

WATER PERMIT NO. 8528-3

Name of Applicant: **Bluestem Family Farms LLC**

Address: **PO Box 188, Pipestone MN 56164**

Phone: **507 825-4211**

Amount of Water Claimed: **0.223 cfs (130 AF)**

Total Acres: **NA**

Source of Water Supply: **groundwater (3 wells)**

Water to be used for: **commercial**

County: **Davison**

Type of Waste Disposal System:

Location: **7 miles west of Mitchell**

PRIORITY Date Received: **7-15-21**

Application/License Fee: **\$ 950**

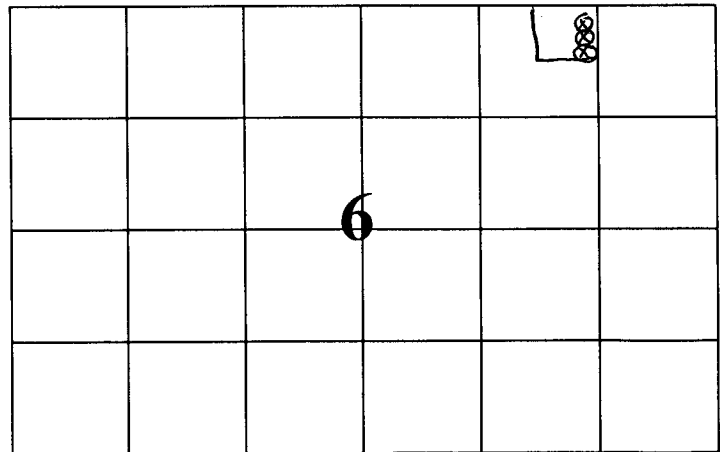
Corrected Application Received: **7-19-21**

Period of Annual Use: **January 1 – December 31**

Remarks: **Two deeper wells (1 existing and 1 new) and an existing shallow well that will be maintained as a backup**

Diversion Point: **NE 1/4 NE 1/4 Sec 6-T103N-R61W**

Facility located: **NE 1/4 NE 1/4 Sec 6-T103N-R61W**



Depth of Well: **250 and 325 feet deep**

Well Driller:

Remarks:

Type of Map:

Prepared by:

Reviewed and the Number Assigned on: **7-19-21**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

**SOUTH DAKOTA
WATER PERMIT NO. 8528-3**

Date of first receipt of application July 15, 2021.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8528-3 to Bluestem Family Farms, LLC, c/o Luke Minion, Manager, PO Box 188, Pipestone MN 56164 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. 8528-3 appropriates 130 acre-feet of water annually at a maximum pump rate of 0.223 cubic feet of water per second from two existing wells (250 feet and 325 feet deep) in the Dakota Aquifer and one new well (approximately 325 feet deep) to be completed into the Dakota Aquifer located in the NE 1/4 NE 1/4 Section 6 for commercial use in a swine facility located in the NE 1/4 NE 1/4 Section 6; all in T103N-R61W. One of the existing wells will be maintained as a standby well for the facility. This site is located approximately 7 miles west of Mitchell SD.
2. The water appropriated shall be used for the purpose of commercial use 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 from which applicant may claim right is July 15, 2021.
5. The date of approval of Permit No. 8528-3 is September 20, 2021.
6. One-fifth of the construction is to be completed on or before March 20, 2024.
7. All construction is to be completed on or before September 20, 2026.
8. Water is to be put to beneficial use on or before September 20, 2030.
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. The wells approved under Water Permit No. 8528-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under these Permits shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells approved under this permit shall be valved and the flow reduced to the amount needed or to a minimum when not being used. If the wells are abandoned or the permit cancelled, the wells must be plugged in accordance with Water Management Board Rules, Chapter 74:02:04.
3. Water Permit No. 8528-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-36.2 or 34A-2-112 or 34A-2-124 for concentrated animal feeding operations.

(continued)

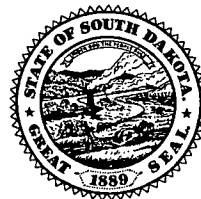
4. Water Permit No. 8528-3 is subject to compliance with all existing and applicable Water Management Board Rules including but not limited to:
 - a) Chapter 74:54:01 Ground Water Quality Standards,
 - b) Chapter 74:54:02 Ground Water Discharge Permit,
 - c) Chapter 74:51:01 Surface Water Quality Standards,
 - d) Chapter 74:51:02 Uses Assigned to Lakes,
 - e) Chapter 74:51:03 Uses Assigned to Streams, and
 - f) Chapter 74:52:01 through 74:52:11 Surface Water Discharge Provisions
5. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Dakota aquifer.
6. Water Permit No. 8528-3 authorizes a total annual diversion of 130 acre-feet of water from the Dakota aquifer.
7. Any future replacement wells shall meet the adequate well construction standard as defined in Administrative Rule of South Dakota (ARSD) 74:02:04:20. Replacement wells may not be constructed using the alternative construction requirements that are allowed for domestic use wells outlined in ARSD 74:02:04:35.

WATER MANAGEMENT BOARD

By: Eric Gronlund
Eric Gronlund, Chief Engineer
Water Rights Program
Department of Agriculture and Natural Resources

OCT 25 2021

date



JUL 15 2021

WATER RIGHTS
PROGRAM

PAID

JUL 15 2021

Ck#00452

SD EForm - 1585LD V5

FORM 2: Application for uses other than irrigation
(type or print)

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8528-3</u> (office use only) Hydrologic Unit <u>10160011</u>
	Basin <u>James River</u>
	Newspaper <u>Daily Republic</u> <u>Plainsman</u>

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

Check use(s) of water:

☐ Municipal	☐ Water Distribution System	☐ Recreational	☐ Institutional
☐ Rural Water System	☒ Commercial	☐ Fish & Wildlife	☐ Geothermal
☐ 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.)

1. Name to Appear on Water Permit Bluestem Family Farms, LLCMailing Address PO Box 188 (Address) Pipestone (City) MN (State) 56164 (Zip Code)Phone (507) 825-4211 Mobile _____ Email luke.minion@pipestone.com2. Amount of water claimed 0.223 *CFS or 130 **GPM and 130 ***AF or _____ Gallons
Flow rate and volume are both required. (*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use)3. Source of water supply groundwater (3 wells)4. Location of point of diversion NE 1/4, NE 1/4, Section 6, T103N, R61W County Davison
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)If not a public water supply (e.g. municipal), will water be used outside of the area described above? ☐ Yes ☒ No

If "Yes," where will water be used? _____

(example - NW1/4 section 12-T104N-R53W)

5. County or counties where water will be used Davison6. Annual period during which water is to be used January 1st thru December 31st

7. 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)

Existing swine feeding operation is proposing to drill an additional well to increase water capacity.

Existing 250 ft deep well will be maintained as a standby well

I, Luke Minion Manager, the applicant, certify under
Name of Person Title (if applicable)

penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

Supplemental Information

(type or print)

1. Well Information (check one or both as applicable) ☒ Drilling new well(s) ☒ Using existing well(s)

a) If new wells, how many 1 Have test holes been drilled ☐ Yes ☒ No Drilled by _____
(if yes, please provide copies of logs)

b) If existing wells, how many 2 Provide copy of log(s), if available. Drilled by Pullman (2009), Putzke (2016)

For either Existing or Proposed Wells: See attached logs

c) Well Depth (required) _____ Depth to Top of Water Bearing Material _____ Depth to Water from Surface _____

d) Distance to nearest domestic well on applicant's property _____ 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:

b) Freeboard _____

c) Crest Width _____

Crest Length _____

d) Height _____

e) Primary Outlet Capacity _____

If pipe, diameter _____

f) Secondary Spillway Capacity _____

Spillway Width _____

g) X & Y Slope (e.g. 3 to 1 is a typical slope)

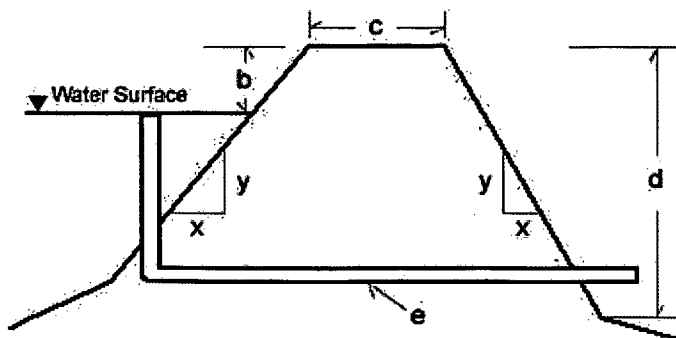
Upstream _____

Downstream _____

h) Surface Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres





Existing Wells and Proposed Well area is approximately 130' west and 660' south of the northeast corner of Section 6, T103N, R61W Davison County, SD



Schlaak, Karen

From: Brad Woerner <bwoerner@stockwellengineers.com>
Sent: Friday, July 16, 2021 3:13 PM
To: Schlaak, Karen
Subject: RE: [EXT] Water Permit Application for Bluestem Family Farms.

Importance: High

Karen,

SORRY.....

My comments below were for Moody County Dairy's application.
It has been a long long week.

Regarding BLUESTEM – you are correct in your assessment below.

Sorry for the mix up earlier!
Thanks



Brad Woerner, PE
Agricultural Engineer
Stockwell Engineers, Inc.
Cell / 605.660.1362
Office / 605.665.8092

From: Brad Woerner <bwoerner@stockwellengineers.com>
Sent: Friday, July 16, 2021 12:15
To: Schlaak, Karen <Karen.Schlaak@state.sd.us>
Subject: RE: Water Permit Application for Bluestem Family Farms.

Karen,

I believe the existing water rights permit (6894-3) has 150 gpm diversion from Split Rock Creek Aquifer. The proposed well is requesting an additional 150 gpm for an allocation of 135 ac-ft (from 2nd well).

It was my understanding that the 1st well (existing water rights) only allocated a flowrate and not a volume? Eric said that the paperwork should reflect the additional water being requested beyond the in-place water rights permit...

If I misunderstood/misrepresented Eric, I apologize. It wasn't intentional....

Thanks,



Brad Woerner, PE
Agricultural Engineer
Stockwell Engineers, Inc.
Cell / 605.660.1362
Office / 605.665.8092

From: Schlaak, Karen <Karen.Schlaak@state.sd.us>
Sent: Thursday, July 15, 2021 16:51
To: Brad Woerner <bwoerner@stockwellengineers.com>
Subject: Water Permit Application for Bluestem Family Farms.

Received the application today. Eric indicated he had talked with you about this application. My understanding is the application is requesting 0.223 cfs (100 gpm) and 130 AF from the two deeper wells (1 existing and 1 new). The existing shallow well will be maintained as a standby well. Is this correct?

Karen Schlaak
DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>



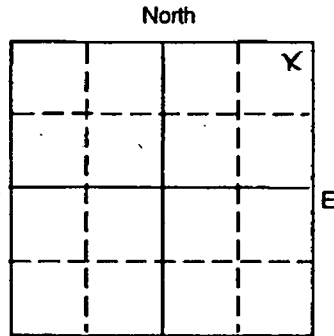
50-1275-1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NE 1/4 NE 1/4 Sec 6 Twp 103 Rg 61

County Davidson



Please mark well location with an "X"

Well completion Date
6-24-16

Distance to nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.)
? 250 ft. from Hogs (identify source)

PROPOSED USE:

☒ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

Rotary

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>200</u> LB/FT	<u>5</u> IN	<u>0</u> FT	<u>325</u> FT	<u>8 3/4</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type Grout DP No. of Sacks 28 Grout Weight 0 Lb/gal From 0 Ft To 280 Ft

Describe grouting procedure 1" trimix line pumped w/ grout machine

SCREEN:

☐ Perforated pipe ☒ Manufactured
Diameter 5 Inches Length 40 Feet
Material Plastic
Slot Size 25 Set From 285 Feet to 325 Feet
Other information Gravel Pack

0 Pack

WAS A PACKER OR SEAL USED? ☐ Yes ☐ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? 5 gallons of chlorine pumped
☐ No, Why Not?

Lab sample sent to for water quality analysis

Well Owner: Blue Stem Feeders
Business Name:
Address: P.O. Box 370
City, State, Zip: Pipestone, MN 56164

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>TOP Soil</u>	<u>0</u>	<u>2</u>
<u>Yellow clay</u>	<u>2</u>	<u>14</u>
<u>Chalk</u>	<u>14</u>	<u>50</u>
<u>Shale + Sand Strips</u>	<u>50</u>	<u>108</u>
<u>Shale</u>	<u>108</u>	<u>235</u>
<u>Sand Strips</u>	<u>235</u>	<u>250</u>
<u>Shale</u>	<u>250</u>	<u>285</u>
<u>Sand</u>	<u>285</u>	<u>325</u>
<u>Granite</u>	<u>325</u>	

STATIC WATER LEVEL 0 FEET

If flowing: closed in pressure 0 PSI

GPM flow through Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate GPM

Can well be completely shut in? Flows - Pint

WELL TEST DATA:

☐ Pumped Describe: AIR
☐ Bailed
☐ Other

Pumping Level Below Land Surface

 Ft. After Hrs. pumped GPM

 Ft. After Hrs. pumped GPM

If pump installed, pump rate: GPM

REMARKS

140' - 75 gpm

DAKOTA

This well was drilled under license # 439

And this report is true and accurate.

Drilling firm: Dave Putzke well Drilling & repair Inc

Signature of License Representative:

Dave Putzke

RECEIVED

Signature of Well Owner or Equitable Property Holder:

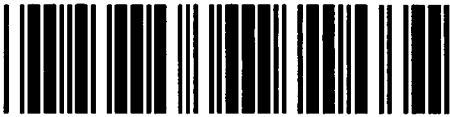
JUN 29 2016

WATER RIGHTS PROGRAM

Date:

523 E Capitol Ave. Pierre SD 57501

Please return **WHITE COPY** to: DENR Water Rights



531052671

ANNUAL REPORT

Secretary of State
500 E. Capitol Ave
Pierre, SD 57501-5070
(605) 773-4845

Foreign Limited Liability Company
SDCL 47-34A-211; 59-11-24, 24.1

Filing Fee: \$50

2020
FILING YEAR

Please Type or Print Clearly in Ink
Please submit one Original
Make payable to the SECRETARY OF STATE

Total Fee: \$50

1. Business ID and Name:

FL003064
BUSINESS ID

BLUE STEM FAMILY FARMS, LLC
BUSINESS NAME

2. The jurisdiction under whose law it is formed **MINNESOTA**

3. The address of the principal executive office (business address):

Actual Street Address

1300 S HWY 75
PIPESTONE, MN 56164

Mailing Address

1300 S HWY 75
PO BOX 188
PIPESTONE, MN 56164

4. The South Dakota Registered Agent's Name:

South Dakota law permits the registered agent to be either (a) a noncommercial registered agent, or (b) a commercial registered agent.

(a) The South Dakota Noncommercial Registered Agent's name

Name **Luke W. Minion**

Actual Street Address in this State

304 S SPLITROCK BLVD
SUITE 205
BRANDON, SD 57005

Mailing Address in this State

304 S SPLITROCK BLVD
SUITE 205
BRANDON, SD 57005

5. If the LLC is manager-managed, list the names and addresses of its manager(s). SDCL 59-11-24. If the LLC is member-managed, this section may be left blank

Name

Address

Luke Minion

304 Splitrock Blvd, Suite 205, Brandon, SD 57005

6. Beneficial Owners (optional): A beneficial owner is a person who has or in some manner controls an equity security. Please consult an attorney for legal advice if you have any questions concerning this entry. Any question under this heading is considered a request for legal advice and the secretary of state's office is, by statute, not permitted, to provide legal advice.

No person may execute this report knowing it is false in any material respect. Any violation may be subject to a criminal penalty (SDCL 22-39-36).

RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Agriculture and Natural Resources

Date July 15, 2021

RECEIVED OF Bluestem Family Farms, LLC PO Box 188 Pipestone MN 56164

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

Fee for Application for Permit No. <u>8528-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>750.00</u>
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>8528-3</u>	\$ <u>200.00</u>
Fee for Filing Transfer Form _____	\$ _____
Fee for _____	\$ _____
Fee for Issuing New Well Driller's License No. _____	\$ _____
Fee for Renewal of Well Driller's License No. _____	\$ _____
Fee for Issuing Well Pump Installer's License No. _____	\$ _____
Fee for Renewal of Well Pump Installer's License No. _____	\$ _____
(Any Other Work Provided by Law)	
TOTAL	\$ <u>950.00</u>

By Eric Gronlund
Chief Engineer

me

Schlaak, Karen

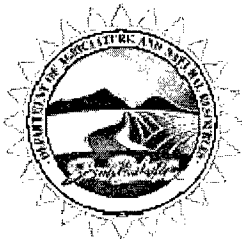
From: Schlaak, Karen
Sent: Monday, August 30, 2021 9:35 AM
To: 'luke.minion@pipestone.com'
Cc: Brad Woerner (bwoerner@stockwellengineers.com)
Subject: RE: Water Permit Application No. 8528-3, Bluestem Family Farms LLC
Attachments: 1786.pdf

Here is the attachment.

From: Schlaak, Karen
Sent: Monday, August 30, 2021 9:26 AM
To: luke.minion@pipestone.com
Cc: Brad Woerner (bwoerner@stockwellengineers.com) <bwoerner@stockwellengineers.com>
Subject: Water Permit Application No. 8528-3, Bluestem Family Farms LLC

Attached is a copy of the report, chief engineer recommendation and information regarding the public notice for your water permit application. As stated in the letter, please contact the paper(s) as soon as possible to authorize publication and arrange for payment. This information is being mailed to you today.

Karen Schlaak
DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8528-3, Bluestem Family Farms LLC**

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. 8528-3, Bluestem Family Farms LLC, PO Box 188, Pipestone MN 56164.

The Chief Engineer is recommending APPROVAL of Application No. 8528-3 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 domestic water uses and water rights, 3) the proposed use is a beneficial use and 4) it is in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board with the following qualifications:

1. The wells approved under Water Permit No. 8528-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under these Permits shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells approved under this permit shall be valved and the flow reduced to the amount needed or to a minimum when not being used. If the wells are abandoned or the permit cancelled, the wells must be plugged in accordance with Water Management Board Rules, Chapter 74:02:04.
3. Water Permit No. 8528-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-36.2 or 34A-2-112 or 34A-2-124 for concentrated animal feeding operations.
4. Water Permit No. 8528-3 is subject to compliance with all existing and applicable Water Management Board Rules including but not limited to:
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 - b) Chapter 74:54:02 Ground Water Discharge Permit,
 - c) Chapter 74:51:01 Surface Water Quality Standards,
 - d) Chapter 74:51:02 Uses Assigned to Lakes,
 - e) Chapter 74:51:03 Uses Assigned to Streams, and
 - f) Chapter 74:52:01 through 74:52:11 Surface Water Discharge Provisions

(continued)

5. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Dakota aquifer.
6. Water Permit No. 8528-3 authorizes a total annual diversion of 130 acre-feet of water from the Dakota aquifer.
7. Any future replacement wells shall meet the adequate well construction standard as defined in Administrative Rule of South Dakota (ARSD) 74:02:04:20. Replacement wells may not be constructed using the alternative construction requirements that are allowed for domestic use wells outlined in ARSD 74:02:04:35.

See report on application for additional information.



Eric Gronlund, Chief Engineer
August 27, 2021

Report to the Chief Engineer
On Water Permit Application No. 8528-3

Bluestem Family Farms LLC

c/o Luke Minion

August 30, 2021

Water Permit Application No. 8528-3 proposes to appropriate up to 130 acre-feet of water annually at a maximum instantaneous diversion rate of 0.223 cubic feet of water per second (cfs) from two existing wells (250 feet and 325 feet deep) completed into the Dakota aquifer and one new well (approximately 325 feet deep) to be completed into the Dakota aquifer in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 6 for commercial use in a swine facility located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 6; all in T103N-R61W. One of the existing wells will be maintained as a standby well for the facility. The site is in Davison County approximately seven miles west of Mitchell, South Dakota.

AQUIFER: Dakota (DKOT)

HYDROGEOLOGY:

The Dakota Formation is defined as the first relatively continuous sandstone below the Greenhorn Limestone, and it extends downward to the top of the Skull Creek Shale in western and central South Dakota (Schoon, 1971). In eastern South Dakota, the Skull Creek Shale is not continuous and when absent, the Dakota Formation directly overlies Precambrian bedrock or the Inyan Kara Group (Schoon, 1971). In western South Dakota, a stratigraphically equivalent formation to the Dakota Formation is the Newcastle Formation, which has outcrops in the Black Hills (Bredehoeft, et al., 1983). In South Dakota, the Dakota Formation has been subdivided into three units (Schoon, 1971). The upper unit consists of light brown to reddish-brown, fine to medium grained, friable sandstone, interbedded with gray to dark gray shale. Thin, discontinuous beds of lignite are present in the lower part of the upper unit. The middle unit consists of a gray silty clay with small siderite pellets disseminated throughout. The lower unit consists of medium to coarse grained sandstone (Schoon, 1971).

The Dakota aquifer is comprised of the porous and permeable portions of the Dakota Formation and is primarily a confined bedrock aquifer throughout most of South Dakota (Schoon, 1971; Water Rights 2021b and 2021d). Schoon (1971) estimated the Dakota Formation underlies 66,500 square miles of South Dakota and has an average thickness of 150 feet. A conservative estimate of the amount of water stored in the Dakota aquifer can be estimated by assuming 15% porosity for the Dakota Formation (Schoon, 1971), multiplied by the average thickness (150 feet) and the areal extent (66,500 square miles or 42.5 million acres) of the aquifer to calculate approximately 960 million acre-feet of stored water in South Dakota.

In Davison County, the Dakota aquifer underlies approximately 340 square miles, or 857,600 acres, and contains an estimated 4.8 million acre-feet of recoverable water in storage (Hansen, 1983). The aquifer has an average thickness of approximately 110 feet, with a documented maximum thickness of approximately 400 feet in the western part of the county (Hansen, 1983).

The depth to the top of Dakota aquifer materials in Davison County range from 250 to 700 feet below the ground surface, and wells completed into the aquifer have static water levels ranging from flowing to approximately 12 feet below the ground surface (Hansen, 1983). Uncontrolled flowing wells that penetrate the aquifer in T103N and T104N have caused the potentiometric surface of the Dakota aquifer to slope to the northeast at a gradient of approximately 8 to 14 feet per mile (Hansen, 1983). Additionally, ten miles northwest of Ethan, South Dakota, the Sioux Quartzite ridge has caused a groundwater divide in the Dakota aquifer that caused the gradient of the potentiometric surface to slope to the southeast (Hansen, 1983).

Water well completion reports were submitted with Water Permit Application No. 8528-3 for two existing wells completed into the Dakota aquifer. The first well completion report lists “Sandy Yellow Clay” from 0 to 12 feet below the ground surface, “Chalk” from 12 to 45 feet, “Codell Shale with Hard Sand” from 45 to 50 feet, “Shale Sandy Shale & Little Sand Streak” from 50 to 65 feet, “Shale with Little Sand Streaks & Hard Sp” 65 to 80 feet, “Shale with Sandy Shale” from 80 to 110 feet, “Shale” 110 to 230 feet, “Good Sand with Shale Breaks” from 230 to 245 feet, and “Good Sand” from 245 to 252 feet. The well was screened from 230 feet to 250 feet in “Good Sand with Shale Breaks” and had a static water level of 15 feet below the ground surface, which indicates there was approximately 215 feet of artesian head pressure in the well at the time of completion (May 27, 2009) (Water Rights, 2021d). The second well completion report lists “Top Soil” from 0 to 2 feet below the ground surface, “Yellow Clay” from 2 to 14 feet, “Chalk” from 14 to 50 feet, “Shale & Sand Stripes” from 50 to 108 feet, “Shale” from 108 to 235 feet, “Sand Strips” from 235 to 250 feet, “Shale” from 250 to 285 feet, “Sand” from 285 feet to 325 feet, and “Granite” at 325 feet. The well was screened from 285 to 325 feet in “Sand” and had a static water level of zero feet below the ground surface, which indicates there was approximately 285 feet of artesian head pressure in the well at the time of completion (June 24, 2016) (Water Rights, 2021d). Based on the submitted well completion reports and the lithologic logs on file for nearby observation wells, the Dakota aquifer is confined at the proposed diversion point and existing well’s location (SDGS, 2021; Water Rights, 2021b and 2021d).

South Dakota Codified Law (SDCL) 46-2A-9

Pursuant to SDCL 46-2A-9, “A permit to appropriate water may be issued only if there is a reasonable probability that there is unappropriated water available for the applicant’s proposed use, that the diversion point can be developed without unlawful impairment of existing domestic water uses and water rights, and that the proposed use is a beneficial use and in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board as defined by SDCL 46-2-9 and 46-2-11.” This report will address the availability of unappropriated water and the potential for unlawful impairment of existing domestic water uses and water rights within the Dakota aquifer.

WATER AVAILABILITY:

Water Permit Application No. 8528-3 proposes to appropriate water from the Dakota aquifer. The probability of unappropriated water being available from the aquifer can be evaluated by considering SDCL 46-6-3.1, which requires “No application to appropriate groundwater may be

approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source. An application may be approved, however, for withdrawals of groundwater from any groundwater formation older than or stratigraphically lower than the greenhorn formation in excess of the average estimated annual recharge for use by water distribution systems.” The Dakota aquifer is older than and stratigraphically lower than the Greenhorn Formation (Fahrenbach et al, 2010); however, the applicant’s proposed use is not for use in a water distribution system as defined by SDCL 46-1-6(17). Therefore, the average annual recharge and average annual withdrawal rates to and from the Dakota aquifer must be considered.

OBSERVATION WELL DATA:

Administrative Rule of South Dakota (ARSD) 74:02:05:07 requires that the Water Management Board shall rely upon the record of observation well measurements in addition to other data to determine that the quantity of water withdrawn annually from the aquifer does not exceed the estimated average annual recharge of the aquifer.

Observation wells provide data on how the aquifer reacts to regional climatic conditions and local pumping. The DANR-Water Rights Program monitors 46 observation wells completed into the Dakota aquifer (Water Rights, 2021b). The five closest observation wells to the proposed diversion point and existing wells are AU-89A (approximately 20 miles southwest), HD-87A (approximately 48 miles northwest), HT-80B (approximately 49 miles southeast), BL-83A (approximately 56 miles east), and GY-89A (approximately 70 miles southwest) (as shown in Figure 6). The hydrographs for these observation wells are displayed in Figures 1 to 5 (Water Rights, 2021b). The data points utilized to construct the hydrographs are measurements of the static water level in the observation wells from the top of the well casing.

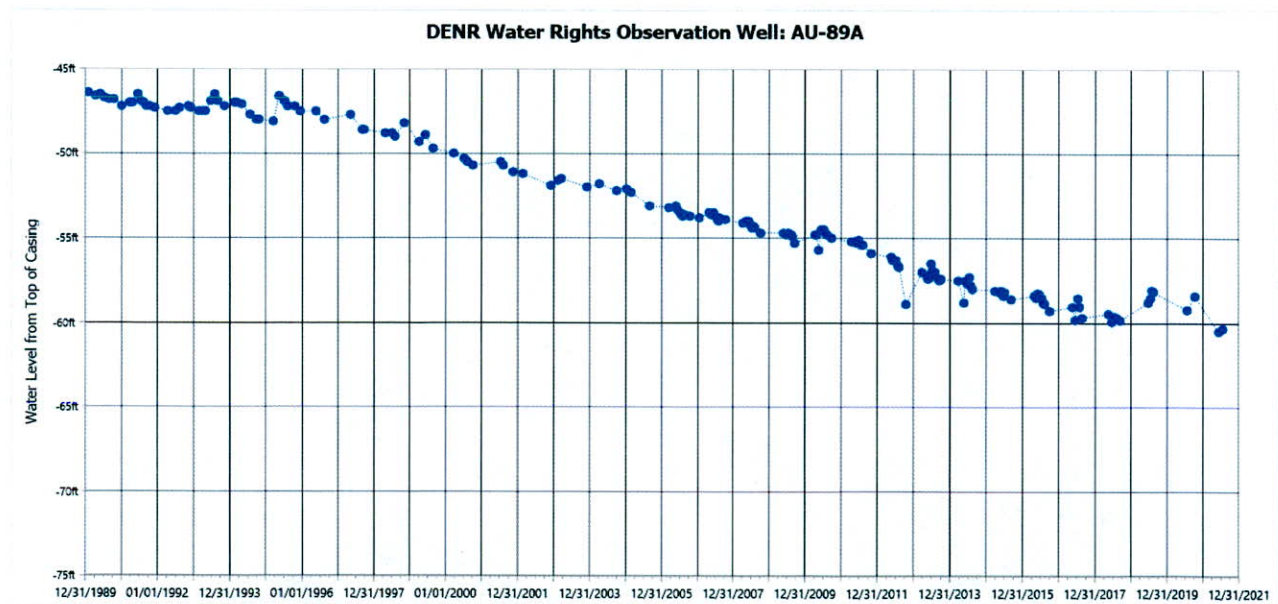


Figure 1. Hydrograph for observation well AU-89A (Water Rights, 2021b)

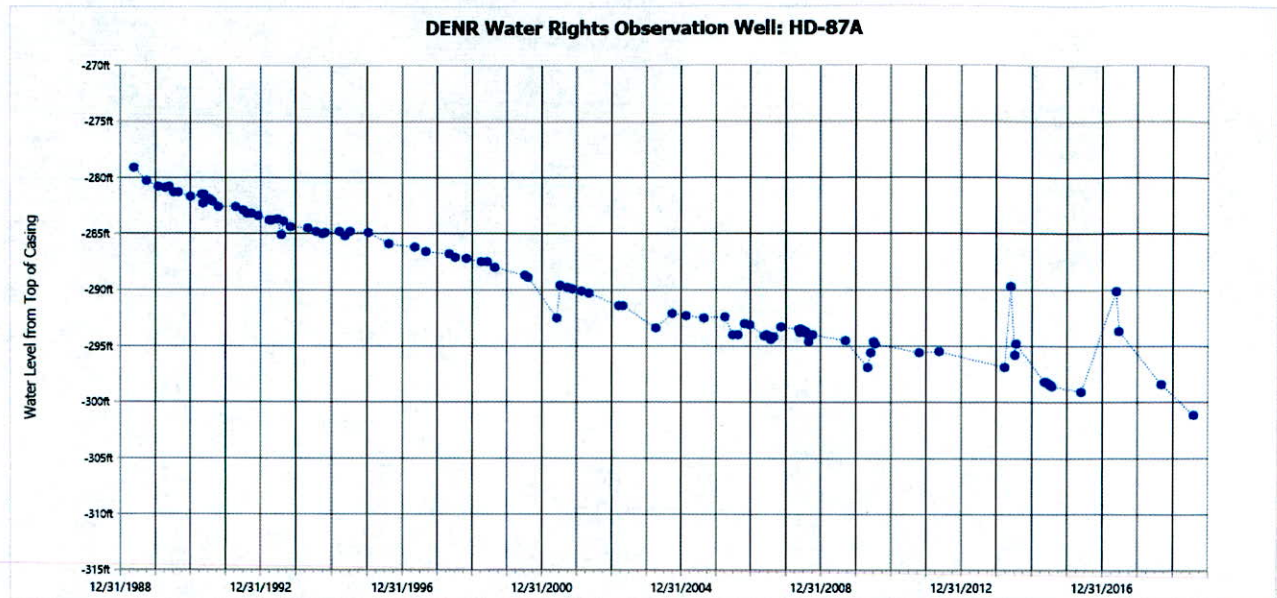


Figure 2. Hydrograph for observation well HD-87A (Water Rights, 2021b)

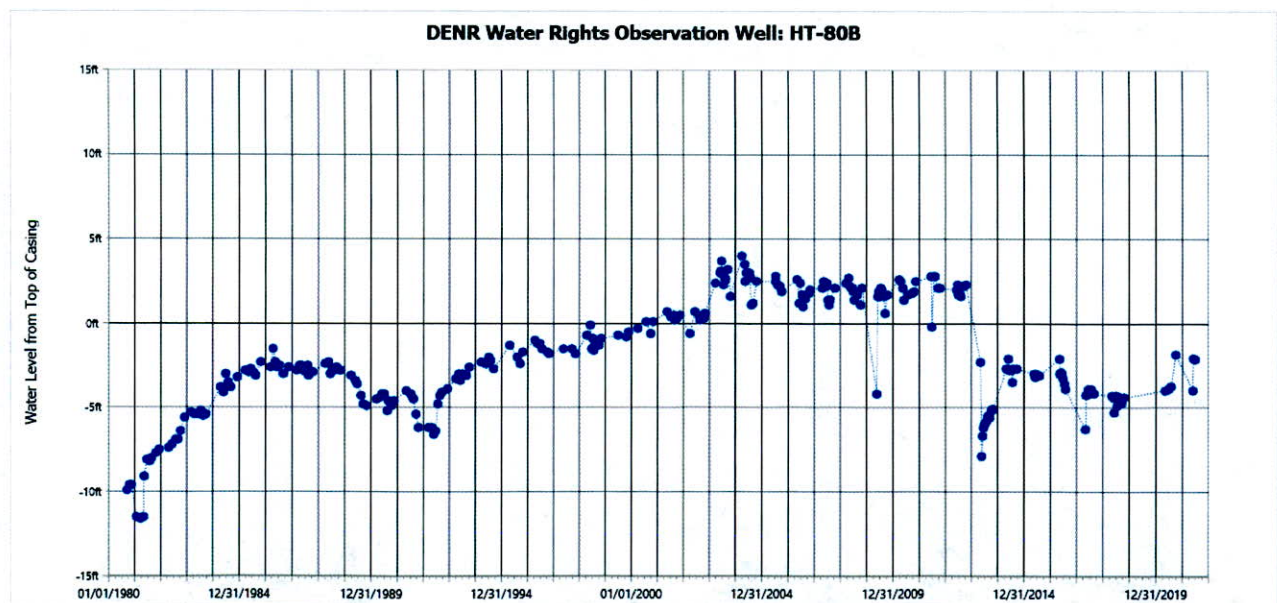


Figure 3. Hydrograph for observation well HT-80B (Water Rights, 2021b)

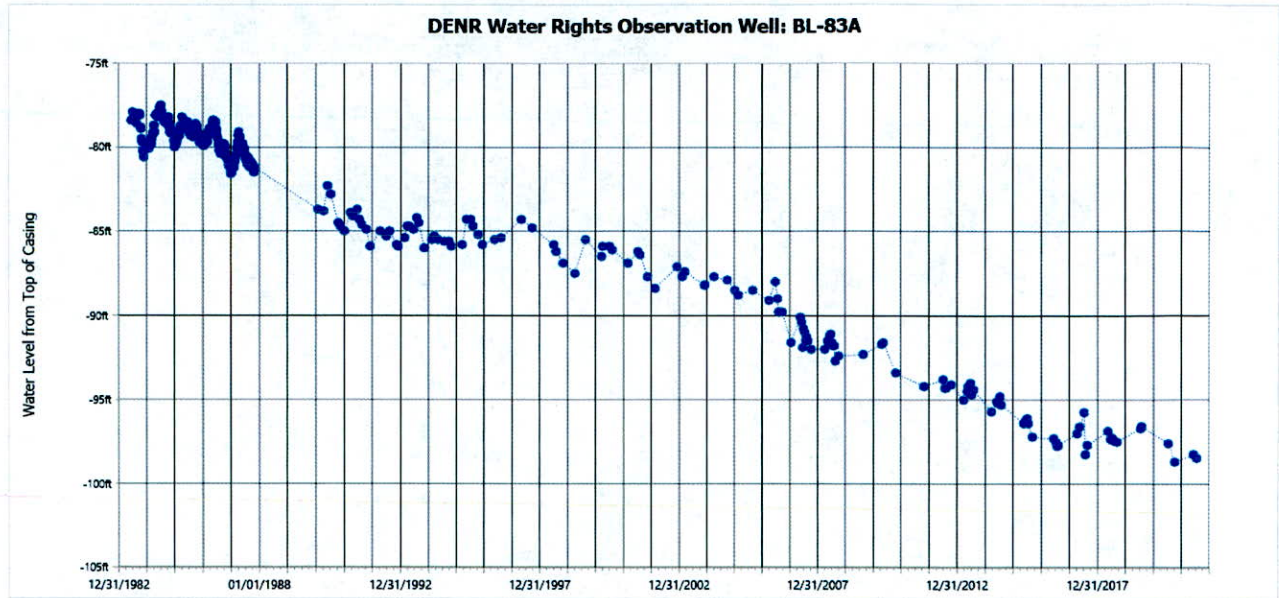


Figure 4. Hydrograph for observation well BL-83A (Water Rights, 2021b)

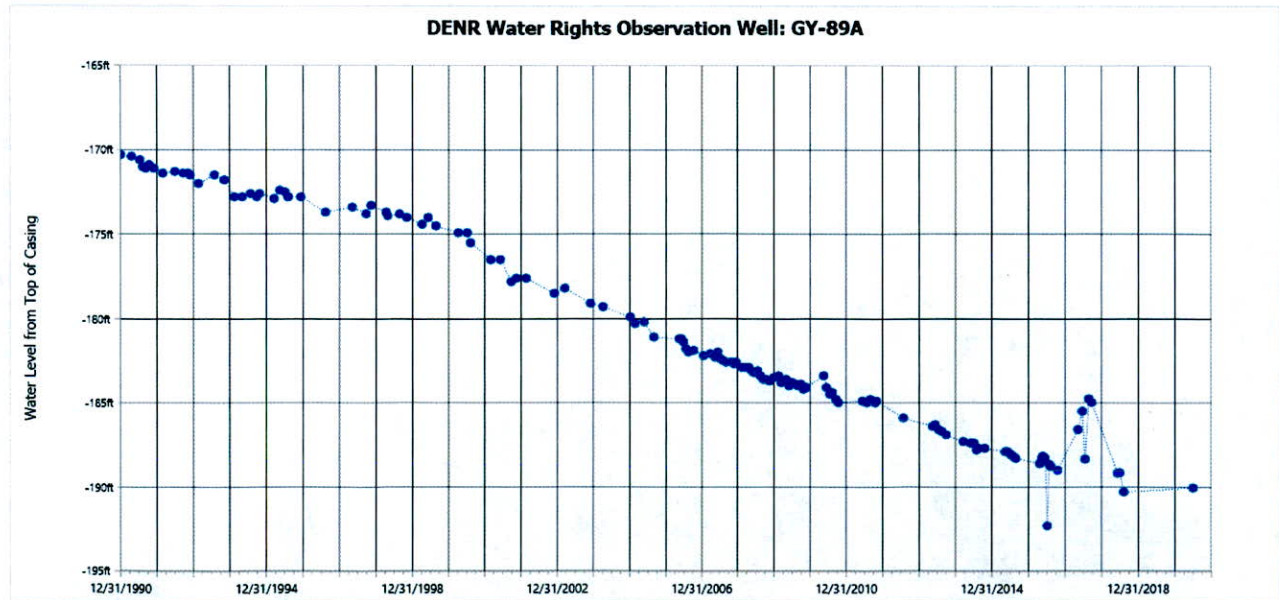


Figure 5. Hydrograph for observation well GY-89A (Water Rights, 2021b)

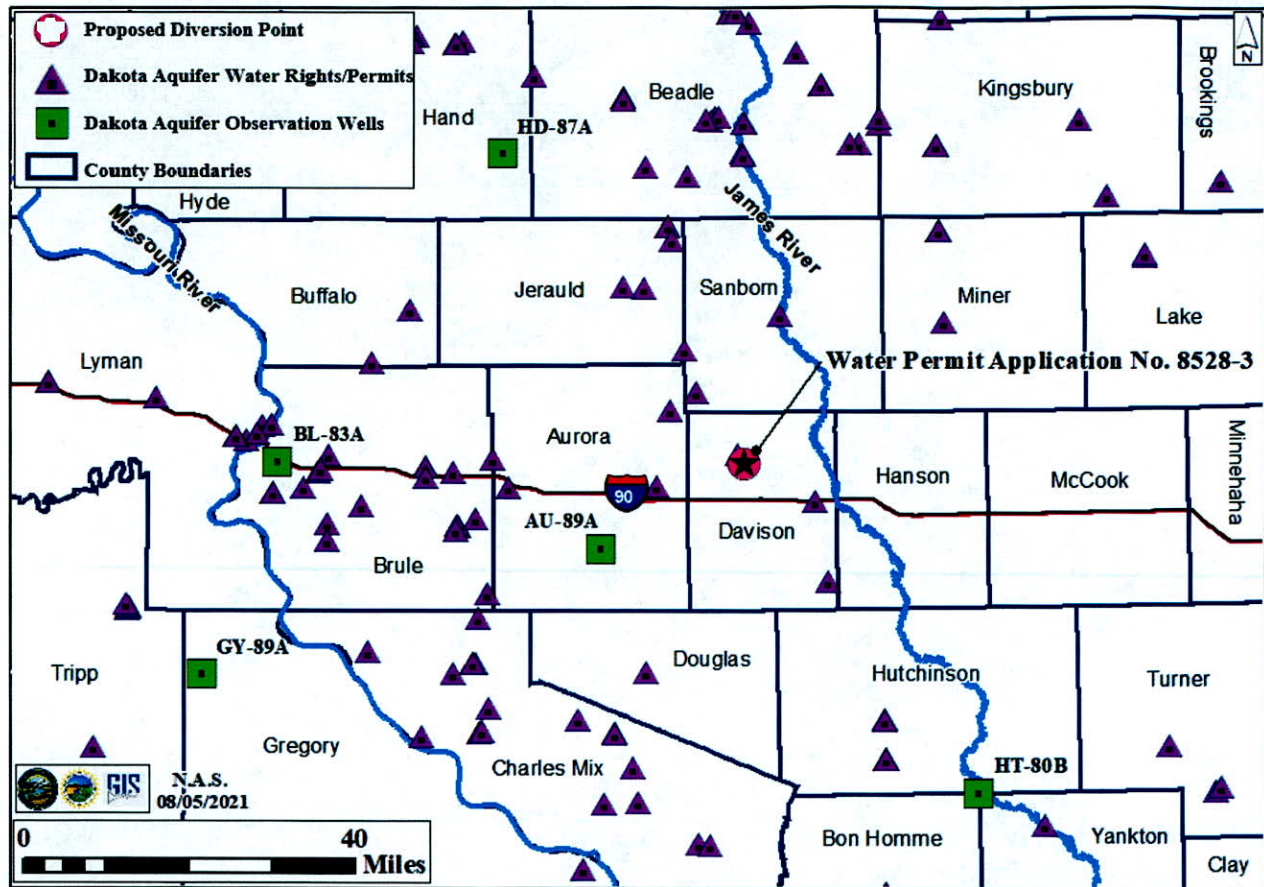


Figure 6. Location of the proposed diversion point and existing wells for Water Permit Application No. 8528-3 with the Dakota aquifer water rights/permits within approximately fifty miles of the proposed diversion point and existing wells, and the observation wells used in this analysis (Water Rights, 2021b and 2021c)

While the overall trend in these historical measurements is downward, observation well ED-85A (approximately 119 miles northwest of the proposed diversion point and existing wells) completed into the Dakota aquifer has recorded a trend that has been stable to slightly increasing from 1991 to 2017 (Figure 7) (Water Rights, 2021b). An aquifer pumping test at the well was the cause for the drawdown in hydraulic head that occurred in 2018 (Figure 7) (Water Rights, 2021b).

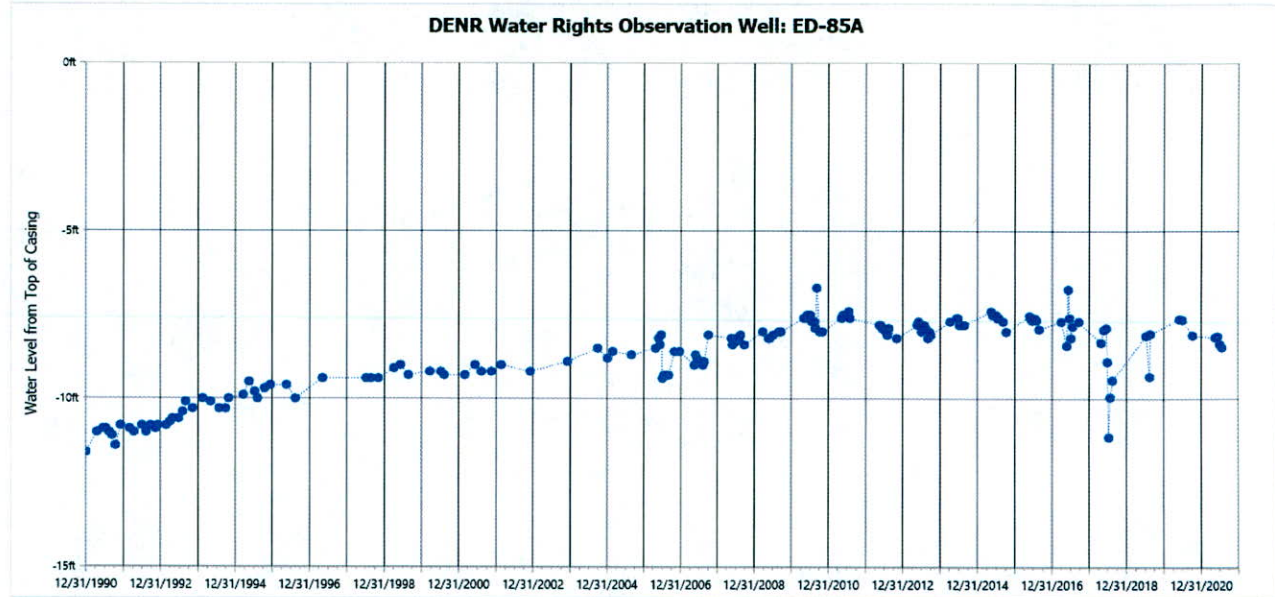


Figure 7. Hydrograph for observation well ED-85A (Water Rights, 2021b)

In addition to the observation well hydrographs, a record of the potentiometric surface is shown through historical accounts. Schoon (1971) developed maps of the potentiometric surface of the Dakota aquifer using data modified from Darton (1909), from the State Engineer's office for the period 1914 to 1915, and a compilation of many reports over the period of 1936 to 1953. Wells that have been completed into the Dakota aquifer in the past fifteen years and within approximately one mile of the proposed diversion point and existing wells were used to approximate the current potentiometric surface conditions (Table 1) (Water Rights, 2021d).

Table 1. Historic and current approximate water level elevations near the proposed diversion point and existing wells the applicant proposes to use (Schoon, 1971; Water Rights, 2021d)

Data Source	Year(s)	Approximate potentiometric surface within two miles of proposed diversion point (feet)
Schoon (1971), after Darton	1909	1,400 to 1,440
Schoon (1971), State Engineer's Office	1914-1915	1,350 to 1,400
Schoon (1971)	1936-1953	1,350 to 1,400
Well Logs Database	2009-Present	1,300 to 1,350

Throughout South Dakota, most of the hydrographs for observation wells completed into the Dakota aquifer, and the potentiometric surface measurements of the Dakota aquifer show a decreasing trend in hydraulic head (Water Rights, 2021b). A decline in water levels (as seen on the hydrographs in Figures 1 to 5) in a confined aquifer does not necessarily indicate a significant decrease in water stored in the aquifer, as water levels above the top of the aquifer materials are representative of the hydraulic head (water pressure) inside the aquifer. Additionally, there are uncontrolled, flowing wells discharging water from the Dakota aquifer at ground surface, and it is expected water from the aquifer is also being discharged to other aquifers if wells completed into the Dakota aquifer have experienced casing failure. Concerns have developed over time about the decline in artesian head pressure of the Dakota aquifer. Schoon (1971) stated, "The fact that withdrawal from the artesian system exceeds recharge is clearly demonstrated by declining pressures." However, the Water Management Board has found that past declines of the potentiometric surface (as seen on Table 1) do not automatically constitute that withdrawals have exceeded recharge (Water Rights, 1987). The Board has concluded that withdrawals exceeding the average annual recharge cannot be determined based solely upon a decline in head pressure, and in theory the Dakota aquifer head pressure is stabilizing relative to withdrawals and discharges (Water Rights, 1987). Since discharge from uncontrolled flowing wells is likely to continue until water levels in the aquifer decline to being at or below the ground surface and continuing to allow beneficial pumping to occur reduces the amount of water being discharged to waste, the Water Management Board's decision to optimize development of the Dakota aquifer is favorable. Therefore, there is a reasonable probability unappropriated water from the Dakota aquifer is available for the proposed appropriation.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Dakota aquifer in South Dakota occurs through upward leakage from underlying aquifers with higher artesian pressure than the Dakota aquifer, downward seepage from overlying confining layers and the through infiltration of precipitation on the Newcastle Formation outcrops in the Black Hills (Bredehoeft, et al., 1983; Koch and McGarvie, 1988; Steece and Howells, 1965). Using computer modeling, Bredehoeft, et al. (1983) attempted to match Darton's (1909) potentiometric surface map of the Dakota aquifer to develop a recharge estimate of approximately 79.4 cfs (57,500 acre-feet per year) before well development began. However, many assumptions used in Bredehoeft, et al.'s (1983) recharge estimate were incorrect and outdated. For example, assuming steady-state flow conditions between aquifers is unrealistic of real-world conditions and the recharge estimates used for the Madison and Inyan Kara aquifers in Bredehoeft, et al.'s (1983) analysis are much lower than estimates measured by more recent research (Carter, et al., 2002). While Bredehoeft, et al.'s (1983) estimate can provide a scale of the Dakota aquifer's recharge rate, it cannot be used as an exact value for water management purposes. As the physical properties of aquifers and the locations where adjacent aquifers are in contact with each other are relatively undefined among many other factors, it is unknown whether the true recharge rate of the Dakota aquifer is higher or lower than Bredehoeft et al.'s (1983) estimate.

Discharge

Discharge from the Dakota aquifer in South Dakota occurs through well withdrawals, uncontrolled flowing wells and outflow to overlying adjacent aquifers (Koch and McGarvie, 1988; Steece and Howells, 1965; Water Rights, 2021c). Outflow from the Dakota aquifer to overlying adjacent aquifers occurs on the slope and crest of the Sioux Ridge because the Dakota and other aquifers merge or are hydraulically connected at this location (Steece and Howells, 1965). Additional outflow from the Dakota aquifer to overlying adjacent aquifers occurs because of the high artesian pressure in the Dakota aquifer and through corroded well casings (Steece and Howells, 1965; Water Rights, 2021b).

Currently, there are 251 water rights/permits appropriating water from the Dakota aquifer within South Dakota, plus one pending application – Water Permit Application No. 8525-3 requesting 130 acre-feet per year from the Dakota aquifer for commercial use in a livestock confinement operation (Water Rights, 2021c). Additionally, there are seven future use permits reserving water from the Dakota aquifer (Water Rights, 2021c). For the purpose of estimated average annual withdrawals, the seven future use permits are assumed to be fully developable for a total of 4,237 acre-feet per year (Table 2).

Table 2. Future use water permits for Dakota aquifer with corresponding reserved water volume (Water Rights, 2021c)

Future Use Permit Holder	Amount of Reserved Water (acre-ft)
City of Canton (1262C-3, 5219-3)	1,849
City of Lennox (5101-3, 5101A-3)	0*
South Lincoln RWS (4817-3)	1,448
Lincoln RWS (5155-3)	440
City of Harrisburg (8400-3)	500
Total:	4,237
RWS: Rural Water System, *The City of Lennox has allocated the water they had reserved	

Of the 251 Dakota aquifer water rights/permits, 19 are for irrigation use and 232 are for non-irrigation use. Table 1 summarizes the 232 non-irrigation water rights/permits authorized to appropriate water from the Dakota aquifer with the estimated annual use for each water right/permit as determined by their limiting diversion rate or annual volume. The amount of water that can be withdrawn was estimated by assuming the non-irrigation water rights/permits limited by an annual volume will withdraw their entire appropriated volume every year. It is estimated that the non-irrigation water rights/permits limited only by a diversion rate will pump at their maximum permitted diversion rate for 60 percent of the time. The use type determined for each water right/permit was based on the primary use categorized for each water right/permit as some permits have additional uses (Water Rights, 2021c). It is worth noting, 12 non-irrigation water rights/permits on Table 3 are authorized to withdraw from one or more aquifers, in addition to the Dakota aquifer. Two of these non-irrigation water permits (Permit Nos. 2804-3 and 8464-3) have a specified volume out of their entire appropriated volume that was authorized only for their Dakota aquifer well. For the purpose of estimated average annual withdrawals, these water permits are assumed to withdraw their full specified volume permitted only for their Dakota aquifer well. The remaining ten water rights/permits that are authorized to withdraw from

either their Dakota aquifer well or their well completed into a different aquifer at their permitted/licensed diversion rate, without having a certain diversion rate or volume designated for what each well is authorized to divert. For the purpose of estimated average annual withdrawals, these water rights/permits are assumed to be withdrawing their full amount from the Dakota aquifer. Additionally, the municipal water rights/permits that are authorized to appropriate water from the Dakota aquifer, that are identified as being connected to a rural water system (RWS) likely maintain their wells for standby purposes (Friedeman, 2020; Water Rights, 2021c); as such, the average annual water use for these water rights has been estimated to be zero acre-feet per year on Table 3. Overall, the average annual withdrawal rate for the Dakota aquifer non-irrigation water rights/permits is approximately 22,514 acre-feet per year (Table 3) (Water Rights, 2021c). When including the estimated use from the pending application - Water Permit Application No. 8525-3 (if approved), the average annual withdrawal rate for the Dakota aquifer non-irrigation water rights/permits is approximately 22,644 acre-feet per year (Water Rights, 2021c).

Table 3. Summary of the non-irrigation water rights/permits authorized to appropriate from the Dakota aquifer with estimated annual use determined by their respective diversion rate or annual volume (Friedeman, 2020; Water Rights, 2021c)

Use Type	No. of Water Rights/Permits	Appropriation for Water Rights/Permits limited by Volume (acre-feet/year)	Appropriation for Water Rights/Permits limited by Diversion Rate (cfs)	Total Estimated Use (acre-feet/year)
RWS	6	2,005	2.2	2,961
SHD	7		3.33	1,447
REC	3	3.1	0.45	199
COM	102	945	11.74	6,044
DOM	11		1.753	762
FWP	4		2.73	1,186
GEO	2		2.33	1,012
INS	2		1.34	582
IND	6	160	0.84	525
MUN	89	3,274	10.41	7,798
TOTAL:	232	6,387	37.1	22,514
RWS: Rural Water System, SHD: Suburban Housing Development, REC: Recreation,				
COM: Commercial, DOM: Domestic, FWP: Fish & Wildlife Propagation, GEO: Geothermal,				
INS: Institutional, IND: Industrial, MUN: Municipal				

As development of the Dakota aquifer has increased over time, some of the appropriations have been made by rural water systems that are required to report their annual withdrawal rate (Water Rights, 2021c). The withdrawals that are annually reported from the Dakota aquifer by some appropriative users (South Lincoln RWS, Clay RWS, and Lincoln County RWS) are shown in Table 4 (Water Rights, 2021c and 2021f). The reported withdrawals by the RWS users listed on Table 4 are for comparison purposes only to show historically the average annual use has been less than the volume that is estimated on Table 3 (Water Rights, 2021c and 2021f). The estimated use for RWS users calculated on Table 3 will be used in the analysis.

Table 4. Non-irrigation rural water system water rights/permits required to report their respective annual use from the Dakota aquifer (Water Rights, 2021c and 2021f)

	South Lincoln RWS	Clay RWS	Lincoln County RWS
	5647-3, 6300-3, 6490-3, 6778A-3	5997B-3	5156-3
2003	725		
2004	904		
2005	769		
2006	863	72	
2007	860	126	
2008	863	124	0
2009	773	119	0
2010	775	122	0
2011	785	116	0
2012	865	186	0
2013	765	155	0
2014	739	148	0
2015	711.5	141	0
2016	640	163	0
2017	643	201	0
2018	503	170	0
2019	562	162	0
2020	530	197.3	0
Max	904	201	0
Min	503	72	0
Avg	738	147	0
RWS: Rural Water System			

Currently, there are 19 irrigation water rights/permits appropriating water from the Dakota aquifer (Water Rights, 2021c). Irrigation water rights/permits have been typically required to report their annual usage on an irrigation questionnaire since 1979. Table 5 lists only 16 water rights/permits appropriating water from the Dakota aquifer as Water Right Nos. 394-3 and 762-3 are not required to submit an irrigation questionnaire. Collectively, Water Right Nos. 394-3 and 762-3 are authorized to irrigate 31.2 acres (Water Rights, 2021c). Generally, irrigators in eastern South Dakota apply less than one foot of water per acre per year. However, to account for the fluctuation in wet and dry cycles from year to year, the one foot of water per acre per year application rate will be used to liberally estimate the annual withdrawal rate for these irrigation water rights. Therefore, Water Right Nos. 394-3 and 762-3 are estimated to collectively withdraw approximately 31.2 acre-feet per year (Water Rights, 2021c). Water Permit Application No. 8510-3 (approved in 2021) authorizes 30 acres of golf course turf to be irrigated (Water Rights, 2021c). Turf irrigation typically requires more water than crop irrigation so an application rate of two feet of water per acre per year will be used to liberally estimate the annual withdrawal rate for this irrigation water permit. When applying two feet of water over the 30 acres currently authorized to be irrigated under Water Permit Application No. 8510-3, the estimated annual withdrawal rate for Water Permit Application No. 8510-3 is approximately 60 acre-feet per year (Water Rights, 2021c).

To give a better representation of the current development of the Dakota aquifer, the average annual withdrawal rate for the irrigation water rights/permits that have reported over the last ten years was estimated. On average, the last ten years of Dakota aquifer irrigation water rights/permits pumped 206.3 acre-feet annually (Table 5) (Water Rights, 2021a). By combining the calculated withdrawal rate for the three irrigation water rights/permits that are not accounted for on Table 5 with the average annual withdrawal rate based on the development of the Dakota aquifer over the last ten years, the average annual withdrawal rate for the 19 Dakota aquifer irrigation water rights/permits is approximately 297.5 acre-feet per year (Water Rights, 2021a and 2021c).

Table 5. Reported historic irrigation use from Dakota aquifer (Water Rights, 2021a)

Year	No. of Permits Reporting	Annual Appropriation (acre-feet)	Reported Pumpage (acre-feet)
1979	2	729	38
1980	2	729	110
1981	4	1469	45
1982	5	1,420.52	33.23
1983	5	1,834.76	64.39
1984	4	1,405.76	0
1985	5	1,554.26	8.1
1986	5	1,834.76	238.85
1987	5	1,900.52	1.3
1988	4	1,471.52	452.8
1989	4	1,471.52	265.4
1990	4	1,471.52	234
1991	5	1,481.52	165.42
1992	5	1,501.52	40.4
1993	7	1,521.52	112.4
1994	7	1,455.76	51.89
1995	8	1,051.76	30.83
1996	8	1,117.52	34.38
1997	9	1,127.52	48
1998	9	637.52	175.8
1999	10	703.52	101.57
2000	10	703.52	172.81
2001	11	777.52	160.85
2002	10	763.52	178.87
2003	10	763.52	205.02
2004	10	763.52	153.97
2005	12	1,003.52	146.51
2006	13	1,211.52	232.32
2007	14	1,238.52	199.98
2008	14	1,238.52	196.39
2009	15	1,298.52	130.76
2010	17	1,950.52	171.66
2011	18	2,158.52	174.57
2012	18	2,158.52	298.33
2013	18	2,158.52	256.52
2014	17	2,354.52	162.86
2015	17	2,576.32	236.1
2016	16	2,368.32	195.95
2017	16	2,368.32	229.07
2018	16	2,368.32	156.71
2019	15	2,057.12	107.52
2020	16	2,183.12	245.61
Min	2	637.5	0
Max	18	2576	453
Avg (1979 to 2020)	10	1485	149
Avg (2011 to 2020)	17	2275	206

There are domestic wells completed into the Dakota aquifer that do not require a water right/permit, so the withdrawal amount for domestic use is unknown (Water Rights, 2021d). Since the introduction of rural water systems, many domestic wells are likely no longer in use or are not being used as primary water sources. Due to their relatively low diversion rates and the availability of rural water, withdrawals from domestic wells are not considered to be a significant portion of the hydrologic budget for the Dakota aquifer. It is currently unknown how much water is being discharged from the Dakota aquifer through uncontrolled flowing wells. The Water Management Board has previously determined water being discharged through uncontrolled flowing wells is not a beneficial use and does not constitute appropriation pursuant to SDCL 46-6-3.1 (Water Rights, 1987).

Hydrologic Budget Summary

The estimated average annual recharge to the Dakota aquifer has not been accurately quantified. Bredehoeft et al. (1983) estimated a recharge rate of approximately 57,500 acre-feet per year but several factors make it uncertain if that is a high or low estimate. The average annual withdrawal rate for the water rights/permits authorized to appropriate water from the Dakota aquifer totals approximately 27,309 acre-feet per year (listed in Table 6). Based on the hydrologic budget, there is a reasonable probability unappropriated water is available from the Dakota aquifer for the proposed appropriation.

Table 6. Estimated use from Dakota aquifer (Water Rights, 2021a and 2021c)

Type of Water Right/Permit	Estimated Use (acre-feet/year)
Future Use Reservations	4,237
Non-Irrigation (including pending application, if approved, assuming full appropriation)	22,644
Irrigation (from 2011 to 2020)	297.5
Application No. 8528-3 (if approved, assuming full appropriation)	130
TOTAL:	27,309

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 251 water rights/permits appropriating water from the Dakota aquifer within South Dakota, plus one pending application – Water Permit Application No. 8525-3, and an additional seven future use permits reserving water in the Dakota aquifer (Water Rights, 2021c). The closest water right/permit to the proposed diversion point and existing wells is Water Right No. 762-3, which is held by Bussmus Farms Inc. The diversion point for Water Right No. 762-3 is located approximately 1.3 miles northwest of the proposed diversion point and existing wells for this application (Figure 8) (Table 7) (Water Rights, 2021c).

There are domestic wells on file with the DANR-Water Rights Program that are completed into the Dakota aquifer, with the closest domestic well on file (not held by the applicant) approximately 3.8 miles west of the proposed diversion point and existing wells (Water Rights, 2021d). There could potentially be other domestic wells completed into the Dakota aquifer near the proposed diversion point and existing wells that are not on file with the DANR-Water Rights Program.

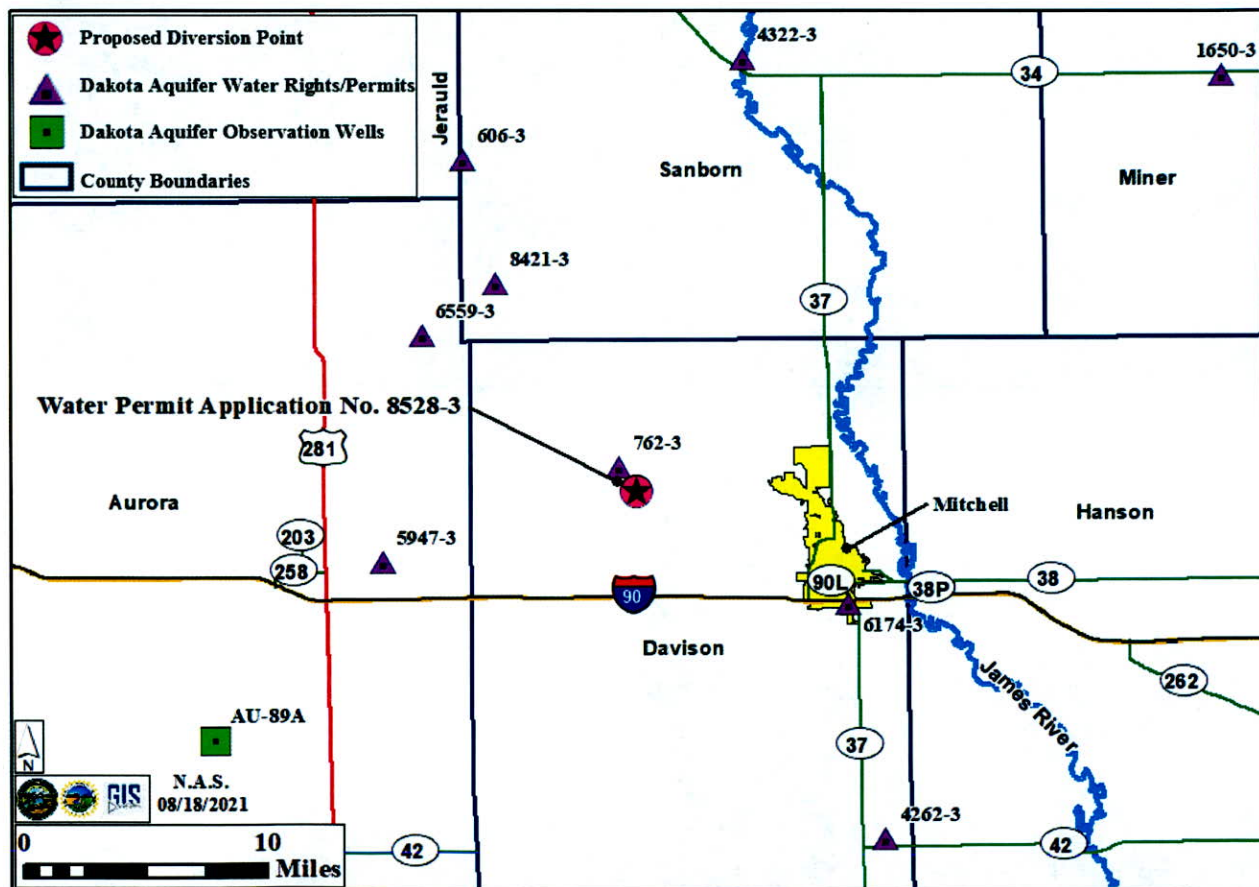


Figure 8. Location of the proposed diversion point and existing wells for Water Permit Application No. 8528-3 with the Dakota aquifer water rights/permits and observation well within approximately 20 miles (Water Rights, 2021b and 2021c)

Table 7. Water rights/permits authorized to withdraw water from the Dakota aquifer within approximately 20 miles of the proposed diversion point and existing wells, as shown in Figure 8 (Water Rights, 2021c)

Permit No.	Name	Status	Use	Authorized Diversion Rate (cfs)	Authorized Volume (acre-feet)
606-3	Dept of Game Fish & Parks	LC	FWP	0.22	
762-3	Bussmus Farms Inc	LC	IRR, FWP	0.28	
1650-3	Town of Roswell	LC	MUN	0.06	
4262-3	Town of Ethan	LC	MUN	0.22	
4322-3	Forestburg Well Co	LC	MUN	0.13	
5947-3	Fish Lake Country Club	LC	IRR	0.24	
6174-3	Cabelas Retail Inc	LC	COM, DOM	0.22	
6559-3	Dwight Scott	LC	COM	0.1	
8421-3	Albert J Selland & Sons Feedlot	PE	COM	0.48	78.5
LC: Licensed Water Right; PE: Water Permit; COM: Commercial; DOM: Domestic; FWP: Fish and Wildlife Propagation					
IRR: Irrigation; MUN: Municipal					

Observation well BL-83A (approximately 56 miles east of the proposed diversion point and existing wells) has six high-yield wells (assumed to be a well with an authorized diversion rate greater than 0.2 cfs) within approximately ten miles of it (Water Rights, 2021b and 2021c). The lithologic log on file for BL-83A noted the well was drilled 942 feet deep with the top of aquifer is expected to be approximately 878 feet below the ground surface (SDGS, 2021). The lowest recorded static water level on the hydrograph (displayed in Figure 4) is approximately 99 feet, which indicates there was still about 779 feet of artesian head pressure in BL-83A even during drier periods when high-yield wells are expected to be pumping more water (Water Rights, 2021b).

The Dakota aquifer is under confined conditions near the proposed diversion point and existing wells based on the submitted well completion reports and lithologic logs on file for nearby observation wells (SDGS, 2021; Water Rights, 2021b and 2021d). Since the Dakota aquifer is confined at the well site, drawdown can extend some distance but the exact drawdown behavior of a well cannot be known without an aquifer performance test. At the well site, the Dakota aquifer has a saturated aquifer thickness ranging from approximately 20 to 40 feet, with depth to the top of aquifer materials ranging from approximately 230 to 285 feet below the ground surface according to the well completion report submitted with the application (Water Rights, 2021d). This would allow for enough thickness for a pump inlet to be placed 20 feet below the top of the aquifer, which is required for the well to be considered adequate under ARSD 74:02:04:20(6). Any drawdown as a result of the proposed diversion is not expected to unlawfully impair nearby adequate wells. In Davison County, there are no complaints on file with the DNR-Water Rights Program regarding well interference for adequate wells completed into the Dakota aquifer (Water Rights, 2021e).

The Water Management Board recognizes that putting water to beneficial use requires a certain amount of drawdown to occur. The Board has developed rules to allow water to be placed to maximum beneficial use without the necessity of maintaining artesian head pressure for domestic use. The Water Management Board defined an “adversely impacted domestic well” in ARSD 74:02:04:20(7) as:

“A well in which the pump intake was set at least 20 feet below the top of the aquifer at the time of construction or, if the aquifer is less than 20 feet thick, is as near to the bottom of the aquifer as is practical and the water level of the aquifer has declined to a level that the pump will no longer deliver sufficient water for the well owner’s needs.”

The Water Management Board considered the delivery of water by artesian head pressure versus maximum beneficial use during the issuance of Water Right No. 2313-2 for Coca-Cola Bottling Company of the Black Hills. The Board adopted the Findings of Facts and Conclusions of Law that noted the reservation of artesian head pressure for delivery of water would be inconsistent with SDCL 46-1-4 which states, “general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable...” (Water Rights, 1995). Furthermore, the Water Management Board found if increased cost or decreased production as a result of impacts on artesian head pressure by legitimate users is to be considered as an unlawful impairment, it would also conflict with SDCL 46-1-4 (Water Rights, 1995). With that in mind, some existing well owners may need to install or lower pumps depending on the specific characteristics of the Dakota aquifer at their location. However, when considering the statutes (SDCL 46-1-4 and 46-6-6.1), rules (ARSD 74:02:04:20(6) and (7)), the saturated thickness of the Dakota aquifer in Davison County, the artesian head pressure in observation wells and appropriative user’s wells completed into the Dakota aquifer near the proposed diversion point and existing wells, and the lack of well interference complaints from the Dakota aquifer in the area, any drawdown created from the proposed diversion is not expected to cause an unlawful impairment on existing water right/permit holders or domestic users with adequate wells. Therefore, there is a reasonable probability that any interference from the proposed appropriation will not impose unlawful impairments on existing users with adequate wells.

Special Consideration: Declining Hydraulic Head

As the Dakota aquifer is a confined aquifer, the hydraulic head causes the water within the aquifer to rise above the top of the aquifer. In the late 1800’s, wells began being completed into the Dakota aquifer and a decline in the aquifer’s hydraulic head occurred whenever a flowing well was drilled and not properly controlled. These uncontrolled wells create a release of pressure contained within the aquifer. The decline has caused some concern on whether the Dakota aquifer withdrawals have exceeded the recharge to the aquifer. The Water Management Board has previously and carefully considered the declining hydraulic head in the Dakota aquifer. In the deliberation and approval of Water Permit No. 5136-3, for Farmland Industries Inc, the Water Management Board approved the findings of facts and conclusions of law containing the following summarized points (Water Rights, 1987):

- The estimated average annual recharge to the Dakota aquifer is not likely to be quantified in the near future;
- Determination of whether the withdrawals exceed the estimated average annual recharge cannot be determined solely by a decline in the hydraulic head;

- SDCL 46-6-6.1 does not require the artesian head to be protected; however, the Board must consider the effect of a limitation or loss of artesian head as one of the factors under the public interest determination;
- The decline in the hydraulic head in the Dakota aquifer has been primarily due to water being discharged through uncontrolled flowing wells;
- “Water discharged from uncontrollable flowing wells does not constitute withdrawal (appropriation) pursuant to SDCL 46-6-3.1;”
- That it is in the public interest to appropriate water rather than allow the water to be discharged to waste by uncontrolled flowing wells;
- That it is not in the public interest to deny a water permit application when the effects of the withdrawal will not be measurable and will not have a significant effect upon the decline or stabilization of the hydraulic head in the Dakota aquifer.

Special Consideration: Well Construction

The well completion reports submitted for the wells the applicant proposes to use meet adequate well construction standards as defined in ARSD 74:02:04:20.

An adequate well has been defined in ARSD 74:02:04:20(6) as:

“A well constructed or rehabilitated to allow various withdrawal methods to be used, to allow the inlet to the pump to be placed not less than 20 feet into the saturated aquifer or formation material when the well is constructed, or to allow the pump to be placed as near to the bottom of the aquifer as is practical if the aquifer thickness is less than 20 feet.”

The alternative well construction requirements for certain Dakota aquifer wells (74:02:04:35) are not permitted for commercial uses. Additionally, the alternative well construction requirements for certain Dakota aquifer wells (74:02:04:35) are not met for this area as the Greenhorn Limestone does not appear to be present. Any future replacement wells shall meet the adequate well construction standard as defined in ARSD 74:02:04:20. Replacement wells may not be constructed using the alternative construction requirements that are allowed for domestic use wells outlined in ARSD 74:02:04:35.

CONCLUSIONS:

1. Water Permit Application No. 8528-3 proposes to appropriate up to 130 acre-feet of water annually at a maximum instantaneous diversion rate of 0.223 cfs from two existing wells completed into the Dakota aquifer and one new well to be completed into the Dakota aquifer for commercial use in a swine facility. One of the existing wells will be maintained as a standby well for the facility. The site is in Davison County approximately seven miles west of Mitchell, South Dakota.
2. Based on observation well data and the hydrologic budget, there is a reasonable probability that unappropriated water is available from the Dakota aquifer to supply the proposed appropriation.

3. There is a reasonable probability that the proposed diversion by Water Permit Application No. 8528-3 will not unlawfully impair adequate wells for existing water rights/permits and domestic users.
4. The decline in the hydraulic head in the Dakota aquifer has been primarily due to water being discharged through uncontrolled flowing wells. It is in the public interest to appropriate water rather than allow the water to be discharged to waste by uncontrolled flowing wells.

Nakai Steen

Nakai Steen
Natural Resources Engineer I
SD DANR - Water Rights Program

Reviewed by:

Adam Mathiowetz

Adam Mathiowetz, PE
Natural Resources Engineer IV
SD DANR - Water Rights Program

References

- Bredehoeft, J.D., Neuzil, C.E., and Milly, P.C., 1983. Regional Flow in the Dakota Aquifer: A Study of the Role of Confining Layers. Alexandria, Virginia: U.S. Geological Survey, 1983. Water-Supply Paper 2237.
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- Water Rights, 1995. Findings of Fact, Conclusions of Law, and Final Decision in the Matter of Water Permit Application No. 2313-2, Coca-Cola Bottling Company of the Black Hills. DANR-Water Rights Program file for Water Right No. 2313-2. Pierre, SD.
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- Water Rights, 2021c. Water Right/Permit Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2021d. Well Completion Reports, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2021e. County Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
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RECEIVED

OCT - 8 2021

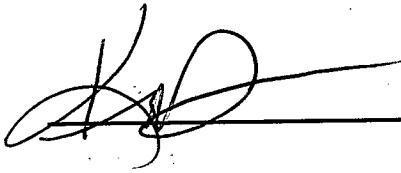
WATER RIGHTS
PROGRAM

Proof Of Publication

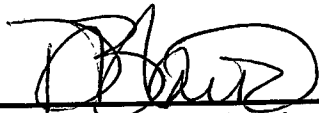
Huron Plainsman
49 3rd Street SE
Huron, SD 57350
605-353-7402

Legal Notice Number: 0998

I, Kim Davis, being duly sworn on oath say that the Plainsman is a daily paper published at Huron, Beadle County South Dakota, and that said newspaper has a bona fide circulation of at least 250 copies daily; that said newspaper has been published within said county for fifty-two consecutive weeks immediately prior to this date, that said newspaper is printed in whole or in part, in an office maintained at said place of publication; that I am a Legal Advertising Coordinator of said newspaper and know that facts herein state. The annexed notice headed: BLUESTREM FAMILY FARMS- WATER RIGHTS, was published for one day, in said newspaper and not in any supplement of the said newspaper, the publication was on - 9/8/21. That the full amount of the fee charged for the publishing \$ 42.57 insures to the benefit of the publisher of said newspaper; that no agreement or understanding for the division thereof has been made with any other person, and that no part thereof has been agreed to be paid to any person whom so ever.



Subscribed and sworn to me before this date 10/7/21.



Notary Public, South Dakota

My Term Expires 03/11/2022

NOTICE OF APPLICATION
NO. 8628-3 to
Appropriate Water

Notice is given that Bluestem Family Farms LLC, c/o Luke Melton, Manager, PO Box 188, Piedmont, MN 56104 has filed an application for a water permit to appropriate 130 acre-foot of water annually at a maximum pump rate of 0.223 cubic feet of water per second from two existing wells (250 feet and 320 feet deep) in the Dakota Aquifer and one new well (approximately 326 feet deep) to be completed into the Dakota Aquifer located in the NE 1/4 NE 1/4 Section 8 for commercial use in a water facility located in the NE 1/4 NE 1/4 Section 8; all in T102N-R6W. One of the existing wells will be maintained as a standby well for the facility. This site is located approximately 7 miles west of Mitchell, SD.

Pursuant to SDCL 49-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8628-3 with

1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unduly impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineer's

recommendation with qualifications, the application, and staff report are available at <https://dsnr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below. Any person interested in opposing this application or recommendation shall advise that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 49-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 49-2-9 and 49-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://dsnr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Fees Building, 623 E. Capitol, Pierre SD 57501 or call (605) 773-3352. The applicant's

mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by September 20, 2021. The petition shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at <https://dsnr.sd.gov/public> or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by September 20, 2021. If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before

the Water Management Board. 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 this application. Notice of the hearing will be given to the applicant and any person filing a petition.

No. 0998 (sch.)
 Published once at the total approximate cost of \$42.67.

RECEIVED

OCT - 7 2021

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA

ss.

COUNTY OF DAVISON

Nicole Riegert, of said county, being first duly sworn, on oath, states as follows:

1. I am the designated agent of the *Mitchell Republic*, a daily newspaper published in the city of Mitchell, in said County of Davison, and State of South Dakota; I have full and personal knowledge of the facts herein stated; that said newspaper is a legal newspaper as defined in SDCL 17-2-2.1 through 17-2-2.4 inclusive; that said newspaper has been published within the said County of Davison and State of South Dakota, for at least one year next prior to the first publication of the attached public notice.

2. The newspaper listed on the exhibit published the advertisement of: *Legal Notice; (1) time: Sept. 8, 2021*, as required by law or ordinance.

3. That the full amount of the fee charged for the publication of the attached public notice insures to the sole benefit of the publisher or publishers; that no agreement or understanding for the division thereof has been made with any other person, and that no part thereof has been agreed to be paid to any person whomsoever, that the fees charged for the publication thereof are: \$40.61

Subscribed and sworn to before me this 8th day of September, 2021.

Legals Clerk

Notary Public

My Commission Expires: May 15, 2026

ANNETTE KROGER
Seal
Notary Public
South Dakota

NOTICE OF APPLICATION NO. 8528-3 to Appropriate Water

Notice is given that Bluestem Family Farms LLC, c/o Luke Minion, Manager, PO Box 188, Pipestone MN 56164 has filed an application for a water permit to appropriate 130 acre-feet of water annually at a maximum pump rate of 0.223 cubic feet of water per second from two existing wells (250 feet and 325 feet deep) in the Dakota Aquifer and one new well (approximately 325 feet deep) to be completed into the Dakota Aquifer located in the NE 1/4 NE 1/4 Section 6 for commercial use in a swine facility located in the NE 1/4 NE 1/4 Section 6; all in T103N-R61W. One of the existing wells will be maintained as a standby well for the facility. This site is located approximately 7 miles west of Mitchell SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8528-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by September 20, 2021. The petition shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at <https://danr.sd.gov/public> or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by September 20, 2021. If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. 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 this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Published 1 time(s) at the total approximate cost of \$40.61.
(Sept. 8, 2021) 2902733

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, August 30, 2021 9:22 AM
To: 'rcrandall@plainsman.com'
Subject: 8528-3, Bluestem Family Farms LLC
Attachments: 8528-3public.short_final.docx; FORM8.FRM.doc

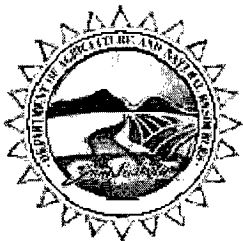
Attached is a notice to be published on September 8, 2021.

Bluestem Family Farms LLC, c/o Luke Minion, Mgr, PO Box 188, Pipestone MN 56164 (507 825-4211) has been notified to contact you to authorize publication and arrange for payment.

Please send the affidavit or return the attached Proof of Publication form ASAP to the Water Rights Program, 523 E Capitol, Pierre SD 57501.

Let me know if you have questions. Please acknowledge receipt of this email.

Karen Schlaak
DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>



Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, August 30, 2021 9:22 AM
To: legals@mitchellrepublic.com
Subject: 8528-3, Bluestem Family Farms LLC
Attachments: 8528-3public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on September 8, 2021.

Bluestem Family Farms LLC, c/o Luke Minion, Mgr, PO Box 188, Pipestone MN 56164 (507 825-4211) has been notified to contact you to authorize publication and arrange for payment.

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Let me know if you have questions. Please acknowledge receipt of this email.

Karen Schlaak

DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

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

August 30, 2021

Bluestem Family Farms LLC
c/o Luke Minion, Mgr
PO Box 188
Pipestone MN 56164

Dear Mr. Minion:

Water Permit Application No. 8528-3 for commercial use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Daily Republic printed at Mitchell SD (Ph # 605 996-5514) and the Plainsman printed at Huron SD (Ph # 605 353-7414). You will need to contact the newspapers and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and 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 newspapers to authorize publication of your Notice and to arrange for payment. Early contact with the papers can eliminate delays. Upon receiving authorization from you, the publishers have been instructed to publish your notice. The newspapers have 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,

Karen Schlaak

Karen Schlaak
Water Rights Program
(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.

NOTICE OF APPLICATION NO. 8528-3 to Appropriate Water

Notice is given that Bluestem Family Farms LLC, c/o Luke Minion, Manager, PO Box 188, Pipestone MN 56164 has filed an application for a water permit to appropriate 130 acre-feet of water annually at a maximum pump rate of 0.223 cubic feet of water per second from two existing wells (250 feet and 325 feet deep) in the Dakota Aquifer and one new well (approximately 325 feet deep) to be completed into the Dakota Aquifer located in the NE 1/4 NE 1/4 Section 6 for commercial use in a swine facility located in the NE 1/4 NE 1/4 Section 6; all in T103N-R61W. One of the existing wells will be maintained as a standby well for the facility. This site is located approximately 7 miles west of Mitchell SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8528-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by September 20, 2021.

The petition shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at <https://danr.sd.gov/public> or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by September 20, 2021.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. 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 this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Published once at the total approximate cost of__



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

OCT 25 2021

Bluestem Family Farms LLC
c/o Luke Minion, Manager
PO Box 188
Pipestone MN 56164

Dear Mr. Minion:

Enclosed is Water Permit No. 8528-3 authorizing construction of the 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,

Eric Gronlund, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

8528-3



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

October 12, 2023

8528-3

Bluestem Family Farm, LLC
PO BOX 188
Pipestone MN 56164

The whom it may concern:

I am writing to acknowledge receipt of the "Notice of Completion of Works" form that you sent in to let us know that you are completed with your water use system.

The system is now ready for inspection. Inspections are done on a county-by-county basis as staff time permits. You have done everything you need to do and the intervening time between the completion of your project and the staff inspection has no bearing on your water permit.

Someone from our office will contact you prior to the inspection to set up a time that is convenient for you. If you have any questions, please contact me.

Sincerely,

Amanda Dewell
Water Rights Program
(605) 773-3352
email: Amanda.Dewell@state.sd.us

NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USE

Date 10/11/23

TO: Water Rights Program, DANR
523 E. Capitol
Pierre, SD 57501-3181

FROM: Bluestem Family Farm, LLC
(name)
P.O. Box 188
(address)
Pipestone MN 56164 507 825 4211
(city, state, zip) (phone)

I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

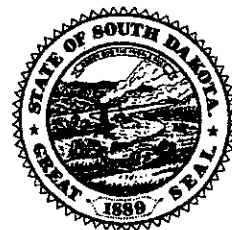
Water Permit No. 8528-3 states that the water use system is to be constructed by 9/20/2030, and water is to be put to beneficial use by 9/20/2030.
(date) (date)

The water use system was completed on 7/1/23.
(date)

Applying the water to beneficial use was completed on 7/1/23.
(date)

You may schedule an investigation so that the water license may be issued.

[Signature]
(signature)



Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8528-3

I have this day, date, made a thorough examination of the water use system constructed by Bluestem Family Farms LLC, PO Box 188, Pipestone, MN 56164 of Permit No. 8528-3, bearing the priority of July 15, 2021 authorizing the diversion of 0.223 cu. ft. per second of the waters of the Dakota Aquifer for commercial swine production purposes, in Davison County.

A. Works used to divert the water:

Well Information: Well #1

- 1) Well Drilling Firm: Pullman Drilling in 2009
- 2) No. of Wells 1
- 3) Depth(s) 250 feet
- 4) Well log is available Y/N If no, explain in comments

Comments: xx

Casing:

- 1) Diameter 5 inches
- 2) Length 230 feet
- 3) Type Plastic

Screen:

- 1) Type PVC
- 2) Length 20 feet
- 3) Static water level 15 feet

Pump:

- 1) Make Submersible
- 2) Model Unknown
- 3) Size Unknown
- 4) Capacity 45 GPM

Motor:

- 1) Make Unknown
- 2) Model No. Unknown
- 3) Horsepower rating Unknown hp

Well Information: Well #2

- 5) Well Drilling Firm: Putzke Well Drilling in 2016
- 6) No. of Wells 1
- 7) Depth(s) 325 feet
- 8) Well log is available Y

Casing:

- 4) Diameter 5 inches
- 5) Length 325 feet
- 6) Type Plastic

Screen:

- 4) Type PVC
- 5) Length 40 feet
- 6) Static water level 0 feet

Pump:

- 5) Make Submersible
- 6) Model Unknown
- 7) Size Unknown
- 8) Capacity 45 GPM

Motor:

- 4) Make Unknown
- 5) Model No. Unknown
- 6) Horsepower rating Unknown hp

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

- 1) Type Unknown
- 2) Size Unknown inches
- 3) Length 200 feet

Comments: xx

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Y
- 2) Exceptions to compliance are: None

E. Condition and Location:

1. The system is in good condition with the point(s) of diversion located as follows: WELL LOCATIONS
From the NE corner Sec 6 T103N R61W "S" WELL 770 ft S & 70 ft W, Lat 43.75862 Long -
98.18686 (NE ¼ NE ¼) "N" WELL 635 ft S & 90 ft W, Lat 43.75908 Long -98.18697 (NE ¼ NE ¼).
2. The works are capable of diverting and conveying to the place of use 0.20 cu. ft. per second of water which is to be used for commercial swine production.

the license should be issued for 0.20 cfs.

3. All structures, wells and lands on map Y

F. Comments or other permit(s) associated with the project:

Used FSA maps and ArcGIS to construct the site map.

There are only two (2) wells on the property.

Talked to Mr. Bob Kampshoff, Facilities Manager, during the field inspection and he indicated the wells produce near 45 gpm each. Mr. Marty Rost (507/215-0482) of Pipestone can also verify the flow values.



Darrell DeBoer
Water Rights Inspector
DENR, Water Rights Program

Date report completed: August 21, 2025



0 425 850 1,700 2,550 3,400 Feet

Darrell DeBoer
Water Right Inspector
DANR-Water Rights Program



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

MAR 18 2026

8528-3

Bluestem Family Farms
C/O Luke Minion
1300 S Hwy 75
Pipestone, MN 56164

Dear Mr. Minion:

Enclosed is Water License No.8528-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

For your information SDCL 46-6-27 requires that if in the future, the owner of an existing well, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

So 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. If you have any questions, please contact Amanda Dewell, Permitting Administrator (605) 773-3352.

Sincerely,


Adam Mathiowetz, PE
Acting Chief Engineer
Water Rights Program

enclosures

STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8528-3

(1) Bluestem Family Farms LLC, 1300 S Hwy 75, Pipestone, MN 56164, made Application No. 8528-3, July 15, 2021, for a water permit to appropriate up to 130 acre-feet of water annually at a maximum diversion rate of 0.223 cubic feet of water per second from groundwater, two existing wells and one new well (Dakota Aquifer) for commercial use in a swine facility. Permit No. 8528-3 was approved September 20, 2021, and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before September 20, 2026, and for the application to beneficial use of water on or before September 20, 2030.

The permit holder submitted a "Notice of Completion of Works and Application of Water to Beneficial Use" form on October 11, 2023. The Notice stated the diversion system was completed and water was applied to beneficial use on July 1, 2023.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 0.20 cubic feet of water per second for beneficial use. The locations of the diversion points are:

- South Well: 770 ft S & 70 ft W of the NE corner Section 6-T103N-R61W (NE ¼ NE ¼)
(Latitude 43.75862 & Longitude -98.18686)
- North Well: 635 ft S & 90 ft W of the NE corner Section 6-T103N-R61W (NE ¼ NE ¼)
(Latitude 43.75908 & Longitude -98.18697)

(3) The amount of appropriation may not exceed 130 acre-feet annually. The water is to be used during the following described annual period: January 1 – December 31.

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

(5) Pursuant to South Dakota Water Law 46-5-30.1 Bluestem Family Farms LLC, the holder and/or owner of Water Right No. 8528-3 is issued a license to appropriate water, the right to appropriate up to 130 acre-feet of water annually at a maximum diversion rate of 0.20 cubic feet of water per second from groundwater, two wells (Dakota Aquifer), with a priority date of July 15, 2021, from the locations specified in (2) of this license for commercial use in a swine facility.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8528-3 and subject to the following qualifications:

1. The wells approved under the Water Permit No. 8528-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under this Permit shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells approved under this permit shall be valved and the flow reduced to the amount needed or to a minimum when not being used. If the wells are abandoned or the permit cancelled, the wells must be plugged in accordance with Water Management Board Rules, Chapter 74:02:04.

continued

3. Water Permit No. 8528-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-36.2 or 34A-2-112 or 34A-2-124 for concentrated animal feeding operations.
4. Water Permit No. 8528-3 is subject to compliance with all existing Water Management Board rules including but not limited to:
 - a) Chapter 74:54:01 Ground Water Quality Standards
 - b) Chapter 74:54:02 Ground Water Discharge Permit
 - c) Chapter 74:51:01 Surface Water Quality Standards
 - d) Chapter 74:51:02 Uses Assigned to Lakes
 - e) Chapter 74:51:03 Uses Assigned to Streams
 - f) Chapter 74:52:01 through 74:52:11 Surface Water Discharge Provisions
5. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Dakota Aquifer.
6. Water Permit No. 8528-3 authorizes a total annual diversion of 130 acre-feet of water from the Dakota Aquifer.
7. Any future replacement wells shall meet the adequate well construction standard as defined in Administrative Rule of South Dakota (ARSD) 74:02:04:20. Replacement wells may not be constructed using the alternative construction requirements that are allowed for domestic use wells outlined in ARSD 74:02:04:35.



Adam Mathiowetz, PE
Water Rights Program, Acting Chief Engineer
Department of Agriculture and Natural Resources

MAR 18 2026
date

