

4258-3

1. Considered MAY 25 1978
2. Name of Applicant U.S. FISH & WILDLIFE SERVICE
3. Post Office Address DENVER, COLO.
4. Amount of Water claimed 210 AC. FT. ANN.
5. Source of Water supply RUNOFF FROM DRY RUN
6. Water to be used for WATERLIFE PROPAGATION & DOMESTIC USE
Acres to be irrigated —
7. Water to be diverted and used in BROWN County
about 2 SOUTH, 12 miles EAST of FREDERICK
8. Proof of Publication
Received 5-15-78
Not Received _____
9. Application
Approved _____
Subject to _____
Not Approved _____
Action Deferred _____
10. Remarks:

No. 4258-3Map No. 3477-3 Water Division No. 3 JAMES RIVER District _____
(Blanks to be Filled by the Engineer for the W. R. C.)

APPLICATION FOR PERMIT

To Appropriately Water within the State of South Dakota

(If "E" Draw a line through items not applicable)

1. Name of Applicant U.S. Fish and Wildlife Service
Postoffice address P.O. Box 25486, Denver Federal Center, State Denver, Colorado
If a corporation show date and place of incorporation _____
2. Method of accomplishing work (contract, employment of others, or by direct labor) Contract
3. Name of diversion work Dry Run Water Control Structure
Annual fill (90 ac.-ft) plus evaporation (120 ac.-ft)
4. Amount of water claimed (cubic feet per second) Total 210 acre-feet annually
5. Source of water supply Dry Run (runoff water)
6. Location or point of diversion N 34° 30' W 1496' from the SE corner of section 14, T. 127 N., R. 62 W.
County Brown
7. Annual period or periods during which water is to be used Year around
8. Use to be made of water. (irrigation, industrial, municipal, commercial, recreation, etc.) Waterfowl production & maintenance
9. For irrigation use. Total number of acres to be irrigated _____
List below each forty acre subdivision, or lot, or fraction thereof and show number of acres to be irrigated in each.

Land Description	No. Acres Irr.	Land Description	No. Acres Irr.

Attach sheet if more space is needed

10. Time required to complete construction of water supply system 5 years. Additional time required to complete application of water to the proposed beneficial use 4 years.
11. Choice of newspaper for Notice of Intent to Appropriately Water publication Aberdeen American News
12. Principal Features of the Proposed Water Supply System.

A. Works proposed to divert water from its natural source.

Farther Dike with C.M.F. outlet structure

B. Works proposed to transport water to place of use.

Shallow impoundment

C. Works proposed to apply water to beneficial use.

Shallow impoundmentEstimated Total Cost \$ 66,000.00Attachment: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map.
(See instructions concerning preparation.)STATE OF Colorado)
SOUTH DAKOTA) ss.County of Aberdeen)I, Danby M. Regan the applicant, certify that I have read the foregoing application and have examined the attached map and that the matters therein stated are true and that I intend, and am able to complete the necessary construction.Signed Danby M. ReganSubscribed and sworn to before me this 20 day of March 1978Joseph J. Kitcher
Notary Public (or other qualified officer)

My Commission expires Aug. 29, 1981

WATER RIGHT APPLICATION APPROVAL

The Water Rights Commission hereby approves Water Right Application No. 4258-3
U.S. FISH & WILDLIFE SERVICE P.O. Box 25486 - FEDERAL CENTER
 (Applicant) (Post Office Address)
DENVER, Colo. 80225 With the following modifications:
 (State)

Date of first receipt of application MARCH 24, 19 78
 Date of return to applicant for correction, amendments or changes required _____, 19 ____
 Date of receipt of corrected application _____, 19 ____
 Approved MAY 25, 19 78, Recorded in Book 20 Page 10

WATER RIGHT PERMIT NO. 4258-3

The Water Rights Commission hereby grants and issues this Water Right Permit No. 4258-3 authorizing the construction of the water use system and the putting of water to beneficial use as stated in the Application and as modified in the Water Right Application approval, subject, however, to the following limitations and conditions:

1. The date from which applicant may claim right is MARCH 24, 19 78
2. The equivalent of at least one-fifth of the work above specified is to be completed on or before NOVEMBER 25, 19 80
3. The whole of said work is to be completed on or before MAY 25, 19 83
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is MAY 25, 19 87
5. The water appropriated shall be used for the purpose of WATERFOWL PRODUCTION
6. The prior right of all persons who, by compliance with the laws of the State of South Dakota, have acquired a right to the use of water must not be injuriously affected by this appropriation.
7. The amount of the appropriation herein granted shall not exceed 210 AC. FT. ANNUALLY ~~cubic feet per second~~ neither shall it exceed the capacity of the above described water supply system, nor shall it exceed the amount of water needed for ~~beneficial use~~ USED FOR WATERFOWL PRODUCTION ~~and if for the irrigation purpose, said appropriation must be limited to not more than 3 acre feet per acre per year and be limited to not more than one-seventieth (1/70) of one cubic foot of water per second of time for each acre of land to which water is actually and beneficially applied for irrigation~~ on or before MAY 25, 19 87; said water to be used during the following described annual period: CONTINUOUSLY

Witness my hand this 30th day of MAY, 19 78

WATER RIGHTS COMMISSION

By:

John Hatch
 Chief Engineer, Executive Officer

Certificate of Construction Issued FEBRUARY 23, 19 82

Water License Issued FEBRUARY 23, 19 82

12. Principal Features of the Proposed Water Supply System (continued.)

D. Well Information or Estimates

(1) Drill Hole, Diameter _____, Depth _____

(2) Casing, Type _____ Diameter _____ Thickness _____
(wood, concrete, steel, etc)

(3) Perforated Screen.

Type _____, Diameter _____, Length _____

(4) Gravel Pack, Thickness _____, Length of gravel pack _____

E. Dugout Information or Estimates.

(1) Surface dimensions _____ Depth _____

F. Fill out for Either a Well or a Dugout.

(1) Water Bearing Materials. (Please attach a copy to test well log if available.)

Character of Water bearing materials _____

Depth to top of water bearing material _____

Depth to bottom of water bearing material _____

Thickness of water bearing material _____

Depth to water (ground surface to water level) _____

(2) Distance to nearest existing household or livestock watering wells.

On same owner's property _____ rds. On property owned by others _____ rds.

G. Water Storage Dams.

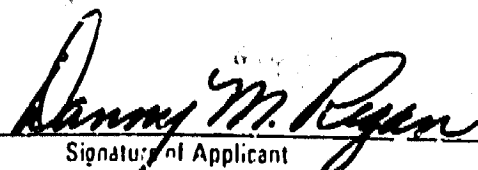
If the proposed water use system contains one or more water storage dams, please show in the space below, the height, maximum water depth, surface area and storage capacity of each storage dam. The location of each water storage dam should be shown on the water right map.

Height of dam - $6\frac{1}{2}$ feet

Maximum water depth - $4\frac{1}{2}$ feet

Surface area - 41 acres

Storage capacity - 90 acre-feet


Signature of Applicant
Acting Regional Director

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 4258-3.

(1) WHEREAS, On the 24th day of March A. D. 19 78
the U.S. Fish and Wildlife Service

made Water Right Application No. 4258-3 for a permit to use 210 acre feet/annually ~~xxxxxx~~ of the waters
of a Dry Draw

County of Brown, State of South Dakota, for Waterfowl Production
purposes, and

(2) WHEREAS, On the 30th day of May A. D. 19 78
Permit No. 4258-3, with a date of priority of March 24, 1978

was issued to said applicant _____ for the diversion of said water, and provided for the completion of construction of the water
supply system therein described on or before the 25th day of May A. D. 19 83 and for the
application to beneficial use of said water on or before the 25th day of May A. D. 19 87

and:

(3) WHEREAS, It is hereby certified that the applicant has complied with the provisions of the laws of the State of South Dakota
relating to completion of the construction of the water supply system and is entitled to divert 210 acre feet/annually ~~xxxxxx~~
~~xxxxxx~~ of water for beneficial use and,

(4) WHEREAS, It is hereby certified that the applicant has complied with the provisions of the laws of the State of South Dakota
relating to the application of water to beneficial use of the following extent,
water is stored in place, and regulated to provide maximum conditions for
waterfowl production purposes.

(5) NOW, THEREFORE, By the virtue of the authority vested in us by the laws of the State of South Dakota, We hereby grant and confirm to the U.S. Fish & Wildlife Service

_____ of Denver, Colorado

the holder _____ and owner _____ of said permit No. 4258-3 a water right, dating from March 24, 1978

_____ to use of 210 acre feet annually ~~XXXXXXXXXXXXXXXXXXXX~~ of the waters

of a Dry Draw

in the County of Brown and State of South Dakota, or so much thereof as may be necessary for the

purposes hereinbelow mentioned, to be diverted at a point N 34° 30'W, 1496 Feet from the SE corner

Section 14, T-127N, R-62W

and ~~XXXXXXXXXXXXXXXXXXXX~~ stored in place

~~conducted to and upon~~

for the purpose of waterfowl production

Subject to any limitations listed in Water Right Permit No. 4258-3 and subject to the laws of the State of South Dakota.

WITNESS, My hand and seal of our office at Pierre, South Dakota
this 23rd day of February A. D.
Nineteen Hundred and Eighty-Two

WATER MANAGEMENT BOARD

By: John Hatch
Chief Engineer, Executive Officer **JOHN HATCH**

Permit No. 4258-3

Water Diversion No. 3 James River Water District

CERTIFICATE OF CONSTRUCTION

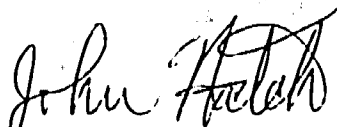
This is to Certify, That The U. S. Fish and Wildlife Service

_____ the holder _____ of
Permit No. 4258-3, issued upon Application No. 4258-3, bearing date of priority of March 24
1978 authorizing the diversion of 210 acre feet annually the waters of _____
a dry draw County of Brown, State of South Dakota at _____
a point N 34° 30' W, 1496 feet from the SE corner, Section 14, T-12N, R-62W

_____, for waterfowl production

purposes, has complied with the provisions of the laws of the State of South Dakota relating to proof of
completion of the works of diversion set out and described in said Permit; that said works are found in satisfactory
condition for diverting and conveying to the place of intended use 210/ acre feet annually of water.

Date February 23, 1982



JOHN HATCH, Chief Engineer
Water Rights Division

Publish first publication, on or before May 5, 1978

NOTICE OF HEARING ON
APPLICATION TO APPROPRIATE WATER

Pierre, South Dakota 57501

April 24, 1978

Notice is hereby given that U.S. Fish & Wildlife Service whose post office address is Denver, Colorado ~~XXXXXXXXXXXX~~ has made an application in accordance with the provisions of SDCL 46-1-1 thru 46-1-8; 46-2-9 thru 46-2-11, 46-2-13; 46-5-1 thru 46-5-8, 46-5-10 thru 46-5-22, 46-5-41, and Commission Rules ARSD 52:01:01:01 thru 52:01:01:13, for a permit to appropriate for beneficial use 210 ac ft ~~XXXXXXXXXX~~ of water annually ~~XXXXXXXXXXXX~~ from the runoff water from Dry Run through the Dry Run Water Control Structure, the point of diversion of which is to be located in the E 1/4 SE 1/4

of Section 14, Twp. 127N Range 62W. Said water to be used for the purpose of providing ~~XX~~ water for Wildlife Propagation and domestic use.

This Application No. 4258-3 will be considered by the Water Rights Commission at Pierre, South Dakota upon the 25th day of May, 1978, at 10 a.M. The Commission is authorized to make a determination on this application at the hearing. All interested persons may appear and be heard. Any person who may be affected by a Commission decision who desires to present evidence or cross-examine witnesses according to SDCL 1-26 may notify the Commission in writing prior to the hearing or orally at the hearing.

NOTE: The final proof of publication WATER RIGHTS COMMISSION
must be received before the hearing
date for the Commission to take action.

Betty Westland
Water Rights Specialist

cc: U.S. Fish & Wildlife Service, P. O. Box 25486-Denver Federal Center
Denver, CO. 80225

Form 3 - Proof of Publication - Notice of
Intent to Appropriate Water

No. 4258-3

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Brown) ss.

I, Sandy Brand hereby

certify that the annexed printed copy of Notice of Intent to Appropriate
Water was taken from the Aberdeen American News

A newspaper which during the whole time of publication of said notice
herein after stated, has been and is printed and published in the _____

city Aberdeen of _____

County of Brown and State of South Dakota;
that the said notice was published in said newspaper on the following
two dates:

May 5, 12, 1978

Sandy Brand
(Signature)

Principal Clerk
(Title)

May 12, 1978
(Date Signed)

(No. 341—May 5-12-21)
NOTICE OF HEARING
ON APPLICATION TO
APPROPRIATE WATER
Notice is hereby given that U.S.
Fish & Wildlife Service whose post
office address is Denver, Colorado
has made an application in ac-
cordance with the provisions of
SDCL 44-1-1 thru 44-1-8; 44-2-1 thru
44-2-11; 44-2-83; 44-3-1 thru 44-3-8; 44-
3-10 thru 44-3-22; 44-3-41, and Com-
mission Rules ARSD 52:01:01:01
thru 52:01:01:12, for a permit to
appropriate for beneficial use 210 ac-
res annually of water from runoff
water from Dry Run through the Dry
Run Water Control Structure, the
point of diversion of which is to be
located in the E1/4 SE1/4 of Section 14,
Twp. 127N Range 62W. Said water
to be used for the purpose of
providing water for Wildlife
Propaganda and domestic use.
This Application No. 4258-3 will be
considered by the Water Rights
Commission at Pierre, South Dakota
upon the 25th day of May, 1978, at 10
a.m. The Commission is authorized
to make a determination on this
application at the hearing. All in-
terested persons may appear and be
heard. Any person who may be af-
fected by a Commission decision
who desires to present evidence or
cross-examine witnesses according
to SDCL 1-24 may notify the Com-
mission in writing prior to the
hearing or orally at the hearing.
- WATER RIGHTS COMMISSION
Betty Westlund
Water Rights Specialist





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

MROED-HC

19 June 1979

Regional Director
Upper Missouri Region
Bureau of Reclamation
P. O. Box 2553
Billings, Montana 59103

Dear Sir:

This confirms the oral instructions (Reservoir Regulation Order CDBR J79-3) given to Tim Felchle of your Bismarck office by Richard Behrens of our Reservoir Regulation Section on 15 and 18 June 1979 regarding the regulation of releases from the flood control zone at Jamestown Reservoir. This is in compliance with our Field Working Agreement and the Flood Control Regulations published in the Federal Register. Flood control releases were scheduled as follows.

a. At 1200 hours CDT on 19 June 1979 decrease the release rate from 350 c.f.s. to 150 c.f.s.

b. At 1700 hours CDT on 19 June 1979 decrease the release rate from 150 c.f.s. to 50 c.f.s.

c. At 1700 hours CDT on 21 June 1979 increase the release rate from 50 c.f.s. to 200 c.f.s.

This temporary reduction in release rate is made to permit contractors, farmers and people in the local Jamestown Area to do construction work and make repairs to their river road crossings. This reduction in releases from Jamestown Reservoir when combined with a simultaneous temporary reduction in releases from Pipestem Reservoir will result in a decrease in the total release rate of from 450 c.f.s. to 100 c.f.s. On 21 June, the total combined release rate will be raised to 300 c.f.s. and kept at this minimum level for about four weeks in an attempt to allow some of the water inundating the lake plain area between Columbia and Ashton, South Dakota to drain back into the James River this year. This attempt is made to alleviate the 1970-type spring inundation to this area which was carried over through the winter, from the 1969 flood.

MROED-HC
Regional Director

19 June 1979

The Sand Lake Refuge Manager has indicated that the water in Sand Lake Refuge has now lowered to a level that will permit the refuge to lower their gates and releases whereby they now can and will coordinate and assist with this type operation. The long travel time to this area and the high evaporation during July and August are also considered in this attempt.

This operation was planned following an informal request for relief measures from Raymond Braun, President of the James River Flood Control Association in South Dakota, on 14 June 1979.

Sincerely,

R. G. BURNETT
Chief, Engineering Division

Copy furnished:

Proj Mgr, Bismarck, ND
USBR Mgr, Huron, SD
ND State Water Comm, Bismarck, ND
SD Water Res Comm, Pierre, SD
Pipestem Res Cfc, Jamestown ND
Stutsman County Commission
Oahe Conservancy Sub-District
James River Flood Control
Arrowwood Natl Wildlife Refuge
Refuge Mgr, Sand Lake Refuge, Columbia, SD



Permit No. 4258-3Water Division 3 James River Water District

REPORT OF EXAMINATION OF WORKS AND/OR APPLICATION OF WATER TO BENEFICIAL USE

TO: WATER RIGHTS, WATER MANAGEMENT BOARD / FOSS BLDG., PIERRE, SOUTH DAKOTA 57501

I have this day made a thorough examination of the water use system constructed by the U.S. Fish and Wildlife Service of Denver, Colorado holder of Permit No. 4258-3, bearing date of priority of March 24, 1979 authorizing the diversion of 210 acre-feet annually ~~XXXXXX~~ of the waters of Dry Run (runoff water) for waterfowl production purposes, in Brown County.

I have to report on the condition of the same as follows:

The Water Use System consists of, the Dry Run Water Control Structure.

A. Works, ted to divert the water: Compacted earthen dam 800 feet long with 14-foot wide top and 5 to 1 slopes on both sides.
Two 72-inch by 44-inch arch CMP's pass water through dam.
Water level is controlled by two stop log gates, each 5-foot by 6.7-foot in size.

B. Works used to transport water to place of use, See Section A.

C. Works used to apply water to beneficial use.

The storage area consists of 41 acres having a capacity of 90 acre-feet.

The system is in the following condition, Excellent.

The point of diversion is located N. 34° 30' W. 1496' from the SE corner of Section 14.
T. 127 N., R. 62 W.

The works are capable of diverting and conveying to the place of use 210 acre-feet annually~~acre-feet annually~~ of water which is to be used for waterfowl production

Water has been put to beneficial use to the maximum extent as follows: The structure was constructed during the fall of 1978, and water has been used to the extent of 210 acre-feet annually since construction was completed.

comprising a total of _____ acres of land.

Date February 18 1982

Donald Driscoll
(Signature)

Donald Driscoll P.E.
License No. 1649

RECEIPT

WATER RIGHTS COMMISSION

State of South Dakota

N^o 4 8732

PIERRE, February 23

82

RECEIVED OF Donald Driscoll U.S. Fish & Wildlife Service, Pierre, SD 57501
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit to Appropriate Water No. _____ (examination, processing, recording and filing) _____		
Fee for inspecting Construction, and issuing Cert. of Construction No. 4258-3	2	50
Fee for inspecting Federal Use, and issuing Water License No. 4258-3	2	50
Fee for issuing Location Certificate-Dry Draw, No. _____		
Fee for filling _____		
Fee for certified copy of _____		
Fee for Print copy of map _____		
Fee for Certifying _____		
Fee for _____ (any other work as provided by law)		
TOTAL	5	00

WATER RIGHTS COMMISSION

By *John Hatch*
Chief Engineer, Executive Officer
JOHN HATCH/ES

SEND RECEIPTS & LICENCES
TO

DONALD DRISCOLL HYDROLOGIST
PIERRE AREA OFFICE
U.S. FISH & WILDLIFE SERVICE
FEDERAL BUILDING
PIERRE, SD 57501

4258-3

DESIGN SUMMARY
March 20, 1989

PROJECT: Dry Run Sub-Impoundment
Sand Lake National Wildlife Refuge

LOCATION: Section 14, T127N, R62W
Brown County, South Dakota

MARSH DATA: Full Service Level (FSL) @ 1291.0
35.3 Surface Acres @ FSL
63.0 AC-FT Capacity @ FSL

PROJECT DESCRIPTION:

The project involves removing and salvaging two existing arch pipe/half round structures from an existing embankment. A new steel sheet pile weir with a 70' crest at elevation 1291.0 will replace the half rounds/arch pipes. Also, the top of the existing embankment will be repaired where a spillway was excavated a few years back. An emergency spillway will be constructed south of the existing embankment.

HAZARD CLASSIFICATION:

The existing embankment is located on Sand Lake Refuge. Dry Run Sub-Impoundment will continue to discharge directly into Mud Lake Reservoir. No roads or farms are located downstream. Therefore, it is our opinion that the dam as it currently exists would be classified as low hazard.

HYDROLOGY/HYDRAULICS:

The watershed consists of approximately 90 square miles along a 20 mile drainage channel with a road crossing nearly every mile. One of the road crossings with an elevated 48" x 72" arch pipe creates a 35-40 acre impoundment known as Engle Dam. The lay of the land produces a substantial amount of ponding throughout the watershed. Flows were routed through Engle Dam and Dry Run Sub-Impoundment. A reduction for ponding was incorporated into the analysis. Following is a summary of the data:

Peak Inflows to Dry Run Sub-Impoundment:

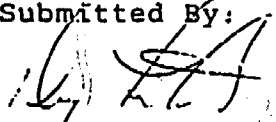
$Q_{10} = 661 \text{ CFS}$
 $Q_{50} = 1231 \text{ CFS}$

Proposed Structure: Steel Sheet Pile Weir w/70' Crest @ El. 1291.0.

Peak Discharges:

<u>Event</u>	<u>Peak Discharge</u>	<u>Max. Water Surface Elevation in Marsh</u>
10 YR.	654 CFS	1293.00
50 YR.	1220 CFS	1294.02

Submitted By:


Doug Lipetzky, P.E.
Regional Engineer

FILE DOCUMENTATION

File No. 4258-3

NAME: John Koerner, US Fish and Wildlife Refuge

ADDRESS: Sand Lake Wildlife Refuge PHONE: 885-6320

RE: Status of Water Right No. 4258-3 and proposed storage capacity increase

John Koerner called concerning a proposed project to be completed in cooperation with Ducks Unlimited. The proposed project is to modify an existing storage structure covered by Water Right No. 4258-3 to fix a severe leakage problem and impound an additional foot of water. The structure was constructed in 1978 and used throughout the ensuing years until a leakage problem developed in 1986. Since then the structure has not been capable of impounding water for long periods. Several times efforts were initiated to repair the structure but Ducks Unlimited refused to begin the work. Work was delayed because DU wanted to raise the level which would flood an upstream property owner who would not grant an easement due to a dispute over deer herd management. This easement situation has now been addressed and DU wants to proceed with the project.

I consulted with John Hatch concerning the status of Water Right No. 4258-3. Since the structure has not been physically breached, no forfeiture or abandonment should have occurred. The proposed increase in storage capacity will need to be permitted even though the existing water license specifies more water than the proposed increase. The difference between the existing storage capacity and the capacity identified on the Form 2A has been forfeited due to nonuse. The methodology used to determine the amount of water needed in excess of the actual storage capacity will also be revisited during processing of the new application.

I also informed Mr. Koerner that plans and specs would need to be approved as required by the Safety of Dams rules.

 1/5/94
Ron Duval, Natural Resources Engineer



DUCKS
UNLIMITED
INC.

DUCKS UNLIMITED, INC.
GREAT PLAINS REGIONAL OFFICE

3502 Franklin Avenue
Bismarck, North Dakota 58501-9329
(701) 258-5599

January 6, 1994



Ron Duvall
SD Dept. of Water & Natural Resources
Division of Water Rights
Joe Foss Building
523 East Capitol Avenue
Pierre, SD 57501

RE: Dry Run Sub-Impoundment Project
Sand Lake National Wildlife Refuge

Dear Ron:

Per your request, enclosed a copy of the plans and specifications for the above-referenced project. A copy of my Design Summary for the project is enclosed as well.

In reference to risk assessment for the dam, there would appear to be no danger to the public in the unlikely event of a dam failure. The structure is located on U.S. Fish & Wildlife Service land and the outlet channel discharges directly into Mud Lake Reservoir. No roads or farms are located between the project site and Mud Lake Reservoir. In addition, the quantity of water stored behind the proposed dam (63 acre-feet) as compared to the quantity in Mud Lake Reservoir is minimal. Therefore, the risks to the public due to this project would appear non-existent.

If you have any questions or need additional information, please contact me at (701) 258-5599. Thank you.

Sincerely,

Doug Lipetzky, P.E.
Regional Engineer

cc: John Koerner, Sand Lake NWR



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Mountain-Prairie Region

IN REPLY REFER TO:

BA EN
NR SC
Mail Stop 60190

MAILING ADDRESS:

Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:

134 Union Blvd.
Lakewood, Colorado 80228



FEB 03 1994

Mr. John Hatch
Department of Environment
and Natural Resources
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

Dear Mr. Hatch:

The U.S. Fish and Wildlife Service (Service) holds Water License No. 4258-3, priority date March 24, 1978, for the Dry Run Sub-Impoundment at the Sand Lake National Wildlife Refuge. Because there have been seepage problems associated with this structure, the Service enlisted the assistance of Ducks Unlimited (DU) to provide construction rehabilitation designs (a copy of which was previously submitted to Mr. Ron Duvall of your office) and oversee the construction that is scheduled for completion this year.

The dam was originally constructed in 1978. In 1986 the structure washed out and was subsequently repaired. In 1987 the pool filled and a seepage problem was discovered. Dry climatic conditions prevented filling in 1988. Preparation for repair occurred in 1989-1990, but wet conditions in 1991-1992 prevented repair work.

We thoroughly reviewed and compared both the original and DU's plans to determine if an additional water permit was required and although there seems to be some discrepancy in the original seasonal use calculations, we are confident that this construction will not impound any additional water over the original dam specifications or what was previously described and covered under Water License No. 4258-3.

The original plans list the top of dam at 1294.2 feet msl, with the spillway elevation at 1293.93 feet msl, for a pool inundating 41 surface acres with a capacity of 90 acre-feet. The water management level was 1-1/2 feet lower at 1292.4 feet msl.

The new plans raise the top of the dam by 1-1/2 feet to elevation 1295.8 feet msl with an emergency spillway at 1294.0 feet msl, but the primary spillway will be lowered to 1291.0 feet msl, thereby reducing both the capacity of the impoundment and the surface area inundated.

Mr. John Hatch

2

We, therefore, request that you amend Water License No. 4258-3 to reflect the correct data as follows:

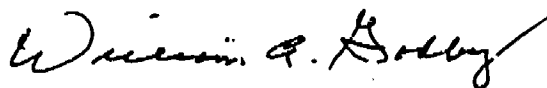
Surface Acres:	35.3 instead of 41
Depth:	3 feet instead of 4-1/2 feet
AF Capacity:	63 instead of 90
AF Seasonal:	<u>36</u> * instead of 120
AF TOTAL:	99 instead of 210

* Seasonal Use calculated as $12.3'' + 12 = 1.03' \times 35.3 \text{ acres} = 36.36 \text{ AF}$

Also, easements have been acquired for flooding of any private land and can be provided upon request.

If you have any questions or require further information, please contact Ginger Chesy of our Engineering Division, Water Rights Branch at (303) 236-5321.

Sincerely,



William A. Godby
Regional Engineer



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

February 16, 1994

Doug Lipetzky, P.E.
Regional Engineer
Ducks Unlimited, Inc.
3502 Franklin Avenue
Bismarck, ND 58501-9329

Dear Mr. Lipetzky:

We have reviewed the plans and specifications for the Sand Lake National Wildlife Refuge Dry Run Sub-Impoundment project, in Brown County. The plans and specifications as submitted are approved.

Our review was to determine compliance with the Water Management Board Safety of Dams Rules, Chapter 74:02:08. Approval of these plans and specifications does not release the US Fish and Wildlife Service, as owner of the structure, from the responsibility for operating and maintaining the dam in good repair.

The Dry Run Sub-Impoundment dam will be classified as a Category 3, Low Hazard dam with an embankment height of approximately 10 feet, a normal storage capacity of 63 acre-feet and a maximum storage capacity of 260 acre-feet.

If you have any questions on this matter, please let us know.

Sincerely,

Gale N. Selken, P.E.
Natural Resources Engineer IV
for John Hatch, Chief Engineer
Water Rights Division
(605) 773-3352

cc: John Koerner, Sand Lake NWR

Dry Run Sub-Impondment
Brown County
Ducks Unlimited and USFWS

Old Dam - Top of Dam - 1294.2
Spillway - 1293.93
H2O level - 1292.4

Emb. Ht. = 10 Ft.
Normal Cap. = 63 Ac.-Ft.
Max. Cap. = 260 Ac.-Ft.

New Dam - Top of Dam - 1295.7

E. Spillway - 1294 - 57 Surf Ac. - 200 Ac.-Ft.
P. Spillway - 1291 - 35 Surf Ac. - 63 Ac.-Ft.
Emb. Top - 1286

Cat. 3 Dam - Eff. Ht. x Inlt. Storage = 8' x 200 = 1600 < 3000 $\therefore$ 25 year
Min. Spillway Design

Peak Inflow

DA = 90 mi.² Q_{10} Peak = 661 cfs
Flat Topo. Q_{50} Peak = 1231 cfs

Spillway Flow

70' wide Steel Sheet Pile Weir

$Q = CLH^{3/2}$ C varies w/ H use C = 2.0

$Q = 3(70)(4.7)^{3/2}$

$Q = 2140$ cfs

50' wide Emergency Spillway

$Q = CLH^{3/2}$ use C = 2.6

$Q = 2.6(50)(1.7)^{3/2}$

$Q = 270$ cfs

Total Q = 2430 cfs

Duck Unlimited Routes Q_{10} = 661 cfs Peak Inflow and get 654 cfs Peak Outflow
with 1293 Max. H2O Elev. And Q_{50} = 1231 cfs Peak Inflow get 1220 cfs
Peak Outflow with 1294 Max. H2O Elev.

Section 74:02:08:09

1. - Topo. Map - OK
2. - Dam Axis - OK
3. - Max. X-Section - OK
4. - Area-Cap. Curve - OK
5. - Outlet Conduits - N/A - OK
6. - Discharge Cap - Routing - OK
7. - Spillway-Details - OK
8. - Specs - OK standard DU
9. - EPP - N/A - OK



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

FEB 27 1998

William A Godby
US Fish & Wildlife Service
PO Box 25486
Denver Federal Center
Denver CO 80225

Dear Mr. Godby:

Enclosed is reissued Water License No. 4258-3 for Dry Run Sub-Impoundment located in Brown County, South Dakota. The US Fish & Wildlife Service advised in a February 3, 1994 letter that the Dry Run Sub-Impoundment was being repaired to minimize seepage losses associated with the structure. During the repair, the storage capacity was to be reduced from 90 acre feet to 63 acre feet. The license has been reissued to reduce the authorized storage capacity and to clarify the license as issued February 23, 1982.

As long as the water is used beneficially, as stated in the Water License, State Water Laws provide that the US Fish & Wildlife Service has a continuing right to use the water.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Program
605 773-3352

ks

enclosure

STATE OF SOUTH DAKOTA

REISSUED WATER LICENSE NO. 4258-3

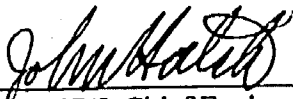
(1) The US Fish & Wildlife Service, PO Box 25486, Denver Federal Center, Denver, CO 80225 was issued Water License No. 4258-3, on February 23, 1982. The water license authorized storage of 210 acre feet of water annually (90 acre-feet annual fill with an additional fill of up to 120 acre feet due to evaporation losses). Water License No. 4258-3 with a priority date of March 24, 1978, authorizes storage of water in Dry Run Sub-Impoundment, Brown County, South Dakota, for waterfowl production purposes. No. 4258-3 was issued to the permit holder for storage of water with construction of the described water system completed and the application to beneficial use of said water completed.

The US Fish & Wildlife Service advised in a February 3, 1994 letter that the Dry Run Sub-Impoundment was being repaired to minimize seepage losses associated with the structure. During the repair, the storage capacity was to be reduced from 90 acre feet to 63 acre feet. The license is being reissued to reduce the authorized storage capacity and to clarify the license as issued February 23, 1982.

(2) It is certified that the water right holder has complied with the provisions of South Dakota State Law relating to completion of the construction of this sub-impoundment with a storage capacity of 63 acre feet for beneficial use, and sufficient water annually to maintain the water level at outlet elevation 1291.0 feet mean sea level (fmsl). The location of the diversion point (spillway) is a point N 34° 30'W 1,496 feet from the SE corner of Section 14, T127N, R62W.

(3) The water right holder complied with the provisions of South Dakota State Law relating to the application of water to beneficial use.

(4) Pursuant to South Dakota Water Law 46-5-30.1 the US Fish & Wildlife Service, PO Box 254486, Denver Federal Center, Denver, CO 80225 the holder and/or owner of Water Permit No. 4258-3 is issued a license to appropriate water, the right to store sufficient water annually to maintain the water level of the lake at the outlet elevation of 1291.0 fmsl with a priority date of March 24, 1978 from the location specified in (2) of this license. The water is impounded for waterfowl production purposes. This license is subject to any limitations or qualifications listed in Water Permit No. 4258-3 and subject to South Dakota State Law.



JOHN HATCH, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

FEB 27 1998

date



NE 1/4



PROPOSED
DRY RUN
WATER CONTROL STRUCTURE

LAND OWNERSHIP

ALL IN SECTION 14, T127N, R62W

U.S. FISH AND WILDLIFE SERVICE

SE 1/4 & E1/2E1/2SW1/4

SAND LAKE LODGE INC.

NE 1/4

CENTER OF
SECTION

SE 1/4

E1/2E1/2SW1/4

DRY RUN

HIGH WATER MARK

SURFACE AREA = 41 ACRES
CAPACITY = 90 ACRE-FEET

N34°30'W 1496'

SE CORNER
OF SECTION

U.S. FISH AND WILDLIFE SERVICE

MARCH 1978

SCALE 1" = 440'

MAP PREPARED BY DONALD DRISCOLL
HYDROLOGIST (ENV), PIERRE AREA OFFICE

~~MAP No. 3477-3~~

APPL. # 4258-3