

WATER PERMIT NO. 8672-3

Name of Applicant: **Rus Farms Real Estate LLC**

Address: **3283 Dogwood Ave, Rock Valley IA 51247**

Phone: **605 351-6026**

Amount of Water Claimed: **2.0 cfs** Total Acres: **160**

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

Water to be used for: **irrigation** County: **Clay**

Type of Waste Disposal System:

Location: **9 miles north of Vermillion**

PRIORITY

Date Received: **10-31-22**

Application/License Fee: **\$1,050**

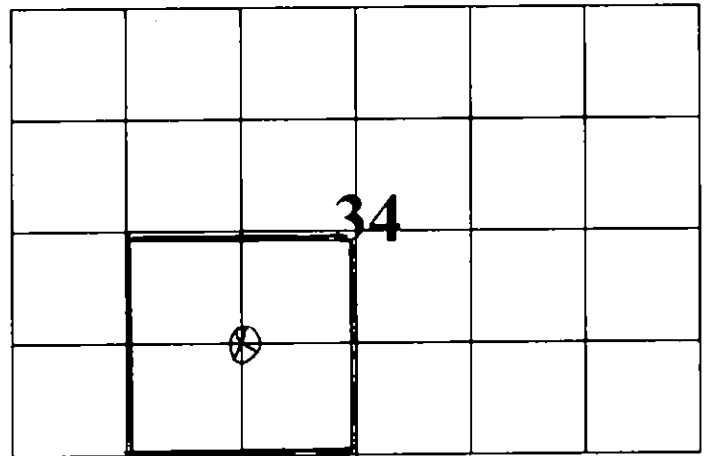
Corrected Application Received:

Period of Annual Use: **May 1 – October 31**

Remarks:

Diversion Point: **center of SW 1/4 Sec 34-T94N-R52W**

Land to be Irrigated: **SW 1/4 Sec 34-T94N-R52W**



Depth of Well: **152**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **11-2-22**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

**SOUTH DAKOTA
WATER PERMIT NO. 8672-3**

Date of first receipt of application October 31, 2022.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8672-3 to Rus Farms Real Estate LLC, c/o Brett Petersen, 3283 Dogwood Ave, Rock Valley IA 51247 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. 8672-3 appropriates 2.0 cubic feet of water per second from one well to be completed into the Lower Vermillion Missouri Aquifer (152 feet deep) located in the approximate center of the SW 1/4 Section 34 for irrigation of 160 acres located in the SW 1/4 Section 34; all in T94N-R52W. This site is located approximately 9 miles north of Vermillion 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 – October 31.
3. The date from which applicant may claim right is October 31, 2022.
4. The date of approval of Permit No. 8672-3 is January 2, 2023.
5. One-fifth of the construction is to be completed on or before July 2, 2025.
6. All construction is to be completed on or before January 2, 2028.
7. Water is to be put to beneficial use on or before January 2, 2032.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The well approved under Water Permit No. 8672-3 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. 8672-3 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 Environment and Natural Resources

JAN 19 2023
date



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

PAID

OCT 31 2022

Ck# 8240

Rec't#

RECEIVED

OCT 31 2022

OFFICE OF
WATER

Mail to: SD DANR, Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8672-3</u> Hydrologic Unit <u>10170102</u> Basin <u>Vermillion River</u> Newspaper <u>Plain Talk</u> <u>Press & Dakotan</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. _____
(Use predates Mar 2, 1955)

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

1. Name to Appear on Irrigation Permit Rus Farms Real Estate LLC

Note: The "Name to Appear on Irrigation Permit" must be the name in which the property to be irrigated is held in.

Mailing Address 3283 Dogwood Ave Rock Valley IA 51247
(Address) (City) (State) (Zip Code)

Phone 6053516026 Mobile _____ Email pbpfarms@gmail.com

2. Amount of water claimed 2.0 *CFS or 800 **GPM _____ ***AF Total Acreage 160
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acres - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Lower Vermillion Aquifer

4. Location of point of diversion 1 well in SW 1/4 Section 34-T94N-R52W (approximate center)
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)
County Clay

5. County or counties where water will be used Clay

6. Annual period during which water is to be used June-September May 1 - Oct 31

7. 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
NW1/4 of SW1/4 34-94-52	40	NE1/4 of SW1/4 of 34-94-52	40
SW1/4 of SW14 of 34-94-52	40	SE1/4 of SW1/4 of 34-94-52	40

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

Drill irrigation well in the center of SW 1/4 of 34-94-52 to irrigate that quarter section.

I, Brett Petersen Operator, the applicant, certify under
Name of Person Title (if applicable)

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

Supplemental Information

(type or print)

- 1. Well Information** (check one or both as applicable) ☒ Drilling new well(s) ☐ Using existing well(s)
- a) If new wells, how many 1 Have test holes been drilled? ☒ Yes ☐ No Drilled by Thein Well Company
(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) 152 Depth to Top of Water Bearing Material 80 Depth to Water from Surface _____
- d) Distance to nearest domestic well on applicant's property N/A Property owned by others 5280'

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

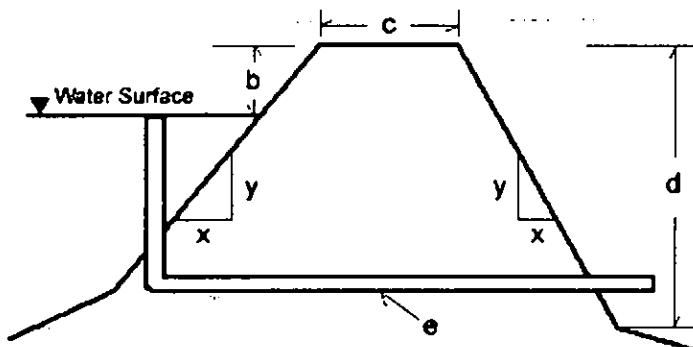
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

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 _____

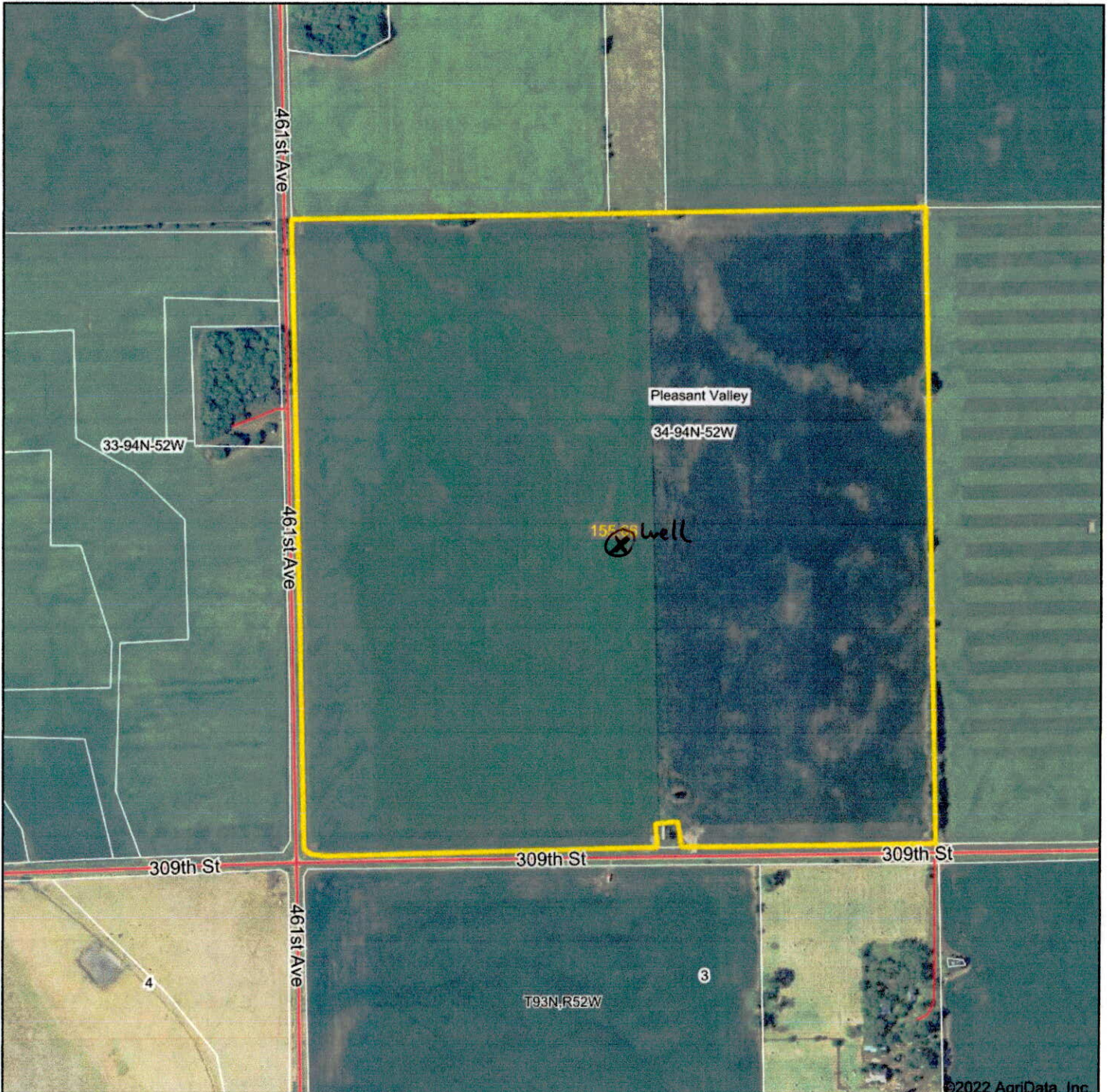


- If pipe, diameter _____
- f) Secondary Spillway Capacity _____
Spillway Width _____
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream _____
Downstream _____
- h) Area of Impoundment _____
- i) Storage _____ Acre Feet
- j) Drainage Area Above Dam _____ Acres

Brett Petersen- Marian Russ Qtr.

Formation	From	To
TOP SOIL	0	3
CLAY BROWN	3	28
CLAY GRAY	28	33
CLAY BLUE	33	80
GRAVEL	80	93
SAND TO MED	93	126
GRAVEL – COARSE SAND	126	152
CLAY GRAY	152	155
SAND	155	157
SHALE	157	

Aerial Map



Map Center: 42° 54' 48.3, -96° 58' 47.66

0ft 642ft 1284ft

34-94N-52W
Clay County
South Dakota

Maps Provided By:
 **surety**
CUSTOMIZED ONLINE MAPPING
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Field borders provided by Farm Service Agency as of 5/21/2008.

94N 52W
Section: 28

94N 52W
Section: 27

94N 52W
Section: 26

94N 52W
Section: 33

94N 52W
Section: 34

94N 52W
Section: 35

93N 52W
Section: 04

93N 52W
Section: 03

93N 52W
Section: 02

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date October 31, 2022

RECEIVED OF PBP Farms Partnership 45610 282nd St., Hurley SD 57036

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

Fee for Application for Permit No. <u>8672-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>850.00</u>
Fee for Application for Permit No. _____ to Appropriate Water for Future use	\$ _____
Fee to retain Future Use Permit No. _____ after period of seven years.	\$ _____
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>8672-3</u>	\$ <u>200.00</u>
Fee for Filing Transfer Form _____	\$ _____
Fee for _____	\$ _____
Fee for Issuing New Well Driller's License No. _____	\$ _____
Fee for Renewal of Well Driller's License No. _____	\$ _____
Fee for Issuing Well Pump Installer's License No. _____	\$ _____
Fee for Renewal of Well Pump Installer's License No. _____	\$ _____
(Any Other Work Provided by Law)	TOTAL
	\$ <u>1050.00</u>

By Eric Gronlund
Chief Engineer
VM

Schlaak, Karen

From: PBP Farms <pbpfarms@gmail.com>
Sent: Wednesday, November 2, 2022 10:54 AM
To: Schlaak, Karen
Subject: Re: [EXT] Water Permit Application

Yes that would be fine thanks!

On Wed, Nov 2, 2022 at 10:48 AM Schlaak, Karen <Karen.Schlaak@state.sd.us> wrote:

We received the application, fee and map. A question regarding the Annual period during which water is to be used. Do you agree with changing June - September to May 1 - October 31? This will give you more flexibility when operating your system.

Let me know, if you would like to make this change.

Karen Schlaak

DANR - Water Rights Program

(605) 773-3352

Website: <https://danr.sd.gov>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8672-3, Rus Farms Real Estate LLC**

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. 8672-3, Rus Farms Real Estate LLC, 3283 Dogwood Avenue, Rock Valley IA 51247.

The Chief Engineer is recommending APPROVAL of Application No. 8672-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing domestic water uses and water rights, 3) the proposed use is a beneficial use and 4) it is in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board with the following qualifications:

1. The well approved under Water Permit No. 8672-3 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. 8672-3 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
December 12, 2022

Report to the Chief Engineer
On Water Permit Application No. 8672-3
Rus Farms Real Estate LLC
c/o Brett Petersen, Operator

December 12, 2022

Water Permit Application No. 8672-3 proposes to divert water at a maximum instantaneous diversion rate of 2.0 cubic feet per second (cfs) from one well to be completed into the Lower Vermillion Missouri aquifer (approximately 152 feet deep) located in the approximate center of the SW $\frac{1}{4}$ of Section 34 for the irrigation of 160 acres located in the SW $\frac{1}{4}$ of Section 34; all in T94N-R52W. The site of interest is located in Clay County approximately nine miles north of Vermillion, SD.

AQUIFER: Lower Vermillion Missouri (LVM)

HYDROGEOLOGY:

The Lower Vermillion Missouri aquifer is a buried glacial outwash that was deposited by meltwater streams beyond the margin of active glacial ice (Stephens, 1967). The aquifer materials range in size from a coarse sand to a coarse gravel (Niehus, 1994). The Lower Vermillion Missouri aquifer is hydrologically connected to the Upper Vermillion Missouri: South aquifer to the north, the Missouri: Elk Point aquifer to the south, the underlying Dakota aquifer, and the Vermillion River (Buhler, 2014; Mathiowetz, 2018; Niehus, 1994; Stephens, 1967). The Lower Vermillion Missouri aquifer and the Missouri: Elk Point aquifer are essentially one continuous outwash deposit that was identified by Hedges and others (1982) at the aquifer boundary transition from primarily buried outwash (Lower Vermillion Missouri aquifer) to primarily unburied outwash (Missouri: Elk Point aquifer).

A boundary between the Upper Vermillion Missouri aquifer and Lower Vermillion Missouri aquifer has been delineated by Hedges and others (1982); however, more recent investigations have concluded the Upper Vermillion Missouri: South (UVM:S) aquifer extends an unspecified distance further south than what was delineated by Hedges and others (1982) (Buhler, 2014; Holmes and Filipovic, 2015). Figure 1 displays a map of the historic Lower Vermillion Missouri aquifer boundary approximated by Hedges and others (1982) with a portion of the Upper Vermillion Missouri: South aquifer estimated by Buhler (2014). The areal extent of the historic Lower Vermillion Missouri aquifer boundary delineated by Hedges and others (1982) is approximately 124,000 acres (Table 1).

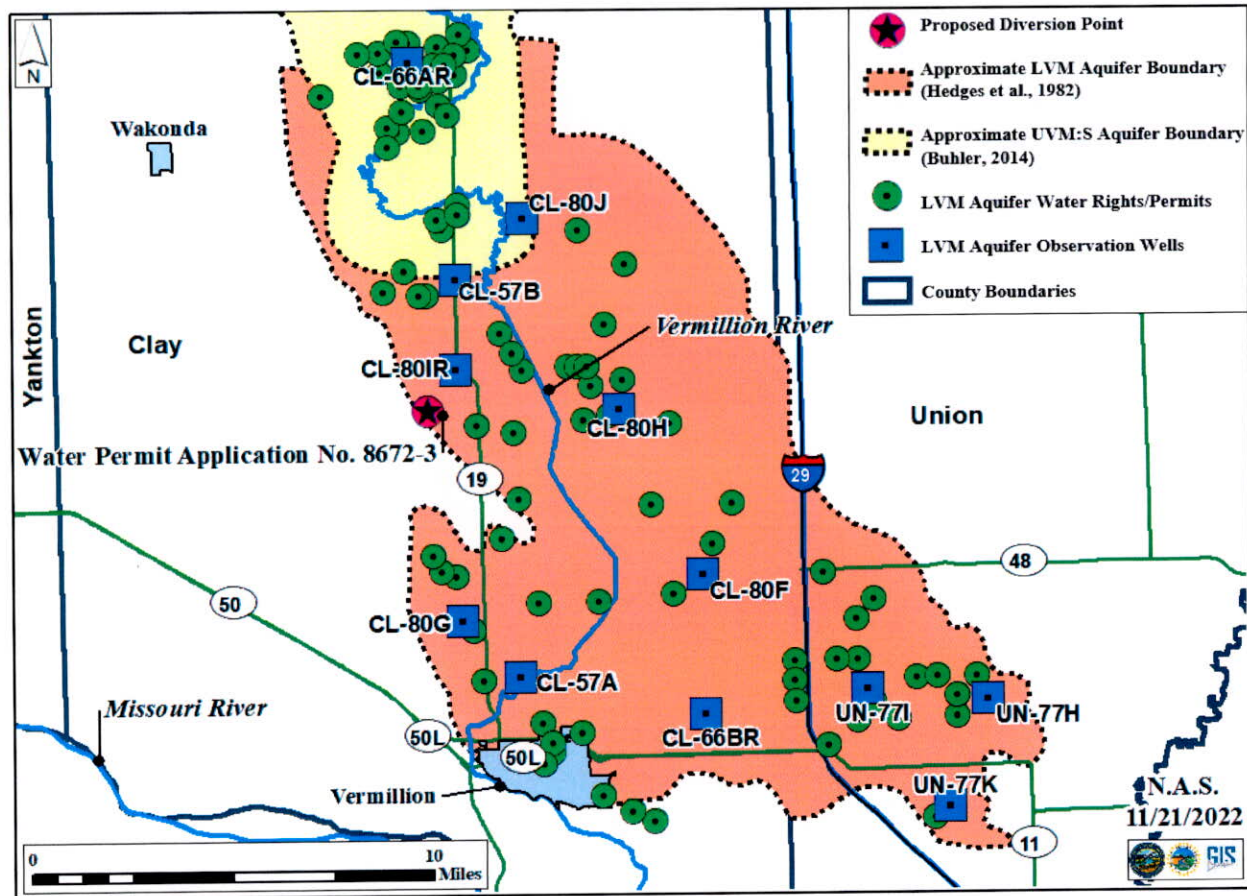


Figure 1. Map of the approximate LVM aquifer boundary delineated by Hedges and others (1982) with a portion of the UVM:S aquifer boundary estimated by Buhler (2014), the location of the proposed diversion point for Water Permit Application No. 8672-3, and the LVM aquifer water rights/permits and observation wells (Water Rights, 2022b and 2022c)

Figure 2 displays the current aquifer boundary for the Lower Vermillion Missouri aquifer (modified from Mathiowetz, 2018). Mathiowetz (2018) delineated the current Lower Vermillion Missouri aquifer boundary essentially by subtracting Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer from the historic aquifer boundary estimated by Hedges and others (1982). Additionally, the first occurrence of aquifer materials maps for Clay and Union County were utilized in delineating the current aquifer boundary (Jensen, 2000; McCormick, 2004; Mathiowetz, 2020). The areal extent of the Lower Vermillion Missouri aquifer is approximately 106,000 acres (Table 1) (Mathiowetz, 2018).

The Lower Vermillion Missouri aquifer is primarily under confined conditions but can be locally unconfined, particularly near the Vermillion River floodplain (shown in Figure 2) (Niehus, 1994; Stephens, 1967). The alluvium, outwash, and sand and gravel deposits (0 to 50 feet below grade) mapped by Jensen (2000) along the Vermillion River are assumed to be an unconfined portion of the Lower Vermillion Missouri aquifer (shown in Figure 2) (Stonesifer, 2013). In its entirety, the areal extent of the unconfined portion of the Lower Vermillion Missouri aquifer is approximately 23,000 acres (modified from Jensen, 2000; modified from Stonesifer, 2013). The unconfined portion of the Lower Vermillion Missouri aquifer that is located outside of Buhler's (2014)

delineation of Upper Vermillion Missouri: South aquifer is approximately 12,000 acres (Table 1) (modified from Jensen, 2000; modified from Stonesifer, 2013).

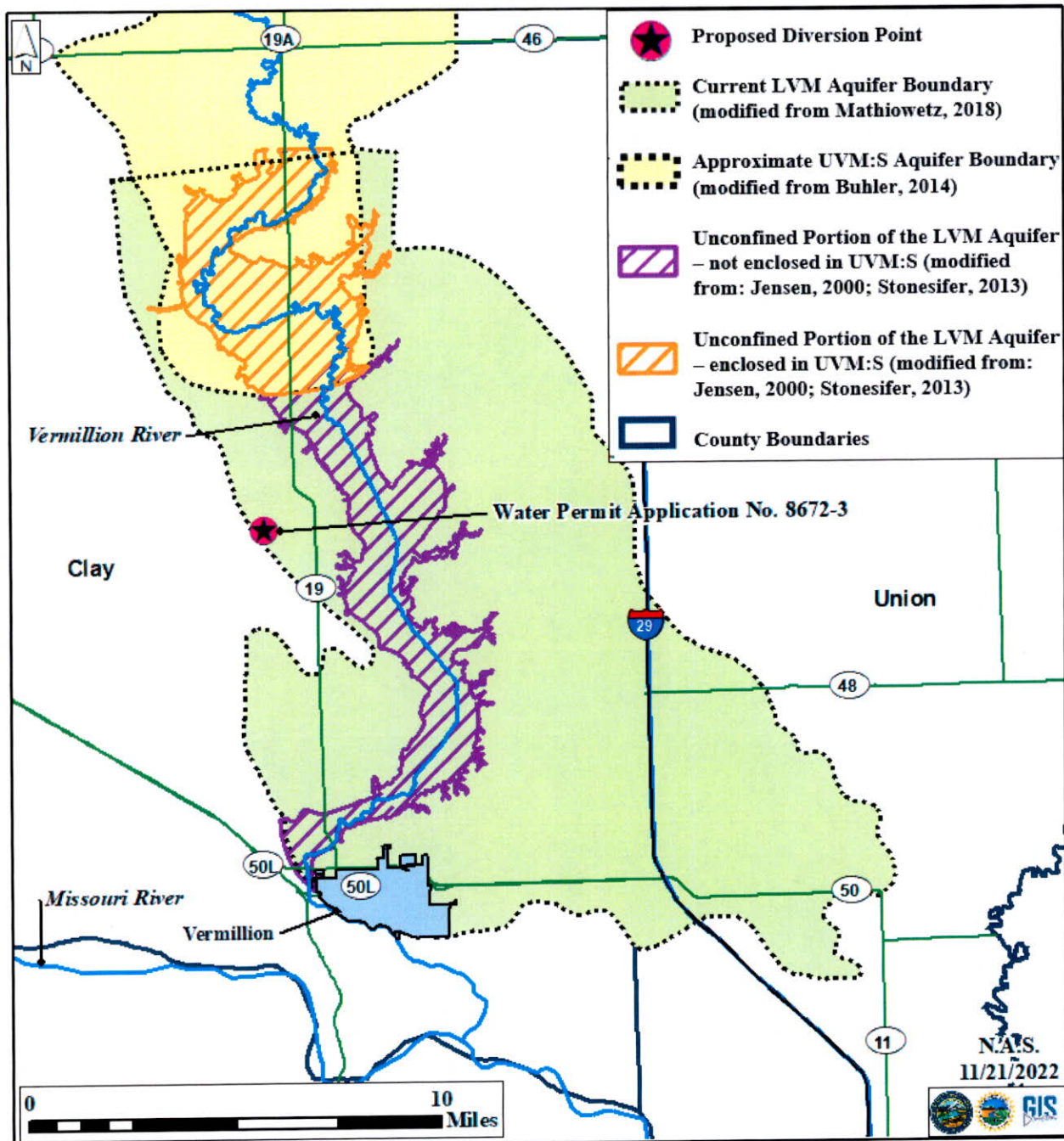


Figure 2. Map of the current LVM aquifer boundary (modified from Mathiowetz, 2018) with the portion of the UVM:S aquifer estimated by Buhler (2014), the estimated unconfined portion of the LVM aquifer (modified from Jensen, 2000; modified from Stonesifer, 2013), and the location of the proposed diversion point for Water Permit Application No. 8672-3

Table 1. Estimated areal extent for the historic LVM aquifer boundary (Hedges et al., 1982), the portion of the UVM: S aquifer that overlies the historic LVM aquifer boundary (Buhler, 2014), the current LVM aquifer boundary (Mathiowetz, 2018), and the unconfined portion of the LVM aquifer along the Vermillion River (modified from Jensen, 2000; modified from Stonesifer, 2013)

Delineation	Estimated Areal Extent (acres)
Historic Lower Vermillion Missouri Aquifer (modified from Hedges et al., 1982)	124,000
Upper Vermillion Missouri: South Aquifer (UVM:S) (modified from Buhler, 2014) - portion that overlies LVM aquifer boundary estimated by Hedges and others (1982)	18,000
Current Lower Vermillion Missouri Aquifer * (Mathiowetz, 2018)	106,000
Unconfined Portion of Lower Vermillion Missouri Aquifer - not enclosed in UVM:S (Buhler, 2014) (modified from Jensen, 2000; modified from Stonesifer, 2013)	12,000
*Estimated by subtracting UVM: S aquifer boundary (Buhler, 2014) from historic boundary (Hedges et al., 1982)	

In Clay County, the Lower Vermillion Missouri aquifer is approximately 100 feet thick on average, with a documented maximum thickness of 170 feet (Stephens, 1967). Hedges and others (1982) estimated the Lower Vermillion Missouri aquifer to contain approximately 1,512,000 acre-feet of recoverable water in storage in Clay County. The direction of groundwater movement in the Lower Vermillion Missouri aquifer is generally to the south (Niehus, 1994).

A test hole completion report was submitted with Water Permit Application No. 8672-3. A reiteration of the report is displayed on Table 2. Based on the submitted test hole completion report, the water well and test hole completion reports near the proposed diversion point, and the lithologic logs on file for nearby observation wells, the Lower Vermillion Missouri aquifer is expected to be confined near the proposed diversion point (SDGS, 2022; Water Rights, 2022b and 2022d).

Table 2. Test hole completion report geology submitted with Water Permit Application No. 8672-3

Formation Log	From	To
Top Soil	0	3
Clay Brown	3	28
Clay Gray	28	33
Clay Blue	33	80
Gravel	80	93
Sand to Med	93	126
Gravel - Coarse Sand	126	152
Clay Gray	152	155
Sand	155	157
Shale	157	

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

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

WATER AVAILABILITY:

Water Permit Application No. 8672-3 proposes to appropriate water from the Lower Vermillion Missouri 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 Lower Vermillion Missouri aquifer is not older than or stratigraphically lower than the Greenhorn Formation (Fahrenbach et al., 2010), and the applicant's proposed use is not for use in a water distribution system as defined by SDCL 46-1-6(17). Therefore, the average annual recharge and average annual withdrawal rates to and from the Lower Vermillion Missouri aquifer must be considered.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Lower Vermillion Missouri aquifer occurs through seepage from the Vermillion River, groundwater inflow from the Upper Vermillion Missouri aquifer, and leakage from the underlying Dakota aquifer (Niehus, 1994; Stephens, 1967). The Lower Vermillion Missouri aquifer may also receive some recharge from the infiltration of precipitation, particularly near the unconfined portion of the aquifer in the Vermillion River floodplain (Niehus, 1994).

Using observation well analysis, Hedges and others (1985) estimated a recharge rate to the unconfined portion of the Lower Vermillion Missouri aquifer to be approximately 3.8 inches per year. Stonesifer (2013) recalculated Hedges and others (1985) estimated recharge rate to be approximately 4.58 inches per year using observation well analysis with additional years of data. Stonesifer (2013) noted recharge and discharge/withdrawals occur concurrently. This results in the calculated recharge rate estimated by using Hedges and others' (1985) method, being less than the actual recharge rate, because Hedges and others (1985) are only accounting for the recharge rate in excess of discharge plus withdrawals. The unconfined portion of the Lower Vermillion Missouri aquifer underlies approximately 12,000 acres (modified from Jensen, 2000;

modified from Stonesifer, 2013). Using Stonesifer's (2013) recharge rate multiplied by the areal extent estimation, the average annual recharge rate to the unconfined portion of the Lower Vermillion Missouri aquifer is approximately 4,580 acre-feet per year.

For this analysis, it is assumed that the confined portion of the Lower Vermillion Missouri aquifer recharges at a similar rate and is hydrologically similar to the confined portion of the Upper Vermillion Missouri aquifer. Using regional flow-net analysis, Hedges and others (1985) estimated a recharge rate to the Upper Vermillion Missouri aquifer, which is primarily confined, to be approximately 0.25 inches per year. This recharge rate is lower than the average recharge rate estimated for other buried and confined aquifers in eastern South Dakota (Hedges et al., 1985). It is worth noting that recharge rates calculated using regional flow-net analysis are suspect and conclusions based on this method are questionable (Hedges et al., 1985). The confined portion of the Lower Vermillion Missouri aquifer underlies approximately 94,000 acres. Using Hedges and others' (1985) recharge rate multiplied by the areal extent estimation, the average annual recharge rate to the confined portion of the Lower Vermillion Missouri aquifer is approximately 1,958 acre-feet per year. In its entirety, the average annual recharge rate to the Lower Vermillion Missouri aquifer (within the historic Lower Vermillion Missouri aquifer boundary delineated by Hedges and others (1982) minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer boundary) (confined and unconfined portions) is approximately 6,538 acre-feet per year.

Discharge

Discharge from the Lower Vermillion Missouri aquifer occurs through well withdrawals, groundwater outflow to the Missouri: Elk Point aquifer, and seepage to the Vermillion River when the stage of the river is lower than the potentiometric surface of the aquifer (Niehus, 1994; Water Rights, 2022c and 2022d).

Currently, there are 90 water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within the historic aquifer boundary delineated by Hedges and others (1982), with 62 of those water rights/permits within the historic aquifer boundary minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer (Water Rights, 2022c). This results in 28 water rights/permits within the Lower Vermillion Missouri aquifer boundary delineated by Hedges and others (1982) that are also within the Upper Vermillion Missouri: South aquifer boundary identified by Buhler (2014) that are still labeled as withdrawing water from the Lower Vermillion Missouri aquifer.

Table 3 summarizes the estimated average annual withdrawal rate for the non-irrigation water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within the historic aquifer boundary (Hedges et al., 1982), and within the historic aquifer boundary minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer. The estimated annual use for each water right/permit was determined by their limiting diversion rate or annual volume. Historically, average water use by non-irrigation appropriations limited by an instantaneous diversion rate have been assumed to be pumping 60% of full time at the respective permitted diversion rate. Water rights/permits limited by an annual volume are

assumed to withdraw their entire respective annual volume limitation. This is a standard method used by the DANR-Water Rights Program for estimating annual withdrawals by non-irrigation appropriations from an aquifer (Water Rights, 2022c). There are seven non-irrigation water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within the historic aquifer boundary delineated by Hedges and others (1982). There are five non-irrigation water rights/permits authorized to appropriate water within the historic Lower Vermillion Missouri aquifer boundary minus the Upper Vermillion Missouri: South aquifer delineated by Buhler (2014). The estimated average annual withdrawals from the Lower Vermillion Missouri aquifer by non-irrigation water rights/permits within the historic aquifer boundary is approximately 1,224.4 acre-feet per year, and approximately 48.6 acre-feet per year within the historic aquifer boundary minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer (Table 3) (Water Rights, 2022c).

Table 3. Estimated average annual water use from the non-irrigation water rights authorized to appropriate water from the LVM aquifer within the historic aquifer boundary (Hedges et al., 1982), and within the historic aquifer boundary minus Buhler's (2014) delineation of the UVM:S aquifer (Water Rights, 2022c)

Permit No.	Name	Use	Status	Authorized Diversion Rate (cfs)	Authorized Annual Volume (acre-feet)	Estimated Use (acre-feet/year)
1870-3	USD Facilities MGMT	INS	LC	0.03		13.0
6397-3	SD Dept of Transportation	INS	LC	0.033		14.3
8222-3	Southeast Farmers COOP	COM	PE	0.167	18.4	18.4
8257-3	Thein Well Co Inc	COM	PE	0.089	1	1
8479-3	Concrete Materials	IND	PE	0.133	1.84	1.84
					Total:	48.6
3905-3*	Clay Rural Water System Inc	RWS	LC	2		868.8
5979-3*	Clay Rural Water System Inc	RWS	LC	2	307	307
					Total:	1,175.8
* Within aquifer boundary delineated by Hedges and others' (1982) and Buhler's (2014) UVM:S boundary						
LC: Licensed Water Right, PE: Water Permit, COM: Commercial, INS: Institutional, RWS: Rural Water System						

Currently, there are 83 irrigation water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within Hedges and others' (1982) historic aquifer boundary (Table 4) (Water Rights, 2022c). Irrigation water rights/permits have been typically required to report their annual usage on an irrigation questionnaire since 1979. The estimated average annual withdrawal rate for the Lower Vermillion Missouri aquifer irrigation water rights/permits that have reported over the period of record (1979 to 2021) within Hedges and others' (1982) historic aquifer boundary is approximately 1,812 acre-feet per year (Table 4) (Water Rights, 2022a). To reflect the current development of irrigation water rights/permits more accurately, the average annual withdrawal rate for irrigation appropriations that have reported from 2012 to 2021 within Hedges and others' (1982) historic aquifer boundary is approximately 3,015 acre-feet per year (Table 4) (Water Rights, 2022a).

Table 4 lists only 80 water rights/permits as reporting in 2021, as three water permits (Nos. 8589-3, 8632-3, and 8641-3) did not submit an irrigation questionnaire form in 2021 because

their water permit is still within its respective construction period (Water Rights, 2022a and 2022c). These three water permits are authorized to irrigate approximately 332.04 acres (Water Rights, 2022c). Generally, irrigators in eastern South Dakota apply less than one foot of water per acre per year. However, to account for the fluctuation in wet and dry cycles from year to year, the one foot of water per acre per year application rate will be used to somewhat overestimate the annual withdrawal rate for these irrigation water permits. Therefore, the estimated average annual withdrawal rate for these three water permits is approximately 332.04 acre-feet per year.

The estimated average annual withdrawal rate for the Lower Vermillion Missouri aquifer irrigation water rights/permits within the historic aquifer boundary that have reported from 2012 to 2021 calculated on Table 4 (3,015 acre-feet/year), plus the estimated use for the three water permits are still within their respective construction periods (332.04 acre-feet/year), is approximately 3,347 acre-feet per year (Water Rights, 2022a).

There are 57 irrigation water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within the current aquifer boundary, which was compiled by removing the water rights/permits that are within the Upper Vermillion Missouri: South aquifer identified by Buhler (2014) from the historic aquifer boundary estimated by Hedges and others (1982) (Table 4) (Water Rights, 2022c).

Table 4 lists only 54 water rights/permits as reporting in 2021, as three water permits (Nos. 8589-3, 8632-3, and 8641-3) did not submit an irrigation questionnaire form in 2021 because their water permit is still within its respective construction period (Water Rights, 2022a and 2022c). These three water permits are authorized to irrigate approximately 332.04 acres (Water Rights, 2022c) and the estimated average annual withdrawal rate for these three water permits is approximately 332.04 acre-feet per year. The estimated average annual withdrawal rate for the Lower Vermillion Missouri aquifer irrigation water rights/permits within the historic aquifer boundary minus the Upper Vermillion Missouri: South aquifer delineated by Buhler (2014), that have reported from 2012 to 2021 (1,866 acre-feet/year), plus the estimated use for the three water permits that were approved in 2022 (332.04 acre-feet/year), is approximately 2,198 acre-feet per year (Table 4) (Water Rights, 2022a).

There are domestic wells completed into the Lower Vermillion Missouri aquifer that do not require a water right/permit, so the withdrawal amount from those wells is unknown (Water Rights, 2022d). Due to their relatively low diversion rates, withdrawals from domestic wells are generally not considered to be a significant portion of the hydrologic budget. Additionally, with the development of rural water systems in areas where the Lower Vermillion Missouri aquifer is the uppermost aquifer available; it is likely some domestic users may have transitioned to rural water. Therefore, the quantity of water withdrawn by domestic wells is estimated to be negligible to the hydrologic budget for the Lower Vermillion Missouri aquifer.

Table 4. Reported irrigation use from LVM aquifer for water rights/permits within the historic aquifer boundary, and the historic aquifer boundary minus Buhler's (2014) delineation of the UVM:S aquifer (Water Rights, 2022a)

Historical Boundary of LVM aquifer (Hedges et al., 1982)			Historical Boundary of LVM aquifer (Hedges et al., 1982) Excluding UVM: S Aquifer Boundary (Buhler, 2014)		
Year	No. of Permits	Reported Pumpage (acre-feet)	Year	No. of Permits	Reported Pumpage (acre-feet)
1979	49	1,163	1979	41	1,008.40
1980	47	2,417	1980	39	2,198.25
1981	49	1,543	1981	40	1,500
1982	37	870.04	1982	28	788.17
1983	38	716.3	1983	29	716.3
1984	47	691	1984	38	669
1985	46	1,328.20	1985	37	1,147.20
1986	45	1,047.50	1986	36	937.5
1987	37	1,115	1987	28	934
1988	38	2,083.80	1988	29	1,617.10
1989	38	2,301.20	1989	29	1,705.20
1990	38	2,113.20	1990	29	1,496.20
1991	39	1,670.10	1991	30	1,254.10
1992	39	168.8	1992	30	133.7
1993	39	0	1993	30	0
1994	39	517.28	1994	30	348.85
1995	37	506.61	1995	29	485.77
1996	36	997.6	1996	28	698.87
1997	36	1,085	1997	28	826
1998	36	1,032.91	1998	27	862.55
1999	38	900.63	1999	28	698.89
2000	38	2,041.72	2000	28	1,726.04
2001	38	2,036.96	2001	28	1,932.97
2002	40	1,762.32	2002	30	1,341.48
2003	40	1,800.56	2003	30	1,630.17
2004	39	1,747.48	2004	29	1,346.60
2005	45	1,410.24	2005	29	1,209.63
2006	43	2,674.51	2006	28	1,881.28
2007	50	2,909.12	2007	26	1,327.02
2008	55	4,301.25	2008	28	911.87
2009	58	482.64	2009	30	460.77
2010	59	144.56	2010	30	133.95
2011	62	2,195.06	2011	33	1,219.42
2012	61	7,759.51	2012	33	3,355.27
2013	71	4,109.10	2013	45	2,856.49
2014	75	1,576.28	2014	48	1,006.38
2015	78	1,925.76	2015	50	1,473.52
2016	79	2,187.54	2016	51	1,779.00
2017	79	3,156.60	2017	51	2,439.28
2018	79	427.68	2018	52	419.39
2019	79	339.6	2019	52	332.97
2020	78	3,353.21	2020	51	1,972.48
2021	80	5,316.2	2021	54	3,026.74
Min	36	0	Min	26	0
Max	80	7,760	Max	52	3,355
Avg (1979 to 2021)	50.6	1,812	Avg (1979 to 2021)	35	1,251
Avg (2012 to 2021)	76	3,015	Avg (2012 to 2021)	49	1,866

Hydrologic Budget Summary

The average annual recharge rate to the unconfined portion of the Lower Vermillion Missouri aquifer is approximately 4,580 acre-feet per year. The average annual recharge rate to the confined portion of the Lower Vermillion Missouri aquifer is approximately 1,958 acre-feet per year. In its entirety, the average annual recharge rate to the Lower Vermillion Missouri aquifer (within the historic Lower Vermillion Missouri aquifer boundary delineated by Hedges and others' (1982) minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer boundary) is approximately 6,538 acre-feet per year.

Based on the historic aquifer boundary delineation (Hedges et al., 1982), the average annual withdrawal rate from the Lower Vermillion Missouri aquifer totals approximately 4,732 acre-feet per year: non-irrigation: 1,224.4 acre-feet/year; irrigation (2012 to 2021 plus three approved in 2022): 3,347 acre-feet/year; Water Permit Application No. 8672-3 (if approved, assuming one-foot application rate per authorized acre): 160 acre-feet/year.

Based on the historic Lower Vermillion Missouri aquifer boundary minus the Upper Vermillion Missouri: South aquifer delineated by Buhler (2014), the average annual withdrawal rate from the Lower Vermillion Missouri aquifer totals approximately 2,405 acre-feet per year: non-irrigation: 48.6 acre-feet/year; irrigation (2012 to 2021 plus three approved in 2022): 2,198 acre-feet/year; Water Permit Application No. 8672-3 (if approved, assuming one-foot application rate per authorized acre): 160 acre-feet/year.

The average annual recharge rate to the Lower Vermillion Missouri aquifer (within the historic Lower Vermillion Missouri aquifer boundary delineated by Hedges and others' (1982) minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer boundary) is higher than the withdrawal rates estimated for the historic Lower Vermillion Missouri aquifer boundary, and the historic Lower Vermillion Missouri aquifer boundary minus the Upper Vermillion Missouri: South aquifer delineated by Buhler (2014). Based on the hydrologic budget, there is a reasonable probability unappropriated water is available from the Lower Vermillion Missouri aquifer for the proposed appropriation.

OBSERVATION WELL DATA:

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

Observation wells provide data on how the aquifer reacts to regional climatic conditions and local pumping. The DNR-Water Rights Program monitors ten observation wells completed into the Lower Vermillion Missouri aquifer plus two other observation wells (CI-80J and CI-66AR) that are within the historic aquifer boundary delineated by Hedges and others (1982) but are now within the Upper Vermillion Missouri: South aquifer boundary as defined by Buhler (2014) (Water Rights, 2022b). The Lower Vermillion Missouri aquifer observation wells that are completed within the historic Lower Vermillion Missouri aquifer boundary delineated

by Hedges and others' (1982) minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer boundary are UN-77I, UN-77H, UN-77K, CL-80G, CL-57A, CL-66BR, CL-80F, CL-80H, CL-80IR, and CL-57B (Water Rights, 2022b). The three closest observation wells to the proposed diversion point are CL-80IR (approximately 1.3 miles northeast), CL-57B (approximately 3.4 miles northeast), and CL-80H (approximately 4.8 miles east) (as shown in Figure 6) (Water Rights, 2022b). The hydrographs for these observation wells are displayed in Figures 3 to 5 (Water Rights, 2022b). The data points utilized to construct the hydrographs are measurements of the static water level in the observation wells from the top of the well casing. It is worth noting the hydrograph titles display DENR Water Rights Observation Well on the hydrographs when the titles should display DANR Water Rights Observation Well on the hydrographs.

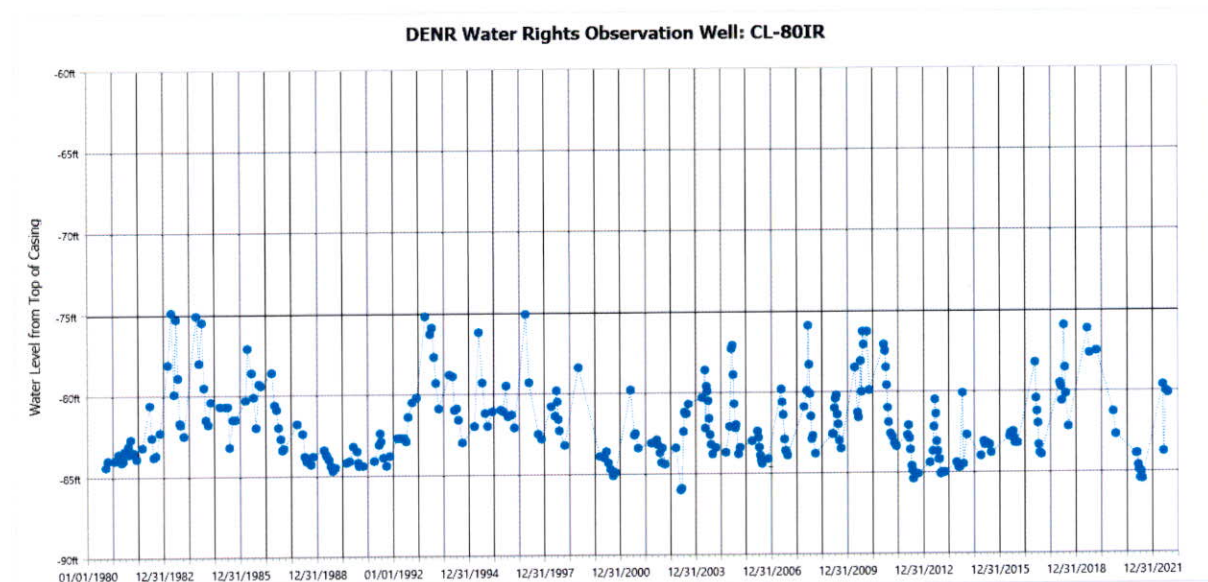


Figure 3. Hydrograph for observation well CL-80IR (Water Rights, 2022b)

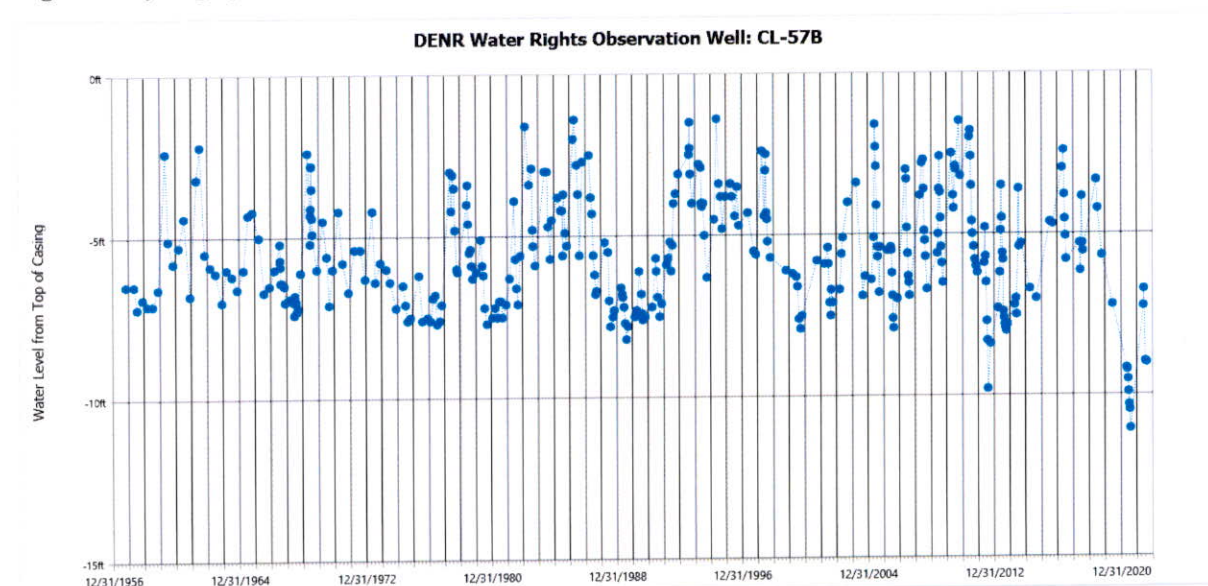


Figure 4. Hydrograph for observation well CL-57B (Water Rights, 2022b)

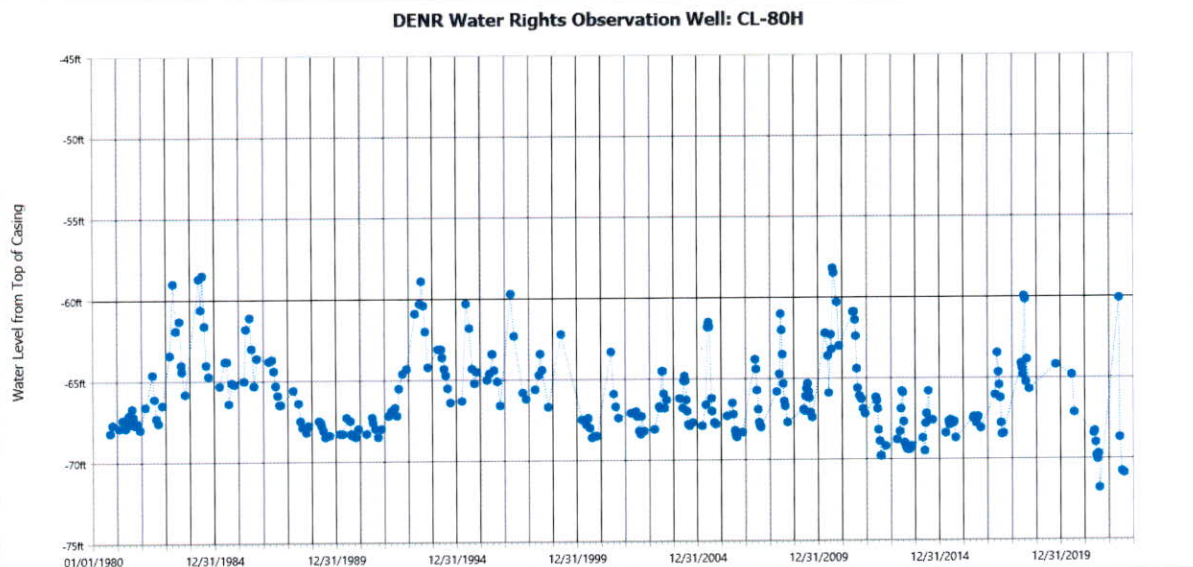


Figure 5. Hydrograph for observation well CL-80H (Water Rights, 2022b)

The hydrographs for the observation wells display generally stable to slightly decreasing (CL-57B and CL-80H) water levels over their respective periods of record. A decline in water levels (as shown on the hydrographs in Figures 4 and 5) in a confined aquifer does not necessarily indicate a significant decrease in water stored in the aquifer, as water levels above the top of the aquifer materials are representative of the hydraulic head (water pressure) inside the aquifer. Additionally, the slight decrease in water levels shown on the hydrographs in Figures 4 and 5 for observation wells CL-57B and CL-80H is likely in response to nearby permits becoming developed in the last five years and their pumping being more apparent on the hydrograph due to the drier climate – it is expected the aquifer is equilibrating to the new pumping under the current climate conditions. Lastly, the most recent water level readings in observation wells completed into the Lower Vermillion Missouri aquifer were measured during the end of the irrigation season in 2022 and no new water level readings have been measured at this time (Water Rights, 2022b).

The hydrographs for these three observation wells were compared to the hydrographs for the other observations wells completed into the Lower Vermillion Missouri aquifer and each displayed a relatively similar trend as shown on the hydrographs displayed in Figures 3 to 5 (Water Rights, 2022b). The hydrographs for the Lower Vermillion Missouri aquifer indicate that the aquifer responds well to climatic conditions because water levels are rising during wetter periods and declining to a stable water level during drier periods. Additionally, the water levels in the observation wells display that the amount of recharge to and natural discharge from the aquifer greatly exceeds pumping with the aquifer returning to pre-pumping conditions between irrigation seasons. Aquifer recovery indicates that climatic conditions and therefore, the effects of recharge to and natural discharges from the aquifer govern the long-term fluctuations of waters levels in the aquifer rather than the impacts of pumping from the Lower Vermillion Missouri aquifer. By recognizing that both recharge to and natural discharge from an aquifer can be captured for pumping, the observation well hydrographs demonstrate unappropriated water is available for the proposed appropriation.

Table 5. Water rights/permits authorized to withdraw water from the LVM aquifer within approximately five miles of the proposed diversion point, as shown in Figure 6 (Water Rights, 2022c)

Permit No.	Name	Status	Use	Authorized Diversion Rate (cfs)	Authorized Annual Volume (acre-feet)	Acres if IRR
2807-3	Abild - Wells Farms	LC	IRR	1.3		91
2966-3	Harold/Beverly Fischer	LC	IRR	1.05		74
2978-3	Arden S Abild	LC	IRR	1.97		138
3037-3	Abild - Wells Farms	LC	IRR	1		68
3039-3	Ronald Alfred Johnson	LC	IRR	2		140
3571-3	Roy Johnson Estate	LC	IRR	3.54		266
3905-3	Clay Rural Water System	LC	RWS	2		N/A
4731-3	Richard/Gayle Johnson	LC	IRR	2		140
5979-3	Clay Rural Water System	LC	RWS	2	307	N/A
6303-3	Thelma R & Ronald Lind	LC	IRR	1.78		132
6808-3	Lovejoy Family Trust	LC	IRR	1.45		135
6821-3	Tim Gregoire	LC	IRR	1.78		83
6985-3	Nels J Sorensen	LC	IRR	1.6		112
7217-3	Thelma R & Ronald Lind	LC	IRR	3.34		202
7230-3	Paul Bremer	LC	IRR	1.33		71
7233-3	Norman Kramer	PE	IRR	1.56		136
7472-3	Paul Bremer	LC	IRR	1.78		134
7477-3	Chad Heckathorn	LC	IRR	1.78		115
7487-3	Bottolfson Brothers	LC	IRR	1.56		140
7504-3	Steven Andrews	PE	IRR	1.78		160
7562-3	John T Lindstrom	LC	IRR	1.33		63
7631-3	Gregoire Farms	LC	IRR	1.61		100
7632-3	Gregoire Farms	PE	IRR	4.44		259
7642-3	Tom Austin	LC	IRR	1.22		63
7679-3	Scott Heritage Farms LLP	PE	IRR	1.67		124.6
7836-3	Craig L Nelson	LC	IRR	1.78		145
8257-3	Thein Well Co Inc	PE	COM	0.089	1	N/A
8459-3	Paul Bremer	PE	IRR	0		40
8484-3	John & Dean Lindstrom	PE	IRR	1.78		120
8589-3	John Lindstrom	PE	IRR	0		50
8632-3	Bottolfson Brothers	PE	IRR	1.78		122.04
LC: Licensed Water Right; PE: Water Permit; COM: Commercial; IRR: Irrigation; RWS: Rural Water System						

The Lower Vermillion Missouri aquifer is primarily under confined conditions but can be locally unconfined particularly near the Vermillion River floodplain (Nichus, 1994; Stephens, 1967). Based on the submitted test hole completion report, the water well and test hole completion reports near the proposed diversion point, and the lithologic logs on file for nearby observation wells, the Lower Vermillion Missouri aquifer is expected to be confined near the proposed diversion point (SDGS, 2022; Water Rights, 2022b and 2022d). The drawdown created by

pumping a well generally does not extend far from the pumped well in an unconfined aquifer; however, in a confined aquifer, drawdown from pumping could extend a distance from the diversion point. The exact drawdown behavior of a well cannot be known without an aquifer performance test. However, observation wells completed into the Lower Vermillion Missouri aquifer near permitted/licensed diversion points can provide some insight on how the aquifer responds to pumping.

Observation well CL-80IR (approximately 1.3 miles northeast of the proposed diversion point) has seven high-yield (assumed to be a well with an authorized diversion rate greater than 0.2 cfs) irrigation wells within approximately two miles of it (Water Rights, 2022b and 2022c). The drawdown from pumping is shown on the hydrograph for CL-80IR, along with the aquifer returning to pre-pumping conditions between irrigation seasons (Figure 3) (Water Rights, 2022b). The lithologic log on file for CL-80IR noted the well was drilled 182 feet deep with the top of aquifer at 90 feet below the ground surface, and had a casing stick up height of approximately 2 feet (SDGS, 2022). The lowest recorded static water level on the hydrograph for CL-80IR (Figure 3) is approximately 86 feet below the top of the well casing, which indicates there was still approximately six feet of artesian head pressure in CL-80IR even during drier periods when high-yield irrigation wells are expected to be pumping more water (Water Rights, 2022b).

In Clay County, the Lower Vermillion Missouri aquifer has an average saturated thickness of approximately 100 feet (Stephens, 1967). Within approximately two miles of the proposed diversion point, the saturated aquifer thickness ranges between 15 to 90 feet (Water Rights, 2022d). This thickness generally allows for a pump inlet to be placed 20 feet below the top of the aquifer, which is required for the well to be considered adequate under ARSD 74:02:04:20(6). Any drawdown as a result of the proposed diversion is not expected to unlawfully impair nearby adequate wells. In Clay and Union Counties, there are no complaints on file with the DNR-Water Rights Program regarding well interference for adequate wells completed into the Lower Vermillion Missouri aquifer (Water Rights, 2022e).

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

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

The Water Management Board considered the delivery of water by artesian head pressure versus maximum beneficial use during the issuance of Water Right No. 2313-2 for Coca-Cola Bottling Company of the Black Hills. The Board adopted the Findings of Facts and Conclusions of Law

that noted the reservation of artesian head pressure for delivery of water would be inconsistent with SDCL 46-1-4 which states, “general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable...” (Water Rights, 1995). Furthermore, the Water Management Board found if increased cost or decreased production as a result of impacts on artesian head pressure by legitimate users is to be considered as an unlawful impairment, it would also conflict with SDCL 46-1-4 (Water Rights, 1995). With that in mind, some existing well owners may need to install or lower pumps depending on the specific characteristics of the Lower Vermillion Missouri aquifer at their location. However, when considering the statutes (SDCL 46-1-4 and 46-6-6.1), rules (ARSD 74:02:04:20(6) and (7)), the estimated saturated aquifer thickness of the Lower Vermillion Missouri aquifer in Clay County, and the lack of well interference complaints for adequate wells completed into the Lower Vermillion Missouri aquifer in Clay and Union Counties, any drawdown created from the proposed diversion is not expected to cause an unlawful impairment on existing water right/permit holders or domestic users with adequate wells. Therefore, there is a reasonable probability that any interference from the proposed appropriation will not impose unlawful impairments on existing users with adequate wells.

CONCLUSIONS:

1. Water Permit Application No. 8672-3 proposes to divert water at a maximum instantaneous diversion rate of 2.0 cfs from one well to be completed into the Lower Vermillion Missouri aquifer (approximately 152 feet deep) for the irrigation of 160 acres. The site of interest is located in Clay County approximately nine miles north of Vermillion, SD.
2. Based on the hydrologic budget and observation well data, there is a reasonable probability that unappropriated water is available from the Lower Vermillion Missouri aquifer to supply the proposed appropriation.
3. There is a reasonable probability that the proposed diversion by Water Permit Application No. 8672-3 will not unlawfully impair adequate wells for existing water right/permit holders and domestic users.



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

Reviewed by:



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

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Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, December 12, 2022 10:40 AM
To: pbpfarms@gmail.com
Subject: Water Permit Application
Attachments: 4507.pdf

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

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



AFFIDAVIT OF PUBLICATION

PLAIN TALK

RUS FARMS REAL ESTATE
3283 DOGWOOD AVE
ROCK VALLEY IA 51247

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JAN 09 2023

OFFICE OF
WATER

STATE OF SOUTH DAKOTA
COUNTY OF CLAY

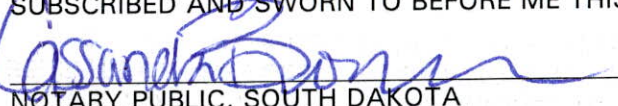
BETH RYE, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE ADVERTISING DIRECTOR OF YANKTON
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
PLAIN TALK, A LEGAL WEEKLY NEWSPAPER PUBLISHED AND CIRCULATED
IN THE CITY OF VERMILLION, SAID COUNTY AND STATE, AND ONE OF
THE OFFICIAL NEWSPAPERS OF THE SAID COUNTY OF FACTS STATED IN
THIS AFFIDAVIT; THAT THE ANNEXED
NOTICE OF APPLICATION NO.

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 23rd DAY OF December, 2022
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$40.00 ENSURES TO THE
BENEFITS OF THE PUBLISHER OF SAID NEWSPAPER AND THAT NO
AGREEMENT AND UNDERSTANDING FOR THE DIVISION THEREOF HAS
BEEN MADE WITH ANY OTHER PERSON, AND THAT NO PART THEREOF
HAS BEEN AGREED TO BE PAID TO ANY PERSON WHOMSOEVER.

PUBLISHED ON: 12/23/2022

FILED ON: 01/04/2023


SUBSCRIBED AND SWORN TO BEFORE ME THIS 4th DAY OF January, 2023


NOTARY PUBLIC, SOUTH DAKOTA
MY COMMISSION EXPIRES 07/04/2026

Notice is given that Rus Farms Real Estate LLC, c/o Brett Petersen, Operator, 3283 Dogwood Ave. Rock Valley IA 51247 has filed an application for a water permit to appropriate 2.0 cubic feet of water per second from one well to be completed into the Lower Vermillion Missouri Aquifer (152 feet deep) located in the approximate center of the SW 1/4 Section 34 for irrigation of 160 acres located in the SW 1/4 Section 34; all in T94N-R52W. This site is located approximately 9 miles north of Vermillion SD.

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WATER

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8672-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineers recommendation with qualifications, the application, and staff report are available at <https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by January 2, 2023.

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

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at <https://danr.sd.gov/public> or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by January 2, 2023.

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Published once at the total approximate cost of \$40.00 and can be viewed free of charge at www.sdpublicnotices.com

Published December 23, 2022.

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

RUS FARMS REAL ESTATE LLC
C/O BRETT PETERSEN
3283 DOGWOOD AVE
ROCK VALLEY IA 51247

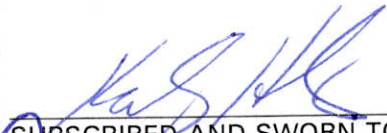
STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

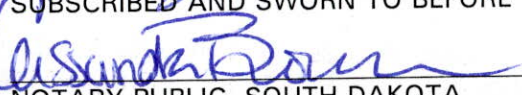
KELLY HERTZ, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE MANAGING EDITOR OF YANKTON
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
YANKTON DAILY PRESS AND DAKOTAN, A LEGAL DAILY NEWSPAPER
PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY
AND STATE, AND ONE OF THE OFFICIAL NEWSPAPERS OF THE SAID
COUNTY OF FACTS STATED IN THIS AFFIDAVIT; THAT THE ANNEXED
NOTICE OF APPLICATION NO.

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 23rd DAY OF December, 2022
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$40.00 ENSURES TO THE
BENEFITS OF THE PUBLISHER OF SAID NEWSPAPER AND THAT NO
AGREEMENT AND UNDERSTANDING FOR THE DIVISION THEREOF HAS
BEEN MADE WITH ANY OTHER PERSON, AND THAT NO PART THEREOF
HAS BEEN AGREED TO BE PAID TO ANY PERSON WHOMSOEVER.

PUBLISHED ON: 12/23/2022

FILED ON: 12/23/2022


SUBSCRIBED AND SWORN TO BEFORE ME THIS 23rd DAY OF December, 2022


NOTARY PUBLIC, SOUTH DAKOTA
MY COMMISSION EXPIRES 07/04/2026

RECEIVED

DEC 30 2022

OFFICE OF
WATER

Ad text : NOTICE OF APPLICATION
NO. 8672-3 to Appropriate Water

Notice is given that Rus Farms Real Estate LLC, c/o Brett Petersen, Operator, 3283 Dogwood Ave, Rock Valley IA 51247 has filed an application for a water permit to appropriate 2.0 cubic feet of water per second from one well to be completed into the Lower Vermillion Missouri Aquifer (152 feet deep) located in the approximate center of the SW 1/4 Section 34 for irrigation of 160 acres located in the SW 1/4 Section 34; all in T94N-R52W. This site is located approximately 9 miles north of Vermillion SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8672-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineers recommendation with qualifications, the application, and staff report are available at <https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by January 2, 2023.

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Published December 23, 2022.

RECEIVED
DEC 30 2022
OFFICE OF
WATER

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, December 12, 2022 10:34 AM
To: Cassandra Brockmoller (cassandra@yankton.net)
Subject: FW: 8672-3, Rus Farms Real Estate
Attachments: 8672-3public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on December 23, 2022.

Rus Farms Real Estate LLC, c/o Brett Petersen, 3283 Dogwood Ave, Rock Valley IA 51247 (605 351-6026) has been notified to contact you to authorize publication and arrange for payment.

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

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

Karen Schlaak

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



Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, December 12, 2022 10:34 AM
To: 'Kelly Kronaizi'
Subject: 8672-3, Rus Farms Real Estate
Attachments: 8672-3public.short_final.docx; FORM8.FRM.doc

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Karen Schlaak

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





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

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

December 12, 2022

Rus Farms Real Estate LLC
c/o Brett Petersen, Operator
3283 Dogwood Ave
Rock Valley IA 51247

Dear Mr. Petersen:

Water Permit Application No. 8672-3 for irrigation use have been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Plain Talk printed at Vermillion (Ph # 605 624-2695) and the Press & Dakotan printed at Yankton (Ph # 605 665-7811). You will need to contact the newspapers and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

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

Sincerely,

Karen Schlaak

Karen Schlaak
Water Rights Program
(605) 773-3352

enclosures

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

NOTICE OF APPLICATION NO. 8672-3 to Appropriate Water

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Published once at the total approximate cost of_



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

JAN 19 2023

Rus Farms Real Estate LLC
Marion J Rus
3283 Dogwood Ave
Rock Valley IA 51247

Dear Mr. Rus:

Enclosed is Water Permit No. 8672-3 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

email: Brett Petersen, Operator

Schlaak, Karen

From: Schlaak, Karen
Sent: Thursday, January 19, 2023 8:00 AM
To: PBP Farms
Subject: Water Permit No. 8672-3
Attachments: Untitled Extract Pages.pdf

Attached is a copy of approved Water Permit No. 8672-3, Rus Farms Real Estate LLC.

Karen Schlaak

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





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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PIERRE SD 57501-3182
danr.sd.gov

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

**Affidavit of Public Notice
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.: 8672-3

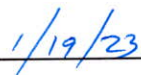
Name of Applicant: Rus Farms Real Estate LLC, Brett Petersen, Operator

Date of Posting: 12/20/2022

Date of Removal: 1/19/2023



Ron Duvall, Water Rights Permitting Administrator

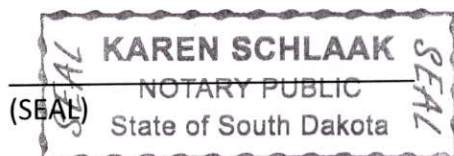


Date

Subscribed and sworn to before me, a notary public, this 19th day of Jan, 20 23.



Notary Public - South Dakota
My commission expires: 4/1/2025





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

January 19, 2024

NOTICE

TO: RUS FARMS REAL ESTATE LLC, MARION J RUS, 3283 DOGWOOD AVE, ROCK VALLEY, IA 51247

FROM: Ron Duvall, Engineer III
for Eric Gronlund, Chief Engineer
Water Rights Program

SUBJECT: Reporting Requirement for 2023 Irrigation Questionnaire(s)

Our records indicate your 2023 Irrigation Questionnaire(s) has not been submitted for Permit No(s) 6565-3, 8672-3, 8687-3. The request for the Questionnaire was dated October 20, 2023. The Water Management Board has directed owners of water permits who have not submitted the 2023 Irrigation Questionnaire(s) be given notice of permit violation and a hearing to be held by the Board. The hearing is to determine what action is to be taken for violation of Water Permit No(s) 6565-3, 8672-3, 8687-3 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

The hearing will be held at **Wednesday, March 6, 2024 at 9:30 am (Central Time)** in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol Avenue, Pierre, SD and will be conducted pursuant to SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to Chapter 1-26. According to SDCL 46-1-12, the Board may suspend a permit for a period of up to one year for the first violation of a permit qualification or up to three years for a second violation or cancel a permit for a third violation. Following the hearing, the Water Management Board can:

1. Suspend or cancel Permit No(s) 6565-3, 8672-3, 8687-3 in accordance with applicable provisions of SDCL 46-1-12;
2. Postpone any action; or
3. Take no action.

The hearing is an adversary proceeding. The permit owner has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

If the questionnaire(s) is (are) received in this office before the **March 6, 2024** hearing you will no longer be in violation of your permit and your name will be removed from the Board agenda. Enclosed are additional questionnaire(s) for your use. If you have questions or need assistance, please contact Amanda Dewell at (605) 773-3352 or email at amanda.dewell@state.sd.us. **If you prefer, you can complete the questionnaire online at the following link: <https://danr.sd.gov/iq> using this password: UIMLNR**

NOTE: Please contact the Water Rights Program, Joe Foss Building, 523 E Capitol, Pierre, SD (605-773-3352) to assure access to the meeting room for the handicapped or to obtain an interpreter for the hearing impaired.



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

January 23, 2024

6565-3, 8672-3 & 8687-3

Rus Farms Real Estate LLC
c/o Marion Rus
3283 Dogwood Ave
Rock Valley IA 51247

Dear Mr. Rus:

I am writing to acknowledge the receipt of your 2023 irrigation questionnaire(s).

You may disregard the January 19, 2024, "Notice" concerning the reporting requirements for Water Permit No(s). 6565-3, 8672-3 & 8687-3. The information was received prior to the March 6, 2024, Water Management Board meeting and these permit number have been removed from the agenda.

If you have any questions, please contact me.

Sincerely,

Amanda Dewell
Water Rights Program
605 773-3352
Amanda.Dewell@state.sd.us

Cc: Brett Petersen; 45656 US HWY 18, Hurley SD 57036

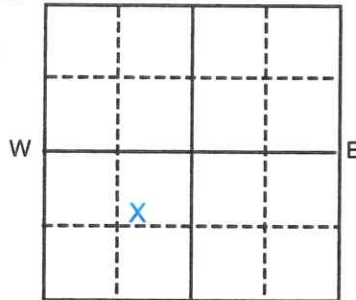
86 72-3

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 34 Twp 94 Rg 52County CLAY

North

Please mark well
location with an "X"

Well Completion Date

6/8/2023

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?

2000 ft. from NORTH OF SEPTIC (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

TREMIE PIPED

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	<u>12</u> IN	<u>0</u> FT	<u>90</u> FT	<u>17.75</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>BENTONITE</u>	<u>25</u>	Lb/gal	<u>0</u> Ft	<u>85</u> Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

SCREEN:

☐ Perforated pipe ☒ ManufacturedDiameter 12 Inches Length 40 FeetMaterial PVC SLOTTEDSlot Size .050 Set From 90 Feet to 130 FeetOther information 12" 20' STAINLESS STEEL .040 SLOT
130' TO 150'

WAS A PACKER OR SEAL USED?

☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☐ Yes, How?☒ No, Why Not?Lab to which water
quality sample sent for analysisIRRIGATION WELLWell Owner: BRETT PETERSEN

Business Name:

Address: 45610 282ND STCity, State, Zip: HURLEY ☒ SD ☒ 57036

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
TOP SOIL	0	3
CLAY BROWN	3	28
CLAY GRAY	28	33
CLAY BLUE	33	80
GRAVEL	80	93
SAND	93	126
GRAVEL	126	152

STATIC WATER LEVEL 84 FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced flow rate _____ GPM

Can well be completely shut in?

WELL TEST DATA:

☐ Pumped Describe: N/A☐ Bailed☐ Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

GPS 12" WELL SEC 34 MARIAN RUSS
N 42 54.8130 W 96 58.7000This well was drilled under license # 475 and this
report is true and accurate.Drilling firm: THEIN WELL COMPANY, INCORPORATED

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

RECEIVED

Date:

MAY 24 2024OFFICE OF
WATER

Brett Petersen / Marian Russ Sec 34 Vermillion 12" well

Write a description for your map

Legend

N 42 54.8130 W 96 58.7000  Brett Petersen 150' 12" well June 2023
Brett Petersen (Marlon Russ) Th # 1 160'

309th St

309th St

461st Ave

461st Ave

461st Ave

Google Earth

RECEIVED

MAY 24 2024

OFFICE OF
WATER



3000 ft