

WATER PERMIT NO. 8517-3

Name of Applicant: **Bratberg Family Protection Trust**

Address: **45055 SD Hwy 50, Gayville SD 57031**

Phone: **605 760-3553**

Amount of Water Claimed: **1.78 cfs**

Total Acres: **132 acres**

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

Water to be used for: **irrigation**

County: **Yankton**

Type of Waste Disposal System:

Location: **3 miles northwest of Volin SD**

PRIORITY

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

Application/License Fee: **\$ 1050**

Corrected Application Received: **6-7-21**

Period of Annual Use: **May 1 – Sept 30**

Remarks:

Diversion Point: **center NW 1/4 Sec 9-T94N-R54W**

Land to be Irrigated: **NW 1/4 Sec 9-T94N-R54W**

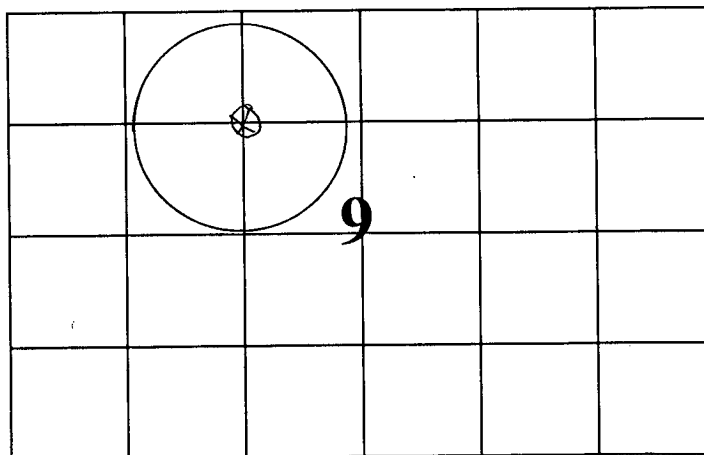
Depth of Well: **125 feet deep**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by:



Reviewed and the Number Assigned on: **6-7-91**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

**SOUTH DAKOTA
WATER PERMIT NO. 8517-3**

Date of first receipt of application June 1, 2021.

Date of return to applicant for corrections, amendments or changes June 2, 2021.

Date of receipt of corrected application June 7, 2021.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8517-3 to Bratberg Family Protection Trust, c/o Shad Bratberg, 45055 SD Hwy 50, Gayville SD 57031 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. 8517-3 appropriates 1.78 cubic feet of water per second from one well to be completed into the Missouri:Elk Point Aquifer (approximately 125 feet deep) located in the approximate center of the NW 1/4 Section 9 for irrigation of 132 acres located in the NW 1/4 Section 9; all in T94N-R54W. This site is located approximately 3 miles northwest of Volin 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 June 1, 2021.
4. The date of approval of Permit No. 8517-3 is August 16, 2021.
5. One-fifth of the construction is to be completed on or before February 16, 2024.
6. All construction is to be completed on or before August 16, 2026.
7. Water is to be put to beneficial use on or before August 16, 2030.
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. 8517-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 8517-3 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

SEP 08 2021

date



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

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JUN 01 2021

WATER RIGHTS
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PAID

JUN 1 2021

Ck# 2233

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8517-3</u> (office use only) Hydrologic Unit <u>10170102</u>
	Basin <u>Vermillion River</u>
	Newspaper <u>Press & Dakotans</u>

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.)

- Name to Appear on Irrigation Permit Bratberg Family Protection Trust
Note: The "Name to Appear on Irrigation Permit" must be the name in which the property to be irrigated is held in.
Mailing Address 45055 SD Hwy 50 Gayville SD 57031
(Address) (City) (State) (Zip Code)
Phone 605-760-3553 Mobile 605-760-3553 Email tammylbratberg@gmail.com
- Amount of water claimed 1.78 *CFS or 800 **GPM ***AF Total Acreage 132
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply Missouri 1 Aquifer
- Location of point of diversion Center of NW 1/4 Section 9 - 94 - 54
(example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W)
County Yankton
- County or counties where water will be used Yankton
- Annual period during which water is to be used May 1 through 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
9-94-54 SW 40	33.0	all in NW 1/4 Sec 9-T94N-R54W	
9-94-54 SE 40	33.0		
9-94-54 NE 40	33.0		
9-94-54 NW 40	33.0		

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

IRRIGATION

Bratberg Family Protection Trust

I, by Shad Bratberg owner, 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.

2015-10

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)

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

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

b) If existing wells, how many _____ Provide copy of log(s), if available. Drilled by _____

For either Existing or Proposed Wells:

☒ c) Well Depth (required) 125' Depth to Top of Water Bearing Material _____ Depth to Water from Surface _____

d) Distance to nearest domestic well on applicant's property _____ Property owned by others _____

2. Wastewater Disposal System Information

a) Type of System (i.e. septic tank, drain field) _____

b) System Capacity (gallons) _____ Year Constructed _____

c) Connected to the City of _____ Sanitary System

3. Dugout Information

a) Surface Dimensions _____ Depth _____

b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

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

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

b) Freeboard _____

c) Crest Width _____

Crest Length _____

d) Height _____

e) Primary Outlet Capacity _____

If pipe, diameter _____

f) Secondary Spillway Capacity _____

Spillway Width _____

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

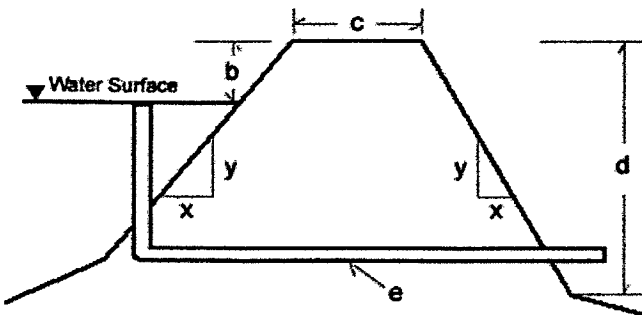
Upstream _____

Downstream _____

h) Surface Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres





Common Land Unit

- Non-Cropland
- Cropland

- Tract Boundary
- PLSS

Wetland Determination Identifiers

- Restricted Use
- Limited Restrictions
- Exempt from Conservation
- Compliance Provisions

United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) imagery. The producer accepts the data 'as is' and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

2017 Program Year

Map Created January 09, 2017

Farm 5753

9 -94 -54

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date June 1, 2021

RECEIVED OF Shad/Tammy Bratberg 45055 SD Hwy 50 Gayville SD 57031

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

Fee for Application for Permit No. <u>8517-3</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>8517-3</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 Bronlund
Chief Engineer
EBM



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

June 2, 2021

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JUN 07 2021

**WATER RIGHTS
PROGRAM**

Bratberg Family Protection Trust
Shad Bratberg
45055 SD Hwy 50
Gayville SD 57031

Dear Mr. Bratberg:

Thank you for submitting the *Application for a Permit to Appropriate Water* for irrigation in Yankton County. To complete the application, the following is required.

- Enclosed is the Form 2A, Supplemental Information. On Item No. 1 regarding the Well Information, please complete c) Well Depth. Your well driller should be able to give you an estimate depth for your proposed well location.
- Also, if you have an email address, please include that information.

If you have any questions, please contact me.

Sincerely,

↓
tammybratberg@gmail.com

Karen Schlaak

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

enclosure



**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. 8517-3, Bratberg Family Protection Trust**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 8517-3, Bratberg Family Protection Trust, 45055 SD Hwy 50, Gayville SD 57031.

The Chief Engineer is recommending APPROVAL of Application No. 8517-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The well approved under Water Permit No. 8517-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 8517-3 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

Eric Gronlund, Chief Engineer
July 29, 2021

**REPORT TO THE CHIEF ENGINEER
WATER PERMIT APPLICATION NO. 8517-3
BRATBERG FAMILY PROTECTION TRUST
JULY 12, 2021**

Water Permit Application No. 8517-3 proposes to appropriate water, for the irrigation of 132 acres, at a maximum instantaneous diversion rate of 1.78 cubic feet per second (cfs) from the Missouri: Elk Point aquifer. The applicant intends to divert water from a single well, approximately 125 feet-deep, to be located at the approximate center of NW $\frac{1}{4}$ with the irrigated acres also located in the NW $\frac{1}{4}$; all in Section 9, T94N-R54W. The site is located approximately three miles northwest of Volin, SD.

AQUIFER: Missouri: Elk Point (M: EP)

Aquifer Characteristics

The Missouri: Elk Point aquifer is a deposit of glacial outwash composed of fine sand to very coarse gravel (Niehus, 1994). It underlies approximately 219,100 acres of Yankton, Clay, and Union counties (Figure 1) with an estimated 3,287,100 million acre-feet of recoverable water in storage (Hedges et al., 1982). It is hydraulically connected to the Lower Vermillion Missouri and Lower James Missouri aquifers, and the Missouri, Vermillion, and Big Sioux Rivers (Niehus, 1994; Stephens, 1967). The movement of groundwater within the aquifer is generally from the northwest to the southeast, and towards the Missouri River (Stephens, 1967). Both confined and unconfined groundwater conditions are present in the aquifer (Niehus, 1994; Stephens, 1967). Existing well completion reports in the vicinity of the proposed application show an average of 60 feet of silty, sandy clay overlying water bearing sand with gravel with an average depth to the groundwater surface of 26 feet (Water Rights, 2021a and 2021b). This indicates an average of 34 feet of artesian head pressure and that the proposed site is under confined conditions.

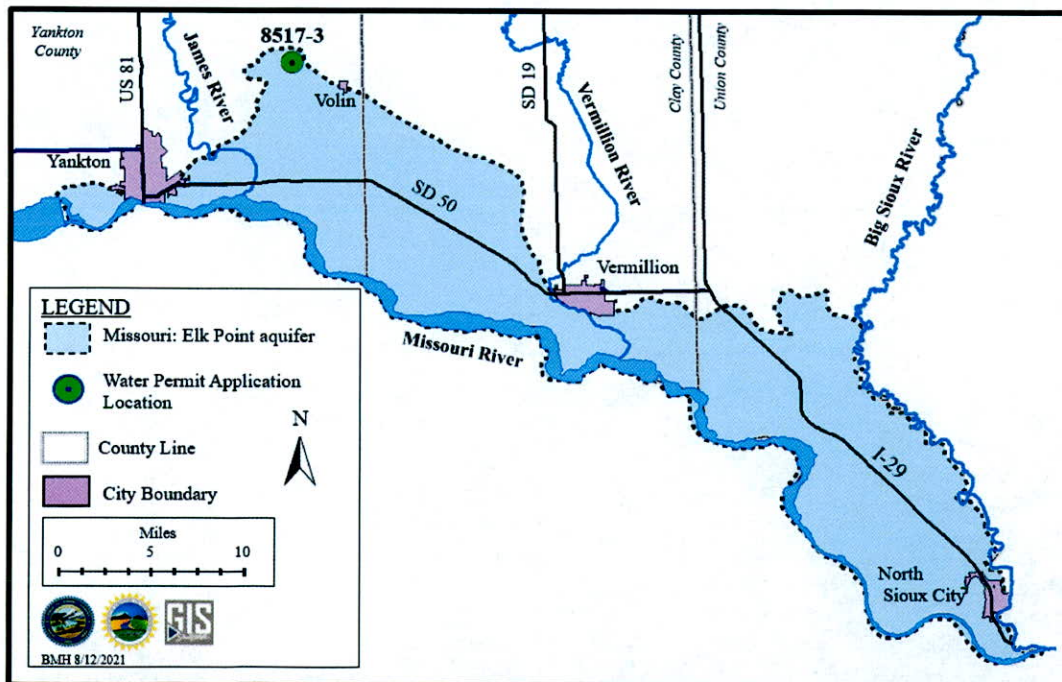


Figure 1. Water Permit Application No. 8517-3 shown within the Missouri: Elk Point aquifer boundary (modified from: Hedges et al., 1982).

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 reasonable probability that there is unappropriated water available for the applicant's proposed use, that the proposed diversion can be developed without unlawful impairment of existing rights, and that the proposed use is a beneficial use and in the public interest. This report will address water availability and potential for unlawful impairment of existing water rights within the Missouri: Elk Point aquifer.

WATER AVAILABILITY

Water Permit Application No. 8517-3 proposes to appropriate water from the Missouri: Elk Point aquifer. The probability of unappropriated water being available from an 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..." If the source of the water is older or lower than the Greenhorn Formation and a water distribution system has applied for a permit, the Board need not consider the balance of recharge to and withdrawal from the aquifer. For this application, a water distribution system is not involved and the aquifer is not older or lower than the Greenhorn Formation; therefore, the balance of recharge and withdrawal must be considered.

Hydrologic Budget

Recharge:

The Missouri: Elk Point aquifer is recharged by infiltration of precipitation where the aquifer is at or near the land surface, inflow from the Lower Vermillion Missouri and Lower James Missouri aquifers, and seepage from the Missouri, Vermillion, James, and Big Sioux Rivers (Bugliosi, 1983; Niehus, 1994). Recharge to the aquifer was estimated by Hedges et al. (1985) to be approximately 3.8 inches per year. With the areal extent of the aquifer estimated at 219,100 acres, the annual recharge rate can be estimated at 69,382 acre-feet/year (ac-ft/yr). Stephens (1967) noted that pumping of the aquifer will induce recharge from the Missouri River. Stonesifer (2013) estimated that the Missouri River contributed 22,582 ac-ft/yr of recharge due to the pumping operation of the Lewis and Clark Rural Water System (RWS). This estimate is based off inducing at least 50% recharge of the water pumped at full development of the existing and future use permits held by Lewis & Clark RWS. Depending on location and diversion rate, this percentage of induced recharge is likely to be much greater than 50% because the amount of recharge induced by non-Lewis & Clark RWS wells has not been estimated (Mathiowetz, 2020). This results in a total estimated annual recharge of approximately 92,000 ac-ft/yr for the Missouri: Elk Point aquifer. There are other wells, both domestic and appropriative, in close vicinity to the Missouri River that can induce recharge from the river, but that amount of induced recharge has not been estimated.

Discharge:

Discharge from the Missouri: Elk Point aquifer occurs through evapotranspiration in areas where the aquifer is near land surface, well withdrawals, leakage to the underlying Dakota aquifer and outflow to the Missouri and Big Sioux Rivers (Bugliosi, 1986; Niehus, 1994). Currently, there are a total of 629 water rights/permits (39 non-irrigation, 585 irrigation, and 5 future use) appropriating water from the Missouri: Elk point aquifer (Water Rights, 2021a). A summary of the non-irrigation water rights/permits are listed in Table 1. The total estimated volume of water to be withdrawn

can be determined by assuming that water rights/permits limited by an annual volume will pump the entire volume appropriated annually or that water rights/permits limited by diversion rate will pump at the maximum permitted diversion rate 60 percent of the time.

Water Permit No. 7059-3 is for recreational use for maintaining the water level of a small lake with a surface area of 17.6 acres. It is assumed that the only consumptive use of this water is due to evaporation (Farmer, 2018). Annual evaporation of water from shallow lakes is estimated to be 42 inches per year at this location (NOAA, 1982) and average annual total precipitation at the Sioux City, IA airport was determined to be 27.74 inches over the 30 year period of 1981 to 2010 (Arguez et al, 2010), resulting in an approximate expected use of 20.9 ac-ft per year.

The total estimated volume of 48,361 ac-ft/yr, shown in Table 1, also takes into consideration the thirteen non-irrigation permits that are required to report their annual usage from the Missouri: Elk Point aquifer. The full authorized appropriation of nine of these permits, either limited by an annual volume or a diversion rate, are shown in Table 1. Five are commercial use permits (8031-3, 8381-3, 8403-3, 8415-3, and 8435-3) that are currently under development and, due to no history of reported use, their combined estimated use of 163 ac-ft/yr, is included in Table 1. Permit No. 8147-3, is a commercial use permit, limited by an annual volume of 160 ac-ft/yr. Lewis and Clark RWS appropriates 32,165 ac-ft/yr from Permit Nos. 6736-3 (20,165 ac-ft/yr) and 7207-3 (12,000 ac-ft/yr). Even though the average reported pumping rate is 13,514 ac-ft/yr (Water Rights, 2012-2020) this system is continually undergoing development, as a result, their full authorized appropriation is included in Table 1. The City of Yankton is limited by an annual volume of 6,050 ac-ft/yr of water under municipal use Permit No. 8212-3. The Clay RWS maintains Permit Nos. 5998A-3 and 7388-3, which combine to appropriate 1,286.8 ac-ft/yr. However, the average reported use of 322 ac-ft/yr, from 2012-2020, it is relatively stable, not increasing, and is considered most reflective of the infrastructure currently in place for these two permits (Water Rights, 2012-2020). Permit No. 7388-3 is authorized to withdraw an estimated total of 869 ac-ft/yr, assuming a 60 percent pumping rate. Permit No. 5998A-3, permitted for turf irrigation and domestic use, is required to report its total annual use as a non-irrigation permit due to serving several homes in a housing development (Water Rights, 2021a). The estimated volume for this permit is included here, rather than with the other turf permits, because it has an annual reported use. The City of Vermillion has two permits (Permit No. 147-3 appropriating 1,156 ac-ft/yr assuming a 60 percent pumping rate, and Permit No. 6236-3 limited annually to 1,161 ac-ft/yr) authorized to appropriate a combined 2,317 ac-ft/yr. However, an average value of 1,219 ac-ft/yr reported from 2006-2020, is considered more reflective of the actual use (Water Rights, 2006-2020). Therefore, this total estimated volume of 48,361 ac-ft/yr will be included in the water balance for non-irrigation permits.

Table 1. Non-irrigation water rights/permits from the Missouri: Elk Point aquifer with permitted appropriation and estimated volume water use (Water Rights, 2006-2020, 2011-2020 and 2021a, Drinking Water 2021).

Estimated Volume Water Use (Water Rights, 2006-2020, 2011-2020 and 2021a, Drinking Water 2021).							
Permit No.	Name	Appropriation limited by Annual Volume (ac-ft/yr)	Appropriation limited by Diversion Rate (cfs)	Total Estimated Volume (ac-ft/yr)	Use ^d	Status ^d	
4501-3	EDDIE WOHL		0.05	21.72	COM	LC	
5616-3	CIMPLS INC		0.44	191.14			
5827-3	DON LANTIS		0.02	9.56			
5953-3	H & K OIL CO		0.04	16.07			
6151-3	VERNON & NORMA VAKOC		0.67	291.05			
6580-3	WEST SHORE ACRES LLC		0.10	43.44			
8031-3	DAKOTA PROTEIN CONVERSION INC		0.22	95.57		PE	
8147-3	DOUG LAFLEUR	160		160.00			
8381-3	R P CONSTRUCTORS	1		1.00			
8403-3	STOCKMEN'S LIVESTOCK INC	40		40.00			
8415-3	RC INVESTMENTS LLC	25		25.00			
8435-3	SIOUX CITY INSULATION	1		1.00			
6744-3	JUDITH I GRANT		0.78	338.83	DOM		
7388-3	CLAY RURAL WATER		2.00	322.30			
5998A-3	SYSTEM INC ^a		2.22		IRR		
7059-3	WE INVESTMENTS LLC ^b		3.11	20.90	REC		
6736-3	LEWIS & CLARK RWS	20,165		20,165.00	RWS		
7207-3	LEWIS & CLARK RWS	12,000		12,000.00			
5490-3	US GEOLOGICAL SURVEY		0.09	39.10	FWP	LC	
5907-3	US FISH/WILDLIFE SERVICE		3.78	1,642.03			
6733-3	US FISH/WILDLIFE SERVICE		1.11	482.18			
7094-3	US FISH/WILDLIFE SERVICE		2.67	1,159.85			
5021-3	VISHAY-DALE ELECTRONICS INC		0.10	43.44	IND		
5388-3	L G EVERIST INC		0.45	195.48			
5453-3	AALADIN INDUSTRIES INC		0.05	21.72			
5593-3	VISHAY-DALE ELECTRONICS INC		0.06	24.33			
6170-3	CONCRETE MATERIALS		0.22	96.44			
1255-3	CITY OF ELK POINT		1.13	490.87	MUN		
143-3	CITY OF VERMILLION		1.78	773.23			
147-3	CITY OF VERMILLION ^a		2.66	1,219.10			
6236-3		1,161					
1965-3	TOWN OF GAYVILLE ^c		0.37	0.00			
4207-3	TOWN OF JEFFERSON		0.90	390.96			
5118-3	TOWN OF GAYVILLE ^c		0.33	0.00			
5437-3	DAKOTA DUNES IMPROVEMENT DIST.		3.33	1,446.55			
5782-3	CITY OF NORTH SIOUX CITY		1.14	495.22			
6354-3	CITY OF VERMILLION		0.02	9.60			
8212-3	CITY OF YANKTON	6,050		6,050.00			
5581-3	LARSON'S LANDING		0.09	38.66	SHD		
5592-3	EAST WINDS COURT INC ^c		0.11	0.00			
Total:				48,361.33			
a - the total estimated volume for these permits are an average value from yearly non-irrigation questionnaires (Water Rights, 2006-2020 and Water Rights, 2011-2020)							
b – this value represents evaporation, the only consumptive use for this permit							
c - these permits all purchase water from a rural water system and maintain their water right for a standby use (Drinking Water, 2021). Therefore, their volume use is considered zero.							
d - COM: Commercial; DOM: Domestic; IRR: Irrigation; REC: Recreation; FWP: Fish & Wildlife Propagation; IND: Industrial; MUN: Municipal; SHD: Suburban Housing Development; LC: License; PE: Permit							

Well withdrawals from the Missouri: Elk Point aquifer are also for irrigation use with actual pumpage from the aquifer reported to the DANR-Water Rights Program through annual irrigation questionnaires. Currently, there are 585 water rights/permits with 81,623 total permitted acres for irrigation (Water Rights, 2021a). Figure 2 shows the historical relation between annual permitted acres with actual pumpage reported from annual irrigation summaries. Historically, the average annual reported pumping is approximately 19,031 ac-ft/yr (Water Rights, 1979-2020). However, this is not necessarily reflective of the increased pumpage from aquifer development, beginning in 2006, and recent development of separate application rates for crop or turf irrigation.

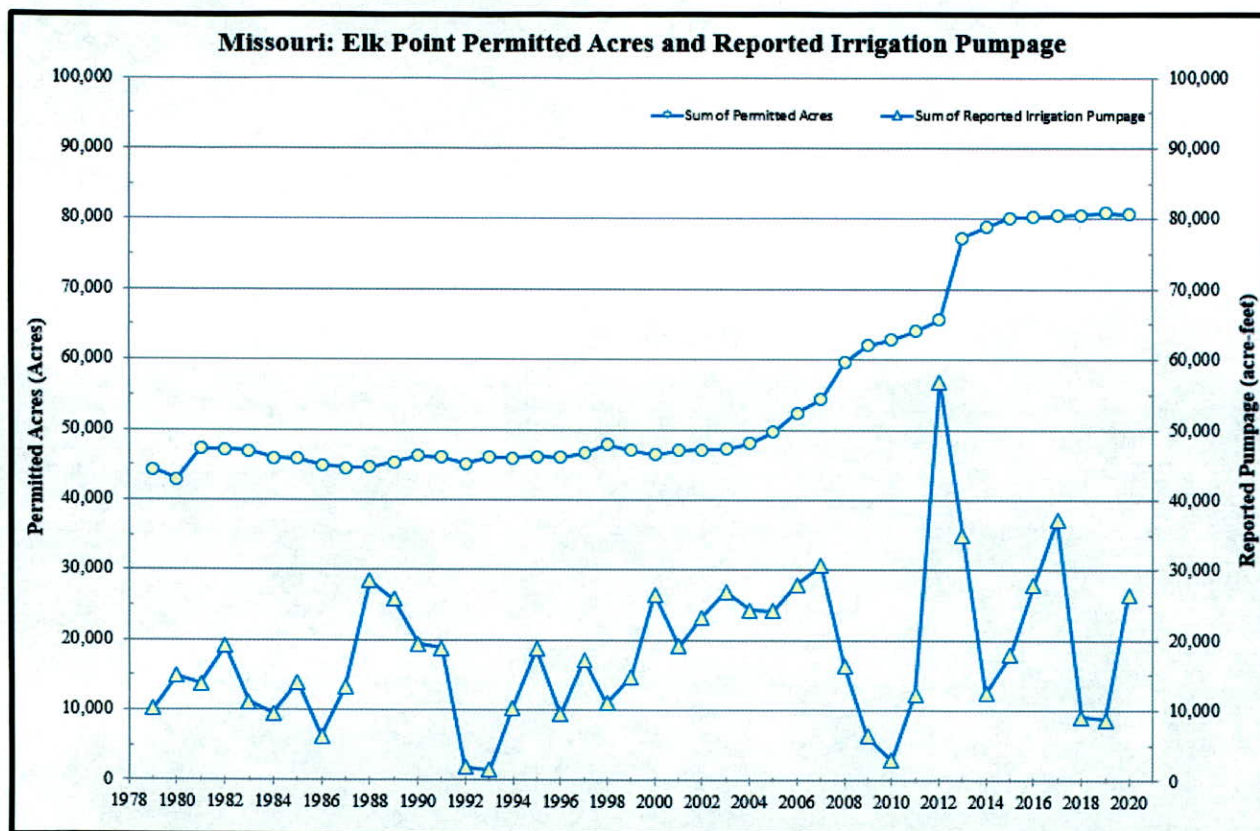


Figure 2. Permitted acres and reported irrigation for the Missouri: Elk Point aquifer (Water Rights, 2021a, Water Rights 1979-2020)

Farmer (2018a) determined that an average application rate of 0.35 acre-feet per permitted acre can be utilized to estimate annual use for both crop and turf irrigation. Farmer (2018b) then established that turf irrigation should be determined separately because they tend to utilize their full authorized allowance for appropriation. Farmer (2021) further refined his work by estimating that an appropriate rate for turf irrigation rate is 0.97 ft/yr and for crop irrigation is 0.343 ft/yr. Table 2 contains the turf irrigation permits with permitted acres and an estimated annual volume use based on the Farmer (2021) application rate. Subsequently, the calculation for estimated annual use for crop irrigation requires adjustment because the 738 acres for turf irrigation need to be removed from the 81,623 total permitted acres. This results in a value of 80,885 acres for crop irrigation and, after applying the application rate of 0.343 ft/yr, yields approximately 27,744 ac-ft/yr. Summing turf (425 ac-ft/yr) and crop (27,744 ac-ft/yr) irrigation volume estimates yields a value of 28,169 ac-ft/yr to be included in the water balance section for irrigation permits.

Table 2. Water rights/permits for irrigation on turf (Water Rights, 2021a).

Permit Number	Name	Acres	Estimated Volume (ac-ft/yr)
1294-3	Recreation Development Association, Inc.	102.0	98.9
2011-3	Two Rivers Golf Club	95.0	92.2
5786-3	Dakota Dunes Golf Course	173.0	167.8
5935-3	Ted Waitt	1.0	1.0
5936-3	Applied Engineering, Inc.	1.8	1.7
7225-3	National Field Archery Association	2.0	1.9
8010-3	Ryan Rusher	2.5	2.4
8029-3	Dakota Dunes Community Improvement District	17.8	17.3
8040-3	Heine Electric & Irrigation, Inc.	1.0	1.0
8354-3	Two Rivers, Inc.	30.0	29.1
8380-3	National Field Archery Association	7.0	6.8
8407-3	Gayville-Volin School District 63-1	4.5	4.4
5998A-3	Clay Rural Water System, Inc.	300.0	n/a ^a
Total:		737.6	424.5
a - The volume for this permit is accounted for in Table 1			

There are five Future Use permits appropriating water from the Missouri: Elk Point aquifer. The full permitted volume authorized from the permits is utilized when estimating the annual volume usage. The future use areas are all in Clay County and composed of 13,000 ac-ft reserved by Lewis and Clark Rural Water System and 1,900 ac-ft reserved by the City of Vermillion. This is a total of 14,900 ac-ft/yr of water reserved for these permits and will be included in the water balance section for future use.

There are numerous domestic wells on file with the Water Rights Program within the Missouri: Elk Point aquifer (Water Rights, 2021b). Domestic users are not required to report their annual water usage and due to their low diversion rates are not considered a significant portion of the hydrologic budget. Additionally, some domestic well may no longer be in use with the development of rural water systems in the area.

There are two pending applications for the Missouri: Elk Point aquifer, Water Permit Application Nos. 8503-3 and 8513-3, proposing to crop irrigate a combined 199 acres. Utilizing the average annual application rate of 0.343 feet on permitted acres (Farmer, 2021), 68 ac-ft/yr will be included in the water balance for the pending applications.

Water Balance:

The Missouri: Elk Point aquifer estimated average annual withdrawal rate is 91,498 ac-ft/yr (non-irrigation: 48,361; irrigation: 28,169; future use: 14,900; pending: 68). Estimated average annual recharge is 92,000 ac-ft/yr. The expected use of 45 ac-ft/yr (crop irrigating 132 acres at the annual 0.343 ft application rate per permitted acre) by this application does not result in an exceedance of average annual withdrawal compared to recharge for this aquifer. Therefore, there is reasonable probability unappropriated water is available for this application.

Observation Well Data

Administrative Rule of South Dakota (ARSD) Section 74:02:05:07 requires that the Water Management Board 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. The DANR-Water Rights Program monitors 32 observation wells completed into the Missouri: Elk Point aquifer (Water Rights, 2021c). The hydrographs for the observation wells within approximately two miles of Water Permit Application No. 8517-3 are shown in Figures 3 and 4.

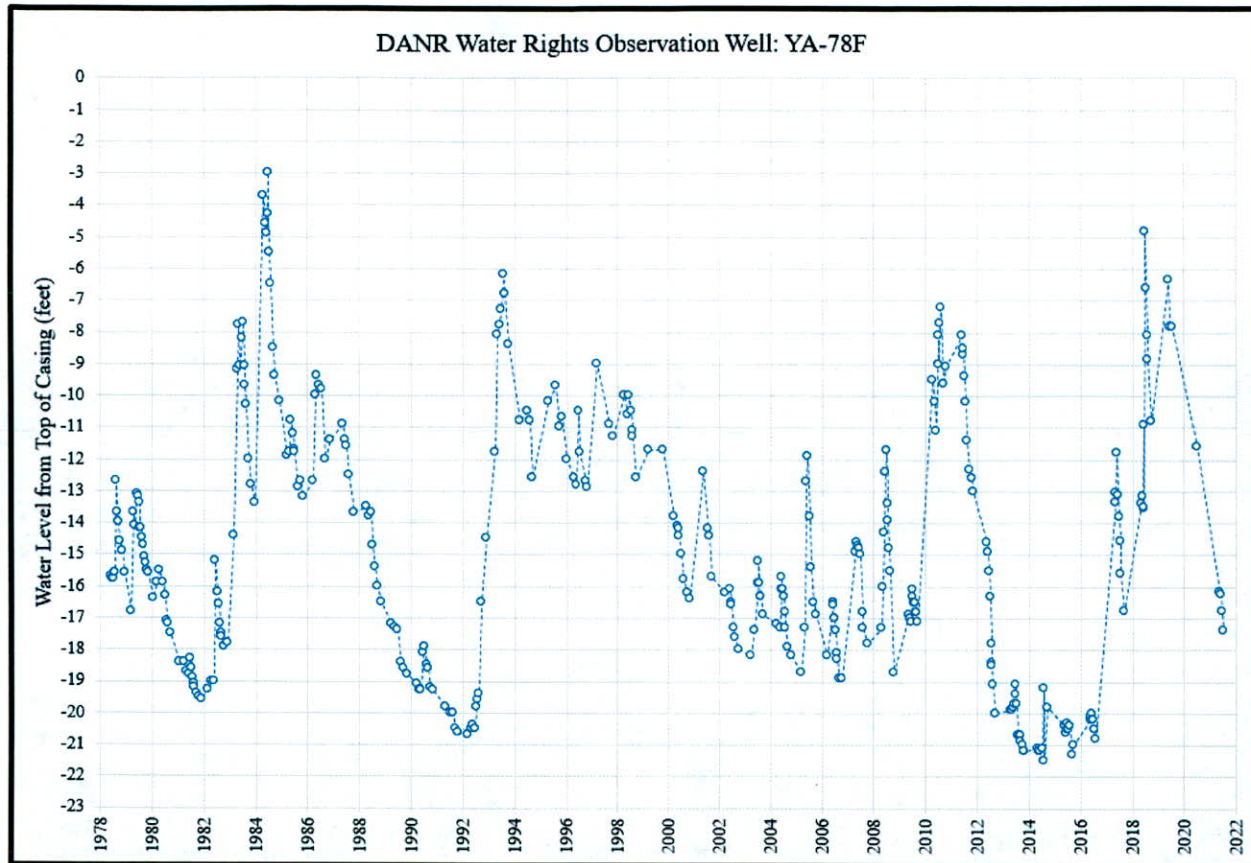


Figure 3. Hydrograph for observation well YA-78F located approximately 0.8 miles south of the proposed well location for Water Permit Application No. 8517-3 (Water Rights, 2021c).

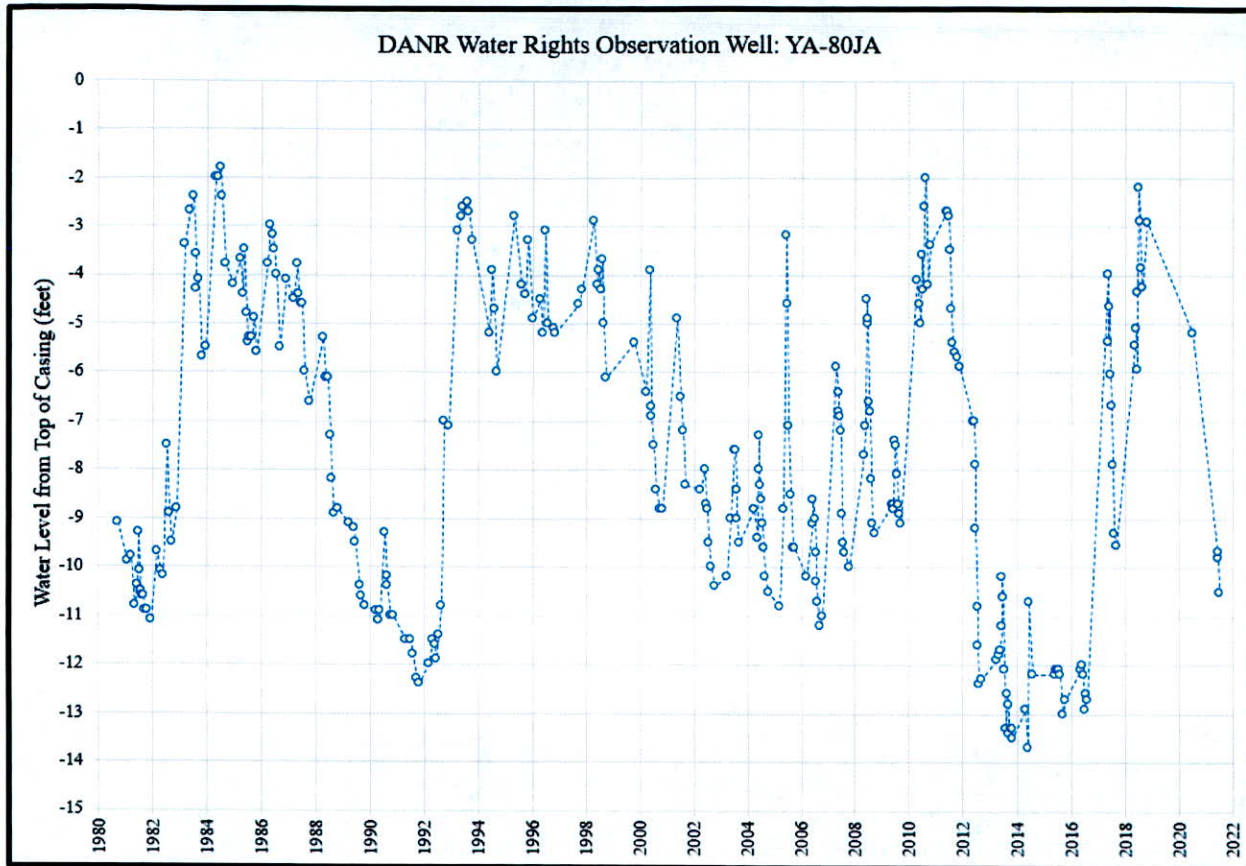


Figure 4. Hydrograph for observation well YA-80JA located approximately 1.8 miles south of the proposed well location for Water Permit Application No. 8517-3 (Water Rights, 2021c).

The hydrographs shown in Figures 3 and 4 are representative of the hydrographs for other observation wells completed in the Missouri: Elk Point aquifer. The hydrographs show the water level of the aquifer is relatively stable over the period of record. They indicate that the aquifer responds well to climatic conditions with rising water levels during wet periods and declining water levels during drier periods. They also demonstrate that any drawdowns from pumping are temporary because the water levels typically recover to pre-pumping levels after the irrigation season.

Several Missouri: Elk Point aquifer observation well hydrographs show a gradual downward trend. These wells are located close to the Missouri River and the downward trend is due to entrenchment of the Missouri River, below Gavins Point Dam in Yankton, SD, lowering the water surface elevation of the river (Goodman, 2007). This results in a lowering of water levels in the hydraulically connected aquifer as the water level in the aquifer equilibrates to the lower average water surface elevation of the river. Therefore, downward trends are likely caused by the entrenchment of the Missouri River and not from over-appropriation of the Missouri: Elk Point aquifer (Mathiowetz, 2020).

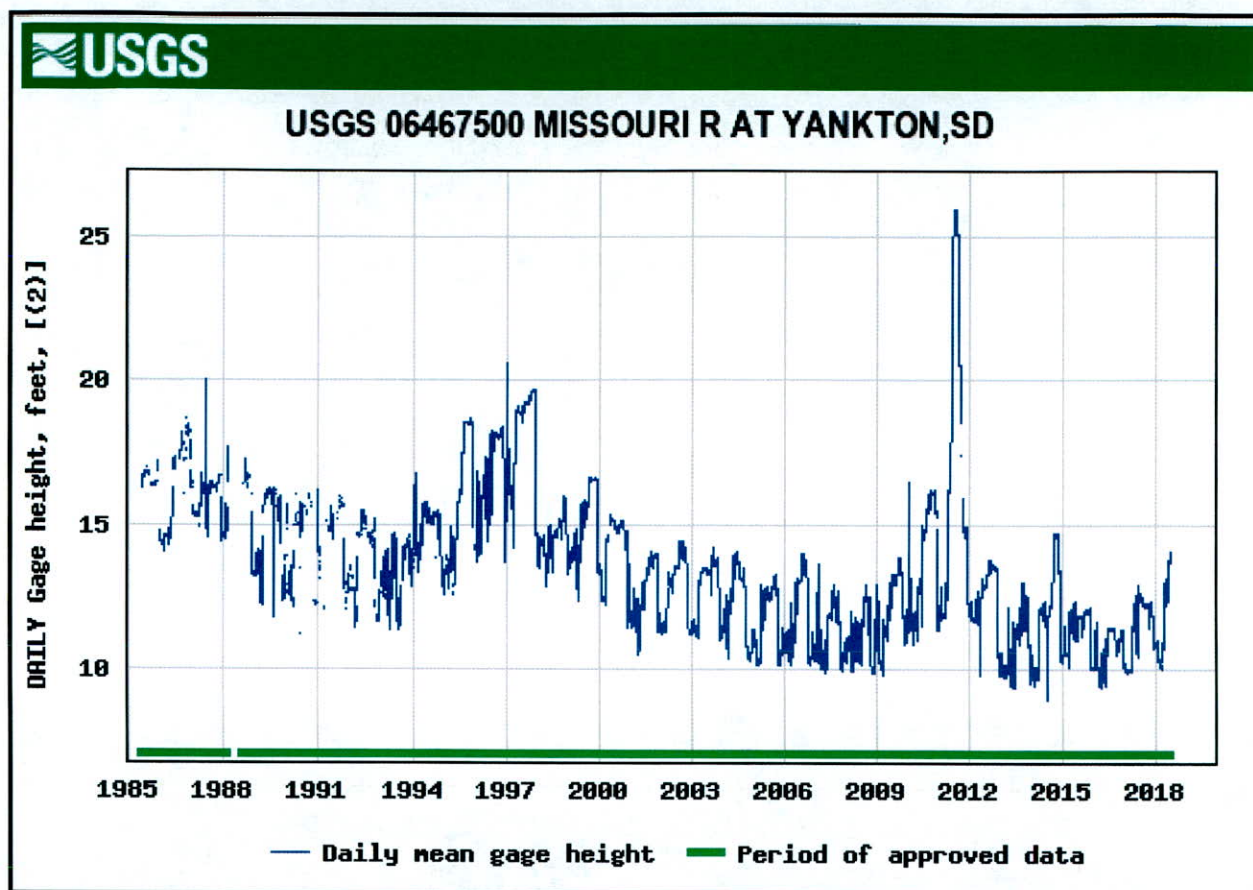


Figure 5. Hydrograph for USGS Stream Gage 06467500 Missouri River at Yankton, SD (USGS, 2021).

The U.S. Geological Survey (USGS) operates stream flow gaging station No. 06467500, on the Missouri River at Yankton, SD. Comparing the hydrograph for this gage (Figure 5) to the observation well hydrographs of the Missouri: Elk Point aquifer (Figures 3 and 4), show both the river and the aquifer react to climatic conditions by rising and falling in a similar fashion. Furthermore, during flood events, as particularly shown in 2011, the water level in the aquifer, especially closer to the Missouri River, rises very quickly beyond what is typically seen for glacial outwash aquifers. This indicates there is hydraulic connection between the aquifer and the river. This means that when the elevation of the water in the river is higher than the aquifer, the river recharges the aquifer. Conversely, when the elevation of the water is higher in the aquifer, the aquifer naturally discharges to the river. As-a-result, there is a reasonable probability unappropriated water is available for this proposed appropriation.

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS

Currently, there are a total of 629 water rights/permits appropriating or reserving water from the Missouri: Elk Point aquifer (Water Rights, 2021a). Table 3 lists the Missouri: Elk Point aquifer water rights/permits shown in Figure 7 within approximately four miles of the proposed well location for Application No. 8517-3.

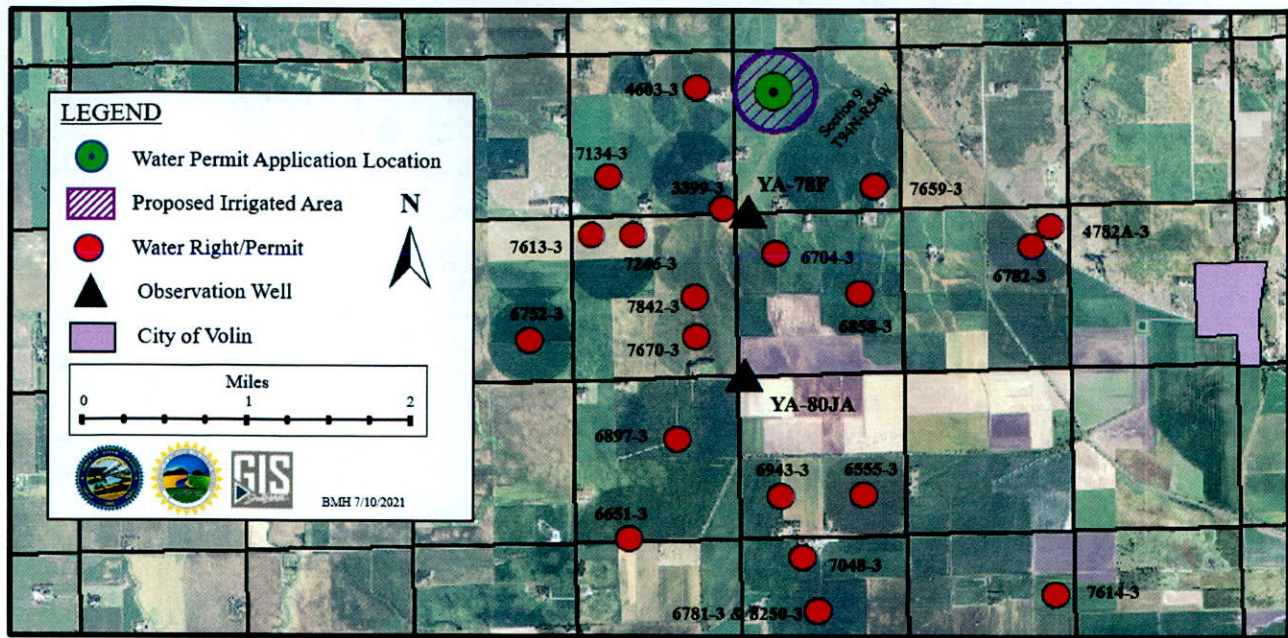


Figure 6. Existing Missouri: Elk Point aquifer water rights/permits and observation well in the vicinity of Water Permit Application No. 8517-3 (Water Rights 2021a & 2021c).

Table 3. Water rights/permits shown in Figure 6 (Water Rights, 2021a).

Permit Number	Name	Rate (cfs)	Acres	Status ^a	Use ^a
3399-3	FREEBURG LIMITED PARTNERSHIP	1.79	125	LC	IRR
4603-3	ALEC SOLBERG	2.00	160		
4782A-3	STEVEN C SCHMIDT	1.14	80		
6555-3	STEVE C SCHMIDT	1.78	129		
6651-3	FREEBURG LIMITED PARTNERSHIP	1.78	119		
6704-3	NELSON FAMILY PARTNERSHIP	1.56	68		
6752-3	ROBERT SMITH	1.78	136		
6781-3	STEVE C SCHMIDT	2.22	190		
6782-3	STEVE C SCHMIDT	1.56	115		
6858-3	FREEBURG LIMITED PARTNERSHIP	3.11	230		
6943-3	RAYMON & PAMELA EPP	1.56	115		
7659-3	FREEBURG LIMITED PARTNERSHIP	3.80	266		
7670-3	KARL M SCHENK	1.78	120		
7842-3	KARL M SCHENK	1.33	135		
6897-3	JOHN & JACQUELINE SMITH	2.78	310	PE	
7048-3	PAUL & DEAN SCHMIDT	1.33	160		
7134-3	ORDEL GUSTAD	1.78	220		
7246-3	PAUL GUSTAD	1.78	320		
7613-3	PAUL & DEAN GUSTAD	1.67	0		
7614-3	PAUL & DEAN GUSTAD	1.67	140		
8250-3	STEVE SCHMIDT	0.00	63		
a - LC: Licensed Water Right; PE: Permitted Water Right; IRR: Irrigation					

a - LC: Licensed Water Right; PE: Permitted Water Right; IRR: Irrigation

There are numerous domestic wells on file with the Water Rights Program within the vicinity of the proposed well site (Water Rights 2021b). To protect domestic well users, 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.”

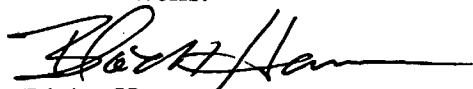
The Water Management Board considered the delivery of water by artesian head pressure versus maximum beneficial use during the issuance of Water Right No. 2313-2 for Coca-Cola Bottling Company of the Black Hills. The Board adopted Findings of Facts and Conclusions of Law that noted the reservation of artesian head pressure for delivery of water is 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 because of impacts on artesian head pressure by legitimate users is considered as an unlawful impairment, it conflicts with SDCL 46-1-4 (Water Rights, 1995). Consequently, some existing well owners may need to lower their pumps due to deeper water levels depending on the specific characteristics of the Missouri: Elk Point aquifer at their location; particularly since the aquifer is under confined conditions near the proposed diversion point for this application. However, many domestic wells may no longer be the primary water source since rural water systems have been introduced to the area. Additionally, there are several high capacity appropriative users in the area of this application and there is no history of well interference complaints in Yankton County involving the Missouri: Elk Point aquifer (Water Rights, 2021d). Nearby adequate wells are not expected to be adversely impacted as defined in ARSD 74:02:04:20(7).

When considering the large amount of artesian head pressure (34 feet), saturated thickness of the aquifer in this area, the hydrographs of nearby observation wells not showing detrimental impact of pumping, and the lack of well interference complaints due to pumping, there is reasonable probability that the proposed diversion can be developed without unlawfully impairing existing appropriative or domestic water users with adequate wells.

CONCLUSIONS:

1. Water Permit Application No. 8517-3 proposes to appropriate water, for the irrigation of 132 acres, at a maximum instantaneous diversion rate of 1.78 cubic feet per second (cfs) from the Missouri: Elk Point aquifer. The applicant intends to divert water from a single well, approximately 125 feet-deep, to be located in the approximate center of NW ¼ with the irrigated acres also located in the NW ¼; all in Section 9, T94N-R54W. The site is located approximately three miles northwest of Volin, SD.
2. Based on the hydrologic budget, observation well data, and the potential to further induce recharge from the Missouri River, there is a reasonable probability unappropriated water is available for this proposed application.

3. There is a reasonable probability the diversions proposed by this application can be made without unlawfully impairing existing appropriative or domestic users with adequate wells.



Blaise Hansen

SD DANR – Water Rights Program

Reviewed By:



Adam Mathiowetz, PE

SD DANR-Water Rights Program

REFERENCES:

- Arguez, A, Durre, I, Applequist, S., Squires, M, Vose, R, Yin, X., and Bilotta, R. (2010). NOAA's U.S. Climate Normals (1981-2010). Annual Precipitation Normals for Station USW00014943 Sioux City Airport, IA. NOAA National Centers for Environmental Information. DOI:10.7289/V5PN93JP [accessed 08/22/18]
- Bugliosi, E.F. (1986). *Water Resources of Yankton County, South Dakota*. Water Resources Investigations Report 84-4241. U.S. Geological Survey, Huron, SD.
- Drinking Water. (2021). *Drinking Water System Information*. SD DANR-Drinking Water Program Online Database. Accessed June 23, 2021.
<<http://DANR.sd.gov/des/dw/sysinfomap.aspx>>.
- Farmer, J. (2018a). *Report on Water Permit Application No. 8322-3: Shawn Guthmiller*. SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Farmer, J. (2018b). *Report on Water Permit Application No. 8364-3: Daniel and Scott Hanson*. SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Farmer, J. (2021). *Report on Water Permit Application No. 8503-3: Sorensen Familt Farm, LLC*. SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Goodman, J.A. (2007). *Report on Water Permit Application No. 6869-3: Lewis and Clark RWS*. SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Hedges, L.S., S.L. Burch, D.L. Iles, R.A. Barari, and R.A. Schoon. (1982). *Evaluation of Ground-water Resources in Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa. Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report*. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.

- Hedges, L.S., Allen, J., and Holly D.E. (1985). *Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 7: Ground Water Recharge*. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
- Mathiowetz, A.W. (2020). *Personal Communication*. Engineer III. SD DENR-Water Rights Program.
- Niehus, C.A. (1994). *Water Resources of Lincoln and Union Counties, South Dakota*. USGS WRI Report 93-4195, United State Geological Survey, Rapid City, SD.
- NOAA. (1982). *Evaporation Atlas for the Contiguous 48 United States*. NOAA Technical Report NWS 33.
- Stephens, J.C. (1967). *Geology and Water Resources of Clay County, South Dakota, Part II: Water Resources*. South Dakota DENR-Geological Survey Bulletin 19, Vermillion, SD.
- Stonesifer, J. R. (2013). *Report on Water Availability of the Missouri: Elk Point aquifer*. SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- USGS. (2021). *USGS Surface-Water Daily Statistics for the Nation*. From <https://waterdata.usgs.gov>, accessed 7/12/2021.
- Water Rights. (1979-2020). *"1979-2020 Irrigation Questionnaires"*. SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Water Rights. (1995). *Findings of Fact, Conclusions of Law, and Final Decision in the Matter of Water Permit Application No. 2313-2, Coca-Cola Bottling Company of the Black Hills*. DENR-Water Rights Program file for Water Right No. 2313-2. Pierre, SD.
- Water Rights. (2006-2020). *"Non-Irrigation Yearly Reports, 2006-2020"*. SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Water Rights. (2012-2020). *"Non-Irrigation Yearly Reports, 2012-2020"*. SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Water Rights. (2021a). *Water Right/Permit Files*. SD DANR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Water Rights. (2021b). *Well Completion Reports*. SD DANR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Water Rights. (2021c). *Observation Well Files*. SD DANR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Water Rights. (2021d). *Yankton County Files*. SD DANR-Water Rights Program, Joe Foss Building, Pierre, SD.

Schlaak, Karen

From: Schlaak, Karen
Sent: Friday, July 30, 2021 8:37 AM
To: tammybratberg@gmail.com
Subject: Water Permit Application No. 8517-3
Attachments: 1588.pdf

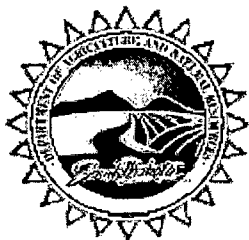
Attached is a copy of the report, chief engineer recommendation and information regarding the public notice for your water permit application. As stated in the letter, please contact the paper as soon as possible to authorize publication and arrange for payment. This information is being mailed to you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

Karen Schlaak

DANR - Water Rights Program

(605) 773-3352

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



AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

RECEIVED

AUG 09 2021

WATER RIGHTS
PROGRAM

BRATBERG FAMILY PROTECTION TRUST
C/O SHAD BRATBERG
45055 SD HWY 50
GAYVILLE SD 57031

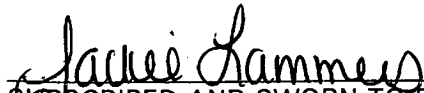
STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

JACKIE LAMMERS, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE CLASSIFIED MANAGER 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
8 + 6 NOTICE OF APPLICATION

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 6th DAY OF August, 2021
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$24.30 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: 08/06/2021

FILED ON: 08/06/2021



SUBSCRIBED AND SWORN TO BEFORE ME THIS 6th DAY OF August, 2021



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

NOTICE OF APPLICATION NO. 8517-3 to Appropriate Water

Notice is given that Bratberg Family Protection Trust, c/o Shad Bratberg, 45055 SD Hwy 50, Gayville SD 57031 has filed an application for a water permit to appropriate 1.78 cubic feet of water per second from one well to be completed into the Missouri:Elk Point Aquifer (approximately 125 feet deep) located in the approximately center of the NW 1/4 Section 9 for irrigation of 132 acres located in the NW 1/4 Section 9; all in T94N-R54W. This site is located approximately 3 miles northwest of Volin SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8517-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineers recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352) and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by August 16, 2021.

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

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

Published once at the total approximate cost of \$24.30

Schlaak, Karen

From: Schlaak, Karen
Sent: Friday, July 30, 2021 8:34 AM
To: Jackie Lammers (jackie.lammers@yankton.net)
Subject: 8517-3, Bratberg Family Protection Trust
Attachments: 8517-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on August 6, 2021.

Bratberg Family Protection Trust, c/o Shad Bratberg, 45055 SD Hwy 50, Gayville SD 57031 (605 760-3353) 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>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

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

July 30, 2021

Bratberg Family Protection Trust
Shad Bratberg
45055 SD Hwy 50
Gayville SD 57031

Dear Mr. Bretberg:

Water Permit Application No. 8517-3 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 Press & Dakotan printed at Yankton SD (Ph # 605 665-7811). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

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

Sincerely,

Karen Schlaak

Karen Schlaak
Water Rights Program
(605) 773-3352

enclosures

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

NOTICE OF APPLICATION NO. 8517-3 to Appropriate Water

Notice is given that Bratberg Family Protection Trust, c/o Shad Bratberg, 45055 SD Hwy 50, Gayville SD 57031 has filed an application for a water permit to appropriate 1.78 cubic feet of water per second from one well to be completed into the Missouri:Elk Point Aquifer (approximately 125 feet deep) located in the approximately center of the NW 1/4 Section 9 for irrigation of 132 acres located in the NW 1/4 Section 9; all in T94N-R54W. This site is located approximately 3 miles northwest of Volin SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8517-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by August 16, 2021.

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

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

Published once at the total approximate cost of_



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

SEP 08 2021

Bratberg Family Protection Trust
c/o Shad Bratberg
45055 SD Hwy 50
Gayville SD 57031

Dear Mr. Bratberg:

Enclosed is Water Permit No. 8517-3 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

8517-3

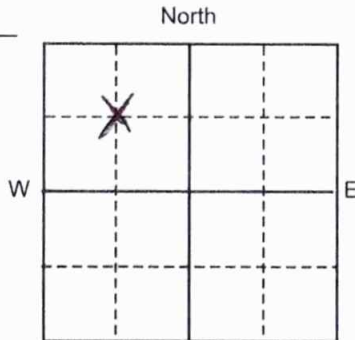
SD EForm - 1621LD V1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SW 1/4 NW 1/4 Sec 9 Twp 94N Rg 54WCounty YANKTON

Please mark well location with an "X"



Well Completion Date

4-30-21

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
1750 ft. from septic (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Straight Rotary

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	<u>12</u> IN	<u>0</u> FT	<u>80</u> FT	<u>17 1/2</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>32</u>	Lb/gal	<u>0</u> Ft	<u>80</u> Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

Tremie

SCREEN:

☒ Perforated pipe ☐ Manufactured
 Diameter 12" Inches Length 40 Feet
 Material PVC
 Slot Size .60 Set From 80 Feet to 120 Feet
 Other information

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? chlorine
☐ No, Why Not?
 Lab to which water quality sample sent for analysis
Well Owner: SHAD Bratberg

Business Name:

Address: 45055 SD Hwy 50City, State, Zip: bayville SD 57031

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top Soil	0	13
med Sand	13	18
Bad Rocks	18	21
Gravel	21	24
Coarse Sand	24	59
Fine Gravel	59	71
Fine to Med Gravel	71	120

STATIC WATER LEVEL

25' 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:☐ Bailed☐ Other

Pumping Level Below Land Surface

55 Ft. After 4 Hrs. pumped 1000 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: 800 GPM

REMARKS

42°58'39.87" N
97°14'07.14" W

This well was drilled under license # 773 and this report is true and accurate.Drilling firm: Quality Well Service LLC

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date: 12-10-21

8517-3



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

JUN 06 2023

Bratberg Family Protection Trust
c/o Brad Bratberg
45055 SD Hwy 50
Gayville SD 57031

8517-3

Dear Mr. Bratberg:

Enclosed is Water License No. 8517-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

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

Regarding the equipment used for applying chemicals and/or fertilizer through your irrigation systems, the staff engineer indicated the absence of the 20 foot hose on the low pressure drain. Enclosed is a copy of Water Management Board rules dealing with chemigation. "Appendix A" shows the minimum requirements for the equipment. Low pressure drains are required and must be in place to prevent contamination of the water source. If after reading the rules you have questions concerning placement of the equipment, please contact Ron Duvall with our department (his card is attached).

As long as you use the water beneficially, as stated in the Water License, State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

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

enclosures

STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8517-3

(1) Bratberg Family Protection Trust, c/o Brad Bratberg; 45055 SD Hwy 50, Gayville, SD 57031, made Application No. 8517-3, June 1, 2021 for a water permit to divert 1.78 cubic feet of water per second from groundwater, one well (Missouri: Elk Point Aquifer), Yankton County, South Dakota for irrigation purposes. Permit No. 8517-3, with a priority date of June 1, 2021 was approved August 16, 2021 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before August 16, 2026 and for the application to beneficial use of water on or before August 16, 2030.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 1.78 cubic feet of water per second for beneficial use. The location of the diversion point is:

1,330 ft E and 1,350 ft S of the NW corner of Section 9, T94N, R54W (SE1/4 NW 1/4)
(Latitude 42.97805 Longitude -97.23476)

(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use to irrigate the following land:

Section 9, T94N, R54W	NW 1/4 NW 1/4	33 acres
	NE 1/4 NW 1/4	33 acres
	SW 1/4 NW 1/4	33 acres
	SE 1/4 NW 1/4	33 acres
	TOTAL	132 acres

(4) Pursuant to South Dakota Water Law 46-5-30.1 Bratberg Family Protection Trust, the holder and/or owner of Water Permit No. 8517-3 is issued a license to appropriate water, the right to use 1.78 cubic feet of water per second from groundwater, one well, completed into the Missouri: Elk Point Aquifer, with a priority date of June 1, 2021 from the location specified in (2) of this license for irrigation purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8517-3 and subject to the following qualifications:

1. The well approved under this water right will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this water right shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 8517-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with the 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. *(The well was drilled by Quality Well Service LLC in 2021. A copy of the well completion report is on file with the Water Rights Program.)*

continued

3. This Water Right is approved subject to the irrigation water use questionnaire being submitted each year.

Eric Gronlund

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

JUN 06 2023

date



**Report of Examination of Works and/or Application of Water to Beneficial Use
For Permit No. 8517-3**

I have this day, September 13, 2022, made a thorough examination of the water use systems owned by Bratberg Family Protection Trust, 45055 SD Hwy 50, Gayville, SD 57031, holder of Permit No. 8517-3, bearing the priority date of June 1, 2021. This permit authorizes the diversion of 1.78 cu. ft. per second of the waters of groundwater (Missouri: Elk Point Aquifer) authorizing the irrigation of 132 acres located in Yankton County.

Inspection contacts: Shad Bratberg and Barry Van Osdel

A. Works used to divert the water:

Well Information

- 1) Well Drilling Firm: Quality Well Service LLC
- 2) No. of Wells: 1
- 3) Depth(s): 120 feet
- 4) Well log is available: Yes

Casing:

- 1) Diameter: 12 inches
- 2) Length: 80 feet
- 3) Type: Plastic

Screen:

- 1) Diameter: 12 inches
- 2) Length: 40 feet
- 3) Type: PVC
- 4) Static water level: 25 feet

Pump:

- 1) Make: Borer Wholesale
- 2) Serial: 26904
- 3) Capacity: 800 GPM

Motor:

- 1) Make: BMR USA
- 2) Model No.: 6404HWP1-PE
- 3) Horsepower rating: 40 hp

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

- 1) Type: Steel Size: 8 inches Length: 10 feet

C. Works used to apply water to beneficial use:

Center Pivot:

- 1) Make: Reinke
- 2) Overall length: 1,293 feet
- 3) Number of towers: 8
- 4) End gun: Yes
- 5) Capacity: 750 GPM

Chemigation Equipment:

- 1) Does chemigate: Yes
- 2) Main line check valve: Yes
- 3) Inspection port/air relief: Yes
- 4) Low pressure drain: Yes
- 5) Discharge is 20' from source: No
- 6) Interlock type: Electrical
- 7) Injection pump: Positive Displacement
- 8) Injection check valve: Yes
- 9) Injection line check valve or positive displacement pump: Yes

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by: No
- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period: Yes
- 3) Exceptions to compliance are: Need a hose on the chemigation discharge drain.

E. Condition and Location:

- 1) The system is in good condition with the point(s) of diversion located as follows:
The well is 1,330 feet east and 1,350 feet south of the northwest corner of Section 9-T94N-R54W (Latitude 42.97805, Longitude -97.23476– SE1/4 of the NW1/4).
- 2) The works are capable of diverting and conveying to the places of use 1.78 cu. ft. per second of water from the well which is to be used for irrigation purposes. Water has been put to beneficial use to the maximum extent as follows:

Section 9-T94N-R54W

<u>NW1/4NW1/4</u>	<u>33 acres</u>
<u>NE1/4NW1/4</u>	<u>33 acres</u>
<u>SW1/4NW1/4</u>	<u>33 acres</u>
<u>SE1/4NW1/4</u>	<u>33 acres</u>

comprising a total of 132 acres of land and the license should be issued for 1.78 cfs.

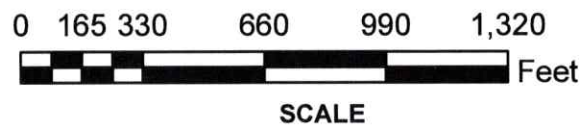
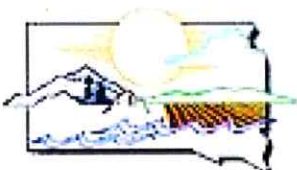
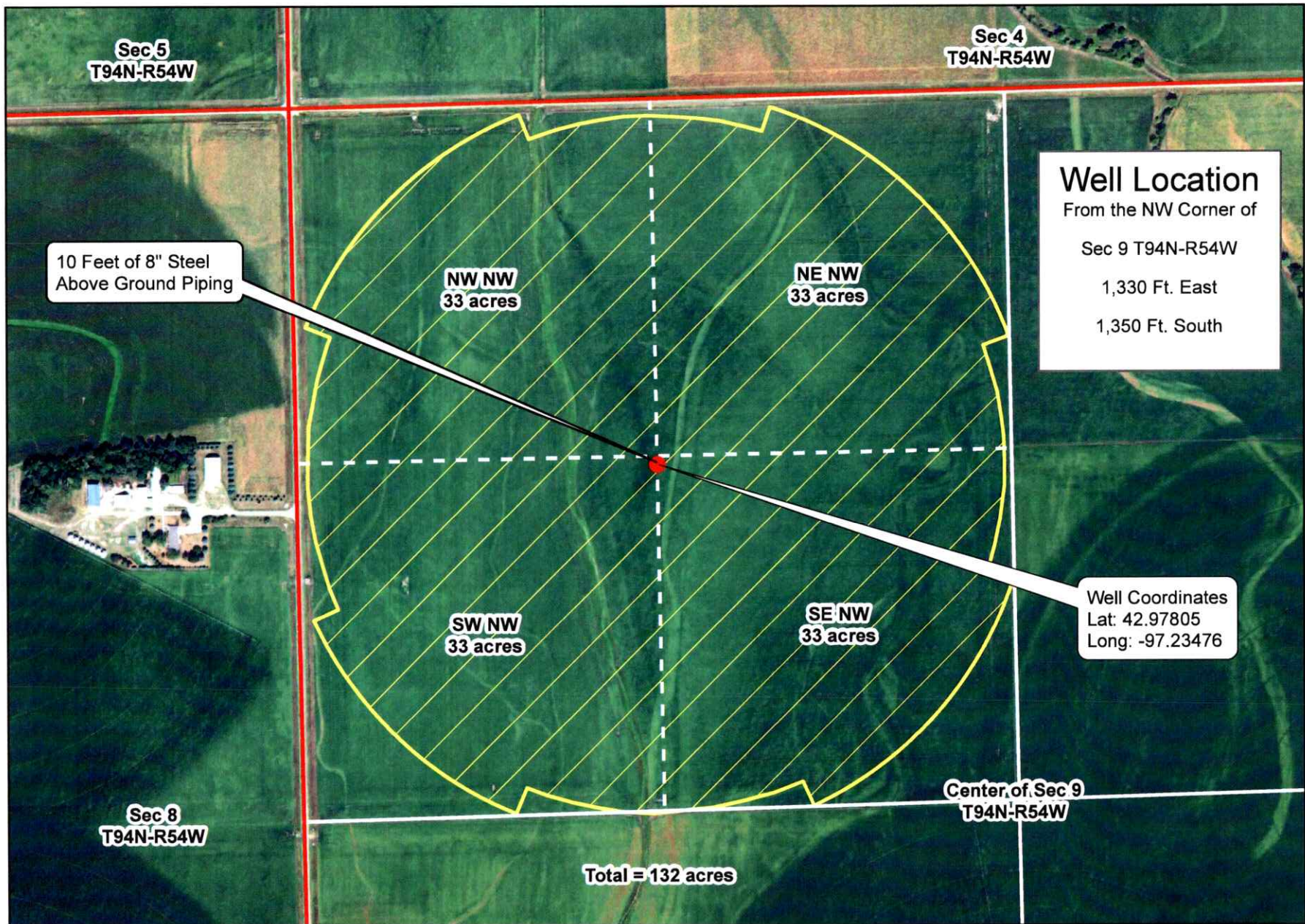
- 3) All structures, wells and lands on map: Yes

F. Comments or other permit(s) associated with the project: The pump is rated for 800 gpm and the pivot is nozzled for 750 gpm. There is not a twenty-foot hose on site for the low pressure drain in the chemigation system.

Keith DeJong, PE Ret.
Water Rights Inspector
DANR, Water Rights Program

Date report completed: June 2, 2023

Water Permit No. 8517-3



Keith DeJong
Keith DeJong, PE Ret.
Staff Engineer
June 2, 2023

8517-3

NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USEDate 9/16/22

MAIL TO: PMB 2020
DANR - Water Rights Program
523 E. Capitol Ave
Pierre, SD 57501-3182

Phone: (605) 773-3352

FROM: Bratberg Family Protection Trust
(name)

45055 SD Hwy. 50
(address)

Gayville SD 57031 605-760-3553
(city) (state) (zip) (phone)

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

Water Permit No. 8517-3 states that the water use system is to be constructed by

August 16, 2026, and water is to be put to beneficial use by August 16, 2030.
(date) (date)

The water use system was completed on July 20 21.
(date)

Applying the water to beneficial use was completed on July 20 21.
(date)

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

Shad Bratberg
(signature)

