

WATER PERMIT NO. 8594A-3

Name of Applicant: Merlin Vannorsdel

Address: 28888 455th Avenue, Viborg SD 57070

Phone: 605-310-8610

Amount of Water Claimed: No add'l

Total Acres: No add'l

Source of Water Supply: Groundwater

Water to be used for: Irrigation

County: Turner

Type of Waste Disposal System:

Location: Approx. 2 1/2 miles northwest of Viborg SD

PRIORITY Date Received: 02-08-24

Application/License Fee: \$100.00

Corrected Application Received:

Period of Annual Use: May 1 – September 30

Remarks: Changing location of diversion point and acres to be irrigated with no increase in diversion rate or acres.

Diversion Point: Near E 1/4 corner Sec 21-T97N-R53W

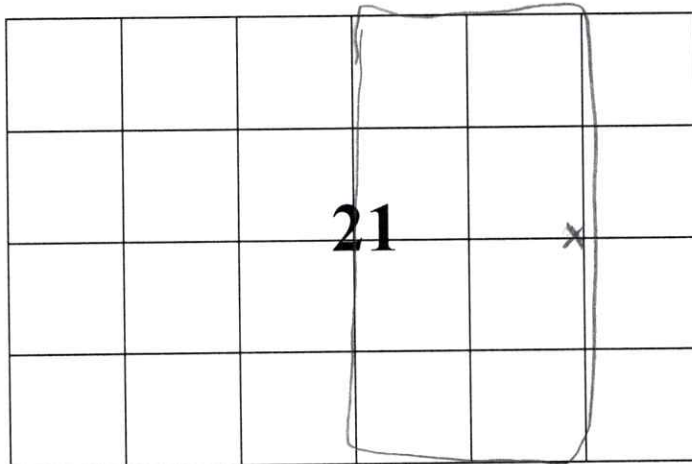
Land to be Irrigated: E 1/2 Sec 21-T97N-R53W

Depth of Well: 214

Well Driller: Thine Well Drilling

Remarks:

Type of Map: aerial



Reviewed and the Number Assigned on: 02-12-24

By: Rachel Rodriguez

Notice of Hearing - date to intervene: _____

SOUTH DAKOTA
WATER PERMIT NO. 8594A-3

Date of first receipt of application February 8, 2024.

Date of receipt of corrected application February 12, 2024.

The Water Management Board approved Water Permit No. 8594A-3 on May 8, 2024, for Merlin Vannorsdel, 28888 455th Avenue, Viborg SD 57070 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. 8594A-3 amends Water Permit No. 8594-3 to change the location of the diversion point and acres to be irrigated. Permit No. 8594-3 appropriates 2.22 cubic feet of water per second from one well in the NE 1/4 Section 29 to be completed into the Upper Vermillion Missouri: West Aquifer to irrigate 156 acres in the NE 1/4 Section 29; all in T97N-R53W. Permit No. 8594A-3 changes the location of the well and acreage to be irrigated to one well to be completed into the Upper Vermillion Missouri: West Aquifer (approximately 214 feet deep) located near the E 1/4 quarter corner of Section 21 for irrigation of 156 acres located in the E 1/2 Section 21; all in T97N-R53W. This amendment does not authorize any increase in the number of acres to be irrigated, and no increase in the diversion rate or volume of water appropriated from the Upper Vermillion Missouri: West Aquifer. This site is located approximately two and one-half miles northwest of Viborg 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: May 1 – September 30.
3. The date from which applicant may claim right is February 11, 2022.
4. One-fifth of the construction is to be completed on or before October 18, 2024.
5. All construction is to be completed on or before April 18, 2027.
6. Water is to be put to beneficial use on or before April 18, 2031.
7. 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. 8594A-3 is located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals shall be controlled so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 8594A-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. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

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

MAY 17 2024
date



FORM 2: Application for irrigation in South Dakota
(type or print)

RECEIVED

FEB 08 2024

OFFICE OF
WATER

Mail to: SD DANR, Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8594A-3</u> Hydrologic Unit <u>10170102</u> Basin <u>Vermillion</u> Newspaper <u>Turner Co New Era</u> <u>Sioux Falls Argus Leader</u> (office use only)
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Application for Permit to Appropriate Water for Irrigation

Type of Application: ☐ New ☐ Vested Right ☒ Amendment/Correction to Permit No. 8594-3
(Use predates Mar 2, 1955)

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

Changing location of diversion point and acres to be irrigated with no increase in diversion rate or acres.

- Name to Appear on Irrigation Permit Merlin Vannorsdel
Note: The "Name to Appear on Irrigation Permit" must be the name in which the property to be irrigated is held in.
Mailing Address 28888 455th Ave Viborg SD 57070
(Address) (City) (State) (Zip Code)
Phone _____ Mobile 605.310.8610 Email scottvannorsdel@yahoo.com
- Amount of water claimed No add'l CFS or **GPM ***AF Total Acreage No add'l
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply Upper Vermillion Missouri Aquifer
- Location of point of diversion 1 well - near E 1/4 corner of sec 21, T97N, R53W
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)
County Turner
- County or counties where water will be used Turner
- Annual period during which water is to be used May 1 - September 30
- List below each forty-acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
E 1/2 Sec 21, T97N, R53W	156.0		

8. Give a description of the project. (Attach sheet if more space is needed)

Relocate the acreage and diversion point approved under Permit 8594-3 to the E
1/2 Section 21, T97N, R53W

I, Scott Vannorsdel, 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.

2021-08

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

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 Thine Well Drilling
(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) 214 Depth to Top of Water Bearing Material 75 Depth to Water from Surface 75
- d) Distance to nearest domestic well on applicant's property 2000 ft Property owned by others no

2. Wastewater Disposal System Information

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

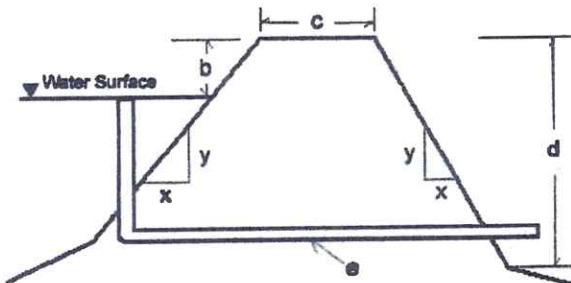
3. Dugout Information

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

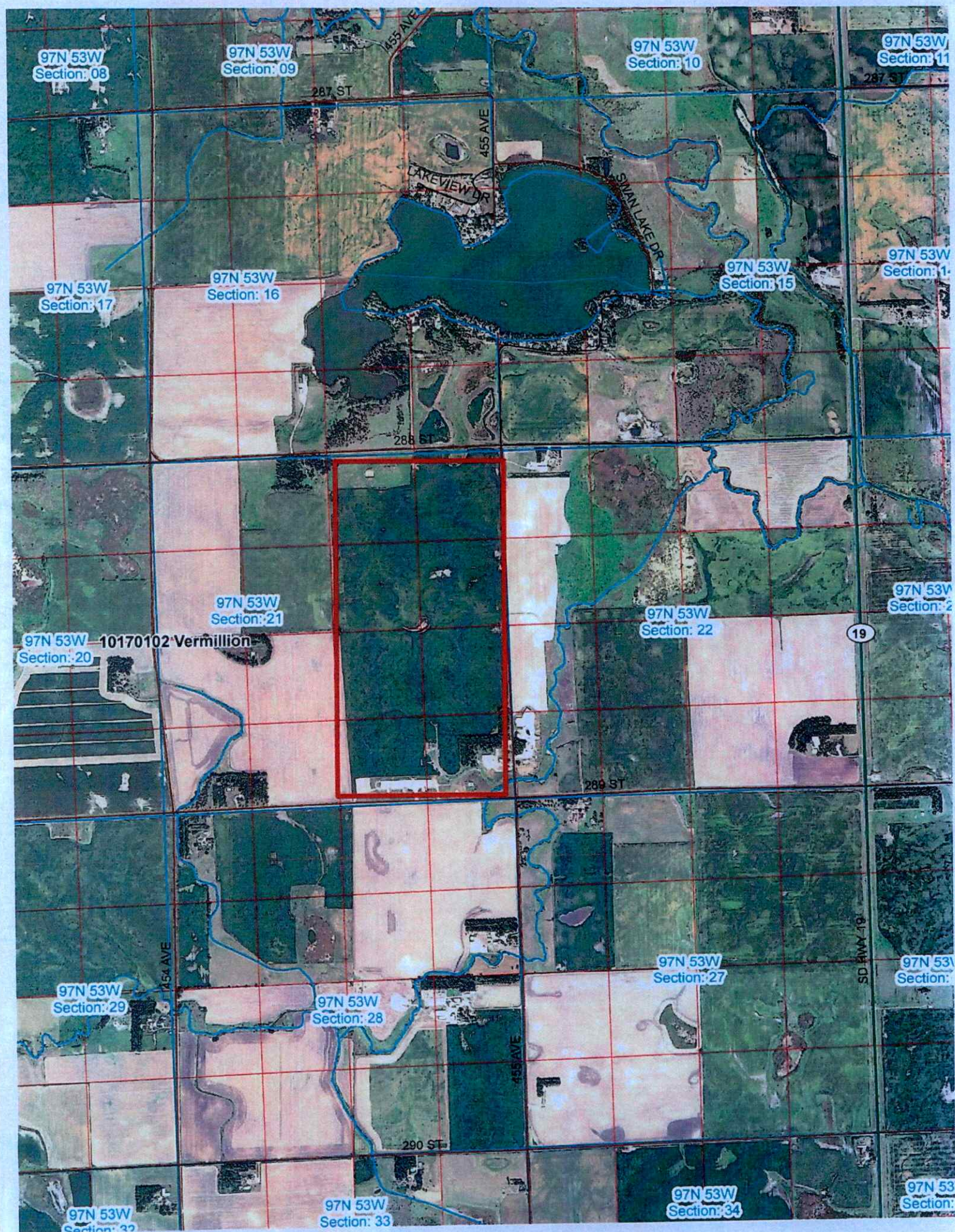
4. Water Storage Dams

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

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



- b) Freeboard _____
- c) Crest Width _____
Crest Length _____
- d) Height _____
- e) Primary Outlet Capacity _____
If pipe, diameter _____
- f) Secondary Spillway Capacity _____
Spillway Width _____
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream _____
Downstream _____
- h) Area of Impoundment _____
- i) Storage _____ Acre Feet
- j) Drainage Area Above Dam _____ Acres



Legend

 Scott Vannorsdel

SD T97N R53W

n 43 12.3820 w 97 6.1100  Scott Vannorsdel 214' TH 1/10/2024

40

19

Google Earth



3000 ft

Rodriguez, Rachel

From: Stephenson, Megan
Sent: Monday, February 12, 2024 1:22 PM
To: Rodriguez, Rachel
Subject: FW: [EXT] Merchant Email Receipt

-----Original Message-----

From: Auto-Receipt <noreply@mail.authorize.net>
Sent: Monday, February 12, 2024 1:22 PM
To: Van Bockel, Jenny <Jenny.VanBockel@state.sd.us>; Keiser, Darcy <Darcy.Keiser@state.sd.us>; Amber Stumpff <Amber.Stumpff@state.sd.us>; Bigby, Beth <Beth.Bigby@state.sd.us>; Stephenson, Megan <Megan.Stephenson@state.sd.us>
Subject: [EXT] Merchant Email Receipt

===== SECURITY STATEMENT =====

It is not recommended that you ship product(s) or otherwise grant services relying solely upon this e-mail receipt.

===== GENERAL INFORMATION =====

Merchant : DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (1869311) Date/Time : 12-Feb-2024 13:21:33 CST

===== ORDER INFORMATION =====

Invoice :
Description : Water permit application change Amount : 102.50 (USD) Payment Method: Visa xxxx1380 Transaction Type: Authorization and Capture

===== Line Items =====

===== RESULTS =====

Response : This transaction has been approved.
Auth Code : 724783
Transaction ID : 80274051096
Address Verification : Street Address: No Match -- First 5 Digits of Zip: Match

===== CUSTOMER BILLING INFORMATION =====

Customer ID :
First Name : Scott
Last Name : Vannorsdel
Company :
Address :
City :
State/Province :
Zip/Postal Code : 57070
Country :
Phone :
Fax :
E-Mail : scottvannorsdel@yahoo.com



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

February 23, 2024

Merlin Vannorsdel
28891 455th Ave.
Viborg, SD 57070

Dear Mr. Vannorsdel:

As requested by email on February 22, 2024 by Scott Vannorsdel on your behalf and pursuant to South Dakota Well Construction Standard 74:02:04:21, you are authorized to construct a test well prior to approval of a water permit. The test well will be located in the E ½ Section 21-T97N-R53W. The well will be no deeper than 250 feet, with a target aquifer located between 90 and 250 feet deep. The target aquifer is the Upper Vermillion Missouri: West management unit. 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. All test or permanent wells to be constructed under this test well permission must be constructed using the methods described in Administrative Rule of South Dakota (ARSD) 74:02:04:28. 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 Amanda Dewell at (605) 773-3352.

Sincerely,

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

CC: Scott Vannorsdel



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

File No. 8817-3 and 8594A-3

WATER RIGHTS PROGRAM -- FILE DOCUMENTATION

NAME: Scott Vannorsdel

ADDRESS: 28888 455th Avenue, Viborg SD 57070

DATE: February 8, 2024 **PHONE:** 605-310-8610 **EMAIL:** scottvannorsdel@yahoo.com

RE: Water Permit Application No. 8817-3 and No. 8594A-3

COMMENTS:

I spoke with Mr. Vannorsdel concerning preparation of the report and recommendation for Application No. 8817-3 and noted it would be a deferral recommendation due to concerns with water availability given the decline in observation well water levels and other permits that had been issued that had not yet been developed. In addition, two other applications had recently been public noticed for deferral for the same reasons. Mr. Vannorsdel asked whether the amount of water being requested would make a difference. I indicated that with two applications ahead of his for which deferral is being recommended it would probably not make any difference on his application. Mr. Vannorsdel indicated that the irrigation system he intends to use only needs 250 gallons per minute.

During subsequent phone conversations Mr. Vannorsdel indicated a desire to amend an existing permit (No. 8594-3) issued from the aquifer to move the acreage to the area covered by Application No. 8817-3. I informed him that this could be done as an amendment as long as the water source remained unchanged, and no additional acres were irrigated. Mr. Vannorsdel indicated he would like to file an application to amend Permit No. 8594-3 to change the location of the acreage to the area described on Application No. 8817-3. Permit No. 8594-3 was approved for 156 acres and Application No. 8817-3 is for 247 acres. I asked Mr. Vannorsdel if he would like Application No. 8817-3 to be modified to add 91 acres to go from 156 acres to 247 acres with no additional water being appropriated. I told him we would likely not recommend approval of that application since additional acres are to be irrigated over what he is currently permitted for, but he could certainly oppose our recommendation and ask the Water Management Board to approve the application. Mr. Vannorsdel asked me to modify Application No. 8817-3 to add 91 acres with no appropriation of water. I informed him I would do so and send him a draft application to amend Permit No. 8594-3 to change the location of the permitted 156 acres. Mr. Vannorsdel returned the signed application, and it has been labeled as Application No. 8594A-3.

Ron Duvall, Engineer III
SD DANR, Water Rights Program

Rodriguez, Rachel

From: Duvall, Ron
Sent: Thursday, February 8, 2024 4:35 PM
To: scottVannorsdel@yahoo.com
Cc: Dewell, Amanda; Rodriguez, Rachel
Subject: RE: Report and Recommendation on Benson water permit application
Attachments: Vannorsdel_amend_8594-3.pdf

Scott,

Attached is the draft application to amend No. 8594-3 to change the location of the acreage to be irrigated and diversion point with no additional acres above 156 acres. We can use the map you submitted with your current application for the attached application to amend. The application fee is \$100.00 for an amendment. If you have Adobe Acrobat Reader, you may be able to edit the document and type your name on the bottom of the application and return it to us via email.

To pay via credit card, please call:

Megan Stephenson at 605.773.4216.

As we discussed, the other application you submitted will be modified to apply for 91 additional acres with no additional water to get the area to be irrigated increased from 156 acres to 247 acres in the E1/2 section 21-97N-53W. The change in this application results in a lower application fee amounting to \$750.00. You will eventually be refunded \$500.00.

Please let me know if you have any questions.

Thank you,

Ron Duvall
Dept. of Agriculture & Natural Resources
Office of Water, Water Rights Program
605.773.3352
danr.sd.gov



DANR
SOUTH DAKOTA

From: Duvall, Ron
Sent: Thursday, February 8, 2024 11:45 AM
To: scottVannorsdel@yahoo.com
Subject: Report and Recommendation on Benson water permit application

Scott,

Attached is the report and recommendation made on the Benson application. This report in large part will be used as the basis for the report prepared on your application. As you requested during our phone call, I will also make the change to your application to apply for 250 gallons per minute rather than 800 gpm as originally applied for. The number of acres will remain unchanged. My direct phone number is 605-773-5670.

Thank you,



**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. 8594A-3, Merlin Vannorsdel**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Agriculture and Natural Resources concerning Water Permit Application No. 8594A-3, Merlin Vannorsdel, 28888 455th Avenue, Viborg SD 57070.

The Chief Engineer is recommending APPROVAL of Application No. 8594A-3 because 1) the water has already been appropriated as authorized by Water Permit No. 8594-3, 2) the proposed diversion and acreage authorized by No. 8594-3 can be relocated and developed without unlawful impairment of existing domestic water uses and water rights as allowed by SDCL 46-2A-12 and 46-5-30.4, 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. 8594A-3 is located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals shall be controlled so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 8594A-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. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Eric Gronlund, Chief Engineer
April 9, 2024

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NOS. 8594A-3 AND 8817-3
FOR
MERLIN VANNORSDEL
APRIL 09, 2024

Water Permit Application No. 8594A-3 proposes to amend Water Permit No. 8594-3 to change the location of the diversion point and acres to be irrigated. Water Permit No. 8594-3 authorizes a maximum instantaneous diversion rate of 2.22 cubic feet of water per second (cfs) from one well in the NE ¼ Section 29 to be completed into the Upper Vermillion Missouri: West aquifer for the irrigation of 156 acres located in the NE ¼ Section 29; all in T97N-R53W. Application No. 8594A-3 proposes to change the location of the well, still to be completed into the Upper Vermillion Missouri: West aquifer (approximately 214 feet deep), to the E ¼ quarter corner of Section 21 for the irrigation of 156 acres located in the E ½ Section 21; all in T97N-R53W. This proposed amendment does not authorize any increase in the number of acres to be irrigated, and no increase in the diversion rate or volume of water to be appropriated from the Upper Vermillion Missouri: West aquifer. This site is located approximately 2.5 miles northwest of Viborg, SD.

Water Permit Application No. 8817-3 proposes to add 91 acres to the irrigated area authorized by Water Permit Application No. 8594A-3. If approved, Application No. 8594A-3 will amend Water Permit No. 8594-3 to change the location of the diversion point and acres to be irrigated. Water Permit No. 8594-3 authorizes a maximum instantaneous diversion rate of 2.22 cubic feet of water per second (cfs) from one well in the NE ¼ Section 29 to be completed into the Upper Vermillion Missouri: West aquifer for the irrigation of 156 acres located in the NE ¼ Section 29; all in T97N-R53W. Application No. 8594A-3 proposes to change the location of the well, still to be completed into the Upper Vermillion Missouri: West aquifer (approximately 214 feet deep), to the E ¼ quarter corner of Section 21 for the irrigation of 156 acres located in the E ½ Section 21; all in T97N-R53W. Water Permit Application No. 8817-3 proposes to irrigate an additional 91 acres in the E ½ Section 21 with no increase in the maximum instantaneous diversion rate from the well to be located near the E ¼ quarter corner of Section 21; all in T97N-R53W.

AQUIFER: Upper Vermillion Missouri: West (UVM:W)

Aquifer Characteristics:

The Upper Vermillion Missouri aquifer is a Quaternary aged buried glacial outwash aquifer composed of fine to coarse sand and gravel with intermixed layers of clay (Holmes and Filipovic, 2015; Water Rights, 2024d). The Upper Vermillion Missouri aquifer has been divided into three management units: North, South, and West (Buhler, 2014). The proposed diversion point for Application Nos. 8594A-3 and 8817-3 is in the West management unit of the Upper Vermillion Missouri aquifer (UVM:W). Buhler (2014) with data from the SD DANR-Geological Survey partially re-delineated the southern portion of the extent of the UVM:W aquifer from previous work done by Buhler (2012) (see Figure 1). Buhler's 2012 mapping of the Upper Vermillion Missouri aquifer did not include management units. Thus, the southern boundary of the UVM:W aquifer from Buhler's 2012 mapping as shown in Figure 1 will be based on the Buhler 2014 mapping.

Buhler has made two separate mappings of the Upper Vermillion Missouri: West aquifer (Buhler, 2012 and 2014). The newer mapping (Buhler, 2014) was based primarily on a SD DANR-Geological Survey study (Holmes and Filipovic, 2015) of the entire Upper Vermillion Missouri aquifer that was in progress when Buhler completed his 2014 report. Based on the remapping by Buhler in 2014, the 2015 Holmes and Filipovic aquifer study report, well completion reports (Water Rights, 2024d), and lithologic logs on file with the SD Geological Survey (SDGS, 2023) it was determined the most northwestern observation wells (Water Rights, 2024b), water rights/permits and future use permits (Water Rights, 2024c) as well as the western half of the 2012 Buhler mapped extent of the Upper Vermillion Missouri: West aquifer may not actually be the same aquifer as the water rights/permits and observation wells within the 2014 Buhler mapped extent. Thus, only the water rights/permits and the observations wells within the 2014 Buhler mapped extent of the Upper Vermillion Missouri: West aquifer will be considered in this report. A more in-depth discussion regarding delineations of the Upper Vermillion Missouri: West aquifer is available in the report for Water Permit Application No. 8797-3 (see Appendix 1) (Mathiowetz, 2023).

A log of materials and depth of materials encountered in a test hole drilled was included with Application No. 8817-3. Gravel was encountered from 63 to 75 feet below land surface and then various sands and gravels were encountered from 98 to 165 feet below land surface. From 167 feet to 214 feet below land surface, more sands and gravels were encountered. Based on other local well completion reports (Water Rights, 2024d) and lithologic logs (SDGS, 2023), completion of a well into any of those layers would be completed into the Upper Vermillion Missouri: West aquifer. The aquifer is expected to be confined at the location of the test hole with an expected static water level 30 to 40 feet below land surface (Water Rights, 2024d).

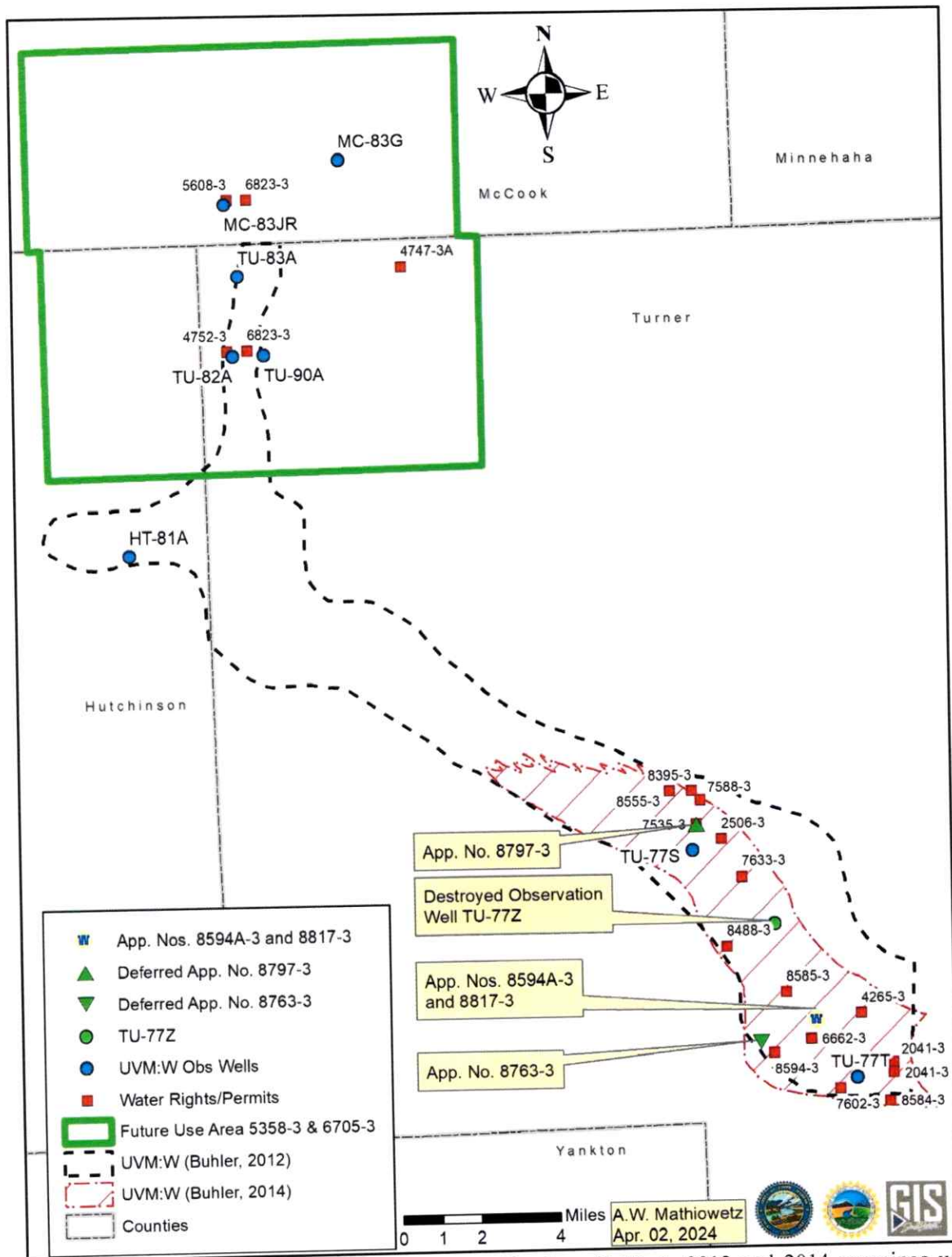


Figure 1- Approximate areal extent of UVM:W aquifer from Buhler's 2012 and 2014 mappings with observation wells, water rights/permits, future use permits, deferred applications, and pending applications (Water Rights, 2024b and 2024c) currently labeled as completed into the UVM:W aquifer

APPLICABLE SOUTH DAKOTA CODIFIED LAW (SDCL):

Water Permit Application No. 8594A-3 to amend Water Permit No. 8594-3

Pursuant to SDCL 46-2A-12, "An amendment of an existing permit or license may be granted for a change in use, a change in point of diversion or other change only if the change does not unlawfully impair existing rights and is for a beneficial use and in the public interest." This report will not address water availability for Application No. 8594A-3 because water availability was considered during the original review and recommendation of the Chief Engineer for Water Permit No. 8594-3. This report will only address the potential for unlawful impairment of existing domestic water uses and water rights within the Upper Vermillion Missouri: West aquifer.

Water Permit Application No. 8817-3

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 Upper Vermillion Missouri: West aquifer.

This application proposes to appropriate water from the Upper Vermillion Missouri: West 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 a Cretaceous-aged formation. The Upper Vermillion Missouri: West aquifer is not older or stratigraphically lower than the Greenhorn Formation (Fahrenbach et al, 2010). Furthermore, the applicant is not a water distribution system as defined by SDCL 46-1-6(17). Therefore, the balance between recharge to and withdrawals from the Upper Vermillion Missouri: West aquifer must be considered for Water Permit Application No. 8817-3.

Water Availability:

Water Permit Application No. 8594A-3 to amend Water Permit No. 8594-3 pursuant to SDCL 46-2A-12 and 46-5-30.4 is not required to be reviewed for availability of unappropriated water since the water has already been appropriated by No. 8594-3. Water Permit Application No. 8817-3 is requesting to add 91 acres to Water Permit No. 8594A-3 if approved. While the diversion rate would not increase under No. 8817-3, the volume of water appropriated would increase by increasing the number of acres being irrigated.

Water Permit Application Nos. 8763-3 and 8797-3 both propose to withdraw water from the Upper Vermillion Missouri: West aquifer. Both applications, if approved, would have priority dates senior to the priority date that Water Permit Application No. 8817-3, if approved, would have. Water Permit Application No. 8763-3 seeks to appropriate 480 ac-ft/yr at a maximum instantaneous diversion rate of 1.11 cfs for commercial use in a dairy operation. Water Permit Application No. 8797-3 proposes the irrigation of 65 acres at a maximum instantaneous diversion rate of 1.78 cfs.

The Water Management Board in their March 2024 meeting deferred Water Permit Application Nos. 8763-3 and 8797-3 based off of the need for additional monitoring of water levels in the two observation wells within the Buhler 2014 mapping of the aquifer, TU-77S and TU-77T. There are concerns regarding recent water level declines shown in both TU-77T and TU-77S, particularly the significant decline shown in TU-77S. It is not readily apparent if the water level decline is drought related, the development of nearby permits reducing artesian head, indicative of over pumping from the aquifer, or some combination thereof. Furthermore, there are several irrigation permits that have yet to be developed (including Permit No. 8594-3) and are still within their allowed construction periods. Thus, those permits have not been accounted for in the reported average annual water use estimation or the observation well analysis. A detailed discussion of water availability and the observation well data for the Upper Vermillion Missouri: West aquifer is in the report for Water Permit Application No. 8797-3 which is Appendix 1 of this report.

Based on that recent analysis, there is not sufficient information available to whether unappropriated water is available for the proposed appropriation under Application No. 8817-3.

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

The nearest well for a water right/permit in proximity to the diversion point proposed by Water Permit Application No. 8594A-3 which is to be used by Application No. 8817-3 is for Water Right No. 6662-3 held by Vannorsdel's Inc located approximately 0.5 miles south of the proposed well site (Water Rights, 2024c). After that, it is Water Permit No. 8585-3 for Allen Vannorsdel and Water Right No. 4265-3 for James D Bondesen each at approximately 1.1 miles away to the northwest and east, respectively (Water Rights, 2024c).

The nearest domestic use well completed into the UVM:W aquifer on file with the DANR-Water Rights Program is located approximately 0.3 miles southwest of the proposed well site but was drilled for the applicant in 2005 (Water Rights, 2024d). The nearest domestic wells on file that were not drilled for the applicant are approximately 0.5 miles north and east of the proposed well site (Water Rights, 2024d). The locations of domestic wells are based on the location provided by the well driller on the water well completion report. The locations as filed with the Water Rights Program are not exact locations. It is possible there are other domestic use UVM:W aquifer wells in the area of the applicant's proposed well site that are not on file with the Water Rights Program.

The UVM:W aquifer is under confined conditions at the applicant's proposed well site (Water Rights, 2024d). Since the aquifer is confined, drawdown can extend some distance from a well. However, the exact drawdown behavior cannot be determined without an aquifer performance test. The Water Management Board recognizes that putting water to beneficial use requires a certain

amount of drawdown to occur. The Board has promulgated 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 (Water Rights, 1995). The Board adopted the Findings of Fact 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). Observation well TU-77S is located within approximately 1.5 miles of six water right permits with high capacity, greater than 0.2 cfs, wells. It should be noted the closest two, Water Right No. 2506-3 and Water Permit No. 7535-3, reported zero pumping from 2015 through 2022. Observation well TU-77S, hydrograph shown in Figure 2, is 146 feet deep with a depth to top of aquifer of 112 feet but a smaller gravel section from 56 to 61 feet below grade (SDGS, 2023; Water Rights, 2024b). The static water level measured in the well ranges from 7 to 47 feet below ground surface. That means at the lowest recorded water level, there was still approximately 65 feet of artesian head pressure above the top of the aquifer.

A review of the Turner County complaint file showed one complaint filed regarding potential well interference from wells completed into the UVM:W aquifer (Water Rights, 2024a). In July 2022, a well owner with a well located in Sec. 6-T97N-R53W, approximately three miles northwest of the proposed well site and 1.4 miles south of observation well TU-77S, stated the well was not pumping water for his cattle. No well completion report was found for the well; however, it was reported as 7 to 15 years old so a well completion report should have been filed. The well owner believed the well to be 160 feet deep with a pump setting of 60 feet. The well owner stated the well had pumped all winter and spring but had ceased pumping in the past 2-3 weeks. Review of the hydrograph for TU-77S showed the static water level at that time was approximately 40 feet below grade and had a similar surface elevation as the non-pumping well. The nearest appropriate pumping was under Water Permit No. 7633-3 approximately 1.3 miles northeast of the non-pumping well. The non-pumping well is located near the mapped edge of the aquifer and possibly has greater than expected drawdown when pumping. Based on the available information, it was determined the non-pumping well was not unlawfully impaired by appropriate pumping in the area.

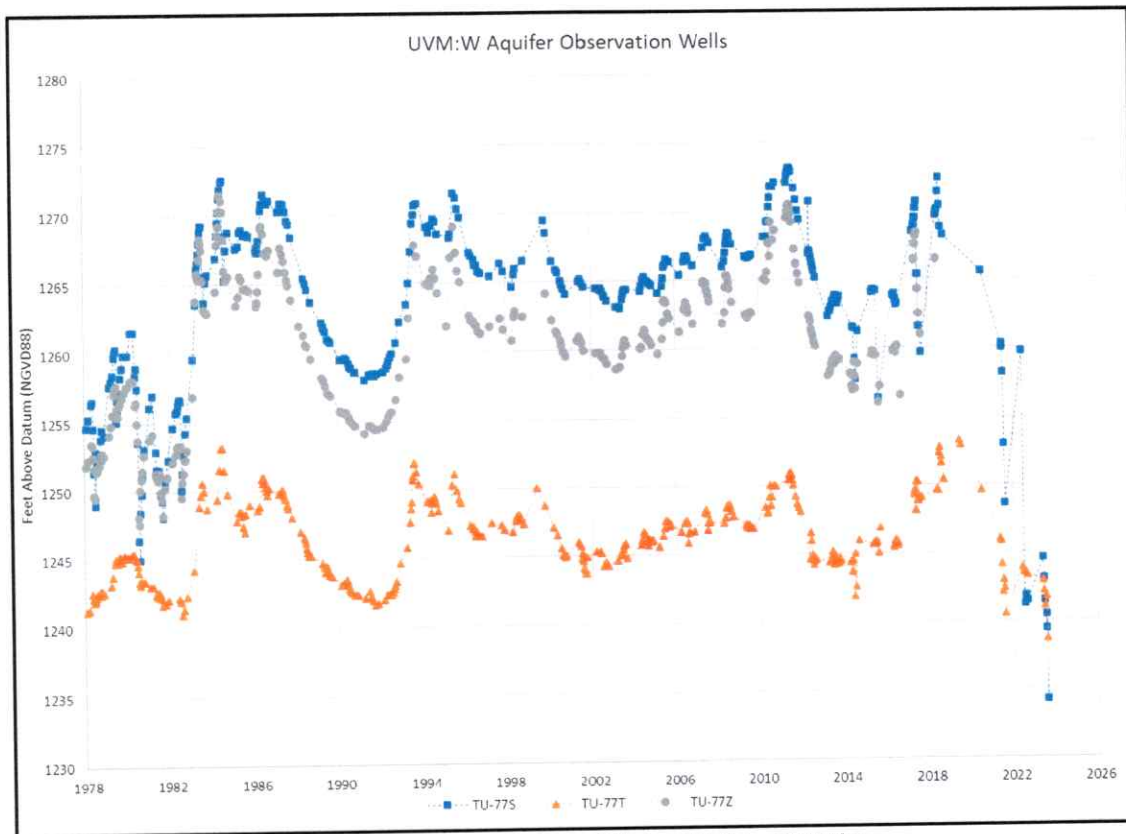


Figure 2- UVM:W aquifer observation well data (Water Rights, 2024b)

With a notable decline of artesian head pressure in both TU-77S and TU-77T without dewatering of the actual aquifer material at those locations, some existing well owners may need to install or lower pumps depending on the specific characteristics of the UVM:W aquifer at their location. When considering the statutes (SDCL 46-1-4 and 46-6-6.1), rule (ARSD 74:02:04:20(7)), the amount of artesian head pressure at the proposed well site for this application (20+ feet), and the lack of substantiated well interference complaints in the area of this application from the UVM:W aquifer, there is a reasonable probability that any drawdown created by using the proposed diversion for Application Nos. 8594A-3 and 8817-3 will not cause an unlawful impairment on existing water rights/permits with adequate wells or adequate domestic wells. Due to the uncertainty as to why there has been a sudden lowering of water level in the observation wells, particularly TU-77S, there may be a concern of cumulative impact. A situation may occur where the combined pumping of existing water rights/permits, and domestic wells coupled with drought conditions could cause an overall lowering of the water levels in the aquifer to a point that adequate wells are impacted. Under such conditions, an unlawful impairment of senior water rights/permits, or adequate domestic wells may occur. However, if either application is approved, the individual permits should each include the standard qualification requiring the applicant to control their pumping as to not cause a reduction of needed water supplies in adequate domestic wells or adequate wells having a prior water right.

CONCLUSIONS:

1. Water Permit Application No. 8594A-3 proposes to amend Water Permit No. 8594-3 to change the location of the diversion point and acres to be irrigated. Water Permit No. 8594-3 authorizes a maximum instantaneous diversion rate of 2.22 cubic feet of water per second (cfs) from one well in the NE ¼ Section 29 to be completed into the Upper Vermillion Missouri: West aquifer for the irrigation of 156 acres located in the NE ¼ Section 29; all in T97N-R53W. Application No. 8594A-3 proposes to change the location of the well, still to be completed into the Upper Vermillion Missouri: West aquifer (approximately 214 feet deep), to the E 1/4 quarter corner of Section 21 for the irrigation of 156 acres located in the E ½ Section 21; all in T97N-R53W. This proposed amendment does not authorize any increase in the number of acres to be irrigated, and no increase in the diversion rate or volume of water to be appropriated from the Upper Vermillion Missouri: West aquifer.
2. Water Permit Application No. 8817-3 proposes to add 91 acres to the irrigated area authorized by Water Permit Application No. 8594A-3. If approved, Application No. 8594A-3 will amend Water Permit No. 8594-3 to change the location of the diversion point and acres to be irrigated. Water Permit No. 8594-3 authorizes a maximum instantaneous diversion rate of 2.22 cubic feet of water per second (cfs) from one well in the NE ¼ Section 29 to be completed into the Upper Vermillion Missouri: West aquifer for the irrigation of 156 acres located in the NE ¼ Section 29; all in T97N-R53W. Application No. 8594A-3 proposes to change the location of the well, still to be completed into the Upper Vermillion Missouri: West aquifer (approximately 214 feet deep), to the E 1/4 quarter corner of Section 21 for the irrigation of 156 acres located in the E ½ Section 21; all in T97N-R53W. Water Permit Application No. 8817-3 proposes to irrigate an additional 91 acres in the E ½ Section 21 with no increase in the maximum instantaneous diversion rate from the well to be located near the E ¼ quarter corner of Section 21; all in T97N-R53W.
3. Based on lithologic logs, well completion reports, and previous mapping of the aquifer and its potential areal extent, this report only considered the Buhler 2014 mapped areal extent, and the water rights/permits, observation wells and other wells completed within or near that areal extent.
4. An analysis of the estimated recharge to the aquifer, estimated groundwater outflow from the aquifer, average water pumpage from the aquifer, likely water pumpage from the aquifer if currently approved water rights/permits are fully developed and put water to use, and observation well data has determined there may not be water available from the aquifer to support the appropriation of water by Application No. 8817-3.
5. Based on the currently best available information, it may be prudent to defer Application No. 8817-3 to allow time for currently approved water rights/permits to fully develop while monitoring water levels in the observation wells to determine if unappropriated water is available for the proposed appropriation.
6. There is a reasonable probability that use from the diversion proposed by Water Permit Application No. 8594A-3 will not unlawfully impair existing appropriative or domestic users with adequate wells.

7. There is a reasonable probability that use for the diversion proposed by Water Permit Application No. 8817-3 will not unlawfully impair existing appropriated or domestic users with adequate wells.



Adam Mathiowetz, PE
SD DANR-Water Rights Program

REFERENCES:

- Buhler, K.A. 2014. Report to the Chief Engineer on 21 Water Permit Applications from the Upper Vermillion Missouri Aquifer. Report in file for Water Permit No. 7715-3. SD DANR-Water Rights Program. Pierre, SD.
- Buhler, K.A. 2012. Report to the Chief Engineer on Water Permit Application No. 7441-3 & 7442-3, Gary or Julie Peterson; Water Permit Application No. 7452-3, Jerome Hult; Water Permit Application No. 7466-3, Bethel Hagen Trust; Water Permit Application No. 7467-3 & 7468-3, Cleland Hagen Trust; and Water Permit Application No. 7535-3 Donald D Benson, December 11, 2012: SD DANR- Water Rights Program. Pierre, SD.
- Fahrenbach, M.D., Steece, F.V., Sawyer, J.F., McCormick, K.A., McGillivray, G.L. and Redden, J.A. 2010. South Dakota Stratigraphic Correlation Chart. Oil and Gas Investigation 3. DANR-Geological Survey Program. Vermillion, SD.
- Holmes, S.L. and Filipovic, D. 2015. Hydrogeologic Investigation of the Upper-Vermillion-Missouri Aquifer. Open-File Report 93-UR. SD DANR-Geological Survey. Vermillion, SD.
- Mathiowetz, A.W. 2023. Report to the Chief Engineer on Water Permit Application No. 8797-3 December 01, 2023. SD DANR-Water Rights Program. Pierre, SD.
- SDGS. 2023. SDGS Interactive Map, Lithologic Logs Data Layer. Accessed: November 14, 2023. SD DANR-Geological Survey. Vermillion, SD.
<<https://usd.maps.arcgis.com/apps/webappviewer/index.html?id=e54c5063b19c49629560a86a7be2eb3d>>
- Water Rights. 2024a. County Files. SD DANR-Water Rights Program, Joe Foss Bldg., Pierre, SD
- Water Rights. 2024b. Observation Well Files. SD DANR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Water Rights. 2024c. Water Right/Permit Files. SD DANR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

Water Rights. 2024d. Well Completion Reports. SD DANR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

Water Rights. 1995. Water Rights File No. 2313-2 Coca-Cola Bottling Company of the Black Hills. SD DANR-Water Rights Program. Pierre, SD.

APPENDIX 1

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 8797-3
FOR
DONALD D. BENSON
DECEMBER 01, 2023

Water Permit Application No. 8797-3 proposes to irrigate 65 acres at a maximum instantaneous diversion rate of 1.78 cubic feet of water per second (cfs) from one well (approximately 222 feet deep) to be completed into the West management unit of the Upper Vermillion Missouri aquifer and located in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 30 with the land to be irrigated located in the NW $\frac{1}{4}$ Section 30; all in T98N-R53W in Turner County. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. The site is located approximately four miles west of Hurley, SD.

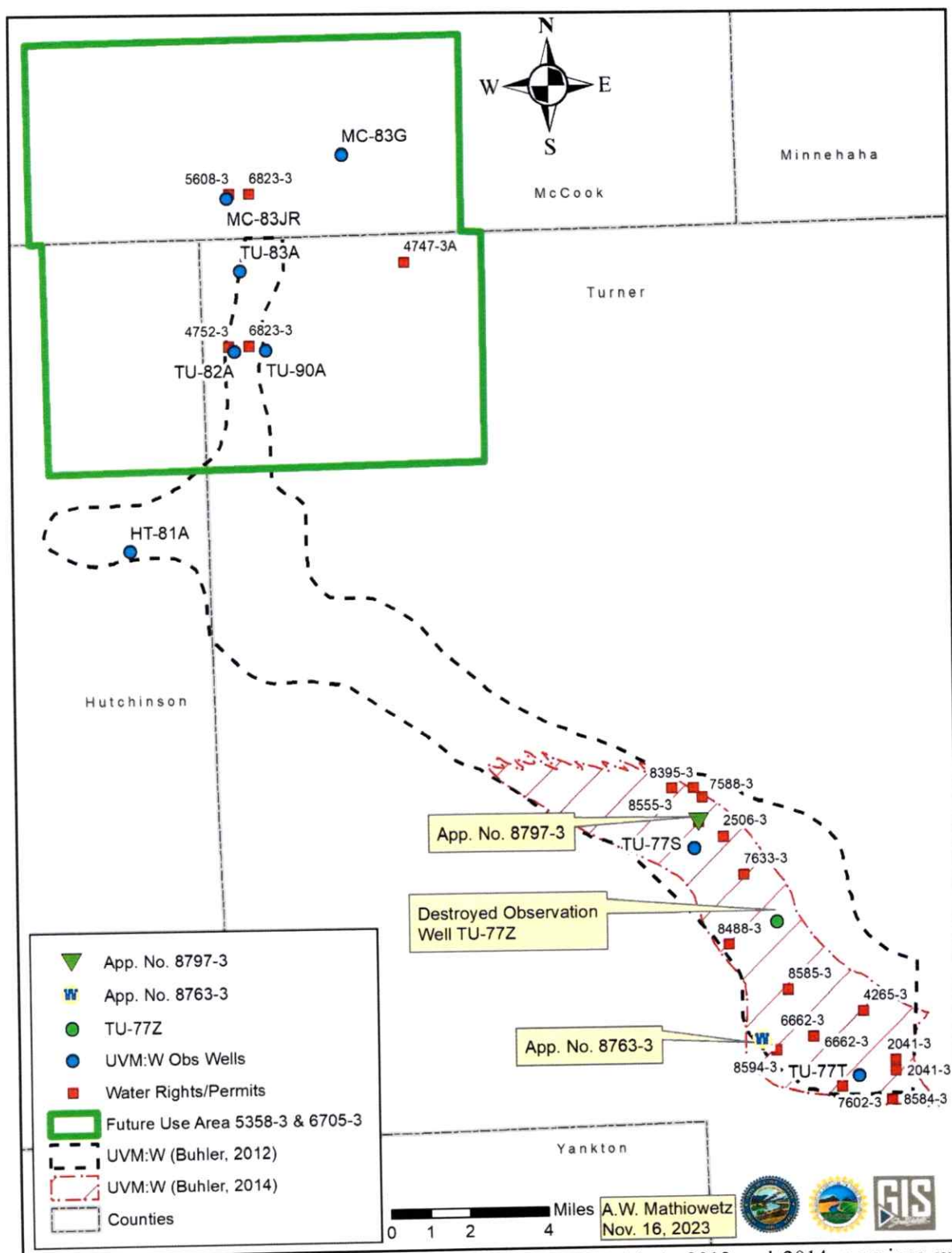
AQUIFER: Upper Vermillion Missouri: West (UVM:W)

Aquifer Characteristics:

The Upper Vermillion Missouri aquifer is a Quaternary aged buried glacial outwash aquifer composed of fine to coarse sand and gravel with intermixed layers of clay (Holmes and Filipovic, 2015; Water Rights, 2023f). The Upper Vermillion Missouri aquifer has been divided into three management units: North, South, and West (Buhler, 2014). The proposed diversion point for Application No. 8797-3 is in the West management unit of the Upper Vermillion Missouri aquifer (UVM:W). Buhler (2014) with data from the SD DANR-Geological Survey partially re-delineated the southern portion of the extent of the UVM:W aquifer from previous work done by Buhler (2012) (see Figure 1). Buhler's 2012 mapping of the Upper Vermillion Missouri aquifer did not include management units. Thus, the southern boundary of the UVM:W aquifer from Buhler's 2012 mapping as shown in Figure 1 will be based on the Buhler 2014 mapping.

The Buhler 2012 mapped areal extent of the UVM:W aquifer is approximately 50,280 acres. The Buhler 2014 mapped areal extent is approximately 19,600 acres. The 2014 mapping of the UVM:W aquifer did not extend all the way to the northwest as previously mapped (Buhler, 2012). Due to the limited test hole drilling done in that portion of the aquifer as part of the DANR-Geological Survey study (Holmes and Filipovic, 2015), the UVM:W aquifer likely extends further in that direction than what Buhler mapped in 2014. However, based on limited availability of geologic data, it is uncertain how far to the northwest the aquifer extends beyond the 2014 Buhler mapping. Buhler (2014) noted that the aquifer in the area of TU-90A and TU-82A and extending north (see Figure 1) should be considered hydrologically distinct from the UVM:W based on a constriction in the bedrock channel and profiles of the potentiometric surface in the area. This is supported by observation well water level data for observation wells TU-82A, TU-90A, TU-83A, MC-83JR and MC-83G (see Figure 2 for example of this behavior) having similar hydrograph shapes to each other, which are significantly different than observation wells TU-77S and TU-77T (see Figure 4) as well as destroyed observation well TU-77Z. All three of those wells (TU-77Z, TU-77T, and TU-77S) share a similar pattern of water levels. Observation well HT-81A (see Figure 3) has a different water level shape than either grouping of observation wells and the lithologic data to the northwest of the Buhler 2014 mapping is also different. Thus, only the water rights/permits and observation wells within the Buhler 2014 aquifer mapping will be considered in this report. The water rights/permits, and future use permits in the vicinity of TU-82A and TU-90A while labeled as UVM:W were assigned an aquifer at that time with significantly less

hydrologic and geologic data than currently available. The aquifer assignment for those permits should be reconsidered.



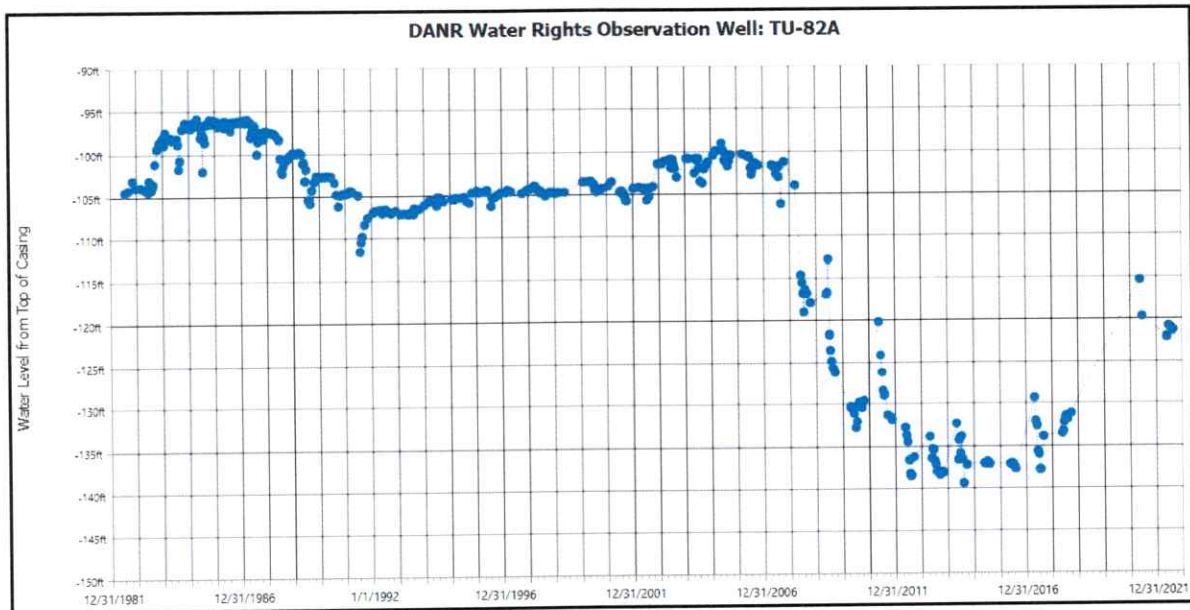


Figure 2- Hydrograph for observation well TU-82A; observation wells TU-90A, TU-83A, MC-83JR and MC-83G all behave in a similar manner (Water Rights, 2023d)

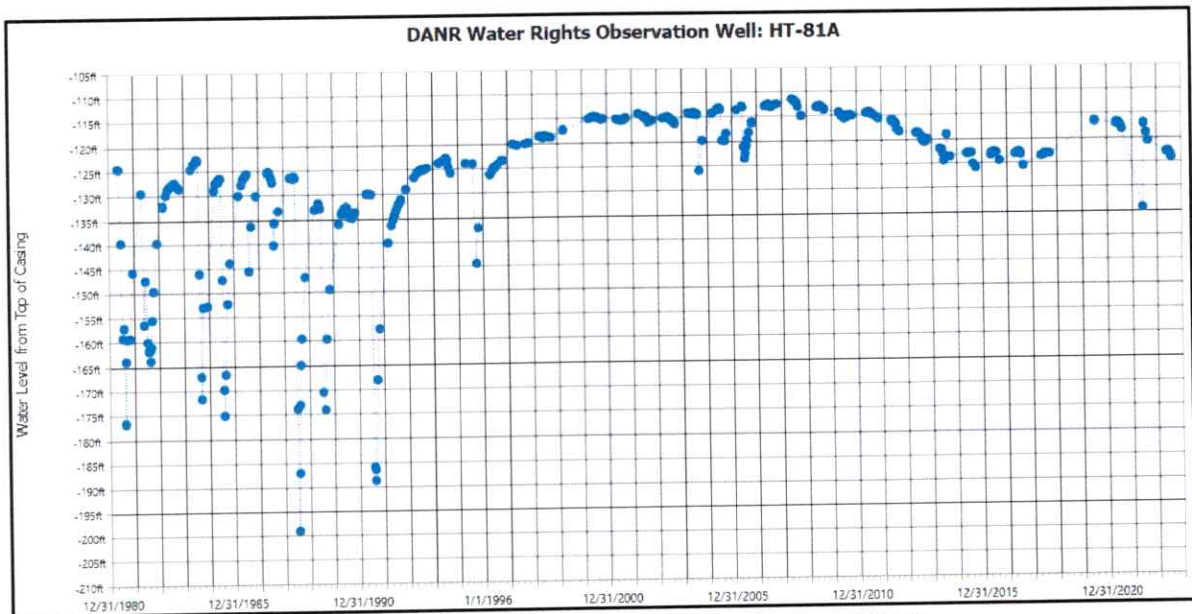


Figure 3- Hydrograph for observation well HT-81A (Water Rights, 2023d)

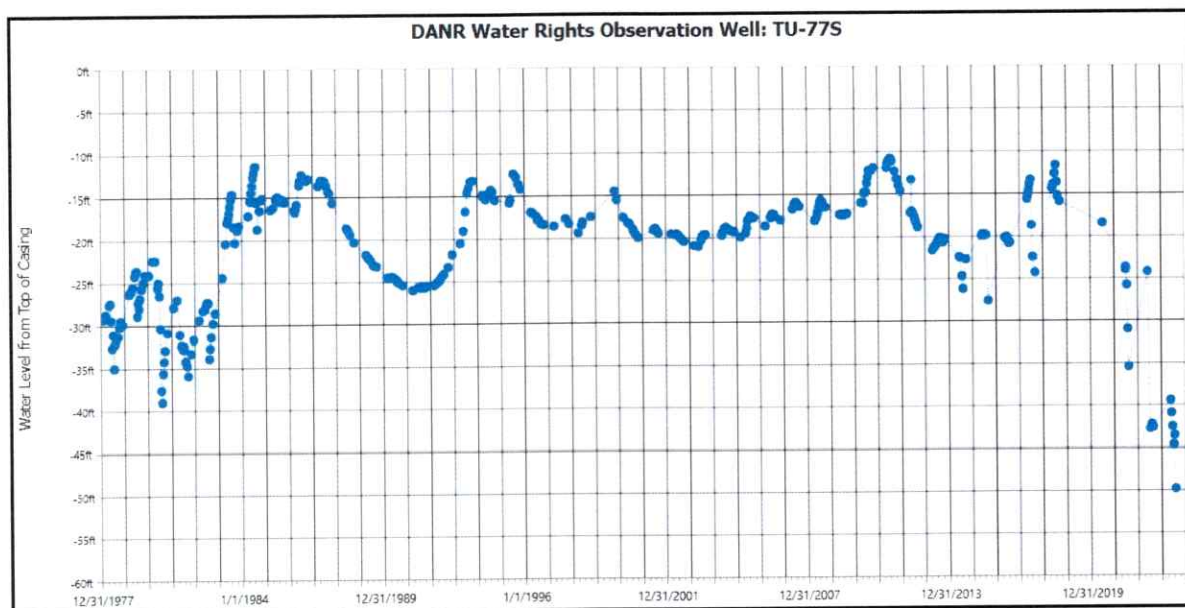


Figure 4- Hydrograph for observation well TU-77S; observation wells TU-77Z and TU-77T all behave in a similar manner (Water Rights, 2023d)

For the remainder of this report, references to the Upper Vermillion Missouri: West aquifer (UVM:W) will specifically mean the Buhler 2014 mapping of the aquifer. The direction of groundwater movement in the UVM:W aquifer is from the northwest to the southeast (Buhler, 2014; Water Rights, 2023d). Review of well completion reports within 0.5 miles of the Buhler 2014 boundary show the aquifer is under confined conditions, generally has a depth to top of aquifer ranging from approximately 30 to 200 feet but may be as shallow as 10 feet along Turkey Ridge Creek, and static water levels ranging from near land surface to 80 feet below grade (Water Rights, 2023f).

Based on local water well completion reports (Water Rights, 2023f) and lithologic logs (SDGS, 2023), the depth to the top of the aquifer is likely to range from 70 to 150 feet below land surface with a likely maximum well depth of 260 feet at the proposed well site. Static water level in the area of this project is expected to be approximately 20 feet below grade (Water Rights, 2023d).

APPLICABLE SOUTH DAKOTA CODIFIED LAW (SDCL):

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 Upper Vermillion Missouri: West aquifer.

This application proposes to appropriate water from the Upper Vermillion Missouri: West 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 a Cretaceous-aged formation. The Upper Vermillion Missouri: West aquifer is not older or stratigraphically lower than the Greenhorn Formation (Fahrenbach et al, 2010). Furthermore, the applicant is not a water distribution system as defined by SDCL 46-1-6(17). Therefore, the balance between recharge to and withdrawals from the Upper Vermillion Missouri: West aquifer must be considered for this application.

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of 1 cfs per 70 acres or the equivalent thereof. The statute provides that: “The Water Management Board may allow a greater diversion, in volume or rate or both, if the method of irrigation, any time constraints on diversion or water, or the type of soil so requires.” This application is requesting an instantaneous diversion rate of 1.78 cfs for the irrigation of 65 acres or the equivalent of 1.92 cfs per 70 acres. No specific reason for the request was provided on the application. However, based on the provided map, the center pivot irrigation system appears to be making a partial rotation. Center pivot irrigation systems require a certain diversion rate to operate properly whether making a partial or full rotation. This reason has been accepted by the Water Management Board and the Water Rights Program in the past.

Hydrologic Budget:

Recharge

Recharge to the Upper Vermillion Missouri: West (UVM:W) aquifer occurs through leakage from fractures in the Sioux Quartzite, outflow from the adjacent portions of the Niobrara aquifer, and direct infiltration of precipitation where the aquifer may be near land surface (Holmes and Filipovic, 2015; Kilts, 2023; Lindgren and Hansen, 1990). A specific recharge rate to the UVM:W aquifer has not been calculated. Furthermore, there is not an up-to-date full delineation of the aquifer available due to limited lithologic and water level data in some areas. Hedges and others (1985) indicated a range of 0.15 to 0.6 inches per year to be a reasonable recharge rate to buried confined aquifers such as the UVM:W aquifer. Using the 2014 mapped area from Buhler, that would be a range of 245 to 980 acre-feet per year (ac-ft/yr).

Buhler (2014) completed a flow-net analysis for what he called groundwater outflow at the southeastern end of the UVM:W aquifer for a single year using January 2014 water level measurements. Buhler (2014) stated “The amount of groundwater outflow from a management unit represents the volume of water recharging the unit that exceeds discharges from the unit.” Groundwater outflow from an aquifer is an analog for recharge. It typically provides a scale to the amount of recharge to smaller aquifers such as the UVM:W aquifer. What that means is while it is not truly a “recharge rate,” groundwater outflow represents recharge rate and provides information on the amount of potential development an aquifer can sustain without becoming over appropriated. The groundwater outflow was calculated using the below equation.

$$Q = kAI * 0.0084$$

Where:

Q= flow (ac-ft/yr)
k= hydraulic conductivity (ft/d)
A= area (ft²)
I= hydraulic gradient (ft/ft)
0.0084= conversion constant

It would be more accurate to call Buhler's (2014) "groundwater outflow" "aquifer intra-flow" because the observation wells used to calculate this value are both within the same aquifer. However, due to the location of the down gradient observation well, TU-77T, near the discharge area of the aquifer, it is reasonable to consider this aquifer intra-flow to be representative of the groundwater outflow. The term groundwater outflow will be used for the remainder of this report. Buhler's (2014) estimated groundwater outflow was 2,681 ac-ft/yr using water level data from observation wells TU-77Z and TU-77T. It should be noted there are appropriations down gradient of TU-77T. At the time of Buhler's (2014) report, Water Right Nos. 2041-3 for the City of Viborg and 4265-3 for James D Bondesen were located down gradient from TU-77T. The City of Viborg has been partially or completely using rural water since 1985 (McIntire, 2023). Water Right No. 4265-3 is an irrigation water right which reported pumping approximately 24 ac-ft in 2013. Accounting for that irrigation use, Buhler's (2014) groundwater outflow should be 2,657 ac-ft/yr.

Observation wells TU-77Z and TU-77T were 4.45 miles apart and were the two closest observation wells to the discharge area of the UVM:W aquifer. Observation well TU-77Z was destroyed by road construction in 2018. The outflow for every year using the data nearest to June 1, ranging between May 1 to June 30 and on consecutive days, if same day readings were not available, were used to calculate the gradient between TU-77Z and TU-77T as well as currently existing wells TU-77S and TU-77T (7.1 miles apart). June 1 was chosen because it is typically before the irrigation season begin, and so there should be minimal impacts on artesian head pressure from seasonal pumping for irrigation. The values of k (277 ft/day) and A (2,173,880 ft²) from Buhler (2014) were also used. The estimated pumpage by the City of Viborg was accounted for in the pre-1986 calculation by assuming pumping at their permitted diversion rate, 0.96 cfs, for 60% of the time. This is likely an overestimate due to the relatively small size of the city of Viborg. However, this method has been developed and used by the Water Rights Program and accepted by the Water Management Board. Furthermore, the reported pumpage by Water Right No. 4265-3 was also subtracted out from the calculated groundwater outflow values since both are down gradient from TU-77T.

The average groundwater outflow, when not subtracting the down gradient pumpage, using the gradients between TU-77Z and TU-77T is approximately 3,179 ac-ft/yr. Using the gradients between TU-77S and TU-77T, the average groundwater outflow is 2,438 ac-ft/yr across their respective periods of record. When subtracting the yearly down gradient pumpage previously mentioned, those averages become 3,062 ac-ft/yr and 2,329 ac-ft/yr, respectively. It is likely the actual outflow from the aquifer is somewhere in the range of the latter groundwater outflow values and could be higher or lower. Table 1 shows the numbers used in the calculation for average groundwater outflow when not accounting for the down gradient water pumpage. The approximate groundwater outflow volumes minus the down gradient water pumpage are shown in Figure 5. Gaps in the data are where no data was available to meet the above criteria for calculation.

Table 1- Groundwater outflow at the southeastern portion of the UVM:W aquifer (Buhler, 2014; Water Rights, 2023d)

Gradient Data Source	A, Area (ft ²)	I, Hydraulic Gradient (ft/ft)	k, Hydraulic Conductivity (ft/day)	Q, Flow (ac-ft/yr)
Buhler, 2014	2,173,880	0.00053	277	2,681
TU-77Z to TU-77T (1978-2018)	2,173,880	0.000628	277	3,179
TU-77S to TU-77T (1978-2023)	2,173,880	0.000482	277	2,438

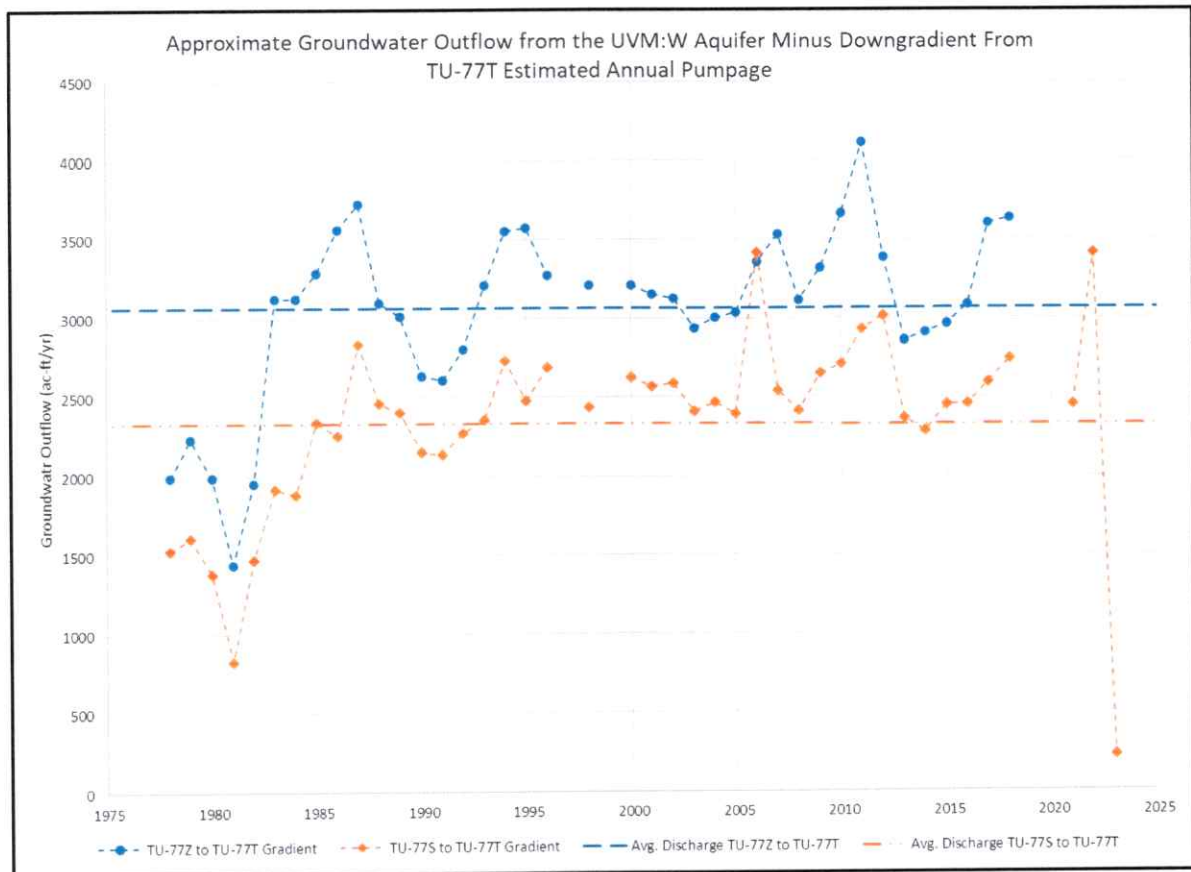


Figure 5- Approximate groundwater outflow from the UVM:W aquifer (Water Rights, 2023d) minus pumpage down gradient from TU-77T based on the hydraulic gradients from TU-77Z to TU-77T and TU-77S to TU-77T

The groundwater outflow for 2023 using the TU-77S to TU-77T gradient is a suspect value based on unusually low water level readings measured for TU-77S (see Figure 4). The new pumping authorized near TU-77S by irrigation Water Permit No. 8555-3, approximately 1.6 miles northwest, and for dairy use under Water Permit No. 8395-3, 1.5 miles north, may have had significant influence on the artesian head pressure in the observation well. Continued monitoring of the observation well will need to be done to determine if the 2023 data is accurate and verify if the water level stabilizes in response to nearby pumping. However, it has been included for this analysis. This flow net analysis shows the 0.15 to 0.6 in/yr recharge rate for buried confined aquifers without a specific recharge rate estimate from Hedges and others (1985) is on the low side of actual average annual recharge to the aquifer.

A direct comparison of groundwater outflow to withdrawals from an aquifer must be taken in the context of year-to-year changes in weather, total withdrawals, and location of withdrawals, because those factors can affect water levels in the observation wells, especially confined aquifer observation wells such as TU-77S and TU-77T, which in turn can have significant effects on the calculations for groundwater outflow, see Figures 4 and 5.

Discharge

Discharge from the UVM:W aquifer is primarily through well withdrawals and natural discharge into the Upper Vermillion Missouri: South aquifer, but there may also be evapotranspiration in areas where the aquifer may be at or near land surface along Turkey Ridge Creek (Buhler, 2014; Lindgren and Hansen, 1990; SDGS, 2023; Water Rights, 2023f). Currently, there are 14 water rights/permits authorized to withdraw water from the UVM:W aquifer, again only considering the Buhler 2014 mapped area (see Table 2). Also, Application No. 8763-3 for B&K Dairy proposes to appropriate up to 480 ac-ft/yr from the UVM:W aquifer but has a priority date junior to this application.

Table 2 lists the water rights/permits authorized to appropriate water from the UVM:W aquifer (Water Rights, 2023e). For Water Permit No. 8395-3 the permitted annual volume limit was listed. For Water Right No. 6662-3 which is limited only by diversion rate, it was assumed full time pumping. This was done because it is a dairy and typically uses water year-round. This is likely to be an overestimate. Historically, the Water Rights Program would estimate use at 60% full time pumping. Using full time pumping was deemed reasonable because Water Permit No. 8395-3 for another dairy in the same aquifer has a permitted volume that assumes pumping 95% of the time. Water Right No. 2041-2 for the City of Viborg is assumed to be zero pumpage because the city is connected to rural water and maintains their wells for standby purposes (Drinking Water, 2023). The estimated annual non-irrigation water use is likely to be less than 557 ac-ft/yr as Water Right No. 6662-3 is highly unlikely to be pumping 24 hours per day. Water Permit Application No. 8763-3 for B&K Dairy proposes to appropriate 480 ac-ft/year. If approved, that would make the estimated annual non-irrigation water use 1,037 ac-ft/yr.

Table 2-Water rights/permits from the UVM:W aquifer (Water Rights, 2023e)

PERMIT NO.	NAME	COUNTY	PRIORITY DATE	STATUS	USE	CFS	ACRES	NON-IRR PERMITTED/ ESTIMATED VOL. (AC-FT/YR)
2041-3	CITY OF VIBORG	TU	12/13/1960	LC	MUN	0.96		0*
2506-3	JAMES REINERS	TU	10/23/1975	LC	IRR	1.5	143	
4265-3	JAMES D BONDESEN	TU	03/27/1978	LC	IRR	0.73	51	
6662-3	VANNORSDEL'S DAIRY	TU	09/16/2008	LC	COM/DOM /LCO	0.134		97.1**
7535-3***	DONALD BENSON	TU	11/30/2012	PE	IRR	1.78	65	
7588-3	MIKOTA HOLDINGS	TU	12/26/2012	PE	IRR	1.78	160	
7602-3	MICHAEL D STEVENS	TU	12/28/2012	PE	IRR	1.89	132	
7633-3	SMIT FAMILY FARMS LLC	TU	01/14/2013	PE	IRR	1.78	152	
8395-3	FULL CIRCLE DAIRY LLC	TU	03/11/2019	PE	COM/DOM /LCO	0.67		460
8488-3	BRETT PETERSEN	TU	02/08/2021	PE	IRR	1.78	80	
8555-3	JON MILLER	TU	10/25/2021	PE	IRR	2.22	320	
8584-3	SHAWN VANNORSDEL	TU	01/21/2022	PE	IRR	2.22	156	
8585-3	ALLEN VANNORSDEL	TU	01/21/2022	PE	IRR	2.22	156	
8594-3	MERLIN VANNORSDEL	TU	02/11/2022	PE	IRR	2.22	156	
TU= Turner, LC= Water Right, PE= Water Permit, MUN= Municipal, IRR= Irrigation, COM= Commercial, DOM= Domestic, LCO= Livestock Confinement Operation, *= Connected to rural water system, **= 100% full time pumping, ***= to be cancelled for non-construction						TOTAL		557.1

Table 3 shows the reported irrigation pumpage along with permitted acres and application rate per permitted acre for each year from 1979 through 2022. This data is reiterated in Figure 6. The table also includes an average permitted acres and application rate per permitted acre from 2013 to 2022 excluding acres and thus the application rate for systems reported as not constructed during that time period. Over the period of record irrigation usage and application rate per permitted acre has increased especially starting in 2012 to present. This makes sense because 2012 was a drought year and there were a number of permits approved in 2014 following Buhler's (2014) report and again in 2021 and 2022. In 2022, there were 7 irrigation water rights/permits authorizing the irrigation of 756 acres reporting no pumpage. The primary reason was for non-construction, 6 of the 7 of the irrigation system. Four of those permits were approved in either 2021 or 2022.

Table 3- Reported irrigation pumpage from the UVM:W aquifer with permitted acres and application rate (inches) per permitted acre (Water Rights, 2023b and 2023e)

Year	Reported Pumpage (ac-ft/yr)	Permits Reporting	Permitted Acres	App. Rate per Permitted Acre	Year	Reported Pumpage (ac-ft/yr)	Permits Reporting	Permitted Acres	App. Rate Inches per Permitted Acre
1979	39.78	4	943	0.5	2003	35.91	3	294	1.5
1980	99.42	4	943	1.3	2004	66.29	2	194	4.1
1981	18.56	3	943	0.2	2005	1.66	2	194	0.1
1982	53.03	3	943	0.7	2006	66.29	2	194	4.1
1983	185.62	3	943	2.4	2007	116.67	2	194	7.2
1984	40	4	943	0.5	2008	0	2	194	0.0
1985	3	3	943	0.0	2009	0	2	194	0.0
1986	0	4	943	0.0	2010	0	2	194	0.0
1987	110	3	943	1.4	2011	0	2	194	0.0
1988	1.4	4	943	0.0	2012	49.72	2	194	3.1
1989	39	4	794	0.6	2013	24.31	2	194	1.5
1990	0	4	794	0.0	2014	145.98	7	859	2.0
1991	0	4	794	0.0	2015	118.5	7	859	1.7
1992	0	4	794	0.0	2016	179.01	7	859	2.5
1993	0	2	194	0.0	2017	199.93	7	859	2.8
1994	0	2	194	0.0	2018	42.72	7	859	0.6
1995	0	2	194	0.0	2019	0	7	859	0.0
1996	88.38	2	194	5.5	2020	294.72	7	859	4.1
1997	0	2	194	0.0	2021	255.32	8	939	3.3
1998	0	3	294	0.0	2022	701.47	11	1571	5.4
1999	0	3	294	0.0	Avg.	69.3	3.8	586.4	1.4
2000	13.92	3	294	0.6	Avg. 2013-2022	196.2	7	871.7	2.4
2001	19.89	3	294	0.8	Avg. 1979-2012	32.0	2.9	502.5	1.1
2002	39.77	3	294	1.6	Avg. 2013-2022 excluding systems reported as not constructed			482.6	4.6

Currently, there are 11 irrigation water rights/permits authorizing the irrigation of 1,571 acres (Water Rights, 2023e). There are six water rights/permits reporting as not constructed on the 2022 irrigation questionnaire, Water Right No. 2506-3, possibly subject to cancellation due to abandonment, and Water Permit Nos. 7535-3, 8488-3, 8584-3, 8585-3, and 8594-3. Water Permit No. 7535-3 authorizes the irrigation of the same acres this application proposes to irrigate and will be cancelled if this application is approved. These water rights/permits authorize the irrigation of 756 acres. If these irrigation systems were developed, excluding Water Permit No. 7535-3, and assuming an application rate per permitted acre of 4.6 in/yr, the average application rate per permitted acre excluding non-constructed systems from 2013 through 2022, the remaining 5 systems would be estimated to pump approximately 265 ac-ft/yr. This application, if approved, would be estimated to pump approximately 25 ac-ft/yr. The average reported irrigation from 2013 to 2022 plus the estimated future use by systems reporting as not constructed, plus estimated future use by this application is approximately 486 ac-ft/yr.

However, it is more reasonable to apply the application rate per permitted acre excluding systems reporting as not constructed over the last 10 years to the total permitted acres for the aquifer. Applying the 4.6 in/yr per permitted acre application rate to the 1,506 currently permitted acres, not including the 65 acres permitted under Water Permit No.7535-3 for above discussed reasons, is approximately 577 ac-ft/yr. The 577 ac-ft/yr is likely a more representative value of estimated annual irrigation pumpage for the future rather than taking the 2013-2022 average plus the application rate applied to the acreage for the systems reporting as not constructed.

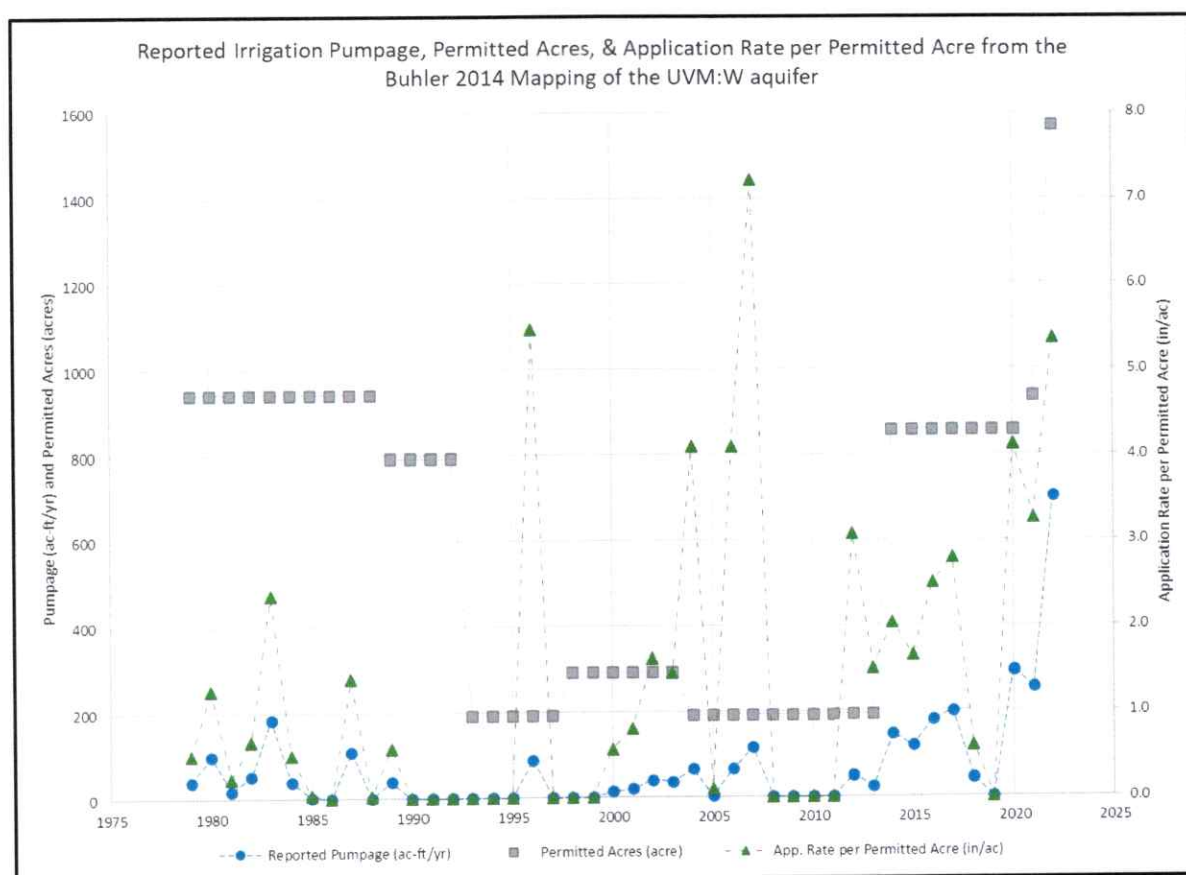


Figure 6- Reported irrigation pumpage, permitted acres and application rate per permitted acre for the UVM:W aquifer from 1979-2022 (Water Rights, 2023b and 2023e)

There are also domestic wells completed into the UVM:W aquifer that do not require a water right/permit, so the withdrawal amount for those wells is unknown (Water Rights, 2023f). Withdrawals from domestic wells on an average annual basis are not considered a significant portion of the hydrologic budget due to their relatively low diversion rate and the availability of rural water in the area where the UVM:W aquifer is located.

Hydrologic Budget

Table 4 shows current estimates for average annual water use plus the proposed use by this application and Water Permit Application No. 8763-3 which has a priority date junior to this application. Using Hedges and others (1985) recharge rate range for buried confined aquifers, leads to an estimated recharge rate range of 245 to 980 ac-ft/yr. Review of groundwater outflow, which can be used as an analog for recharge, shows over the period of record an average outflow ranging from 2,329 to 3,062 ac-ft/yr. However, there has been a significant recent downward trend in the groundwater outflow, see Figure 5 . This recent change may be due to development within

approximately 1.5 miles of observation well TU-77S which is used for the groundwater outflow calculations.

Table 4- Water use estimates

Use Type	Volume (ac-ft/yr)
Irrigation, 4.6 in/yr on 1,506 permitted acres, not including Water Permit No. 7535-3	577
Non-Irrigation	557
<i>Total</i>	<i>1,134</i>
App. No. 8797-3	25
App. No. 8763-3	480
Grand Total	1,639.0

Observation Well Data:

Administrative Rule of South Dakota Section 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 information on how the aquifer reacts to regional climatic conditions and local pumping. The Water Rights Program maintains two observation wells within the Buhler 2014 mapping of the UVM:W aquifer. There is also a destroyed observation well, TU-77Z (see Figure 1). Observation well TU-77Z was destroyed in 2018 for road construction. The hydrographs for these observation wells are shown in Figure 7.

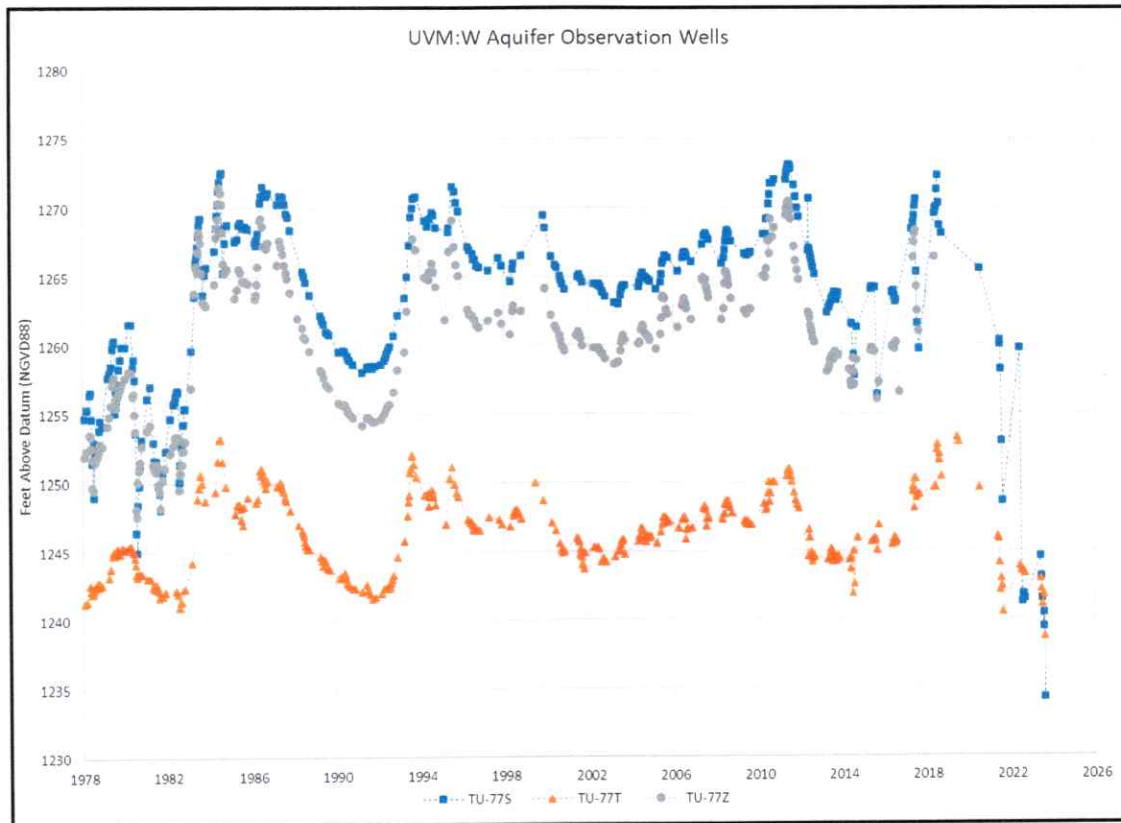


Figure 7- UVM:W aquifer observation well data (Water Rights, 2023d)

Observation well TU-77T shows relatively stable water levels over its period of record with a recent decline to record low levels in 2023, likely in response to drought conditions. The record low recorded water level was August 2, 2023. It should be noted 2023 has been a drought year during the irrigation season. Observation well TU-77S has a relatively stable water level across the period of record until 2021. Since that time, there has been a steep decline in water levels from the June 29, 2021, measurement to the most recent measurement, August 1, 2023, of approximately 26 feet. There was some spring recovery of water levels as measured in June 2022 and May 2023. The 2022 and 2023 measurements for observation well TU-77S are somewhat suspect at this time because of their significant difference in water level decline over the last several years compared to TU-77T but are not implausible given the recent increase in pumping in the vicinity of TU-77S. Additional measurements into the next several years are required to verify the validity of those measurements.

Observation well TU-77S is upgradient of TU-77T in terms of general water movement within the aquifer. That means the water level for TU-77S, when viewed in terms of elevation, should be above the water levels in TU-77T. For 2023 and measurements on the same day or consecutive days, from the first measurement on May 23 through the third measurement on June 20, TU-77S had a water level elevation measurement ranging from 1.65 to 0.36 feet above the water level elevation measurement of TU-77T. For the 4th and 5th measurements, July 18 and August 1 and 2, 2023, TU-77S had water level measurements ranging from 1.31 to 4.48 feet below TU-77T. That would be a reversal of the gradient within the aquifer which could indicate no groundwater outflow from the aquifer was occurring at that time.

Water Availability

When comparing the shape of the groundwater outflow chart (Figure 5) and the observation well hydrographs (Figure 7), the similar shapes are obvious. That makes sense because the water level elevations (Figure 7) and the difference between those values are used to estimate the groundwater outflow (Figure 5). The reduction or even elimination of groundwater outflow from an aquifer means that it is possible recharge to the aquifer is equal to or less than withdrawals from the aquifer. While previous Water Management Board and court decisions (Circuit Court of South Dakota, Sixth Judicial Circuit, 2005; Circuit Court of South Dakota, First Judicial Circuit, 2012) have relied upon or stated that average annual recharge and average annual withdrawals should be considered, it is necessary to also consider the context of development that is currently occurring from the aquifer.

There are a number of recently approved water permits that have yet to develop and are therefore not accounted for in the average reported pumpage from the aquifer. There was a significant decline of groundwater outflow from the aquifer for 2023 (see Figure 5). The estimated groundwater outflow for 2023 was approximately 222.6 ac-ft/yr. As previously stated, there are a number of irrigation water rights/permits that are yet to develop and would increase pumping from the aquifer if developed.

Average numbers take time to develop. Likely pumpage by irrigation users can be projected by calculating the application rate per permitted acre (Table 3). The average reported irrigation across the last 10 years is 196.2 ac-ft/yr. When accounting for all currently approved irrigation permits, both developed and yet to be developed, by multiplying the permitted acres times the application rate per permitted acre for developed systems, 4.6 inches/acre, the likely average annual irrigation pumpage assuming development of all the currently non-developed irrigation water rights/permits and continued usage by all of the developed permits is 577 ac-ft/yr. That is a significant increase over the current average annual irrigation pumpage.

There are two separate primary factors to consider in this instance when determining if there is unappropriated water available for this proposed appropriation. First, there has been a recent change in groundwater levels (see TU-77S in Figure 7) and thus the estimated groundwater outflow from the aquifer. This may have been caused by drought conditions or recent nearby development of appropriative permits affecting artesian head pressure in the aquifer. Second, there are a number of irrigation water permits that are yet to fully develop and thus are not properly accounted for in the average annual pumpage from the aquifer. Most of the undeveloped permits have 3 to 4 years left in their respective development periods. When considering these factors, there may not be unappropriated water available for this application or Application No. 8763-3. It may be prudent to defer this application and Application No. 8763-3 for such time as to allow the development of the currently permitted water rights/permits and for continued monitoring of the water levels in the observation wells.

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

The nearest water right/permit from the UVM:W aquifer to the proposed well location is Water Permit No. 7535-3, which is held by the applicant, shares the same approximate well location, has not been developed, and will be cancelled if this application is approved (Water Rights, 2023e). The next nearest water rights/permits are Water Permit No. 7588-3 approximately 0.63 miles north, Water Right No. 2506-3 approximately 0.74 miles southeast of the proposed well site, Water Permit No. 8395-3 approximately 0.86 miles north, and Water Permit No. 8555-3 approximately

1.1 miles northwest of the proposed well site (Water Rights, 2023e). Observation well TU-77S is located approximately 0.67 miles south of the proposed well site (Water Rights, 2023d).

The nearest domestic use well completed into the UVM:W aquifer is located approximately 0.6 miles northwest of the proposed well site (Water Rights, 2023f). Based on 2020 satellite imagery, the well appears to be completed into a pasture and is likely used for livestock purposes. The well is 100 feet deep with a depth to top of aquifer of 72 feet and a static water level of 21 feet at the time of well completion in April 2016. The locations of domestic wells are based on the location provided by the well driller on the water well completion report. It is possible there are other domestic use UVM:W aquifer wells in the area of the applicant's proposed well site that are not on file with the Water Rights Program.

The UVM:W aquifer is under confined conditions at the applicant's proposed well site (Water Rights, 2023f). Since the aquifer is confined, drawdown can extend some distance from a well. However, the exact drawdown behavior cannot be determined without an aquifer performance test. The Water Management Board recognizes that putting water to beneficial use requires a certain amount of drawdown to occur. The Board has promulgated 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 (Water Rights, 1995). The Board adopted the Findings of Fact 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). Observation well TU-77S is located approximately 0.9 miles southeast of the previously described domestic well. Observation well TU-77S, hydrograph shown in Figure 4, is 146 feet deep with a depth to top of aquifer of 112 feet but a smaller gravel section from 56 to 61 feet below grade (SDGS, 2023; Water Rights, 2023d). The static water level measured in the well ranges from 7 to 47 feet below ground surface. That means at the lowest recorded water level, there was still approximately 65 feet of artesian head pressure above the top of the aquifer.

A review of the Turner County complaint file showed one complaint filed regarding potential well interference from wells completed into the UVM:W aquifer (Water Rights, 2023a). In July 2022, a well owner with a well located in Sec. 6-T97N-R53W, approximately 2.1 miles south of the proposed well site and 1.4 miles south of observation well TU-77S, stated the well was not pumping water for his cattle. No well completion report was found for the well; however, it was reported as 7 to 15 years old so a well completion report should have been filed. The well owner

believed the well to be 160 feet deep with a pump setting of 60 feet. The well owner stated the well had pumped all winter and spring but had ceased pumping in the past 2-3 weeks. Review of the hydrograph for TU-77S showed the static water level at that time was approximately 40 feet below grade and had a similar surface elevation as the non-pumping well. The nearest appropriative pumping was under Water Permit No. 7633-3 approximately 1.3 miles northeast of the non-pumping well. The non-pumping well is located near the mapped edge of the aquifer and possibly has greater than expected drawdown when pumping. Based on the available information, it was determined the non-pumping well was not unlawfully impaired by appropriative pumping in the area.

With a notable decline in water level in TU-77S, some existing well owners may need to install or lower pumps depending on the specific characteristics of the UVM:W aquifer at their location. When considering the statutes (SDCL 46-1-4 and 46-6-6.1), rule (ARSD 74:02:04:20(7)), the amount of artesian head pressure at the proposed well site for this application (65+ feet), and the lack of substantiated well interference complaints in the area of this application from the UVM:W aquifer, there is a reasonable probability that any drawdown created by using this proposed diversion will not cause an unlawful impairment on existing water rights/permits with adequate wells or adequate domestic wells. However, if this application is approved, it should include the standard qualification requiring the applicant to control their pumping as to not cause a reduction of needed water supplies in adequate domestic wells or adequate wells having a prior water right.

CONCLUSIONS:

1. Water Permit Application No. 8797-3 proposes to irrigate 65 acres at a maximum instantaneous diversion rate of 1.78 cfs from one well to be completed into the Upper Vermillion Missouri: West aquifer.
2. Based on lithologic logs, well completion reports, and previous mapping of the aquifer and its potential areal extent, this report only considered the Buhler 2014 mapped areal extent, and the water rights/permits, observation wells and other wells completed within or near that areal extent.
3. This application proposes to irrigate at a diversion rate greater than the statutory limit of 1 cfs per 70 acres. Based on the provided map, it appears the center pivot irrigation system will be making a partial rotation. Partial rotation systems require the same diversion rate as full rotation systems to properly operate while irrigating less acres. This reason for the exceedance has been accepted by the Water Management Board and the Water Rights Program in the past.
4. An analysis of the estimated recharge to the aquifer, estimated groundwater outflow from the aquifer, average water pumpage from the aquifer, likely water pumpage from the aquifer if currently approved water rights/permits are fully developed and put water to use, and observation well data has determined there may not be water available from the aquifer to support this proposed appropriation.
5. Based on the currently best available information, it may be prudent to defer Application No. 8797-3 to allow time for currently approved water rights/permits to fully develop while monitoring water levels in the observation wells.

6. There is a reasonable probability that use from this proposed diversion will not unlawfully impair existing appropriative or domestic users with adequate wells.

Adam Mathiowetz

Adam Mathiowetz, PE
SD DANR-Water Rights Program

REFERENCES:

- Buhler, K.A. 2014. Report to the Chief Engineer on 21 Water Permit Applications from the Upper Vermillion Missouri Aquifer. Report in file for Water Permit No. 7715-3. SD DANR-Water Rights Program. Pierre, SD.
- Buhler, K.A. 2012. Report to the Chief Engineer on Water Permit Application No. 7441-3 & 7442-3, Gary or Julie Peterson; Water Permit Application No. 7452-3, Jerome Hult; Water Permit Application No. 7466-3, Bethel Hagen Trust; Water Permit Application No. 7467-3 & 7468-3, Cleland Hagen Trust; and Water Permit Application No. 7535-3 Donald D Benson, December 11, 2012: SD DANR- Water Rights Program. Pierre, SD.
- Circuit Court of South Dakota, Sixth Judicial Circuit, 2005. April 29, 2005 Memorandum Decision re: HU04-37 Hines v. SD Department of Environment and Natural Resources.
- Circuit Court of South Dakota, First Judicial Circuit, 2012. April 12, 2012 Memorandum Decision re: Hanson County Dairy v. Robert Bender and Stace Nelson.
- Drinking Water. 2023. DANR-Drinking Water Program “My System Information”. Accessed: November 8, 2023. <<https://danr.sd.gov/OfficeOfWater/DrinkingWater/default.aspx>>.
- Fahrenbach, M.D., Steece, F.V., Sawyer, J.F., McCormick, K.A., McGillivray, G.L. and Redden, J.A. 2010. South Dakota Stratigraphic Correlation Chart. Oil and Gas Investigation 3. DANR-Geological Survey Program. Vermillion, SD.
- 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. Task7: Ground Water Recharge. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185. SD DANR-Geological Survey. Vermillion, South Dakota.
- Holmes, S.L. and Filipovic, D. 2015. Hydrogeologic Investigation of the Upper-Vermillion-Missouri Aquifer. Open-File Report 93-UR. SD DANR-Geological Survey. Vermillion, SD.
- Kilts, W. 2023. Report to the Chief Engineer Water Permit Application 8684-3 Matthew Wirth May 9, 2023. SD DANR-Water Rights Program permit files. Pierre, SD.
- Lindgren, R.J. and Hansen, D.S. 1990. Water Resources of Hutchinson and Turner Counties, South Dakota. U.S. Geological Survey Water-Resources Investigations Report 90-4093.

SDGS. 2023. SDGS Interactive Map, Lithologic Logs Data Layer. Accessed: November 14, 2023. SD DANR-Geological Survey. Vermillion, SD.
<<https://usd.maps.arcgis.com/apps/webappviewer/index.html?id=e54c5063b19c49629560a86a7be2eb3d>>

Water Rights. 2023a. County Files. SD DANR-Water Rights Program, Joe Foss Bldg., Pierre, SD

Water Rights. 2023b. Irrigation Questionnaire Files. SD DANR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

Water Rights. 2023c. Non-irrigation Questionnaire Files. SD DANR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

Water Rights. 2023d. Observation Well Files. SD DANR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

Water Rights. 2023e. Water Right/Permit Files. SD DANR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

Water Rights. 2023f. Well Completion Reports. SD DANR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

Water Rights. 1995. Water Rights File No. 2313-2 Coca-Cola Bottling Company of the Black Hills. SD DANR-Water Rights Program. Pierre, SD.



**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.**

April 10, 2024

Merlin Vannorsdel
28888 455th Avenue
Viborg SD 57070

Dear Mr. Vannorsdel:

Water Permit Application No. 8594A-3 for irrigation use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Turner County New Era printed in Parker SD (Ph # 605 297-4419) and the Argus Leader printed in Sioux Falls (see attachment for contact number). 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,

Rachel Rodriguez

Rachel Rodriguez
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 HEARING on Application No. 8594A-3 to Amend Water Permit No. 8594-3

Notice is given that Merlin Vannorsdel, 28888 455th Avenue, Viborg SD 57070 has filed an application for a water permit to amend Water Permit No. 8594-3 to change the location of the diversion point and acres to be irrigated. Permit No. 8594-3 appropriates 2.22 cubic feet of water per second from one well in the NE ¼ section 29 to be completed into the Upper Vermillion Missouri: West Aquifer to irrigate 156 acres in the NE ¼ section 29; all in T97N-R53W. Application No. 8594A-3 proposes to change the location of the well and acreage to be irrigated to one well to be completed into the Upper Vermillion Missouri: West Aquifer (approximately 214 feet deep) located near the E ¼ quarter corner of section 21 for irrigation of 156 acres located in the E ½ Section 21-T97N-R53W. This proposed amendment does not authorize any increase in the number of acres to be irrigated, and no increase in the diversion rate or volume of water appropriated from the Upper Vermillion Missouri: West Aquifer. This site is located approximately two and one-half miles northwest of Viborg SD.

South Dakota Codified Law (SDCL) 46-2A-4(10) provides that “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 Chief Engineer’s recommendation and no hearing may be held before the board, unless the Chief Engineer makes a finding that an application, even if uncontested, presents important issues of public policy or public interest that should be heard by the board.” In this case, the Chief Engineer finds that this application presents important issues of public interest that should be heard by the Water Management Board.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends **APPROVAL** of Application No. 8594A-3 with qualifications because 1) the water has already been appropriated as authorized by Water Permit No. 8594-3, 2) the proposed diversion and acreage authorized by No. 8594-3 can be relocated and developed without unlawful impairment of existing domestic water uses and water rights as allowed by SDCL 46-2A-12 and 46-5-30.4, 3) the proposed use is a beneficial use 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.

The Water Management Board will consider this application at **11:00 AM** (Central Time) on **May 8, 2024**, in the Matthew Training Center, Joe Foss Bldg, 523 E. Capitol Ave., Pierre SD. The Chief Engineer’s recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application based on the facts presented at the public hearing.

Any person who intends to participate in the hearing 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 **April 29, 2024**.

The petition shall be in writing and 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. The hearing is an adversary proceeding and any party has the right to be present at the hearing and to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing and decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

The **May** hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any person who has filed a petition to oppose the application. The request for an automatic delay must be filed by **April 29, 2024**. If an automatic delay is requested, the hearing will be rescheduled for a future Board meeting and personal notice will be provided to the applicant and all petitioners regarding the time, date, and location.

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at <https://danr.sd.gov/public> or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by **April 29, 2024**.

Notice is given to individuals with disabilities that the meeting is being held in a physically accessible location. Individuals requiring assistive technology or other services in order to participate in the meeting or materials in an alternate format should contact Brian Walsh, Nondiscrimination Coordinator, by calling (605) 773-5559 or by email at Brian.Walsh@state.sd.us as soon as possible but no later than two business days prior to the meeting in order to ensure accommodations are available.

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Published once at an approximate cost of_____.

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Wednesday, April 10, 2024 9:01 AM
To: New Era
Subject: 8594A-3 Merlin Vannorsdel - Public Notice
Attachments: 8594A-3 public.wmb_final.docx; FORM8.FRM.doc

Attached is a notice to be published on April 18, 2024.

Merlin Vannorsdel, 28888 455th Avenue, Viborg SD 57070, 605-310-8610 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 Ave, Pierre SD 57501.

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

Thank you,

Rachel Rodriguez
DANR | Program Assistant
Rachel.Rodriguez@state.sd.us



Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Wednesday, April 10, 2024 9:03 AM
To: legals@argusleader.com
Subject: 8594A-3 Merlin Vannorsdel - Public Notice
Attachments: 8594A-3 public.wmb_final.docx; FORM8.FRM.doc

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

Thank you,

Rachel Rodriguez
DANR | Program Assistant
Rachel.Rodriguez@state.sd.us



AFFIDAVIT OF PUBLICATION

NT & NATURAL RE SD DEPT OF ENVIRONME
Joe Foss Building
Sd Dept Of Environment & Natural Resources
523 E Capitol AVE
Pierre SD 57501-3182

RECEIVED

APR 30 2024

OFFICE OF
WATER

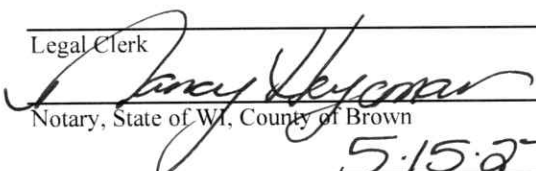
STATE OF WISCONSIN, COUNTY OF BROWN

The Argus Leader, a daily newspaper published in the city of Sioux Falls, Minnehaha County, State of South Dakota, and personal knowledge of the facts herein state and that the notice hereto annexed was Published in said newspapers in the issue:

04/18/2024

and that the fees charged are legal.
Sworn to and subscribed before on 04/18/2024

Legal Clerk


Notary, State of WI, County of Brown

My commission expires

Publication Cost: \$103.96

Order No: 10062546

of Copies:

Customer No: 1248706

1

PO #:

THIS IS NOT AN INVOICE!

Please do not use this form for payment remittance.

NANCY HEYRMAN
Notary Public
State of Wisconsin

**NOTICE OF HEARING on
Application No. 8594A-3 to
Amend Water Permit No.
8594-3**

Notice is given that Merlin Vannorsdel, 28888 455th Avenue, Viborg SD 57070 has filed an application for a water permit to amend Water Permit No. 8594-3 to change the location of the diversion point and acres to be irrigated. Permit No. 8594-3 appropriates 2.22 cubic feet of water per second from one well in the NE 1/4 section 29 to be completed into the Upper Vermillion Missouri: West Aquifer to irrigate 156 acres in the NE 1/4 section 29; all in T97N-R53W. Application No. 8594A-3 proposes to change the location of the well and acreage to be irrigated to one well to be completed into the Upper Vermillion Missouri: West Aquifer (approximately 214 feet deep) located near the E 1/4 quarter corner of section 21 for irrigation of 156 acres located in the E 1/2 Section 21-T97N-R53W. This proposed amendment does not authorize any increase in the number of acres to be irrigated, and no increase in the diversion rate or volume of water appropriated from the Upper Vermillion Missouri: West Aquifer. This site is located approximately two and one-half miles northwest of Viborg SD.

South Dakota Codified Law (SDCL) 46-2A-4(10) provides that "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 Chief Engineer's recommendation and no hearing may be held before the board, unless the Chief Engineer makes a finding that an application, even if uncontested, presents important issues of public policy or public interest that should be heard by the board." In this case, the Chief Engineer finds that this application presents important issues of public interest that should be heard by the Water Management Board. Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8594A-3 with qualifications because 1) the water has already been appropriated as authorized by Water Permit No. 8594-3, 2) the proposed diversion and acreage authorized by No. 8594-3 can be relocated and developed without unlawful impairment of existing domestic water uses and water rights as allowed by SDCL 46-2A-12 and 46-5-30.4, 3) the proposed use is a beneficial use 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.

The Water Management Board will consider this application at 11:00 AM (Central Time) on May 8, 2024, in the Matthew Training Center, Joe Foss Bldg, 523 E. Capitol Ave., Pierre SD. The Chief Engineer's recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application based on the facts presented at the public hearing.

Any person who intends to participate in the hearing 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 April 29, 2024.

The petition shall be in writing and 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. The hearing is an adversary proceeding and any party has the right to be present at the hearing and to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing and decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

The May hearing date will be automatically delayed

for at least 20 days upon written request to the Chief Engineer from the applicant or any person who has filed a petition to oppose the application. The request for an automatic delay must be filed by April 29, 2024. If an automatic delay is requested, the hearing will be rescheduled for a future Board meeting and personal notice will be provided to the applicant and all petitioners regarding the time, date, and location.

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at

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21, 46-2A-23; 46-5-1.1, 46-5-2
thru 46-5-26, 46-5-30.2 thru
46-5-30.4, 46-5-31, 46-5-32
thru 46-5-34.1, 46-5-38 thru
46-5-39, 46-5-46, 46-5-47, 46-5-
49; 46-6-1 thru 46-6-3.1, 46-6-
6.1, 46-6-10, 46-6-13, 46-6-14,
46-6-21, 46-6-26; and Board
Rules ARSD 74:02:01:01
thru 74:02:01:25.02;
74:02:01:35.01.
Published once at an
approximate cost of 103.96.
Published April 18, 2024, at
the total approximate cost
of \$103.96 and may be
viewed free of charge at
www.sdpublishnotice.com

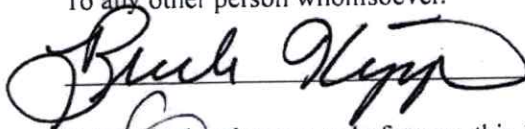
Affidavit of Publication

STATE OF SOUTH DAKOTA
COUNTY OF TURNER

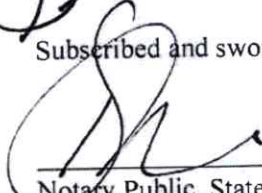
I, Brenda Kiggins of New Century Press, publisher of The New Era, which is a weekly newspaper of general circulation, Printed and published in the City of Parker, in said County of Turner., and has been such legal newspaper during the times here in after mentioned; that the said newspaper has been in existence as such legal newspaper for more than one year prior to the publication of the notice here unto attached, and has during all of said publication of the notice hereunto attached, and has during all of said time had, and now has, more than 200 bona fide subscribers; that the undersigned, the affiant, is the Office Assistant of the said newspaper, in charge of the advertisement department thereof and has personal knowledge of all the facts stated in this affidavit and the advertisement headed:
N0418-5 Notice Of Hearing on Application No. 8817-3 to Add Acres to be Irrigated
Once printed copy of hereto attached, is printed and published in the said newspaper for one week, to wit:

On Thursday, the 18th day of April 2024

That \$79.98 being the full amount of the fees for publication of the attached notices insure solely for the benefits of the publishers of the said newspaper, that no arrangement or understanding for a division thereof has been made with any other person and that no part thereof has been agreed to be paid To any other person whomsoever.

 _____

Subscribed and sworn to before me this 19th day of April 2024

 _____

Notary Public, State of South Dakota
My Commission Expires August 11, 2029



Publication Fee...\$79.98
Notary Fee...\$
Total ...\$79.98

**NOTICE OF HEARING on
Application No. 8594A-3 to
Amend Water Permit No. 8594-3**

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**Public notices
on Page B2 ►**

B2 | The New Era | 4.18.24

Public notices from Page B1

NE ¼ section 29; all in T97N-R53W. Application No. 8594A-3 proposes to change the location of the well and acreage to be irrigated to one well to be completed into the Upper Vermillion Missouri: West Aquifer (approximately 214 feet deep) located near the E ¼ quarter corner of section 21 for irrigation of 156 acres located in the E ½ Section 21-T97N-R53W. This proposed amendment does not authorize any increase in the number of acres to be irrigated, and no increase in the diversion rate or volume of water appropriated from the Upper Vermillion Missouri: West Aquifer. This site is located approximately two and one-half miles northwest of Viborg SD.

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Published once at the total approximate cost of \$ 79.98 and may be viewed free of charge at www.sdpublicnotices.com.

(N0418-3)

Order Confirmation

Not an Invoice

Account Number:	1248706
Customer Name:	Sd Dept Of Environment & Natural Resources
Customer Address:	Sd Dept Of Environment & Natural Resources 523 E Capitol AVE Joe Foss Building Pierre SD 57501-3182
Contact Name:	NT & NATURAL RE SD DEPT OF ENVIRONME
Contact Phone:	
Contact Email:	
PO Number:	

Date:	04/10/2024
Order Number:	10062546
Prepayment Amount:	\$ 0.00

Column Count:	1.0000
Line Count:	324.0000
Height in Inches:	0.0000

Print

Product	#Insertions	Start - End	Category
SFA Sioux Falls Argus Leader	1	04/18/2024 - 04/18/2024	Public Notices
SFA argusleader.com	1	04/18/2024 - 04/18/2024	Public Notices

As an incentive for customers, we provide a discount off the total order cost equal to the 3.99% service fee if you pay with Cash/Check/ACH. Pay by Cash/Check/ACH and save!

Total Cash Order Confirmation Amount Due	\$103.96
Tax Amount	\$0.00
Service Fee 3.99%	\$4.15
Cash/Check/ACH Discount	-\$4.15
Payment Amount by Cash/Check/ACH	\$103.96
Payment Amount by Credit Card	\$108.11

Order Confirmation Amount

\$103.96

Rodriguez, Rachel

From: Gannett Legals Public Notices 4 <ganlegpubnotices4@gannett.com>
Sent: Wednesday, April 10, 2024 9:52 AM
To: Rodriguez, Rachel
Subject: RE: [EXT] 10062546 8594A-3 Merlin Vannorsdel - Public Notice
Attachments: Order_Confirmation_Liners - 2024-04-10T105132.107.pdf

Hello,

Please find your order confirmation and proof of ad attached.

Your ad is set to run in [Argus Leader] on [4/18] for [103.96] which includes an affidavit, that will be mailed to you 7-10 business after the last day of the ad printing. Please reply by Tuesday 4/16 by 9AM with any changes. All orders are subject to a 3.99% service fee if paid with a credit card. As an incentive for customers, we provide a discount off the order cost equal to the 3.99% service fee if you pay with ACH. Pay by ACH and Save! Final Order cost provided at time of payment and via a receipt.

Your notice is scheduled to run per your request and will publish unless you reply to this email requesting changes or to cancel.

In the future, if you would like to utilize our online self-serve ad portal to place your legal notices, please visit your local publication's online classifieds legal section. There, you can conveniently submit and immediately preview your notices anytime, 24/7.

Thanks,
Keyonna Theodore
Public Notice Representative



Office: 844-254-5287

From: Rodriguez, Rachel <Rachel.Rodriguez@state.sd.us>
Sent: Wednesday, April 10, 2024 10:03 AM
To: SFA-Legals mbx <allegals@gannett.com>
Subject: 10062546 8594A-3 Merlin Vannorsdel - Public Notice

Attached is a notice to be published on April 18, 2024.

Merlin Vannorsdel, 28888 455th Avenue, Viborg SD 57070, 605-310-8610 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 Ave, Pierre SD 57501.

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

Thank you,

Rachel Rodriguez

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Wednesday, April 10, 2024 10:24 AM
To: scottVannorsdel@yahoo.com
Subject: 8594A-3 Merlin Vannorsdel - Public Notice
Attachments: 8594A-3 Rec.pdf; 8594A-3 Ltr.pdf; 8594A-3 PubNotice.pdf; 8594A-3 InvoiceArgusLeader.pdf

Good morning,

Attached is a copy of the report, chief engineer's 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 also being mailed to you today.

I will send another email for your other application shortly.

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

Thank you,

Rachel Rodriguez
DANR | Program Assistant
Rachel.Rodriguez@state.sd.us





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

MAY 17 2024

Merlin Vannorsdel
28888 455th Avenue
Viborg SD 57070

Dear Mr. Vannorsdel:

Enclosed is Water Permit No. 8594A-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



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

**Affidavit of Public Notice
Posting on DANR Website**

Pursuant to SDCL § 46-2A-4, public notice of the following application was posted on the DANR web site at <https://danr.sd.gov/public>. The posted public notice is the same notice as published in the pertinent newspaper(s) and a copy of the public notice is maintained in the application file. If the application is contested, the posting is moved to the DANR contested case website at <https://danr.sd.gov/public/ContestedCase.aspx> until final action is taken on the application pursuant to SDCL § 46-2A-4.

Application No.: 8594A-3

Name of Applicant: Merlin Vannorsdel

Date of Posting: 4/15/2024

Date of Removal: 5/17/2024



Ron Duvall, Engineer III

5/17/2024

Date

Subscribed and sworn to before me, a notary public, this 17th day of May, 2024.



Notary Public - South Dakota
My commission expires: **Rachel Rodriguez**
My Commission Expires
May 16, 2029



(SEAL)

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

Date 9-4-24

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

FROM:

Vannorsdel's Inc

(name)

28888 455 AVE

(address)

6666 SD 57070

(city, state, zip)

605-310-8610

(phone)

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

Water Permit No. 8594A-3 states that the water use system is to be constructed by

July 1 24

(date)

, and water is to be put to beneficial use by

July 1 24

(date)

The water use system was completed on

Aug 1 - 24

(date)

Applying the water to beneficial use was completed on

Aug 1 - 24

(date)

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



(signature)

RECEIVED

SEP 19 2024

OFFICE OF
WATER



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

September 20, 2024

8594A-3

Vannorsdel's Inc
c/o Scott or Merlin Vannorsdel
28888 455th Ave
Viborg SD 57070

Dear Sirs:

I am writing to acknowledge receipt of the "Notice of Completion of Works" form that you sent in to let us know that you are completed with your water use system authorized under Water Permit No. 8594A-3.

The system is now ready for inspection. Inspections are done on a county-by-county basis as staff time permits. You have done everything you need to do and the intervening time between the completion of your project and the staff inspection has no bearing on your water permit. Someone from our office will contact you prior to the inspection to set up a time that is convenient for you.

The "Notice of Completion of Works" you submitted listed the permit holder information as Vannorsdel's Inc. Presently Permit No. 8594A-3 is held in the name of Merlin Vannorsdel. If you would like the name of the permit holder changed, a transfer of ownership and \$50.00 associated fee would be required. For your convenience I have enclosed a partially completed form. If you wish for this permit to remain in the name of Merlin, you be disregard.

If you have any questions, please contact me.

Sincerely,

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

enclosure