

WATER PERMIT NO. 8562-3

Name of Applicant: Riverview LLP

Address: 26406 479th Ave, Morris MN 56267

Phone: 320 287-1028

Amount of Water Claimed: 1.45 cfs (491 AF)

Total Acres: NA

Source of Water Supply: groundwater (one well)

Water to be used for: commercial

County: Clark

Type of Waste Disposal System:

Location: 4 miles southeast of Willow Lake

PRIORITY

Date Received: 11-18-21

Application/License Fee: \$ 1,250.00

Corrected Application Received: 11-22-21

Period of Annual Use: Jan 1 – Dec 31

Remarks:

Diversion Point: NE 1/4 SW 1/4 Sec 16-T113N-
R56W

Land to be Irrigated: NA

Depth of Well: 1,300 feet

Well Driller:

Remarks:

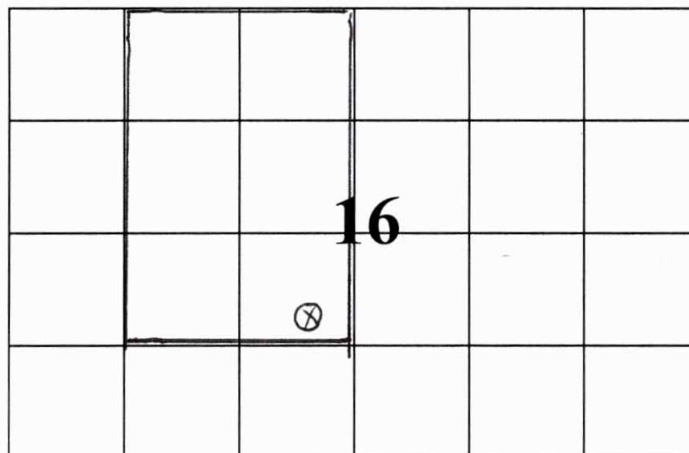
Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 11-22-21

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



SOUTH DAKOTA
WATER PERMIT NO. 8562-3

Date of first receipt of application November 18, 2021.

Date of return to applicant for corrections, amendments or changes November 18, 2021.

Date of receipt of corrected application November 22, 2021.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8562-3 to Riverview LLP, 26406 470th Ave, Morris MN 56267 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. 8562-3 appropriates 491 acre-feet of water annually at a maximum pump rate of 1.45 cubic feet of water per second from one well to be completed into the Dakota Aquifer (approximately 1,300 feet deep) located in the NE 1/4 SW 1/4 Section 16 for commercial use at a dairy facility to be located in the NW 1/4, N 1/2 SW 1/4 Section 16; all in T113N-R56W. This site is located approximately 4 miles southeast of Willow Lake SD.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: January 1 – December 31.
3. The date from which applicant may claim right is November 18, 2021.
4. The date of approval of Permit No. 8562-3 is January 31, 2022.
5. One-fifth of the construction is to be completed on or before July 31, 2024.
6. All construction is to be completed on or before January 31, 2027.
7. Water is to be put to beneficial use on or before January 31, 2031.
8. 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 well approved under Water Permit No. 8562-3 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 proposed well authorized by Permit No. 8562-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. Water Permit No. 8562-3 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. 8562-3 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. 8562-3 authorizes a total annual diversion of 491 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

MAR 30 2022
date



RECEIVED

NOV 18 2021

PAID

NOV 18 2021

Ck# 265925

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8562-3</u> (office use only) Hydrologic Unit <u>10170103</u>	WATER RIGHTS PROGRAM
	Basin <u>Sioux River</u>	
	Newspaper <u>Clark Co Courier</u>	
	<u>Public Opinion</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 Riverview LLP

Mailing Address 26406 470th Ave (Address) Morris (City) MN (State) 56267 (Zip Code)
Phone 320-392-5609 Mobile 320-287-1028 Email matt.waldbeser@riverviewllp.com

2. Amount of water claimed 1.45 *CFS or 650 **GPM and 491 ***AF or 160 MM 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 Dakota Aquifer

4. Location of point of diversion SW 1/4 of Sec 16- T113N,R56W (NE 1/4 SW 1/4) County Clark
(example - 3 wells in SW 1/4 NE 1/4 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 - NW 1/4 section 12-T104N-R53W)

5. County or counties where water will be used CLark

6. Annual period during which water is to be used Daily from Jan 1st to Dec 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)

The water will be used for livestock on a dairy facility.

I, Brady Janzen (Brady Janzen) Authorized Partner, 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 _____ Provide copy of log(s), if available. Drilled by _____

For either Existing or Proposed Wells:

c) Well Depth (**required**) ~1300 Depth to Top of Water Bearing Material ~1275 Depth to Water from Surface ?

d) Distance to nearest domestic well on applicant's property N/A Property owned by others approx 1/4 mi

2. Wastewater Disposal System Information

a) Type of System (i.e. septic tank, drain field) Manure Storage Lagoons

b) System Capacity (gallons) 145,000,000.00 Year Constructed 2021

c) Connected to the City of N/A Sanitary System

3. Dugout Information

a) Surface Dimensions N/A Depth N/A

b) Depth to water (ground surface to water level) N/A

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:

N/A

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)

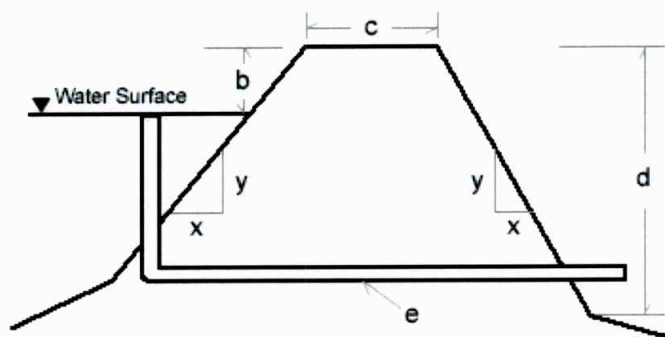
Upstream _____

Downstream _____

h) Surface Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres



08

09

192 St

113N 56W

17

Washington Dairy Site

16

Well



2000 ft

113N 56W
Section: 05

113N 56W
Section: 04

113N 56W
Section: 03

113N 56W
Section: 08

113N 56W
Section: 09

113N 56W
Section: 10

113N 56W
Section: 17

113N 56W
Section: 16

113N 56W
Section: 15

113N 56W
Section: 20

113N 56W
Section: 21

113N 56W
Section: 22

113N 56W
Section: 29

113N 56W
Section: 28

113N 56W
Section: 27



DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

December 22, 2020

Matt Waldbeser
Riverview LLP
26406 470th Ave
Morris, Mn 56267

Dear Mr. Waldbeser:

As requested by email on December 21, 2020, pursuant to South Dakota Well Construction Standard 74:02:04:21, you are authorized to have a South Dakota licensed well driller construct a test well prior to approval of a water permit. The test well will be located in the W ½ Section 16-T113N-R56W in Clark County. All test wells must be constructed in accordance with the SD Well Construction Standards. Any test holes or test wells that are abandoned must be plugged pursuant to the SD Well Construction Standards.

Authorization must be obtained before water from the well can be used in excess of domestic use as defined by South Dakota Codified Law 46-1-6(7) or for uses other than domestic use. Approval of this test well does not assure issuance of a water permit. Following review of a water permit application and assessing the availability of water, the potential impacts to existing users, the beneficial use, and the public interest of a permit, the Chief Engineer will make a recommendation to the Water Management Board regarding the application. The recommendation to approve, deny, or defer the application will be publicly noticed and an opportunity afforded for the public to intervene. A public hearing may be required to consider the water permit. If you have questions regarding permitting, please call Ron Duvall at (605) 773-3352.

Sincerely,

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



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

RECEIVED

NOV 22 2021

WATER RIGHTS
PROGRAM

PAID

NOV 22 2021

Ck# 266060

November 18, 2021

Riverview LLP
c/o Brady Janzen
26406 470th Ave
Morris MN 56267

Dear Mr. Janzen:

Thank you for submitting the *Application for a Permit to Appropriate Water* for a dairy facility located in Clark County. In order to complete the application, the following is required.

- A check for \$1,150.00 was submitted with the application. The application/license filing fee for 491 acre-feet of water is \$1,250.00. Please submit an additional \$100.00.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak

Karen Schlaak
Water Rights Program
605 773-3352
karen.schlaak@state.sd.us

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date November 18, 2021

RECEIVED OF Riverview LLP 26406 470th Ave Morris MN 56267

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

Fee for Application for Permit No. <u>8562-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>950.00</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>8562-3</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>1150.00</u>

By Eric Gronlund
Chief Engineer

VM

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date November 22, 2021

RECEIVED OF Riverview LLP c/o Brady Janzen 26406 470th Ave., Morris, MN 56267

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

Fee for Application for Permit No. <u>8562-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>100.00</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. _____	\$ _____
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>100.00</u>

By Eric Gronlund
Chief Engineer
EM



531333321

ANNUAL REPORT

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

Foreign Limited Liability Partnership
SDCL 48-7A-1003; 59-11-6; 59-11-24.1

Filing Fee: \$50

2021
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:

FR000197
BUSINESS ID

RIVERVIEW, LLP
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

26406 470TH AVE
MORRIS, MN 56267-5370

Mailing Address

26406 470TH AVE
MORRIS, MN 56267-5370

4. The South Dakota Registered Agent's Name:

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

(b) The South Dakota Commercial Registered Agent's name & CRA#

CRA: **NATIONAL REGISTERED AGENTS, INC. (0000011)**

Actual Street Address in this State

319 COTEAU ST
PIERRE, SD 57501-3187

Mailing Address in this State

5. The names and business addresses of the partners.

Name

Address

Bradley Alan Fehr **26339 470th Ave, Morris, MN 56267**

Kurtis Jon Domnick **29677 US Highway 59, Morris, MN 56267**

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 civil and/or criminal penalty (SDCL 22-39-36; 47-15-51).

10/27/2021

Dated

Email (Optional)

Brady Janzen

Signature of an Authorized Person

Brady Janzen

Printed Name



**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. 8562-3, Riverview LLP**

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. 8562-3, Riverview LLP, 26406 470th Ave, Morris MN 56267.

The Chief Engineer is recommending APPROVAL of Application No. 8562-3 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 well approved under Water Permit No. 8562-3 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 proposed well authorized by Permit No. 8554-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. Water Permit No. 8562-3 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. 8562-3 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

(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. 8562-3 authorizes a total annual diversion of 491 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

January 11, 2022

Report to the Chief Engineer
On Water Permit Application No. 8562-3

Riverview LLP

c/o Brady Janzen

January 12, 2022

Water Permit Application No. 8562-3 proposes to appropriate up to 491 acre-feet of water annually at a maximum instantaneous diversion rate of 1.45 cubic feet of water per second (cfs) from one well to be completed into Dakota aquifer (approximately 1,300 feet deep) in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 16 for commercial use at a dairy facility to be located in the NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$ of Section 16; all in T113N-R56W. This site is located in Clark County approximately four miles southeast of Willow Lake, 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 saturated and permeable portions of the Dakota Formation and is primarily a confined bedrock aquifer throughout most of South Dakota (Schoon, 1971; Water Rights 2022b and 2022d). Schoon (1971) estimated the Dakota Formation underlies 66,500 square miles of South Dakota and has an average thickness of 150 feet. 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 Clark County, the saturated aquifer thickness of the Dakota aquifer ranges from approximately 0 to 200 feet; with the depth to aquifer materials ranging from approximately 900 to 1,400 feet below the ground surface (Hamilton, 1986). In the county, the Dakota aquifer is estimated to contain over approximately 3 million acre-feet of recoverable water in storage (Hamilton, 1986). The Dakota aquifer is generally under confined conditions, and the direction of groundwater

movement in the aquifer is generally to the west in most of the county and southwestward in the southern part of the county (Hamilton, 1986).

No water well or test hole completion report was submitted with Water Permit Application No. 8562-3. Well completion reports on file with the DNR-Water Rights Program for wells completed into the Dakota aquifer within approximately eight miles of the proposed diversion point for this application have saturated aquifer thicknesses ranging from approximately 40 to 100 feet, with the depth to the top of aquifer materials ranging from approximately 1,200 to 1,300 feet below the ground surface, and static water levels at well completion varying from approximately 300 to 330 feet below the ground surface (Water Rights, 2022d). This indicates the artesian head pressure in these nearby Dakota aquifer wells (appropriative and domestic), ranges from approximately 900 to 970 feet. Based on the well completion reports on file and the lithologic logs on file for nearby observation wells, the Dakota aquifer is expected to be confined near the proposed diversion point (SDGS, 2022; Water Rights, 2022d).

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. 8562-3 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, 2022b). The three closest observation wells to the proposed diversion point are HD-87A (approximately 62 miles southwest), ED-85A (approximately 81 miles northwest), and AU-89A (approximately 83 miles southwest) (as shown in Figure 4). The hydrographs for these observation wells are displayed in Figures 1 to 3 (Water Rights, 2022b). 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.

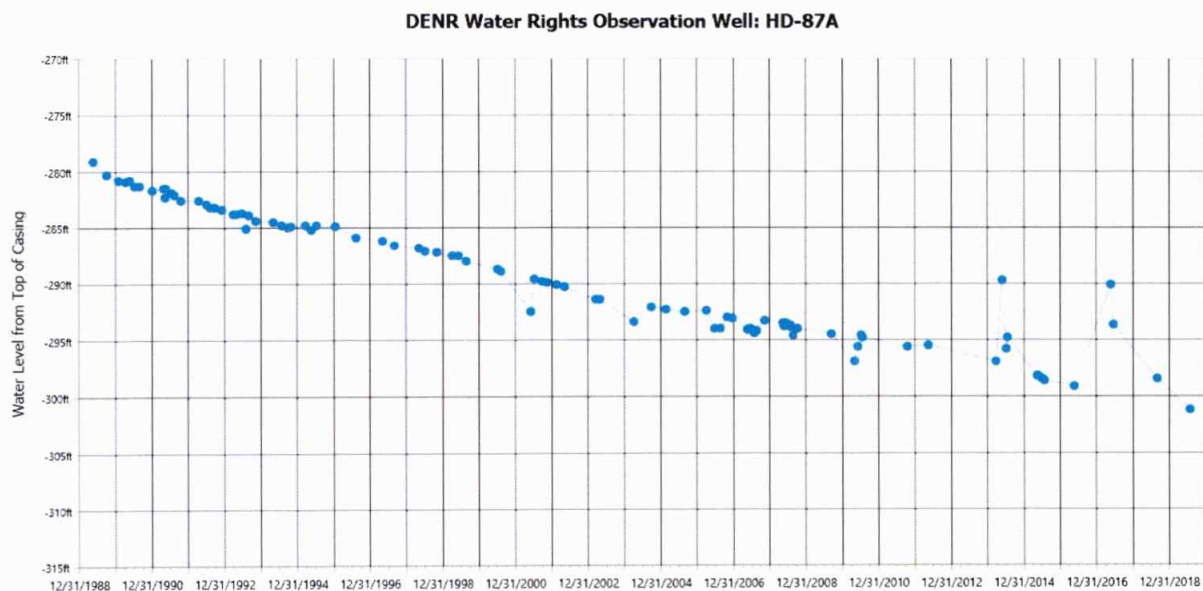


Figure 1. Hydrograph for observation well HD-87A (Water Rights, 2022b)

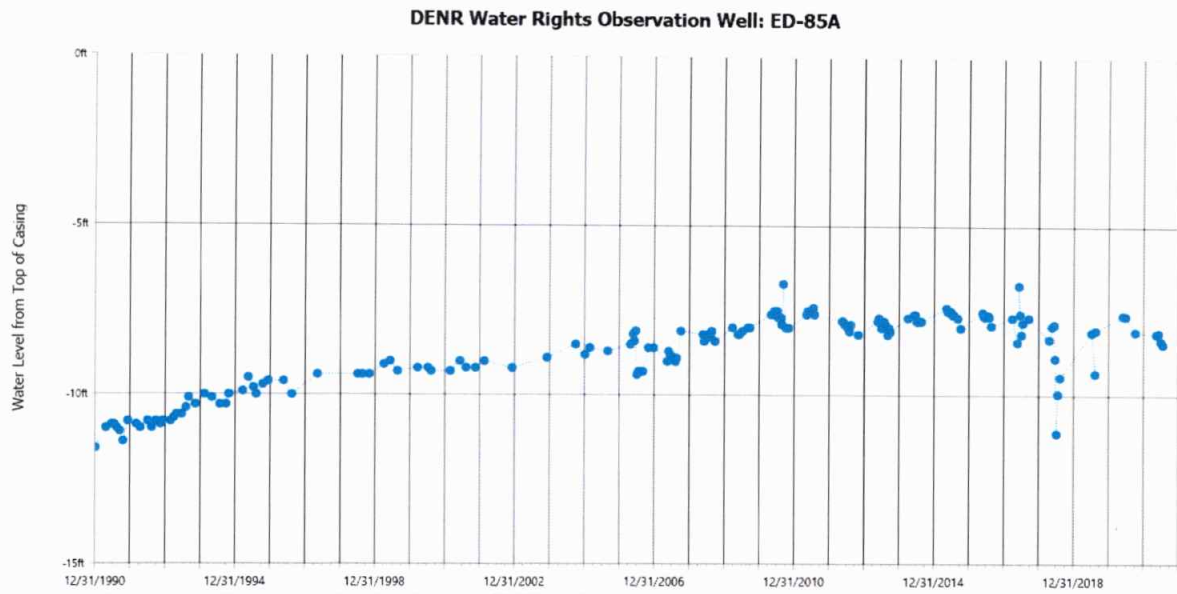


Figure 2. Hydrograph for observation well ED-85A (Water Rights, 2022b)

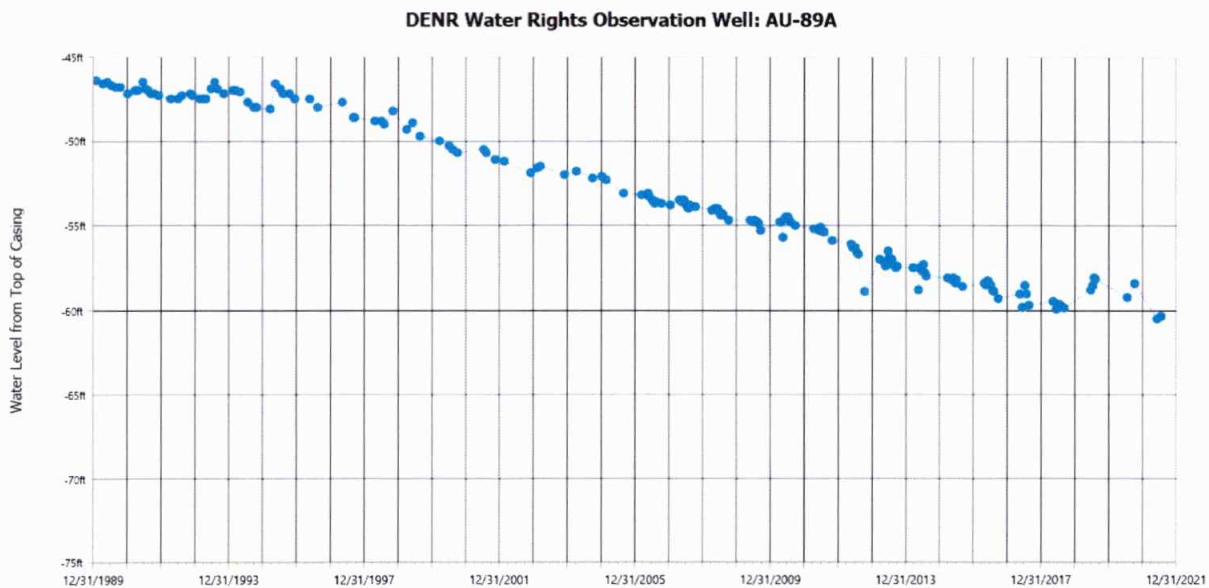


Figure 3. Hydrograph for observation well AU-89A (Water Rights, 2022b)

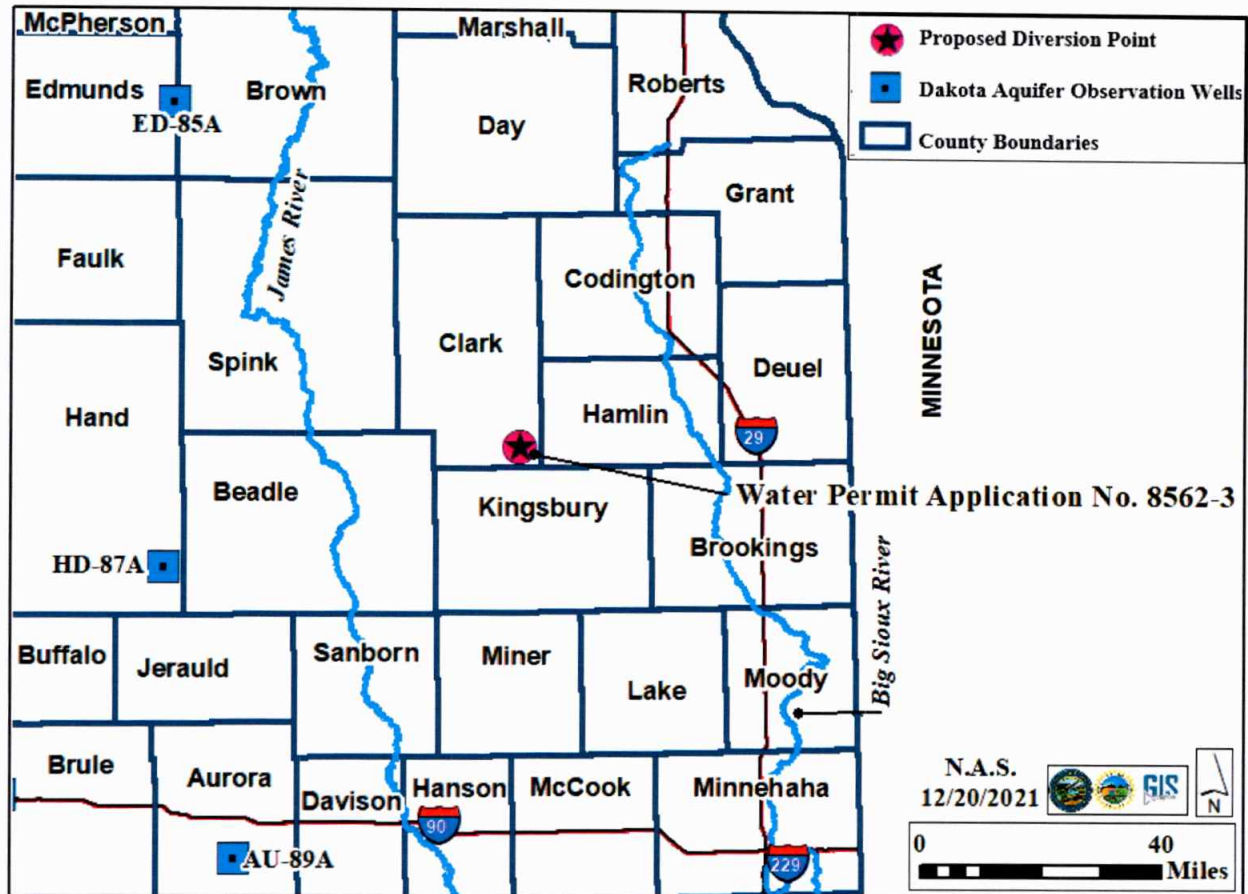


Figure 4. Location of the proposed diversion point for Water Permit Application No. 8562-3 with the Dakota aquifer observation wells used in this analysis (Water Rights, 2022b)

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 from a compilation of many reports over the period of 1936 to 1953. Wells that have been completed into the Dakota aquifer in the past twenty years and within approximately ten miles of the proposed diversion point were used to approximate the current potentiometric surface conditions (Table 1) (Water Rights, 2022d).

Table 1. Historic and current approximate water level elevations near the proposed diversion point (Schoon, 1971; Water Rights, 2022d)

Data Source	Year(s)	Approximate potentiometric surface within ten miles of proposed diversion point (feet)
Schoon (1971), after Darton	1909	1,600 to 1,650
Schoon (1971), State Engineer's Office	1914-1915	1,500 to 1,550
Schoon (1971)	1936-1953	1,500 to 1,550
Well Logs Database	2001-Present	1,425 to 1,475

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, 2022b). While the overall trend in these historical measurements is slightly downward, observation well ED-85A completed into the Dakota aquifer has recorded a trend that has been relatively stable to slightly increasing from 1991 to 2017 (Figure 2) (Water Rights, 2022b). An aquifer pumping test at the well was the cause for the drawdown in hydraulic head that occurred in 2018 (as shown on Figure 2) (Water Rights, 2022b).

A decline in water levels (as shown on the hydrographs in Figures 1 and 3) 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 shown 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). 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 through corroded well casings, and outflow to overlying adjacent aquifers because of higher artesian pressure in the Dakota aquifer (Bredehoeft, et al., 1983; Kume; 1977; Water Rights, 2022b and 2022c).

Currently, there are 253 water rights/permits appropriating water from the Dakota aquifer within South Dakota, and one pending permit application - Water Permit Application No. 8560-3 requesting to irrigate 65 acres of a golf course (Water Rights, 2022c). The estimated average annual withdrawal rate for this pending permit is included with the irrigation permit analysis in this report. Additionally, there are seven future use permits reserving water from the Dakota aquifer (Water Rights, 2022c). For the purpose of estimating 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 permits reserving water from the Dakota aquifer

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 253 Dakota aquifer water rights/permits, 19 are for irrigation use and 234 are for non-irrigation use. Table 3 summarizes the 234 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 use type determined for each water right/permit was based on the primary use categorized for each water right/permit as some permits have multiple uses (Water Rights, 2022c). Historically, average water use by non-irrigation appropriations limited by an instantaneous diversion rate have been assumed to be pumping 60% of full time at the respective permitted diversion rate. Water rights/permits limited by an annual volume are assumed to withdraw their entire respective annual volume limitation. This is a standard method used by the DANR-Water Rights Program for estimating annual withdrawals by non-irrigation appropriations from an aquifer (Water Rights, 2022c).

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 do not have a certain diversion rate or volume designated for what each well from each aquifer is authorized to divert. For the purpose of estimating 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 (Drinking Water Program, 2022; Water Rights, 2022c); 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 estimated average annual withdrawal rate for the Dakota aquifer non-irrigation water rights/permits is approximately 22,774 acre-feet per year (Table 3) (Water Rights, 2022c).

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 (Drinking Water Program, 2022; Water Rights, 2022c)

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	104	1,205	11.74	6,304
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:	234	6,647	37.1	22,774
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, 2022c). 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, 2022c and 2022f). From the Drinking Water Program Water System Database, Lincoln County RWS appears to purchase their groundwater from another rural water system and may maintain the well authorized under Water Permit No. 5156-3 for backup use (Drinking Water Program, 2022; Water Rights, 2022c). 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, 2022c and 2022f). 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, 2022c and 2022f)

	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	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 authorized to appropriate water from the Dakota aquifer, and one pending permit - Water Permit Application No. 8560-3 requesting to irrigate 65 acres of a golf course (Water Rights, 2022c). Based on the maximum allowable appropriation for water permits authorized for irrigation use, the estimated average annual withdrawal rate for Water Permit Application No. 8560-3 is approximately 130 acre-feet per year (Water Rights, 2022c). The maximum allowable appropriation for irrigation use was used as the estimated average annual withdrawal rate because golf courses typically apply more water to irrigable acres than crop irrigators (Water Rights, 2022a and 2022c).

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 for irrigation use 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, 2022c). 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 somewhat overestimate 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, 2022c). Additionally, Water Permit Application No. 8510-3 (approved in 2021) authorizes 30 acres of a golf course to be irrigated and is limited to an annual appropriation that may not exceed two-acre feet annually for each acre of land authorized to be irrigated (Water Rights, 2022c). Therefore, the estimated average annual withdrawal rate for Water Permit Application No. 8510-3 is approximately 60 acre-feet per year. The estimated average annual withdrawal rate for the three water rights/permits not accounted for on Table 5 is approximately 91.2 acre-feet per year.

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, 2022a).

By combining the calculated withdrawal rate for the three irrigation water rights/permits that are not accounted for on Table 5, with the estimated withdrawal rate for the pending permit application, and the estimated average annual withdrawal rate based on the development of the Dakota aquifer over the last ten years, the estimated average annual withdrawal rate for the 19 Dakota aquifer irrigation water rights/permits is approximately 427.5 acre-feet per year (Water Rights, 2022a and 2022c).

Table 5. Reported historic irrigation use from Dakota aquifer (Water Rights, 2022a)

Year	No. of Permits Reporting	Reported Pumpage (acre-feet)
1979	2	38
1980	2	110
1981	4	45
1982	5	33.2
1983	5	64.4
1984	4	0
1985	5	8.1
1986	5	238.9
1987	5	1.3
1988	4	452.8
1989	4	265.4
1990	4	234
1991	5	165.4
1992	5	40.4
1993	7	112.4
1994	7	51.9
1995	8	30.8
1996	8	34.4
1997	9	48
1998	9	175.8
1999	10	101.6
2000	10	172.8
2001	11	160.9
2002	10	178.9
2003	10	205
2004	10	154
2005	12	146.5
2006	13	232.3
2007	14	200
2008	14	196.4
2009	15	130.8
2010	17	171.7
2011	18	174.6
2012	18	298.3
2013	18	256.5
2014	17	162.9
2015	17	236.1
2016	16	196
2017	16	229.1
2018	16	156.7
2019	15	107.5
2020	16	245.6
Min	2	0
Max	18	453
Avg (1979 to 2020)	10	149
Avg (2011 to 2020)	17	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, 2022d). 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 27,930 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, 2022a and 2022c)

Type of Water Right/Permit	Estimated Use (acre-feet/year)
Future Use Reservations	4,237
Non-Irrigation	22,774
Irrigation (average reported from 2011 to 2020, plus three permits that do not have to report/have not reported, plus pending permit)	427.5
Application No. 8562-3 (if approved, assuming full appropriation)	491
TOTAL:	27,930

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 253 water rights/permits authorized to appropriate water from the Dakota aquifer, plus one pending permit, and an additional seven future use permits reserving water in the Dakota aquifer (Water Rights, 2022c). The closest water right/permit to the proposed diversion point is Water Right No. 1228-3 - held by the City of Bryant; however; the City of Bryant purchases their groundwater from a rural water system and may maintain the well authorized under Water Right No. 1228-3 for standby use (Drinking Water Program, 2022; Water Rights, 2022c). The next closest water right/permit to the proposed diversion point is Water Permit No. 6747-3 - held by Collins Colony (Water Rights, 2022c). The diversion point for Water Permit No. 6747-3 is located approximately seven miles southwest of the proposed diversion point for this application (Figure 5) (Table 7) (Water Rights, 2022c).

There are domestic wells on file with the DNR-Water Rights Program that are completed into the Dakota aquifer, with the closest domestic well on file (not held by the applicant) approximately 1.4 miles north of the proposed diversion point (Water Rights, 2022d). There could potentially be other domestic wells completed into the Dakota aquifer near the proposed diversion point that are not on file with the DNR-Water Rights Program.

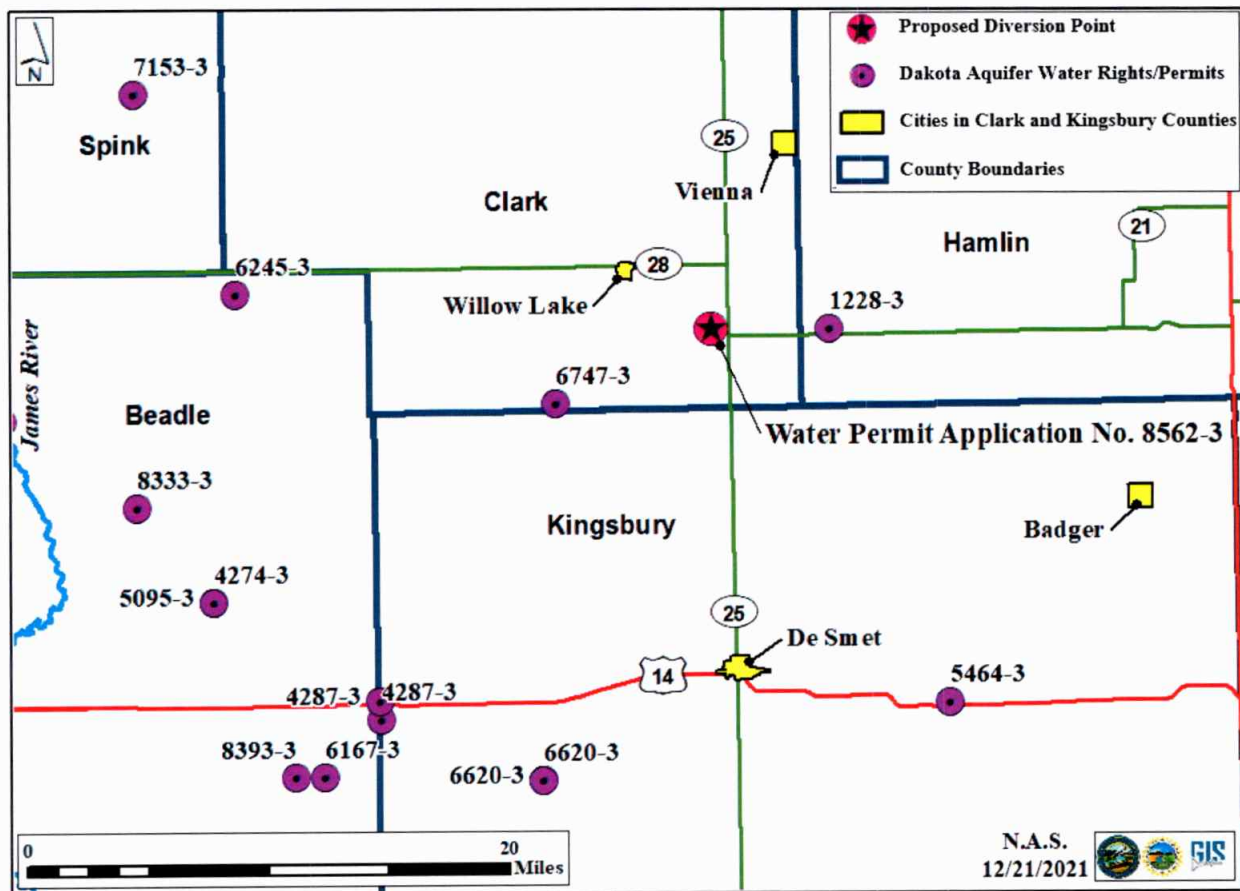


Figure 5. Location of the proposed diversion point for Water Permit Application No. 8560-3 with the Dakota aquifer water rights/permits within approximately 25 miles (Water Rights, 2022b and 2022c)

Table 7. Water rights/permits authorized to withdraw water from the Dakota aquifer within approximately 25 miles of the proposed diversion point, as shown in Figure 5 (Water Rights, 2022c)

Permit No.	Name	Status	Use	Diversion Rate (cfs)	Authorized Annual Volume (acre-feet)
1228-3	City of Bryant	LC	MUN	0.22	N/A
4274-3	Town of Yale	LC	MUN	0.05	N/A
4287-3	City of Iroquois	LC	MUN	2.5	N/A
5095-3	Town of Yale	LC	MUN	0.066	N/A
5464-3	City of Lake Preston	LC	MUN	0.33	N/A
6167-3	Pearl Creek Hutterian Brethren	LC	COM	0.145	N/A
6245-3	Shamrock Colony	LC	COM	0.07	N/A
6620-3	Redstone Feeders LLC	LC	COM	0.13	N/A
6747-3	Collins Colony	PE	DOM	0.11	N/A
7153-3	Hillside Colony	PE	COM	0.22	N/A
8333-3	Liberty Farms LLC	PE	COM	0.1	62
8393-3	Pearl Creek Hutterian Brethren	PE	COM	0.13	7.7
LC: Licensed Water Right; PE: Water Permit; COM: Commerical; DOM: Domestic; MUN: Municipal					

Observation well ED-85A (approximately 81 miles northwest of the proposed diversion point) has eight high-yield wells (assumed to be a well with an authorized diversion rate greater than 0.2 cfs) within approximately fifteen miles of it (as shown on Figure 4) (Water Rights, 2022b and 2022c). The lithologic log on file for ED-85A noted the well was drilled 1,080 feet deep below the ground surface with the top of aquifer at approximately 980 feet below the ground surface (Water Rights, 2022b). The lowest recorded static water level on the hydrograph (displayed in Figure 2) is approximately 12 feet below the ground surface, which indicates there was still approximately 968 feet of artesian head pressure in ED-85A even during drier periods when high-yield wells are expected to be pumping more water (Water Rights, 2022b).

The Dakota aquifer is expected to be under confined conditions near the proposed diversion point based on the well completion reports and lithologic logs on file with the DANR-Water Rights Program (SDGS, 2022; Water Rights, 2022b and 2022d). Since the Dakota aquifer is expected to be confined near the proposed diversion point, drawdown can extend some distance but the exact drawdown behavior of a well cannot be known without an aquifer performance test.

Near the proposed diversion point, the Dakota aquifer has a saturated aquifer thickness ranging from approximately 40 to 100 feet below the ground surface, with the depth to the top of aquifer materials ranging from approximately 1,200 to 1,300 feet below the ground surface (Water Rights, 2022d). 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 Clark County, there have been no substantiated complaints submitted to the DANR-Water Rights Program regarding well interference for adequate wells completed into the Dakota aquifer (Water Rights, 2022e).

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 near the proposed diversion point, the artesian head pressure in observation wells and appropriative user’s wells completed into the Dakota aquifer near the proposed diversion point, 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 proposed diversion point must 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. 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. 8562-3 proposes to appropriate up to 491 acre-feet of water annually at a maximum instantaneous diversion rate of 1.45 cfs from one well to be completed into Dakota aquifer (approximately 1,300 feet deep) for commercial use at a dairy facility. This site is located in Clark County approximately four miles southeast of Willow Lake, 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. 8562-3 will not unlawfully impair adequate wells for existing water rights/permits and domestic users.



Nakaila Steen

Natural Resources Engineer I

SD DANR - Water Rights Program

Reviewed by:



Adam Mathiowetz, PE

Natural Resources Engineer IV

SD DANR - Water Rights Program

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Schlaak, Karen

From: Schlaak, Karen
Sent: Wednesday, January 12, 2022 1:54 PM
To: Matt Waldbeser
Subject: Water Permit Application No. 8562-3, Riverview LLP
Attachments: 2396.pdf

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>



NOTICE OF APPLICATION NO. 8562-3 to Appropriate Water

Notice is given that Riverview LLP, c/o Brady Janzen, 26406 470th Ave, Morris MN 56267 has filed an application for a water permit to appropriate 491 acre-feet of water annually at a maximum pump rate of 1.45 cubic feet of water per second from one well to be completed into the Dakota Aquifer (approximately 1,300 feet deep) located in the NE 1/4 SW 1/4 Section 16 for commercial use at a dairy facility to be located in the NW 1/4, N 1/2 SW 1/4 Section 16; all in T113N-R56W. This site is located approximately 4 miles southeast of Willow Lake SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8562-3 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 January 31, 2022.

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.

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Published once at the total approximate cost of \$41.66.
1-19-1t

Affidavit of Publication

State of South Dakota

§

County of Clark

William J. Krikac of said county, being first duly sworn, on oath says that he is the publisher of the **Clark County Courier**, a weekly newspaper printed and published in Clark in said County of Clark and has a full and personal knowledge of all the facts therein stated; that said newspaper is a legal newspaper and has a bona-fide circulation of at least two hundred copies weekly, and has been published within said County for fifty-two successive weeks next prior to the publication of the notice herein mentioned, and was and is printed wholly or in part in an office maintained at said place of publication; that the

Riverview LLP

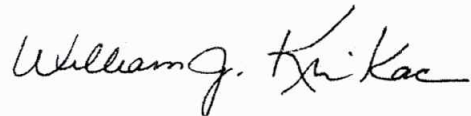
a printed copy of which taken from the paper in which same was published, is attached to this sheet, and is made a part of this Affidavit, was published in said newspaper at least once in each week for

One

successive week(s), on the day of each week on which said newspaper was regularly published, to wit:

January 19, 2022

that the full amount of the fees for the publication of the annexed notice is

\$41.66


Subscribed and sworn to before me this

20th day of January, 2022


Notary Public
Clark County, South Dakota

My Commission expires: 06/04/2025

RECEIVED**JAN 25 2022**

WATER RIGHTS
PROGRAM

LOCALiQ

Aberdeen News
Watertown Public Opinion

PO Box 630567 Cincinnati, OH 45263-0567

PROOF OF PUBLICATION

Water Rights Program
Riverview LLP
26406 470TH AVE
MORRIS MN 56267

STATE OF SOUTH DAKOTA, COUNTY OF CODINGTON

The Watertown Public Opinion is, and during all the times hereafter mentioned was, a daily legal newspaper as defined in SDCL 17-2-2.1 through 17-2-2.4, as amended, published at Watertown, Codington County, South Dakota, by Watertown Public Opinion; that the notice, order or advertisement, a printed copy of which is attached, was published in said newspaper in the issue dated:

01/19/2022

and that the fees charged are legal.
Sworn to and subscribed before on 01/19/2022

Legal Clerk

Notary, State of WI, County of Brown

My commission expires

Publication Cost: \$48.68

Order No: 6781184

Customer No: 559590

of Copies:

1

PO #:

THIS IS NOT AN INVOICE!

Please do not use this form for payment remittance.

AMY KOKOTT
Notary Public
State of Wisconsin

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APPLICATION
NO. 8562-3 to

Appropriate Water

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Published once at the total approximate cost of \$48.68.
Jan. 19, 2022 # 6781184

Schlaak, Karen

From: Schlaak, Karen
Sent: Wednesday, January 12, 2022 1:49 PM
To: Watertown Public Opinon (legals@thepublicopinion.com)
Subject: 8562-3, Riverview LLP
Attachments: 8562-3public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on January 19, 2022.

Riverview LLP, c/o Brady Janzen, 26406 470th Ave, Morris MN 56267, (605 320-287-1028) 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: Wednesday, January 12, 2022 1:48 PM
To: 'courier@itctel.com'
Subject: 8562-3, Riverview LLP
Attachments: 8562-3public.short_final.docx; FORM8.FRM.doc

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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.**

January 12, 2022

Riverview LLP
c/o Brady Janzen
26406 470th Ave
Morris MN 56267

Dear Mr. Janzen:

Water Permit Application No. 8562-3 for commercial use have been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Clark County Courier printed at Clark (Ph # 605 532-3654) and the Public Opinion printed at Watertown (Ph # 605 886-6901). 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.

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**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

MAR 30 2022

Riverview LLP
c/o Randy Janzen
26406 470th Ave
Morris MN 56267

Dear Mr. Janzen:

Enclosed is Water Permit No. 8562-3 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

A 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 information 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