

WATER PERMIT NO. 8522-3

Name of Applicant: **Moody County Dairy LP**

Address: **4009 W 49th St, Suite 308, Sioux Falls SD 57106**

Phone: **605 351-9216**

Amount of Water Claimed: **0.333 cfs (135 AF)**

Total Acres: **NA**

Source of Water Supply: **groundwater (one well)**

Water to be used for: **commercial**

County: **Minnehaha**

Type of Waste Disposal System:

Location: **11 miles east of Dell Rapids**

PRIORITY

Date Received: **6-30-21**

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

Corrected Application Received:

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

Remarks:

Diversion Point: **approximate center of SE 1/4 Sec
9-T104N-R47W**

Land to be Irrigated: **NA**

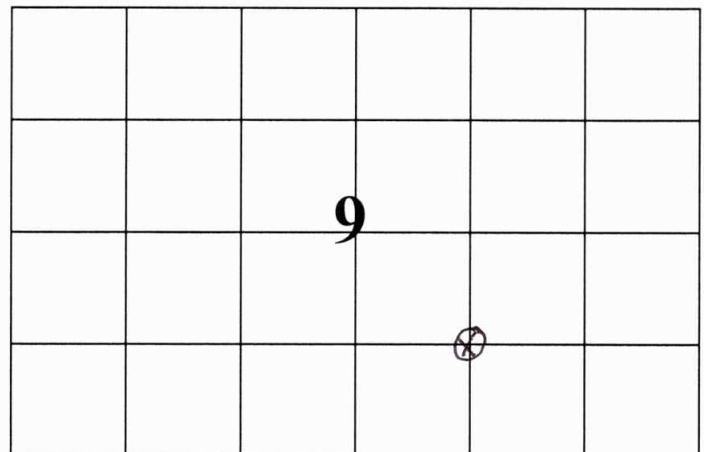
Depth of Well: **360**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by:



Reviewed and the Number Assigned on: **6-30-21**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

SOUTH DAKOTA
WATER PERMIT NO. 8522-3

Date of first receipt of application June 30, 2021.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8522-3 to Moody County Dairy LP, c/o Lynn Boadwine, 4009 W 49th St, Suite 308, Sioux Falls SD 57106 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. 8522-3 appropriates 110 acre-feet of water annually at a maximum pump rate of 0.333 cubic feet of water per second from one well to be completed into the Split Rock Creek Aquifer (approximately 360 feet deep) located in the NW 1/4 SE 1/4 Section 9 for commercial use in an existing dairy operation located in the SE 1/4 Section 10; all in T104N-R47W. Combinations of diversion under existing Water Right No. 6894-3 and this permit may not exceed 351 acre-feet annually. This site is located approximately 11 miles east of Dell Rapids 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 June 30, 2021.
5. The date of approval of Permit No. 8522-3 is September 13, 2021.
6. One-fifth of the construction is to be completed on or before March 13, 2024.
7. All construction is to be completed on or before September 13, 2026.
8. Water is to be put to beneficial use on or before September 13, 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 well approved under Water Permit No. 8522-3 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. Water Permit No. 8522-3 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)

3. Water Permit No. 8522-3 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
4. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Split Rock Creek aquifer.
5. Combinations of diversions under Water Right No. 6894-3 and this Permit may not exceed a total annual diversion of 351 acre-feet of water from the Split Rock Creek aquifer.

WATER MANAGEMENT BOARD

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

SEP 27 2021

date



JUN 30 2021

PAID

JUN 30 2021

Ck# 016063

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8522-3</u>	(office use only) Hydrologic Unit <u>10170203</u>	WATER RIGHTS PROGRAM
	Basin <u>Sioux River</u>		
	Newspaper <u>Argus Leader</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 Moody County Dairy, LP

Mailing Address 4009 W 49th Street, Suite 308 Sioux Falls SD 57106
 (Address) (City) (State) (Zip Code)

Phone (605) 361-3352 Mobile (605) 351-9216 Email ldboadwine@gmail.com

2. Amount of water claimed 0.333 *CFS or 150 **GPM and 110 ***AF or 110 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 Split Rock Creek Aquifer

4. Location of point of diversion NW 1/4 of SE 1/4 of Sec. 9, T104N, R47W County Minnehaha
 (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? SE 1/4 Section 10-T104N-R47W
 (example - NW1/4 section 12-T104N-R53W)

5. County or counties where water will be used Minnehaha County, SD6. Annual period during which water is to be used January 1 thru December 31

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 dairy is increasing animal numbers and requires additional water. 150 gpm well to be installed in Split Rock Creek Aquifer. Existing water rights permit 6894-3 allows 150 gpm diversion from Split Rock Creek Aquifer. The proposed well will divert an additional 150 gpm and 110 ac-ft of water.

See included well log from existing well for water rights 6894-3.

I, Lynn Boadwine 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.

6894-3

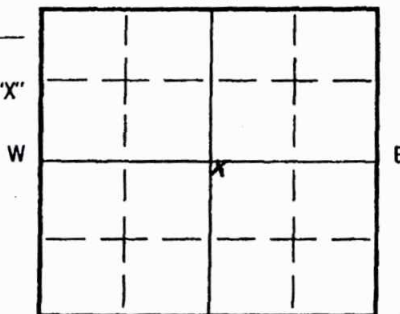
07-92

SOUTH DAKOTA WATER WELL COMPLETION REPORT

Location NW 1/4 SE 1/4 Sec 9 Twp 104N Rg 47WCounty Minnehaha

North

Please mark well location with an "X"



Well Completion Date

11-15-07

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? none ft. from none (identify source).

PROPOSED USE:

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

METHOD OF DRILLING:

RotaryCASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>250</u> LB/FT	<u>6 1/2</u> IN	<u>0</u> FT	<u>360</u> FT	<u>10</u> IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Bentonite Slur</u>	<u>17</u>	_____ lb./gal	<u>0</u> ft	<u>280</u> ft
		_____ lb./gal	_____ ft	_____ ft

Describe grouting procedure New triaxial lime-pumped w/mud pumpSCREEN: ☒ Perforated pipe ☐ ManufacturedDiameter 6 1/2 IN Length 60 FEETMaterial Plastic SDR-17Slot Size 25 Set From 300 Feet to 360 FeetOther information Pack w/ O PackWAS A PACKER OR SEAL USED? ☐ YES ☒ NO

If so, what material? _____

Describe packer(s) and location? _____

DISINFECTION: Was well disinfected upon completion?

☒ YES. How: 59 gallons ofchlorine

Laboratory sent to for water quality analysis _____

Business Name: Helmer Dairy LLCAddress: 48660 246 st.Garretts SQ 57030

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
TOP Soil	0	2
yellow clay	2	60
Fine Sand	60	65
Coarse Gravel	65	75
Blue clay	75	260
Granite	260	263
Blue clay	263	292
Sandstone (Pink)	292	360
Blue clay	360	

STATIC WATER LEVEL 33 Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

☒ PumpedDescribe: AIR☐ Bailed☐ Other

Pumping Level Below Land Surface

100 ft. After 24 Hrs. pumped 200 GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS Draw Down 85'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 PutzkeScott HelmerDate: 11-21-07

RECEIVED
NOV 28 2007
WATER RIGHTS
PROGRAM

SRKC



File Location: F:\PROJECTS\2019\19027 - Moody County Dairy\Permits\Water\19027 - Well Map.dwg \ Plot Date: 6/28/2021 10:51 AM

Moody County Dairy, LP Water Rights Application Map



Scale: 1" = 1,200'

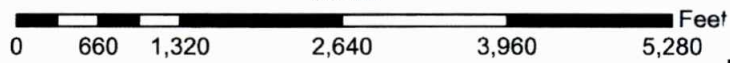
STOCKWELL
6/28/2021 SEI No: 19027

2021 Well

WATER LICENSE NO. 7937-3
MOODY COUNTY DAIRY
NOVEMBER 27, 2013



SCALE



Lynn Beck
Lynn Beck
Natural Resources Engineer III
SD DENR - Water Rights Program



RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date June 30, 2021

RECEIVED OF Moody County Dairy LP 4009 W 49th Street, Suite 308 Sioux Falls SD 57106

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

Fee for Application for Permit No. <u>8522-3</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>8522-3</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
EG

Schlaak, Karen

From: Brad Woerner <bwoerner@stockwellengineers.com>
Sent: Wednesday, June 30, 2021 11:09 AM
To: Schlaak, Karen
Subject: RE: [EXT] Water Permit Application for Moody County Dairy LP

Karen,

Please use 135 ac-ft for item #7.

The 135 ac-ft volume is for the proposed well.

Sorry for the confusion...

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: Wednesday, June 30, 2021 11:06
To: Brad Woerner <bwoerner@stockwellengineers.com>
Subject: Water Permit Application for Moody County Dairy LP

We received the application today. A question regarding the amount of acre-feet requested. Item No. 2 says 135 AF. Item No. 7 says 125 AF. Which is correct and is that AF volume for just the new well?

Karen Schlaak

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



Mathiowetz, Adam (DENR)

From: Brad Woerner <bwoerner@stockwellengineers.com>
Sent: Wednesday, August 4, 2021 4:08 PM
To: Mathiowetz, Adam (DENR)
Cc: Steen, Nakaila; Gronlund, Eric
Subject: RE: [EXT] Moody County Dairy Water Permit Application

Adam,

I spoke with Lynn.

He would like to go with 351 ac-ft/yr total from the Split Rock Creek Aquifer (combined total for both wells).

I would say to quantify Water Right No. 6894-3 as 241 ac-ft/yr and have the new application be for 110 ac-ft/yr additional.

This should get us to the desired 351 ac-ft/yr...

Make sense? Let me know either way and I can revise as needed.

Thank you!

Sincerely,



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

From: Mathiowetz, Adam (DENR) <Adam.Mathiowetz@state.sd.us>
Sent: Wednesday, August 4, 2021 15:44
To: Brad Woerner <bwoerner@stockwellengineers.com>
Cc: Steen, Nakaila <Nakaila.Steen@state.sd.us>; Gronlund, Eric <Eric.Gronlund@state.sd.us>
Subject: Moody County Dairy Water Permit Application

Brad,

Nakaila and I talked with Eric and we need to make sure we are clear on what the dairy's intent is. Water Right No. 6894-3 from the Split Rock Creek aquifer authorizes a diversion rate of 0.333 cfs currently. This entitles the dairy to 241 ac-ft/yr assuming full time pumping. The new application requests a diversion rate of 0.333 cfs with an annual volume limit of 135 ac-ft/yr.

Does the dairy want 270 ac-ft/yr from the wells combined? That is to say 135 ac-ft/yr from each Split Rock Creek aquifer well. Under that scenario, the new application would only be for 29 ac-ft/yr and we would quantify Water Right No. 6894-3 for 241 ac-ft/yr.

Or, does the dairy want the 241 ac-ft/yr from Water Right No. 6894-3 plus the 135 ac-ft/yr requested by the new application. This would be an annual total of 376 ac-ft/yr from the Split Rock Creek aquifer.



Adam Mathiowetz, PE

Engineer, Water Rights Program

Department of Agriculture and Natural Resources

523 E. Capitol Ave. Pierre SD, 57501

605.773.3352

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. 8522-3, Moody County Dairy LP**

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. 8522-3, Moody County Dairy LP, 4009 W 49th St, Suite 308, Sioux Falls SD 57106.

The Chief Engineer is recommending APPROVAL of Application No. 8522-3 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 rights, 3) the proposed use is a beneficial use and, 4) it is in the public interest with the following qualifications:

1. The well approved under Water Permit No. 8522-3 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. Water Permit No. 8522-3 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.
3. Water Permit No. 8522-3 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)

4. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Split Rock Creek aquifer.
5. Combinations of diversions under Water Right No. 6894-3 and this Permit may not exceed a total annual diversion of 351 acre-feet of water from the Split Rock Creek aquifer.

See report on application for additional information.



Eric Gronlund, Chief Engineer

August 9, 2021

Report to the Chief Engineer
On Water Permit Application No. 8522-3

Moody County Dairy LP

c/o Lynn Boadwine

August 17, 2021

Water Permit Application No. 8522-3 proposes to appropriate up to 110 acre-feet of water annually at a maximum instantaneous diversion rate of 0.333 cubic feet per second (cfs) from one well to be completed into the Split Rock Creek aquifer (approximately 360 feet deep) and located in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 9 for commercial use in an existing dairy operation located in the SE $\frac{1}{4}$ of Section 10; all in T104N-R47W. The site is in Minnehaha County approximately 11 miles east of Dell Rapids, South Dakota.

The applicant holds Water Right No. 6894-3 which authorizes a maximum instantaneous diversion rate of 0.333 cfs from one well (360 feet deep) completed into the Split Rock Creek aquifer and located in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 9 for commercial use in an existing dairy operation located in the SE $\frac{1}{4}$ of Section 10; all in T104N-R47W.

Collectively, Water Right No. 6894-3 and Water Permit Application No. 8522-3 (if approved), will authorize a maximum instantaneous diversion rate of 0.333 cfs from each of the two wells, for a total combined appropriation of 351 acre-feet per year at a maximum diversion rate of 0.666 cfs.

AQUIFER: Split Rock Creek (SRKC)

HYDROGEOLOGY:

The Cretaceous-aged, Split Rock Creek Formation underlies portions of Lake, Minnehaha, and Moody Counties in South Dakota (Hedges et al, 1982). The Split Rock Creek Formation may possibly be the lateral equivalent to all marine Cretaceous formations in eastern South Dakota, such as the Pierre Shale, Niobrara Formation, Carlile Shale, Codell Sandstone, and Greenhorn Limestone among others (Tomhave, 1994). The Split Rock Creek Formation consists of embayment fill and other nearshore facies deposited along the irregular paleoshore of the Sioux Ridge, which hosts the highly fractured, Precambrian-aged, Sioux Quartzite (Tomhave, 1994; Pence, 1997). In Minnehaha County, there are three primary embayments: the Trent embayment in the northeastern corner of the county, the Herman Embayment in the northwestern corner, and the Brandon Embayment in the southeastern corner (Tomhave, 1994). The proposed location of the diversion point is within the Trent Embayment (Lindgren and Niehus, 1992 and 1994; Tomhave, 1994). In the Trent Embayment, the uppermost Split Rock Creek sediments consist of alternating beds of white to tan carbonaceous claystones and pink quartz sands and this portion of the Split Rock Creek Formation may, in part, correlate in age to the Pierre Shale (Tomhave, 1994).

The Split Rock Creek aquifer underlies approximately 145 square miles, or 92,800 acres, of Minnehaha County and is distributed in three hydrologically independent portions within each of the three embayments into the Sioux Quartzite (as seen in Figure 1) (Lindgren and Niehus, 1992 and 1994). The Trent embayment underlies approximately 17.5 miles (11,200 acres), the Herman Embayment underlies approximately 12.5 miles (8,000 acres), and the Brandon Embayment underlies approximately 115 miles (73,600 acres) (Lindgren and Niehus, 1992 and 1994). It is worth noting, the bedrock geologic map for eastern South Dakota in Moody County and the bedrock map for Rock County, Minnesota, show bedrock formations and bedrock elevation contours that suggest the Trent embayment extends beyond Minnehaha County, and thus the Split Rock Creek aquifer within the Trent embayment likely underlies more than the 11,200 acres located in Minnehaha County (Jirsa et al., 2020; Tomhave and Schulz, 2004). However, the bedrock formations mapped in the possible extensions of the Trent embayment outside of Minnehaha County are mapped as “Cretaceous Undifferentiated,” which is commonly used when the distinction between known Cretaceous formations is not clear (Jirsa et al., 2020; Tomhave and Schulz, 2004; Water Rights, 2021c).

Generally, the Split Rock Creek aquifer is under confined conditions, and the direction of groundwater movement in the aquifer within the Trent Embayment is to the east (Lindgren and Niehus, 1992). The proposed diversion point for Water Permit Application No. 8522-3 plots approximately 0.5 miles south outside of the Split Rock Creek aquifer boundary delineated by Lindgren and Niehus (1992 and 1994) as aquifer boundaries are approximate.

A water well completion report was submitted with Water Permit Application No. 8522-3 for an existing well (360 feet deep) completed into the Split Rock Creek aquifer in the NW ¼ SE ¼ of Section 9-T104N-R47W and authorized under Water Right No. 6894-3. The well completion report lists “Top Soil” from 0 to 2 feet below the ground surface, “Yellow Clay” from 2 to 60 feet, “Fine Sand” from 60 to 65 feet, “Coarse Gravel” from 65 to 75 feet, “Blue Clay” from 75 to 260 feet, “Granite” from 260 to 263 feet, “Blue Clay” from 263 to 292 feet, “Sandstone (Pink)” from 292 to 360 feet, and “Blue Clay” at 360 feet below the ground surface (Water Rights, 2021c). The well was screened in pink sandstone from 300 to 360 feet below the ground surface and had a static water level of 33 feet below the ground surface, which indicates there was approximately 259 feet of artesian head pressure in the well at the time of completion (November 15, 2007) (Water Rights, 2021c). Based on the submitted well completion report, the Split Rock Creek aquifer is under confined conditions at the proposed diversion point (Water Rights, 2021c).

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 rights, and that the proposed use is a beneficial use and in the public interest.” This report will address the availability of unappropriated water and the potential for unlawful impairment of existing water rights within the Split Rock Creek aquifer.

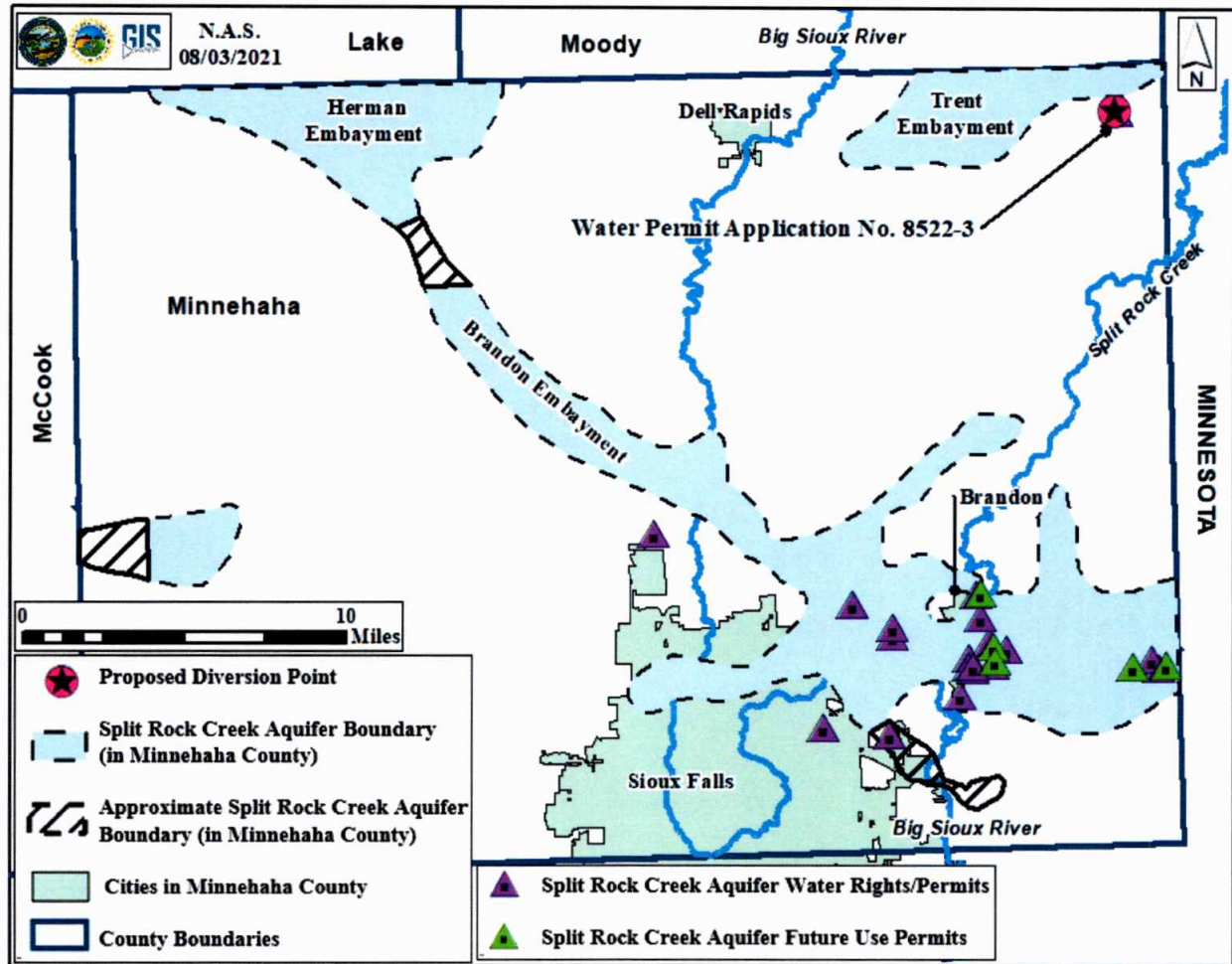


Figure 1. Map of the approximate Split Rock Creek aquifer in Minnehaha County delineated by Lindgren and Niehus (1992 and 1994) and the location of the proposed diversion point for Water Permit Application No. 8522-3, and the Split Rock Creek aquifer water rights/permits (Water Rights, 2021b)

WATER AVAILABILITY:

Water Permit Application No. 8522-3 proposes to appropriate water from the Split Rock Creek 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 Greenhorn Formation is Cretaceous aged and there are younger (stratigraphically higher) and older (stratigraphically lower) formations within the Cretaceous Age. The Split Rock Creek Formation does vary in age from younger than to older than the Greenhorn Formation (Fahrenbach et al,

2010). At the proposed diversion point, the Split Rock Creek Formation is generally younger, stratigraphically higher, than the Greenhorn Formation (Water Rights, 2021c). Therefore, the average annual recharge and average annual withdrawal rates to and from the Split Rock Creek aquifer must be considered.

HYDROLOGIC BUDGET:

Recharge

Due to the level of development of the Split Rock Creek aquifer within the Brandon embayment (as seen in Figure 1), most of the study of recharge has focused solely on that embayment. Recharge to the Split Rock Creek aquifer within the Trent embayment is primarily through the infiltration of precipitation that falls on Sioux Quartzite outcrops that subsequently moves through fractures in the quartzite into the aquifer and through infiltration of precipitation where the aquifer is near land surface or is overlain by permeable sediments near land surface (Lindgren and Niehus, 1992 and 1994).

Of the Brandon embayment, Pence (1997) states:

“The data indicate that if production wells in the aquifer are located, designed, and constructed properly, the aquifer has an overall potential to yield in excess of 5 million gallons per day. After production wells are installed in the aquifer and have been pumped for an extended period of time, a better prediction can be made on the potential long term yield of the aquifer.”

A potential total yield from wells completed into an aquifer is not the same as an average recharge rate to the aquifer. However, it can be useful in determining a general sense of the scale of the average annual recharge rate and setting an upper limit to the likely average annual recharge (Mathiowetz, 2019). A yield of 5 million gallons per day is approximately 5,600 acre-feet per year. Although this potential total yield was estimated for the Split Rock Creek aquifer within the Brandon embayment, this yield rate can be utilized to determine a general sense of the scale of the average annual recharge rate to the Trent embayment in Minnehaha County. By dividing the potential total yield to the Split Rock Creek aquifer (5,600 acre-feet per year), by the areal extent of the Brandon embayment (approximately 73,600 acres), the average annual recharge rate to the aquifer within the Brandon embayment is approximately 0.913 inches per year. The Split Rock Creek aquifer within the Trent embayment underlies approximately 11,200 acres in Minnehaha County (Lindgren and Niehus, 1992 and 1994). Therefore, an upper limit of the average annual recharge rate for the Split Rock Creek aquifer within the Trent embayment is approximately 852 acre-feet per year.

For confined glacial-origin aquifers, Hedges and others (1985) recommended recharge rates of 0.15 to 0.60 inches per year for use by management and development programs. While the Split Rock Creek aquifer is not glacial in origin, it is generally buried and confined; thus, Hedges and others' (1985) range is useful in providing a general scale of recharge to this portion of the Split Rock Creek aquifer that could be expected. In Minnehaha County, the estimated range of average annual recharge based on the aquifer's areal extent of 11,200 acres determined by

Lindgren and Niehus (1992 and 1994) is approximately 140 to 560 acre-feet per year using the Hedges and others (1985) recharge rate estimate and recognizing the estimates are for glacial origin aquifers and not a bedrock aquifer like the Split Rock Creek aquifer.

A numerical flow model completed by Putnam (1998) analyzed the inflow rates to the Split Rock Creek aquifer within a study area that conforms to the shape of the Brandon embayment (approximately 73,600 acres). The general approach to calibration of the model representing the Split Rock Creek aquifer was to simulate a period approximating average conditions prior to significant pumping stresses with a steady-state simulation followed by transient simulations of changing hydrologic stresses (Putnam, 1998). The hypothetical average annual inflow rate to the Split Rock Creek aquifer was 2.5 cfs (1,810 acre-feet per year) under steady state conditions. During model runs, if an additional 4 cfs withdrawal rate from the aquifer was added, the hypothetical average inflow rate increased to 5.9 cfs (4,271 acre-feet per year) (Putnam, 1998). Putnam (1998) noted that when the withdrawals were increased by 6 cfs over the original steady state calculations the model showed complete dewatering of an adjacent aquifer; "Thirty grid blocks, which represent the Brandon aquifer in the area where a hydraulic connection to the Split Rock Creek aquifer exists, went dry in the simulation with additional pumping of 6 ft³/s."

By dividing the hypothetical average annual inflow rate to the Split Rock Creek aquifer (1,810 acre-feet per year under steady state conditions) calculated by Putnam (1998), by the areal extent of the Brandon embayment (approximately 73,600 acres), the lower bound of the average annual inflow rate to the aquifer within the Brandon embayment is approximately 0.295 inches per year. Additionally, by dividing the hypothetical average annual inflow rate to the Split Rock Creek aquifer (4,271 acre-feet per year) (if an additional 4 cfs withdrawal rate from the aquifer was added) calculated by Putnam (1998), by the areal extent of the Brandon embayment (approximately 73,600 acres), the upper bound of the average annual inflow rate to the aquifer within the Brandon embayment is approximately 0.696 inches per year.

Although these inflow rates are based off the larger Brandon embayment, these rates can be utilized to estimate an inflow rate range for the smaller Trent embayment. The Split Rock Creek aquifer within the Trent embayment underlies approximately 11,200 acres in Minnehaha County (Lindgren and Niehus, 1992 and 1994). Therefore, the average annual inflow rate range for the Split Rock Creek aquifer within the Trent embayment ranges from 275 to 650 acre-feet per year in Minnehaha County.

Neither Pence (1997) nor Hedges and others (1985) have a direct recharge rate estimate for the Split Rock Creek aquifer. Based on the information available in these reports regarding aquifer pumping tests, the well yields indicated in Pence (1997), and comments regarding recharge to buried and confined glacial aquifers (Hedges et al, 1985), it is reasonable to estimate the average annual recharge rate to the Split Rock Creek aquifer in Minnehaha County probably ranges from approximately 140 to 852 acre-feet per year. This range is supported by the hypothetical average recharge rates, 275 to 650 acre-feet per year used and calculated by Putnam (1998) for a numerical model of the aquifer.

It is worth noting, the physical mechanisms of recharge to the Split Rock Creek aquifer within the Brandon and Trent embayments are different (Tomhave, 1994). It is likely the recharge rate per unit area (e.g., acre of aquifer) to the aquifer within the Trent embayment is smaller than the recharge rate to the aquifer within the Brandon embayment because the aquifer within the Trent embayment has less connection to higher recharge rate sources like the Big Sioux and Brandon aquifers, and the Big Sioux River. (Lindgren and Niehus, 1992 and 1994; Tomhave, 1997). Additionally, the aquifer within the Trent embayment is generally encountered deeper than the aquifer within the Brandon embayment (Water Rights, 2021c). However, the recharge rate determined for the Split Rock Creek aquifer within the Trent embayment, while estimated from studies completed for the aquifer within the Brandon embayment, still provides a sense of scale of what recharge could be expected for the aquifer within the Trent embayment.

Discharge

Discharge from the Split Rock Creek aquifer within the Trent embayment is primarily through well withdrawals and outflow to adjacent aquifers (Lindgren and Niehus, 1992 and 1994; Water Rights, 2021b).

Currently, there is one water right authorized to appropriate water from the Split Rock Creek aquifer within the Trent embayment - Water Right No. 6894-3, held by Moody County Dairy LP, which is authorized to divert 0.333 cfs from one well for commercial use (Water Rights, 2021b). The amount of water that can be withdrawn annually for Water Right No. 6894-3 was estimated by assuming the user will pump at their maximum permitted diversion rate for 100 percent of the time. This rate was used based on an email exchange with the applicant's consultant regarding estimated future water use (B. Woerner, Personal Communication, August 4, 2021). Therefore, the average annual withdrawal rate for the water right authorized to appropriate water from the Split Rock Creek aquifer within the Trent embayment is approximately 241 acre-feet per year.

There could be domestic wells completed into the Split Rock Creek aquifer within the Trent embayment that do not require a water right/permit, so the withdrawal amount from those wells is unknown (Water Rights, 2021c). Due to their relatively low diversion rates, withdrawals from domestic wells are generally not considered to be a significant portion of the hydrologic budget. Additionally, with the development of rural water systems in areas where the Split Rock Creek aquifer within the Trent embayment is the uppermost aquifer available; it is likely some domestic users may have transitioned to rural water. Therefore, the quantity of water withdrawn by domestic wells is estimated to be negligible to the hydrologic budget for the Split Rock Creek aquifer within the Trent embayment.

Hydrologic Budget Summary

In Minnehaha County, the average annual recharge rate to the Split Rock Creek aquifer within the Trent embayment probably ranges from approximately 140 to 852 acre-feet per year. In Minnehaha County, the average annual withdrawal rate from the Split Rock Creek aquifer within the Trent embayment is approximately 241 acre-feet per year. If approved, Water Permit Application No. 8522-3 is expected to pump approximately 110 acre-feet per year, assuming the

applicant will withdraw their full appropriative volume annually. Based off the lower recharge rate value, the average quantity of water withdrawn from the aquifer annually (if this application is approved) exceeds the minimum estimated recharge by 211 acre-feet.

Even though the average annual withdrawal rate exceeds the lower end of the recharge rate range, the applicant holds the only water right authorized to withdraw from the Split Rock Creek aquifer within the Trent embayment. Additionally, it is likely the Split Rock Creek aquifer within the Trent embayment extends into Moody County, South Dakota and Rock County, Minnesota (Jirsa et al., 2020). While the recharge rate to the Trent Embayment is likely lower than the rate to the Brandon Embayment, it is probable that the actual recharge rate to the Split Rock Creek aquifer within the Trent Embayment is greater than the minimum estimated value, 140 acre-feet per year, and is more likely toward the middle of the range, 140 to 852 acre-feet per year. Therefore, there is a reasonable probability unappropriated water is available for this proposed appropriation.

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 one observation well completed into the Split Rock Creek aquifer within the Trent embayment (Water Rights, 2021a). The observation well is MY-2008A and is located approximately 2.6 miles northwest of the proposed diversion point, as shown in Figure 3. The hydrograph for this observation well is displayed in Figure 2 (Water Rights, 2021a). The data points utilized to construct the hydrograph are measurements of the static water level in the observation wells from the top of the well casing.

The water level data shown on the hydrograph is generally representative of the water level in the Split Creek aquifer within the Trent embayment. The hydrograph for the observation well displays a slightly decreasing to stable water level over its period of record (Water Rights, 2021a). The observation well was completed into the aquifer in 2008, which indicates there is only approximately twelve years of water level readings for this well (SDGS, 2021; Water Rights, 2021a), which is a limited period of record but is still long enough to provide some information on the aquifer. A few months prior to the installation of this observation well, the first appropriative permit was approved from this aquifer at a location 2.6 miles southeast of the observation well. Since permit holders have five years to complete construction, then an additional four years to put water to beneficial use, and the aquifer is confined at this observation well, some of the downward water level trend near the beginning of the period of record in the aquifer is likely the aquifer equilibrating to the new, year-round, pumping in the aquifer. This typically displays on the hydrographs of confined observation wells as a several year decrease in water level, which then stabilizes in relation to pumping, while still fluctuating in relation to climate. Even with the aquifer equilibrating to pumping in the first part of the period of record,

the aquifer's response to climatic conditions can still be observed. For example, the slight increase in water levels in 2010 which was a wetter year, and a gradual decline in water levels from 2012 to 2013 in response to drier conditions. The response to climatic conditions can also be noted in the later part of the period of record in the slight increase in water level in response to wetter conditions in 2019. Since this is a bedrock rock aquifer overlain by till that primarily recharges via inflow from other bedrock aquifers, rather than direct infiltration of precipitation or streamflow on an outcrop area, this muted (more yearly response to climatic conditions rather than seasonal) or very slight response to wetter periods is expected since there can be lag time in recharge reaching these types of aquifers. Ultimately, the hydrograph for this observation well indicates that the aquifer responds well to climatic conditions because water levels are rising during wetter periods and declining to a stable water level during drier periods. Based on the observation well data, there is a reasonable probability that unappropriated water is available for this proposed appropriation. This agrees with the hydrologic budget analysis.

Lastly, observation well MY-2008A (approximately 2.6 miles northwest of the proposed diversion point) has one high-yield well (assumed to be a well with an authorized diversion rate greater than 0.2 cfs) within approximately three miles of it (Water Rights, 2021a and 2021b). The lithologic log on file for MY-2008A noted the well was drilled 524 feet deep, has a casing stickup height of 1.5 feet, with the top of aquifer is expected to be approximately 284 feet below the top of well casing (SDGS, 2021). The lowest recorded water level on the hydrograph is approximately 22 feet below the top of well casing (as seen on Figure 2), which indicates there was still approximately 260 feet of artesian head pressure in MY-2008A even during drier periods when high-yield wells are expected to be pumping more water (Water Rights, 2021a).

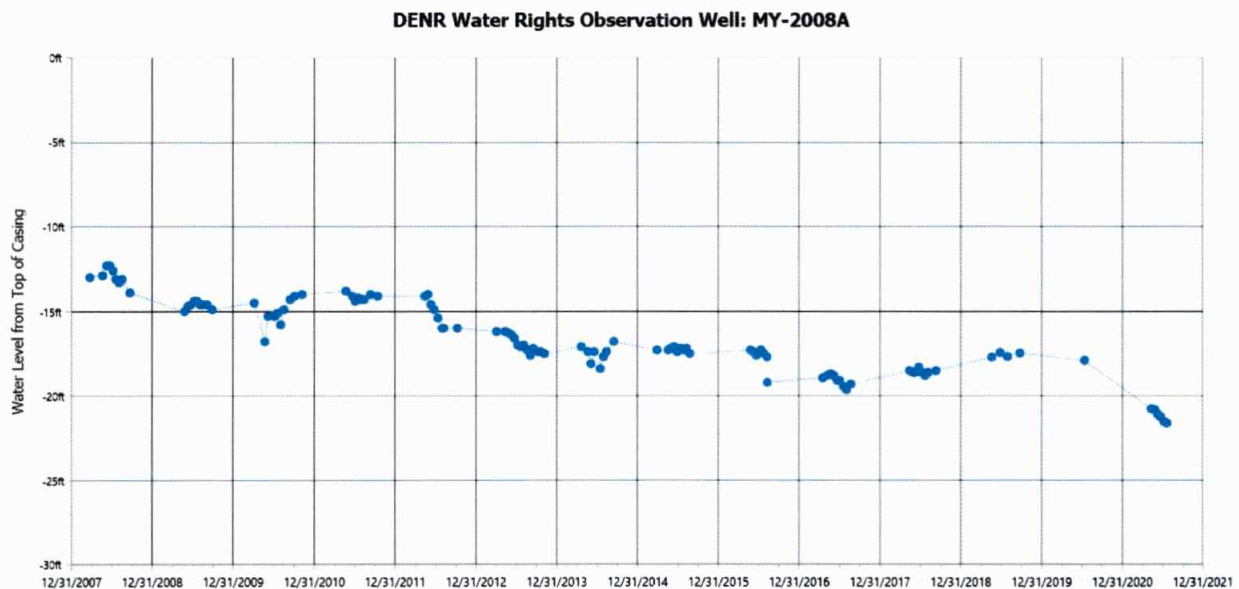


Figure 2. Hydrograph for observation well MY-2008A (Water Rights, 2021a)

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there is one water right authorized to appropriate water from the Split Rock Creek aquifer within the Trent embayment (Water Rights, 2021b). The closest water right/permit to proposed diversion point is Water Right No. 6894-3, held by Moody County Dairy LP. The diversion point for Water Right No. 6894-3 is located approximately 0.06 miles east of the proposed diversion point for this application (as seen in Figure 3) (Water Rights, 2021b).

There are no domestic wells on file with the DNR-Water Rights Program that are completed into the Split Rock Creek aquifer within the Trent embayment in Minnehaha County (Water Rights, 2021c). There could potentially be domestic wells completed into the Split Rock Creek aquifer within the Trent embayment in Minnehaha County near the proposed diversion point that are not on file with the DNR-Water Rights Program.

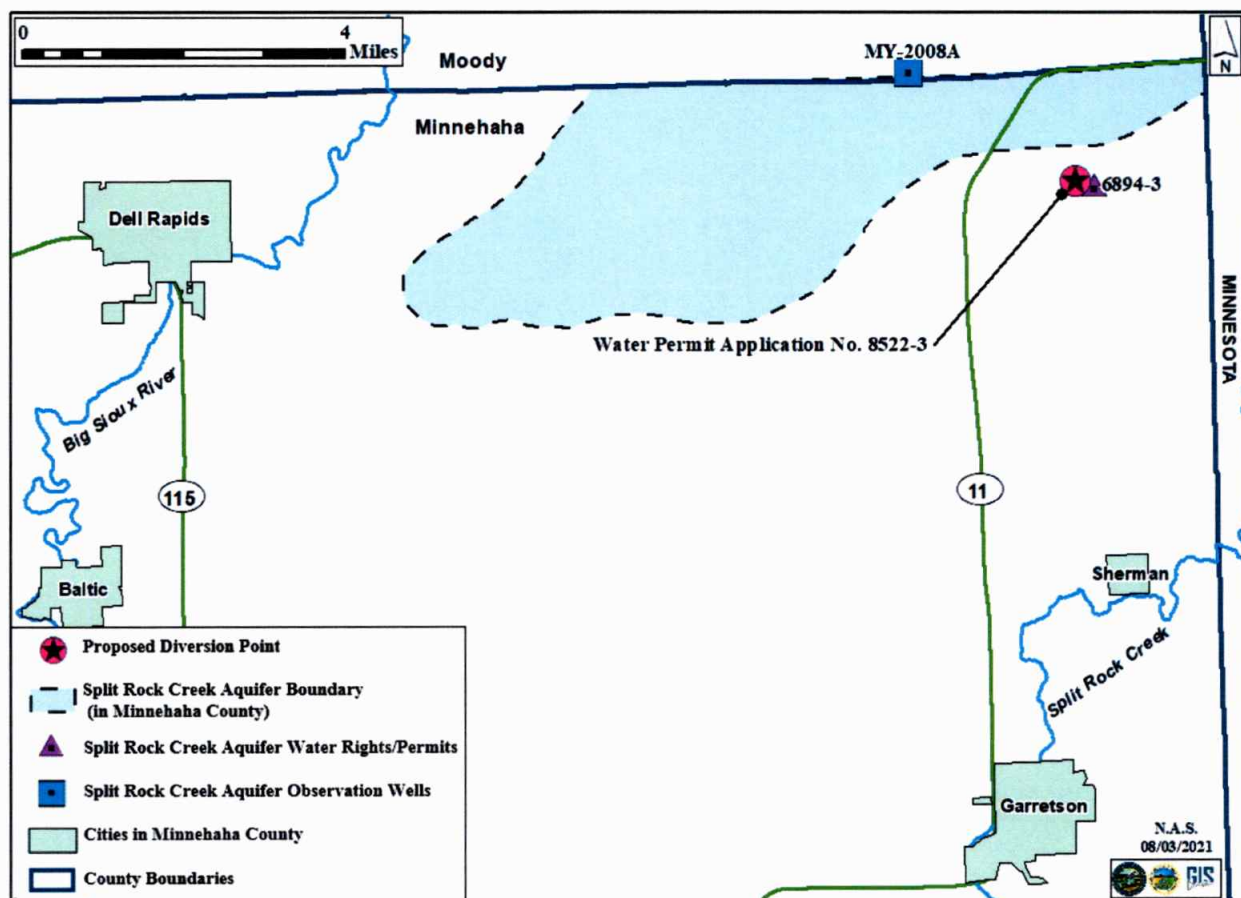


Figure 3. Location of the proposed diversion point for Water Permit Application No. 8522-3 with the Split Rock Creek aquifer water right and observation well within the Trent embayment (Lindgren and Niehus, 1992 and 1994; Water Rights, 2021a and 2021b)

In Minnehaha County, the Split Rock Creek aquifer is primarily confined with some variation in depth to the top of the aquifer and saturated aquifer thickness (Lindgren and Niehus, 1992; SDGS, 2021; Tomhave, 1994; Water Rights, 2021a, 2021b, and 2021c). Based on the submitted well completion report and the lithologic log on file for the nearby observation well, the Split Rock Creek aquifer is confined at the proposed diversion point (SDGS, 2021; Water Rights, 2021a and 2021c). Drawdown created by pumping a well generally does not extend far from the pumped well in an unconfined aquifer; however, in a confined aquifer, drawdown from pumping could extend a distance from the diversion point. The exact drawdown behavior of a well cannot be known without an aquifer performance test. However, the observation well completed into the Split Rock Creek aquifer within the Trent embayment in Minnehaha County near the licensed diversion point can provide some insight on how the aquifer responds to pumping.

Based on the submitted well completion report, the Split Rock Creek aquifer has a saturated aquifer thickness of approximately 68 feet, and the depth to the top of aquifer materials is approximately 292 feet below the ground surface at the applicant's well site (Water Rights, 2021c). 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 because of the proposed diversion is not expected to unlawfully impair nearby adequate wells. In Minnehaha or Moody Counties, there have been no complaints filed with the DNR-Water Rights Program regarding well interference for adequate wells completed into the Split Rock Creek aquifer (Water Rights, 2021d). Within Minnehaha County, there has been one complaint filed with the DNR-Water Rights Program regarding well interference in a Sioux Quartzite well between the City of Sioux Falls and a neighboring trailer court (Water Rights, 2021d). After investigation, there was no information that indicated development of the City of Sioux Falls wells adversely impacted the neighboring trailer court's Sioux Quartzite well. The proposed diversion point for this application is approximately 18 miles northeast of that well complaint location (Water Rights, 2021b).

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 Split Rock Creek aquifer within the Trent embayment 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 Split Rock Creek aquifer within the Trent embayment in Minnehaha County, the artesian head pressure in observation wells and appropriative user’s wells completed into the Split Rock Creek aquifer near the proposed diversion point, and the lack of well interference complaints in this area, any drawdown created from the proposed diversion is not expected to cause an unlawful impairment on the existing water right/permit holder, or domestic users with adequate wells. Additionally, the applicant holds the only water right authorized to withdraw from the Split Rock Creek aquifer within the Trent embayment (Water Rights, 2021b). Therefore, there is a reasonable probability that any interference from the proposed appropriation will not impose unlawful impairments on existing users with adequate wells.

CONCLUSIONS:

1. Water Permit Application No. 8522-3 proposes to appropriate up to 110 acre-feet of water annually at a maximum instantaneous diversion rate of 0.333 cfs from one well to be completed into the Split Rock Creek aquifer (approximately 360 feet deep) for commercial use in an existing dairy operation. The site is in Minnehaha County approximately 11 miles east of Dell Rapids, South Dakota.
2. The applicant holds Water Right No. 6894-3 which authorizes a maximum instantaneous diversion rate of 0.333 cfs from one well (360 feet deep) completed into the Split Rock Creek aquifer. Collectively, Water Right No. 6894-3 and Water Permit Application No. 8522-3 (if approved), will authorize a maximum instantaneous diversion rate of 0.333 cfs from each of the two wells, for a total combined appropriation of 351 acre-feet per year at a maximum diversion rate of 0.666 cfs.
3. Based on the hydrologic budget and observation well data, there is a reasonable probability unappropriated water is available for this proposed appropriation.
4. There is a reasonable probability that the proposed diversion by Water Permit Application No. 8522-3 will not unlawfully impair adequate wells completed into the Split Rock Creek aquifer within the Trent embayment for existing water right/permit holders and domestic users.

Nakaila Steen

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

Reviewed by:

Adam Mathiowetz

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

References

- Fahrenbach, M.D., Steece, F.V., Sawyer, J.F., McCormick, K.A., McGillivray, G.L., Schulz, L.D., and Redden, J.A. 2010. South Dakota Stratigraphic Correlation Chart. Oil and Gas Investigations 3. SD DENR-Geological Survey, Vermillion, SD.
- Hedges, L.S., Burch, S.L., Iles, D.L., Barari, R.A., and Schoon, R.A., 1982. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa. Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
- Hedges, L.S., Allen, J., and Holly, D.E., 1985. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 7: Ground Water Recharge; United States Army Corps of Engineers Contract DACW 45-80-C-0185.
- Jirsa, M.A., Retzler, A.J., and Chandler, V.W., 2020. Geologic Atlas of Rock County, Minnesota, Plate 2: Bedrock Geology. County Atlas Series. Atlas C-47, Part A. Minnesota Geological Survey, Rock County, MN.
- Lindgren, R.J. and Niehus, C.A., 1992. Water Resources of Minnehaha County, South Dakota. Water-Resources Investigations Report 91-4101. U.S. Geological Survey. Huron, SD.
- Lindgren, R.J. and Niehus, C.A., 1994. Major Aquifers in Minnehaha County, South Dakota. Information Pamphlet No. 46. U.S. Geological Survey. Huron, SD.
- Mathiowetz, A., 2019. Unpublished Report to the Chief Engineer on Future Use Permit Application No. 8399-3 - City of Sioux Falls. SD DANR-Water Rights Program. Pierre, SD.
- Pence, S.F. 1997. Summary of the Split Rock Creek Aquifer Study. Open-File Report 87-UR. SD DANR-Geological Survey. Vermillion, SD.
- SDGS, 2021. South Dakota Geological Survey Lithologic Logs Database. Accessed August 2, 2021. <http://cf.sddanr.net/lithdb/>.

- Steen, N.A., 2020. Report to the Chief Engineer on Water Permit Application No. 8423-3 - City of Platte. SD DANR-Water Rights Program. Pierre, SD.
- Tomhave, D.W. 1994. Geology of Minnehaha County, South Dakota. Bulletin 37. SD DENR-Geological Survey. Vermillion, SD.
- Tomhave, D.W. and Schulz, L.D., 2004. Bedrock Geologic Map Showing Configuration of the Bedrock Surface in South Dakota East of the Missouri River. General Map 9. SD-DANR Geological Survey Program, Vermillion, SD.
- 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.
- Water Rights, 2021a. Observation Well Data, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2021b. Water Right/Permit Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2021c. Well Completion Reports, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2021d. County Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, August 17, 2021 12:53 PM
To: ldboadwine@gmail.com
Subject: Water Permit Application No. 8522-3
Attachments: 1673.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 as soon as possible to authorize publication and arrange for payment. This information is being mailed to you today.

I am also forwarding a couple of emails that have a phone number and account number from the Argus Leader that should help you when contacting them.

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 NEWSPAPER RIGHT AWAY.**

August 17, 2021

Moody County Dairy LP
c/o Lynn Boadwine
4009 W 49th St, Suite 308
Sioux Falls SD 57106

Dear Mr. Boadwine:

Water Permit Application No. 8522-3 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 Argus Leader printed at Sioux Falls SD (Ph # 605 331-2200). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

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. 8522-3 to Appropriate Water

Notice is given that Moody County Dairy LP, c/o Lynn Boadwine, 4009 W 49th St, Suite 308, Sioux Falls SD 57106 has filed an application for a water permit to appropriate 110 acre-feet of water annually at a maximum pump rate of 0.333 cubic feet of water per second from one well to be completed into the Split Rock Creek Aquifer (approximately 360 feet deep) located in the NE 1/4 SW 1/4 Section 9 for commercial use in an existing dairy operation located in the SE 1/4 Section 10; all in T104N-R47W. Combinations of diversion under existing Water Right No. 6894-3 and this application may not exceed 351 acre-feet annually. This site is located approximately 11 miles east of Dell Rapids SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8522-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. 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 or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by September 7, 2021.

The petition may be informal but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

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_

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, August 17, 2021 11:18 AM
To: 'legals@argusleader.com'
Subject: 8522-3, Moody County Dairy LP
Attachments: 8522-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on August 25, 2021.

Moody County Dairy LP, c/o Lynn Boadwine, 4009 W 49th St, Suite 308, Sioux Falls SD 57106 (605 351-9216) 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>



Water Rights Program - File Documentation

NAME: Brad Woerner, Stockwell Engineers

ADDRESS:

DATE: 8-24-21

RE: Publication Notice

COMMENTS:

Brad called and stated he thought we made an error regarding the legal description of the well location. He said the well is in the NW 1/4 SE 1/4 Section 9-T104N-R47W as originally listed on the application.

Brad had looked at the online application where I had changed the legal description of the well to the NE 1/4 SW 1/4 Section 9 as Ron had changed it on the draft of the public notice.

After reviewing the map Ron, Brad and I all agreed the well location was the NW 1/4 SE 1/4.

Since the notice is scheduled to run August 25 in the Argus Leader, it is too late to make the change. The notice will need to be published again with the correct legal. The Water Rights Program will pay the cost of the second publication.



Karen Schlaak
Water Rights Program

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, August 30, 2021 8:43 AM
To: 'legals@argusleader.com'
Subject: 8522-3, Moody County Dairy LP
Attachments: 8522-3public.short.docx

Attached is a notice to be published on September 2, 2021.

The Water Rights Program will pay the cost of publication.

Please send the affidavit and bill 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>



NOTICE OF APPLICATION NO. 8522-3 to Appropriate Water

Notice is given that Moody County Dairy LP, c/o Lynn Boadwine, 4009 W 49th St, Suite 308, Sioux Falls SD 57106 has filed an application for a water permit to appropriate 110 acre-feet of water annually at a maximum pump rate of 0.333 cubic feet of water per second from one well to be completed into the Split Rock Creek Aquifer (approximately 360 feet deep) located in the NW 1/4 SE 1/4 Section 9 for commercial use in an existing dairy operation located in the SE 1/4 Section 10; all in T104N-R47W. Combinations of diversion under existing Water Right No. 6894-3 and this application may not exceed 351 acre-feet annually. This site is located approximately 11 miles east of Dell Rapids SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8522-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. 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 or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by September 13, 2021.

The petition may be informal but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

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_

Argus Leader

P.O. Box 677349, Dallas, TX 75267-7349

Account No.: SFA-078306

Ad No.: 0004890653

PO #: 8522-3 Moody Co Dairy LP

WATER RIGHTS PROGRAM
523 E CAPITOL JOE FOSS BLDG
PIERRE, SD 57501

Lines : 106

Ad Total: \$37.49

This is not an invoice

RECEIVED

SEP 07 2021

WATER RIGHTS
PROGRAM

Account No.: SFA-078306

Ad No.: 0004890653

Argus Leader AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA

COUNTY OF MINNEHAHA

I being duly sworn, says: That The Argus Leader is, and during all the times hereinafter mentioned was, a daily legal newspaper published at Sioux Falls, Minnehaha County, South Dakota; that affiant is and during all of said times, was an employee of the publisher of such newspaper and has personal knowledge of the facts stated in this affidavit; that the notice, order or advertisement, a printed copy of which is hereto attached, was published in said

Thursday, September 2, 2021

Sworn to and subscribed before me this 2 day of September,
2021.

Legal Clerk

Notary Public, State of Wisconsin, County of Brown

VICKY FELTY
Notary Public
State of Wisconsin

NOTICE OF
APPLICATION NO. 8522-3
to Appropriate Water

Notice is given that Moody County Dairy LP, c/o Lynn Boodwine, 4009 W 49th St, Suite 308, Sioux Falls SD 57106 has filed an application for a water permit to appropriate 110 acre-feet of water annually at a maximum pump rate of 0.333 cubic feet of water per second from one well to be completed into the Split Rock Creek Aquifer (approximately 360 feet deep) located in the NW 1/4 SE 1/4 Section 9 for commercial use in an existing dairy operation located in the SE 1/4 Section 10; all in T104N-R47W. Combinations of diversion under existing Water Right No. 6894-3 and this application may not exceed 351 acre-feet annually. This site is located approximately 11 miles east of Dell Rapids SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8522-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. 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 or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by September 13, 2021. The petition may be informal but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

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 \$37.49
4890653 Sept 2, 2021

RECEIVED

SEP 07 2021

WATER RIGHTS
PROGRAM



RECEIVED
OCT 18 2021
WATER RIGHTS
PROGRAM

ACCOUNT NAME Water Rights Program		ACCOUNT # 207985	PAGE # 1 of 1
INVOICE # 0004111838	BILLING PERIOD Sep 1- Sep 30, 2021	PAYMENT DUE DATE October 20, 2021	
PREPAY (Memo Info) \$0.00	UNAPPLIED (included in amt due) \$0.00	TOTAL AMOUNT DUE \$37.49	
BILLING ACCOUNT NAME AND ADDRESS WATER RIGHTS PROGRAM DEPT OF ENVIRON & NAT RESOURCE 523 E CAPITOL JOE FOSS BLDG PIERRE, SD 57501 		BILLING INQUIRIES/ADDRESS CHANGES 1-877-736-7612 or smb@ccc.gannett.com	
		FEDERAL ID 47-2493274	
Terms and Conditions: Past due accounts are subject to interest at the rate of 18% per annum or the maximum legal rate (whichever is less). Advertiser claims for a credit related to rates incorrectly invoiced or paid must be submitted in writing to Publisher within 30 days of the invoice date or the claim will be waived. Any credit towards future advertising must be used within 30 days of issuance or the credit will be forfeited. All funds payable in US dollars.			

00002079850000000000000041118380000374910855

To sign-up for E-mailed invoices and online payments please contact abgspecial@gannett.com. Previous account number: 078306.

Date	Description	Amount
9/1/21	Balance Forward	\$38.00
9/10/21	PAYMENT - THANK YOU	-\$38.00

Package Advertising:

Start-End Date	Description	PO Number	Package Cost
9/2/21-9/2/21	0004890653 NOTICE OF APPLICAT	8522-3 Moo	\$37.49

PLEASE DETACH AND RETURN THIS PORTION WITH YOUR PAYMENT



ACCOUNT NAME Water Rights Program		PAYMENT DUE DATE October 20, 2021		AMOUNT PAID		
ACCOUNT NUMBER 207985		INVOICE NUMBER 0004111838				
CURRENT DUE \$37.49	30 DAYS PAST DUE \$0.00	60 DAYS PAST DUE \$0.00	90 DAYS PAST DUE \$0.00	120+ DAYS PAST DUE \$0.00	UNAPPLIED PAYMENTS \$0.00	TOTAL AMOUNT DUE \$37.49
REMITTANCE ADDRESS (Include Account# & Invoice# on check) The Argus Leader P.O. Box 677349 Dallas, TX 75267-7349			TO PAY WITH CREDIT CARD PLEASE FILL OUT BELOW: ☐ VISA ☐ MASTERCARD ☐ DISCOVER ☐ AMEX Card Number _____ Exp Date ____/____/____ CVV Code _____ Signature _____ Date _____			

00002079850000000000000041118380000374910855

October 19, 2021

PAYMENT REQUEST FORM

PAYEE: Argus Leader
PO Box 677349
Dallas, TX 75267-7349

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

DESCRIPTION OF SERVICE, PRODUCE OR TRANSFER

Notice of Application 8522-3 Moody County Dairy

AMOUNT: \$37.49

FUNDING SOURCE:

GENERAL: X

FEDERAL:

OTHER:

COMMENTS:

AUTHORIZATION: *Eve Menlund 10/19/2021*

I declare and affirm under the penalties of perjury that this claim is in all things, true and correct. I further agree to comply with the provisions of the Civil Rights Act of 1964 and regulations issued thereunder relating to nondiscrimination in federal assisted programs.



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

SEP 27 2021

Moody County Dairy LP
c/o Lynn Boadwine
4009 W 49th St, Suite 308
Sioux Falls SD 57106

Dear Mr. Boadwine:

Enclosed is Water Permit No. 8522-3 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

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8522-3

I have this day, May 2, 2025, made a thorough examination of the water use system constructed by Moody County Dairy LLP, 4009 W 49th St, Suite 308, Sioux Falls, SD 57106 of Permit No. 8522-3, bearing the priority of June 30, 2021 authorizing the diversion of 0.333 cu. ft. per second of the waters of the Split Rock Creek Aquifer for commercial dairy purposes, in Minnehaha County.

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Putzke Well Drilling
- 2) No. of Wells 2 (6894-3 & 8522-3)
- 3) Depth(s) 360 feet
- 4) Well log is available Y

Casing:

- 1) Diameter 6 inches
- 2) Length 300 feet
- 3) Type Plastic

Screen:

- 1) Type Plastic
- 2) Length 60 feet
- 3) Static water level 33 feet

Pump:

- 1) Make Submersible
- 2) Model Unknown
- 3) Size Unknown
- 4) Capacity 150 each - 300 total GPM

Motor:

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

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

- 1) Type 2 Buried PVC pipe
- 2) Size 6 each inches
- 3) Length 7,000 feet

C. 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 SE corner Sec 9 T104N R47W WEST WELL: 2700 ft N & 2870 ft W, Lat 43.82758 Long -
96.48213 (NW ¼ SE ¼) EAST WELL: 2710 ft N & 2811 ft W, Lat 43.82771 Long -96.48190 (NW ¼
SE ¼).
2. The works are capable of diverting and conveying to the place of use 0.666 cu. ft. per second of water
(0.333 per well) which is to be used for commercial dairy use.

the license should be issued for 0.666 cfs for two (2) wells.
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 map.

Visited with Mr. Dave Christianson, Farm Manager (605/695-8745) during the field visit and he told me that the well system can deliver about 300 gpm to the dairy site.

The mailing address and the telephone number in the permit materials are current.



Darrell DeBoer
Water Rights Inspector
DENR, Water Rights Program

Date report completed: May 3, 2025





DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES
JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

JUL 25 2025

Moody County Dairy LP
c/o Lynn Boadwine
4009 W 49th St STE 308
Sioux Falls, SD 57106

No. 8522-3

Dear Mr. Boadwine:

Enclosed is Water License No. 8522-3. 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 our office.

If you have any questions regarding the enclosed license, please contact Water Rights Permitting Administrator, Amanda Dewell at (605) 773-3352 or Amanda.Dewell@state.sd.us.

Sincerely,

Mark Mayer, PE
Director of Office of Water
(605) 773-3352

Note: The applicable portions of Water Right No. 6894-3 have been incorporated into Water Right No. 8522-3.

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8522-3**

(1) Water Right No. 6894-3, held by Moody County Dairy LP, 4009 W 49th St, Suite 308, Sioux Falls SD 57106, with a priority date of September 11, 2007, authorizes the appropriation of up to 241 acre-feet of water annually, at a maximum rate of 0.333 cubic feet of water per second from groundwater, one well (Split Rock Creek Aquifer), for commercial use in a dairy operation. The applicable portions of Water Right No. 6894-3 have been incorporated into this license.

Moody County Dairy LP made Application No. 8522-3, June 30, 2021, for a water permit to appropriate up to 110 additional acre-feet of water annually, at a maximum rate of 0.333 cubic feet of water per second, in addition to what was already authorized by Water Right No. 6894-3, from groundwater, one additional well (Split Rock Creek Aquifer). Permit No. 8522-3, with a priority date of June 30, 2021, was approved September 13, 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 13, 2026, and for the application to beneficial use of water on or before September 13, 2030.

(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 appropriate up to 351 acre-feet of water annually, at a maximum diversion rate of 0.666 cubic feet of water per second for beneficial use. The locations of the diversion points are:

- East Well: 2,710 ft N & 2,811 ft W of the SE corner Section 9, T104N, R47W (NW ¼ SE ¼)
(Latitude 43.82771 & Longitude -96.48190)
- West Well: 2,700 ft N & 2,870 ft W of the SE corner Section 9, T104N, R47W (NW ¼ SE ¼)
(Latitude 43.82758 & Longitude -96.48213)

(3) 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.

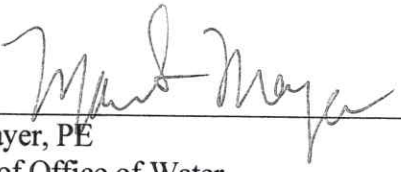
(5) Pursuant to South Dakota Water Law 46-5-30.1 Moody County Dairy LP, the holder and/or owner of Water Right No. 8522-3 is issued a license to appropriate up to 351 acre-feet of water annually, at a maximum rate of 0.666 cubic feet of water per second from groundwater, two wells (Split Rock Creek Aquifer), with priority dates of September 11, 2007 (241 ac-ft/0.333 cfs) & June 30, 2021 (110 ac-ft/0.333 cfs), from the location specified in (2) of this license for commercial use in a dairy operation.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8522-3 and subject to the following qualifications:

1. The well approved under Water Permit No. 8522-3 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.

continued

2. Water Permit No. 8522-3 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.
3. Water Permit No. 8522-3 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
 - f) Chapter 74:52:01 through 74:52:11 Surface Water Discharge Provisions
4. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Split Rock Creek Aquifer.
5. Combinations of diversions under Water Right No. 6894-3 and this Permit may not exceed a total annual diversion of 351 acre-feet of water from the Split Rock Creek Aquifer. *(The applicable portions of Water Right No. 6894-3 have been incorporated into Water Right No. 8522-3.)*



Mark Mayer, PE
Director of Office of Water
Department of Agriculture and Natural Resources

7/25/25

date

