

WATER PERMIT NO. 1999-1

Name of Applicant: Rafter Properties LLC

Address: 13167 Arapahoe Dr, Piedmont SD 57769

Phone: 605 347-1100

Amount of Water Claimed: 0.17 cfs

Total Acres: NA

Source of Water Supply: groundwater (one well)

Water to be used for: water distribution system

County: Meade

Type of Waste Disposal System:

Location: 3 miles northeast of Summerset

PRIORITY

Date Received: 7-23-20

Application/License Fee: \$ 700.00

Corrected Application Received:

Period of Annual Use: Jan 1 – Dec 31

Remarks: For use in the AR Ranch Estates Subdivision

Diversion Point: SW 1/4 SE 1/4 Sec 16-T3N-R7E

Land to be Irrigated: NA

Depth of Well: 518 feet deep

Well Driller: Bice Drilling

Remarks:

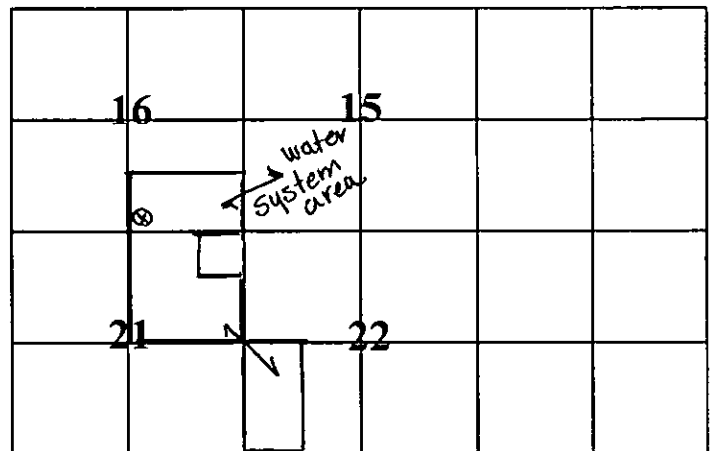
Type of Map:

Prepared by:

Reviewed and the Number Assigned on: XX

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



FORM 2: Application for uses other than irrigation
(type or print)

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>1999-1</u> (office use only) Hydrologic Unit <u>10120111</u>
	Basin <u>Upper Cheyenne</u>
	Newspaper <u>Faith Independent</u> <u>Rapid City Journal</u>

PAID

JUL 23 2020

Ck# 1043

RECEIVED

JUL 23 2020

Application For Permit To Appropriate Water Within The State Of South Dakota WATER RIGHTS PROGRAM

Check use(s) of water:

☐ Municipal	☒ Water Distribution System	☐ Recreational	☐ Institutional
☐ Rural Water System	☐ Commercial	☐ Fish & Wildlife	☐ Geothermal
☐ Domestic (over 18 gpm)	☐ Industrial	☐ Other _____	

Type of Application:
(check one)

☒ New	☐ Vested Right (Use predates Mar 2, 1955)	☐ Future Use Reservation
☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____		
☐ Amendment/Correction to Permit No. _____		

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

_____1. Name to Appear on Water Permit Rafter Properties, LLC

Mailing Address 13167 Arapahoe Dr., Piedmont ☒ SD ☒ 57769
(Address) (City) (State) (Zip Code)

Phone 6057912300 Mobile 6053471100 Email jd@hewittlandcompany.com

2. Amount of water claimed 0.17 *CFS or 75 **GPM and 74 420 ***AF or _____ Gallons
Flow rate and volume are both required. (*Cubic Feet per Second) (**Gallons per Minute) (***Acre Feet - storage capacity of dam/dugout or annual use)3. Source of water supply Well - located in SW 1/4 SE 1/4 Sec 16-T3N-R7E4. Location of point of diversion SE 1/2 SE 1/4 SEC. 16, T3N, R7E, County MEADE ☒
(example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W)If not a public water supply (e.g. municipal), will water be used outside of the area described above? ☒ Yes ☐ NoIf "Yes," where will water be used? NE 1/4 SEC 21, W1/2SW1/4 SEC 22, T3N, R7E, MEADE CO, SD
(example - NW 1/4 section 12-T104N-R53W)5. County or counties where water will be used MEADE6. Annual period during which water is to be used 12 MONTHS Jan 1 - Dec 31

7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

This well will serve a Centralized Water System used for AR Ranch Estates Subdivision formerly the S1/2SE1/4 Sec 16, T3N, R7E, Meade Co. The current pahase includes 34 residential lots, there will also be a 30,000 gal storage tank installed.

I, [Signature] Member/Mgr _____, 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.

**SOUTH DAKOTA
WATER PERMIT NO. 1999-1**

Date of first receipt of application July 23, 2020.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 1999-1 to Rafter Properties, LLC, c/o JD Hewitt, 13167 Arapahoe Dr, Piedmont SD 57769 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. 1999-1 appropriates 74 acre-feet of water annually at a maximum pump rate of 0.17 cubic feet of water per second from one well to be completed into the Inyan Kara Aquifer (518 feet deep) located in the SW 1/4 SE 1/4 Section 16-T3N-R7E for a water distribution system to be located in portions of the S 1/2 SE 1/4 Section 16, NE 1/4 Section 21 and the W 1/2 SW 1/4 Section 22; all in T3N-R7E. This site is located approximately 3 miles northeast of Summerset SD.
2. The water appropriated shall be used for the purpose of a water distribution system and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 1999-1 is October 12, 2020.
5. The date from which applicant may claim right is July 23, 2020.
6. One-fifth of the construction is to be completed on or before April 12, 2023.
7. All construction is to be completed on or before October 12, 2025.
8. Water is to be put to beneficial use on or before October 12, 2029.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 1999-1 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. The permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Inyan Kara aquifer.
4. Water Permit No. 1999-1 authorizes a total annual diversion of 74 acre feet of water.

WATER MANAGEMENT BOARD

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

OCT 21 2020
date



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 Frank Conway, Bice Drilling
(if yes, please provide copies of logs)

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

For either Existing or Proposed Wells:

c) Well Depth (required) 518' Depth to Top of Water Bearing Material 497' Depth to Water from Surface 497

d) Distance to nearest domestic well on applicant's property none Property owned by others 3/4 mile

2. Wastewater Disposal System Information

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

b) System Capacity (gallons) Year Constructed

c) Connected to the City of Sanitary System

3. Dugout Information

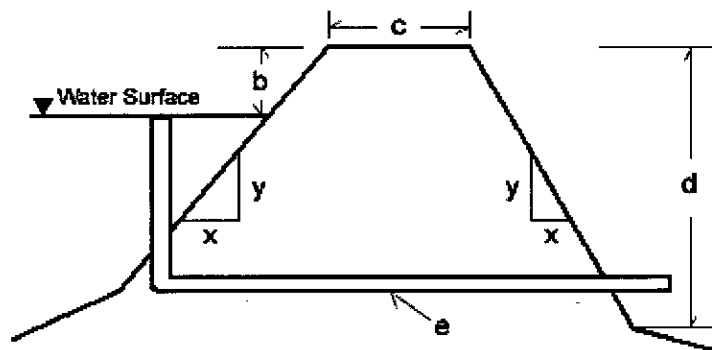
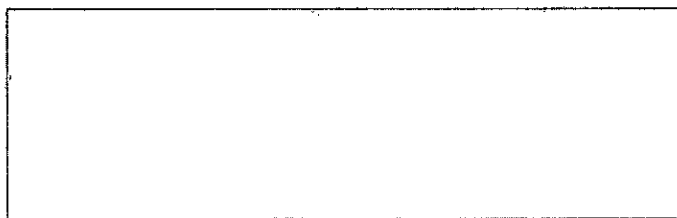
a) Surface Dimensions Depth

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

4. Water Storage Dams

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

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



b) Freeboard

c) Crest Width

Crest Length

d) Height

e) Primary Outlet Capacity

If pipe, diameter

f) Secondary Spillway Capacity

Spillway Width

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

Upstream

Downstream

h) Surface Area of Impoundment

i) Storage Acre Feet

j) Drainage Area Above Dam Acres

1999-1

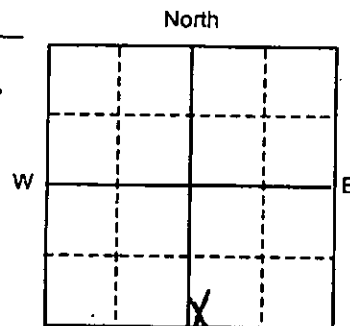
SD EForm - 1621LD V1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SW 1/4 SE 1/4 Sec 16 Twp 3N Rg 7ECounty MEADE

Please mark well location with an "X"



44° 12' 48" N
-103° 16' 55" W

Well Completion Date

6-6-20

1 Mile

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

PROPOSED USE:

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

METHOD OF DRILLING:

Air Rotary

CASING DATA:

☒ Steel ☐ Plastic ☐ Other

If other describe

PIPEWEIGHT 17 LB/FT DIAMETER 5.5 IN FROM 165 FT TO 515 FT HOLE DIAMETER 7 7/8 IN
LB/FT IN FT FT IN
LB/FT IN FT FT IN

GROUTING DATA:

Grout Type PORTLAND No. of Sacks 80 Grout Weight 14 Lb/gal From 515 Ft To C Ft
per sack 7/22/20 Lb/gal Ft Ft

Describe grouting procedure

PRESSURE grout through casing

SCREEN:

☐ Perforated pipe ☐ Manufactured

Diameter _____ Inches Length _____ Feet

Material Open Hole per driller 7/27/2020

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? Chlorine

Lab to which water quality sample sent for analysis

Well Owner: J D Hewitt

Business Name:

Address: 13167 ARAPAHOE DRCity, State, Zip: Piedmont SD 57769

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>CROWN Clay</u>	<u>0</u>	<u>20</u>
<u>GRAVEL SHALE</u>	<u>20</u>	<u>300</u>
<u>Dakota</u>	<u>300</u>	<u>360</u>
<u>FUSON</u>	<u>360</u>	<u>510</u>
<u>Dakota SAND</u>	<u>510</u>	<u>520</u>

STATIC WATER LEVEL

0

FEET

If flowing: closed in pressure

45

PSI

GPM flow 15 through _____

Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate _____

GPM

Can well be completely shut in?

WELL TEST DATA:

☐ Pumped Describe: Air Developer
☐ Bailed
☒ Other

Pumping Level Below Land Surface

300 Ft. After 2 Hrs. pumped 75 GPM
40 Ft. After 2 Hrs. pumped 30 GPM

If pump installed, pump rate: _____

GPM

REMARKS

This well was drilled under license # 725 and this report is true and accurate.

Drilling firm: Dakota Bice Drilling

Signature of License Representative:

Frank Conway

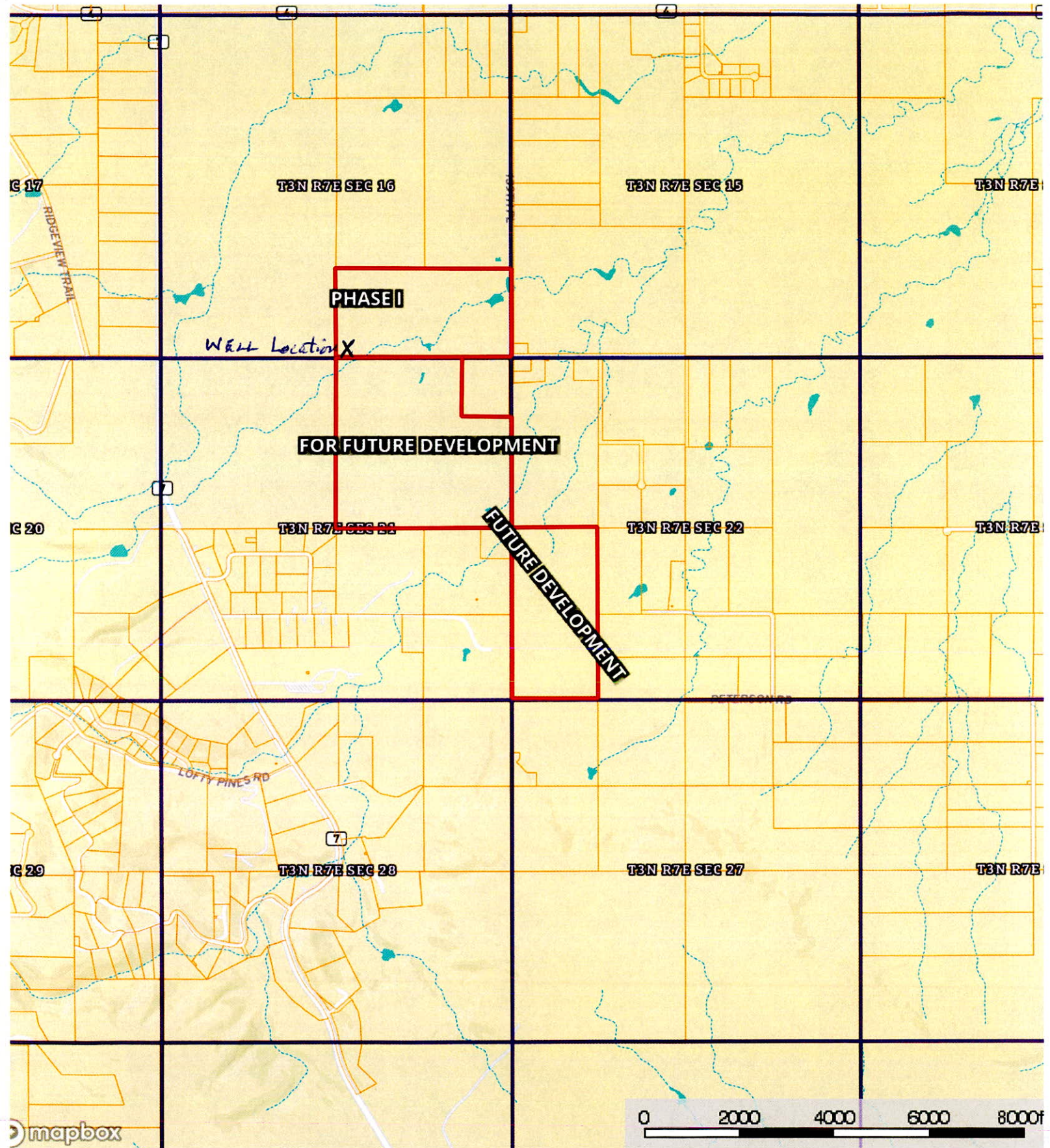
Signature of Well Owner or Equitable Property Holder:

RECEIVED

Date:

JUL 27 2020

WATER RIGHTS PROGRAM



Boundary Stream, Intermittent River/Creek Water Body

RECEIVED

7-21-2020

JUL 23 2020

MR GRANLAND -

WATER RIGHTS
PROGRAM

Please find enclosed herewith
an Application for WATER Right,
Application Fee & MAP of Location
of well -

FRANK Conway - Dakota Bore Drilling
has drilled the Well and should
have, by this date, submitted the
well Log & Report,

Should you have any questions -
please don't hesitate to contact
me at 605. 991-2300 or 605 347-1100
(home/office) (mobil)

OR email me: jd@hewittlandcompany.com
Thank you in advance for your
Attention to this matter -



RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date July 23, 2020

RECEIVED OF Rafter Properties LLC 13167 Arapahoe Dr. Piedmont SD 57669

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

Fee for Application for Permit No. <u>1999-1</u> to Appropriate Water, to construct and to put water to beneficial use	\$750.00
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>1999-1</u>	\$200.00
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	\$950.00

By Eric Groslund
Chief Engineer
EG



530888016

ANNUAL REPORT

Secretary of State
500 E. Capitol Ave
Pierre, SD 57501-5070
(605) 773-4845

Domestic Limited Liability Company
SDCL 47-34A-211; 59-11-24, 24.1

Please Type or Print Clearly in Ink
Please submit one Original
Make payable to the SECRETARY OF STATE

Filing Fee: \$50

Total Fee: \$50

2020
FILING YEAR

1. Business ID and Name:

DL031032
BUSINESS ID

RAFTER PROPERTIES, LLC
BUSINESS NAME

2. The jurisdiction under whose law it is formed **SOUTH DAKOTA**

3. The address of the principal executive office (business address):

Actual Street Address

**13167 ARAPAHOE DRIVE
PIEDMONT, SD 57769-7166**

Mailing Address

**13167 ARAPAHOE DRIVE
PIEDMONT, SD 57769-7166**

4. The South Dakota Registered Agent's Name:

South Dakota law permits the registered agent to be either (a) a noncommercial registered agent, or (b) a commercial registered agent.

(a) The South Dakota Noncommercial Registered Agent's name

Name **JULIE HEWITT**

Actual Street Address in this State

**13167 ARAPAHOE DRIVE
PIEDMONT, SD 57769-7166**

Mailing Address in this State

5. If the LLC is manager-managed, list the names and addresses of its Managers. SDCL 59-11-24. If the LLC is member-managed, this section may be left blank.

6. Beneficial Owners (optional): A beneficial owner is a person who has or in some manner controls an equity security. Please consult an attorney for legal advice if you have any questions concerning this entry. Any question under this heading is considered a request for legal advice and the secretary of state's office is, by statute, not permitted, to provide legal advice.

Name	Address
James D Hewitt	13167 Arapahoe Dr.

No person may execute this report knowing it is false in any material respect. Any violation may be subject to a criminal penalty (SDCL 22-39-36).

11/04/2019

Dated

Email (Optional)

James D Hewitt

Signature of an Authorized Person

James D Hewitt

Printed Name

Schlaak, Karen

From: JD Hewitt <jd@hewittlandcompany.com>
Sent: Thursday, July 23, 2020 6:25 PM
To: Schlaak, Karen
Subject: Re: [EXT] Water Permit Application

Karen;

Thank you - Yes the well is located in the SW1/4SE1/4 16-3-7

Let me know if you have any questions.
thank you!

JD Hewitt - Broker
Hewitt Land Company
13167 Arapahoe Dr.
Piedmont, SD 57769

605.791.2300 ph
605.347.1100 cell
605.791.2312 fax

www.hewittlandcompany.com

On 2020-07-23 12:25 pm, Schlaak, Karen wrote:

We received your Application for Permit to Appropriate Water today.

For clarification, do you agree that the location of the well as marked on the map is the SW ¼ SE ¼ Section 16-T3N-R7E?

Karen Schlaak
Water Rights Program
(605) 773-3352



NO. 1999-1

Water Rights Program - DENR
Conversation File Documentation

NAME OF PERSON OR FILE: Water Permit Application No. 1999-1, Rafter Properties LLC

ADDRESS: 13167 Arapahoe Driv, Piedmont COUNTY: Meade County

DATE: July 23, 2020 TELEPHONE: 605 347-1100

RE: Volume of water to be associated with Application No. 1999-1

I called and spoke with JD Hewitt regarding the annual volume stated on the application. I inquired about how he arrived at 120 acre feet of water annually since 75 gpm pumped continuously equates to 123 acre feet of water in a year period. Mr. Hewitt stated he believed the 120 acre feet is the amount for the minimum fee of \$500. He agreed they would not use that amount of water. We discussed the general 60% pumping rule which would equate to 74 acre feet of water annually. Mr. Hewitt requested the application be amended to 74 acre feet of water annually.

NAME: Eric Hunsaker



DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1999-1, Rafter Properties, LLC**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 1999-1, Rafter Properties, 13167 Arapahoe Dr, Piedmont SD 57769.

The Chief Engineer is recommending APPROVAL of Application No. 1999-1 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 1999-1 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. The permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Inyan Kara aquifer.
4. Water Permit No. 1999-1 authorizes a total annual diversion of 74 acre feet of water.

See report on application for additional information.

Eric Gronlund, Chief Engineer
September 21, 2020

Report to the Chief Engineer
On Water Permit Application No. 1999-1
Rafter Properties LLC c/o JD Hewitt

September 18, 2020

Water Permit Application No. 1999-1 proposes to appropriate 74 acre-feet of water annually at a maximum instantaneous diversion rate of 0.17 cubic feet of water per second (cfs) from one well (518 feet deep) to be completed into the Inyan Kara aquifer located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 16-T3N-R7E. The proposed use is for a water distribution system to be located in portions of the S $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 16, NE $\frac{1}{4}$ of Section 21 and the W $\frac{1}{2}$ SW $\frac{1}{4}$ of Section 22; all in T3N-R7E. This site is located in Meade County approximately 3 miles northeast of Summerset, South Dakota.

AQUIFER: Inyan Kara (INKR)

HYDROGEOLOGY:

The Inyan Kara aquifer exists in the saturated portions of the permeable materials that make up the Inyan Kara Group. The Inyan Kara Group is comprised of the Lower Cretaceous aged, Fall River and Lakota Formations (Downey, 1986). The Inyan Kara aquifer is a regional, bedrock aquifer that underlies most of the northern great plains in Montana, North Dakota, South Dakota and Wyoming and extends up into Canada (Downey, 1986). Generally, the Lakota Formation constitutes approximately the lower two thirds of the Inyan Kara Group and the Fall River Formation constitutes approximately the upper one third (Gott et al., 1974). The contact of these two parts is a transgressive disconformity of regional extent marking the initial incursion of the (early) Cretaceous Sea (Waage, 1959), which deposited the materials that make up the Fall River Formation (Downey, 1986). The Fall River Formation consists of a “variegated brown, red and gray to purple, calcareous, well-sorted, fine grained sandstone, siltstone and shale containing mica,” and is estimated to be 100 to 200 feet thick (Martin et al., 2004). The Lakota Formation consists of a “yellow, brown, red-brown, and gray to black claystone, silty pebble conglomerate, and massive to thin-bedded, cross-bedded sandstone,” that can be locally interbedded with fresh-water limestone and bituminous coal beds (Martin et al., 2004). The estimated thickness of the Lakota Formation ranges from 35 to 500 feet (Martin et al., 2004). For the purpose of appropriations, the Water Management Board and the SD DENR-Water Rights Program consider the Inyan Kara Group as one aquifer.

The Inyan Kara Group outcrops in the Black Hills but is otherwise buried in South Dakota (See Figure 1) (Martin et al., 2004). The closest outcrop of the Inyan Kara Group is located approximately 0.85 miles southwest of the proposed diversion point and the top of the Inyan Kara aquifer materials are expected to be approximately 300 feet below grade at the well site (Water Rights, 2020c and 2020d). The direction of groundwater movement in the Inyan Kara aquifer is generally to the northeast (Kyllonen & Peter, 1987).

In western South Dakota and Wyoming, the Inyan Kara aquifer is estimated to range between 81 to 475 feet thick and underlies approximately 23,239,040 acres with 324,169,440 acre-feet of recoverable water in storage (Allen et al., 1985; Kyllonen & Peter, 1987). In Meade County, the Inyan Kara aquifer is estimated to be 230 feet thick on average and underlies approximately 2,107,520 acres with 36,354,720 acre-feet of recoverable water in storage (Allen et al., 1985).

A water well completion report was submitted with Water Permit Application No. 1999-1. The report indicated brown clay from 0 to 20 feet below the ground surface, gray shale from 20 to 300 feet, the Dakota Formation from 300 to 360 feet, the Fuson (shale) from 360 to 510 feet and the Lakota Sandstone from 510 to 520 feet. At the time of completion (June 6, 2020) the well was determined to be flowing approximately 15 gallons per minute (GPM). The unit identified as the Dakota Formation is likely the Fall River Formation, as the Fall River Formation is informally, locally termed “Dakota” by well owners and some drillers (Kyllonen & Peter, 1987). Based on the submitted well completion report and lithologic logs on file for nearby observation wells, the Inyan Kara aquifer is expected to be confined at the applicant’s proposed diversion point (SDGS, 2020; Water Rights, 2020b and 2020d).

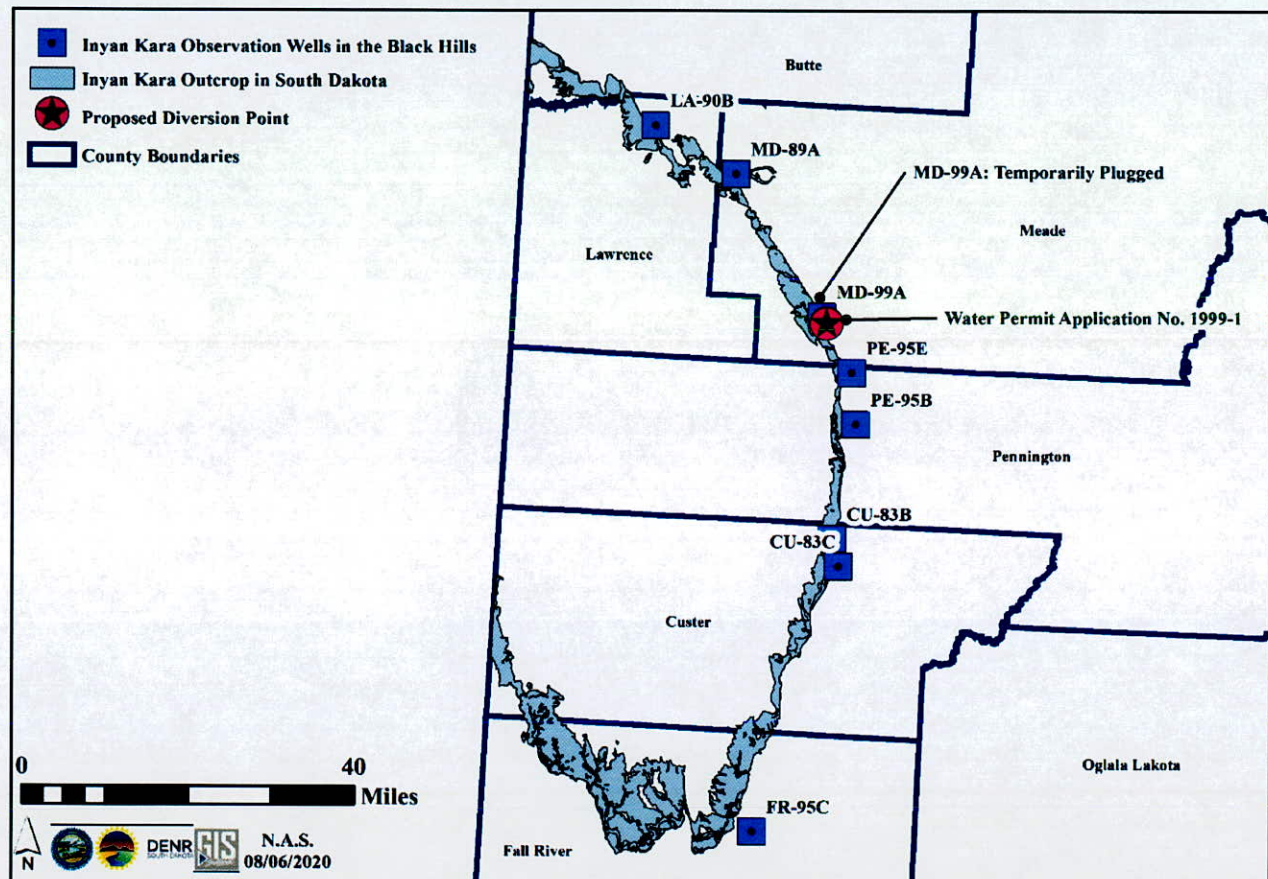


Figure 1. Inyan Kara outcrop in the Black Hills in South Dakota (Carter and Redden, 1999), Inyan Kara observation wells in the Black Hills (Water Rights, 2020b) and the proposed diversion point for Water Permit Application No. 1999-1

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

Pursuant to SDCL 46-2A-9, "A permit to appropriate water may be issued only if there is a reasonable probability that there is unappropriated water available for the applicant's proposed use, that the diversion point can be developed without unlawful impairment of existing rights, and that the proposed use is a beneficial use and in the public interest." This report will address the availability of unappropriated water and the potential for unlawful impairment of existing water rights within the Inyan Kara aquifer.

WATER AVAILABILITY:

Water Permit Application No. 1999-1 proposes to appropriate water from the Inyan Kara 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." Although, the Inyan Kara aquifer is older than and stratigraphically lower than the Greenhorn Formation, and the applicant's proposed use is for a water distribution system, a brief discussion on the recharge to and withdrawals from the aquifer is included in this analysis.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Lower Cretaceous aquifer is from the infiltration of precipitation at the edges of small basins in central Montana, at the western edge of the Power River basin, and at the edge of the Black Hills uplift (Lobmeyer, 1985). Additionally, in south-central North Dakota and across South Dakota, the Lower Cretaceous aquifer appears to be receiving water from the underlying Paleozoic rocks (Lobmeyer, 1985). The Lower Cretaceous aged geologic units include the Muddy Sandstone/Newcastle Sandstone, the Skull Creek Shale, the Fall River Formation and the Lakota Formation (listed youngest to oldest) (Driscoll and Carter, 2001).

Precipitation data for the Black Hills (in South Dakota) from 1950 to 1998 was analyzed to estimate a total recharge yield for the Inyan Kara aquifer. On average during this period, the Inyan Kara outcrop received approximately 17.84 inches of precipitation per year and lost approximately 17.05 inches of precipitation per year to evapotranspiration (Driscoll and Carter, 2001). By subtracting these values, an estimated total recharge yield of 0.79 inches of precipitation per year over the Inyan Kara outcrop in the Black Hills was calculated. A recharge factor of 0.80 was used for the Inyan Kara aquifer because the formation contains more shale layers than the Madison, Minnelusa and Minnekahta Formations, which are predicted to experience direct runoff and are assumed to have a recharge factor of 1.0 (Driscoll and Carter, 2001). By multiplying the estimated total recharge yield of 0.79 inches per year by a recharge

factor of 0.8, it is expected 0.63 inches of precipitation per year contributes to recharge of the Inyan Kara aquifer on the Black Hills outcrop. The remaining 0.16 inches per year are assumed to contribute to runoff. The Inyan Kara outcrop overlies approximately 219,700 acres in the Black Hills and when multiplied by the recharge estimate of 0.63 inches per year, the average annual recharge rate to the Inyan Kara aquifer is approximately 11,600 acre-feet per year (Driscoll and Carter, 2001). This is a conservative estimate that accounts for precipitation losses to evapotranspiration and runoff. Additional recharge is likely occurring due to upward leakage from underlying aquifers, areas other than the Black Hills (in South Dakota) where the Inyan Kara aquifer outcrops and groundwater inflow from out of state.

Discharge

Natural discharge from the Lower Cretaceous aquifer occurs where streams cross the outcrop areas in Montana and Wyoming, and by leakage through overlying sediments in eastern North Dakota and South Dakota (Lobmeyer, 1985). Additionally, discharge from the Inyan Kara aquifer is through well withdrawals for irrigation, non-irrigation and domestic users (Water Rights, 2020c, 2020d and 2020f).

Uncontrolled, flowing wells are discharging water from the Inyan Kara aquifer at ground surface, and it is expected water from the aquifer is also being discharged to other aquifers if wells completed into the Inyan Kara aquifer have experienced casing failure. It is currently unknown how much water is being discharged from the Inyan Kara aquifer through uncontrolled, flowing wells. The Water Management Board has previously determined water being discharged through uncontrolled, flowing wells from the Dakota aquifer is not a beneficial use and does not constitute appropriation pursuant to SDCL 46-6-3.1 (Water Rights, 1987). Since discharge from uncontrolled flowing wells is likely to continue until water levels in the aquifer decline to being at or below ground surface, continuing to allow beneficial pumping to occur reduces the amount of water being discharged to waste. Therefore, the Water Management Board has allowed development of the Dakota and Inyan Kara aquifers to continue.

Currently, there are 199 water rights/permits authorized to withdraw water from the Inyan Kara aquifer (Water Rights, 2020c). Three additional water rights/permits (Nos. 6011-3, 6091-3, 6128-3 and 6257-3) are included in this analysis as they are authorized to withdraw from the Dakota and Inyan Kara aquifers; however, for this analysis these water rights/permits are assumed to withdraw their full amount from the Inyan Kara aquifer (Water Rights, 2020c). Additionally, there is one future use permit (Permit No. 1780-2, held by the Town of New Underwood) reserving 142 acre-feet of water per year from the Inyan Kara aquifer and one application held in abeyance (Water Permit Application No. 2686-2 for Powertech (USA)) requesting 274.2 acre-feet of water per year from the Inyan Kara aquifer (Water Rights, 2020c). The average annual withdrawal rate from the Inyan Kara aquifer by the 202 water rights/permits was estimated by: 1) averaging the annual usage for irrigation permits/rights required to report over the period of record (1979-2019) and by assuming an application rate of 12 inches per permitted/licensed acre for newer irrigation permits and irrigation rights/permits not required to report; 2) calculating the approximate Concentrated Animal Feeding Operations (CAFO) annual usage by multiplying the number of permitted animals by the average daily use for each type of animal permitted; 3) using the average volume for non-irrigation appropriations required to

report their usage and withdraw a similar volume each year; 4) assuming the non-irrigation water rights/permits limited by an annual volume, and not required to report annual usage, will withdraw the entire appropriated volume every year; and assuming the non-irrigation water rights/permits limited only by a diversion rate, and not required to report annual usage, are estimated to pump at their maximum permitted diversion rate for 60 percent of the time.

There are domestic wells completed into the Inyan Kara aquifer that do not require a water right/permit, so the withdrawal amount is unknown (Water Rights, 2020d). Due to their relatively low diversion rates, withdrawals from domestic wells are not considered to be a significant portion of the hydrologic budget for the Inyan Kara aquifer.

Eleven municipal or suburban housing development water rights/permits are known by the DENR to be on standby for emergency use because they are obtaining their water from a rural water system or are supplied by a city (Table 1) (Drinking Water Program, 2020; Friedeman, 2020; Water Rights, 2020c). As such, their withdrawal rates are accounted for with their respective rural water system permits in Table 5 and are assumed to be zero acre-feet per year, so they are not accounted for twice.

Table 1. Inyan Kara municipal or suburban housing development water rights/permits with wells on stand-by (Drinking Water Program, 2020; Friedeman, 2020; Water Rights, 2020c)

Permit No.	Status	Name	Use Type	Pump Rate (cfs)	
1360-2	LC	Aladdin Investments Inc	SHD	0.15	Supplied by Rapid City
2224-3	LC	Sunshine Acres Water System	SHD	0.22	Mid Dakota RWS
2279-3	LC	Camelot Land	SHD	0.22	Supplied by City of Pierre
2442-2	LC	Rainbow Water Co Inc	SHD	0.09	Supplied by Rapid City
473-1	LC	Town of Fruitdale	MUN	1	Butte-Meade RWS
595-3	LC	City of Onida	MUN	1.11	Mid Dakota RWS
1198-3	LC	Town of Mound City	MUN	0.17	WEB RWS
1647-2	LC	Town of Quinn	MUN	0.2	West River/Lyman Jones RWS
1712-3	LC	City of Ipswich	MUN	0.19	WEB RWS
2263-2	LC	Town of Belvidere	MUN	0.17	West River/Lyman Jones RWS
6735-3	LC	City of Eureka	MUN	1.48	WEB RWS

LC: Licensed Water Right, SHD: Suburban Housing Development, MUN: Municipal, RWS: Rural Water System

There are 17 water rights/permits currently authorized to appropriate water from the Inyan Kara aquifer for irrigation use (Water Rights, 2020c). Generally, irrigation water rights/permits are required to report their annual water usage. Currently, 10 out of the 17 irrigation water rights/permits are required to report their annual water usage. The average annual withdrawal rate for irrigation appropriations (that are required to report) over the period of record (1979-2019) is approximately 79.44 acre-feet per year (Table 2) (Water Rights, 2020a). The seven irrigation water rights/permits that are not required to report, or are still within their 5-year construction period, are conservatively assumed to apply 12 inches of water (compared to maximum allowed volume of 2 acre-feet per year) over the 583 acres permitted/licensed, which results in a withdrawal rate of approximately 583 acre-feet per year (Water Rights, 2020c). Overall, the estimated average annual withdrawal rate for all irrigation water rights/permits authorized to appropriate water from the Inyan Kara aquifer is approximately 662 acre-feet per year (Table 5). However, it is expected irrigation water rights/permits will withdraw less than 662 acre-feet per year as seven of these irrigation water rights/permits have assumed withdrawal rates based on a set volume per permitted/licensed acres rather than actual reported usage.

Table 2. Reported historic irrigation use from the Inyan Kara aquifer (Water Rights, 2020a)

Year	No. of Permits	Annual Appropriation (ac-ft)	Reported Pumpage (ac-ft)
1982	5	1,844.90	2.53
1983	7	2,056	33.17
1984	8	2,084	4.5
1985	8	2,084	224.6
1986	7	1,904	4
1987	6	1,876	38
1988	6	1,876	54.10
1989	8	1,957	18.82
1990	8	1,957	33.5
1991	9	1,957	25.12
1992	9	1,957	26
1993	9	1,957	36.41
1994	9	2,046	30.56
1995	10	2,236	37.42
1996	8	894	19.81
1997	8	894	6
1998	8	1,165	20.75
1999	6	799	14.18
2000	6	799	25.27
2001	6	552	53.23
2002	7	823	87.83
2003	6	781	111.90
2004	7	781	143.48
2005	7	781	132.51
2006	8	910	136.04
2007	8	910	141.86
2008	9	1,188	130.51
2009	9	1,188	98.93
2010	9	1,188	112.57
2011	9	1,188	129.79
2012	9	1,188	188.76
2013	9	1,188	146.48
2014	9	1,188	112.25
2015	7	882	105.82
2016	7	882	177.81
2017	8	750	183.55
2018	9	777	99.92
2019	10	777	70.61
Min	5	552.3	2.53
Max	10	2,235.70	224.6
Avg	7.84	1,322.99	79.44

The average annual withdrawal rate for the 15 Inyan Kara aquifer water rights/permits who operate a CAFO was estimated by multiplying the number of permitted animals by the average daily use for each type of animal permitted (Ag-Info Centre, 2009; Drennon, 2020; Water Rights, 2020c) (Table 3). However, if that estimated withdrawal rate was higher than the annual limit authorized by the water right/permit, the annual volume limit was assumed to be the estimated use for that user. Water Right/Permit Nos. 6011-3, 6091-3, 6128-3 and 6257-3 are authorized to withdraw from the Dakota and Inyan Kara aquifers; however, for this analysis these water rights/permits are assumed to withdraw their full amount from the Inyan Kara aquifer (Water Rights, 2020c). Overall, the average annual withdrawal rate for the Inyan Kara aquifer water rights/permits who operate a CAFO is approximately 1,447.79 acre-feet per year (Ag-Info Centre, 2009; Drennon, 2020; Water Rights, 2020c) (Tables 3 and 5).

Table 3. Estimated annual water use for the Inyan Kara aquifer water rights/permits who operate CAFO (Ag-Info Centre, 2009; Drennon, 2020; Water Rights, 2020c)

Permit No.	Status	Name	Pump Rate (cfs)	County	Annual Limit (acre-feet/year)	Estimated Livestock Needs (acre-feet/year)	Estimated Use (acre-feet/year)
2178-2	LC	Fall River Feed Yard LLC	0.62	FR	448.88	280.22	280.22
2552-2	LC	Kjerstad Livestock Partnership	0.16	PT	115.84	11.19	11.19
4965-3	LC	Dakota Feeding Company LLC	0.33	SU	238.92	168.02	168.02
5890-3	LC	Evergreen Colony	0.14	FA	101.36	189.24	101.36
6011-3	LC	Plainview Colony Htm	0.22	ED	159.28	135.00	135.00
6091-3	PE	Brentwood Colony	0.1	FA	72.4	57.86	57.86
6128-3	LC	Deerfield Htm Brethren	0.27	ED	195.48	71.92	71.92
6257-3	PE	Thunderbird Colony	0.2	FA	144.8	129.95	129.95
6376-3	LC	LDL Cattle Company	0.22	ED	159.28	112.09	112.09
6377-3	LC	LDL Cattle Company	0.27	ED	195.48	112.09	112.09
6619-3	PE	PJ Werdell & Sons	0.33	HD	238.92	112.09	112.09
6851-3	LC	Todd Cowan	0.15	HY	108.6	53.24	53.24
7034-3	LC	Vogel & Sauner Farms	0.123	PT	89.052	44.84	44.84
7098-3	LC	Mike & Jessie Fuller	0.04	SU	28.96	45.93	28.96
7209-3	LC	Paul Oberlimer	0.04	PT	28.96	61.65	28.96
FR: Fall River; PT: Pennington; SU: Sully; FA: Faulk; ED: Edmunds; HY: Hyde; HD: Hand						Total (acre-feet/year):	1,447.79

There are 29 non-irrigation water rights/permits required to report their annual water usage from the Inyan Kara aquifer each year. Of those 29 non-irrigation water rights/permits, 14 withdraw a consistent volume from the Inyan Kara aquifer each year. As such, the reported volume of water withdrawn by these users was averaged over the respective period of record for each water right/permit (Water Rights, 2020f) (Table 4). The remaining 15 non-irrigation water rights/permits required to report their annual usage have had less consistent withdrawals over their respective period of record or are still undergoing development of their permit (Water Rights, 2020c). As such, these non-irrigation water rights/permits limited by an annual volume are assumed to withdraw the entire appropriated volume every year and those limited by only by a diversion rate are estimated to pump at their maximum permitted diversion rate for 60 percent of the time (Water Rights, 2020c) (Table 4). Overall, the average annual withdrawal rate for the Inyan Kara non-irrigation water rights/permits that are required to report their annual volume withdrawn is approximately 3,388 acre-feet per year (Tables 4 and 5).

Table 4. Estimated annual water use for the Inyan Kara aquifer water rights/permits who are required to report their annual usage (Water Rights, 2020c and 2020f)

Permit No.	Status	Name	Use Type	Pump Rate (cfs)	Priority Date	Annual Volume (acre-feet/year)	Estimated Use (acre-feet/year)	Estimation Method
1645-2	LC	Hermosa Water Users Assoc.	RWS	0.6	08/17/1978		157.87	Average
1826-1	LC	Golden Valley Water Company LLC	SHD	0.267	09/01/2004		15.18	Average
1837-1	LC	Guy Mann (Prairie Haven)	SHD	0.22	02/28/2005		95.57	60% Pumping Rate
1846-1	LC	Dennis or Anna Mae Beckham	SHD	0.1	05/26/2005		3.36	Average
1874-1	LC	Viewfield Rural Water Assoc.	RWS	0.212	01/03/2007		37.54	Average
1898-1	LC	Viewfield Rural Water Assoc.	RWS	0.212	11/14/2007			
1903-1	LC	Castle Rock Group	DOM	0.11	05/19/2009		15.37	Average
1906-1	LC	City of Sturgis	MUN	0.222	08/21/2009		2.56	Average
1958-1	LC	City of Sturgis	MUN	0.088	04/11/2016	8.1		
1920-1	LC	Elk Valley Ranchettes Homeowners Assoc.	SHD	0.1	01/24/2011		7.35	Average
1968-1	PE	Venekamps LLC	SHD	0.11	04/27/2017	29	29	Volume
1983-1	PE	Continental Resources	IND	0.5	07/10/2018	360	360	Volume
1989-1	PE	Luff Exploration Company	IND	0.1	04/09/2019	58.8	58.8	Volume
2464-2	LC	West River Lyman Jones	RWS	0.76	07/26/2011	360	430.29	Average
2465-2	LC		RWS	1	07/26/2011	360		
2797-2	PE		RWS	1	04/01/2019	455		
2538-2	PE	JKRK Properties LLC - Timberwood Park	SHD	0.244	08/30/2004		106.0	60% Pumping Rate
2543-2	LC	Southern Black Hills Water System	SHD	0.19	09/30/2004		82.54	60% Pumping Rate
2752-2	PE	Southern Black Hills Water System	RWS	0.33	04/25/2016	170	170	Volume
2550-2	LC	Town of Hermosa	MUN	0.22	01/25/2005	162	47.31	Average
2596-2	LC	City of Wall	MUN	0.6	07/24/2006	261	142.93	Average
2601-2	LC	Grandview Land LLC	SHD	0.33	09/01/2006	206	206	Volume
2622-2	LC	Owanka Rural Water Assoc.	RWS	0.39	10/09/2007		169.42	60% Pumping Rate
2635-2	LC	Fall River Water Users District	SHD	0.1	07/17/2008		43.44	60% Pumping Rate
2778-2	PE	Western Construction Inc	COM	0.17	11/13/2017	31	31	Volume
8197-3	PE	Aberdeen Farm LLC	COM	0.16	01/29/2016	72.1	72.1	Volume
8299-3	PE	Aberdeen Energy LLC	IND	1.33	09/28/2018	968	968	Volume
8420-3	PE	Vogel Farms PTR	GEO	0.12	01/28/2020	88.7	88.7	Volume
1996-1	PE	Dylan Gingras	SHD	0.133	04/14/2020	48	48	Volume
						Total:	3,388.32	

LC: Water Right; PE: Water Permit; RWS: Rural Water System; SHD: Suburban Housing Development; DOM: Domestic; MUN: Municipal; COM: Commercial; IND: Industrial; GEO: Geothermal

Table 5 summarizes the 199 water rights/permits (plus the 3 permits authorized to withdraw from both the Inyan Kara and Dakota aquifers, Future Use Permit No. 1780-2 and Water Permit Application No. 2686-2) authorized to withdraw water from the Inyan Kara aquifer and the estimated average annual withdrawal rate.

Table 5. Summary of the water rights/permits currently authorized to withdraw water from the Inyan Kara aquifer

Inyan Kara Aquifer Use Type	No. of Permits	Estimated Withdrawal Rate (acre-feet/year)
Irrigation (required to report) (average 1979-2019)	10	79.44
Irrigation (not required to report)	7	583
CAFO (not required to report) (diversion rate limited)	15	1,447.79
Standby/Hooked up to RWS (MUN/SHD)	11	0
Non-Irrigation (required to report)	29	3,388.32
Non-Irrigation (not required to report - volume limited)	3	183.8
Non-Irrigation (not required to report - diversion rate limited)	127	9,710
Total Number of Permits :	202	
Future Use Permit No. 1780-2		142
Water Permit Application No. 2686-2 - Abeyance		274.2
Total Withdrawal Rate (acre-feet/year):		15,808.55

Localized Hydrologic Budget

A subarea enclosing the proposed diversion point and nearby water rights/permits upgradient and downgradient of the diversion point was delineated to assess a hydrologic budget for the Inyan Kara aquifer on a localized scale (Figure 2). The subarea was identified based on hypothetical flow paths that were constructed approximately orthogonal to the potentiometric surface of the Inyan Kara aquifer mapped by Strobel and others (2000) with the intent of minimizing groundwater flow to and from adjacent subareas. The water rights/permits located in the subarea and authorized to withdraw water from the Inyan Kara aquifer are shown in Table 6 and Figure 2.

The average annual recharge rate from precipitation to the Inyan Kara outcrop in the Black Hills, after accounting for evapotranspiration and runoff, was estimated to be 0.63 inches per year (Carter and Driscoll, 2001). The subarea outcrop was estimated to be approximately 7,304 acres (Strobel et al., 2000). By multiplying the recharge estimate by the subarea outcrop, an estimated average annual precipitation recharge rate of 384 acre-feet per year for the subarea. This estimated recharge rate does not account for additional recharge that occurs from underlying aquifers and infiltration of precipitation at areas other than the Black Hills where the Inyan Kara aquifer outcrops. Additionally, streamflow recharge to the Inyan Kara aquifer has not been quantified due to insufficient information (Carter and Driscoll, 2001).

The average annual withdrawal rate for the subarea was calculated by assuming the water rights in Table 3 will pump 60% of the time at their maximum diversion rate for their period of annual use. Assuming Water Permit Application No. 1999-1 is approved, the average annual withdrawal rate for the subarea of the Inyan Kara aquifer was estimated to be approximately 746 acre-feet per year (Table 6). Water Right Nos. 1846-1 and 1920-1 are required to report their annual usage from the Inyan Kara aquifer (see Table 4), and their reported volumes are less than the calculated volumes assuming a 60% pumping rate (see Table 6); therefore, the average annual withdrawal rate from the subarea is expected to be less than 746 acre-feet per year.

Most of the uncertainties associated with this estimate of precipitation recharge cannot be accurately quantified because of the unknowns associated with the variables involved and the broad assumptions necessary in estimating recharge (Carter and Driscoll, 2001). Therefore, the estimated recharge rate from precipitation should not be considered an absolute value. Although average annual withdrawals up and down gradient from the proposed diversion point appear to exceed average annual precipitation recharge directly on the Inyan Kara outcrop, this average annual precipitation recharge rate is a conservative assumption. This average annual precipitation rate assumes that the only water available to supply this proposed appropriation and the appropriations up and down gradient of it, originates as precipitation recharge from directly up gradient of the appropriations (no stream loss recharge and no groundwater inflow from adjacent areas). Therefore, there is additional recharge to the Inyan Kara aquifer that is currently unquantified. Since additional recharge is likely available through streamflow losses, and increased well withdrawals could induce groundwater inflow from outside the subarea, the estimated average annual recharge rate and the estimated average annual withdrawal rate from the subarea indicate there is a reasonable probability that unappropriated water is available for this proposed appropriation.

Table 6. Water rights/permits authorized to withdraw water from the Inyan Kara aquifer plus the proposed diversion point as shown in Figure 2 (Water Rights, 2020c)

Location	Permit No.	Status	Name	Use Type	Pump Rate (cfs)	Estimated Use (acre-feet/year)
Upgradient	1597-1	LC	Crooked Oaks Homeowners Association	SHD	0.1	43.44
Upgradient	1796-1	LC	Dennis or Ann Beckham	SHD	0.1	43.44
Upgradient	1656-1	LC	Lofty Pines Homeowners	SHD	0.085	36.92
Upgradient	1793-1	LC	Autumn Meadows Sanitary District	SHD	0.17	73.85
Upgradient	1846-1	LC	Dennis or Anna Mae Beckham	SHD	0.1	43.44
Upgradient	1338-1	LC	Black Hills Petrified Forest	COM	0.03	13.03
Upgradient	1690-1	LC	Tim and Arvid Scott	DOM	0.077	33.45
Upgradient	1587-2	LC	Weston Heights Homeowners	SHD	0.11	47.78
Upgradient	1664-1	LC	Buffalo Ridge Water Users	SHD	0.1	43.44
Upgradient	1700-1	LC	Elk Creek 7 Water Association	SHD	0.111	48.22
Upgradient	1812-1	LC	RDT Water Association LLC	SHD	0.078	33.88
Upgradient	1876-1	LC	Elk Creek 7 Water Association	SHD	0.08	34.75
Upgradient	1688-1	LC	Jake or Lynne Mooney	COM	0.089	38.66
Upgradient	1996-1	PE	Dylan Gingras	SHD	0.133	57.78
Downgradient	1920-1	LC	Elk Valley Ranchettes Homeowners Association	SHD	0.1	43.44
Downgradient	1794-1	LC	Vita Royal Products Inc	COM	0.035	15.20
Downgradient	1837-1	LC	Guy Mann	SHD	0.22	95.57
Proposed Diversion Point	1999-1 (upon approval)	Application	Rafter Properties LLC	SHD		74.00
PE: Water Permit; LC: Licensed Water Right; SHD: Suburban Housing Development; COM: Commercial; DOM: Domestic					TOTAL:	746.30

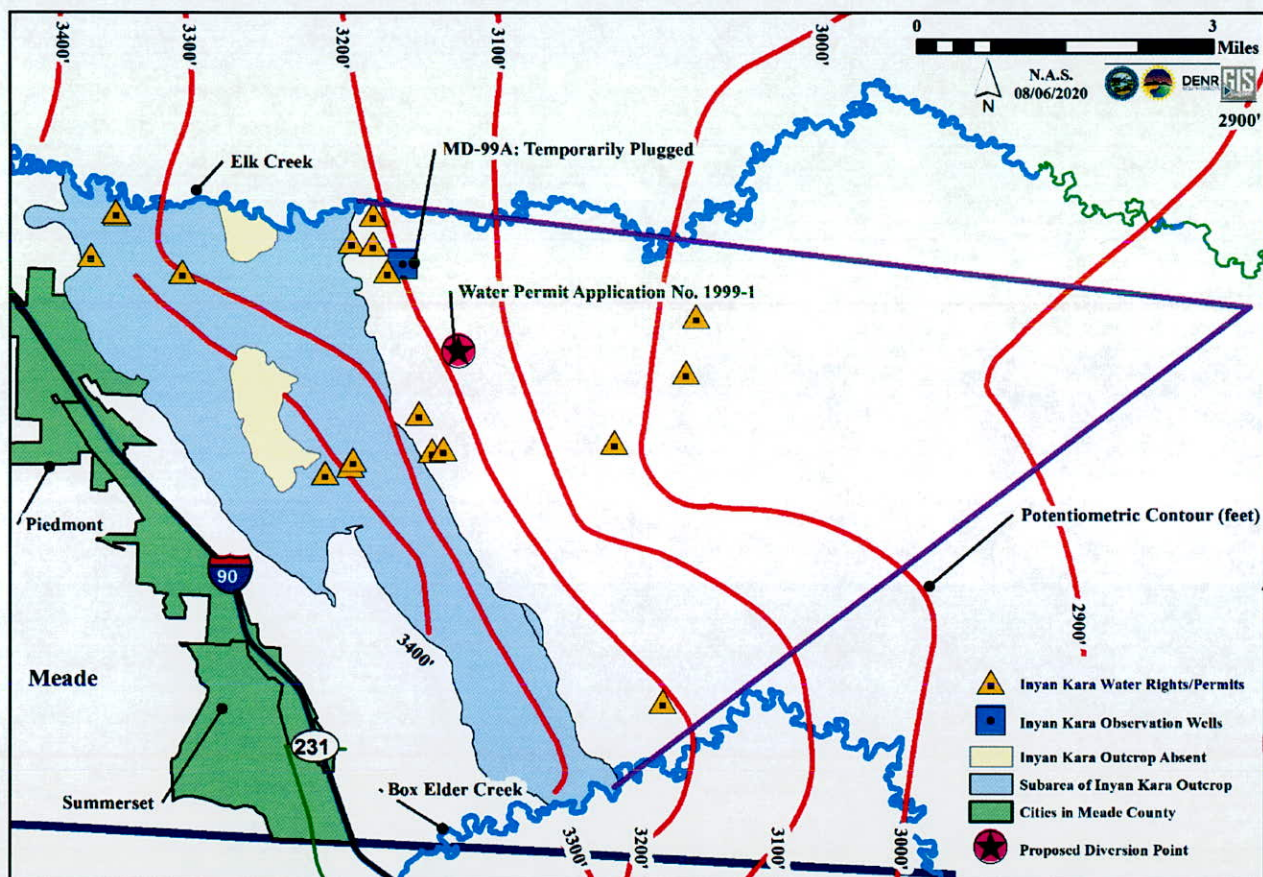


Figure 2. The subarea of the Inyan Kara outcrop used to calculate the localized hydrologic budget (modified from Carter and Redden, 1999; Strobel et al., 1999), the proposed diversion point, nearby Inyan Kara observation wells (Water Rights, 2020b), Inyan Kara aquifer water rights/permits upgradient and downgradient of the proposed diversion point (Water Rights, 2020c) and the modified potentiometric surface used to define the subarea (modified from Strobel et al., 2000)

Hydrologic Budget Summary

The average annual recharge rate to the Inyan Kara aquifer from precipitation on the outcrop in the Black Hills (in South Dakota) is approximately 11,600 acre-feet per year (Driscoll and Carter, 2001). This is a conservative estimate that accounts for precipitation losses to evapotranspiration and runoff, and additional recharge is likely occurring due to upward leakage from underlying aquifers and infiltration of precipitation at areas other than the Black Hills where the Inyan Kara aquifer outcrops.

The average annual withdrawal rate from the Inyan Kara aquifer plus the appropriation proposed by this application (if approved) is approximately 15,808.55 acre-feet per year. This average annual withdrawal rate has assumptions on annual water usage for both irrigation and non-irrigation water rights/permits, and it is expected the average annual withdrawal rate from the Inyan Kara aquifer is less than 15,808.55 acre-feet per year.

After delineating a subarea of the Inyan Kara aquifer and only accounting for recharge from precipitation on the Inyan Kara outcrop in the Black Hills (in South Dakota), the estimated average annual recharge rate was calculated to be approximately 384 acre-feet per year. The estimated average annual withdrawal rate for water rights/permits directly up and down gradient from the proposed diversion (plus the proposed diversion point, if approved) was calculated to be approximately 746 acre-feet per year. There is additional recharge to the Inyan Kara aquifer that is currently unquantified; such as, recharge from streamflow losses and groundwater inflow from outside the subarea. There are two water rights in the subarea required to report their annual appropriations from the Inyan Kara aquifer, and their usage is less than what was assumed at a 60% pumping rate in Table 6; therefore, it is expected the annual withdrawal rate from the Inyan Kara aquifer in the subarea is less than 746 acre-feet per year.

There is no estimated average annual recharge rate to the Inyan Kara aquifer in its entirety. The estimated average annual recharge rate cited in this report only accounts for precipitation on the Inyan Kara outcrop in the Black Hills (in South Dakota) and does not account for other factors contributing to recharge. Although, the estimated average annual withdrawal rate for appropriations up and down gradient from the proposed diversion point exceeds the estimated average annual recharge rate from precipitation, there is likely additional recharge occurring that has not been currently quantified. Additionally, the Inyan Kara aquifer still produces flowing wells, and there are uncontrolled wells completed into the Inyan Kara aquifer flowing water to waste at ground surface. By allowing beneficial pumping to occur, it is lowering the amount of pressure in the uncontrolled, flowing wells, which is reducing the amount of water being discharged to waste. Since additional recharge is likely available through streamflow losses, increased well withdrawals could induce groundwater inflow from outside the subarea, and the Inyan Kara aquifer still produces flowing wells, there is a reasonable probability that unappropriated water is available for this proposed appropriation.

OBSERVATION WELL DATA:

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

The DENR-Water Rights Program monitors nine observation wells completed into the Inyan Kara aquifer (Water Rights, 2020b). These observation wells provide data on how the aquifer reacts to regional climatic conditions and local pumping. The closest observation well to the proposed diversion point is MD-99A (approximately 1.0 miles northwest); however, this well has had a history of leakage and maintenance issues and has been temporarily plugged to prevent further outflow (Water Rights, 2020b). The observation wells used for this analysis are PE-95E (approximately 6.8 miles southeast), PE-95B (approximately 13.0 miles southeast), MD-89A (approximately 21.5 miles northwest), and LA-90B (approximately 32 miles northwest) (as shown in Figure 1) (Water Rights, 2020b and 2020c). The hydrographs for these observation wells are displayed in Figures 3 to 6 (Water Rights, 2020b). 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.

Observation wells MD-89A and PE-95E are both approximately 1.2 miles from the closest Inyan Kara outcrop, which is a primary recharge area for the Inyan Kara aquifer. As such, the hydrographs for MD-89A and PE-95E show higher recharge 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. Additionally, a decline in water levels (as seen in the hydrograph for observation well PE-95E) in a confined aquifer does not indicate a significant decrease in water stored in the aquifer, as water levels above the top of the aquifer materials are representative of the hydraulic head (water pressure) inside the aquifer. As development of Dakota aquifer increased, the decline in hydraulic head in the aquifer created a pressure variance between the Dakota and Inyan Kara aquifers, which causes water to flow from the Inyan Kara aquifer to the Dakota aquifer. If there is a difference in hydraulic head between the two aquifers, flow will continue between the two. In the future, it is possible flows between the Dakota and Inyan Kara aquifers will reach a state of static equilibrium. Since the Dakota and Inyan Kara both have uncontrolled, flowing wells, wells that may have failed casing below the ground surface, and there are numerous withdrawals from permitted, licensed and domestic users, the hydraulic head in those aquifers is expected to decline until the hydraulic head in both aquifers is equal to the hydraulic head of the lowest aquifer those aquifers are leaking into from uncontrolled, flowing wells. The Water Management Board has previously determined that it is better to allow the Dakota aquifer water to be put to beneficial use than it is to allow it to flow to waste (Water Rights, 1987). That conclusion is expected to apply to the Inyan Kara aquifer as well.

The water levels in the hydrograph for the observation well MD-89A show the response to pumping from irrigation and stable water levels preceding each irrigation season over the respective period of record. The water levels in the hydrographs for the observation wells PE-95B and LA-90B display stable to increasing water levels over the respective period of record. The effects of climatic conditions are clear in the hydrographs because water levels are rising during wetter periods (early spring snowmelt and precipitation) and slowly declining to a stable water level during drier periods. The hydrographs show the aquifer consistently recovers after an irrigation season is finished and the stable to rising water levels in observation wells shows the aquifer is not being stressed by pumping. Aquifer recovery indicates that climatic conditions and therefore, recharge to and natural discharge from the aquifer, dominate changes in water level to the Inyan Kara aquifer rather than pumping. That means recharge to and natural discharge from the aquifer greatly exceeds withdrawals. By recognizing that both recharge to and natural discharge from an aquifer can be captured for pumping, the observation well hydrographs demonstrate there is a reasonably probability unappropriated water is available for the proposed appropriation.

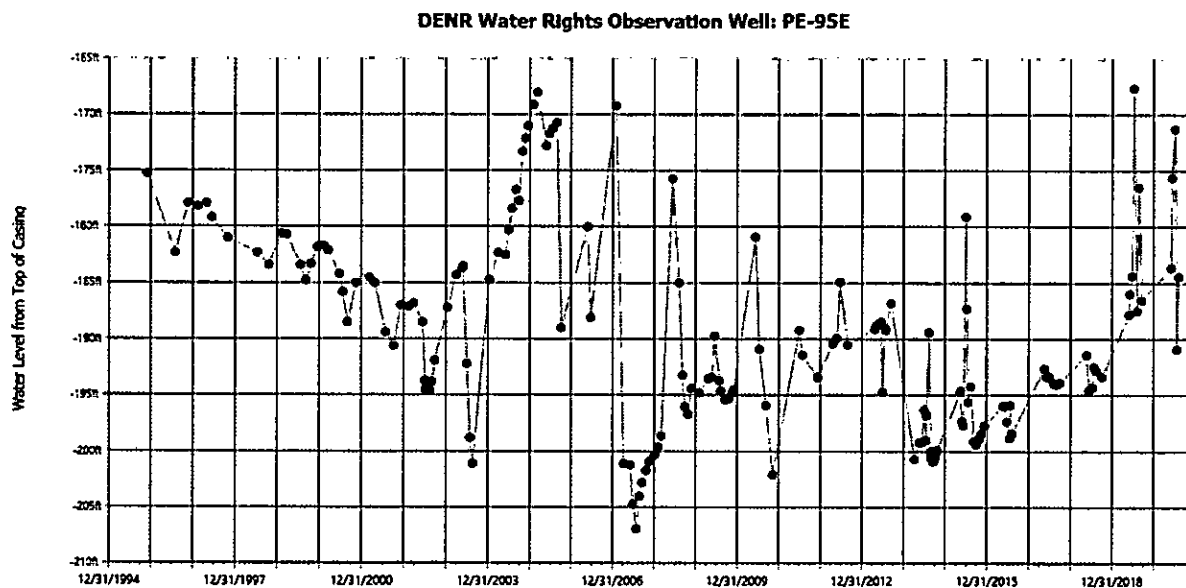


Figure 3. Hydrograph for observation well PE-95E (Water Rights, 2020b)

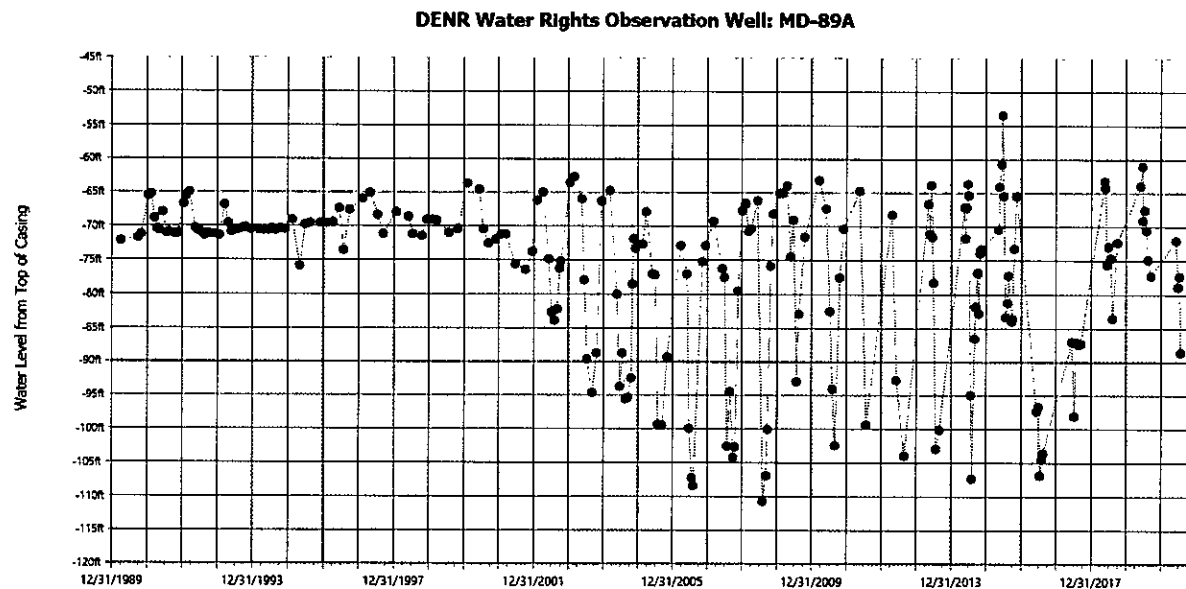


Figure 4. Hydrograph for observation well MD-89A (Water Rights, 2020b)

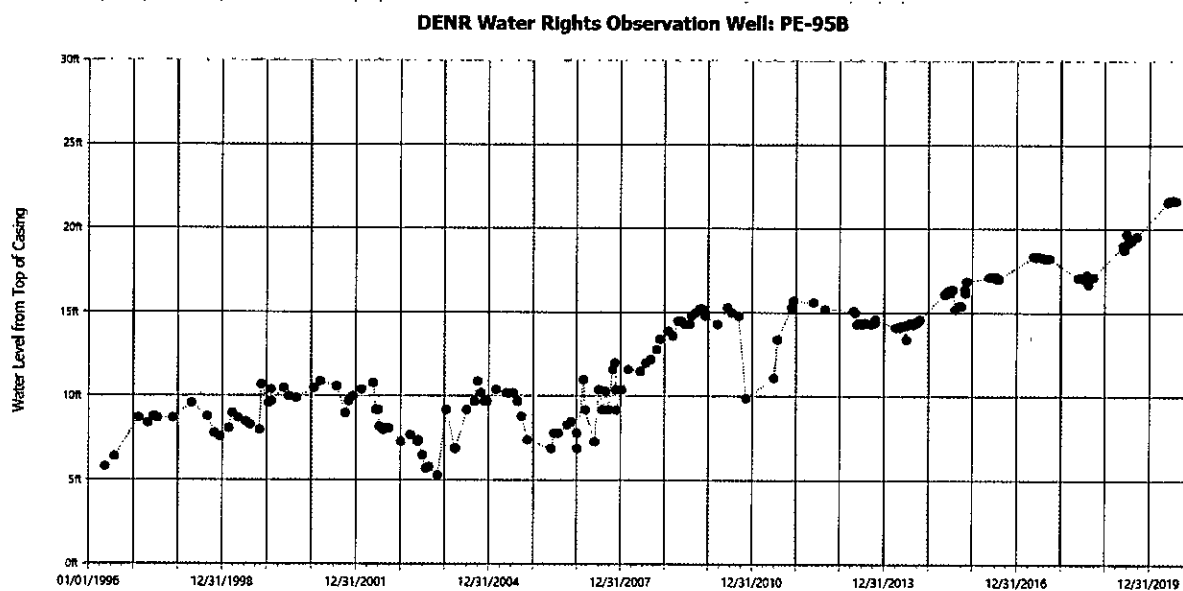


Figure 5. Hydrograph for observation well PE-95B (Water Rights, 2020b)

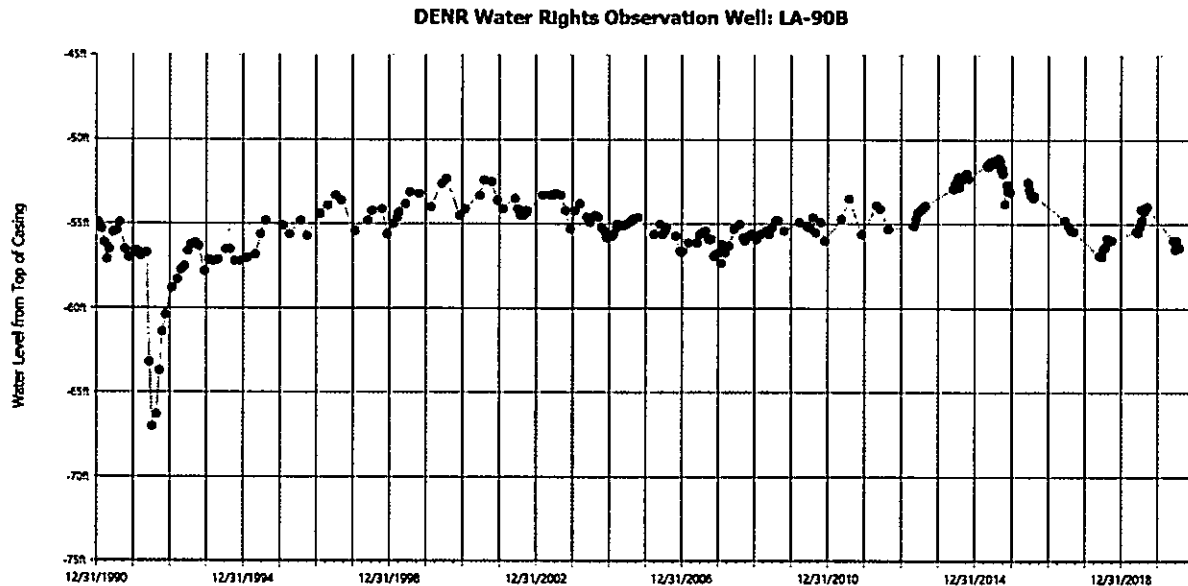


Figure 6. Hydrograph for observation well LA-90B (Water Rights, 2020b)

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 199 water rights/permits authorized to appropriate water from the Inyan Kara aquifer (Water Rights, 2020c). The closest water right/permit to the proposed diversion point is Water Right No. 1793-1, held by Autumn Meadows Sanitary District, which is located approximately 0.78 miles southwest of the proposed diversion point (Table 7) (Figure 7) (Water Rights, 2020c).

There are domestic wells on file with the DENR-Water Rights Program that are completed into the Inyan Kara aquifer, with the closest domestic well on file (not held by the applicant) approximately 0.24 miles north of the proposed diversion point (Water Rights, 2020d). There are likely other domestic wells completed into the Inyan Kara aquifer near the diversion point that are not on file with the DENR-Water Rights Program.

The Inyan Kara aquifer is under confined conditions at the applicant's proposed diversion point based on the submitted well completion report and lithologic logs on file for nearby observation wells (SDGS, 2020; Water Rights, 2020b). Since the Inyan Kara aquifer is expected to be confined at the proposed diversion point, drawdown can extend some distance but the exact drawdown behavior of a well cannot be known without an aquifer performance test. Observation well MD-89A (approximately 21.5 miles northwest of proposed diversion point) has 6 irrigation wells within approximately 1.7 miles of it (Water Rights, 2020b and 2020c). The drawdown from pumping can be seen in the hydrograph for MD-89A, along with the aquifer returning to pre-pumping conditions between irrigation seasons (Figure 4) (Water Rights, 2020b). The lithologic log on file for MD-89A noted the well was drilled 482 feet deep and was screened from 447 to 477 feet below grade with the top of aquifer materials at 287 feet below grade (SDGS, 2020). The lowest recorded static water level on the hydrograph is approximately 110

feet below grade, which indicates there was still approximately 177 feet of artesian head pressure in MD-89A even during a drier period when irrigation wells are expected to be pumping more water (Water Rights, 2020b).

In Meade County at the applicant's proposed diversion point, the Inyan Kara aquifer has an average saturated thickness of approximately 230 feet with the depth to top of aquifer materials approximately 300 feet below grade according to the well completion report submitted with Water Permit Application No. 1999-1 (Allen et al., 1985). This would 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 diversion for this application is not expected to unlawfully impair nearby adequate wells. In Meade County, there are no complaints on file with the DENR-Water Rights Program regarding well interference for wells completed into the Inyan Kara aquifer (Water Rights, 2020e).

Table 7. Water rights authorized to withdraw from the Inyan Kara aquifer as shown in Figure 7 (Water Rights, 2020c)

Permit No.	Name	Status	Use	Rate (cfs)
1597-1	Crooked Oaks Canyon Homeowners	LC	SHD	0.1
1656-1	Lofty Pines Homeowners	LC	SHD	0.085
1664-1	Buffalo Ridge Water Users	LC	SHD	0.1
1700-1	Elk Creek 7 Water Association	LC	SHD	0.111
1793-1	Autumn Meadows Sanitary District	LC	SHD	0.17
1796-1	Dennis or Ann Beckham	LC	SHD	0.1
1812-1	RDT Water Association LLC	LC	SHD	0.078
1846-1	Dennis or Anna Mae Beckham	LC	SHD	0.1
1876-1	Elk Creek 7 Water Association	LC	SHD	0.08
1920-1	Elk Valley Ranchettes Homeowners	LC	SHD	0.1
LC: Licensed Water Right; SHD: Suburban Housing Development				

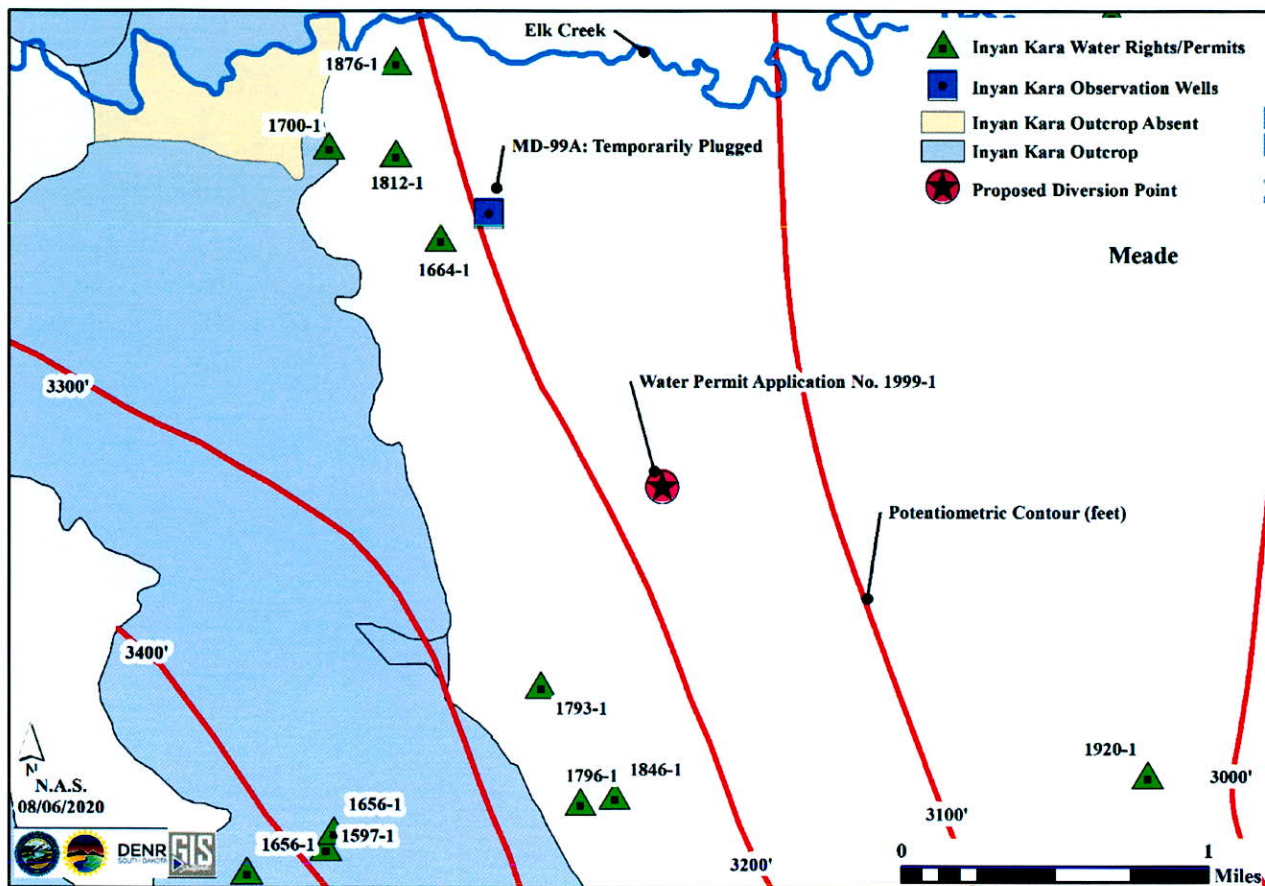


Figure 7. Location of the proposed diversion point for Water Permit Application No. 1999-1 with nearby water rights authorized to withdraw water from the Inyan Kara aquifer and the closest observation well to the proposed diversion point (modified from Martin et al., 2004; modified from Strobel et al., 2000; Water Rights, 2020b and 2020c)

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 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 Inyan Kara aquifer at their location. However, when considering the statutes (SDCL 46-1-4 and 46-6-6.1), ARSD 74:02:04:20 (6) and (7), the estimated thickness of the Inyan Kara aquifer at the applicant's location, and the lack of well interference complaints, any drawdown created from the proposed diversion is not expected to cause an unlawful impairment on existing water rights/permits or domestic users with adequate wells. Therefore, there is a reasonable probability that any interference from the proposed appropriation will not impose unlawful impairments on existing users with adequate wells.

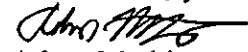
CONCLUSIONS:

1. Water Permit Application No. 1999-1 proposes to appropriate 74 acre-feet of water annually at a maximum instantaneous diversion rate of 0.17 cubic feet of water per second (cfs) from one well (518 feet deep) to be completed into the Inyan Kara aquifer.
2. The appropriation is for a water distribution system to be located in Meade County, approximately 3 miles northeast of Summerset, South Dakota. The Inyan Kara aquifer is older and stratigraphically lower than the Greenhorn Formation.
3. Based on the hydrologic budget and observation well data, there is a reasonable probability that unappropriated water is available from the Inyan Kara aquifer to supply the proposed appropriation.
4. There is a reasonable probability that the proposed diversion by Water Permit Application No. 1999-1 will not unlawfully impair adequate wells for existing water rights/permits and domestic users.

Nakaila Steen

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

Reviewed by;



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

References

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- Water Rights, 2020d. Well Completion Reports, SD-DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
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RECEIVED

OCT 05 2020

WATER RIGHTS
PROGRAM

PUBLISHER'S AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA }
}SS
COUNTY OF MEADE }

**NOTICE OF
APPLICATION
NO. 1999-1 to
Appropriate Water**

Kris Stocklin-Johnson of said County and State says: THE FAITH INDEPENDENT is a general circulation, published in FAITH, in said County. There has been such newspaper during the times there has been said THE FAITH INDEPENDENT is a legal newspaper in existence for more than one year immediately preceding the first publication herein mentioned; and has more than 200 bonafide subscribers; that I, the undersigned, am Office Manager of said newspaper, and have personal knowledge of all facts stated in this affidavit; and that the advertisement headed:

Notice is given that Rafter Properties LLC, c/o JD Hewitt, 13167 Arapahoe Dr, Piedmont SD 57769 has filed an application for a water permit to appropriate 74 acre-feet of water annually at a maximum pump rate of 0.17 cubic feet of

water per second from one well to be completed into the Inyan Kara Aquifer (518 feet deep) located in the SW 1/4 SE 1/4 Section 16-T3N-R7E for a water distribution system to be located in portions of the S 1/2 SE 1/4 Section 16, NE 1/4 Section 21 and the W 1/2 SW 1/4 Section 22; all in T3N-R7E. This site is located approximately 3 miles northeast of Summerset SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1999-1 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by October 12, 2020.

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

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

Notice to Appropriate Water - No. 1999-1

A printed copy of which is hereto attached, was printed and published in said newspaper for one successive issue, the first publication being on the 30th day of September, 2020, and the last publication on the 30th day of September, 2020, that \$24.83 being the full amount of the fee for publication of the annexed notice insures solely to the benefit of the publishers of the said newspaper; that no arrangement or understanding for a division thereof has been made with any person and that no part thereof has been agreed to be paid to any other person whomsoever.

x Kris Stocklin-Johnson

Subscribed and sworn to me before this 30th day of September, 2020.

Tamara Ravellette

Notary Public, State of South Dakota
My Commission Expires
Jan. 24th, 2026



Published September 30, 2020 at the total approximate cost of \$24.83.

Affidavit of Publication

RECEIVED

STATE OF SOUTH DAKOTA

OCT 05 2020

County of Pennington

SS:

WATER RIGHTS
PROGRAM

Sept 30 L18198
NOTICE OF APPLICATION NO.
1999-1 to Appropriate Water

Notice is given that Rafter Properties LLC, c/o JD Hewitt, 13167 Arapahoe Dr, Piedmont SD 57769 has filed an application for a water permit to appropriate 74 acre-feet of water annually at a maximum pump rate of 0.17 cubic feet of water per second from one well to be completed into the Inyan Kara Aquifer (518 feet deep) located in the SW 1/4 SE 1/4 Section 16-T3N-R7E for a water distribution system to be located in portions of the S 1/2 SE 1/4 Section 16, NE 1/4 Section 21 and the W 1/2 SW 1/4 Section 22; all in T3N-R7E. This site is located approximately 3 miles northeast of Summerset SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1999-1

with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

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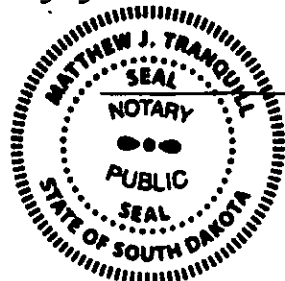
(Published one time at the approximate cost of \$49.60)

Sheri Sponder being first duly sworn, upon his/her oath says: That he/she is now and was at all time hereinafter mentioned, an employee of the RAPID CITY JOURNAL, a corporation of Rapid City, South Dakota, the owner and publisher of the RAPID CITY JOURNAL, 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 in the English language, at and within an office maintained by the owner and publisher thereof, at Rapid City, in said Pennington County, and has been admitted to the United States mail under the second class mailing privilege for at least one year prior to the publication herein mentioned; that the advertisement, a printed copy of which, taken from said Rapid City Journal, the paper in which the same was published, is attached to this sheet and made a part of this affidavit, was published in said paper once each

day for one successive
day, the first publication there of being on the
30th day of Sept 2020 that the fees charged for
the publication there of are 49 dollars
and 69 cents.

Sheri Sponder

Subscribed and sworn to before me this 1st
day of October, 2020.



Matthew J. Tranquill

Notary public

December 5, 2025

My commission expires

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, September 21, 2020 11:09 AM
To: Rapid City Journal (legals@rapidcityjournal.com)
Subject: 1999-1, Rafter Properties LLC
Attachments: 1999-1public.short1.docx; FORM8.FRM.doc

Attached is a notice to be published on September 30, 2020.

Rafter Properties LLC, c/o JD Hewitt, 13167 Arapahoe Dr., Piedmont SD 57769 (605 347-1100) has been notified to contact you to authorize publication and arrange for payment.

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

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

Karen Schlaak
Water Rights Program
(605) 773-3352



Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, September 21, 2020 11:08 AM
To: 'faithind@faithsd.com'
Subject: 1999-1, Rafter Properties LLC
Attachments: 1999-1public.short1.docx; FORM8.FRM.doc

Attached is a notice to be published on September 30, 2020.

Rafter Properties LLC, c/o JD Hewitt, 13167 Arapahoe Dr., Piedmont SD 57769 (605 347-1100) has been notified to contact you to authorize publication and arrange for payment.

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

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

Karen Schlaak

Water Rights Program
(605) 773-3352





DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

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

September 21, 2020

Rafter Properties LLC
c/o J D Hewitt
13167 Arapahoe Dr
Piedmont SD 57769

Dear Mr. Hewitt:

Water Permit Application No. 1999-1 for a water distribution system use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Faith Independent printed at Faith SD (Ph # 605 867-2161) and the Rapid City Journal printed at Rapid City SD (Ph # 605 394-8336). You will need to contact the newspapers and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

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

Sincerely,

Karen Schlaak

Karen Schlaak
Water Rights Program
(605) 773-3352

enclosures

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

Instruction to Newspaper - Publish the Notice on September 30, 2020. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 1999-1 to Appropriate Water

Notice is given that Rafter Properties LLC, c/o JD Hewitt, 13167 Arapahoe Dr, Piedmont SD 57769 has filed an application for a water permit to appropriate 74 acre-feet of water annually at a maximum pump rate of 0.17 cubic feet of water per second from one well to be completed into the Inyan Kara Aquifer (518 feet deep) located in the SW 1/4 SE 1/4 Section 16-T3N-R7E for a water distribution system to be located in portions of the S 1/2 SE 1/4 Section 16, NE 1/4 Section 21 and the W 1/2 SW 1/4 Section 22; all in T3N-R7E. This site is located approximately 3 miles northeast of Summerset SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1999-1 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by October 12, 2020.

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

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

Published once at the total approximate cost of_____.

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, September 21, 2020 11:12 AM
To: JD Hewitt
Subject: Water Permit Application No. 1999-1
Attachments: 0005.pdf

Mr. Hewitt,

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

Karen Schlaak

Water Rights Program
(605) 773-3352



October 21, 2020

PAYMENT REQUEST FORM

PAYEE: Rafter Properties, LLC
c/o JD Hewitt
13167 Arapahoe Dr
Piedmont SD 57769

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

DESCRIPTION OF SERVICE, PRODUCE OR TRANSFER

Over payment of Application/License Fee

AMOUNT: \$250.00

FUNDING SOURCE:

GENERAL: X

FEDERAL:

OTHER:

COMMENTS:

AUTHORIZATION: *Eui Muenkel 10/21/2020*

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



DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

OCT 21 2020

Rafter Properties LLC
c/o JD Hewitt
13167 Arapahoe Dr
Piedmont SD 57769

Dear Mr. Hewitt:

Enclosed is Water Permit No. 1999-1 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

An application/license filing fee of \$950.00 was submitted with the application. The fee should have been \$700.00. \$250.00 will be refunded to Rafter Properties LLC. The refund check should be received within the next couple of weeks.

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