

No. 946-3Water Division No. 3 WHEATSTONE CREEK District
(Blanks to be Filled by the Engineer for the W. R. C.)

DEC 19 11 30 am

VESTED RIGHT STATE WATER RESOURCES COM. S. D. 1930

APPLICATION FOR PERMIT

To Appropriate Water within the State of South Dakota

(NOTE—Draw a line through items not applicable.)

1. Name of applicant South Dakota Department of Game, Fish and Parks
Postoffice address Pierre, County Hughes, State South Dakota

- I. If a corporation _____
(a) Name of same _____
(b) Date and place of incorporation _____
(c) Amount of capital stock _____
(d) Amount paid in _____
(e) Names and addresses of directors _____

(NOTE—A certified copy of articles of incorporation must accompany the application.)

- II. Method of accomplishing the work and financial resources of the applicant:
(a) Method of accomplishing work (Whether by contract, employment of others, or by direct labor) _____
(b) Cash on hand, \$ _____ (c) Treasury stock, \$ _____
(d) Bonds to be issued, \$ _____ (e) Other resources, \$ _____

2. Name of diversion work BUFFALO LAKE - Marshall County
As required to fill lake to outlet level - approximately 2640
3. Amount of water claimed acres feet per year cubic feet per second _____
4. Source of water supply DRY DRAW
Three points in the watershed located in the SE 1/4 SW 1/4 Sec. 2;
5. Location of point of diversion NE 1/4 NW 1/4 S. NW 1/4 NE 1/4 Sec. 14, T. 125, R. 53
_____ on _____ bank _____ County.
6. Annual period or periods during which water is to be used all year round

7. To be used for:

- I. Irrigation or domestic use: Gravity, overhead sprinkling or combination system? _____
(a) Number of acres to be irrigated _____ acres.

- (b) Legal subdivisions to be irrigated _____

(NOTE—A list of lands to be irrigated, giving each subdivision and fraction with acreage thereof, should be written here, or may be appended as a part of this application. Same must also be shown on accompanying map.)

- (c) Statement as to domestic use (giving location, etc.) To the ordinary high water mark of
the inundated portions of Sec. 2, 3, 10, 11, 15, 16, 17, 20, 21, T. 125, R. 53

II. Stockwatering, mining, milling, power, fish culture, fire protection and public recreation:

- (a) Nature of use public recreational purposes
Name any of the above uses claimed
(b) Amount of power to be generated _____ horse power.
Amount claimed for engine cooling _____
(c) Location of plant _____
(d) Method of developing power _____
(e) Point where water will be returned to stream _____

8. Estimated cost of work:

(a) Head Gates, \$..... (b) Pumping plant, \$.....
 (c) Fluming, \$..... (d) Canal-earth, \$..... Rock, \$.....
 (e) Other structures \$..... Total, \$.....

9. Description of diversion works:

I. Nature of works: (Reservoir, dam, ditch, flume, pumping plant, etc.)

II. Dimensions of works. Information requested not applicable. Buffalo Lake is a
 meandered lake. Maximum depth is approximately 20 feet

(a) Dam: Height.....feet; length at bottom.....feet; length at top.....
feet; thickness at bottom.....feet; thickness at top.....
 feet; slope at front water face.....; slope at back face.....
 material used in construction.....

(b) Reservoir: Capacity when filled.....acre feet. Surface area at highwater
 mark.....880.....acres.

DEPTH AT OUTLET-Feet	SURFACE AREA AT EACH DEPTH AT OUTLET—ACRES	FEET	ACRE-Feet CAPACITY

(c)* Head gate: Width.....feet; height.....feet;
 Material.....

(d) Canal: Total length.....miles.

LOCATION BELOW HEADGATE	DEPTH	BOTTOM WIDTH	WIDTH AT WATER-LINE	GRADE PER MILE
At.....Mile	feet	feet	feet	feet
At.....Mile	feet	feet	feet	feet
At.....Mile	feet	feet	feet	feet
At.....Mile	feet	feet	feet	feet
At.....Mile	feet	feet	feet	feet
At.....Mile	feet	feet	feet	feet

(Give dimensions where reductions in size are made.)

10. Time required for completion of work.....years. Not applicable - a meandered lake

11. Time required for complete application of water to the proposed beneficial use.....years.

12. Choice of newspaper for publication of notice of intention to appropriate.....

STATE OF SOUTH DAKOTA

County of.....Hughes.....} ss.

I,.....Walter J. Fillmore....., being first duly sworn
 on my oath depose and say: That my relation to the above described undertaking is that of owner, that I have
 read the above foregoing statement, examined the map accompanying the same, and that I know of my own
 personal knowledge that the matters therein stated and shown are true.

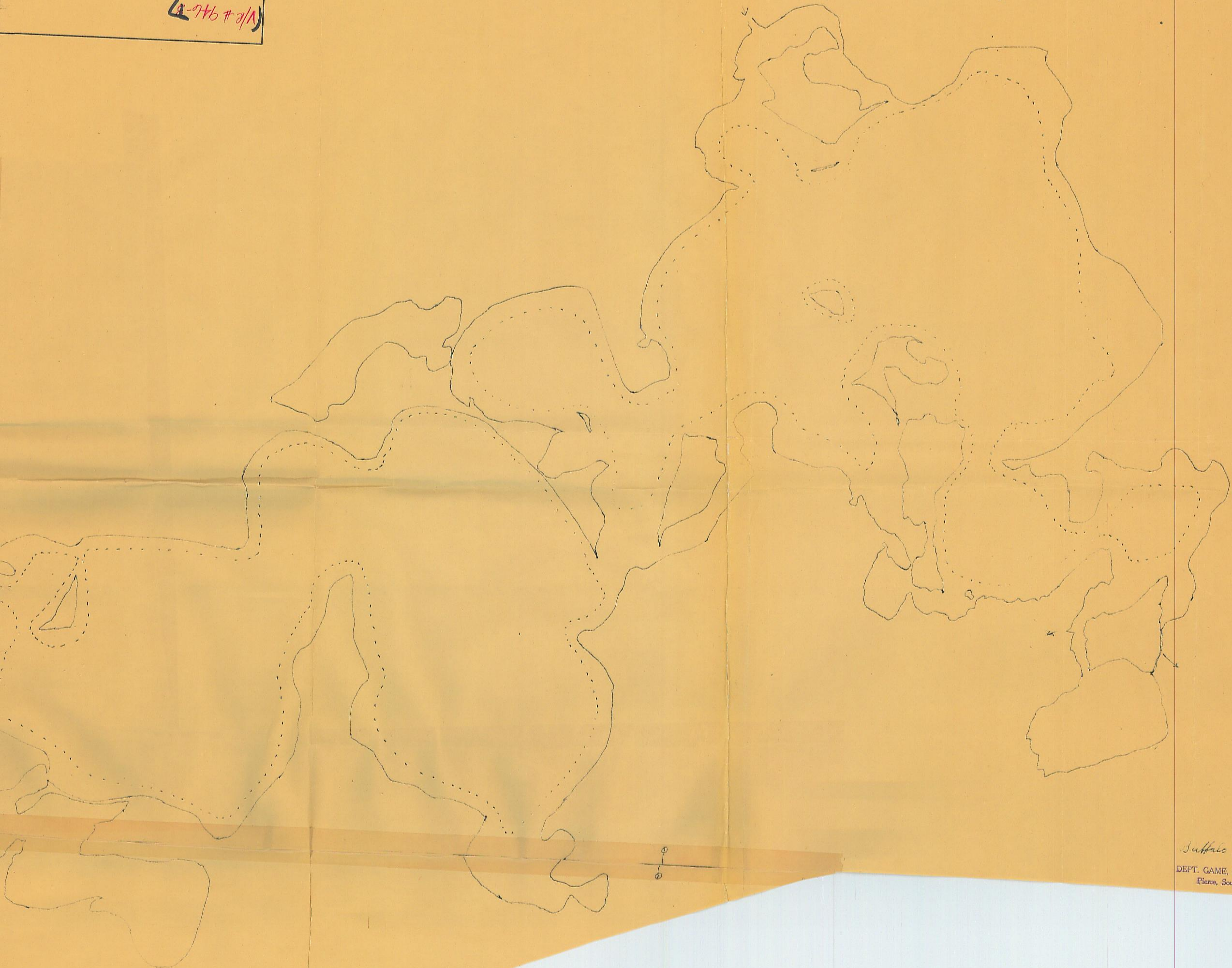
Signed.....

Subscribed and sworn to before me this.....day of.....1961

.....
 Notary Public (or other qualified officer.)

U. S. DEPARTMENT OF AGRICULTURE	
SOIL CONSERVATION SERVICE	
Designed by	Date
Drawn	Title
Traced	Title

(V/e # 946-7)



Buffalo Lake
DEPT. GAME, FISH & PARKS
Pierre, South Dakota

Remarks by State Water Resources Commission:

"VESTED RIGHT" CLAIMED

STATE OF SOUTH DAKOTA

County of HUGHES } ss.

Pierre, South Dakota, JANUARY 28, 1963

This is to certify that the foregoing application was received by the Commission at 11:30 o'clock

a m. upon the 12TH day of DECEMBER, 1961

State Water Resources Commission

By: [Signature]

Chief Engineer, Executive Officer

Number of permit 946-3

Date of first receipt of application DECEMBER 12, 1961

Date of return to applicant for correction, amendments or changes required as follows: _____, 19____

Date of receipt of corrected application _____, 19____

Date from which applicant may claim right 1889, 1961

Approved JANUARY 28, 1963, Recorded in Book 8 Page 34

This is to certify that we have examined the foregoing application for a permit to appropriate water of the State of South Dakota, and we hereby grant the same as stated herein, subject, however, to the following limitations and conditions:

1st. The equivalent of at least one-fifth of the work above specified is ~~to be~~ completed ~~on or before~~ _____, 19____

2nd. The whole of said work is ~~to be~~ completed ~~on or before~~ _____, 19____

3rd. The limit of time for proof of beneficial use of water appropriated in accordance herewith is

COMPLETED, 19____

4th. The water appropriated shall be used for the purpose of PUBLIC RECREATION

5th. 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.

6th. The amount of the appropriation herein granted shall not exceed 2640 acre feet annually ~~one cubic foot per second~~; neither shall it exceed the capacity of the above described system of diversion works, nor the least amount of water that experience may hereafter indicate as necessary for the production of crops in the exercise of the best husbandry; and further, ~~said appropriation must 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~~ used for public recreation ~~was~~

and beneficially ~~applied for irrigation~~ on or before June 30, 1955; said water to be used during the following described annual period:

Continuously

Witness my hand this 28TH day of JANUARY, 1963

State Water Resources Commission

By: [Signature]

Chief Engineer, Executive Officer

Certificate of Construction Issued JANUARY 28, 1963

Water License Issued JANUARY 28, 1963

STATE OF SOUTH DAKOTA

WATER LICENSE No. 946-3

WHEREAS, On the 12th day of December A. D. 1961
the South Dakota Department of Game, Fish and Parks

of Pierre County of Hughes and State of
South Dakota duly made application (No. 946-3 Vested Right
annually 2640 acre feet
of the waters of dry draws
County of Marshall State of South Dakota, for public recreation
purposes; and

WHEREAS, On the 28th day of January A. D. 1963
Vested Right / Permit No. 946-3 was issued to said applicant recognizing
for the diversion of said water, and providing for the
completion of the works of diversion therein described
and for the application to beneficial use of said
water
and,

WHEREAS, On the 12th day of December A. D. 1961
the holder of said permit duly made proof of the completion of adequate works for the diversion of 2640 acre
feet annually
of said waters, as evidenced by our Certificate No. 946-3
dated January 28, 1963 confirming the completion of works of sufficient capacity for
diverting and conveying to the place of intended use 2640 acre feet annually
of water, with date of
priority of 1889 and,

WHEREAS, On the 12th day of December A. D. 1961
proof was duly made of the application to beneficial use of 2640 acre feet annually
of said water;
to be used in place for public recreation

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 South Dakota Department of Game, Fish and Parks

of Pierre the holder and owner of said Vested Right permit No. 946-3
a water right, dating from 1889 to the use of 2640 acre feet
annually

~~of the waters of~~ dry draws
In the County of Marshall and State of South Dakota, or so much thereof as may be

necessary for the purposes hereinbelow mentioned, to be diverted at points in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 2,
in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 14, and in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 14, all in T125N, R53W

and ~~XXXXXX~~ stored in place

for the purpose of public recreation

subject, however, to the laws of the State of South Dakota applicable to a license for the use of the waters of the State, and subject, also to the local or community customs, rules and regulations which have been or may be adopted from time to time by a majority of the users from a common source of supply, canal or lateral from which such water may be taken, when such rules and regulations have for their object the economical use of such water.

WITNESS, My hand and seal of our office at Pierre, South Dakota,
this 28th day of January A. D. Nineteen
Hundred and Sixty-Three

State Water Resources Commission

By:

J. W. GRIMES
Chief Engineer, Executive Officer

STATE OF SOUTH DAKOTA

Water License No. _____

To _____

Source of Supply _____

County _____

Am't _____ c. f. s.

Point of Diversion _____

Place of Use _____

Purpose _____

Date of Priority _____

Recorded _____

in Book _____ of _____ Page _____

Permit No. 946-3Water Division No. 3 Whetstone Creek Water District**Certificate of Completion of Works**

TO ALL WHOM IT MAY CONCERN:

This is to Certify, That the South Dakota Department of Game, Fish and Parks

of Pierre, County of Hughes, and State of South Dakota, the holder of Vested Right of Permit No. 946-3, issued upon Application No. 946-3, bearing date of priority of 1899, authorizing the diversion of 2640 acre feet annually ~~xxxxxx~~ of the waters of dry draws

County of Marshall, State of South Dakota, at points in the SE $\frac{1}{4}$ SW $\frac{1}{4}$, Section 2, in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 14, and in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 14, All. in T125N, R53W, for public recreation

purposes, has ⁵ fully 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 recognized as satisfactory ~~xxxxxx~~ for diverting and conveying to the place intended use 2640 acre feet annually ~~xxxxxx~~ of water; and that the ~~xxxxxx~~ use of said water are described as follows, to-wit: to be used in place for public recreation

Witness my hand this 28th day of January, A. D. 1963

State Water Resources Commission

By: J. H. GRIMS
Chief Engineer, Executive Officer

Location No.

Water Division No. Water District

Proof of Application of Water to Beneficial Use**PETITION OF HOLDER**

Ques. 1. State your name, residence, occupation and postoffice address.

Ans. South Dakota Department of Game, Fish and Parks, Pierre, S. Dak.

Ques. 2. If acting in behalf of a corporation, state its name, principal place of business (if a foreign corporation, give name and postoffice of statutory agent,) your position with reference to same, and your authority for appearing in its behalf.

Ans.

Ques. 3. State date of posting and date of recording notice of appropriation.

Ans.

Ques. 4. State source of water supply and give exact location of point of diversion.

Ans. Three points in the watershed located in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 2; NE $\frac{1}{4}$ NW $\frac{1}{4}$ & NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 14, T 125, R 53

Ques. 5. Describe your works of diversion giving length and height of each dam and state amount of water they are capable of conveying from point of diversion to place of use, and give name of canal or ditch or other works by which water is conducted to such place of use, and date of completion of same.

Ans. A meandered lake - depth 20 feet - 230 acres

Ques. 6. State for what purpose water is used and describe place of use. (If for irrigation, name each subdivision in which used, and number of acres in each subdivision that have ACTUALLY been irrigated with said water.)

Ans. Fish and wildlife propagation, conservation and recreation

Ques. 7. If for other than irrigation purpose, state how applied, amount of horse power generated, etc.

Ans. Used in place in lake or reservoir

Ques. 8. What is the minimum amount of water required for the use specified above?

Ans. As required to fill lake to outlet level - approximately 2640 acre feet per year

Ques. 9. If you are not the person or representative of the corporation to whom above mentioned permit was originally issued, please state how ownership was acquired by present holder.

Ans.

Ques. 10. State when, how, in what amount and to what extent, the water diverted under above mentioned permit has been used.

Ans. A meandered lake. Used by the public for uses specified except for that
amount lost by evaporation and seepage

(Sign) [Signature]

I hereby certify that the foregoing testimony was read to the above subscriber before its signing, that I believe him to be the person he represents himself to be, and that said testimony was subscribed and sworn to before me, at my office in _____, County of _____

State of South Dakota, on this 7 day of December, A. D. 1961
Witnesses: [Signature] 11-6-65

I, the undersigned, do hereby certify that I am a duly qualified elector residing in the immediate vicinity of the diversion works designated in the foregoing testimony, that I have no interest in the works, water or land above described, that I have read the foregoing testimony and that I know of my own personal knowledge that the matters therein stated are true.

Location No. _____	
PROOF OF APPLICATION OF WATER TO BENEFICIAL USE	
PETITION OF HOLDER	
Amount of Water _____ c. f. s.	
Source _____	
County _____	
Purpose _____	
Place of Use _____	
Date of recording _____	
Received and filed _____	

Water Rights Division - DWR

File No. 946-3

Conversation or File Documentation

NAME OF PERSON OR FILE: SD Dept of Game, Fish and Parks - Buffalo and Almos Lakes

ADDRESS: _____ COUNTY _____

DATE: _____ TELEPHONE _____

RE: Ordinary High Water Mark Determination

COMMENTS:

December 9 & 10, 1982 - Water Management Board Minutes

Mr. Walter MOVED, SECONDED by Mr. Harms that the Ordinary High Water Mark for
North Buffalo, South Buffalo and Almos Lakes be established at 1835.4 feet msl.
That vested Water Right No. 946-3 be clarified to require the outlet for Buffalo
and Almos Lakes to be at an elevation of 1834.8 feet msl. MOTION CARRIED.

For more information see the OHWM file.

File in Permit or other file as necessary. Use to document conversations and what the other party was told; why action or decision was made.

4/82

NAME: _____



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

September 21, 1988

Richard Beringson, Secretary
Department of Game, Fish and Parks
Anderson Building
445 E Capitol
Pierre SD 57501

Dear Mr. Beringson:

I am writing to notify you that pursuant to the Notice of Intent to Validate Vested Water Right Claims dated June 20, 1988 that I intend to oppose validation of all Department of Game, Fish and Parks Vested Water Right Claims for lakes for the following reasons:

1. Until the outlet elevation for each lake is surveyed and the outlet elevation is set by the Water Management Board.
2. To allow the Vested Water Right Claim to be amended, if necessary, as follows:
 - a) Include the outlet elevation;
 - b) To correct the amount of water claimed;
 - c) To add the qualification that a vested claim is subject where necessary to installation of a concrete outlet structure to assure retention of the outlet at the established elevation; and
 - d) To add any amendments and qualifications necessary to clarify a Vested Right Claim.

Also, that I intend to oppose validation of all Department of Game, Fish and Parks Vested Water Right Claims for dams to allow the Vested Water Right Claim to be amended, if necessary, as follows:

1. To include the spillway elevation;
2. To correct the amount of water claimed; and
3. To add any amendments and qualifications necessary to clarify a Vested Right Claim.

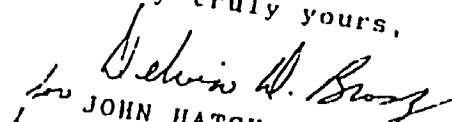


September 21, 1988
Richard Beringson, Secretary
Page 2

We will be working with your staff on these validations. We have already discussed setting outlet elevations before validating claims for lakes. Although the work necessary to complete the validation process will take several years to complete, the results should be of benefit to the public and to your Department. As the work is completed to validate each claim, the claim will be presented to the Water Management Board for validation.

Please advise if you have any questions.

Very truly yours,

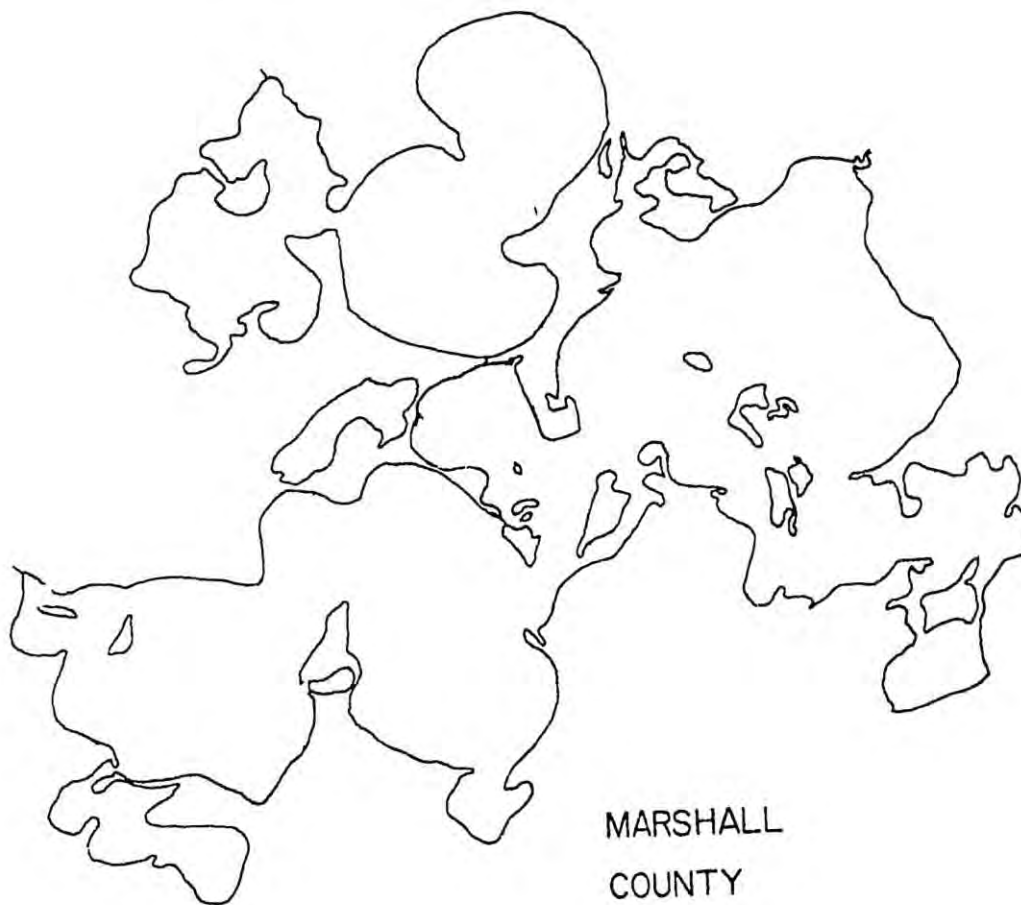

JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

cc: Ron Koth, Department of Game, Fish and Parks

946-3

ORDINARY HIGH WATER MARK
INVESTIGATION FOR

BUFFALO LAKES



MARSHALL
COUNTY

SOUTH Dakota Department of
Water & Natural Resources
Joe Foss Building
Pierre, South Dakota 57501
November 1982

REPRODUCTIONS: REDUCTION 25% ROLL NO. 6 DATE MICROFILMED 11/10/82 CAMERA OPERATOR

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RECOMMENDATIONS. RELIGION

26/1

ROLL NO. 6

DATE MICROFILMED

2/2/76

DATE MICROFILMED

2/2/76

DATE MICROFILMED

2/2/76

DATE MICROFILMED

2/2/76

DATE MICROFILMED

2/2/76

DATE MICROFILMED

2/2/76

DATE MICROFILMED

NORTH BUFFALO LAKE
SOUTH BUFFALO LAKE
ALMOS LAKE

ABSTRACT

This report contains the results of an investigation performed to determine the Ordinary High Water Mark (OHWM) for North Buffalo, South Buffalo, and Almos Lakes in Marshall County. These lakes will be referred to in this report as Buffalo Lakes. In Marshall County. The primary factors involved in calculating the OHWM are: shoreline tree base elevations, erosion mark elevations, outlet structure elevation, and water level elevations.

Based on the finding in this report the OHWM for North Buffalo, South Buffalo, and Almos Lakes has been determined to be 1835.4 feet mean sea level (msl).

RECORDS

REVISION

26.1

ROLL NO.

10

DATE MICROFILMED

CHEN / OPERATOR

INTRODUCTION

Authority and Administrator

The Water Management Board is mandated according to SDCL 43-17-21 to establish the Ordinary High Water Mark on public lakes in South Dakota. This report contains the results of the investigation conducted by the Department of Water and Natural Resources, Water Rights Division to determine the elevation of the DHWM and outlet structure for Buffalo Lakes.

Explanation of OHWM

The ordinary high water mark is coordinated with the upper limits of the bed of a lake. The determination of the OHWM is derived from the examination of the banks and bed of the lake. This examination is conducted to ascertain where the continuous presence and action of the water has left a distinct mark; either by erosion, destruction of terrestrial vegetation, or some other easily recognized characteristic. In examining a lake for the determination of this level, it is necessary to consider the size, watershed, topography, soils and general characteristics of the lake (refer to Appendix A).

Date of Investigation

The principal field investigation for this report was conducted in June, 1982. The examination of the shoreline, banks, and vegetation of Buffalo Lakes was performed. The shoreline areas selected for study were those least affected by individuals. Public access areas and/or gradually sloping beaches provide the best OHWM indicators.

INVESTIGATION

Location

North Buffalo, South Buffalo, and Almos Lakes are located in Marshall County, within Sections 2, 3, 4, 5, 8, 9, 10, 11, 14, 15, 17, 20 and 21 of T125N, R53W (refer to Appendix A).

Lake Characteristics

North Buffalo, South Buffalo, and Almos Lakes are of glacial origin,² positioned in the upper reaches of the Coteau lakes outwash deposit. The contributing watershed and extensive aquifer connection provide the lakes with adequate recharge.⁴ Appendix A provides a summary of Buffalo Lakes' data.

The high water level for all three lakes is controlled by the outlet structure on Almos Lake. When the water level reaches the outlet structure elevation, all three lakes are connected surfacely.

The outlet structure elevation is the main characteristic affecting the OHWM elevation. Therefore, these three lakes were treated as one lake in this OHWM investigation.

Elevation Reference

Elevations in this report are referenced to a United States Geological Survey Bench Mark. This bench mark is located at the corners of Sections 22, 23, 26 and 27, T124N, R53W. In the SW corner of Section 23, a standard tablet stamped "15 KEE 1970"; set at an elevation of 1899.134 feet msl.

OHWM Indicators

A. Shoreline Trees

Trees, which are the largest and most permanent expression of upland growth, are used to determine a relationship between the growth characteristics of the trees at various elevations and the OHWM elevation. Records of ordinary high water levels are reflected in the well established trees along a lake's shoreline. Cottonwood, ash, and willow are the most predominant trees that grow along the shores of South Dakota's lakes. Experimentation and research have shown that most trees will not survive if water levels exceed one half to one tree diameter below the base elevation of the tree for more than 25% of the growing season. Consideration must be given to the characteristics of the soil, slope of the ground, and the effects of water and ice on the shoreline and bank.

REPRODUCTION REDUCTION 25:1 ROLL NO. 6
DATE MICROFILMED 1-22-70
CHEN OPERATOR

B. Tree Categories

The trees along the shoreline of Buffalo Lakes are divided into three categories:

1. The first category of trees are those where their lakeside base elevation (the elevation where the soil meets the trunk on the lakeside of the tree) is below the OHWM (see Appendix B). This causes erosion of the soil and destruction and decay of the tree. The destruction and decay of the tree is caused by the zone of soil saturation smothering part of the root system. These trees survive because part of their root system is above the zone of saturation.
2. The second category of trees are those where their lakeside base elevation is from zero to one half of a foot above the OHWM (see Appendix C). These trees show signs of butt swell and erosion. Their root system is surfacely exposed and growing away from the lake.
3. The third category of trees are those with a lakeside base elevation approximately one foot above the OHWM (see Appendix D). These trees show lesser degrees of butt swell, little or no root erosion, and some surface roots.

C. Erosion Marks

Changes in soil characteristics and erosion lines were found between elevations of 1834.9 and 1835.6 feet msl.

Outlet Structure

The outlet for Buffalo Lakes is located on the north shore of Almos Lake in the SE1/4 of the NW1/4 of Section 4, T125N, R53W. This structure consists of an earthen dike with three corrugated metal pipes in the center of the structure. Refer to Appendix E for details. The bottom of the corrugated metal pipes are at elevations of 1835.3, 1835.0 and 1834.8 feet msl and diameters of 1.5 feet, 0.8 feet and 1.0 feet respectively.

The culverts appear to have been placed at an elevation above the natural channel elevation. This was apparent in the examination of the outlet channel leading to and away from the dike and in the number of 35-55 year old trees that were found dead along the shoreline.

The outlet channel reached a peak of 1833.8 feet msl just in front of the dike. It appears from this information that the outlet elevation for these lakes was increased about 1.1 feet at the time the dike was constructed.

Water Level Elevations

The water level elevation for North Buffalo, South Buffalo, and Almos Lakes in June, 1982 was 1832.6, 1832.2 and 1832.2 respectively. The water level was 2.2 and 2.6 feet below the outlet elevation.

Find in Appendix A a list of water level records for Buffalo Lakes.

Water Rights

There has been one Water Right issued relating to the Waters of Buffalo Lakes. It is a Vested Water Right claimed by the Department of Game, Fish and Parks. This Vested Right No. 946-3 is for the annual recharge of 2,640 acre feet or as required to fill to the outlet elevation. The priority date for this Vested Right is 1889.

CONCLUSIONS

Based on the lakeside base elevation of trees, erosion lines, and the outlet structure of Buffalo Lakes, the OHWM has been established at an elevation of 1835.4 feet msl.

The present outlet elevation of 1834.8 feet msl, reflects the necessary water level required to establish the DHWM at 1835.4 feet msl.

RECOMMENDATIONS

Recommendations to the Water Management Board by the Division of Water Rights Staff.

1. That the Ordinary High Water Mark for North Buffalo, South Buffalo and Almos Lakes be established at 1835.4 feet msl.
2. That Vested Water Right No. 946-3 be clarified to allow the water level at Buffalo Lakes to be maintained at an elevation no higher than 1834.8 feet msl. *or in excess of 1834.8 feet msl.*

Jerry E. Steffen

Jerry E. Steffen, Natural Resources Engineer
Water Rights Division
Department of Water and Natural Resources

For information regarding OHWM bench marks established at Buffalo Lakes, contact Department of Water and Natural Resources, Water Rights Division, Pierre, South Dakota.

STATE OF SOUTH DAKOTA)
COUNTY OF HUGHES) ss

Swore to, before me, this 7th day of December, 1982.

Louis L. Quinn
Notary Public

LOUIS L. QUINN, Notary Public
My Commission Expires
February 2, 1984

5 2-3-83

RECOMMENDATIONS
REDUCTION 25.1
ROLL NO. 10
DATE MICROFILMED
CHERRY CREEK

APPENDICES

Appendix A.....	Buffalo Lakes Data
	Table 1 Data Summary
	Table 2 Water Level Records
	County Map
	Watershed Map
	Bathymetric Map
Appendix B.....	Photos of Trees Below OHWM
Appendix C.....	Photos of Trees At OHWM
Appendix D.....	Photos of Trees Above OHWM
Appendix E.....	Photos of Outlet Structure

REPRODUCTION OF ORIGINAL RECORDS
ROLL NO. 10
DATE MICROFILMED
CIVIL ENGINEERING

Appendix A

Buffalo Lakes Data

Table 1 Data Summary

Surface Area.....	2185 acres ¹
Watershed Area.....	18,000 acres ²
Maximum Depth.....	12 feet ^{1,2}
Mean Depth.....	7 feet ^{1,2}
Volume.....	15,295 acre feet ^{1,2}
Total Dissolved Solids.....	534 mg/l ¹
Aquifer Connection.....	extensive ²
Outlet Elevation.....	1834.8 feet (msl)
OHWM Elevation.....	1835.4 feet (msl)
Vested Water Rights.....	No. 946-3 held by GF&P for the annual recharge of 2640 acre feet, priority date of 1889

REPRODUCTION: REDUCTION 285/1

ROLL NO 10

DATE MICROFILMED 11-22-70

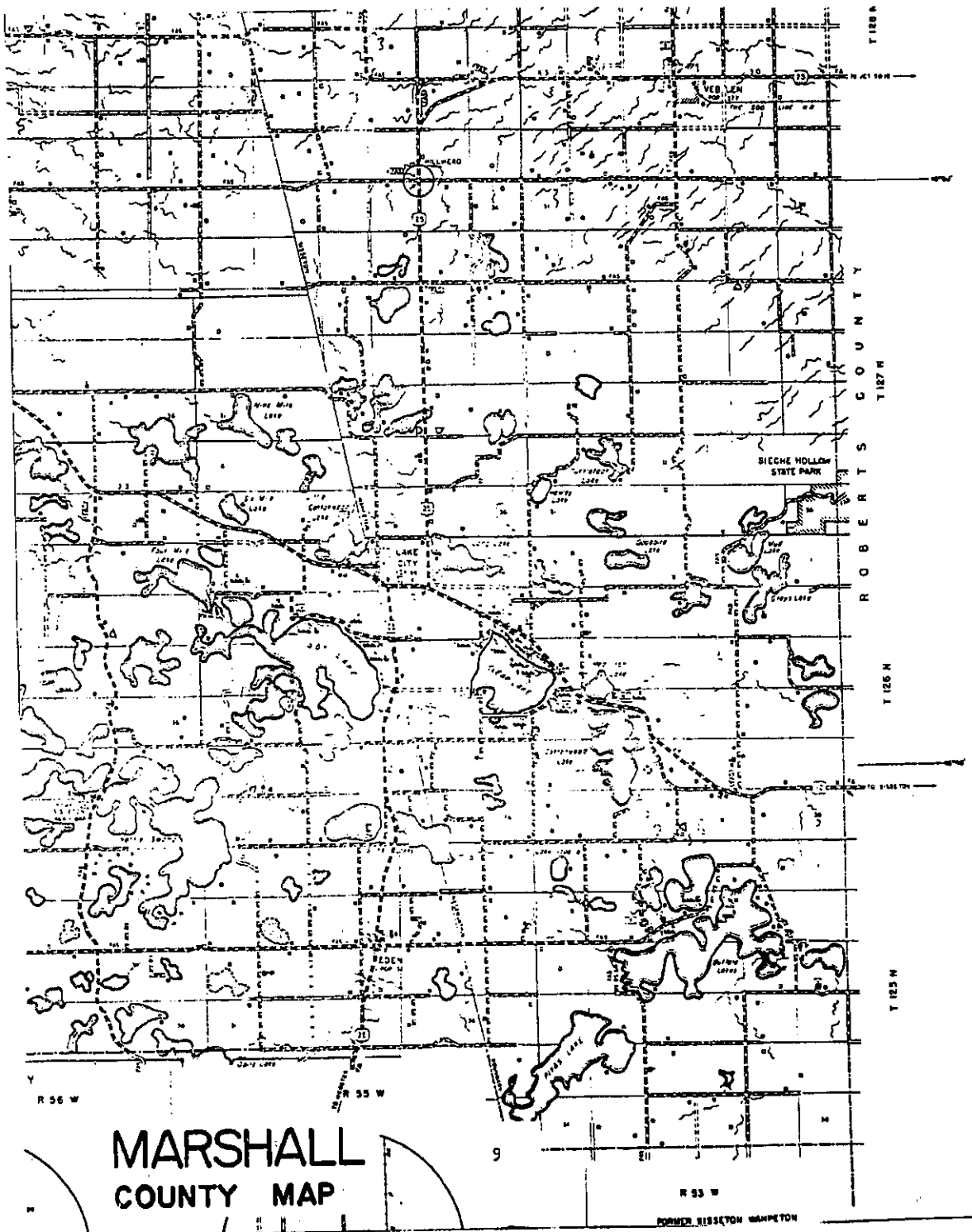
CHEN OPERATOR

Table 2 Water Level Records²

<u>Year-Month</u>	<u>Water Level</u>	<u>Year-Month</u>	<u>Water Level</u>	<u>Year-Month</u>	<u>Water Level</u>
1935 Dec	1820.8 (nd)	1945 Oct	1833.1	1960 Fall	1830.0
1936 May	1824.3	1946 May	1835.0	1961 S	1834.0
1937 May	1828.4	1946 Oct	1835.0	1962 S	1834.67
1938 June	1826.8	1947 May	Overflowing	1962 F	1834.02
1939 May	1827.5	1948 May	1836.2	1963 S	1834.6
1939 Nov	1825.9	1949 May	1836.3	1963 F	1833.4
1940 May	1828.4	1949 Nov	1834.8	1965 W	1835.6
1940 Oct	1826.1	1950 May	1837.0	1965 F	1835.0
1941 June	1827.1	1951 Jan	1835.3	1966 S	1836.0
1941 Nov	1825.9	1951 May	1836.5	1967 F	1834.6
1942 May	1829.3	1952 May	1837.8	1968 F	1834.9
1942 Nov	1828.1	1952 Oct	1835.9	1969 S	1836.4
1943 June	1829.3	1953 Nov	1836.0	1969 F	1834.2
1943 Nov	1829.8	1954 Apr	1836.5	1970 S	1836.0
1944 Jul	1833.3	1955 May	1835.8	1970 F	1834.0
1944 Nov	1832.4	1956 May	1835.1	1071 S	1834.8
1945 May	1834.3	1956 Nov	1833.9	1972 S	1836.0
	1833.5	1959 Apr	1834.7	1973 S	1834.9
	1835.0	1960 Apr	1834.7	1975 S	1833.0
				1975 F	1831.8
				1976 F	1830.25
				1982 June	1832.6
				1982 F	1831.9

S-Spring

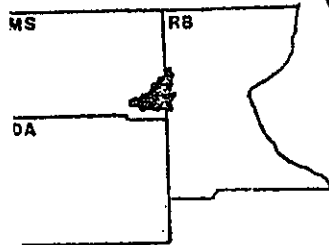
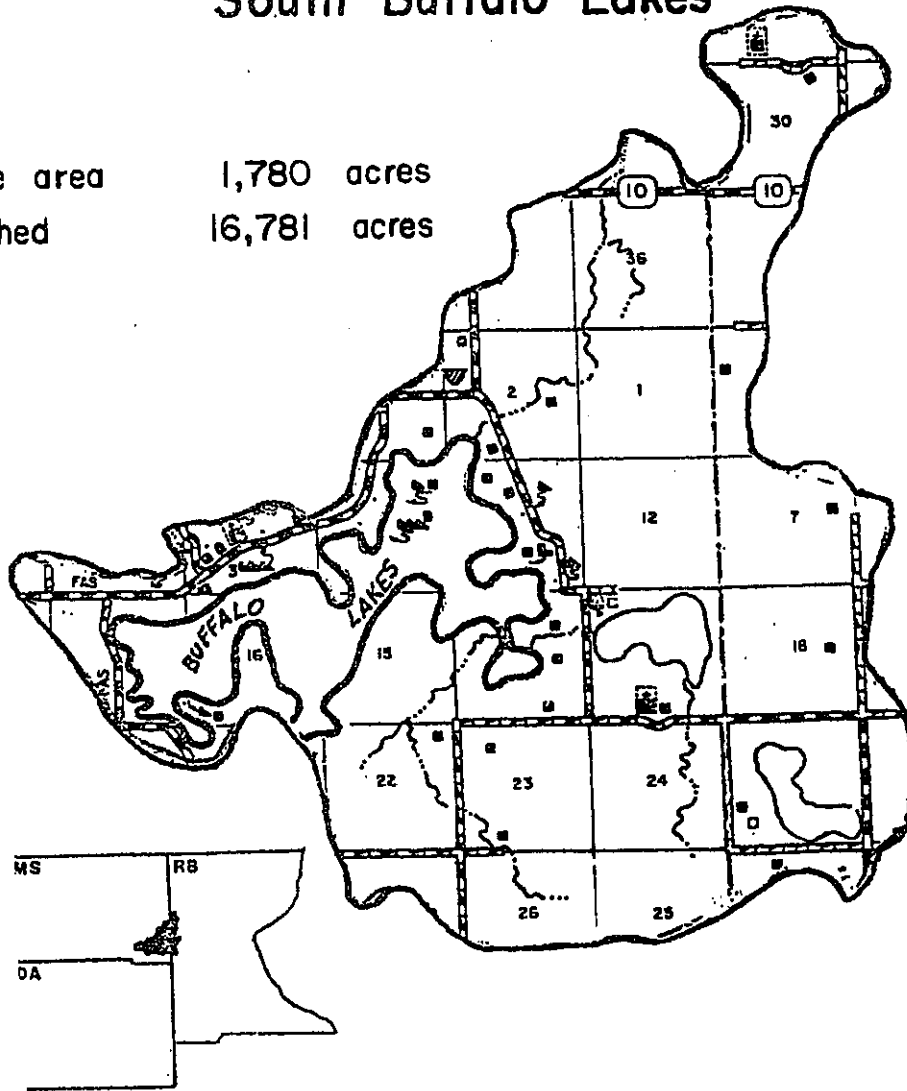
F-Fall



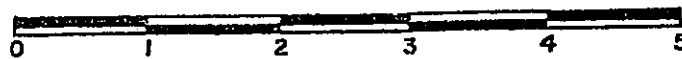
REPRODUCTIONS, REDUCTION 25:1 ROLL NO 10 DATE MICROFILMED 11-11-70 CAMERA OPERATOR

South Buffalo Lakes

Surface area 1,780 acres
Watershed 16,781 acres



Scale



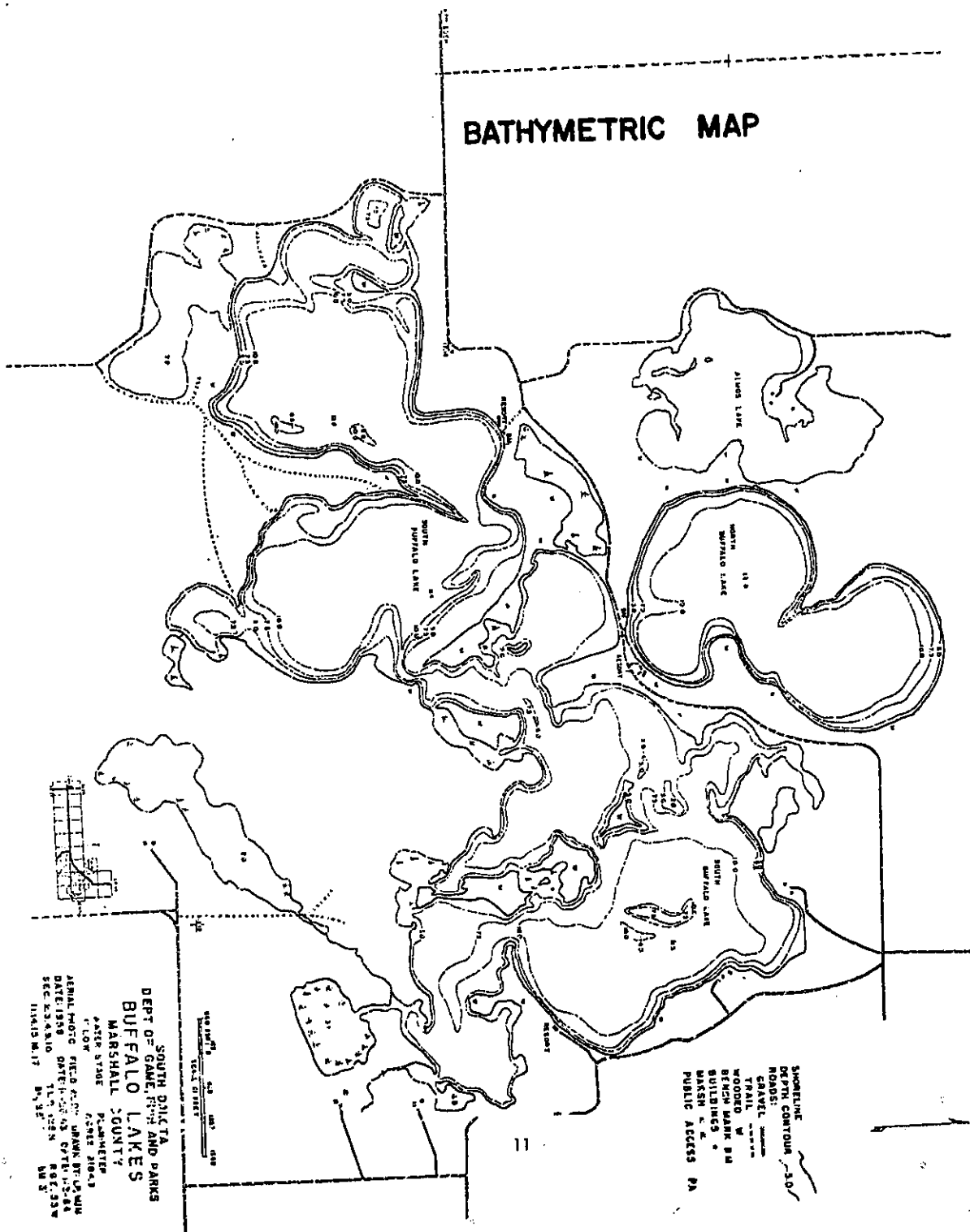
Miles

REPRODUCTIONS: REDUCTION 25:1 ROLL NO. 10

DATE MICROFILMED

CAMERA OPERATOR

BATHYMETRIC MAP



APPENDIX B
PHOTOS OF TREES GROWING BELOW THE OHWM



PHOTO NO. 1 Description: Dead Willow, Dia. 0.7', 0.7' & 0.6'
 Base Elevations: Lakeside----1833.2 Age 60 years
 Landside----1834.0



PHOTO NO. 2 Description: Dead Elm, Dia. 0.4' & 0.8', Age 35 years
 Base Elevations: Lakeside----1633.5
 Landside----1534.6

REPRODUCTIONS, REDUCTION 1/2, ROLL NO. 10

DATE MICROFILMED

CAMERA OPERATOR



(left tree)
 PHOTO NO. 3 Description: Slippery Elm, Dia 0.9 ft., Age 60 years
 Base Elevations Lakeside----1834.6
 Landside----1835.5
 (right tree) Description: Cottonwood, Dia. 2.3 ft., Age 75 years
 Base Elevations Lakeside----1833.8
 Landside----1837.0
 Horizontal mark on tree-----1836.0



PHOTO NO. 4 Description: Cottonwood, Dia. 2.0 ft., Age 70 years
 Base Elevations Lakeside----1833.8
 Landside----1837.0
 Bottom of cross-----1835.5

REPRODUCTIONS

REDUCTION

3017

ROLL NO

12

DATE MICROFILMED

CAMERA OPERATOR



PHOTO NO. 5 Description: Elm, Dia. 2.1 ft., Age 70 years
 Base Elevations: Lakeside----1834.9
 Landside----1836.9
 Destruction of Bark on Root---1835.5



PHOTO NO. 6 Description: Cottonwood, Dia. 2.0 ft., Age 65 years
 Base Elevations: Lakeside----1834.2
 Landside----1837.3
 Description: Cottonwood, Dia. 1.7 ft., Age 60 years
 Base Elevations: Lakeside----1834.4
 Landside----1837.5

REPRODUCTIONS.

REDUCTION

251

ROLL NO

6

DATE MICROFILMED

CAMERA OPERATOR



PHOTO NO. 7 Description: Cottonwood, Dia. 2.7 ft., Age 85 years
 Base Elevations: Lakeside----1834.6
 Landside----1837.4

REPRODUCTIONS, REDUCTION

35:1

ROLL NO. 10

4-6-76
 DATE MICROFILMED

CAMERA OPERATOR

REPRODUCTIONS.

REDUCTION

200%

ROLL NO.

10

DATE MICROFILMED

CAMERA OPERATOR

APPENDIX C

PHOTOS OF TREES GROWING AT THE OHWM



(left tree)
PHOTO NO. 8 Description: Dead Oak, Dia. 0.5 ft., Age 35 years
Base Elevations: Lakeside----1835.3
Landside----1836.3
(right tree) Description: Live Willow, Dia. 0.7 ft., Age 40 years
Base Elevations: Lakeside----1835.4



(2nd from left)
PHOTO NO. 9 Description: Elm, Dia 0.6 ft., Age 35 years
Base Elevations: Lakeside----1835.3
Landside----1836.3
(4th from left) Description: Cottonwood, Dia. 1.9 ft., Age 70 years
Base Elevations: Lakeside----1836.4
Landside----1837.6



PHOTO NO. 10 Description: Cottonwood, Dia. 2.2 ft., Age 75 years
Base Elevations: Lakeside----1835.4
Landside----1837.5



PHOTO NO. 11 Description: Willow, Dia. 0.9 ft., Age 40 years
Base Elevations: Lakeside----1835.6
Landside----1836.7

REPRODUCTIONS,

REDUCTION

35:1

ROLL NO.

10

DATE MICROFILMED

CAMERA OPERATOR



PHOTO NO. 12 Description: Ash, Dia. 1.2 ft, Age 55 years
Base Elevations: Lakeside----1835.8
 Landside----1837.2

REPRODUCTIONS.

REDUCTION

25:1

ROLL NO.

10

DATE MICROFILMED

CAMERA OPERATOR

APPENDIX D

PHOTOS OF TREES GROWING ABOVE THE OHWM



PHOTO NO. 13 Description: Cottonwood, Dia. 1.2 ft., Age 55 years
Base Elevations: Lakeside----1836.1
Landside----1837.4



PHOTO NO. 14 Description: Ash, Dia. 1.3 ft., Age 50 years
Base Elevations: Lakeside----1836.2
Landside----1837.2

REPRODUCTIONS, REDUCTION

ROLL NO. 10

DATE MICROFILMED

CAMERA OPERATOR



PHOTO NO. 15 Description: Cottonwood, Dia. 1.0 Ft., Age 50 years
Base Elevations: Lakeside----1836.4
Landside----1836.9



PHOTO NO. 16 Description: Cottonwood, Dia. 2.1 ft., Age 70 years
Base Elevations: Lakeside----1836.5
Landside----1837.9

REPRODUCTIONS, REDUCTION

361/

ROLL NO 60

DATE MICROFILMED

CAMERA OPERATOR



PHOTO NO. 17 Description: Cottonwood, Dia. 1.5 ft., Age 60 years
Base Elevations: Lakeside----1837.5
Landside----1838.8

REPRODUCTIONS:

REDUCTION

25:1

ROLL NO

10

DATE MICROFILMED

1966-76

APPENDIX E
PHOTOS OF OUTLET STRUCTURE

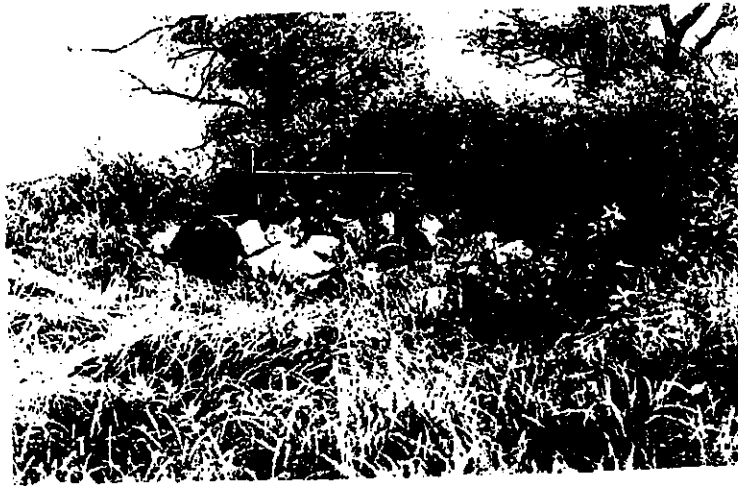


PHOTO NO. 18 OUTLET STRUCTURE		
<u>Culverts</u>	<u>Dia.</u>	<u>Elevation of Flow line</u>
Left	1.5'	1835.3
Middle	0.8'	1835.0
Right	1.0'	1834.3



PHOTO NO. 19 NATURAL CHANNEL UPSTREAM
 Peak elevation of Natural Channel in front of Dam----1833.7

REPRODUCTIONS.

REDUCTION

2001

ROLL NO.

18

DATE MICROFILMED

CAMERA OPERATOR

BIBLIOGRAPHY

¹ Ronald M. Koth, South Dakota Lakes Classification and Inventory, South Dakota Department of Water and Natural Resources, Office of Water Quality, July 1, 1981, pp 260-266.

² State Lakes Preservation Committee,
A Plan for the Classification, Preservation, and Restoration of Lakes in Northeast South Dakota, July 1977, pp 111-112.

B91703JS.wr

REPRODUCTIONS
REDUCTION

267

ROLL NO

12

DATE MICROFILMED

CHEN/OPERATION

AGENDA

Water Management Board Meeting

December 9 & 10, 1982

PLACE: Dakota Room, Sheraton Inn, 1400 NW 8th Ave, Aberdeen, South Dakota

THURSDAY, December 9, 1982

- 8:30 am Call to Order
Approval of October 7 & 8, 1982 Minutes
Set April Meeting Time & Date April 14 & 15 in Sioux Falls suggested
Status & Review of Water Rights Litigation
- 9:00 am Administer Oath to Water Rights Staff
Cancellation Considerations (see attached list)
"Vested Right" Considerations
Requests for Extension of Time
- 9:45 am Break
- 10:00 am Introduction of Board, Legislative Oversight Committee and Water Rights Staff
Requirements before Water Permit Applications can be Advertised and at the Time of the Hearing
Water Permit Application Hearings (see attached list)
- 12:00 noon Lunch
- 1:00 pm Conclusions of Law, Findings of Fact & Final Decision
1767-2 Billy Joe & Vlasta Kirk
Water Right Application Hearings (continued)
- 1:30 pm Hearing on Order by Chief Engineer to Remove Rock Dam located south of Freeman in NW 1/4 Section 36, R56W, T98N
- 2:30 pm Break
- 2:45 pm Consideration of Motion for Order Compelling Discovery with regard to Proposed Cancellation of Bernard Bruch, Antonette Pelkey and Truman Quail Water Right Filings
- 3:00 pm Hearing on Proposed Amendments to General Rules 74:02:01
- 4:30 pm Whitewood Creek Discussion (Water Quality Division)
Recess for Day

FRIDAY, December 10, 1982

- 9:00 am Reconvene
Establishment of Ordinary High Water Marks & Clarify Department of Game, Fish & Parks and other Water Rights
- 917-3 Clear Lake - Marshall County
 - 946-3 Buffalo Lakes & Almos Lake - Marshall County
 - 915-3 Roy Lake - Marshall County
 - 930-3 Enemy Swim Lake & Campbell Slough - Day County
 - 926-3 Pickerel Lake - Day County
 - 639-3 Waubay Lakes (North & South) - Day County
 - 636-3 Spring Lake - Day County
 - 635-3 Hilliebrands Lake & Swan Pond - Day County
- Other Business
Adjourn

RECEIVED
RELATION 23517
POL NO 62
DATE MICROFILMED
CHERRY CREEK

NEW APPLICATIONS DECEMBER 9 & 10, 1982

No.	Name	Location	County	CFS	Acreage	Source
1229-1A	City of Spearfish	2E, 1S Spearfish	Lawrence	1.35	municipal	863' deep Madison well
1265-1	Nell & Margaret Mutchler	3/4N Spearfish	Lawrence	0.39 add'l	comm & trailer	296' deep Minnelusa well
1830-2	City of Box Elder	1S Box Elder	Pennington	1.11	municipal	4200' deep Madison well
1831-2	Ray J Hillenbrand	1 1/2 W Caputa	Pennington	no add'l	no add'l	Rapid Creek
4917-3	Oahe Guide Asso., Inc.	20W, 9S Onida	Sully	0.11	commerical	64' deep well
4929-3	Corson Village Water Asso.	in city limits	Minnehaha	0.05	municipal	92' deep well
4930-3	WEB Water Develop. Asso.	12SE Hobridge	Walworth	15.00	RWS	Missouri River
4931-3	Benson Hereford Ranch	4N Clark	Clark	no add'l	no add'l	to add 55' deep well
4932-3	Hallett Construction Co.	8N, 1 1/2 E Watertown	Codington	5.00	industrial	11' deep dugout (gravel pit)
4933-3	Hallett Construction Co.	3/4 E Watertown	Codington	11.00	industrial	Willow Creek
4934-3	Richard Jongeling	3W, 5N Estelline	Hamlin	1.70	119.00	56' deep well
4935-3	Larry Nielson	2S, 1 1/2 W Tulare	Spink	0.23	40.00	124' deep well
4936-3	Casa Del Rosa Water	5W, 1N Harrisburg	Lincoln	0.10	sub housing	196' deep well
4937-3	Vernon L Parks	1E, 1S Lily	Day	1.11 add'l	no add'l	2-187' deep wells
4938-3	James Adler & Granite View Farms	5E Milbank	Grant	2.10	160.00	120' deep well
<u>Vested Right Consideration</u>						
4928-3	Corson Village Water Asso.	in city limits	Minnehaha	0.01	municipal	92' deep well

Mr. Harms stated he agreed with the elevation of the recommendation of the OHWM. He agreed with the maximum elevation of the outlet structure. Mr. Harms stated he did not believe the Board has authority to direct the Game, Fish & Parks Department to maintain it at that elevation. When an irrigation permit is granted, the Board may allow the applicant to put 10 acre feet of water on the crops, but they do not require him to do that. They allow him to manage that water resource according to his own business. If the citizens want to approach Game, Fish and Parks to raise the outlet structure, then that is an issue between the two of them.

Mr. Arend commented as to what authority Game, Fish & Parks would have to raise the outlet, if this Board did not establish at least the maximum level that they can set it at.

Mr. Harms stated he agreed with setting a maximum level, what he did not agree with was the portion of the motion which states they have to maintain the water at that level.

Mr. Arend stated by establishing the level of the weir that would mean that it cannot be any higher. They cannot control the rain and the runoff. That is done by nature. Mr. Arend stated he would like to maintain the high level.

Mr. Timm stated the Board does have the authority to set the outlet weir level.

In answer to a question from Mr. Harms, Mr. Rylance stated they would have to maintain the weir level, not the water level.

Mr. Arend called the question. MOTION CARRIED with Mr. Harms voting NO.

Mr. Rylance stated for clarification purposes that the Board set the OHWM at 1823.7 and the weir level was set at 1823.0. By weir they mean outlet structure.

BUFFALO AND ALMOS LAKES

Jerry Steffen presented the report on Buffalo and Almos Lakes (copy on file). Mr. Steffen read the recommendations by the staff on the lakes.

Mr. Opitz read a statement by the Department of Game, Fish and Parks Secretary into the record (copy on file). The statement concurred with the recommendations of the staff.

In reference to the hydrology of the lakes Mr. Steffen stated that North and South Buffalo are connected by a culvert through the road. The culvert is approximately one half foot below the outlet structure elevation on Almos Lakes. This is not the controlling structure of this lake system. It is just a waterway between the two so that a road could be put in between the lakes. Probably before the road was put in, the lakes when they were full were connected surficially in that area. Between North Buffalo and Almos Lakes there is a channel that drains high waters when the two lakes are surficially connected.

REPRODUCTIONS: REDUCTION 25:1 ROLL NO. 10
DATE MICROFILMED 7-22-70 BY 8803 RDD
FILMED AT U.S. AIR FORCE CAMERA OPERATOR 8803 RDD

25:1 ROLL NO 6

DATE MICROFILMED 1-22-70

CAMERA OPERATOR

GENERAL OPERATOR

OPERATOR

OPERATOR

REPORT

10

100

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

1. **Introduction**

1. *Phragmites*

1000

NEW APPLICATIONS DECEMBER 9 & 10, 1982

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DENR
SOUTH DAKOTA

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

Memo to File

Buffalo Lakes in Marshall County

VWR No. 946-3

The OHWM was set by the Water Management Board on December 9 & 10, 1982.

OHWM elevation 1835.4 fmsl NGVD29

The outlet elevation was set by the Water Management Board on December 9 & 10, 1982.

Outlet elevation 1834.8 fmsl NGVD29