Reclamation
P.O. Box 825
Huron, South Dakota 57350

Refer 400

Dear Mr. Oleson:

I am sorry to be so tardy answering your letter of August 15, 1969, about perfecting the water rights for the Rapid Valley Project, Deerfield Dam (U.S.509-2) and the Rapid Valley Project, Pactola Dam (U.S.561-2).

In essence, acquisition of water rights by the United States pursuant to state law includes (1) notification on behalf of the United States that it intends to utilize water or to make a survey for later utilization and withdrawal of unappropriated waters by State Government, (2) filing of plans for the proposed work on behalf of the United States, and (3) upon completion of construction of the works by the United States, water license is to be issued.

Concerning the above items, water right records show the following (dates are dates of receipt or action by State Government):

U.S. 509-2

(1) Notice of Intent filed Dec. 1, 1939, (Pactola Reservoir).
Certificate of Withdrawal issued Dec. 1, 1939.
Notice amended July 7, 1941 (Storage on Castle Creek).
Amended Notice acknowledged as amendment to Withdrawal No. 509, July 10, 1941.
Notice amended and supplemented Aug. 24, 1942.
Supplemental Withdrawal issued Aug. 24, 1942.
Notice of Aug. 24, 1942, corrected Oct. 8, 1942.

(2) Print of Drawing 252-7, Deerfield Dam, filed Sept.10,1946.

(3) Water License not issued.

U.S. 581-2

(1) Notice of Intent filed Apr. 25, 1952, (Pactola Reservoir). Certificate of Withdrawal issued May 5, 1952.

(2) No plans received.

(3) Water License not issued.

State law does not prescribe what constitutes "plans" which are to be filed on behalf of the United States. Nor does a search of records in this office reveal any prior designation as to what constitutes these "plans". Under state law, the following factors describe a water right: priority date, amount of water used beneficially, the purposes served, the periods of use, the places of use, and any conditions which may apply to the use of water.

For Bureau of Reclamation projects, each of these water right factors may be determined by the following "plans".

Priority date - Date of receipt of the notice on behalf of the United States that it intends to utilize certain specified waters or intends to make a survey with a view of later utilizing certain specified waters.

Amount of Water-The Definite Plan Report, or its equivalent, supplemented by "as built" drawings and tabulations showing storage capabilities, capacities of diversion works and the quantities and rates of water provided for the purposes served by the project works should provide the information needed.

Purposes Served-The Definite Plan Report, or its equivalent, supplemented by any changes which may have occurred on an "as built" basis should provide this information.

Periods of Use- The Definite Plan Report, or its equivalent, modified by any changes provided on an "as built" basis should provide the information needed for determination of periods of storage and beneficial use.

Places of Use - The Definite Plan Report, or its equivalent, supplemented by a drawing showing the irrigable lands and places of use for other than irrigation purposes should provide this information.

Conditions applied to use - Copies of contracts with water users should provide information for determination of this factor.

I hope that this summary will provide the information that you requested for the Deerfield and Pactola projects. This summary may be used to perfect the Bureau's water rights for Shadehill and Angostura projects, also. I believe that the Belle Fourche Project water right should be modernized, too, pursuant to this summary and the Keyhole Project filing in Wyoming, copy in South Dakota, should be perfected pursuant to this summary especially as to places of use.

Sincerely,

J. W. Grimes

JWG:ls

677-1
U. S. 594-1

August 5, 1963

Mr. Simon Wall, Mayor
City of Lemmon
Lemmon, South Dakota

Dear Mr. Wall:

Your water right application (677-1) for a future use withdrawal from Shadehill Reservoir for municipal use was considered by the Water Resources Commission.

Water rights for this purpose are included in the water right acquired by the Bureau of Reclamation. Since a contract between the City of Lemmon and the Bureau, covering the service of water storage in Shadehill Reservoir, is necessary, whether the municipal water supply works are built by the Bureau, the City or other constructors, acquisition of additional water rights by the City of Lemmon is not required.

Your application will be kept on file and referenced to the water right of the Bureau of Reclamation. Your intent to use water from Shadehill Reservoir in the future will thus be a matter of record.

Proof of newspaper publication of the intent of your application has not been received. As a result of Water Resources Commission action, further procedural action, including publication and furnishing proof of publication, is no longer necessary.

Sincerely,

JWG:ls

J. W. GRIMES

April 5, 1949

D. H. Lindeman,
Acting Assistant Regional Counsel
U. S. Dept. of the Interior
Bureau of Reclamation
P. O. Box 1538
Billings, Montana

Re: Shadehill Dam and Reservoir
Grand Division, Shadehill Unit
Missouri River Basin Project
South Dakota
Withdrawal No. WS 594-1

Attn: 6-194

Dear Mr. Lindeman:

This will acknowledge receipt of a "Notice of Intention to the State Engineer of the State of South Dakota" issued under authority of the Flood Control Act of December 22, 1944 to construct and to operate and maintain National works to conserve and to control the waters of the Missouri River and its tributaries and further authorization; that pursuant to such authorizations, the United States of America intends to construct operate and maintain certain works to conserve, control and utilize the waters of the Grand River, South Dakota, for beneficial consumptive uses. The above-referred-to notice was received in the State Engineer's Office on March 29, 1949.

The document makes further application for the withdrawal from other appropriations of all unappropriated waters of the Grand River and its tributaries and their sources of supply including definite streams and water courses and including natural springs now or hereafter subject to appropriation.

In conformity with the application and with Section 61.0137 of the South Dakota Code of 1939, the enclosed withdrawal is issued to the United States of America acting through K. F. Vernon, Regional Director, Region 6, Bureau of Reclamation, United States Department of the Interior.

Sincerely yours,

DEAN W. LOUCKS
State Engineer

Enc.
DWL:RW

Form C

CERTIFICATE OF WITHDRAWAL OF

WATER FOR APPROPRIATION

TO

UNITED STATES DEPARTMENT OF Interior
BUREAU OF Reclamation

Withdrawal No. US 594-1

Grand River
Stream

The United States of America acting through K. F. Vernon, Regional Director, Region 6, Bureau of Reclamation, United States Department of the Interior, having made application for the withdrawal of certain heretofore unappropriated public waters of the State of South Dakota, and having complied with the requirements of the statute of the State of South Dakota providing for such withdrawal, such statute and authority being contained in and described as Section 61.0137 of the South Dakota Code of 1939, now therefore:

All unappropriated water of the Grand River and its tributaries and their sources of supply, including definite streams and water courses, and including natural springs now or hereafter subject to appropriation, including all waste seepage and return flow waters from any operations or uses, in connection with a reclamation development to be constructed by the Bureau of Reclamation, are hereby withdrawn from future appropriation during the continuance of the right herein granted and contained.

Part of the reserved waters under this application will be conserved and controlled by a dam on the Grand River situated in the E½ Sec. 24; SE¼, N½ Sec. 25; NE¼ Sec. 36, all in Twp. 21 N. of Range 15 East of the Black Hills Meridian; and SW¼ Sec. 18; N½ Sec. 19, all in Twp. 21 N. of Range 16 East of the Black Hills Meridian, to form a reservoir with a capacity of about 467,000 acre-feet and utilized, in part, by means of a distributary system to serve the lands ultimately included within said reclamation development.

The waters, both those allowed to flow naturally and those conserved and controlled by said dam, will be used for domestic, municipal, stock water, irrigation, mining, or industrial purposes, and such other uses as the Congress of the United States has or shall hereafter authorize.

A map included with the notice (2-35-Huron, S. Dak. 3-29-48) is a general map of the proposed dam and reservoir and reclamation development.

This certificate and withdrawal shall in no manner prejudice, alter, amend or effect the rights of any prior appropriator or prior appropriation of water, nor of any application for appropriation pending upon the date of this certificate, but the rights and privileges of any and all such prior appropriators or applicants for appropriation of water shall remain inviolate and intact, the same as if the within withdrawal had not been made.

This certificate shall be and is subject to cancellation in accordance with the provisions of the statute hereinbefore referred to and under the authority of which this certificate is issued.

In accordance with the provisions of the statute hereinbefore referred to, this certificate is executed at the State Capitol at Pierre, South Dakota, this 29th day of March 1949.

DEAN H. LOUCKS
State Engineer

UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION
P. O. Box 1553
Billings, Montana Reply Att'n: 6-154

April 7, 1949.

RECEIVED
APR 9 1949
OFFICE OF STATE ENGINEER
PIERRE, S. DAK.

Hon. Dean W. Loucks,
State Engineer,
Pierre, South Dakota.

Dear Mr. Loucks:

Re: Shadehill Dam and Reservoir,
Grand Division, Shadehill Unit,
Missouri River Basin Project,
South Dakota. Withdrawal
No. US 594-1.

Reference is made to your letter of April 5, 1949, acknowledging receipt in your office on March 29, 1949, of "Notice of Intention to the State Engineer of the State of South Dakota," and transmitting Certificate of Withdrawal No. US 594-1.

Please accept my sincere appreciation of your cooperation with the Bureau of Reclamation in this matter.

Sincerely yours,

D. N. Lindeman

D. N. Lindeman,
Acting Assistant Regional Counsel.

February 23, 1950

Hunsin Bros.
Hettinger, North Dakota

Re: Inquiry Water Application

Gentlemen:

This is in reply to your letter of February 21 in which you state that you are interested in doing sprinkler irrigation with water from the north fork of the Grand River.

You, of course, are aware that your location is just above the Bureau of Reclamation project. All waters above this project have been withdrawn from further appropriation in favor of the United States Government for use through the Shadehill Project. Any withdrawal in this area would have to be approved or released by the Bureau of Reclamation before it would be available for further appropriation.

If we can give you any further information, we would be glad to hear from you.

Yours very truly,

DEAN W. LOUCKS
State Engineer

DWL:RV

Hettinger, North Dakota
February 21, 1950

D. W. Lounks
Office of State Engineer
Pierre, South Dakota

Dear Sir:

We are interested in doing sprinkler irrigation with water from the north fork of the Grand River. We live in Section 10, township 22, Range 12, Perkins County.

Could you please give us information on water rights, any present appropriation, and if the water from this stream is suitable for irrigation purposes. Also any other information we would need in this matter.

Thanking you,
/s/ Funsin Bros.
Hettinger, N. D.

DWL:RH

COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

P.O. Box 1538
Billings, Montana

Reply Att'n: 6-154

March 28, 1949

Hon. Dean W. Loucks,
State Engineer,
Pierre, South Dakota.

Dear Mr. Loucks:

There is enclosed herewith a Notice of Intention to conserve, control, and utilize for beneficial consumptive uses and for beneficial uses unappropriated waters of the Grand River, South Dakota. This notice is filed pursuant to the provisions of Section 61.0137, South Dakota Code of 1939.

As stated in the notice further and additional standard plans of the works will be filed at a later date and supplementary applications to conform to changed plans may also be filed.

Please acknowledge receipt of the notice, and also furnish the date when the notice was accepted for filing in your office and the recordation data of your office.

Sincerely yours,

D. N. Lindeman

D. N. Lindeman,
Acting Assistant Regional Counsel.

Encl.

CC-Corm.
CC-Actg.Dist.Mgr.,Huron,S.Dak.
Chief, Hydrology Divn.,Denver,Colo.
Const.Mgr.,Lemmon,S.Dak.
(w/encl to each)

NOTICE OF INTENTION TO THE STATE ENGINEER OF
THE STATE OF SOUTH DAKOTA

Shadehill Dam and Reservoir,
Grand Division, Shadehill Unit,
Missouri River Basin Project, South Dakota.

WHEREAS, the United States of America, in the Flood Control Act of December 22, 1944 (58 Stat. 887), is authorized to construct and to operate and maintain national works to conserve and control the waters of the Missouri River and its tributaries, and is further authorized in said Flood Control Act to utilize such conserved and controlled waters for beneficial consumptive uses and for beneficial uses in accordance with the national policy set forth in Section 1 of said Act of Congress of December 22, 1944, and pursuant to the provisions of the Act of June 17, 1902 (32 Stat. 388), as now or hereafter amended and supplemented, known as the Federal Reclamation Laws; and

WHEREAS, the United States of America, pursuant to such authorization, will construct, operate, and maintain certain works to conserve, control, and utilize the waters of the Grand River, South Dakota, for beneficial consumptive uses and for beneficial uses; and

WHEREAS, the United States of America, acting through K. F. Vernon, Regional Director, Region 6, Bureau of Reclamation, United States Department of the Interior, thereunto duly authorized by the Secretary of the Interior, hereby notifies the State Engineer of the State of South Dakota of its intention to conserve, control, and utilize for beneficial consumptive uses and for beneficial uses unappropriated waters within the State of South Dakota by the construction of the works hereinafter described;

NOW, THEREFORE, in conformity with Section 61.0137, South Dakota Code of 1939, application is hereby made for the withdrawal and reservation from other appropriations of all unappropriated water of the Grand River and its tributaries and their sources of supply, including definite streams and water courses, and including natural springs now or hereafter subject to appropriation, for utilization in connection with that certain reclamation development known as the Grand Division, Shadehill Unit, Missouri River Basin Project, South Dakota, authorized to be constructed under the Act of Congress of June 17, 1902 (32 Stat. 388), as now or hereafter amended and supplemented, known as the Federal Reclamation Laws, and the Act of Congress of December 22, 1944 (58 Stat. 887), as said development may from time to time hereafter be modified, and for such other uses as now or hereafter authorized in said Federal Reclamation Laws.

This application covers all the unappropriated waters of said river and its tributaries and their sources of supply, and additionally all waste, seepage, and return flow waters from any operations or uses through, by means of, or in connection with said reclamation development, or otherwise.

The said reclamation development will be constructed by the Bureau of Reclamation, United States Department of the Interior, its authorized representative being Regional Director, Region 6, Bureau of Reclamation, United States Department of the Interior, Billings, Montana.

Part of the reserved waters under this application will be conserved and controlled by a dam on the Grand River situate in the E½ Sec. 24; SE¼, N½ Sec. 25; NE¼ Sec. 36, all in Twp. 21 N. of Rge. 15 East of Black Hills Meridian; and SW¼ Sec. 18; NW¼ Sec. 19, all in Twp. 21 N. of Rge. 16 East of the Black Hills Meridian, to form a reservoir with a capacity of about 467,000 acre-feet and utilized, in part, by means of a distributary system to serve the lands ultimately included within said reclamation development.

The waters, both those allowed to flow naturally and those conserved and controlled by said dam, will be used for domestic, municipal, stock water, irrigation, mining, or industrial purposes, and such other uses as the Congress of the United States has or shall hereafter authorize.

The map attached (2-35-Huron, So. Dak. 3-29-48) is a general map of the proposed dam and reservoir and reclamation development.

Further and additional standard plans of the conservation, control and use works will be filed in your office by the Regional Director, Region 6, Bureau of Reclamation, Billings, Montana.

The right to file supplementary applications hereto to conform to the plans of the conservation, control, and use works as the same are constructed is hereby reserved.

Dated at Billings, Montana, this 24th day of March, 1949.

THE UNITED STATES OF AMERICA

By K. F. Vernon

K. F. Vernon, Regional Director,
Region 6, Bureau of Reclamation,
United States Department of the Interior.

STATE OF MONTANA)
) ss.
County of Yellowstone)

I hereby certify that the foregoing Notice of Intention was signed in my presence and sworn to before me by K. F. Vernon, Regional Director, this 24th day of March, 1949.

Roy F. Allen
Notary Public for the State of Montana
Residing at Billings, Montana.
My Commission expires June 27, 1950

OVERSIZE

DOCUMENT IS

SUPPLEMENTARY

TO MICROFILM FILE

STATE OF SOUTH DAKOTA

UNITED STATES WITHDRAWAL WATER LICENSE NO. 594-1
SHADEHILL RESERVOIR - SHADEHILL UNIT

(1) WHEREAS, The Bureau of Reclamation, United States of America on March 28, 1949 filed *"NOTICE OF INTENTION TO THE STATE ENGINEER OF THE STATE OF SOUTH DAKOTA, Shadehill Dam and Reservoir, Grand Division, Shadehill Unit, Missouri River Basin Project, South Dakota" to reserve and withdraw all of the unappropriated water of the Grand River, part of the reserved waters to be conserved and controlled by a dam (Shadehill Dam), capacity about 467,000 acre-feet, to be constructed at a specified location, to be used for domestic, municipal, stockwater, irrigation, mining, or industrial purposes, and other uses;

(2) WHEREAS, The State Engineer on March 29, 1949 issued *"CERTIFICATE OF WITHDRAWAL OF WATER FOR APPROPRIATION, Withdrawal No. U.S. 594-1", withdrawing all unappropriated waters of the Grand River and its tributaries, with part of the reserved waters to be conserved and controlled by a reservoir having a capacity of about 467,000 acre-feet to be constructed at a specified location;

(3) WHEREAS, It is hereby certified that the United States of America has completed construction of Shadehill Reservoir on the Grand River, having storage capacities as follows: dead storage 58,231 acre-feet, inactive storage 7,633 acre-feet, active storage 73,810 acre-feet, flood control storage 217,708 acre-feet and flood surcharge 111,203 acre-feet, the United States of America is entitled to an initial water storage fill of 139,674 acre-feet of storage in Shadehill Reservoir and an annual replenishment of storage to the top of the active storage space plus evaporation and natural water losses; and

(4) WHEREBY, It is hereby certified the United States of America has constructed Shadehill Reservoir and has made application of water to beneficial use in water storage, recreation, irrigation and incidental water use. Since being constructed, 50,000 acre-feet of the 73,810 acre-feet active storage space has been used for interim flood control releases. Contracts have been executed authorizing irrigators to irrigate land by pump diversions from water stored in Shadehill Reservoir and from water released from Shadehill Reservoir.

(5) NOW THEREFORE, By virtue of the authority vested in us by the laws of the State of South Dakota, we hereby grant and confirm to the United States of America, United States Withdrawal Water License No. 594-1, a water right dating from March 29, 1949 for storage of water in Shadehill Reservoir as may be necessary for the purposes herein below mentioned, to be diverted at the specified location in the NW¼, SE¼, Section 25, T12N, R15E for the purpose of recreation on a year around basis, irrigation during the growing season, plus incidental silt detention, water quality, fish and wildlife habitat,

domestic, livestock watering and other beneficial uses.

Subject to the following qualifications:

Flows (not exceeding inflows) shall be released as needed for downstream domestic use, including livestock watering, and prior downstream water right use;

The initial reservoir filling (139,674 acre-feet) having been accomplished, the authorized annual storage replenishment shall be equal to that volume of water needed to bring the reservoir water surface to the top of the active conservation storage space, elevation 2272 feet, *Bureau of Reclamation Drawing 276-602-465, "SHADEHILL RESERVOIR AREA CAPACITY CURVE", revised, 10-12-62.

WITNESS, My hand and seal of our office at Pierre, South Dakota this 24 day of November A.D. Nineteen Hundred and Sixty-Eight.

WATER RIGHTS COMMISSION

By:

Donald Driscoll

DONALD DRISCOLL, Chief Engineer
and Executive Officer

* Indicates specified document is filed in U.S. Withdrawal File No. 509-2.

File

DEPARTMENT OF THE ARMY
OMAHA DISTRICT, CORPS OF ENGINEERS
6014 U.S. POST OFFICE AND COURTHOUSE
OMAHA, NEBRASKA 68102

RECEIVED
AUG 11 1977
DEPT. OF NATURAL
RESOURCE DEVELOPMENT

MROED-HC

8 August 1977

SUBJECT: Bowman-Haley Reservoir Regulation Order No. ODBH-77-1

Area Engineer, South Dakota Area

1. This confirms the following oral instructions given to Dave Ka[illegible]ecek of your office by Bruce Garvey of our Reservoir Regulation Section on [illegible] August 1977 regarding the regulation of releases from Bowman-Haley Dam:

a. At 1345 MDT on 3 August 1977 open the 30-inch valve to an opening of 49 revolutions (5.5 + 43.5) of the hand wheel, an approximate release rate of 40 c.f.s.

b. At 1235 MDT on 5 August 1977 reset the 30-inch valve to an opening of 28 revolutions (5.5 + 22.5) of the hand wheel, an approximate release rate of 20 c.f.s.

2. The Reservoir Regulation Section should be notified of any complaints by local interests or non-use of the water by the water users.

3. These releases are being scheduled as a result of a request from Governor Kneip of South Dakota to meet the emergency livestock, fish and wildlife and irrigation needs along the North Fork of the Grand River downstream from Bowman-Haley Dam and upstream of Shadehill Reservoir. Perkins County, South Dakota, the county of the intended use has been declared a drought emergency area. This action is in accordance with the instructions in the MRD letter of 26 August 1974 subject, Bowman-Haley Reservoir, Interim Use of Future Water Supply Storage Space, which quotes the provisions of EM 1165-2-105.

FOR THE DISTRICT ENGINEER:

R. G. BURNETT
Chief, Engineering Division

Copy furnished:
ND State Water Comm., Bismarck, ND
Dept of Natural Resources Development, Pierre, SD
Proj Mgr, Mo-Oahe Proj Off, Bureau of Reclamation, Huron, SD
Bowman County Water District, Bowman, ND

United States Department of the Interior
BUREAU OF RECLAMATION
Region 6
MISSOURI-OAHE PROJECTS OFFICE
P.O. BOX 825
HURON, SOUTH DAKOTA 57350

IN REPLY REFER TO: 400

JUL 6 1971

RECEIVED
JUL 7 1971
STATE WATER RESOURCES COMM.
PIERRE, SOUTH DAKOTA

Mr. J. W. Grimes
Chief Engineer and Executive Officer
South Dakota Water Resources Commission
Pierre, South Dakota 57501

Dear Mr. Grimes:

Withdrawal No. U.S. 594-1 was issued in favor of the United States for withdrawal of all of the unappropriated water of Grand River and its tributaries in connection with a multipurpose reclamation development. Shadehill Reservoir has been constructed to store the water required for this development; however, because of lack of sufficient interest by the local landowners to form a contracting entity, water has not yet been applied to the land originally planned for irrigation.

We request that you proceed to perfect that part of the withdrawal that pertains to storage of water in Shadehill Reservoir. The following information and enclosures are provided in this connection:

Shadehill Dam, completed in 1951, is a zoned rolled-earth structure constructed across the Grand River about 1 mile downstream from the confluence of the North Fork and the South Fork of the Grand River and near Shadehill, South Dakota. It forms a reservoir with a conservation storage capacity of 139,674 acre-feet, including 58,231 acre-feet of dead storage located below the lowest outlet. It also has 217,708 acre-feet of flood control space located above the crest of the service spillway. The ungated service spillway, with a "glory-hole" type inlet, is designed to discharge 5,700 c.f.s. The canal outlet works, as modified in 1960, with an outlet extension to the Grand River, has a capacity of 600 c.f.s. The ungated and unlined emergency spillway immediately upstream from the left abutment has a capacity of 127,000 c.f.s. The emergency spillway discharges into Flat Creek, a tributary of the Grand River.

Priority Date - Notice of Intent was dated March 29, 1949, and Certificate of Withdrawal was issued March 29, 1949.

Amount of Water - All of the water unappropriated on March 29, 1949, of the Grand River and its tributaries upstream from Shadehill Dam as required to store 139,674 acre-feet in the conservation pool of Shadehill Reservoir, as further supported by the following drawings and tables:

1. Shadehill Reservoir topography with Shadehill Dam superimposed. (Drawing No. 276-602-639 dated 3-20-70.)

2. General Plan and Section - Shadehill Dam. (Drawing No. 276-D-36 as revised 10-18-51.)

3. Outlet Works Modification Plan and Details - Shadehill Dam. (Drawing No. 276-D-182 as revised 10-31-60.)

4. Capacity Table - Shadehill Reservoir, dated October 1, 1952.

5. Area-capacity curves, Shadehill Reservoir. (Drawing No. 276-602-465 as revised 6-26-63.)

6. Reservoir capacity allocation for Shadehill Reservoir.

Periods of Use - Twelve months in each year.

Place of Use - Shadehill Reservoir and land areas adjoining Shadehill Reservoir taking area and the Grand River downstream from Shadehill Dam.

Purposes Served - Beneficial use for multiple purposes in accordance with Federal Reclamation Laws (32 Stat. 388) as amended, Flood Control Act of December 22, 1944 (58 Stat. 887), as amended, and the Act of March 10, 1934 (48 Stat. 401) as amended, including, but not preferred by this enumeration, domestic, municipal, industrial, and livestock uses; recreation; fish and wildlife; irrigation; flood control; silt detention; pollution control; mining; and other beneficial uses.

Construction of the proposed Shadehill Unit irrigation distribution facilities has been deferred pending the formation of a contracting entity with sufficient irrigable land to establish feasibility. During this interim period, temporary annual water service contracts for an irrigation water supply from Shadehill Reservoir have been executed with up to 13 landowners. The contracted acreage has ranged from 1,000 to about 1,200 acres for the past several years.

Conditions Applied to Use - Payment of appropriate charges in all cases and compliance with Excess Land Laws under Reclamation Act (32 Stat. 388) as amended, where water is used for irrigation.

We further request that withdrawal of that portion of the water pertaining to the irrigation of lands be continued until such lands are developed.

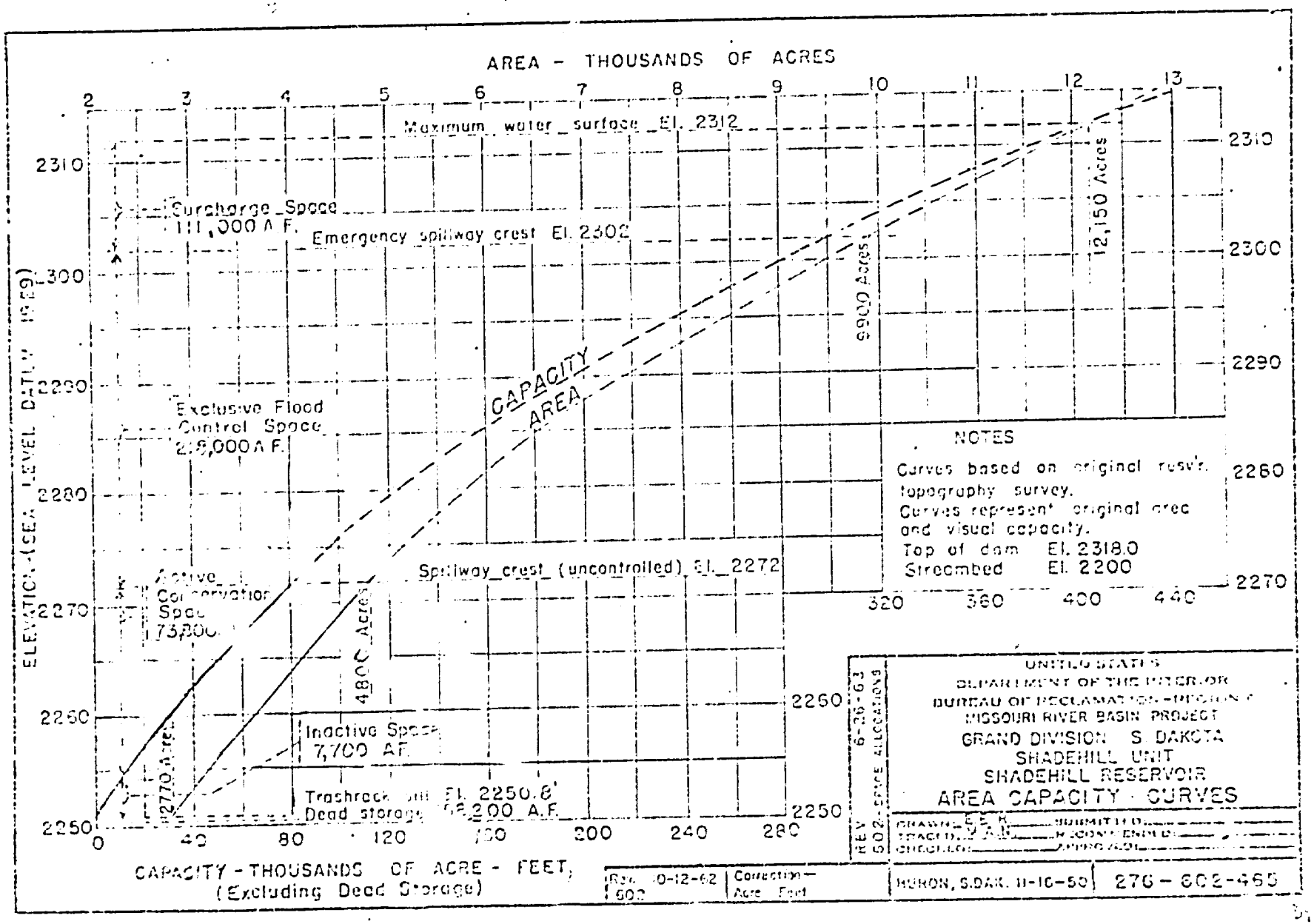
Please advise if additional information is required for perfection of this water right.

Sincerely yours,

P L Funkhouser Jr.

Preston L. Funkhouser, Jr.
Project Manager

Enclosures


AREA - THOUSANDS OF ACRES
2 3 4 5 6 7 8 9 10 11 12 13
Maximum water surface El. 2312
Surcharge Space
111,000 A.F.
Emergency spillway crest El. 2302
Exclusive Flood
Control Space
239,000 A.F.
CAPACITY
AREA
9900 Acres
12,150 Acres
Active
Conservation
Space
73,200
Spillway crest (uncontrolled) El. 2272
4800 Acres
2770 Acres
Inactive Space
7,700 A.F.
Trashrack sill El. 2250.8'
Dead storage 68,200 A.F.
ELEVATION (SEA LEVEL DATUM 1929)
2310
2300
2290
2280
2270
2260
2250
0 40 80 120 160 200 240 280
CAPACITY - THOUSANDS OF ACRE - FEET,
(Excluding Dead Storage)
NOTES
Curves based on original resv. topography survey.
Curves represent original area and visual capacity.
Top of dam El. 2318.0
Streambed El. 2200
320 360 400 440
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MISSOURI RIVER BASIN PROJECT
GRAND DIVISION S. DAKOTA
SHADEHILL UNIT
SHADEHILL RESERVOIR
AREA CAPACITY CURVES
REV. 6-26-63
502-SPACE ALLOCATIONS
HURON, S.DAK. 11-16-59
276-602-465

RESERVOIR CAPACITY ALLOCATIONS

Type of dam Earthfill
Operated by Bureau of Reclamation
Crest length 12,843 ft.
Volume 3,500,000 cubic yards
Top width 30 ft., Max. Base Width 938 ft.
Closure date July 1, 1950
Construction period 1949-1951
Stream Grand River
Reservoir Surface area 12,150 acres at El. 2312.0

Region 6 State South Dakota
Shadehill Reservoir
Shadehill Dam
Missouri River Basin Project
Grand Division
Shadehill Unit
Operational Status
December 1966 Date

Furnish one copy of completed form to the Chief Engineer: Attention D-756

Maximum height (Structural height) 115 ± ft.
Height above streambed 118 ± ft.
Total capacity 357,382 a.f. ①
Live capacity 299,151 a.f. ①
Active capacity 251,518 a.f. ①

Crest of dam (without camber)	El. 2318.0	Freeboard	6.0 ft
Maximum water surface	El. 2312.0	Surcharge	111,203 a.f.
Top of exclusive flood control	W.S. El. 2302.0	Exclusive flood control	217,708 a.f.
Bottom of exclusive flood control	W.S. El. 2272.0		
Top of joint use	W.S. El.	Joint use	a.f.
Uses F.C.			
Bottom of joint use	W.S. El.		
Top of active conservation	W.S. El. 2272.0	Active conservation	73,810 a.f.
Uses			
Top of inactive	W.S. El. 2253.4	Inactive	7,633 a.f.
Top of dead	W.S. El. 2250.8	Dead	58,231 a.f.
Streambed at dam axis	El. 2200.0		
Lowest point of foundation excavation	El. 2173.0		

F.C.	Flood Control (Total)	a.f.	
I.	Irrigation	a.f.	C (ACTIVE CONSERVATION AND JOINT USE)
M.& I.	Municipal and Industrial	a.f.	
P.	Power	a.f.	
F.& W.	Fish and Wildlife	a.f.	
	Other	a.f.	
S	Sediment	a.f.	

① Includes ____ a.f. allowance for ____ year sediment deposition between streambed and El. ____, of which ____ a.f. is above El. ____

Reference:
Area Capacity Curve - Drawing No. 276-602-465 (Revised 10-12-62)

SHADEHILL RESERVOIR

Total Capacity 468,505 Acre Feet

Placed in Use October 1, 1958

Refer to Area Capacity Curves, Drawing No. 276-602-465 Huron, S. D. Dated 11-16-50 and No. 2-5 Pierre, S. D. Dated 11-27-46

Elevation Feet	Acre Feet 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2200	0					9				
1	26					52				
2	87					131				
3	183					244				
4	314					392				
5	479					575				
6	680					793				
7	915					1,046				
8	1,185					1,333				
9	1,490					1,656				
10	1,830					2,013				
11	2,205					2,405				
12	2,614					2,832				
13	3,059					3,294				
14	3,538					3,791				
15	4,052					4,322				
16	4,601					4,889				
17	5,185					5,490				
18	5,804					6,126				
19	6,457					6,797				
20	7,146					7,503				
21	7,869					8,244				
22	8,628					9,020				
23	9,421					9,831				
24	10,249					10,676				
25	11,113*					11,568				
26	12,041					12,532				
27	13,041					13,568				
28	14,113					14,677				
29	15,259					15,859				
30	16,477					17,113				

DATE MICROFILMED

SHADSHILL RESERVOIR

Elevation Feet	Acre Feet 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2231	17,767					18,439				
32	19,129					19,837				
33	20,563					21,307				
34	22,069					22,850				
35	23,649					24,466				
36	25,301					26,154				
37	27,025					27,914				
38	28,821					29,746				
39	30,689					31,650				
40	32,629					33,62[illegible]				
41	34,643					35,677				
42	36,729					37,799				
43	38,887					39,993				
44	41,117					42,257				
45	43,419					44,597				
46	45,793					47,008				
47	48,241					49,492				
48	50,761					52,048				
49	53,353					54,676				
50	56,017*	56,290	56,564	56,839	57,115	57,392	57,670	57,950	58,231/1	58,513
51	58,796	59,079	59,363	59,648	59,934	60,221	60,509	60,798	61,0[illegible]3	61,379
52	61,672	61,964	62,258	62,553	62,849	63,147	63,445	63,744	64,044	64,345
53	64,646	64,949	65,253	65,558	65,864	66,171	66,479	66,787	67,096	67,406
54	67,717	68,029	68,342	68,656	68,971	69,287	69,604	69,923	70,243	70,564
55	70,886	71,208	71,531	71,855	72,180	72,506	72,833	73,161	73,490	73,820
56	74,152	74,483	74,815	75,148	75,482	75,817	76,153	76,490	76,828	77,167
57	77,506	77,848	78,191	78,535	78,880	79,227	79,575	79,924	80,274	80,625
58	80,977	81,328	81,680	82,033	82,387	82,743	83,100	83,458	83,817	84,177
59	84,536	84,897	85,259	85,622	85,986	86,351	86,717	87,084	87,452	87,821
60	88,192	88,563	88,935	89,308	89,682	90,057	90,433	90,810	91,188	91,567

Elevation Feet	Acre Feet									
	230,0.2	230,454	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2261	91,986	92,327	92,709	93,092	93,476	93,861	94,247	94,633	95,020	95,408
62	95,797	96,187	96,578	96,970	97,363	97,757	98,152	98,549	98,947	99,346
63	99,746	100,146	100,547	100,949	101,352	101,756	102,161	102,567	102,974	103,382
64	103,793	104,203	104,614	105,026	105,439	105,853	106,268	106,684	107,101	107,519
65	107,937	108,357	108,778	109,200	109,623	110,047	110,472	110,898	111,324	111,751
66	112,179	112,608	113,038	113,469	113,901	114,334	114,768	115,204	115,641	116,079
67	116,518	116,957	117,397	117,838	118,280	118,723	119,167	119,612	120,058	120,506
68	120,955	121,404	121,854	122,305	122,757	123,210	123,664	124,119	124,575	125,032
69	125,489	125,948	126,408	126,869	127,331	127,794	128,258	128,722	129,187	129,653
70	130,120	130,588	131,057	131,527	131,998	132,470	132,943	133,417	133,893	134,370
71	134,848	135,326	135,805	136,285	136,766	137,248	137,731	138,215	138,700	139,186
72	139,674/2	140,162	140,651	141,141	141,632	142,124	142,617	143,111	143,606	144,101
73	144,597	145,094	145,592	146,091	146,591	147,093	147,596	148,100	148,605	149,111
74	149,618	150,126	150,635	151,145	151,655	152,166	152,678	153,191	153,705	154,220
75	154,736	155,257	155,780	156,304	156,830	157,358	157,888	158,419	158,952	159,487
76	160,024	160,562	161,102	161,644	162,187	162,732	163,279	163,828	164,378	164,929
77	165,482	166,038	166,595	167,154	167,715	168,277	168,841	169,406	169,973	170,541
78	171,110	171,683	172,258	172,834	173,412	173,991	174,571	175,153	175,737	176,323
79	176,908	177,497	178,088	178,681	179,275	179,871	180,469	181,069	181,670	182,272
80	182,876	183,481	184,088	184,697	185,309	185,922	186,537	187,154	187,773	188,393
81	189,014	189,638	190,263	190,890	191,519	192,149	192,780	193,413	194,048	194,685
82	195,323	195,963	196,605	197,248	197,893	198,540	199,189	199,839	200,491	201,145
83	201,801	202,458	203,116	203,776	204,438	205,102	205,767	206,435	207,105	207,776
84	208,449	209,123	209,798	210,475	211,154	211,835	212,517	213,202	213,889	214,577
85	215,267	215,958	216,650	217,344	218,040	218,738	219,437	220,139	220,843	221,548
86	222,255	222,963	223,673	224,385	225,098	225,813	226,530	227,249	227,969	228,691
87	229,414	230,139	230,866	231,595	232,325	233,057	233,791	234,527	235,265	236,003
88	236,742	237,484	238,228	238,974	239,721	240,470	241,221	241,974	242,728	243,484
89	244,240	244,999	245,760	246,522	247,286	248,052	248,819	249,588	250,360	251,13[illegible]
90	251,909	252,685	253,463	254,242	255,023	255,806	256,590	257,376	258,164	258,[illegible]

Elevation Feet	Acre Feet 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2291	259,747	260,540	261,335	262,131	262,929	263,729	264,530	265,333	266,138	266,946
92	267,755	268,565	269,377	270,190	271,005	271,822	272,640	273,460	274,283	275,108
93	275,934	276,761	277,590	278,420	279,252	280,086	280,921	281,758	282,597	283,439
94	284,282	285,126	285,972	286,819	287,668	288,519	289,371	290,225	291,082	291,941
95	292,801	293,662	294,525	295,389	296,255	297,123	297,992	298,863	299,736	300,612
96	301,489	302,367	303,247	304,128	305,011	305,896	306,782	307,670	308,560	309,453
97	310,347	311,242	312,139	313,037	313,937	314,839	315,742	316,647	317,555	318,465
98	319,376	320,288	321,202	322,117	323,034	323,953	324,873	325,795	326,719	327,646
99	328,574	329,503	330,434	331,366	332,300	333,236	334,173	335,112	336,054	336,993
2300	337,943*	338,893	339,845	340,799	341,756	342,715	343,677	344,641	345,607	346,576
1	347,546	348,520	349,496	350,474	351,454	352,436	353,420	354,407	355,396	356,388
2	357,382/3	358,379	359,378	360,379	361,383	362,389	363,398	364,408	365,420	366,435
3	367,452	368,472	369,494	370,518	371,545	372,574	373,606	374,640	375,676	376,715
4	377,755	378,798	379,844	380,892	381,943	382,996	384,050	385,107	386,166	387,228
5	388,292	389,358	390,427	391,498	392,571	393,647	394,725	395,805	396,888	397,974
6	399,062	400,151	401,243	402,338	403,435	404,535	405,637	406,741	407,847	408,956
7	410,066	411,179	412,295	413,413	414,533	415,655	416,780	417,907	419,037	420,169
8	421,303	422,439	423,578	424,719	425,863	427,009	428,157	429,308	430,461	431,616
9	432,773	433,933	435,096	436,261	437,427	438,596	439,767	440,941	442,[illegible]	443,295
10	444,476*	445,660	446,846	448,034	449,225	450,417	451,612	452,809	454,008	455,210
11	456,414	457,621	458,830	460,042	461,255	462,471	463,689	464,909	466,132	467,357
12	468,585/4									

* Based on topographic contours

/1 Elevation 2,250.8' = 58,231 A. F. Dead Storage
/2 Spillway Crest (Uncontrolled) at elevation 2,272.0 = 139,674 A. F. Storage = 81,443 Irrigation Storage
/3 Emergency Spillway Crest at elevation 2,302.0 = 357,382 A. F. Storage − 139,674 A. F. = 217,708 Flood Storage
/4 Maximum water surface at elevation 2,312.0 = 468,585 A. F. Storage − 357,382 A. F. = 111,203 A. F. Surcharge