

WATER PERMIT NO. 1798-1

Name of Applicant: William Pothast

Address: Box 117, Eagle Butte SD 57625

Phone: 605 964 6876

Amount of Water Claimed: 38.2 AF

Total Acres: NA

Source of Water Supply: runoff

Water to be used for: fish & wildlife propagation, recreation, livestock

County: Ziebach

Type of Waste Disposal System:

Location: 8 miles southwest of Dupree

PRIORITY

Date Received: 6-27-2003

Application/License Fee: \$200

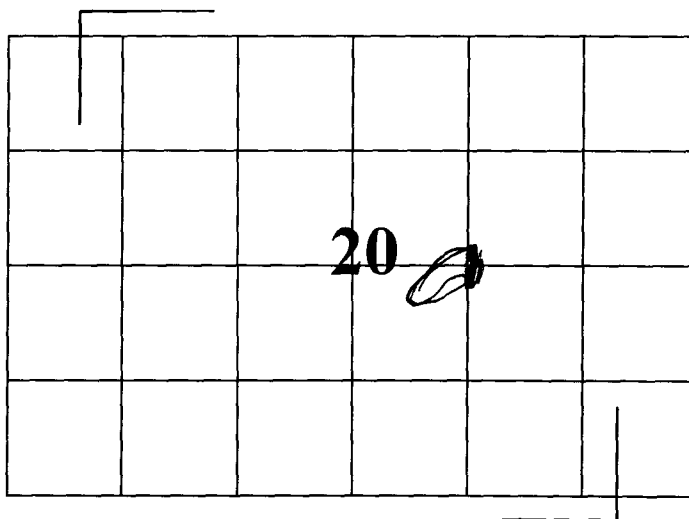
Corrected Application Received:

Period of Annual Use: January 1 – December 31

Remarks:

Diversion Point: S ½ NE ¼, N ½ SE ¼ Sec 20-
T11N-R23E

Land to be Irrigated:



Depth of Well: NA

Well Driller: : NA

Remarks:

Type of Map: topo

Prepared by: Tim Olson, GF&P

Reviewed and the Number Assigned on: 6-27-2003

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

RECEIVED

JUN 27 2003

WATER RIGHTS
PROGRAM

Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	No. <u>1798-1</u> (office use only) Hydrologic Unit <u>10130105</u>
	Basin <u>Missouri River</u>
	Newspaper <u>West River Progress, Dupree</u>

Application For Permit To Appropriate Water Within The State Of South Dakota

Check use(s) of water:

- | | | | |
|--|---|---|--|
| ☐ Municipal | ☐ Suburban Housing | ☒ Recreational | ☐ Institutional |
| ☐ Rural Water System | ☐ Commercial | ☒ Fish & Wildlife | ☐ Geothermal Heat |
| ☒ Domestic (over 18 gpm) | ☐ Industrial | ☐ Other | |

Type of Application: (check one)

- ☒ New ☐ Vested Right (Use predates Mar 2, 1955) ☐ Future Use Reservation
☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____
☐ Amendment/Correction to Permit No. _____

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

- Name of Applicant William Pothast Phone 605 964-6876
(check one) ☒ Owner ☐ Tenant/lessee
Mailing Address Box 117, Eagle Butte, SD State 57625
(Street, RR, or Box and City) (Zip Code)
- Amount of water claimed _____ *CFS or _____ **GPM 38.2 ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply Dry Draw
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Ziebach
SW 1/4, NE 1/4, sec. 25 T11N, R23E S1/2 E1/4 Section 17
1600' west, 2200' south of NE section corner
- County or counties where water will be used Ziebach
- Annual period during which water is to be used year long Jan 1 - Dec 31
- Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)
Dam to be constructed in cooperation with S.D. Game, Fish & Parks, Wildlife Division for stockwater, fish, wildlife and recreational purposes

STATE OF SOUTH DAKOTA)

SS

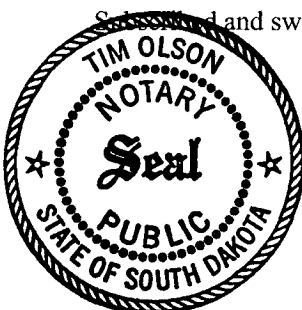
Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Attach map and any other technical information. (see instructions)

County of _____

I, WILLIAM POTHAST, the applicant, certify that I have read this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.

Applicant's signature William Pothast

Subscribed and sworn to before me this 18th day of June 20 03



Tim Olson
Notary Public signature

My Commission Expires
May 18, 2007

**SOUTH DAKOTA
WATER PERMIT NO. 1798-1**

Date of first receipt of application June 27, 2003.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 1798-1 to William Pothast, Box 117, Eagle Butte SD 57625 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 1798-1 authorizes impoundment of 38.2 acre-feet of water from runoff by constructing a dam located in the S ½ SE ¼ Section 17-T11N-R23E with water impounded in the same area.
2. The water appropriated shall be used for the purpose of fish and wildlife propagation, recreation and livestock water and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 –December 31.
4. The date of approval of Permit No. 1798-1 is September 22, 2003.
5. The date from which applicant may claim right is June 27, 2003.
6. One-fifth of the construction is to be completed on or before March 22, 2006.
7. All construction is to be completed on or before September 22, 2008.
8. Water is to be put to beneficial use on or before September 22, 2012.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. Water Permit No. 1798-1 authorizes a dam with a storage capacity of 38.2 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation.
2. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.

WATER MANAGEMENT BOARD

By: Garland Erbele

Garland Erbele, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

OCT 06 2003

date



(type or print in ink)

1. Well Information - Proposed Construction

- a) Drill Hole Diameter _____ Depth _____
- b) Casing Type _____ Diameter _____ Thickness _____
- c) Screen Type _____ Diameter _____ Thickness _____
- d) Gravel Pack _____ Length of Gravel Pack _____
- e) Depth to Top of Water Bearing Material _____
- f) Depth to Water (ground surface to water level) _____
- g) Distance to nearest existing domestic well:
 On applicants property _____ On property owned by others _____

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) _____
- b) System Capacity (gallons) _____ Year Constructed _____
- c) Connected to the City of _____ Sanitary System

3. Dugout Information

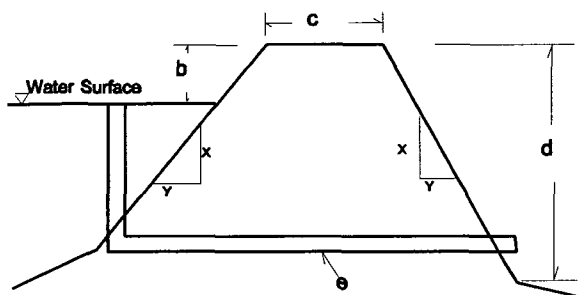
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

- a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

Natural Resources Conservation Service
Box 399
Faith, SD 57626



- b) Freeboard _____ 3'
- c) Crest Width _____ 12'
- Crest Length _____ 470'
- d) Height _____ 30.2'
- e) Primary Outlet Capacity _____ NA
 If pipe, diameter _____ NA
- f) Secondary Spillway Capacity _____ 150cfs
 Spillway Width _____ 65'
- g) X & Y Slope _____
 Upstream _____ 3:1
 Downstream _____ 2.5:1
- h) Surface Area of Impoundment _____ 4.34 acre
- i) Storage _____ 38.2 Acre Feet
- j) Drainage Area Above Dam _____ 170.0 Acres

Water Permit Application No. 1798-1
William Pothust

Top of Dam Elev. - 100
Spillway Elev. - 97
DS Toe Elev. - 69.8 } Ht = 30.2 ft Cat. 3 - Low Hazard Dam

Normal Storage Capacity = 38.2 Ac-Ft
Max Storage Capacity = 76

Max Capacity x Ht = 76 x 30.2 = 2295 < 3000 ∴ 25 year
Minimum Spillway Design

From USGS WRI 80-80 "Tech for Est Flood Peaks ... in 50"

DA = 170 A. = 0.26 mi²

Slope = 200 ft/mi

SI = 1.76

$$\begin{aligned} Q_{25} &= 83.4 A^{.65} S^{.44} S_i^{-.72} \\ &= 83.4 (.26)^{.65} (.200)^{.44} (1.76)^{-.72} \\ &= 83.4 (.45) (10.29) (.67) \\ &= \underline{260 \text{ cfs}} \end{aligned}$$

$$\begin{aligned} Q_{100} &= 132 A^{.65} S^{.46} S_i^{-.67} \\ &= 132 (.26)^{.65} (.200)^{.46} (1.76)^{-.67} \\ &= 132 (.42) (11.44) (.68) \\ &= \underline{430 \text{ cfs}} \end{aligned}$$

Spillway Flow

$$\begin{aligned} Q &= C L H^{3/2} \quad C = 2.6 \\ &= 2.6 (65 \times 3)^{1.5} \quad L = 65 \\ &= \underline{880 \text{ cfs}} \quad H = 3 \end{aligned}$$

Section 74:02:08:09

1. Topo Map - OK
2. Dam Axis Profile - OK
3. Dam X-Sec. - OK
4. Area Capacity - OK
5. Outlet Details - OK
6. Spillway Rating - OK
7. Spillway Details - OK
8. Specs. std NRCS - OK
9. EPP - N/A Cat 3 - OK

NRCS Annual Yield

DA = 170 CN = 81 ISO = 2

$$\begin{aligned} 80\% \text{ chance} &= 0.3 \\ 0.3 \times 170^{1/2} &= \underline{4.25 \text{ Ac-Ft}} \end{aligned}$$

$$\begin{aligned} 50\% \text{ chance} &= 0.7 \\ 0.7 \times 170^{1/2} &= \underline{10 \text{ Ac-Ft}} \end{aligned}$$

$$\begin{aligned} 10\% \text{ chance} &= 2.7 \\ 2.7 \times 170^{1/2} &= \underline{38.25 \text{ Ac-Ft}} \end{aligned}$$

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date June 27, 20 03

RECEIVED OF William Pothast, Box 117, Eagle Butte SD 57625

The following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>1792-1</u> to Appropriate Water, to construct and to put water to beneficial use	150	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>1792-1</u>	50	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	200.00

No.

000000

By

Darland Erbe

Chief Engineer

gm

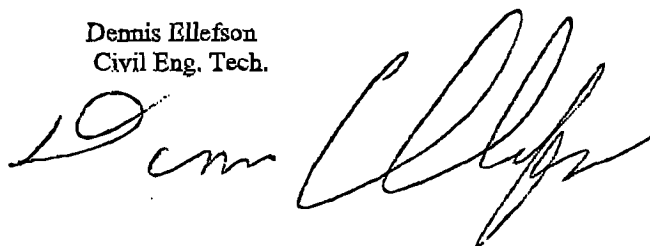
AUG 28/03

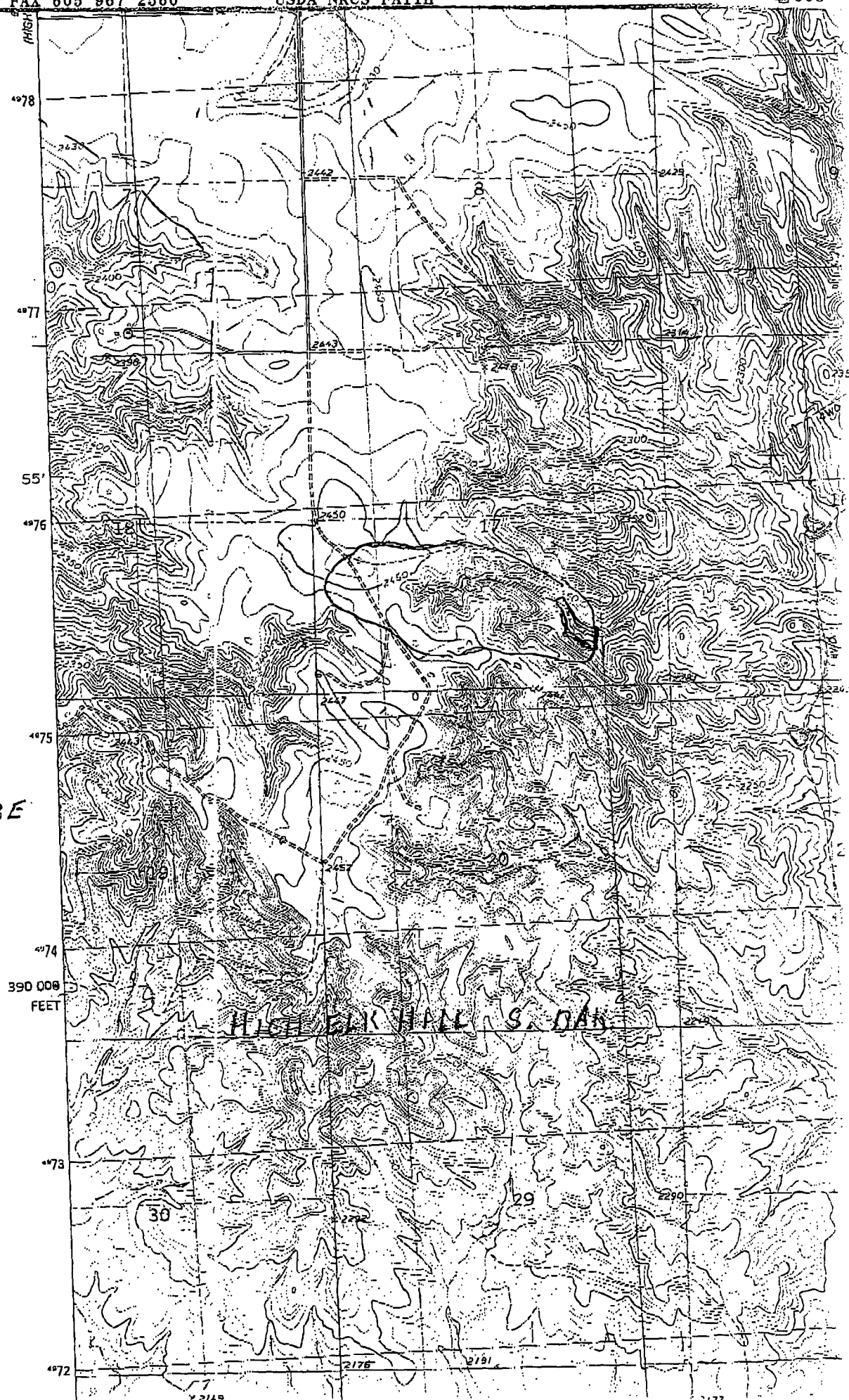
DENR
PMB 2002
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 27501-3182

WILLIAM POTHAST POND

I made an error in location of this pond. Location of pond should be SE4 S-17 T-11N R-23E

Dennis Ellefson
Civil Eng. Tech.

A handwritten signature in black ink, appearing to read "Dennis Ellefson", is written over the typed name and title.



-97 T-11N R-13E
2.5

CONSTRUCTION SPECIFICATIONS

for

Pond 378
William Rothost
S-20 T-11N R-23E

Prepared by:

USDA-NATURAL RESOURCES CONSERVATION SERVICE

Assisting:

Ziebach Conservation District

CHECKLIST

SOUTH DAKOTA CONSTRUCTION AND MATERIAL SPECIFICATIONS

CONSTRUCTION SPECIFICATIONS

Check Column	Specification No. SD--	Title
	1	Clearing 6/82
✓	2	Clearing and Grubbing 6/82
	3	Structure Removal 6/82
✓	4	Stripping 6/82
✓	5	Excavation 6/82
	6	Excavated Ponds (Dugouts) 6/82
	7A	Earth Fill - Class A - (Controlled Compaction) 6/82
✓	7S	Earth Fill - Class S - (Method Type Compaction) 6/82
	7U	Earth Fill - Class U - (Uncompacted) 8/71
	8	Rock Riprap and Bedding 6/82
	9	Drain Fill and Filter 6/82
	10	Salvaging and Spreading Topsoil 6/82
	11	
	12A	Concrete (Class 3500) 6/82
	12B	Concrete for Minor Structures (less than 5 c.y.) 6/82
	13	Steel Reinforcement 8/71
	14	
	15	Corrugated Metal Pipe Conduits 12/81
	16	Timber Fabrication and Installation 7/77
	17	Metal Fabrication and Installation 8/71
	18	Wire Mesh Gabions 6/82
	19	

RUNOFF COMPUTATION SHEET

prepared for

B. POTHA

in

ZIEBACH County, South Dakota

Designer : D.E.
Date : 04/29/03Checker _____
Date _____

S-20 T-11N R-23E

Land Use and Condition	Acres by hydrologic soil group			
	A	B	C	D
Pasture, grassland or range				
poor	68	79	50x86	89
fair	49	69	100x79	84

=====

Curve Number = 81
 Drainage Area = 150 ac.
 Tc Method Used - EFH Method
 W/S Slope = 4.0 %
 W/S Length = 4000 ft.
 Time of Concentration = 0.78 hr.
 Rainfall Type = II

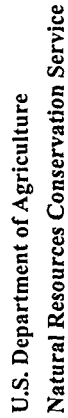
Frequency	24-hr rainfall	Runoff	Peak discharge	Ia/P
1 - yr.	1.7 in.	0.42 in.	35 cfs.	0.28
2 - yr.	2.0 in.	0.60 in.	52 cfs.	0.23
5 - yr.	2.8 in.	1.16 in.	106 cfs.	0.17
10 - yr.	3.4 in.	1.63 in.	153 cfs.	0.14
25 - yr.	3.8 in.	1.95 in.	186 cfs.	0.12
50 - yr.	4.4 in.	2.46 in.	238 cfs.	0.11
100 - yr.	4.8 in.	2.81 in.	274 cfs.	0.10

Drainage curves : Qa = 44.4 cfs. Qc = 15.6 cfs.
 Qb = 24.7 cfs. Qd = 10.1 cfs.

$$\frac{(300')(1050')(1.6)}{43560} = 4.34 \text{ surface Ac. } (18')(1.5) = 39.06 \text{ storage}$$

$$Q \quad 150 \text{ Ac. } 18\% \quad .0018 \text{ 20yr} = 0.97 \text{ Ac FT sed}$$

$$38.09 \text{ usable storage}$$



SD-ENG-32

11/99 Rev
Sheet 1 of 4

Practice: POND - FILL

Legal Description:

Computations By: D. ELLEFSON

Checked By:

Date: 28-May-03

Date:

Upstream Slope = 3.0:1

[illegible]

H_1 and L_1 are Downstream and H_2 and L_2 are Upstream

POND FILL (yd³) = 21,093.0

A schematic diagram of a rectangular plate. The plate has a total height of $H_1 + H_2$ and a total width of $L_1 + L_2$. A vertical line divides the plate into two sections of height H_1 and H_2 . A horizontal line divides the plate into two sections of width L_1 and L_2 . A central point is marked with a downward-pointing arrow labeled F .

OVER-FILL @ 5% SHRINKAGE (yd³) = 1,054.7

POND STRIPPING (yd³) = 903.8

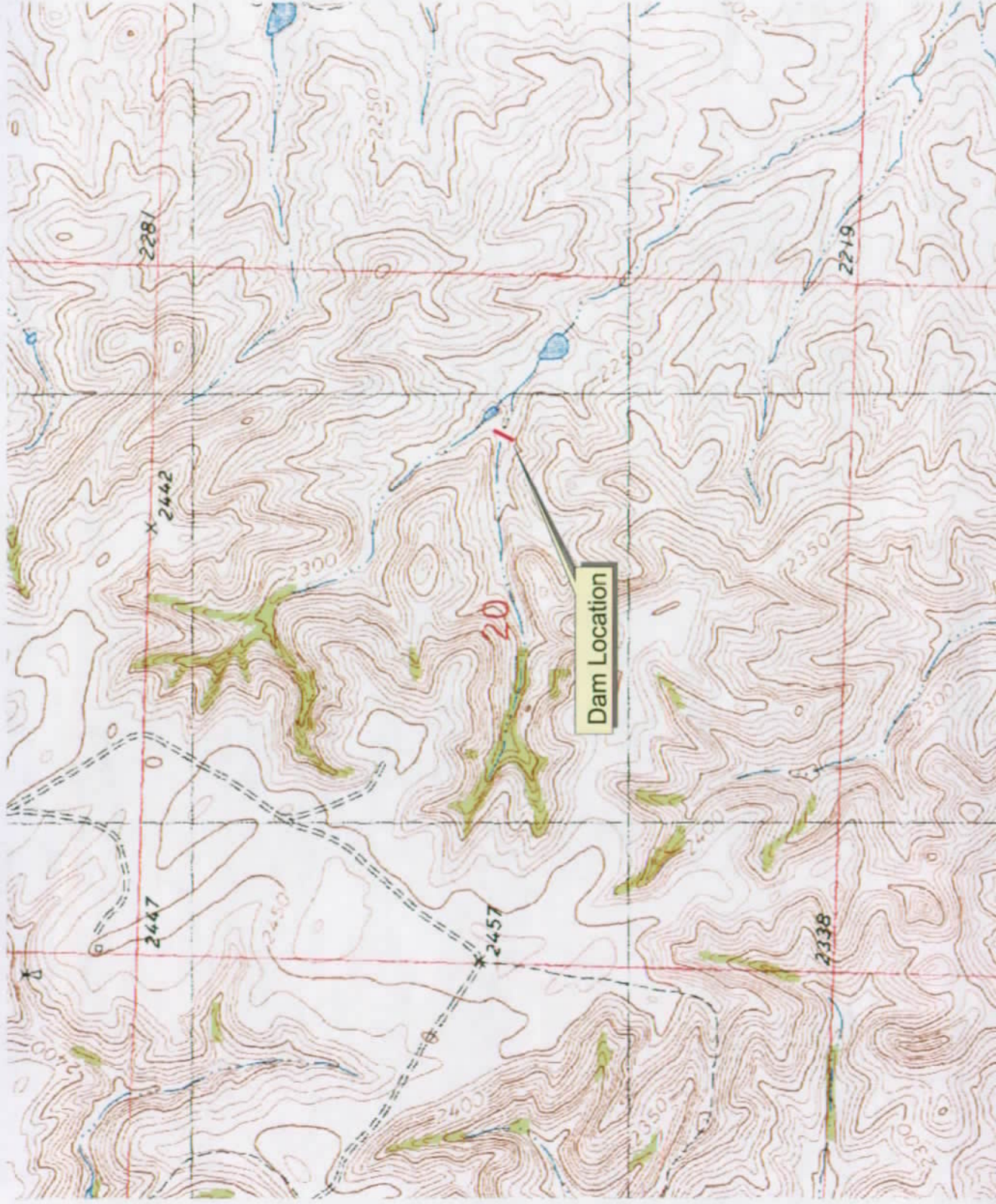
CORE TRENCH (yd³) = 364.4

POND CUT (yd³) = 0.0

TOTAL FILL (yd³) = **23,415.9**

TOTAL EXCAVATION (yd³) = 0.0

Bill Pothast Property
sec. 20, T11N, R23E, Ziebach Co.



1 Miles

0.5

0

0.5

TE Plan 50051P

1798-1

DRAINAGE AREA ACRES	ANNUAL YIELD AC. FT.	PEAK RUNOFF 25-YR.	EMERG. SPLWY. CAPACITY C.F.S.	WATER DEPTH FEET	SURFACE AREA ACRES	SEDIMENT STORAGE AC. FT.	TOTAL STORAGE AC. FT.
170	5.95	27.6	195	24	4.34	1.34	36.75

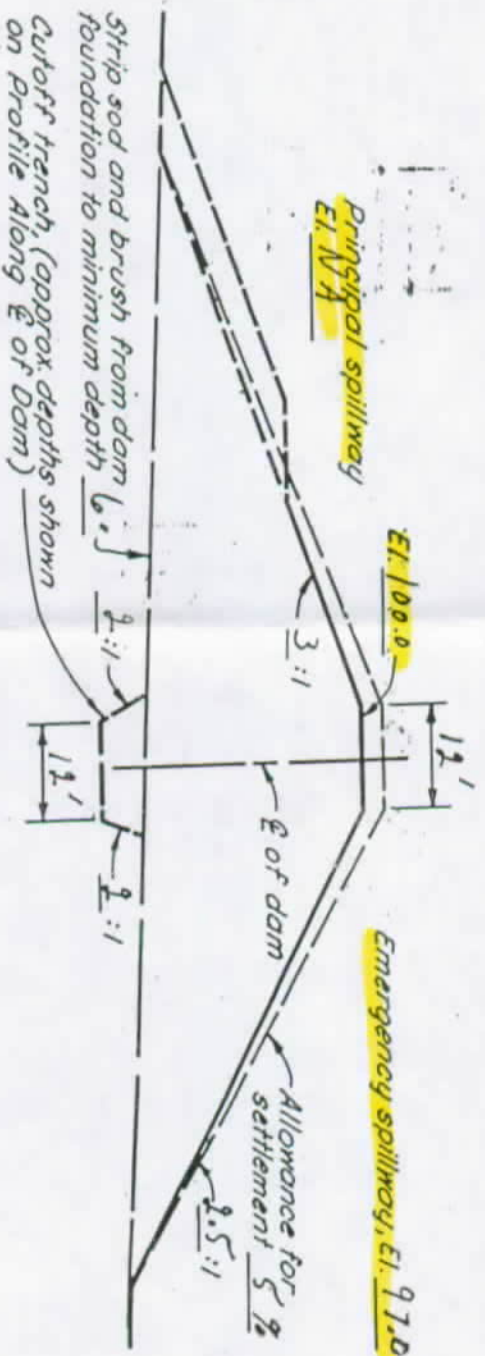
STRUCTURE DATA



LOCATION

ITEM	UNIT	QUANTITY
EARTH FILL	cy	21093
5% SETTLEMENT STRIPPING	cy	1055
CORE TRENCH	cy	904
	cy	364
TOTAL	cy	23416

TABLE OF QUANTITIES



TYPICAL CROSS SECTION OF DAM

S.D. CONSTRUCTION AND MATERIAL SPECIFICATIONS:

- SD-4 STRIPPING
- SD-75 EARTH FILL CLASS-S
- SD-10 SALVAGING & SPREADING TOPSOIL
- SD-2 Clearing & Grubbing
- SD-5 EXCAVATION

EARTH DAM

OPERATOR: WILLIAM POTHAST
 CONSERVATION DISTRICT: ZIEBACH
 U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

Designed by: <u>B. C. Miller</u>	Drawn by: <u>B. C. Miller</u>	Checked by: <u>B. C. Miller</u>
Date: <u>5/28/63</u>	Date: <u>5/28/63</u>	Date: <u>5/28/63</u>
Drawn by: <u>B. C. Miller</u>	Drawn by: <u>B. C. Miller</u>	Drawn by: <u>B. C. Miller</u>
Date: <u>5/28/63</u>	Date: <u>5/28/63</u>	Date: <u>5/28/63</u>

SKETCH PLAN OF DAM AND RESERVOIR AREA

Approximate scale 1" = _____

REFERENCE: GUIDE PLAN NO. 1.0

JOB PLAN NO. 1.0

(REV 4-73) 5, N-29, 073.10

EL. 110

EL. 100

EL. 90

EL. 80

EL. 70

EL. 60.0

EL. 50

EL. 40

EL. 30

EL. 20

MAXIMUM TOP EL. 100.0

5% SETTLEMENT

6.5' EL. SPILLWAY

CROSS SECTION AT CREST OF EMERGENCY SPILLWAY AND PROFILE ALONG E OF DAM

MAXIMUM TOP EL. 100.0

EL. 100

EL. 97.0

EL. 93.0

EL. 90

55' level CROSS

EL. 97.0

EL. 9

6" STRIPPING

3:1

5% SETTLEMENT

8.5:1

6" STRIPPING

ROCK TRENCH

PROFILE ALONG E OF EMERGENCY SPILLWAY

SEDIMENT YIELD

MAXIMUM CROSS SECTION OF DAM

ERODIBILITY AREA ACRES	GROSS RATE A.F./AC./YR.	DRAINAGE AREA ACRES	DELIVERY RATE %	DESIGN PERIOD YEARS	REQ'D. SEDIMENT VOLUME AC.FT.
1.00	.0022	170	18%	20yr	1.34



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

August 26, 2003

William Pothast
Box 117
Eagle Butte, SD 57625

Dear Mr. Pothast:

We have reviewed the plans and specifications for your dam project located between the NE ¼ and the SE ¼ of Section 20-T11N-R23E, in Ziebach County. The plans and specifications as submitted are approved. Approval of the plans and specifications does not authorize construction of the dam. The construction of the dam may not begin until Water Permit No. 1798-1 is approved.

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

The Pothast Dam will be classified as a small size Category 3, Low Hazard dam with a dam height of 30 feet and a normal storage capacity of 38.2 acre-feet and a maximum storage capacity of 76 acre-feet.

If you have any questions, please feel free to contact us.

Sincerely,

Gale N. Selken, P.E.
Natural Resources Engineer Director
for Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

c: Dennis Ellefson, NRCS, Faith

 1SITES XEQ 07/24/2003 WATER RESOURCE SITE ANALYSIS COMPUTER PROGRAM
 VER 2000 (USER MANUAL - DATED MAY 2001)
 TIME 16:59:25

***** 80-80 LIST OF INPUT DATA *****

SITES 05/01/2000POT BILL POTHAST 0.234375 H4
 SAVMOV 0 101
 SAVMOV 101 1 1
 STRUCTURE POT BILL POTHAST
 73 0.0
 80 1.0
 82 2.1
 84 3.0
 94 4.5
 97 6.8 4.34 38.2
 100 10.5 7.2
 105 15.2 76 Ac-Ft

RECEIVED
 AUG 11 2003
 WATER RIGHTS
 PROGRAM

ENDTABLE
 WSDATA 5A1PO AC 81 150 4000 4
 PDIRECT .00 3.40
 POOLDATA ELEV 97 73 75 73 NH
 CROWN 0.667
 TEMPLATE 3.0 2.5 00
 CLPROFILE - DAM CENTERLINE PROFILE
 000 100 050 97.1 100 92.5
 150 87.5 200 77.4 250 70.3
 300 72.7 350 77 400 83.4
 470 100
 ENDTABLE
 ASDATA 30D025 4 .015 3
 BTMWIDTH FEET 65
 GRAPHICS IE
 GO,DESIGN NELCPIOR TYPE2 24 TYPE2378 24
 SAVMOV 2 101 1 POT
 ENDJOB

 ***** MESSAGE - DRAINAGE AREA FROM WSDATA CONTROL BEING CONVERTED FROM
 ACRES TO SQUARE MILES FOR COMPUTATION PURPOSES.

1SITES -----
 XEQ 07/24/2003 BILL POTHAST WSID= POT
 VER 2000 BILL POTHAST SUBW= PO
 TIME 16:59:25 SITE = POT PASS= 1 PART= 1

***** BASIC DATA *****
 CLIMATE AREA - NOT DEFINED DESIGN CLASS A1 = LT 3000.

STORM DISTRIBUTION-PSH 24 HOUR TYPE II RAINFALL DISTRIBUTION

STORM DISTRIBUTION AUX. -24 HOUR TYPE II RAINFALL DISTRIBUTION

PRECIP. - Q-PS,1-DAY Q-PS,10-DAY P-SD P-FB
 0.00 0.00 0.00 3.40

WSDATA - CN DA-SM TC/L -/H QRF
 81.00 0.23 4000.00 4.00 0.00

SITEDATA- PERM POOL CREST PS FP SED VALLEY FL 378?
 97.00 73.00 75.00 73.00 YES

BASEFLOW INITIAL EL EXTRA VOL SITE TYPE
 0.00 0.00 0.00 DESIGN

PSDATA - NO. COND COND L DIA/W -/H
 0.00 0.00 0.00 0.00

PS N KE WEIR L TW EL
 0.000 0.00 0.00 0.00

2ND STG ORF H ORF L START AUX.
 0.00 0.00 0.00 0.00

ASCRESTS - AUX.1 AUX.2 AUX.3 AUX.4 AUX.5
 0.00 0.00 0.00 0.00 0.00

AUX.DATA - REF.NO. RETARDANCE TIE STATION INLET LENGTH
 30 D 0.00 0

AUX.DATA - INLET N SIDE SLOPE EXIT N EXIT SLOPE ACTUAL AUX?
 0.000 4.00 0.000 0.015 NO

BTM WIDTH - BW1 BW2 BW3 BW4 BW5
 ft 65.00 0.00 0.00 0.00 0.00

***** NOTE - THIS IS ONLY A PRELIMINARY AUX. SPILLWAY RATING CURVE OF
 DISCHARGE/FT OF WIDTH AND DOES NOT INCLUDE SIDESLOPE CORRECTION
 OR A REVISED RATING USING THE ACTUAL AUX. SPILLWAY CONFIGURATION.

AUX. SPILLWAY ID CODE ...30D025 ELEVATION INCREMENT (FT)= 0.200

DISCHARGES-Q1 Q2 Q3 Q4
 0.030 0.110 0.560 1.170

Q5 Q6 Q7 Q8
 1.910 2.780 3.830 5.040

Q9 Q10 Q11 Q12
 6.420 7.970 9.700 11.600

AUXILIARY SPILLWAY RATING BASED ON PRECOMPUTED SUBCRITICAL FLOW METHOD
 USING PROFILE NUMBER 30.

1***** DETAILED LIST OF BASIC DATA *****
 WEIR COEF. FOR ORIFICES..... 3.10 RATIO OF Ia TO S (CH.10,NEH4). 0.20
 WEIR COEF. FOR DROP INLET..... 3.10 TIME INCS TO PEAK OF UNIT HYD. 5.
 DISCHARGE COEF. FOR ORIFICES..... 0.60 NO. POINTS FOR DESIGN HYD. ... 101

HOOD, WEIR INLET COEF. 0.60 DRAWDOWN TIME LIMIT - DAYS.... 10.0
 HOOD, PIPE ENTRANCE COEF. 0.60 DRAWDOWN RATIO STORAGE LIMIT.. 0.00
 HOOD, SLUG FLOW COEF. 0.00 OTHER DRAWDOWN RATIOS APPLY ?. NO

PS ACCURACY OF FULL FLOW CALC.,FT 0.01 WSP ALLOWABLE FSS VEL. CHANGE. 0.05
 FILLET SIZE FOR BOX CONDUITS..... 6.00 WSP FSS CALC. PRECISION, FT.. 0.005

GRAVITATIONAL CONSTANT..... 32.16 AUX. SPILLWAY MIN. CAP. COEF. 237.0
 MIN. NHCP378 PS PIPE AREA SQFT.. 0.545 AUX. SPILLWAY MIN. CAP. EXP. 0.493

MIN. TR60 DEPTH AUX. TO TOP DAM.. 3.00 MIN. AUX. BW IN BW SOLUTION,FT 20.0
 MIN. NHCP378 DEPTH AUX.TO TOP DAM 2.00 PRECISION OF BW SOLUTION..... 1.0
 MIN. NHCP378 DEPTH PS - AUX.CREST 1.00 OLD TR60 CRITERIA USED NO
 MIN. NHCP378 DEPTH DESIGN Q - TOD 1.00 OLD NHCP378 CRITERIA USED NO

EMBANKMENT TEMPLATE: TOP WIDTH = (calc.), MAX. CROWN = 0.667 ft,
 SIDE SLOPE WAVE BERM MULTIPLE STABILITY BERMS SEPARATE STABILITY BERMS
 RATIOS WIDTH U&D/S WIDTHS DELTA H WIDTHS, ft HEIGHTS, ft
 U/S D/S ft ft ft U/S D/S U/S D/S
 3.00 2.50 0.0 0.0 0.00 0.00 0.00 0.00 0.00

DIMENSIONLESS UNIT HYDROGRAPH
 STANDARD DIMENSIONLESS UNIT HYDROGRAPH
 PEAK FACTOR = 484.0 | TIME INC. =0.020 | NO. INC. TO PEAK = 5.00
 PRODUCT ORDINATE AND TIME INC. =0.2669787

0.0000	0.0300	0.1000	0.1900	0.3100
0.4700	0.6600	0.8200	0.9300	0.9900
1.0000	0.9900	0.9300	0.8600	0.7800
0.6800	0.5600	0.4600	0.3900	0.3300
0.2800	0.2410	0.2070	0.1740	0.1470
0.1260	0.1070	0.0910	0.0770	0.0660
0.0550	0.0470	0.0400	0.0340	0.0290
0.0250	0.0210	0.0180	0.0150	0.0130
0.0110	0.0090	0.0080	0.0070	0.0060
0.0050	0.0040	0.0030	0.0020	0.0010
0.0000				

1NRCS DESIGN STORM RAINFALL DISTRIBUTION (CHAPTER 21, NEH4 & TR-60).

0.000	0.008	0.016	0.025	0.033
0.043	0.052	0.063	0.074	0.086
0.099	0.112	0.126	0.142	0.160
0.180	0.205	0.255	0.345	0.437
0.530	0.603	0.633	0.660	0.684
0.705	0.724	0.742	0.759	0.775
0.790	0.804	0.818	0.831	0.844
0.856	0.868	0.879	0.890	0.900
0.910	0.920	0.930	0.939	0.948
0.957	0.966	0.975	0.983	0.992
1.000				

24 HOUR TYPE II RAINFALL DISTRIBUTION

IDENTIFICATION NAME IS TYPE2 GIVEN DURATION = 24.0 HRS

0.000	0.001	0.002	0.003	0.004
0.005	0.006	0.007	0.008	0.009
0.010	0.012	0.013	0.014	0.015
0.016	0.017	0.018	0.020	0.021
0.022	0.023	0.024	0.026	0.027
0.028	0.029	0.031	0.032	0.033
0.034	0.036	0.037	0.038	0.040
0.041	0.042	0.044	0.045	0.047
0.048	0.049	0.051	0.052	0.054
0.055	0.057	0.058	0.060	0.061
0.063	0.065	0.066	0.068	0.070
0.071	0.073	0.075	0.076	0.078
0.080	0.082	0.084	0.085	0.087
0.089	0.091	0.093	0.095	0.097
0.099	0.101	0.103	0.105	0.107
0.109	0.111	0.113	0.116	0.118
0.120	0.122	0.125	0.127	0.130
0.132	0.135	0.138	0.141	0.144
0.147	0.150	0.153	0.157	0.160
0.163	0.166	0.170	0.173	0.177
0.181	0.185	0.189	0.194	0.199
0.204	0.209	0.215	0.221	0.228
0.235	0.243	0.251	0.261	0.271
0.283	0.307	0.354	0.431	0.568
0.663	0.682	0.699	0.713	0.725
0.735	0.743	0.751	0.759	0.766
0.772	0.778	0.784	0.789	0.794
0.799	0.804	0.808	0.812	0.816
0.820	0.824	0.827	0.831	0.834
0.838	0.841	0.844	0.847	0.850
0.854	0.856	0.859	0.862	0.865
0.868	0.870	0.873	0.875	0.878
0.880	0.882	0.885	0.887	0.889
0.891	0.893	0.895	0.898	0.900
0.902	0.904	0.906	0.908	0.910
0.912	0.914	0.915	0.917	0.919
0.921	0.923	0.925	0.926	0.928
0.930	0.931	0.933	0.935	0.936
0.938	0.939	0.941	0.942	0.944
0.945	0.947	0.948	0.949	0.951
0.952	0.953	0.955	0.956	0.957
0.958	0.960	0.961	0.962	0.964
0.965	0.966	0.967	0.968	0.970
0.971	0.972	0.973	0.975	0.976
0.977	0.978	0.979	0.981	0.982
0.983	0.984	0.985	0.986	0.988
0.989	0.990	0.991	0.992	0.993
0.994	0.996	0.997	0.998	0.999
1.000				

1SITES -----

XEQ 07/24/2003
VER 2000

BILL POTHAST
BILL POTHAST

WSID= POT
SUBW= PO

TIME 16:59:25 SITE = POT PASS= 1 PART= 2

***** ERROR(11) - "GO,DESIGN" WITHOUT PRINCIPAL SPILLWAY DATA OR GIVEN PS RATING
REQUIRES AUX. CREST ELEVATION TO BE GIVEN. USE COLUMNS 21-30
OF "ASCREST" CONTROL RECORD.

>>>> PASS 1 EXECUTION TERMINATED DUE TO INPUT RELATED DATA ERRORS. <<<<<
NO GRAPHICS FILES WRITTEN.
HYDOUT 1 POT

1SITES.....JOB NO. 1 COMPLETE.

POT BILL POTHAST

0 SUBWATERSHED(S) ANALYZED.

1 STRUCTURE(S) ANALYZED.

0 HYDROGRAPHS ROUTED AT LOWEST SITE.

0 TRIALS TO OBTAIN BOTTOM WIDTH FOR SPECIFIED STRESS OR VELOCITY.

SITES.....COMPUTATIONS COMPLETE

***** MESSAGE - RUN/PASS 1 STOPPED BECAUSE OF ERROR NO. 11.

SITES.....SUMMARY TABLE 1 NOT COMPLETED.

NRCS SITES VERSION 2000 ,05/01/2000
POT FILES

INPUT
C:\Program Files\usda\SITES\MAURICE1\POTHAST1.D2C

OUTPUT - DATED 07/24/2003 16:59:25
C:\Program Files\usda\SITES\MAURICE1\POTHAST1.OUT

FILE GENERATED DATED 07/24/2003 16:59:25
C:\Program Files\usda\SITES\MAURICE1\POTHAST1.DEC

GRAPHICS FILES GENERATED

OPTION "L" DATED 07/24/2003 16:59:25
C:\Program Files\usda\SITES\MAURICE1\POTHAST1.DRG

OPTION "P" DATED 07/24/2003 16:59:25
C:\Program Files\usda\SITES\MAURICE1\POTHAST1.DHY

OPTION "E" DATED 07/24/2003 16:59:25
C:\Program Files\usda\SITES\MAURICE1\POTHAST1.DEM

REPORT ON
WATER PERMIT APPLICATION No. 1798-1
William Pothast
August 19, 2003

Water Permit Application No. 1798-1 has been filed by William Pothast to impound 38.2 acre-feet of water by constructing a dam, located between the S ½ SE ¼ of Section 17-T11N-R23E, in Ziebach County. The application also requests impoundment of sufficient water to maintain water at the outlet elevation. The water will be used for fish and wildlife production, recreation and livestock use.

Discussion:

The dam will be classified as a small size, Category 3, Low Hazard dam. The Natural Resources Conservation Service (NRCS) has designed the dam. The plans and specifications have been reviewed and will be approved.

The dam will be 30 feet high with a normal storage capacity of 38.2 acre-feet with a reservoir level at the spillway elevation, and a maximum storage capacity of 76 acre-feet with a reservoir level at the top of dam elevation. A dam of this size and hazard classification is required to have a minimum spillway design capable of passing a 25-year frequency event.

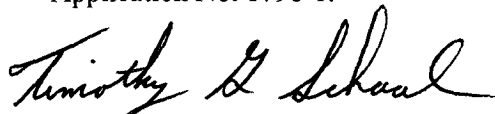
The dam has a drainage area of 170 acres or 0.26 square miles. A 25-year frequency event produces a peak runoff of approximately 260 cfs and a 100-year frequency event produces a peak runoff of approximately 430 cfs. The dam is designed to have a 65 foot wide earthcut spillway with 3 feet of freeboard. The earthcut spillway will have the capacity to pass approximately 880 cfs.

The annual yield for this drainage area with an 80 percent chance of occurrence, or 8 out of 10 years, is expected to be 4.25 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 10 acre-feet and the annual yield with a 10 percent chance, or 1 out of 10 years, is expected to be 38 acre-feet.

The Pothast Dam will be located between the S ½ SE ¼ of Section 17-T11N-R23E on an unnamed tributary to Rudy Creek, about four miles upstream of the confluence of the unnamed tributary and Rudy Creek. There are no existing Water Permit/Rights located between the proposed dam and Rudy Creek.

Conclusions:

1. Water Permit Application No. 1798-1 should be approved since unappropriated water is available and approval should not have an adverse effect on existing Water Permits/Rights.
2. If approved, the low flow bypass requirement for downstream domestic use should be a qualification on Water Permit Application No. 1798-1.



Timothy G. Schaal, P.E.
Natural Resources Engineer Specialist

Approved by:



Gale N. Selken, P.E.
Natural Resources Engineer Director



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1798-1, William Pothast**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 1798-1, William Pothast, Box 117, Eagle Butte SD 57625.

The Chief Engineer is recommending APPROVAL of Application No. 1798-1 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. Water Permit No. 1798-1 authorizes a dam with a storage capacity of 65.4 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation.
2. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.

See report on application for additional information.

Garland Erbele, Chief Engineer
August 26, 2003



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATES, CONTACT
THE NEWSPAPER RIGHT AWAY.

August 26, 2003

William Pothast
Box 117
Eagle Butte SD 57625

Dear Mr. Pothast:

Water Permit Application No. 1798-1 for fish & wildlife propagation, recreation and livestock water use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice of hearing has been sent to the Publisher of the West River Progress printed at Dupree, SD (Ph # 605-365-5145). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and a report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice of Hearing and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization, the publisher has been instructed to publish your notice once each week for two consecutive weeks with the last publication to occur twenty days before the board meeting. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

August 26, 2003

West River Progress
PO Box 158
Dupree SD 57623-0158

ATTENTION: Legal Public Notice

Enclosed is a Notice of Hearing on Application No. 1798-1 to Appropriate Water to be published twice. Please publish the first notice on September 4, 2003 with the second publication 7 days later.

The applicant must verify to you that the notice is to be published, before you make the first publication. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is William Pothast, Box 117, Eagle Butte SD 57625 (Ph # 605-964-6876).

Please send the Water Rights Program the first publication immediately. The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,


Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

CUT HERE

No. 1798-1

TO: Eric Gronlund
Water Rights Program
Joe Foss Building
Pierre SD 57501-3181

Date _____

We are in receipt of your letter of August 26, 2003 enclosing Notice of Hearing to Appropriate Water by Application No. 1798-1 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper

Instruction to Newspaper - Publish first Notice on September 4, 2003 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 1798-1 to Appropriate Water

Notice is given that William Pothast, Box 117, Eagle Butte SD 57625 has filed an application for a water permit to impound 38.2 acre-feet of water from runoff by constructing a dam located between the S $\frac{1}{2}$ NE $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ Section 20-T11N-R23E with water impounded in the same area. This application requests impoundment of sufficient water to maintain water to the outlet elevation. The water is for fish and wildlife propagation, recreation and livestock water purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1798-1 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by September 22, 2003.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

Water Rights Program - DENR
Conversation File Documentation

NAME OF PERSON OR FILE: Water Permit Application No. 1798-1, William Pothast

ADDRESS: COUNTY: Ziebach

DATE: August 28, 2003 TELEPHONE:

RE: Discussion on the correct legal description on the application

COMMENTS:

Kitty Pothast called regarding the publication notice we sent out for Water Permit Application No. 1798-1. She indicated that the proposed dam is to be constructed in the SE ¼ of Section 17, T11N, R23E and not for Section 20. I pulled the file and noted that the application, plans and submitted map all state that the dam is to be located in Section 20. She said she'd do some checking.

We then were contacted by Dennis Ellefson with NRCS who did the design work for the dam. He indicated it was his error and that the dam is to be located in the SE ¼ of Section 17, T11N, R23E. He faxed Water Rights a map of the location of the dam and a note on the legal location of the dam.

Based on this information, I contacted the newspaper regarding the change in the legal location of the dam and then contacted the Pothast's and let them know that we got the issue of legal location resolved.

NAME: *Eric Thunlund*

Affidavit of Publication

STATE OF SOUTH DAKOTA,
COUNTY OF POTTER, ss.

NOTICE OF APPLICATION NO. 1798-1 to Appropriate Water

Notice is given that William Pothast, Box 117, Eagle Butte SD 57625 has filed an application for a water permit to impound 38.2 acre-feet of water from runoff by constructing a dam located between the S 1/2 of SE 1/4 Section 17-T11N-R23E with water impounded in the same area. This application requests impoundment of sufficient water to maintain water to the outlet elevation. The water is for fish and wildlife propagation, recreation and livestock water purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1798-1 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or rec-

ommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by September 22, 2003.

The petition may be informal, but must include a statement describing

the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

(Published in the West River Progress, September 4 and 11, 2003.)

DAVID B. CLAUSEN being first duly sworn, on oath says, that he is the publisher of the WEST RIVER PROGRESS, a weekly newspaper published in Dupree, County of Ziebach, and has full and personal knowledge of all the facts herein stated; that said newspaper is a legal newspaper and has a bonafide circulation of at least two hundred copies weekly, and has been published within said county for fifty-two successive weeks next prior to the publication of the notice herein mentioned; that the

*Notice of Application
No 1798-1 to Appropriate
Water*

a printed copy of which, taken from the paper in which same was published, is attached to this sheet, and is made a part of this Affidavit, was published in said

newspaper at least once each week for 2 successive weeks, on the day of each week on which said newspaper was regularly published, to-wit:

Sept 4 and 11, 2003

that the full amount of the fees for the publication

of the annexed notice is \$ 37.27

David Blum

Subscribed and sworn to before me this 4th

day of September, 2003

Carol D. Clausen

Carol D. Clausen, Notary Public

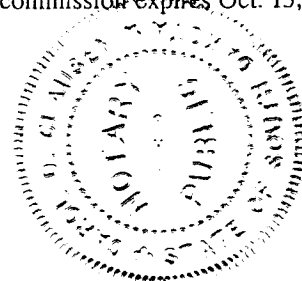
State of South Dakota

My commission expires Oct. 15, 2004

RECEIVED

SEP 29 2003

WATER RIGHTS
PROGRAM





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

OCT 06 2003

William Pothast
Box 117
Eagle Butte SD 57625

Dear Mr. Pothast:

Enclosed is Water Permit No. 1798-1 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

Permit No. 1798-1
Missouri River - Water District

Report Of Examination Of Works And/Or Application of Water To Beneficial Use

TO: Chief Engineer, Water Rights Program, DENR, Foss Bldg., Pierre, SD 57501

I have this day, October 26, 2005, made a thorough examination of the water use system constructed by William Pothast of Box 117, Eagle Butte, SD 57625 holder of Permit No. 1798-1, bearing the priority of June 27, 2003 authorizing the storage of 38.2 acre-feet of the waters of runoff for fish & wildlife, recreation and livestock water purposes, in Ziebach County.

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

A. Works used to divert the water:

A 30 foot high dam with a normal storage capacity of 38.2 acre-feet

B. Works used to transport water to place of use:

N/A

C. Works used to apply water to beneficial use:

A 30 foot high dam with a normal storage capacity of 38.2 acre-feet

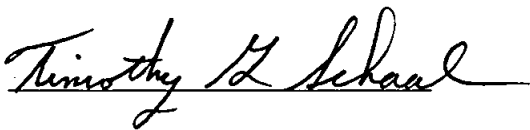
The system is in the following condition good. The point of diversion is located 800 ft. north & 1300 ft. west of the SE corner of Sec. 17-T11N-R23E (S ½ SE ¼) (Lat. 44.909209, Long. -101.344816). The works are capable of storing 38.2 acre-feet of water which is to be used for fish & wildlife, recreation and livestock water use. Water has been put to beneficial use to the maximum extent as follows:

A 30 foot high dam with a normal storage capacity of 38.2 acre-feet

and the license should be issued for 38.2 acre-feet of storage.

Applicable permit qualifications have been complied with: Yes X

Exceptions to compliance are: none Date Report Completed: February 1, 2006



Timothy G. Schaal, P.E.
Natural Resources Engineering Specialist
DENR, Water Rights Program

REPORT ON INSPECTION OF PERMIT NO. 1798-1

DATE OF INSPECTION: October 26, 2005

NAME & ADDRESS OF INSPECTION CONTACT/ William Pothast

RELATIONSHIP TO PERMIT HOLDER, IF APPLICABLE: owner

NAME & ADDRESS OF PERMIT HOLDER: William Pothast, Box 117, Eagle Butte, SD 57625

DIVERSION POINT LEGAL LOCATION: 800 ft. north & 1300 ft. west of the SE corner of Sec. 17-
T11N-R23E (S ½ SE ¼) (Lat. 44.909209, Long. -101.344816).

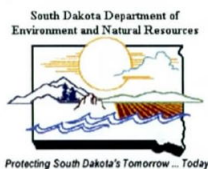
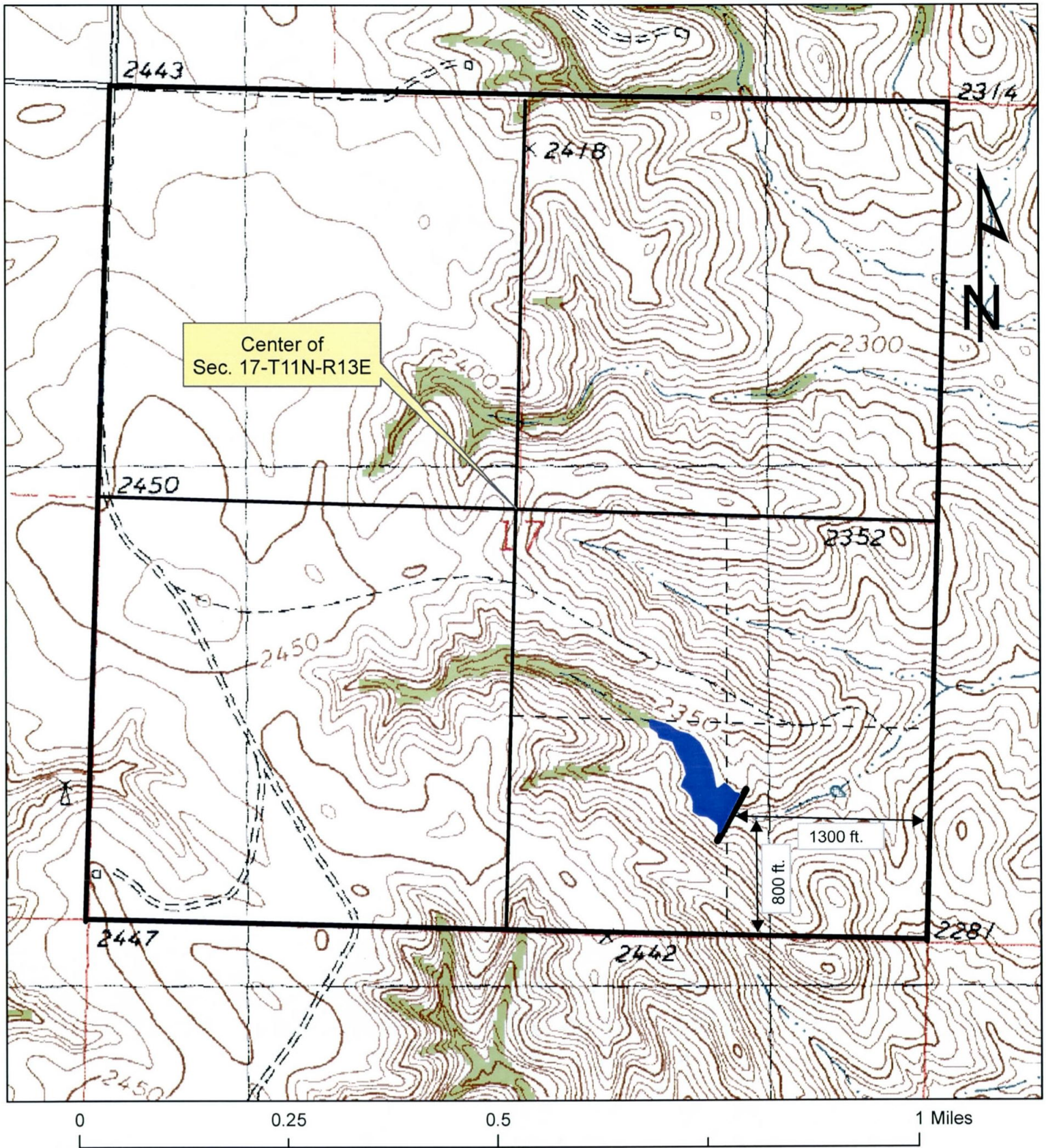
DAM INFORMATION:

- 1) Height to crest 30 feet
- 2) Height to primary spillway 27 feet
- 3) Height to secondary spillway N/A feet
- 4) Crest width 12 feet
- 5) Crest length 470 feet
- 6) Spillway length XXX feet
- 7) Spillway width 65 feet
- 8) Approx. storage (Normal) 38.2 acre-feet
- 9) Approx. storage (Maximum) 76 acre-feet
- 10) Date constructed: 2003

PERMIT QUALIFICATIONS AND REGULATIONS:

- 1) Soil and water permit lands agree with lands being irrigated and lands listed on permit N/A
- 2) Special qualifications to permit being abided by yes
- 3) All structures, wells and lands on map yes
- 4) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period N/A

Water Permit Application No. 1798-1



Timothy G. Schaal

Timothy G. Schaal, P.E.
Natural Resources Engineering Specialist
DENR, Water Rights Program

2/01/06

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 1798-1

(1) William Pothast, Box 117, Eagle Butte, SD 57625 made Application No. 1798-1, June 27, 2003 for a water permit to impound 38.2 acre-feet of water from runoff, Ziebach County, South Dakota for fish and wildlife propagation, recreation and domestic livestock watering purposes. Permit No. 1798-1, with a priority date of June 27, 2003 was approved September 22, 2003 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before September 22, 2008 and for the application to beneficial use of said water on or before September 22, 2012.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to construction of the storage dam and is entitled to impound 38.2 acre-feet of water for beneficial use with sufficient water annually to maintain the water level to the outlet elevation.

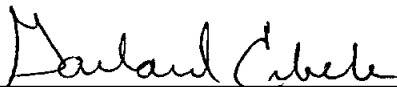
The location of the storage dam (spillway) is: 800 feet north and 1,300 feet west of the SE corner of Section 17, T11N, R23E (S ½ SE ¼).

(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use for fish and wildlife propagation, recreation and domestic livestock watering purposes.

(4) Pursuant to South Dakota Water Law 46-5-30.1 William Pothast, Box 117, Eagle Butte SD 57625 the holder and/or owner of Water Right No. 1798-1 is issued a license to appropriate water, the right to impound 38.2 acre- feet of runoff water with sufficient water annually to maintain the water level to the outlet elevation from the location specified in (2) of this license. Water Right No. 1798-1 carries a priority date of June 27, 2003.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 1798-1 and subject to the following qualifications:

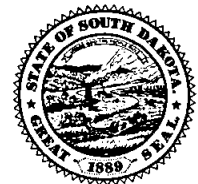
- Water Right No. 1798-1 authorizes a dam with a storage capacity of 38.2 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation.
- Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.



Garland Erbele, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

APR 07 2008

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

APR 07 2006

1798-1

William Pothast
Box 117
Eagle Butte SD 57625

Dear Mr. Pothast:

Enclosed is your Water License No. 1798-1 and a copy of the map prepared by the staff engineer who conducted the field investigation. Water License No. 1798-1 is the final document which completes the process of obtaining a water right.

As long as you use the water beneficially, as stated in the Water License, State Water Laws provide that you have a continuing right to use the water.

Sincerely,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures