

WATER PERMIT NO. 2880-2

Name of Applicant: **Jeremiah and Wendy Walla**

Address: **6408 Prestwick Road, Rapid City SD 57702**

Phone: **605-348-9505**

Amount of Water Claimed: **0.389 cfs/15.96 AF**

Total Acres: **23.54**

Source of Water Supply: **Groundwater**

Water to be used for: **Irrigation/Rec/FWP**

County: **Pennington**

Type of Waste Disposal System:

Location: **Approx. 6 miles southwest of Rapid City**

PRIORITY Date Received: **07-24-24**

Application/License Fee: **\$700.00**

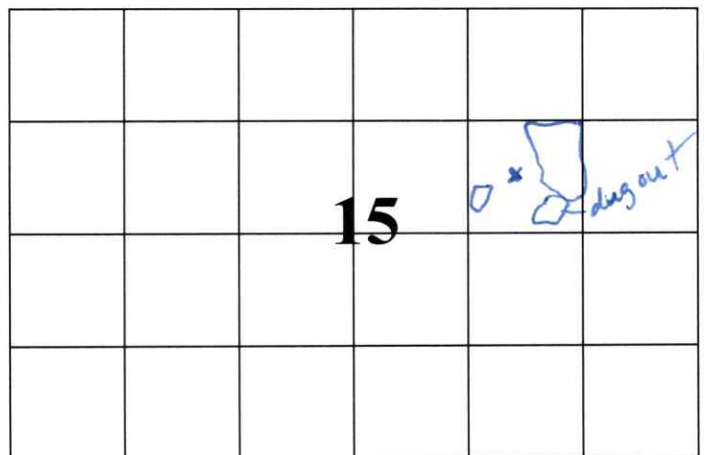
Corrected Application Received: **07-24-24**

Period of Annual Use: **March 1 – November 30**

Remarks: **1 well and 1 dugout**

Diversion Point: **SE 1/4 NE 1/4 Sec 15-T1S-R7E**

Land to be Irrigated: **SE 1/4 NE 1/4 Sec 15-T1S-R7E**



Depth of Well: **1300**

Well Driller: **Taylor Drilling**

Remarks:

Type of Map: **aerial**

Reviewed and the Number Assigned on: **07-25-24**

By: **Rachel Rodriguez**

Notice of Hearing - date to intervene: _____

SOUTH DAKOTA
WATER PERMIT NO. 2880-2

Date of first receipt of application July 24, 2024.

Date of return to applicant for corrections, amendments or changes July 24, 2024.

Date of receipt of corrected application August 2, 2024.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2880-2 to Jeremiah and Wendy Walla, 6408 Prestwick Road, Rapid City SD 57702, 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. 2880-2 appropriates 0.39 cubic feet of water per second (cfs) from one well to be completed into the Madison Aquifer (approximately 1,300 feet deep), located in the SE 1/4 NE 1/4 Section 15-T1S-R7E. Water from the well will be diverted to a dugout to be located in the SE 1/4 NE 1/4 and then diverted from the dugout (16 acre-feet storage capacity) at a rate of 0.57 cfs for irrigation of 23.54 acres located in the SE 1/4 NE 1/4; all in Section 15- T1S-R7E. The dugout will also capture incidental runoff from direct precipitation with the impounded water also used for fish and wildlife propagation, livestock watering, and fire suppression. This site is located approximately six miles southwest of Rapid City SD.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: January 1 – December 31.
3. The date from which applicant may claim right is July 24, 2024.
4. The date of approval of Permit No. 2880-2 is October 15, 2024.
5. One-fifth of the construction is to be completed on or before April 15, 2027.
6. All construction is to be completed on or before October 15, 2029.
7. Water is to be put to beneficial use on or before October 15, 2033.
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. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 2880-2 is issued for a twenty-year term. Pursuant to SDCL 46-2A-21, the twenty-year term may be deleted at any time during the twenty-year period or following its expiration. If the twenty-year term is not deleted at the end of the term, the permit may either be cancelled or amended with a new term limitation of up to twenty years. Permit No. 2880-2 may also be cancelled for nonconstruction, forfeiture, abandonment or three permit violations pursuant to SDCL 46-1-12, 46-5-37.1 and ARSD 74:02:01:37.
2. The well approved under Water Permit No. 2880-2 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.

(continued)

3. The well authorized by Permit No. 2880-2 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.
4. No pumping from the well into the dugout is authorized when the dugout is overflowing.
5. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 2880-2 authorizes a maximum diversion rate of 0.57 cfs from the dugout for the irrigation of 23.54 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
6. This Permit is approved subject to the irrigation water use questionnaire being submitted each year. The reported use should represent the amount of water pumped from the Madison Aquifer into the dugout.

WATER MANAGEMENT BOARD

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

OCT 22 2024

date



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

Mail to: SD DANR, Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>2880-2</u> Hydrologic Unit <u>10120109</u> Basin <u>Cheyenne</u> Newspaper <u>Rapid City Journal</u> (office use only)
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PAID

JUL 24 2024

Ck# 14692

Rec't# _____

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 Jeremiah and Wendy Wella

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

Mailing Address 6408 Prestwick Rd Rapid City S.D. 57702
(Address) (City) (State) (Zip Code)

Phone 605-348-9505 Mobile 605-484-3911 Email jeremy.wella@gmail.com

2. Amount of water claimed 0.389 *CFS or 175 **GPM 15.96 ***AF Total Acreage 1.06 23.54
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Natural run off and new well completed in Madison Aquifer

4. Location of point of diversion SE 1/4 NE 1/4 Sec 15 T15 R7E
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)
Lot 1 of J2 Estates Tax ID 73749 County Pennington

5. County or counties where water will be used Pennington

6. Annual period during which water is to be used Jan March 1st - December 31st
November 30th

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
Hay 1 A 1/2 False 1/4 NE 1/4 Sec 15 T15 R7E	17.17	Pond also used for fire	1.06
Tree Farm	4.37	protection + Fire Dept use	
Sod and Gardens	2.00	Same pond	
Pond - Surface Area	1.06		

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

See attached notes and 3 maps

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JUL 24 2024

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WATER

I, Jeremiah Wella 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.

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 Taylor Drilling
(if yes, please provide copies of logs)
- b) If existing wells, how many N/A Provide copy of log(s), if available. Drilled by _____

For either existing or proposed wells:

- c) Well Depth (required) 1300' Depth to Top of Water Bearing Material 1000' Depth to Water from Surface 1000'
- d) Distance to nearest domestic well on applicant's property N/A (none) Property owned by others 0.75 mi

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) Septic tank with drain field
- b) System Capacity (gallons) 2050 Year Constructed TBD 2024
New Construction
- c) Connected to the City of N/A Sanitary System

3. Dugout Information

- a) Surface Dimensions 1.06 Ac 833.46' perimeter Depth 15' average
- b) Depth to water (ground surface to water level) 2 feet

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.

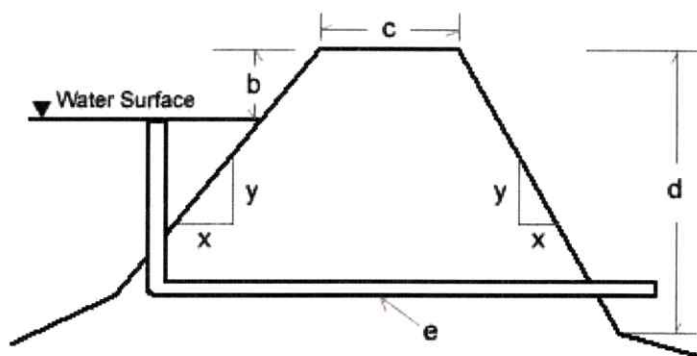
- a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

No dam - Dugout only
Natural drainage outlet.

- b) Freeboard 1
- c) Crest Width Natural Drainage
Crest Length 300+ Dugout No Dam
- d) Height 0
- e) Primary Outlet Capacity Natural Drainage

If pipe, diameter N/A

- f) Secondary Spillway Capacity Natural Drainage
Spillway Width _____
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream 3.5 to 1
Downstream 20 to 1
- h) Area of Impoundment 1.06 Ac
- i) Storage 15.96 Acre Feet
- j) Drainage Area Above Dam 746.3 Acres

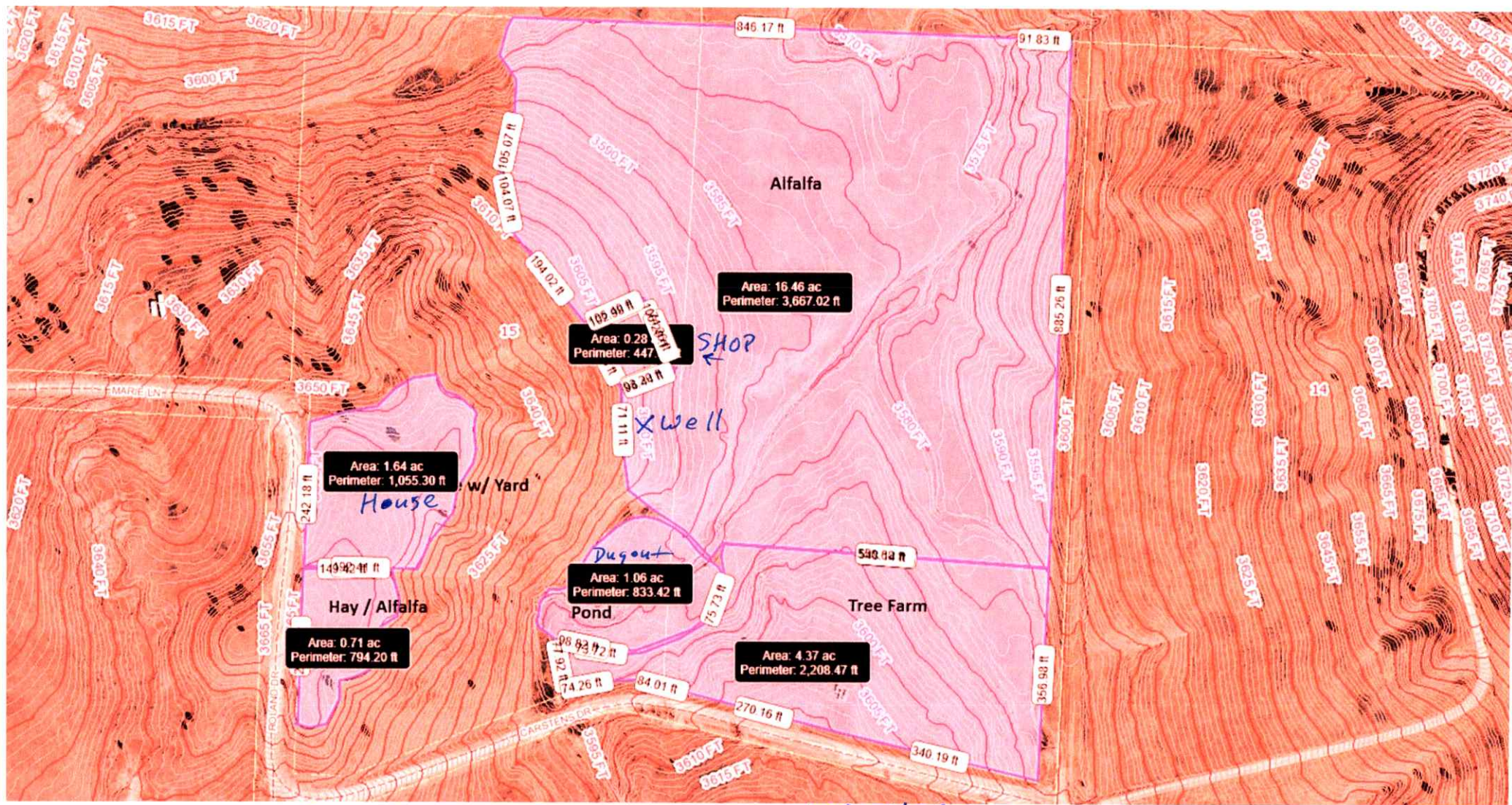


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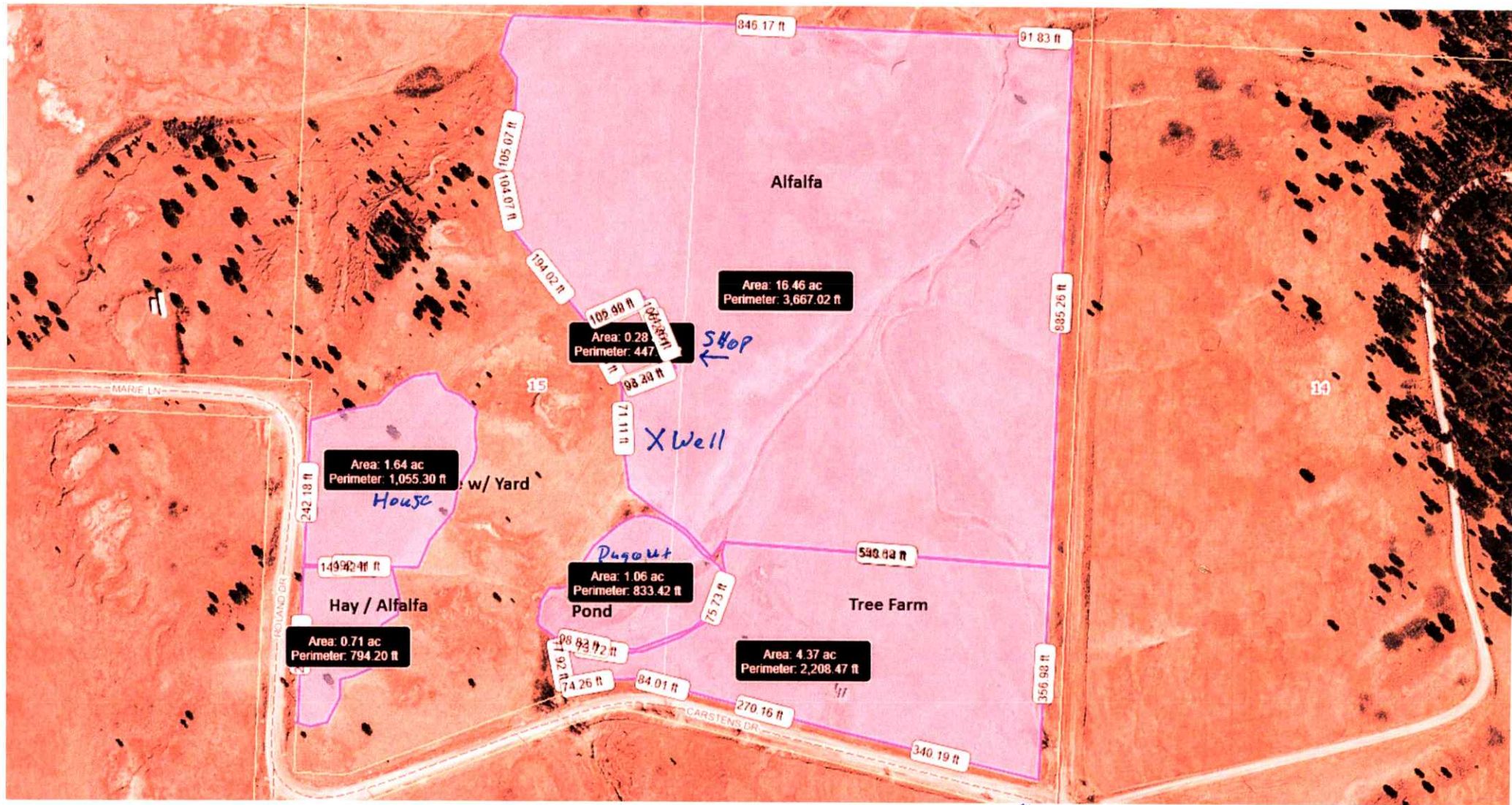
Total Acres 34.69 acres
Dugout 1.06 acres
Crops 22.40 acres
Home/Shop 1.69 acres
Livestock
Fish

Lat: 43° 57' 53.25010" N
Lon: 103° 15' 43.17938" W

Scale
1:2159

N →

2023 Rapid City MPO 1ft Contour Rapidmap.org



Total Acres 34.69 acres
Dugout 1.06 acres
Crop 22.40 acres
Livestock
Fish Home / Shop 1.69 acres

Lat: 43° 57' 53.25010" N
Lon: 103° 15' 43.17938" W

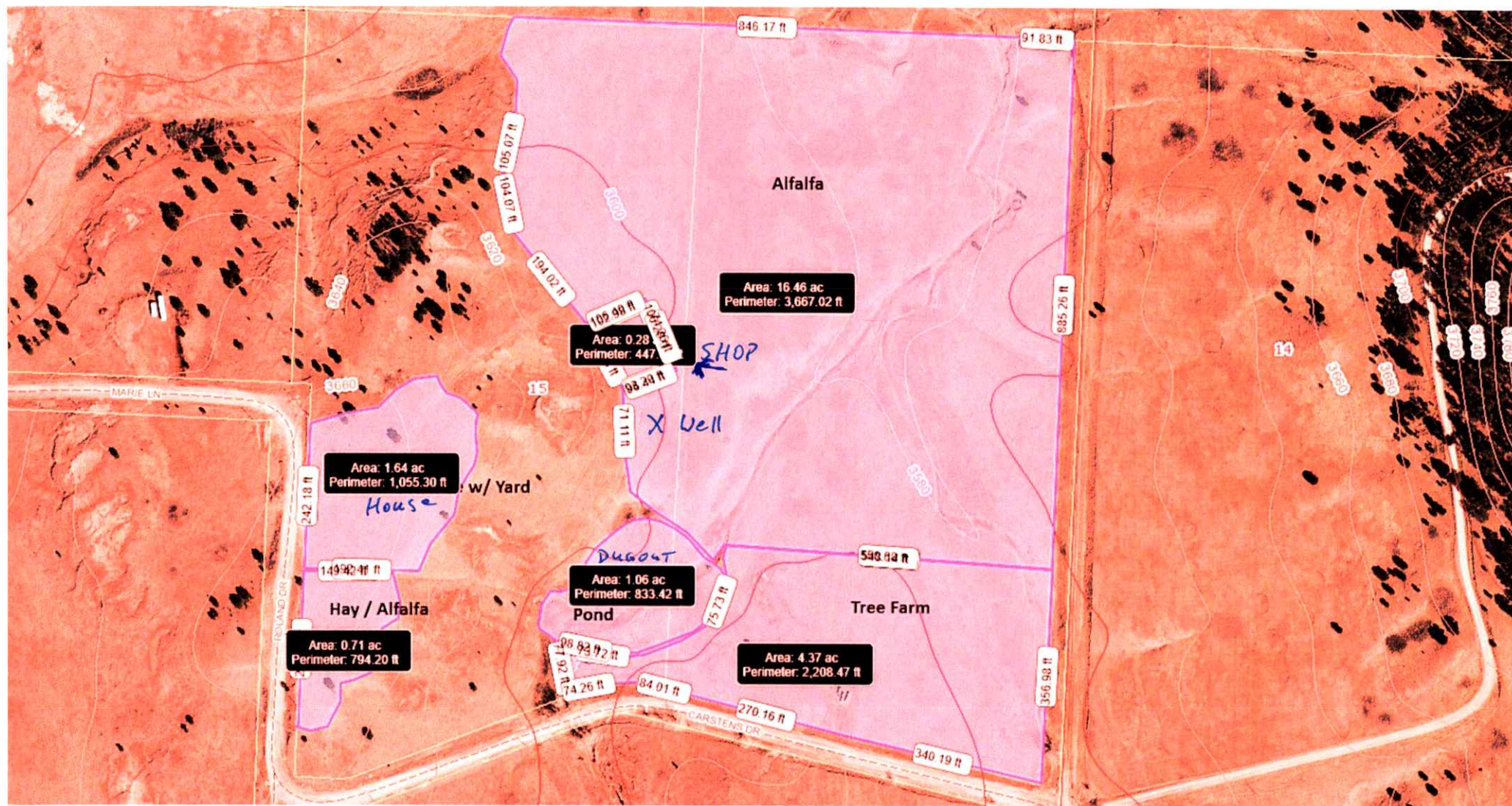
Scale
1: 2189

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2023 Rapid City Aerial

Rapidmap.org

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Total acres 34.69 acres
Dugout 1.06 acres
Crops 22.40 acres
Home/Shop 1.69 acres
Livestock
Fish

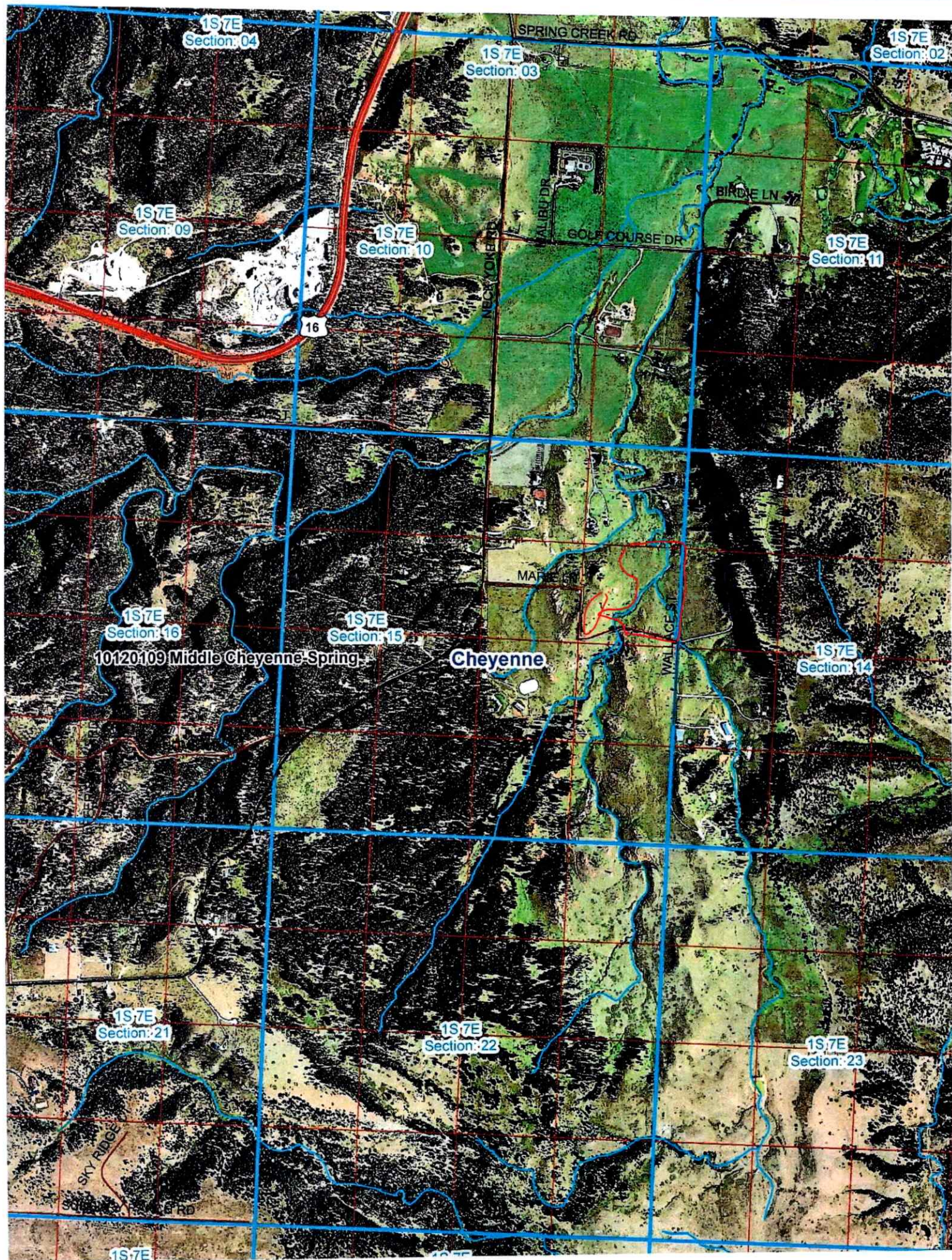
Lat: 43° 57' 53.25010" N
Lon: 103° 15' 43.17938" W

Scale
1:2189

N →

USGS Contours NAVD88

Rapidmap.org



1S,7E
Section: 04

1S,7E
Section: 03

1S,7E
Section: 02

1S,7E
Section: 09

1S,7E
Section: 10

1S,7E
Section: 11

1S,7E
Section: 16

1S,7E
Section: 15

1S,7E
Section: 14

10120109 Middle Cheyenne Spring

Cheyenne

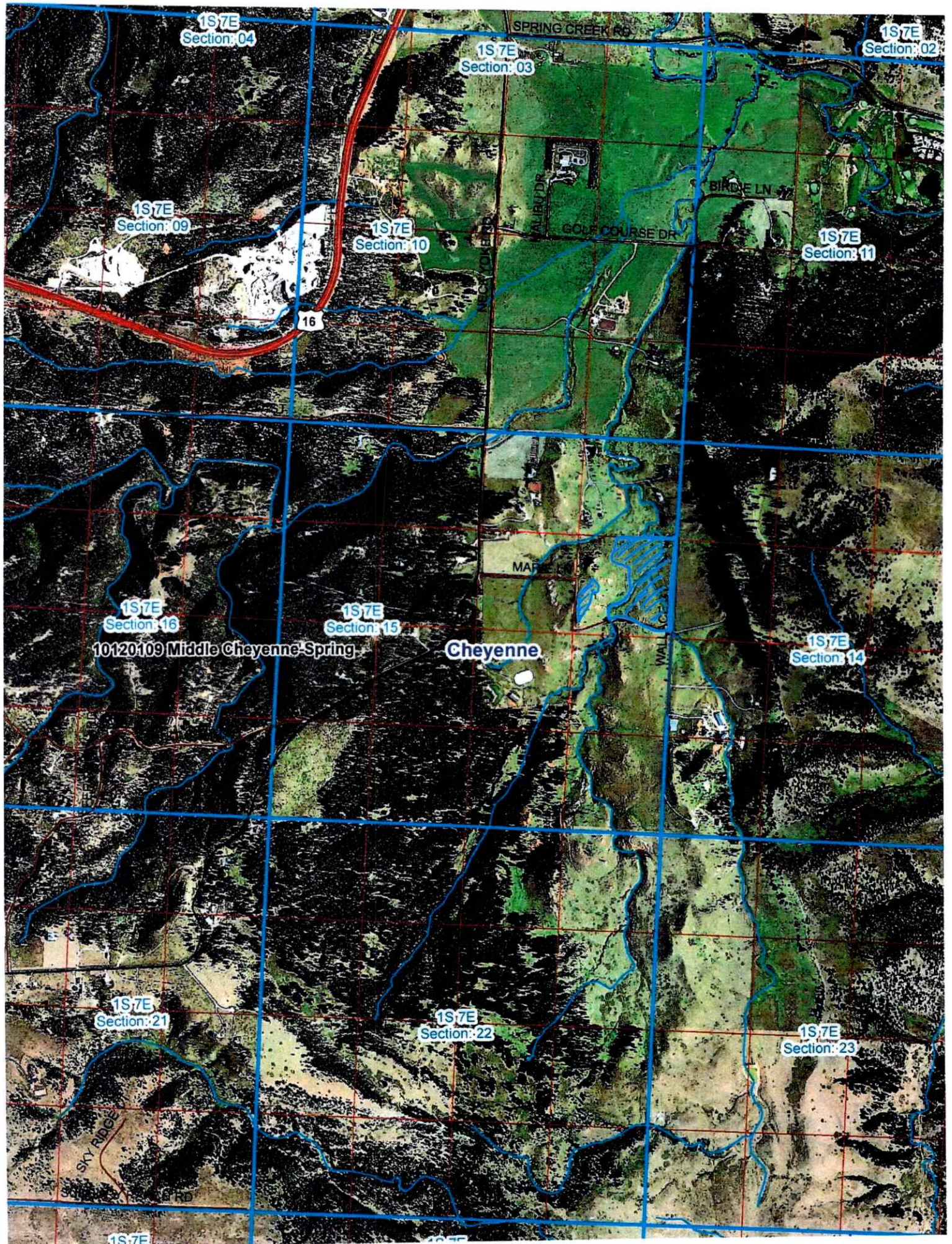
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1S7E
Section: 04

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Section: 10

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Section: 14

10120109 Middle Cheyenne Spring

Cheyenne

1S7E
Section: 21

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Section: 22

1S7E
Section: 23

1S7E

1S7E

RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Agriculture and Natural Resources

Date July 24th, 2024

RECEIVED OF Jeremiah and Wendy Walla 6408 Prestwick Road Rapid City SD 57702

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

Fee for Application for Permit No. <u>2880-2</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>500.00</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>2880-2</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>700.00</u>

By

Eric Gronlund
Chief Engineer

SR

Duvall, Ron

From: Jeremy Walla <jeremy.walla@gmail.com>
Sent: Friday, August 2, 2024 6:37 PM
To: Duvall, Ron
Subject: Re: [EXT] Water Permit Application

I am currently assigned to a Fire in Oregon for the next couple weeks. This is what I came up without here in the field.

Question #1 =175 gallons per min is the diversion from the Madison well.

#2 Irrigation will be from diversion out of the dugout

#3 the diversion rate from the dugout = I am not sure I am doing this calculation correctly but it looks like it will be 200-250gpm but this will vary greatly as work with USDA and other organizations to find the right products and water usage.

#4 the dugout will be kept full from the Madison well with incidental surface contribution from direct precipitation

Thank you,
Jeremy Walla

RMA CIM Team 2
Logistics Section Chief
Fire Chief Whispering Pines VFD

On Mon, Jul 29, 2024 at 1:51 PM Duvall, Ron <Ron.Duvall@state.sd.us> wrote:

Jeremy and Wendy,

I am looking over your application and I have questions concerning the diversion (pump) rate identified on the application and the water sources identified on the application (Madison well and dugout). The application indicates a diversion rate of 175 gallons per minute. Please indicate whether 175 gallons per minute is the diversion from the well or from the dugout to the area to be irrigated. If 175 gallons per minute is the diversion rate from the well, will the acreage be irrigated directly from the well or will the well water be directed to the dugout and then from the dugout to the area to be irrigated. If irrigating from the dugout, what is the desired diversion rate from the dugout to the acreage to be irrigated?

Also, is the dugout going to be located in the channel to capture runoff from the drainage area above the dugout or is the dugout going to be out of the channel and primarily kept full from the Madison well? I am trying to determine if the application should identify surface runoff (other than incidental runoff from direct precipitation) as a water source or just the Madison aquifer and with an incidental surface contribution to the dugout.

Thank you,

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Wednesday, July 24, 2024 4:02 PM
To: 'jeremy.walla@gmail.com'
Subject: Water Permit Application
Attachments: map.pdf

Good afternoon,

I am in receipt of your water permit application. Regarding the area to be irrigated, how did you arrive at 22.40 acres for crops? When I look at the maps submitted, I see a total of:

16.46 Alfalfa
0.71 Hay/Alfalfa
4.37 Tree Farm
2.00 Sod & Gardens
Equals 23.54

Do you agree? Attached is a map of Sec15-T1S-R7E, please outline the area to be irrigated.

Thank you,

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



Rodriguez, Rachel

From: Jeremy Walla <jeremy.walla@gmail.com>
Sent: Wednesday, July 24, 2024 10:11 PM
To: Rodriguez, Rachel
Subject: Re: [EXT] Water Permit Application
Attachments: image001.png; irrigationmap.pdf

I am currently out on a Wildland fire assignment so had to try to draw this up on my phone. I do agree with your math and I don't have the documents I sent in front of me here. I tried to circle the areas on the PDF you sent me.

Thank you,
Jeremy Walla
605-484-3911
RMA CIM Team 2
Logistics Section Chief
Fire Chief Whispering Pines VFD

On Wed, Jul 24, 2024, 14:02 Rodriguez, Rachel <Rachel.Rodriguez@state.sd.us> wrote:

Good afternoon,

I am in receipt of your water permit application. Regarding the area to be irrigated, how did you arrive at 22.40 acres for crops? When I look at the maps submitted, I see a total of:

16.46 Alfalfa

0.71 Hay/Alfalfa

4.37 Tree Farm

2.00 Sod & Gardens

Equals 23.54

Do you agree? Attached is a map of Sec15-T1S-R7E, please outline the area to be irrigated.

Thank you,

Rachel Rodriguez

SD DANR Water Rights Program

To whom it concerns,

I am applying for water rights to a newly acquired property that we are building on to begin no later than 07/30/2024. We are looking to begin "urban farming". The use of the property will range from hay and alfalfa production, a tree farm, food production, food plots in the future for wildlife, a dugout only pond that could sustain fish, and provide a water source for wildland urban interface firefighting. We can and plan to have as many as three livestock (cows) for beef that will need to be watered as well as some chickens for meat and egg production in the future as we finish construction of our home. Our total property size is 34.69 acres with a total of 33+- acres dedicated to crops and livestock. We are looking to be good neighbors and keep the use of the land as agriculture. We do plan to acquire more land in the immediate area in the future if possible. We look to make this a multi-generational farm. As a Fire Chief of a neighboring volunteer fire department and district, I also understand the need for water sources in the Black Hills. I will be working with the district Fire Chief to allow use of the water in case of structure or wildland fire at or near the property when it makes sense to use the water diversion point and well. I have attached several maps of the property to illustrate the property use. Feel free to contact me at any point for further clarification or questions on anything provided in this application.

Sincerely,

Jeremiah Walla



605-484-3911

jeremy.walla@gmail.com

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JUL 24 2024

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WATER

* All maps created on Pennington County Rapid Map Service



**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. 2880-2, Jeremiah and Wendy Walla**

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. 2880-2, Jeremiah and Wendy Walla, 6408 Prestwick Road, Rapid City, SD 57702.

The Chief Engineer is recommending APPROVAL of Application No. 2880-2 with a twenty-year term pursuant to SDCL 46-1-14 and 46-2A-20 because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, 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. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 2880-2 is issued for a twenty-year term. Pursuant to SDCL 46-2A-21, the twenty-year term may be deleted at any time during the twenty-year period or following its expiration. If the twenty-year term is not deleted at the end of the term, the permit may either be cancelled or amended with a new term limitation of up to twenty years. Permit No. 2880-2 may also be cancelled for nonconstruction, forfeiture, abandonment or three permit violations pursuant to SDCL 46-1-12, 46-5-37.1 and ARSD 74:02:01:37.
2. The well approved under Water Permit No. 2880-2 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.
3. The well authorized by Permit No. 2880-2 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.
4. No pumping from the well into the dugout is authorized when the dugout is overflowing.
5. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 2880-2 authorizes a maximum diversion rate of 0.57 cfs from the dugout for the irrigation of 23.54 acres with an annual volume not to exceed 2 acre feet of water per acre per year.

continued

6. This Permit is approved subject to the irrigation water use questionnaire being submitted each year. The reported use should represent the amount of water pumped from the Madison Aquifer into the dugout.

See report on application for additional information.



Eric Gronlund, Chief Engineer
September 25, 2024

Report to the Chief Engineer

On Water Permit Application No. 2880-2

Jeremiah and Wendy Walla

September 25, 2024

Water Permit Application No. 2880-2 proposes to divert water at a maximum instantaneous diversion rate of 0.39 cubic feet of water per second (cfs) from one well to be completed into the Madison aquifer (approximately 1,300 feet deep) located in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 15-T1S-R7E. Water from the well will be diverted to a dugout to be located in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ and then diverted from the dugout (16 acre-feet storage capacity) at a rate of 0.57 cfs for the irrigation of 23.54 acres located in the SE $\frac{1}{4}$ NE $\frac{1}{4}$; all in Section 15-T1S-R7E. The applicants are requesting a diversion rate greater than the statutory limit of 1.0 cfs per 70 acres. The dugout will also capture incidental runoff from direct precipitation with the impounded water also used for fish and wildlife propagation, livestock watering, and fire suppression. The site of interest is located in Pennington County approximately six miles southwest of Rapid City, SD.

AQUIFER: Madison (MDSN) and incidental runoff from direct precipitation

HYDROGEOLOGY:

In the Black Hills of South Dakota, major aquifers that are extensively used exist within the Inyan Kara Group, Minnekahta Limestone, Minnelusa Formation, Madison Limestone, and Deadwood Formation (youngest to oldest) (Carter and Driscoll, 2001a; Fahrenbach et al., 2010; Water Rights, 2024b, 2024c, and 2024d). Individually, these aquifers are separated by relatively impermeable layers within the formations or by confining layers between the formations (Carter and Driscoll, 2001a; Fahrenbach et al., 2010). The direction of groundwater movement in these aquifers is generally radially outward from the outcrop in the Black Hills in South Dakota (Carter and Driscoll, 2001a). While the lateral component of groundwater flow dominates the movement of water in these aquifers, extremely variable leakage can also occur (Carter and Driscoll, 2001a).

The Madison Group in South Dakota is a Lower Mississippian and Upper Devonian aged group of formations that in the Black Hills consists of the Englewood and Pahasapa Limestone formations (Fahrenbach et al., 2010). The Pahasapa Limestone is a white, light gray to tan, fine- to medium-grained limestone and dolomite containing brown to gray chert (Martin et al., 2004). The Englewood Limestone is a pink to lavender to light-gray, thin- to medium-bedded, fine- to medium-grained, argillaceous, dolomitic limestone (Martin et al., 2004). The Madison aquifer consists of the permeable and porous portions of the Madison Group that are sufficiently saturated to deliver useful quantities of water. The Madison aquifer extends over more than 210,000 square miles in Montana, Wyoming, North Dakota, South Dakota, and Nebraska (Downey, 1984); although, it may not be suitable as a source of water in all of those areas due to extreme depth to the aquifer and poor water quality far from the outcrops (Carter et al., 2002). The Madison Group outcrops in the Black Hills but is otherwise buried in South Dakota (shown in Figure 1) (Martin et al., 2004). In South Dakota, the Madison aquifer is primarily under

confined conditions, except where it outcrops in the Black Hills (SDGS, 2024; Water Rights, 2024b and 2024d).

The Madison aquifer may be hydrologically connected to the underlying Deadwood aquifer. Putnam and Long (2007) postulate that “the hydraulic connection between the Madison Limestone and the Minnelusa Formation is spatially variable and probably results from faults, fractures, and breccia pipes.” The Minnelusa aquifer overlies the Madison aquifer unconformably (Fahrenbach et al., 2010), which means there was a period of erosion or weathering between when the Madison Group and the Minnelusa Formation were deposited. Transmissivity in the Madison aquifer mainly comes from secondary porosity features such as solution cavities, faults, and fractures (Long and Putnam, 2002). Because most of the transmissivity in the Madison aquifer comes from secondary porosity features, aquifer characteristics in the Madison aquifer vary greatly from location to location (Long and Putnam, 2002).

In the Black Hills Area of South Dakota, Carter and others (2003) estimated the Madison Group to underlie approximately 2,632,320 acres. The aquifer has an average saturated thickness of 521 feet in the study area and a documented maximum thickness of 1,000 feet (Carter et al, 2003).

No water well or test hole completion report was submitted with Water Permit Application No. 2880-2. Water well completion reports on file with the DANR-Water Rights Program for wells completed into the Madison aquifer within approximately two miles of the proposed diversion point have saturated aquifer thicknesses ranging from approximately 60 to 360 feet, with the depth to the top of aquifer materials ranging from approximately 500 to 1,400 feet below the ground surface, and static water levels at the time of well completion varying from approximately 700 feet below the ground surface to flowing (Water Rights, 2024d). The Madison aquifer is expected to be confined at the proposed diversion point based on the well completion reports on file for nearby wells completed into the aquifer, and lithologic logs on file for nearby observation wells (SDGS, 2024; Water Rights, 2024d).

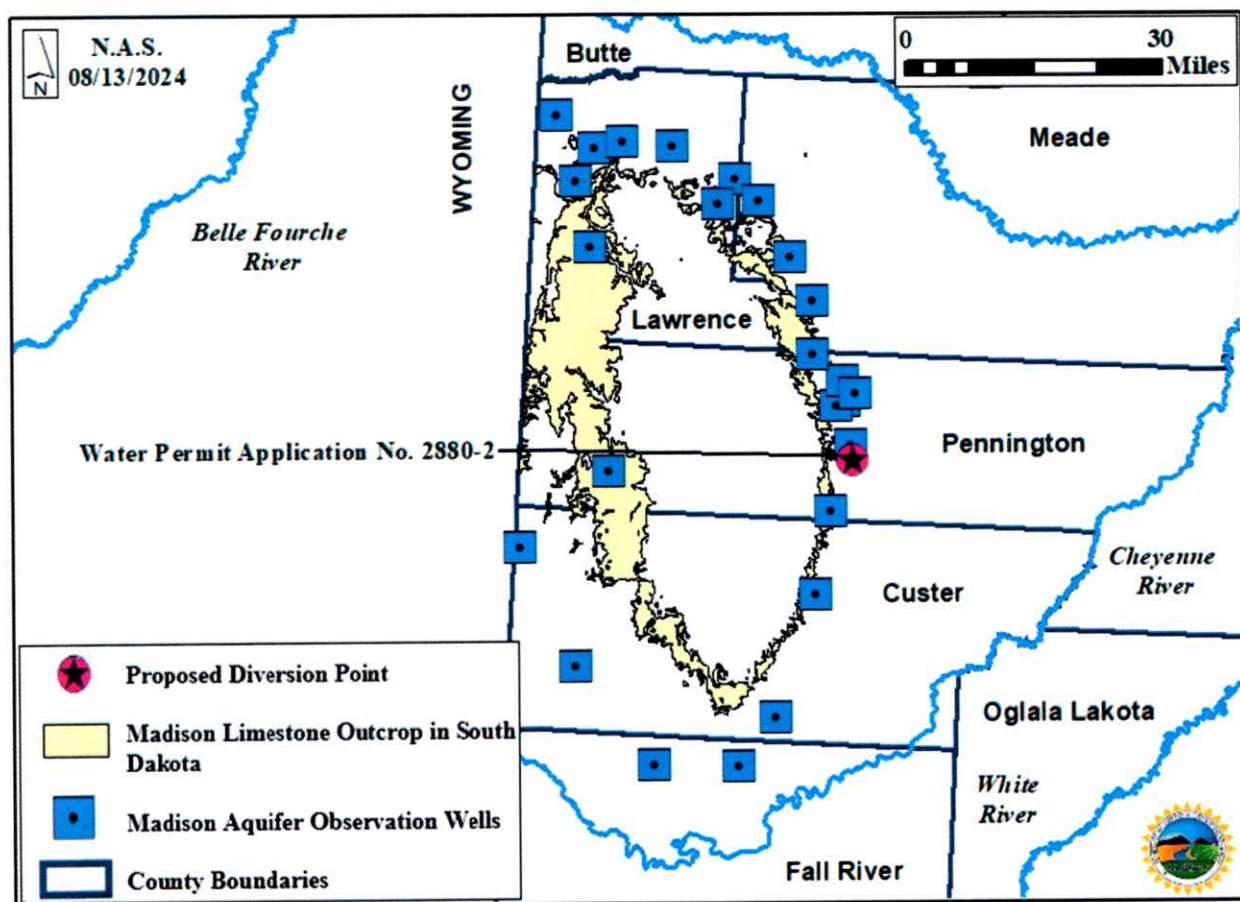


Figure 1. Madison Limestone outcrop in the Black Hills in South Dakota (Strobel et al., 1999), the Madison aquifer observation wells in the Black Hills (Water Rights, 2024b), and the proposed diversion point for Water Permit Application No. 2880-2

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 Madison aquifer.

Pursuant to SDCL 46-2A-20, **Term limitation on water withdrawal from Madison formation in certain counties.** “Notwithstanding SDCL 46-1-14 and 46-2A-7, no water permit for construction of works to withdraw water from the Madison formation in Butte, Fall River, Custer, Lawrence, Meade and Pennington counties may be issued for a term of more than twenty years, unless the Water Management Board determines, based upon the evidence presented at a hearing that:

- (1) Sufficient information is available to determine whether any significant adverse hydrologic effects on the supply of water in the Madison formation would result if the proposed withdrawal were approved; and
- (2) The information, whether provided by the applicant or by other means, shows that there is a reasonable probability that issuance of the proposed permit would not have a significant adverse effect on nearby Madison formation wells and springs.”

Water Permit Application No. 2880-2 proposes to withdraw water from the Madison aquifer in one of the counties listed above. Therefore, in addition to the other requirements, the Water Management Board must consider the effect this application may have on nearby Madison aquifer wells and springs. Water Permit Application No. 2880-2 is subject to a 20-year term limit.

WATER AVAILABILITY:

Water Permit Application No. 2880-2 proposes to appropriate water from the Madison 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 Madison aquifer is older than and stratigraphically lower than the Greenhorn Formation (Fahrenbach et al., 2010); however, the applicant’s proposed use is not for use in a water distribution system as defined by SDCL 46-1-6(17). Therefore, the average annual recharge and average annual withdrawal rates to and from the Madison aquifer must be considered.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Madison aquifer is primarily through streamflow losses and the infiltration of precipitation where the formation outcrops (Carter and Driscoll, 2001a; Driscoll et al., 2002). Driscoll and others (2002) noted that the Madison aquifer receives more recharge from streamflow losses than the Minnelusa aquifer as a result of the Madison outcrop having an upslope location to the Minnelusa outcrop within the Black Hills in South Dakota.

Woodward-Clyde Consultants (1981) estimated recharge to the outcrop of the Madison aquifer in the Black Hills as part of an environmental impact statement for the ETSI Coal Slurry Pipeline Project. The upper-bound estimate of recharge in the Woodward-Clyde Consultants (1981) report is approximately 400,000 acre-feet per year, assuming almost all of the precipitation that falls on the outcrop infiltrates into the aquifer. Woodward-Clyde Consultants (1981) produced a lower-bound recharge estimate of 140,000 acre-feet per year based on the Rahn and Gries (1973) report. However, the Rahn and Gries (1973) report estimated recharge for all Paleozoic

limestone in the Black Hills, which includes the Madison Group, the Minnelusa Formation, and the Minnekahta Formation. Rahn and Gries (1973) reported that 146.14 cfs was the minimum estimated recharge rate for all Paleozoic limestone from the infiltration of precipitation, which converts to approximately 106,000 acre-feet per year for all Paleozoic Formations. The Woodward-Clyde Consultants (1981) report did not acknowledge the fact that the Rahn and Gries (1973) report estimated minimum recharge for a larger group of formations than the Woodward-Clyde Consultants (1981) report covers; therefore, was likely to overestimate recharge to the Madison aquifer under the assumptions made.

Carter and others (2001a) analyzed streamflow and precipitation data from 1931 to 1998 within the Black Hills of South Dakota and Wyoming to determine the average annual recharge to the Madison and Minnelusa aquifers. The average annual recharge rate to the Madison and Minnelusa aquifers from streamflow contributions was estimated to be approximately 93 cfs, or 67,500 acre-feet per year; plus 251 cfs, or 181,760 acre-feet per year from precipitation falling on the outcrop in the Black Hills, for a combined estimated average annual recharge rate of 344 cfs, or 249,260 acre-feet per year.

Carter and others (2001a) determined that of the combined estimated average annual recharge rate, approximately 55% of the total recharge goes to the Madison aquifer, and the remaining 45% recharges to the Minnelusa aquifer. Therefore, the estimated average annual recharge rate to the Madison aquifer is approximately 137,093 acre-feet per year. This recharge rate estimate does not include possible inflow from adjacent aquifers or from the Madison aquifer outside of the Black Hills of South Dakota and Wyoming. The Carter and others (2001a) report uses additional and more recent years of data, and better assumptions than the Woodward-Clyde Consultants (1981) and Rahn and Gries (1973) reports. Therefore, the best estimate of recharge to the Madison aquifer is based on the Carter and others (2001a) report.

Discharge

Discharge from the Madison aquifer is primarily through well withdrawals (Water Rights, 2024d), leakage to other aquifers, and flow to headwater and artesian springs (Carter and Driscoll, 2001b).

Currently, there are 174 water rights/permits appropriating water from the Madison aquifer within South Dakota, plus one pending application – Water Permit Application No. 2038-1 requesting up to 12 acre-feet of water per year for commercial use. The estimated use for the pending application will be included with the non-irrigation water rights/permits.

Additionally, there are 12 future use permits reserving water from the Madison aquifer (Water Rights, 2024c). For the purpose of estimating average annual withdrawals, the future use permits are assumed to be fully developable for a total of 14,549 acre-feet per year.

Water Permit No. 2773-2 is authorized for use from either the Minnelusa or Madison aquifers; however, the construction period has passed for this permit and the annual irrigation questionnaire indicates the well has not been constructed (Water Rights, 2024c). Therefore, the estimated use for Water Permit No. 2773-2 will not be included in this analysis, resulting in a

total of 173 water rights/permits and one pending application. Water Right No. 1709-1 authorizes a diversion rate of 0.333 cfs from three wells, two completed into the Minnelusa aquifer (110 gallons per minute or 0.245 cfs) and one completed into the Madison aquifer (40 gallons per minute or 0.089 cfs) for suburban housing development and commercial use (Water Rights, 2024c). The estimated use for the Madison aquifer well authorized by Water Right No. 1709-1 will be included with the non-irrigation water rights/permits in this analysis.

Of the 173 Madison aquifer water rights/permits, 33 are for irrigation as a primary use, with exception of Water Permit No. 1096A-1 (see below), and 140 are for non-irrigation use (plus one pending application) (Water Rights, 2024c). Table 1 summarizes the 140 non-irrigation water rights/permits (plus one pending application) authorized to appropriate water from the Madison aquifer with the estimated annual use for each water right/permit as determined by their limiting diversion rate or annual volume. The use type determined for each water right/permit was based on the primary use categorized for each water right/permit as some permits have additional uses (Water Rights, 2024c). 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, 2024c).

Additionally, the municipal water rights/permits that are authorized to appropriate water from the Madison aquifer, that are identified as being connected to a rural water system (RWS) and likely maintain their wells for standby purposes (Drinking Water Program, 2024; Water Rights, 2024c); as such, the average annual water use for these water rights has been estimated to be zero acre-feet per year on Table 1. Overall, the average annual withdrawal rate for the Madison aquifer non-irrigation water rights/permits (plus one pending application) is approximately 44,316 acre-feet per year (Table 1) (Water Rights, 2024c).

Table 1. Summary of the non-irrigation water rights/permits authorized to appropriate from the Madison aquifer with estimated annual use determined by their respective diversion rate or annual volume, including one pending application (Drinking Water Program, 2024; Water Rights, 2024c)

Use Type	No. of Water Rights/Permits	Authorized Annual Volume (acre-feet/year)	Authorized Diversion Rate (cfs)	Total Estimated Use (acre-feet/year)
RWS	19	5,152	3.85	6,824
SHD	40	339.2	7	3,380
REC	1	N/A	1	434.4
COM	14	1,076	1.93	1,915
DOM	4	71	0.22	167
INS	2	N/A	0.2	87
IND	11	301.3	4.88	2,421
MUN	36	18,156	16.82	25,463
GEO	2	N/A	1.43	621
WDS	11	3,004		3,004
TOTAL:	140	28,088	37.33	44,316
RWS: Rural Water System, SHD: Suburban Housing Development, REC: Recreation,				
COM: Commercial, DOM: Domestic; GEO: Geothermal; WDS: Water Distribution System				
INS: Institutional, IND: Industrial, MUN: Municipal				

Currently, there are 33 irrigation water rights/permits authorized to appropriate water from the Madison aquifer (Water Rights, 2024c). 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 Madison aquifer irrigation water rights/permits that have reported over the period of record (1982 to 2023) is approximately 841 acre-feet per year (Water Rights, 2024a). To reflect the current development of irrigation water rights/permits more accurately, the average annual withdrawal rate for irrigation appropriations from 2014 to 2023 is approximately 828 acre-feet per year (Water Rights, 2024a).

For comparison purposes, the average annual withdrawal rate for the 33 water rights/permits authorized for irrigation use from the Madison aquifer was estimated utilizing the following method: for the water rights/permits with greater than ten years of irrigation reports available, the average reported irrigation over the respective period of record was used to estimate withdrawals; for the water rights/permits with less than ten years of irrigation reports available, withdrawals were assumed to equal two acre-feet per authorized acre; although, actual usage is likely less for non-turf irrigation (Water Rights, 2024a and 2024c). Non-irrigation withdrawals from permit holders with irrigation also as a permitted use were assumed to withdraw at their maximum instantaneous diversion rate 60% of the time, and the water rights/permits limited by an annual volume were assumed to withdraw their entire respective annual volume limitation. In the case of Water Right No. 1885-1, with irrigation also as a permitted use, if assumed to withdraw at their maximum instantaneous diversion rate 60% of the time plus applying 2 feet of water to each authorized acre, that sum (~91 acre-feet/year) would cause the total estimated withdrawal to exceed the rate they are physically capable of withdrawing, so instead their total

estimated withdrawal is 100% of their maximum instantaneous diversion rate (~80 acre-feet/year).

Using the methods described above, the estimated average annual withdrawal rate for the Madison aquifer water rights/permits used for irrigation, as well as other uses, is approximately 9,314 acre-feet per year (Table 2) (Water Rights, 2024a and 2024c). This value will be used in this analysis to estimate the average annual withdrawal rate for the water rights/permits authorized for irrigation primarily and other uses from the Madison aquifer.

Water Right/Permit Nos. 1096A-1, 1496-1, and 1670-1 are all authorized to withdraw from the same well and one dam. Water Right Nos. 1096A-1, 1670-1 are authorized for irrigation use and Water Right No. 1096A-1 and Water Permit No. 1496-1 are authorized for rural water system use. Documentation in the administrative file for Water Right No. 1670-1 indicates that the well is not valved such that it can be shut off when not in use for the beneficial uses listed on the permits. A letter dated September 9, 1998, indicates that when the water for that well is not being used for the beneficial uses described in the permits, it is used for fish and wildlife propagation. The person writing the letter indicated they would prefer the Board not order the well to be shut off when not used for irrigation or rural water system withdrawals. It is likely the well continues to flow uncontrolled; thus, at the flow rate listed in Water Right No. 1096A-1 of 1.33 cfs, that well withdraws approximately 963.5 acre-feet per year from the Madison aquifer.

Water Right No. 1650-1 does not require the water right holder to report annual withdrawals and allocates no acreage. It provides supplemental water supply from a flowing well for Water Right No. 1231-1. Water Right No. 1231-1 permits a 110-acre-foot dam to provide water for a commercial livestock operation and irrigation of 134 acres. Water Right No. 1650-1 allows for direct irrigation from a Madison aquifer well of up to 2 acre-ft per acre for the land permitted by Water Right No. 1231-1. Kilts (2019) estimated that Water Right No. 1650-1 withdraws 55.9 acre-feet per year (Kilts, 2019). This water right was transferred to a new owner in 2021. For the 2023 irrigation season, the owner reported using 85.36 acre-feet of water for irrigation. As this is the only year this owner has reported, the value of 55.9 acre-feet per year will be used until more years of reporting can establish an average.

Table 2. Estimated use for Madison aquifer water rights/permits with irrigation listed as primary beneficial use (Water Rights, 2024a and 2024c)

Permit No.	Name	Status	Priority Date	Use Type(s)	Authorized Diversion Rate (cfs)	LC/PE Acres	Average Report (ac-ft/yr)	Years of Irrigation Reported	Estimated IRR Use (ac-ft/yr)	Estimated Non-Irr Use (ac-ft/yr)	Total Est Use (ac-ft/yr)
1009-1	Donald F/Ann J Brady	LC	02/01/1974	IRR	0.78	53.73	29	42	29		29
1185-1	Donald F/Ann J Brady	LC	01/18/1979	IRR, REC, FWP	0.38	22.52	108.1	42	108.1	0***	108.1
1223-1	P & L Water and Hay LLP	LC	03/10/1981	IRR	0.67	263	186.1	42	186.1		186.1
1363-1	Spearfish Canyon Country Club	LC	09/15/1986	IRR	0.9	80.1	66.3	37	66.3		66.3
1452-1	Black Hills State College	LC	12/19/1988	IRR, MUN	3.33	25.44	22.8	35	22.8	1,447.4	1,470.2
1725-2	Janice R Crowser	LC	08/20/1980	IRR	1.07	75.1	0.9	25	0.9		0.89
1911-2	Hart Ranch Development Co	LC	09/27/1984	IRR, SHD, REC	0.88	124	116.7	30	116.7	382.5	499
2106-2	Stuart Rice	LC	06/06/1990	IRR, DOM	0.08	2.8	0.7	33	0.7	34.8	35.5
2286-2	Donald Konechne	LC	04/28/1993	IRR	0.1	38.5	10.2	30	10.2		10.2
858-2	John & Heidi McBride	LC	02/05/1965	IRR	9.36	655.75	6.4	42	6.4		6.4
2313-2	Coca-Cola Bottling	LC	04/08/1994	IRR, COM	0.33	3	7.1	29	7.1	143.4	150.6
1635-1	Black Hills National Cemetery	LC	04/02/1990	IRR, INS	0.82	54.5	94.1	28	94.1	356.4	450.5
1670-1	Buddy, Peggy, & Kami Ireland	LC	06/09/1998	IRR	3.61	253	43.9	26	*	*	*
1096A-1	Butte-Meade Sanitary District	PE	04/16/1976	RWS, IRR	1.33	0	N/A	0	*	*	963.5
2458-2	City of Rapid City	LC	03/30/2001	IRR	0.8	107	104.6	23	104.6		104.6
1842-1	Tom C Davis	LC	04/05/2005	IRR	0.44	330	0	19	0		0
2593-2	Hart Ranch Development	LC	06/15/2006	IRR, SHD	0.49	72.5	29.9	17	29.9	213	242.8
1858-1	Glencoe Camp Resort II LLC	LC	03/08/2006	IRR, COM	0.86	34	0	17	0	373.8	373.8
1885-1	John T & Veronica Widdoss	LC	04/09/2007	IRR, DOM	0.11	22	18.4	7	44	47.8	79.6*
1899-1	Davis Ranches Inc	LC	08/25/2008	IRR	1.43	100	0	15			0
1923-1	Roger & Jean Ranschau	LC	02/15/2011	IRR, DOM	0.11	3	1	13	0.73	47.8	48.5
2673-2	Diocese of Rapid City	LC	05/27/2011	IRR	0.12	7	9	12	8.5		8.5
1960-1	One Diamond Inc	LC	08/17/2012	IRR, COM	1.28	150	130	8	300	29****	329
1931-1	Elkhorn Ridge @ Frawley Ranches LLC	LC	04/11/2016	IRR, COM	0.17	3.3	3	11	3	73.9	76.9
1707A-1	Elkhorn Ridge @ Frawley Ranches LLC	PE	01/06/2000	IRR, SHD, COM, DOM	3.705	100	0	4	0	1,610.3	1,610.3
1707E-1	Elkhorn Ridge @ Frawley Ranches LLC	PE	01/06/2000	IRR	0	0	14.2	17	14.2		14.2
1945-1	Frawley Ranches LLC	PE	02/10/2014	IRR	1.11	265	53.3	10	53.3		53.3
2773-2	Arrowhead Country Club	PE	07/27/2017	IRR	1.11	100	0	6	200		*
2741-2	Tubbs Land & Cattle LLC	PE	08/20/2018	IRR	3.34	567	155.7	5	1,134		1,134
2002-1	City of Spearfish	PE	12/28/2020	IRR	1.33	40	0	3	80		80
2012-1	Jesse Horstmann	PE	12/23/2021	IRR	0.5	43.5	0	2	87		87
2013-1	Santa Maria Land & Cattle Corp	PE	01/18/2022	IRR	2.22	460	0	1	920		920
2879-2	Weinreis Brothers	PE	05/24/2024	IRR	0.5	75	0	0	150		150
2037-1	Jared & Anna Lukens-Black	PE	06/24/2024	IRR, COM, DOM	0.055	0.6	0	0	1.2	23.9	25.1
*Discussed in text **Extension of time to develop 1707A-1 ***Non-Irrigation use reported with irrigation use ****Non-irrigation use(s) limited by annual volume										TOTAL:	9,314
LC: Licensed Water Right, PE: Water Permit, COM: Commercial, DOM: Domestic, FWP: Fish & Wildlife Propagation, MUN: Municipal, REC: Recreation;											
RWS: Rural Water System, SHD: Suburban Housing Development											

There are domestic wells completed into the Madison aquifer that do not require a water right/permit, so the withdrawal amount from those wells is unknown (Water Rights, 2024d). However, Carter and others (2001b) estimated an average annual withdrawal rate from the Madison aquifer for domestic and livestock use from 1987 to 1996 to be approximately 247.4 acre-feet per year. It is likely that water withdrawals from the Madison aquifer for domestic and livestock use has increased since 1996; however, with the development of rural water systems in some of the areas where the Madison aquifer is a viable aquifer, it is likely some domestic users may have transitioned to rural water. Additionally, due to their relatively low diversion rates, withdrawals from domestic wells are generally not considered to be a significant portion of the hydrologic budget. Therefore, the quantity of water estimated by Carter and others (2001b) for average annual withdrawals for domestic and livestock use from the Madison aquifer will be assumed to be a probable minimum average annual withdrawal rate from the aquifer.

Two other applications requesting to appropriate water from the Madison aquifer are either deferred or held in abeyance. Water Permit Application No. 2585-2 for Southern Black Hills Water System proposes to appropriate 1,600 acre-feet per year but is deferred for further study. Water Permit Application No. 2685-2 for Powertech, Inc is held in abeyance pending federal permitting and proposes to appropriate 889 acre-feet per year.

Hydrologic Budget Summary

The estimated average annual recharge rate to the Madison aquifer is approximately 137,000 acre-feet per year. The estimated average annual withdrawal rate from the Madison aquifer is approximately 68,939 acre-feet per year (including the estimated use for Water Permit Application Nos. 2037-1 and 2880-2, if approved) (shown in Table 3). Based on the hydrologic budget, there is a reasonable probability unappropriated water is available from the Madison aquifer for the proposed appropriation.

Table 3. Estimated use from Madison aquifer (Water Rights, 2024a, 2024c, and 2024f)

Type of Water Right/Permit	Estimated Use (acre-feet/year)
Future Use Reservations	14,549
Non-Irrigation (including pending Water Permit App No. 2038-1, if approved)	44,316
Irrigation	9,314
Deferred/Abeyance	2,489
Water Permit Application No. 2880-2 (if approved, assuming 2 feet per authorized acre plus net evaporative loss)	49
TOTAL:	70,717

Localized Hydrologic Budget: *Carter, Driscoll, Hamade, & Jarrell (2001b)*

Carter and others (2001b) calculated hydrologic budgets for subareas of the Madison and Minnelusa aquifers for the Black Hills (in SD and WY) during the water years of 1987 to 1996. The budgets were calculated by dividing the Black Hills into nine subareas with the intent of minimizing groundwater flow to and from adjacent subareas. These subareas were determined based on several factors, including locations of major artesian springs, streamflow loss zones, and areas dominated by precipitation recharge. The proposed diversion point for Water Permit Application No. 2880-2 is located in Subarea 2 (Figure 2). The hydrologic budget for Subarea 2 is displayed in Table 4 (Carter et al., 2001b)

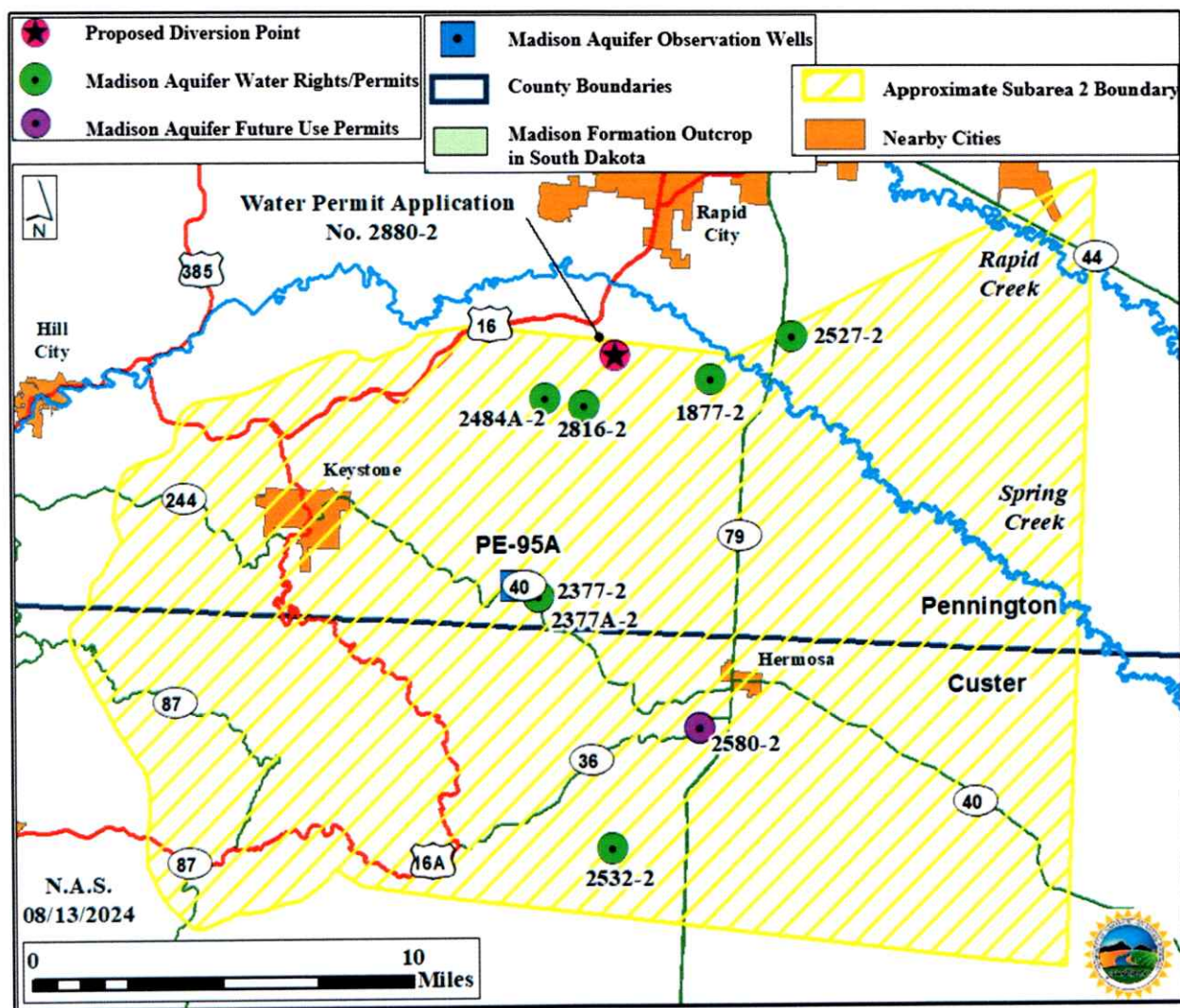


Figure 2. Subarea used for the Madison and Minnelusa aquifers localized hydrologic budgets (modified from Carter et al., 2001b), the Madison Limestone outcrop (Strobel et al., 1999), the location of the proposed diversion point for Water Permit Application No. 2880-2, and the Madison aquifer water rights/permits and observation wells within Subarea 2 (Water Rights, 2024b and 2024c)

Table 4. Estimated average annual hydrologic budget for Subarea 5 for the Madison and Minnelusa aquifers in the Black Hills for the water years 1987 to 1996 (modified from Carter et al., 2001b)

Subarea 2	Inflow:			Outflow:		
	Streamflow Recharge	Precipitation Recharge	Net Groundwater Inflow	Artesian Springflow	Wells	Net Groundwater Outflow
cfs	27.1	10.8	0	0	3.7	34.2
acre-feet/year	19,620.4	7,819.2	0	0	2,678.8	24,760.8

As shown in Table 4, Carter and others (2001b) estimated the average annual recharge rate to Subarea 2 for the Madison and Minnelusa aquifers due to streamflow, precipitation, and groundwater inflow recharge to be approximately 24,760.8 acre-feet per year. Carter and others (2001a) determined that of the combined average annual recharge rate, approximately 55% of the total recharge goes to the entire Madison aquifer. Although 55% of the total recharge going to the Madison aquifer is for the entirety of the Madison Group outcrop area in the Black Hills, this percentage can still be used to roughly approximate the average annual recharge rate to the Madison aquifer in Subarea 2, which equates to approximately 13,618 acre-feet per year.

Groundwater models rely on several assumptions and the hydrologic budget for the subarea determined by Carter and others (2001b) does not account for other factors contributing to recharge. Additional recharge is likely available through upward leakage from underlying aquifers and through well withdrawals inducing groundwater inflow from outside the subarea.

Currently in Subarea 2, there are seven water rights/permits authorized to withdraw from the Madison aquifer, and one future use permit reserving water (Water Rights, 2024c). For the water rights/permits authorized for irrigation use, an application rate of two feet per authorized acre per year was utilized for the purpose of estimating the average annual withdrawal rate from the Madison aquifer. The average annual withdrawal rate from the Madison aquifer for the non-irrigation water rights/permits was estimated utilizing the same methods used for the non-irrigation water rights/permits in Table 1. Including Water Permit Application No. 2880-2 (if approved, assuming two feet or water per authorized acre application rate plus net evaporative loss), the estimated average annual withdrawal rate from the Madison aquifer is approximately 2,891 acre-feet per year from Subarea 2. Based on the hydrologic budget for the water rights/permits within Carter and others (2001b) Subarea 2, there is a reasonable probability unappropriated water is available from the Madison 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 DANR-Water Rights Program monitors 25 observation wells completed into the Madison aquifer (Water Rights, 2024b). The four closest observation wells to the proposed diversion point are PE-94A (approximately two miles north), PE-86A (approximately two miles north), PE-95A (approximately 6.5 miles southwest), and PE-96A (approximately 6.75 miles northwest) (as shown in Figure 1) (Water Rights, 2024b). The hydrographs for these observation wells are displayed in Figures 3 to 5 (Water Rights, 2024b). The data points utilized to construct the hydrographs are measurements of the static water level in the observation wells from the top of the well casing.

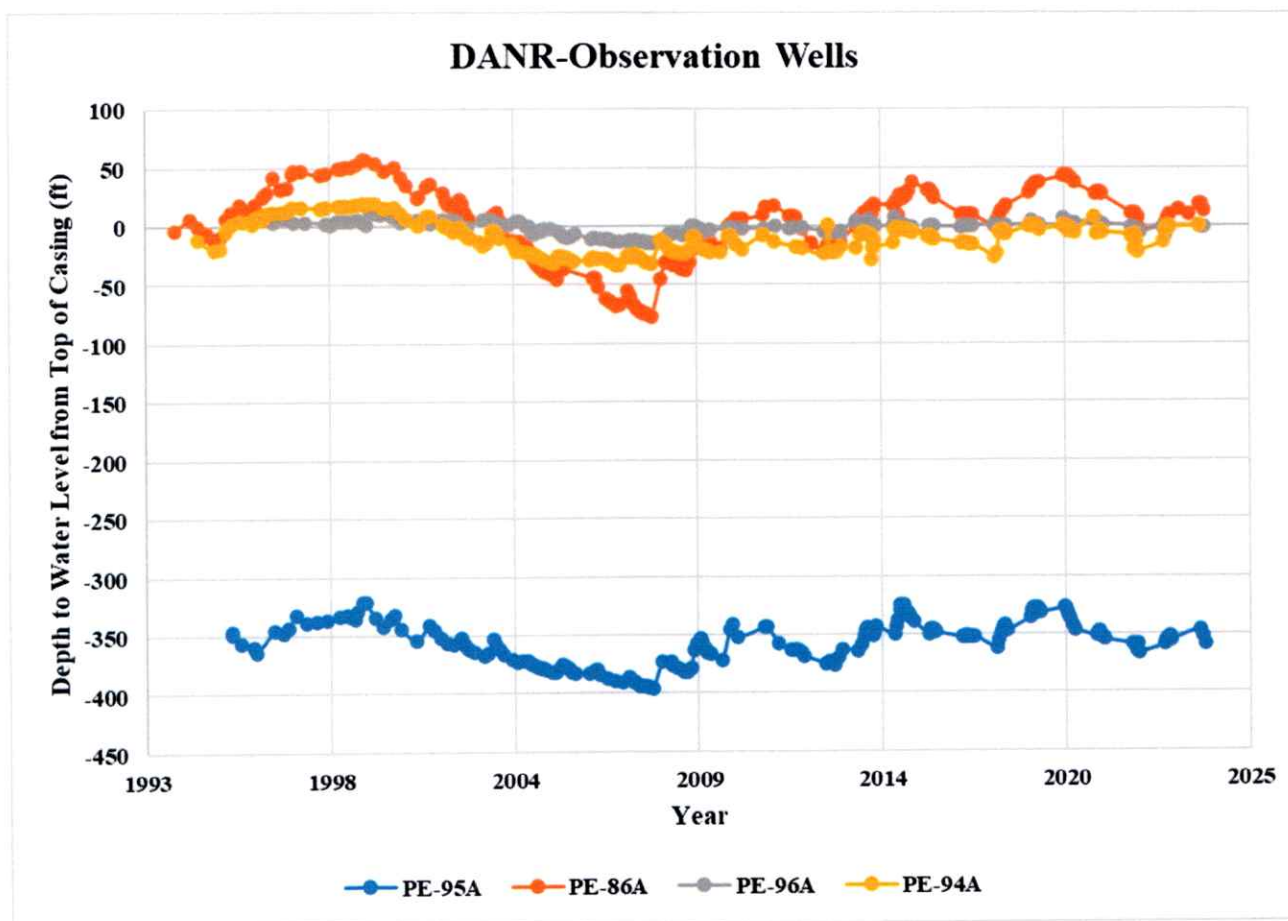


Figure 3. Hydrographs for observation wells PE-94A, PE-86A, PE-95A, and PE-96A (Water Rights, 2024b)

Observation wells PE-96A and PE-95A are approximately 0.5 miles from the closest Madison Group outcrop. The outcrop is a primary recharge area for the Madison aquifer. As such, the hydrographs for PE-96A and PE-95A are more reactive to the magnitude of recharge occurring on the outcrop than areas downgradient from the outcrop, resulting in observation wells near the outcrop showing greater fluctuations to seasonal recharge and withdrawals than observation wells further away. Overall, the hydrographs for the observation wells display generally stable to slightly increasing water levels over their respective periods of record. The hydrographs for these three observation wells were compared to the hydrographs for the other observation wells completed into the Madison aquifer and each displayed a generally similar trend as shown on the hydrographs displayed in Figures 3 to 5 (Water Rights, 2024b). The hydrographs for the observation wells completed into the Madison 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 annually. 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 water levels in the aquifer rather than the impacts of pumping from the Madison 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.

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 174 water rights/permits appropriating water from the Madison aquifer within South Dakota, plus one pending application, and 11 future use permits reserving water (Water Rights, 2024c). The closest water rights/permits to the proposed diversion point are Water Right No. 2810-2 and Water Permit No. 2816-2, which are held by Croell Inc and Pine Grove Community Water Association. The diversion points for Water Right No. 2810-2 and Water Permit No. 2816-2 are located approximately 1.5 miles northwest and southwest of the proposed diversion point for this application (Figure 4) (Table 5) (Water Rights, 2024c).

There are domestic wells on file with the DANR-Water Rights Program that are completed into the Madison aquifer, with the closest domestic well on file (not held by the applicant) located approximately 0.3 miles northwest of the proposed diversion point (Water Rights, 2024d). There could potentially be other domestic wells completed into the Madison aquifer near the proposed diversion point that are not on file with the DANR-Water Rights Program. The location of the domestic wells in the well completion report database maintained by the Water Rights Program is based on the location listed by the driller on the well completion report.

The Madison aquifer can exist under both confined and unconfined aquifer conditions (Water Rights, 2024b and 2024d). Based on the water well completion reports on file, and lithologic logs on file for nearby observation wells, the Madison aquifer is expected to be confined near the proposed diversion point (SDGS, 2024; Water Rights, 2024b and 2024d). 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 Madison aquifer near permitted/licensed diversion points can provide some insight on how the aquifer responds to pumping.

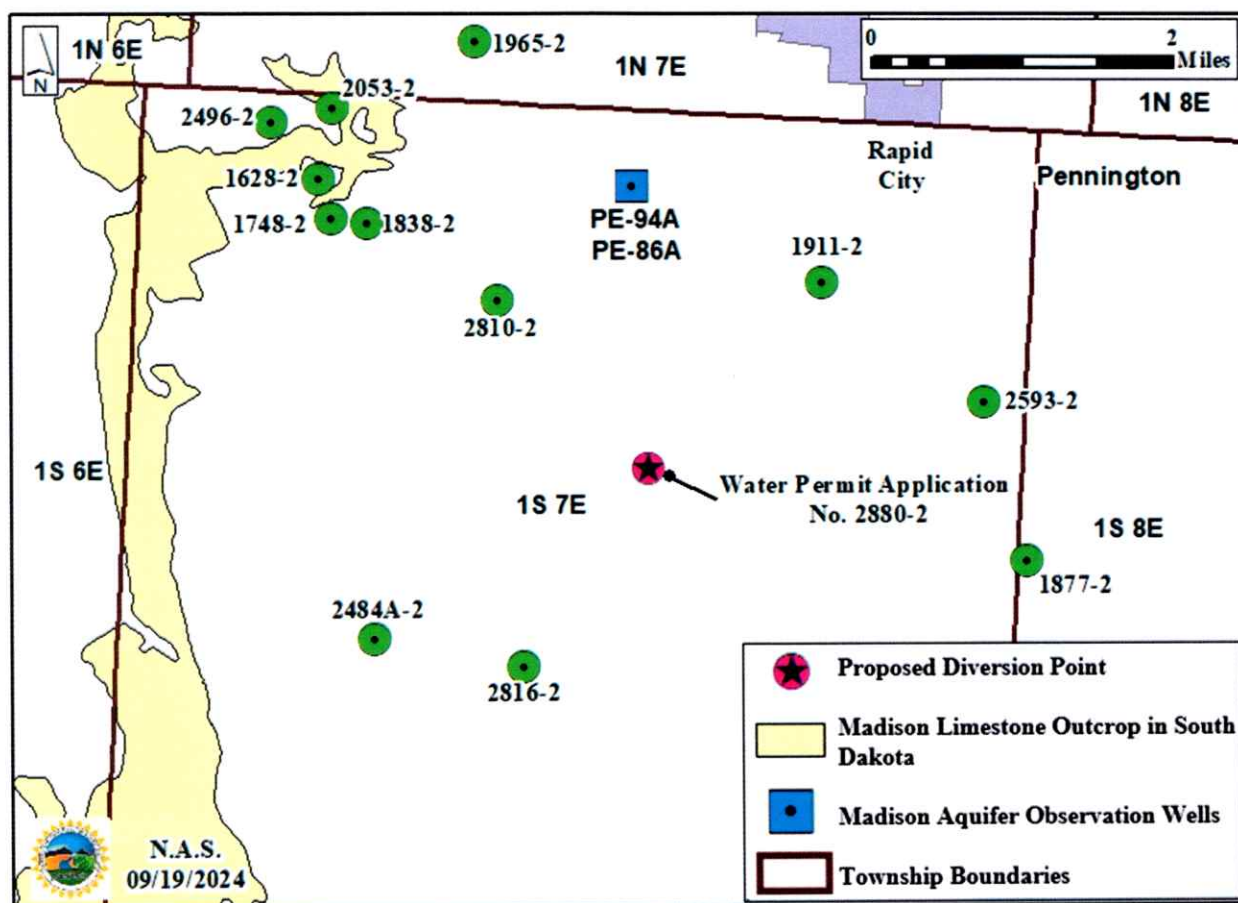


Figure 4. Location of the proposed diversion point for Water Permit Application No. 2880-2 with the Madison aquifer water rights/permits and observation wells within approximately three miles (Water Rights, 2024b and 2024c)

Table 5. Water rights/permits authorized to withdraw from the Madison aquifer as shown in Figure 4 (Water Rights, 2024c)

Permit No.	Name	Status	Use	Authorized Diversion Rate (cfs)	Authorized Annual Volume (acre-feet/year)
1628-2	Copper Oaks Water Association	LC	SHD	0.05	
1748-2	Warren Water Co Inc	LC	SHD	0.03	
1838-2	Canyon Shadows Water Co	LC	SHD	0.03	
1877-2	Hart Ranch Development Co	LC	SHD, REC, COM	0.55	
1911-2	Hart Ranch Development Co	LC	IRR, SHD, REC	0.88	
1965-2	Highland Hills Water Association	LC	SHD	0.056	
2053-2	Spring Canyon Water Co	LC	SHD	0.05	
2484A-2	Pine Grove Community Water	LC	SHD	0.392	
2496-2	Spring Canyon Water Co	LC	SHD	0.17	
2593-2	Hart Ranch Development Co	LC	IRR, SHD, REC	0.49	
2810-2	Croell Inc	LC	IND, DOM	0.33	25.1
2816-2	Pine Grove Community Water	PE	WDS	0.11	8.3
LC: Licensed Water Right; PE: Water Permit; COM: Commerical; DOM: Domestic; IRR: Irrigation; IND: Industrial; REC: Recreation; SHD: Suburban Housing Development; WDS: Water Distribution System					

Observation well PE-86A (approximately two miles north of the proposed diversion point) has six high-yield wells (assumed to be a well with an authorized diversion rate greater than 0.2 cfs) within approximately two miles of it (Water Rights, 2024b and 2024c). Some drawdown resulting from pumping can be seen on the hydrograph for PE-86A, along with the water level in the aquifer recovering in response to recharge during the spring season (Figure 3) (Water Rights, 2024b). The lithologic log on file for PE-86A noted the well was drilled approximately 1,220 feet below the ground surface, had a casing stick up height of 0.5 feet, and the top of aquifer materials approximately 1,197 feet below the ground surface (SDGS, 2024). The lowest recorded static water level on the hydrograph is approximately 77 feet below the top of the well casing (shown on Figure 3), which indicates there was still approximately 1,120 feet of artesian head pressure in PE-86A even during a drier period when wells are expected to be pumping more water and when water levels are generally naturally lower in response to drier conditions (SDGS, 2024; Water Rights, 2024b).

Within approximately two miles of the proposed diversion point, wells completed into the Madison aquifer have a saturated aquifer thickness ranging from approximately 60 to 360 feet (SDGS, 2024; Water Rights, 2024d). This would generally allow for enough thickness for a pump 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 for this application is not expected to unlawfully impair nearby adequate wells. In Pennington County, there are no substantiated complaints on file with the DANR-Water Rights Program regarding well interference for adequate wells completed into the Madison aquifer (Water Rights, 2024e).

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 Madison aquifer at their location. However, when considering the statutes (SDCL 46-1-4 and 46-6-6.1), rules (ARSD 74:02:04:20(6) and (7)), the saturated thickness of the Madison aquifer near the proposed diversion point, the artesian head pressure in observation wells near permitted/licensed diversion points, and the lack of well interference complaints, any drawdown created from the proposed diversion is not expected to cause an unlawful impairment to 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 to existing users with adequate wells.

Springs

In the past, there have been concerns that development of the Madison aquifer will affect spring discharge. The nearest spring to the proposed diversion point is Cleghorn Springs and Jackson Springs (approximately seven miles northwest of proposed diversion point), which discharges from the Minnelusa Formation and Madison Group, but it is not known what proportion is from each aquifer (Driscoll et al., 2002; Peter, 1985; USGS, 2024). The next nearest spring is Battle Creek Spring (approximately eight miles southwest of proposed diversion point) was identified as discharging from the local Quaternary Alluvium aquifer (Driscoll et al., 2002; USGS, 2024).

When considering the deferral of Water Permit Application No. 2585-2 for the Southern Black Hills Water System, the Water Management Board adopted a conclusion of law stating in part "...The only protection South Dakota law provides when considering an application for an underground water permit for flow from an artesian spring is under the public interest criteria" (Water Rights, 1997). Given the distance between the proposed diversion point and the springs mentioned above, while considering the applicant's proposed maximum diversion rate, there is a reasonable probability Water Permit Application No. 2880-2 can be developed without making an impact that would be measurable above the natural fluctuations in the nearest spring(s) that likely are or could be influenced by water coming from the Minnekahta or Minnelusa aquifers.

SDCL 46-5-6:

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of 1.0 cfs per 70 acres, or "the equivalent thereof." The statute does provide that: "The Water Management Board may allow a greater diversion, in volume or rate or both, if the method of irrigation, any time constraints on diversion of water, or the type of soil so requires..."

If approved, Water Permit Application No. 2880-2 would authorize a maximum instantaneous diversion rate of 0.39 cfs from one well and incidental runoff for the irrigation of 23.54 acres, or at a rate of 1.2 cfs per 70 acres. The applicant did not provide a reason for the exceedance, but it appears to be due to the irregular shaped area being irrigated and possibly the type of irrigation equipment to be used. Either of these reasons would fall within SDCL 46-5-6 which allows the Water Management Board to allow a greater diversion rate without exceeding the annual volume limitation. The Water Management Board has accepted both reasons as valid for exceeding the 1 cfs per 70-acre limitation. Furthermore, an exceedance of 0.2 cfs per 70 acres is not unreasonable.

Incidental Runoff Contribution

The dugout, where the diverted water from the Madison aquifer well is to be stored, will also capture incidental runoff from direct precipitation. The dugout has a 16 acre-feet storage capacity and 1.06-acre surface area. The dugout is located adjacent to an unnamed tributary to Spring Creek.

Review of Water Availability

Pennington County receives approximately 17.9 inches of precipitation per year (1.49 feet/year) on average, using climate data from 1895 to 2024 (NOAA, 2024). At storage capacity, the dugout covers a surface area of 1.06 acres. When multiplying that surface area by 1.49 feet of precipitation per year, approximately 1.58 acre-feet per year is available to be stored on average.

The application indicated the intent is to store the captured runoff in one dugout. The water is expected to be pumped primarily during the irrigation season but losses due to evaporation and seepage are expected. It has been found that evaporation from a shallow lake, wet soil, or other moist natural surface is roughly 70% of the evaporation from a Class A pan for the same conditions (Farnsworth and Thompson, 1982). Near the proposed dugout location, the estimated average pan evaporation rate for April through October is 44 inches/year, and for November through March is 12 inches/year, for a total of 56 inches/year (4.67 feet/year) in pan evaporation (Poudyal, 2006). To account for evaporation from natural surfaces, 70% of that rate is approximately 39.2 inches/year (3.3 feet/year). Estimated loss due to seepage is not available since this is not known until after years of operation and is typically not measured (Kilts, 2022). The net loss between direct precipitation and evaporation is approximately 21.3 inches per year, or approximately 1.88 acre-feet per year over the dugout area.

These precipitation and evaporative estimates are not a guarantee of what will occur in any given year, but are on average, over time, estimates. Any incidental surface runoff into the dugout will need to be supplemented with ground water to maintain water levels in the dugout.

Review of Existing Water Rights, Discussion, and Recommendation

There are no water rights/permits authorized to appropriate water from the unnamed tributary to Spring Creek (Water Rights, 2024c). Additionally, the nearest Spring Creek water right/permit is located five river miles downstream from the confluence of the unnamed tributary with the creek.

One location notice exists on the unnamed tributary to Spring Creek downstream of the proposed dugout location. No location notices exist on file on Spring Creek for several river miles downstream of the proposed dugout location (Water Rights, 2024c).

Given the lack of water rights/permits from the unnamed tributary to Spring Creek, and the lack of complaints for appropriative and domestic water uses, any incidental surface water contribution captured by the dugout, if Water Permit Application No. 2880-2 is approved, is not expected to unlawfully impair existing downstream appropriative uses or domestic uses.

CONCLUSIONS:

1. Water Permit Application No. 2880-2 proposes to divert water at a maximum instantaneous diversion rate of 0.39 cfs from one well to be completed into the Madison aquifer (approximately 1,300 feet deep). Water from the well will be diverted to a dugout and then diverted from the dugout (16 acre-feet storage capacity) at a rate of 0.57 cfs for the irrigation of 23.54 acres.
2. The dugout will also capture incidental runoff from direct precipitation with the impounded water also used for fish and wildlife propagation, livestock watering, and fire suppression. The site of interest is located in Pennington County approximately six miles southwest of Rapid City, SD.
3. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres likely due to the irregular shaped area being irrigated and possibly the type of irrigation equipment to be used. This reason falls within SDCL 46-5-6 which allows the Water Management Board to allow a greater diversion rate and has been accepted by the Water Management Board and the Water Rights Program in the past.
4. Based on the hydrologic budget and observation well data, there is a reasonable probability that unappropriated water is available from the Madison aquifer to supply the proposed appropriation.
5. There is a reasonable probability that the proposed diversion by Water Permit Application No. 2880-2 will not unlawfully impair adequate wells for existing water rights/permits and domestic uses.
6. On average, Pennington County receives approximately 17.9 inches of precipitation per year, which would yield approximately 1.58 acre-feet per year available to be stored in the dugout.
7. On average, Pennington County experiences 39.2 inches of evaporative losses per year, resulting in a net loss between direct precipitation and evaporation of approximately 21.3 inches per year, or approximately 1.88 acre-feet per year over the dugout area.
8. These precipitation and evaporative estimates are not a guarantee of what will occur in any given year, but are on average, over time, estimates. Incidental runoff from direct precipitation will not be a reliable source.

Nakaila Steen

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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**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.**

September 26, 2024

Jeremiah and Wendy Walla
6408 Prestwick Road
Rapid City SD 57702

Dear Mr. & Mrs. Walla:

Water Permit Application No. 2880-2 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 Rapid City Journal printed in Rapid City SD (Ph # 307-266-0554). 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,

Rachel Rodriguez

Rachel Rodriguez
Water Rights Program
(605) 773-3352

enclosures

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

NOTICE OF APPLICATION NO. 2880-2 to Appropriate Water

Notice is given that Jeremiah and Wendy Walla, 6408 Prestwick Road, Rapid City SD 57702, have filed an application for a water permit to appropriate 0.39 cubic feet of water per second (cfs) from one well to be completed into the Madison Aquifer (approximately 1,300 feet deep), located in the SE 1/4 NE 1/4 Section 15-T1S-R7E. Water from the well will be diverted to a dugout to be located in the SE 1/4 NE 1/4 and then diverted from the dugout (16 acre-feet storage capacity) at a rate of 0.57 cfs for irrigation of 23.54 acres located in the SE 1/4 NE 1/4; all in Section 15- T1S-R7E. The applicants are requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. The dugout will also capture incidental runoff from direct precipitation with the impounded water also used for fish and wildlife propagation, livestock watering, and fire suppression. This site is located approximately six miles southwest of Rapid City SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2880-2 with a twenty-year term pursuant to SDCL 46-1-14 and 46-2A-20 because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, 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. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by October 15, 2024.

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 October 15, 2024.

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.

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Thursday, September 26, 2024 8:11 AM
To: RCY Legals
Subject: 2880-2 Jeremiah and Wendy Walla - Public Notice
Attachments: 2880-2 public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on October 3, 2024.

Jeremiah and Wendy Walla, 6408 Prestwick Road, Rapid City SD 57702, 605-348-9505, jeremy.walla@gmail.com has been notified to contact you to authorize publication and arrange for payment.

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

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

Thank you,

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



AFFIDAVIT OF PUBLICATION

Jeremy Walla
6408 Prestwick Road

State of Pennsylvania, County of Lancaster, ss:

Rachel Cozart, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC and duly authorized agent of The Rapid City Journal, a corporation of Rapid City, South Dakota, a legal and daily newspaper printed and published in Rapid City, in said County of Pennington, and has full and personal knowledge of all the facts herein stated as follows: that said newspaper is and at all of the times herein mentioned has been a legal and daily newspaper with a bonafide paid circulation of at least Two Hundred copies daily, and has been printed and published for at least one year prior to the first date of the published notice.

This affidavit is a true and corrected copy of notice which appeared in said newspaper on the following dates:

PUBLICATION DATES: October. 3 2024

NOTICE ID: gKStrIoLSkQQ0CQ7Apes

PUBLISHER ID: COL-SD-1066

NOTICE NAME: Notice of App 2880-2 to Appropriate Water

TOTAL AD COST: \$89.11

FILED ON: Sep. 26, 2024

Rachel Cozart

(Signed) _____

VERIFICATION

State of Pennsylvania
County of Lancaster

Commonwealth of Pennsylvania - Notary Seal
Nicole Burkholder, Notary Public
Lancaster County
My commission expires March 30, 2027
Commission Number 1342120

Subscribed in my presence and sworn to before me on this: 10/04/2024

Nicole Burkholder

Notary Public

Notarized remotely online using communication technology via Proof.

NOTICE OF APPLICATION NO.

2880-2 to Appropriate Water
Notice is given that Jeremiah and Wendy Walla, 6408 Prestwick Road, Rapid City SD 57702, have filed an application for a water permit to appropriate 0.39 cubic feet of water per second (cfs) from one well to be completed into the Madison Aquifer (approximately 1,300 feet deep), located in the SE 1/4 NE 1/4 Section 15-T1S- R7E. Water from the well will be diverted to a dugout to be located in the SE 1/4 NE 1/4 and then diverted from the dugout (16 acre-foot storage capacity) at a rate of 0.57 cfs for irrigation of 23.54 acres located in the SE 1/4 NE 1/4; all in Section 15- T1S- R7E. The applicants are requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. The dugout will also capture incidental runoff from direct precipitation with the impounded water also used for fish and wildlife propagation, livestock watering, and fire suppression. This site is located approximately six miles southwest of Rapid City SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2880-2 with a twenty-year term pursuant to SDCL 46-1-14 and 46-2A-20 because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, 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. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

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

523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by October 15, 2024.

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 October 15, 2024.

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 October 3, 2024 for a total approximate cost of \$89.11 and may be viewed for free at www.sd-publicnotices.com)
Legal No: COL-SD-1066

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Thursday, September 26, 2024 8:13 AM
To: Jeremy Walla
Subject: 2880-2 Jeremiah and Wendy Walla - Public Notice
Attachments: 2880-2 Rec.pdf; 2880-2 Ltr.pdf; 2880-2 PubNotice.pdf

Good morning,

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

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

Thank you,

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





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

OCT 22 2024

Jeremiah and Wendy Walla
6408 Prestwick Road
Rapid City SD 57702

Dear Mr. & Mrs. Walla:

Enclosed is Water Permit No. 2880-2 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

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

enclosures



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

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

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

Application No.: 2880-2

Name of Applicant: Jeremiah and Wendy Walla

Date of Posting: 9/30/2024

Date of Removal: 10/22/2024



Ron Duvall, Engineer III

10/22/2024

Date

Subscribed and sworn to before me, a notary public, this 22nd day of Oct, 20 24.

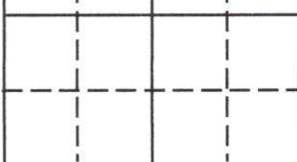


Notary Public - South Dakota
My commission expires:

Rachel Rodriguez
My Commission Expires
May 16, 2029

(SEAL)



Location <u>SE</u> $\frac{1}{4}$ <u>NE</u> $\frac{1}{4}$ Sec <u>15</u> Twp <u>1S</u> Rg <u>7E</u> County <u>Pennington</u> GPS Coordinates Lat: <u>43.96455</u> Lon: <u>-103.26169</u> Please mark well location with an "X" on section grid  North W E 1 Mile Well Completion Date <u>5/27/2025</u> Distance from nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.) <u>250</u> ft. from <u>septic system</u> (identify source) PROPOSED USE: ☒ Domestic/Stock ☐ Municipal ☐ Business ☐ Monitoring Well ☒ Irrigation ☐ Industrial ☐ Institutional ☐ Test Hole ☐ Dewatering Well ☐ Geothermal ☐ Other _____ METHOD OF DRILLING: rotary air - mud CASING DATA: ☒ Steel ☐ Plastic ☐ Other If other describe _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>PIPEWEIGHT</th> <th>DIAMETER</th> <th>FROM</th> <th>TO</th> <th>HOLE DIAMETER</th> </tr> </thead> <tbody> <tr> <td><u>36</u> LB/FT</td> <td><u>9.625</u> IN</td> <td><u>0</u> FT</td> <td><u>60</u> FT</td> <td><u>13.5</u> IN</td> </tr> <tr> <td><u>23</u> LB/FT</td> <td><u>7</u> IN</td> <td><u>+2</u> FT</td> <td><u>1122</u> FT</td> <td><u>8.75</u> IN</td> </tr> <tr> <td><u>O.H</u> LB/FT</td> <td><u>-</u> IN</td> <td><u>1122</u> FT</td> <td><u>1260</u> FT</td> <td><u>6.25</u> IN</td> </tr> </tbody> </table> GROUTING DATA: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Grout Type</th> <th>No. of Sacks</th> <th>Grout Weight</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>cement</u></td> <td><u>35</u></td> <td><u>15.0</u> Lb/gal</td> <td><u>0.0</u> Ft</td> <td><u>60.0</u> Ft</td> </tr> <tr> <td><u>cement</u></td> <td><u>210</u></td> <td><u>15.0</u> Lb/gal</td> <td><u>0.0</u> Ft</td> <td><u>1,122.0</u> Ft</td> </tr> </tbody> </table> Describe grouting procedure <u>Pressure grouted through casing</u> SCREEN: ☐ Perforated pipe ☐ Manufactured Diameter _____ Inches Length _____ Feet Material _____ Slot Size _____ Set From _____ Feet to _____ 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? <u>chlorine solution</u> ☐ No, Why Not? _____ Lab sample sent to for water quality analysis _____	PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER	<u>36</u> LB/FT	<u>9.625</u> IN	<u>0</u> FT	<u>60</u> FT	<u>13.5</u> IN	<u>23</u> LB/FT	<u>7</u> IN	<u>+2</u> FT	<u>1122</u> FT	<u>8.75</u> IN	<u>O.H</u> LB/FT	<u>-</u> IN	<u>1122</u> FT	<u>1260</u> FT	<u>6.25</u> IN	Grout Type	No. of Sacks	Grout Weight	From	To	<u>cement</u>	<u>35</u>	<u>15.0</u> Lb/gal	<u>0.0</u> Ft	<u>60.0</u> Ft	<u>cement</u>	<u>210</u>	<u>15.0</u> Lb/gal	<u>0.0</u> Ft	<u>1,122.0</u> Ft	Well Owner: <u>Jeremy Walla</u> Business Name: _____ Address: <u>6408 Prestwick Rd.</u> City, State, Zip: <u>Rapid City, SD 57702</u> WELL LOG: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">FORMATION</th> <th colspan="2">DEPTH</th> </tr> <tr> <th>FROM</th> <th>TO</th> </tr> </thead> <tbody> <tr> <td><u>Spearfish</u></td> <td><u>0.0</u></td> <td><u>268.0</u></td> </tr> <tr> <td><u>Minnekahta</u></td> <td><u>268.0</u></td> <td><u>309.0</u></td> </tr> <tr> <td><u>Opeche</u></td> <td><u>309.0</u></td> <td><u>419.0</u></td> </tr> <tr> <td><u>Minnelusa</u></td> <td><u>419.0</u></td> <td><u>988.0</u></td> </tr> <tr> <td><u>Madison</u></td> <td><u>988.0</u></td> <td><u>1,260.0</u></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> STATIC WATER LEVEL <u>84.0</u> 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: <u>200 Ft. - 1 Hr - 150 GPM</u> ☐ Bailed ☒ Air <u>300 Ft - 1 Hr - 240 GPM</u> ☐ Other <u>400 Ft - 1 Hr - 285 GPM</u> Pumping Level Below Land Surface <u>500.0</u> Ft. After <u>1.0</u> Hrs. pumped <u>325.0</u> GPM <u>700.0</u> Ft. After <u>1.5</u> Hrs. pumped <u>Est. 400.0</u> GPM If pump installed, pump rate: _____ GPM REMARKS RECEIVED JUL 03 2025 OFFICE OF WATER This well was drilled under license # <u>331</u> And this report is true and accurate. Drilling firm: <u>Taylor Drilling Co.</u> Signature of License Representative: _____ Signature of Well Owner or Equitable Property Holder: _____ Date: _____	FORMATION	DEPTH		FROM	TO	<u>Spearfish</u>	<u>0.0</u>	<u>268.0</u>	<u>Minnekahta</u>	<u>268.0</u>	<u>309.0</u>	<u>Opeche</u>	<u>309.0</u>	<u>419.0</u>	<u>Minnelusa</u>	<u>419.0</u>	<u>988.0</u>	<u>Madison</u>	<u>988.0</u>	<u>1,260.0</u>												
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