

WATER PERMIT NO. 1987-1

Name of Applicant: Centennial Vista Estates Homeowners Association

Address: PO Box 432, Spearfish SD 57783 Phone:

Amount of Water Claimed: 0.1 cfs Total Acres: NA

Source of Water Supply: groundwater (one existing well)

Water to be used for: suburban housing development County: Lawrence

Type of Waste Disposal System:

Location: approximate 5 miles north of Deadwood

PRIORITY Date Received: 1-3-19 Application/License Fee: \$300

Corrected Application Received: Period of Annual Use: Jan 1 – Dec 31

Remarks:

Diversion Point: NW 1/4 NW 1/4 Sec 34-T6N-R3E

Land to be Irrigated: NA

Depth of Well: 700 feet deep

Well Driller: Alexander Drilling

Remarks:

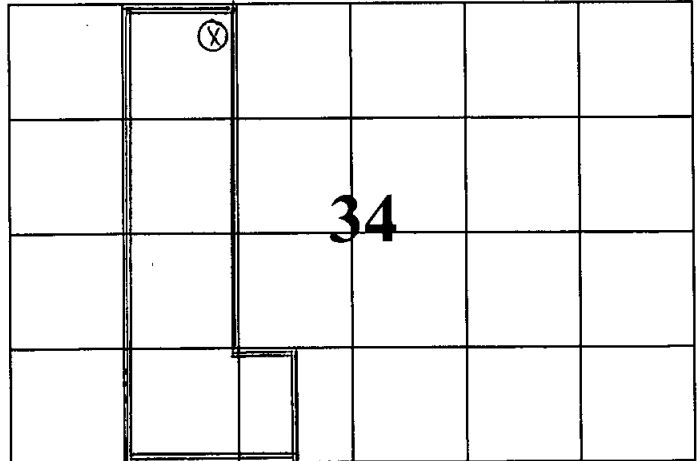
Type of Map: plat

Prepared by:

Reviewed and the Number Assigned on: 1-3-19

By: Karen Schlaak

Notice of Hearing - date to intervene: _____



PAID

JAN 03 2019

ck# 2017
RECEIVED

JAN 03 2018 9

WATER RIGHTS
PROGRAM

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>1987-1</u> (office use only) Hydrologic Unit <u>10/20203</u>
	Basin <u>Belle Fourche R</u>
	Newspaper <u>Black Hills Pioneer</u> <u>605 642-2761</u>

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

Check use(s) of water:

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

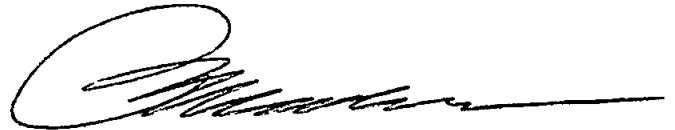
Type of Application:
(check one)

☒ 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.)

- Name to Appear on Water Permit Centennial Vista Estates Homeowners Association
Mailing Address PO Box 432 Spearfish SD 57783
(Address) (City) (State) (Zip Code)
Phone _____ Mobile _____ Email _____
- Amount of water claimed 0.1 *CFS or 45 **GPM and 11AF ***AF or 3.5 million 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)
- Source of water supply Madison Aquifer
- Location of point of diversion Well #1: NW 1/4, NW 1/4, Section 34, Twp 6N, Rg 3E County Lawrence
(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 ☐ No
If "Yes," where will water be used? _____
(example - NW 1/4 section 12-T104N-R53W)
- County or counties where water will be used Lawrence
- Annual period during which water is to be used January through December
- 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)

PAT WALSH, President



- I, Pat Hasson OWTO, the applicant, certify under
Name of Person 3518 Westview Drive, Spearfish, SD 57783 Title (if applicable)
penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

2015-10

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

**SOUTH DAKOTA
WATER PERMIT NO. 1987-1**

Date of first receipt of application January 3, 2019.

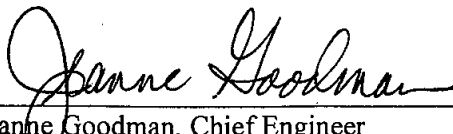
The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 1987-1 to Centennial Vista Estates Homeowners Association, PO Box 432, Spearfish SD 57783 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 1987-1 appropriates 11 acre-feet of water annually at a maximum pump rate of 0.1 cubic feet of water per second from one well completed into the Madison Aquifer (700 feet deep) located in the NW 1/4 NW 1/4 Section 34-T6N-R3E for a water distribution system. This site is located approximately 5 miles north of Deadwood 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. 1987-1 is March 25, 2019.
5. The date from which applicant may claim right is January 3, 2019.
6. One-fifth of the construction is to be completed on or before September 25, 2021.
7. All construction is to be completed on or before March 25, 2024.
8. Water is to be put to beneficial use on or before March 25, 2028.
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. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 1987-1 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. 1987-1 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 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under these Permits shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
3. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Madison aquifer.
4. Water Permit No. 1987-1 appropriates up to 11 acre feet of water annually

WATER MANAGEMENT BOARD

By: 
Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

MAR 29 2019

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 ____ Have test holes been drilled ☐ Yes ☐ No Drilled by ____
(if yes, please provide copies of logs)

b) If existing wells, how many 1 Provide copy of log(s), if available. Drilled by Alexander Drilling Co.

For either Existing or Proposed Wells:

c) Well Depth (required) 700 Depth to Top of Water Bearing Material 692 Depth to Water from Surface ____

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

2. Wastewater Disposal System Information

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

b) System Capacity (gallons) ____ Year Constructed ____

c) Connected to the City of ____ Sanitary System

3. Dugout Information

a) Surface Dimensions ____ Depth ____

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

4. Water Storage Dams

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

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

b) Freeboard _____

c) Crest Width _____

Crest Length _____

d) Height _____

e) Primary Outlet Capacity _____

If pipe, diameter _____

f) Secondary Spillway Capacity _____

Spillway Width _____

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

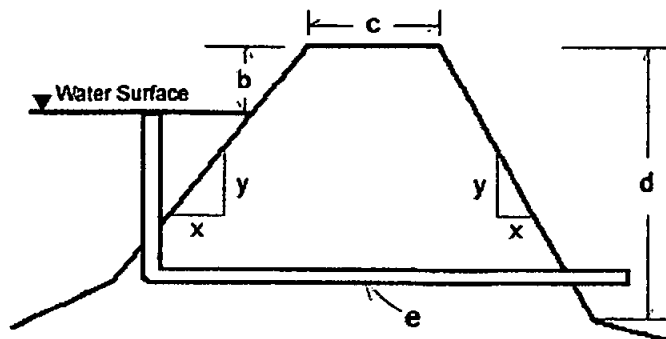
Upstream _____

Downstream _____

h) Surface Area of Impoundment _____

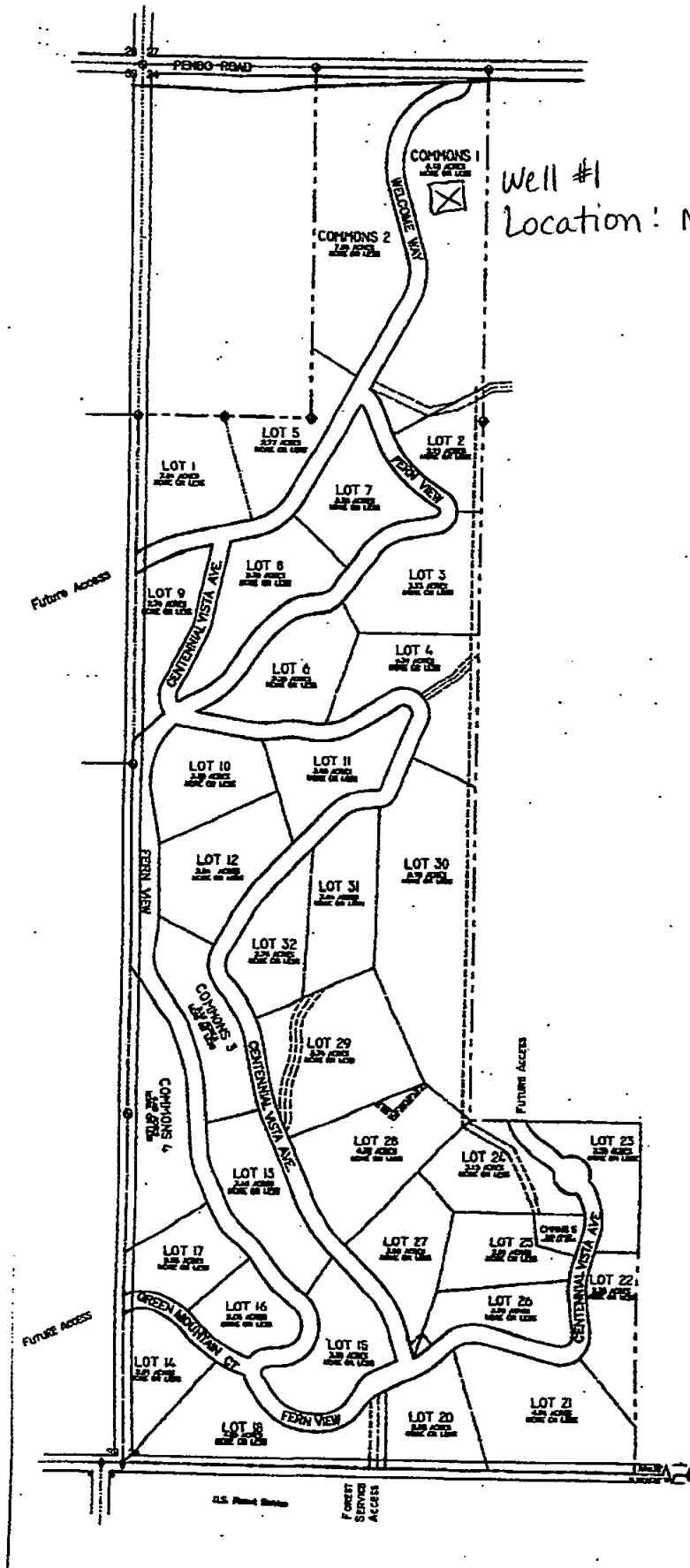
i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres



FINAL LAYOUT OF LOTS 1-32 OF CENNTENNIAL VISTA ESTATES

E 1/2 NW 1/4 NW 1/4, SW 1/4 NW 1/4, NW 1/4 SW 1/4, SW 1/4 SW 1/4,
and the W 1/2 SE 1/4 SW 1/4 of SECTION 34, T6N, R3E, S11M.



Well #1

Location: NW 1/4, NW 1/4, Sec 34, Twp 6N, Rg 3E

Sec 28
T006N
R03E

Sec 27
T006N
R03E

Sec 26
T006N
R03E

Sec 33
T006N
R03E

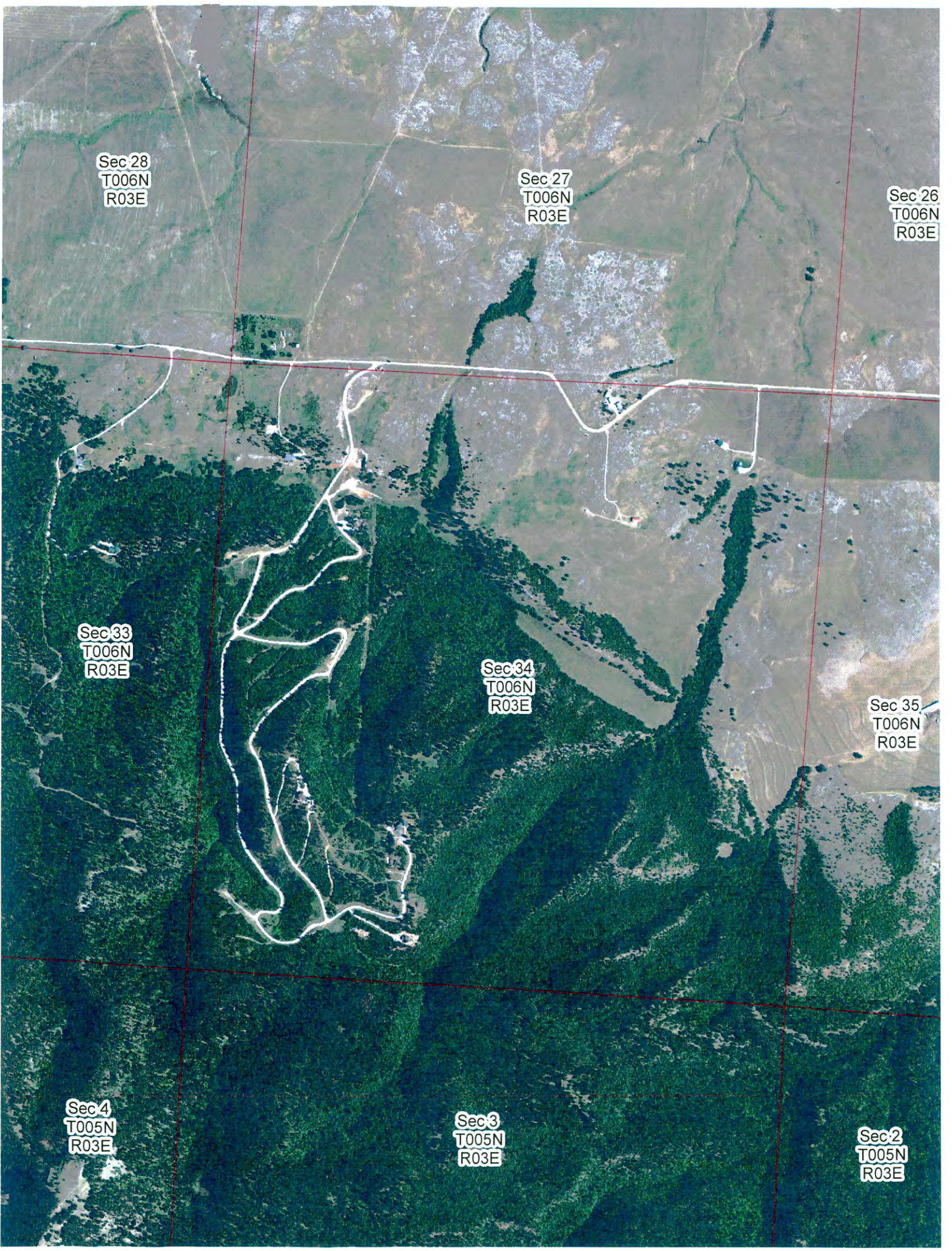
Sec 34
T006N
R03E

Sec 35
T006N
R03E

Sec 4
T005N
R03E

Sec 3
T005N
R03E

Sec 2
T005N
R03E



SOUTH DAKOTA WATER WELL COMPLETION REPORT

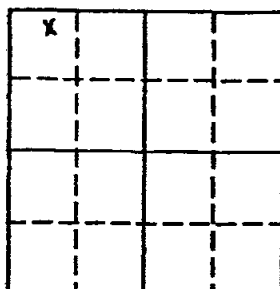
11-02

Location NW 1/4 NW 1/4 Sec 34 Twp 4N Rg 3EWell Owner: Bexco-LLC

County

Lawrence

North



Please mark well location with an "X"

Well Completion Date

5/29/05

1 Mile

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

1/4 mi from Septic (Identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Rotary Downhole HammerCASING DATA: ☐ Steel ☐ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	7 IN	FT	FT	8 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Portland</u>	<u>80</u>	<u>Lb/gal</u>	<u>670</u> Ft	<u>0</u> Ft
<u>16/80 Bentonite</u>	<u>16</u>	<u>Lb/gal</u>	<u>0</u> Ft	<u>670</u> Ft

Describe grouting procedure

thru casingSCREEN: ☐ Perforated pipe ☐ Manufactured

Diameter _____ Inches Length _____ Feet

Material _____

Slot Size _____ Set From _____ Feet to _____ Feet

Other information

None casing set in hd rockWAS A PACKER OR SEAL USED? ☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

open hole

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? 16/80 chlorine solution☐ No, Why Not?

Lab sample sent to for water quality analysis

Business Name:

Bexco LLC

Address:

Box 177

City, State, Zip:

White wood 805793

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Minnelaha</u>	<u>0</u>	<u>35</u>
<u>Opeche</u>	<u>35</u>	<u>115</u>
<u>Minnelusa</u>	<u>115</u>	<u>620</u>
<u>Madison</u>	<u>620</u>	<u>675</u>
<u>Fracture Madison 20gpm</u>	<u>675</u>	<u>690</u>
<u>Cavern 40-50 gpm</u>	<u>690</u>	<u>692</u>
<u>Madison</u>	<u>692</u>	<u>700</u>

STATIC WATER LEVEL

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:

W/Air☐ Bailed☐ Other

Pumping Level Below Land Surface

Ft. After

Hrs. pumped

GPM

Ft. After

Hrs. pumped

GPM

If pump installed, pump rate:

GPM

REMARKS

RECEIVED

SEP 14 2005

WATER RIGHTS PROGRAM

This well was drilled under license #

334

And this report is true and accurate.

Drilling firm:

Alexander Drilling Co

Signature of License Representative:

Mavis Sewell

Signature of Well Owner or Equitable Property Holder:

Rexco, LLC By Dale R. Hansen member

Date:

5/5/05

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date January 3, 2019

RECEIVED OF Centennial Vista Estates PO Box 432 Spearfish SD 57783

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

Fee for Application for Permit No. <u>1987-1</u> to Appropriate Water, to construct and to put water to beneficial use	100	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>1987-1</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	300 00

No. **08909**

By

Jeane Goodman
Chief Engineer

7911

Gronlund, Eric

From: Gronlund, Eric
Sent: Monday, January 07, 2019 8:28 AM
To: 'Pat Hasson'
Subject: RE: [EXT] Centennial Vista Estates
Attachments: CentennialVistaappl.pdf

Pat and Carol

The Water Rights Program received the application for Centennial Vista Estates Homeowners Association. The application was signed by Pat as the system operator. We'd either need the President of the Association to sign the application (attached) or a letter from the President stating you are authorized to act on behalf of the Association in the matter of the water permit application.

Thanks – Eric

Eric Gronlund
Water Rights Program, DENR
605 773-3352
Eric.gronlund@state.sd.us

From: Pat Hasson [<mailto:hassonpd@gmail.com>]
Sent: Wednesday, December 19, 2018 12:05 PM
To: Gronlund, Eric
Subject: Re: [EXT] Centennial Vista Estates

Eric,
Your answers were exactly what we needed. Thank you!

A couple more:
We have another HOA that is comparable - they have 12 homes and use 1.5 million gallons per year. I believe Centennial Vista has at least 12 more lots that can be built on. Would you suggest we put 3 million gallons on the application? or more?

Is the inspection/licensing fee to be mailed along with the application fee and the application?

Pat & Carol

On Tue, Dec 18, 2018 at 12:02 PM Gronlund, Eric <Eric.Gronlund@state.sd.us> wrote:

Pat – hope the answers below help out. Eric

From: Pat Hasson [<mailto:hassonpd@gmail.com>]
Sent: Tuesday, December 18, 2018 11:44 AM
To: Gronlund, Eric
Subject: [EXT] Centennial Vista Estates

Hello Eric,

We spoke to you by phone a few weeks ago about the water rights for Centennial Vista Estates in Spearfish. We just got permission from their board of directors to start the application process for them.

We have a few more questions for you:

- I just started as their certified operator and only have meter readings starting September 24, 2018. I would assume they use more water in the summer. What would you advise us to do to calculate gallons used annually with this limited information? Yes, peak water use will likely be the summer months. In calculating the annual volume, be reasonable but estimate on the high side. In the scheme of thing, Centennial's water use is not going to be that great so unless you have an astronomical number, it shouldn't be a concern. Example if you think the water use will be 1 million gallons per year, I don't think stating 2 million gallons per year is going to offend anyone's sensibility.
- What would you recommend they use for the name to appear on the water permit? Since it's an HOA, is it advised to use personal information of a board member since that information will most likely change frequently? Could they just use the name of the HOA? They do have a PO Box for the HOA - is a phone number or email necessary? The permit should be in the name of the HOA. Since there is a PO Box for the HOA even if the contact person changes, correspondence will get to the proper place.
- I have a copy of the plat map for the development. Is it acceptable to just draw an X where the wellhead is and write in the location from the well drillers log? As long as there's reference to a section corner on the plat map, drawing an X will be sufficient.

Thank you,

Pat & Carol Hasson



530571293

ANNUAL REPORT

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

Domestic Nonprofit Corporation
SDCL 47-24-6, 59-11-24

2018
FILING YEAR

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

Filing Fee: \$10
SOC (Agent) Fee: \$10
Total Fee: \$20

1. Business ID and Name:

NS012876
BUSINESS ID

CENTENNIAL VISTA ESTATES COMMUNITY ASSOCIATION
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

2816 CENTENNIAL VISTA AVENUE
PO BOX 432
SPEARFISH, SD 57783

Mailing Address

PO BOX 432
SPEARFISH, SD 57783

4. The South Dakota Registered Agent's Name:

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

(c) Title of the office or other position with the company

Title: **President**

Actual Street Address in this State

2816 CENTENNIAL VISTA AVENUE
SPEARFISH, SD 57783

Mailing Address in this State

PO BOX 432
SPEARFISH, SD 57783

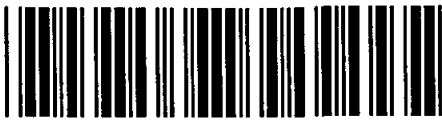
5. The names and addresses of its principal officers.

Title	Name	Address
President	Patrick M Walsh	PO Box 432, Spearfish, SD 57783
Vice President	Jessy Dietrich	PO Box 432, Spearfish, SD 57783
Treasurer	Taaron Hopper	PO Box 432, Spearfish, SD 57783
Secretary	Linda Johnson	PO Box 432, Spearfish, SD 57783

6. The names and addresses of its directors (governors).

Name	Address
Myron Stahl	PO Box 432, Spearfish, SD 57783
Jessy Dietrich	PO Box 432, Spearfish, SD 57783
Linda Johnson	PO Box 432, Spearfish, SD 57783

7. 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.



No person may execute this report knowing it is false in any material respect. Any violation may be subject to a civil and/or criminal penalty (SDCL 47-1A-129; 22-39-36).

05/12/2018

Dated

Email (Optional)

Patrick M Walsh

Signature of an Authorized Person

Patrick M Walsh

Printed Name

B0062-1152 05/12/2018 9:08PM Rec'd by SD SOS



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

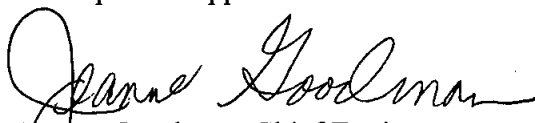
**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1987-1, Centennial Vista Estates Homeowners Association**

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. 1987-1, Centennial Vista Estates Homeowners Association, c/o Pat Hasson, PO Box 432, Spearfish SD 57783.

The Chief Engineer is recommending APPROVAL of Application No. 1987-1 with a 20 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 rights, 3) the proposed use is a beneficial use and, 4) it is in the public interest with the following qualifications:

1. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 1987-1 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. 1987-1 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 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under these Permits shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
3. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Madison aquifer.
4. Water Permit No. 1987-1 appropriates up to 11 acre feet of water annually.

See report on application for additional information.


Jeanne Goodman, Chief Engineer
March 4, 2019

Report to the Chief Engineer
Water Permit No. 1987-1
Centennial Valley Homeowners Association
February 26, 2019

Water Permit Application No. 1987-1 proposes to appropriate up to 11 acre-feet of water annually from the Madison aquifer at a maximum diversion rate of 0.1 cubic feet of water per second (cfs) for a water distribution system. The proposed diversion point is one well (700 feet deep) located in the NW ¼ NW ¼ Section 24 in T6N-R3E. This site is located approximately five miles north of Deadwood, SD.

Aquifer: Madison (MSDN)

Hydrogeology and Aquifer Characteristics

The Madison aquifer is a regional aquifer that underlies portions of Montana, Nebraska, North Dakota, South Dakota, Wyoming, and Canada (Peterson, 1984). This aquifer occurs within the Mississippian aged Madison Limestone, which can locally be referred to as the Pahasapa Limestone in the Black Hills. The Madison limestone is a generally massive gray to buff limestone that is locally dolomitic (Strobel et al., 1999). The upper portion is karstic in nature, containing solution features that result in widespread secondary permeability (Kyllonen and Peter, 1987). The primary porosity of the aquifer is low, with average porosity estimated at 11% and effective porosity estimated at 5% (Rahn, 1979). However, aquifer characteristics are variable due to the local heterogeneity of the aquifer as a result of joints, fractures, solution features, and regional variation in the aquifer (Greene et al., 1999). The Madison aquifer typically occurs within the upper portion of the Madison Limestone where solution features and fractures have increased the permeability of the Madison Limestone (Greene, 1993).

The Madison aquifer underlies approximately 19,116,160 acres of western South Dakota (Allen et al., 1985), and underlies approximately 3,431,680 acres of eastern South Dakota (Hedges et al., 1982). The amount of recoverable water in storage for the Madison aquifer in western South Dakota was estimated at 644,827,200 acre-feet of which an estimated 29,798,400 acre-feet is in Pennington County (Allen et al., 1985). However, due to the large amount of heterogeneity in the characteristics of the Madison aquifer, water availability at any one location is subject to variability. Putnam and Long (2007) observed this in the wide ranges of well yields present in the aquifer with the majority of yields ranging from 10 to 200 gallons per minute and some well yields ranging from 400 to 1,750 gallons per minute. In regard to water quality, Driscoll et al. (2002) notes that water quality declines in the aquifer further from the Madison outcrop areas.

The well completion report for this well indicates the well was completed in May of 2005 to a total depth of 700 feet below grade. The report indicated the top of the Madison Formation was encountered at 620 feet below grade. The well completion report for this application did not include a static water level, however a review of nearby well completion reports indicates that the well site for this application is likely located in an area of the Madison aquifer that can vary

between water table and confined conditions based on climatic conditions (Williamson, et al., 2000 and Water Rights, 2019c). The well that this application proposes to utilize is located about 1.2 miles from the nearest Madison outcrop area (Williamson, et al., 2000).

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 there is unappropriated water available for the applicant's proposed use, the proposed diversion can be developed without unlawful impairment of existing rights, and the proposed use is a beneficial use and in the public interest. This report will address the availability of unappropriated water and potential effects on existing rights from the aquifer that are pertinent to this application.

Water Availability

The probability of unappropriated water being available from the Madison 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." Additionally, pursuant to SDCL 46-1-6 (17) a water distribution system is defined as "a system of piping, valves, storage tanks, pumps, and appurtenances by which water is conveyed for domestic or municipal use by a common distribution system, including a municipality as defined in § 9-1-1, a nonprofit rural water supply company as defined in § 10-36A-1, a water user district as defined in § 46A-9-2, a sanitary district as defined in chapter 34A-5, or homes, including mobile homes as defined in § 32-3-1, and manufactured homes as defined in § 34-34A-1.1 supplied by a common distribution system." Here, the Madison aquifer is older than the Greenhorn Formation and a water distribution system is involved and while not required the question of recharge versus discharge will still be examined out of an abundance of caution.

Observation Well Data

In determining the availability of unappropriated water for a permit application, Administrative Rule 74:02:05:07 requires the Water Management Board to rely on 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 annual recharge.

The Water Rights Program monitors 25 observation wells completed into the Madison aquifer (Water Rights, 2019a). In general, the observation wells for the Madison aquifer document that water levels in the aquifer are dominated by climatic conditions. Over the period of record, Madison observation wells show cyclic conditions of water levels, rising during wetter

periods and gradually declining during drier periods. Any effects on the water levels of the aquifer caused by pumping are temporal in nature. This indicates water levels in the aquifer are dominated by climatic conditions. Therefore, recharge to and natural discharge from the aquifer exceeds well withdrawals. Since recharge to and natural discharge from the aquifer can be captured for pumping, unappropriated water is available in the aquifer.

The nearest Madison aquifer observation well monitored by the Water Rights Program is located approximately 2.3 miles to the north. The hydrograph for this observation well (LA-95A) is shown in Figure 1. The hydrograph for observation well LA-88C is located 5.8 miles to the northwest is shown in Figure 2.

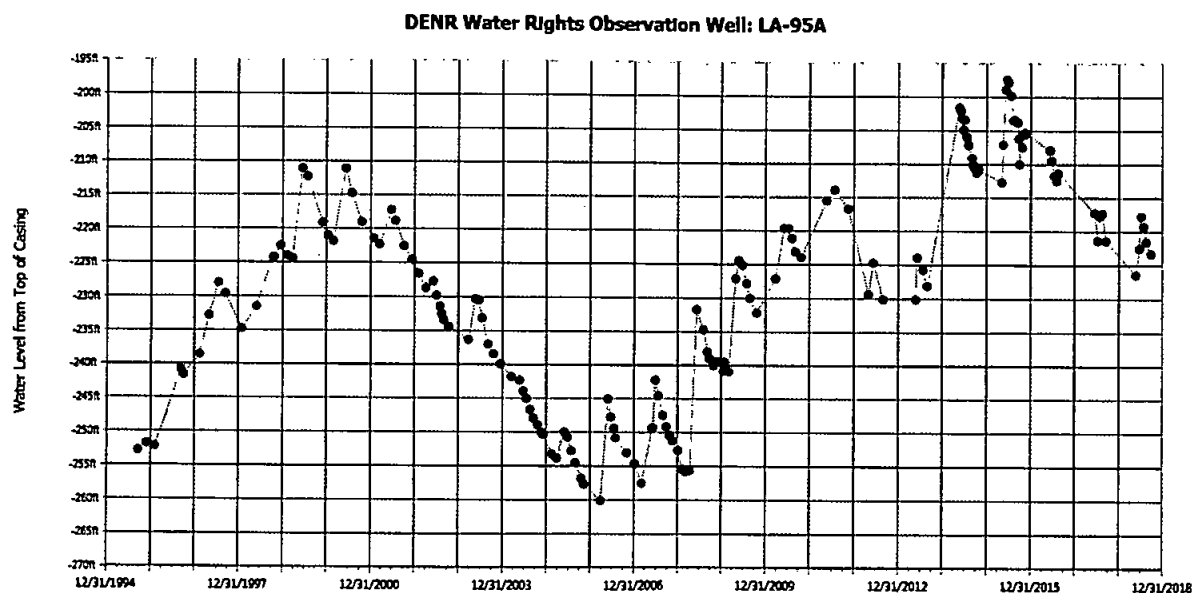


Figure 1: Hydrograph of observation well LA-95A (Water Rights, 2019a)

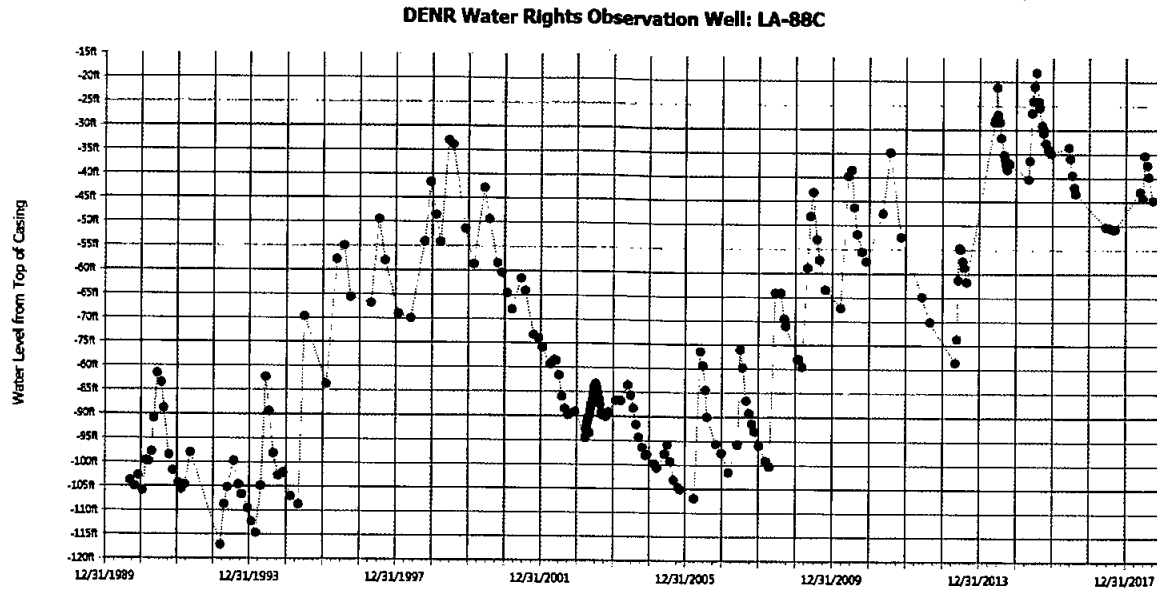


Figure 2: Hydrograph of observation well LA-88C (Water Rights, 2019a)

Hydrologic Budget

General Hydrologic Budget

Recharge

In the Black Hills, the Madison aquifer is recharged by streamflow losses and infiltration of precipitation where it outcrops (Carter et al. 2001a). Woodward Clyde Consultants (1981) estimated recharge in South Dakota to the Madison aquifer to range from 140,000 to 400,000 acre-feet per year; however when Woodward Clyde Consultants (1981) referred to the Madison aquifer they included everything between the Cretaceous shales and the Precambrian. Carter et al. (2001a) as part of the Black Hills Hydrology study estimated combined average annual recharge from precipitation and streamflow to the Madison and Minnelusa aquifers in the Black Hills area for water years 1931-1998 at 344 cfs (249,211 acre-ft). When considering the distribution of this recharge between aquifers, Carter et al. (2001a) notes that both aquifers receive a similar volume of recharge from precipitation. However, recharge due to streamflow is thought to be slightly higher in the Madison aquifer due to the upgradient location of its outcrops (Carter et al. 2001a). Based on this, Carter et al. (2001a) estimated that the Madison aquifer receives about 55% (137,066 acre-ft) and the Minnelusa aquifer receives about 45% (112,145 acre-ft) of the combined average annual recharge, although it is noted that this is subject to localized temporal and spatial variability based on outcrop patterns in the Black Hills area.

Withdrawals

Withdrawals from the Madison aquifer are pumping from wells, headwater springs, and artesian springs (Carter et al. 2001a). Well withdrawals can be divided into irrigation and non-irrigation uses. There are currently 152 water rights/permits, nine future use permits, one application held in abeyance (Application No. 2685-2 Powertech Inc.), one deferred application

from the Madison aquifer (Application No. 2585-2 Southern Black Hills Water Systems), and two applications under review (this application and Application No. 1971-1 United States Fish and Wildlife Service) (Water Rights, 2019b). Water rights/permits from the Madison aquifer in South Dakota are primarily located in or around the outskirts of the Black Hills, likely due to the decline in water quality as distance from the outcrop area increases. Of the 152 water rights/permits appropriating water from the Madison aquifer, only eight are outside of the Black Hills region, six in Haakon County, one in Ziebach County, and one in Dewey County.

Future use water permits are assumed to be fully developable. The nine future use permits reserve a total of 12,809 acre-feet per year from the Madison aquifer and are summarized in Table 1. However, Future Use Permit No. 439-2 reserves 3,367 acre-feet from groundwater, infiltration galleries, and Minnelusa and Madison Formation wells located along Rapid Creek for municipal use by Rapid City but does not attribute specific amounts to any of the listed water sources. Since there is no single water source attributed to Future Use Permit No. 439-2, the potential for the entire amount being developed from the Madison aquifer is accounted for in the hydrologic budget. Application No. 2685-2 for Powertech (USA) Inc. is held in abeyance at the request of the applicant while the applicant completes the required federal permitting process. Application No. 2685-2 proposes to pump up to 888.8 acre-feet of water per year from the Madison aquifer. Application No. 2585-2 for Southern Black Hills Water System was deferred for the assessment of the potential impacts to the cave pools of Wind Cave National Park and to Beaver Creek. Application No. 2585-2 proposes to appropriate 1,600 acre-feet of water per year from the Madison aquifer.

Table 1: Summary of Future Use Permits for the Madison Aquifer (Water Rights, 2019a)

Permit Number	Name	County	Annual Reservation (acre-feet)
369-1	City of Belle Fourche	Butte	620
439-2	City of Rapid City	Pennington	3,367
1833-2	Westin Heights Home Owners	Meade	211
1872-1	City of Spearfish	Lawrence	2,704
2086-2	City of Rapid City	Pennington	4,075
2560-2, 2506A-2, & 2560A-2	Fall River Water Users District	Fall River	358
2580-2	Southern Black Hills Water System	Fall River	1,474
Total			12,809

The majority of water rights for the Madison aquifer are for non-irrigation use. For water rights/permits limited to an annual volume, full use of that volume is assumed for estimation of average annual withdrawal. Water rights/permits that are limited by an average volume have an estimated appropriation of 21,411.5 acre-feet per year. Historically, average annual water use by non-irrigation appropriations limited by instantaneous diversion rate has been less than 60% of full time pumping at the permitted diversion rate. Average annual use of Madison water

rights/permits limited by diversion rate only is estimated to be less than 19,855.2 acre-feet per year.

Carter et al. (2001b) estimates average domestic and livestock watering use of the Madison aquifer during water years 1987 to 1996 at about 2.25% of well withdrawals from the Madison aquifer for the study period. This indicates that the Madison aquifer is typically utilized for uses or diversion rates that require a water right and that domestic and livestock watering are not a significant portion of the hydrologic budget for the aquifer. In the case of the Madison aquifer this is likely due to the high costs of drilling Madison wells except near the outcrop, which would cause domestic users to be preferential to overlying aquifers (such as the Minnelusa) as a water source.

The estimate of average annual irrigation usage from the Madison aquifer in South Dakota is challenging due to the natural variation in average annual precipitation across the Black Hill area. Additionally, both landscape irrigation (lawns, golf courses, etc.) and agricultural irrigation (hay, crops, etc.) occur under these permits further making the calculation of any one application rate to apply across the acres authorized for irrigation from the aquifer challenging. Average annual reported irrigation pumpage from the Madison Aquifer from 1982 to 2017 is 847 acre-feet; however with the issuance and cancellation of water rights/permits the location and number of permitted acres has varied during that time. Therefore, in the case of the irrigation water permits/rights for the Madison aquifer, examination of the historical reported irrigation pumpage of each water right/permit currently authorized for irrigation was done for the 1982 to 2017 irrigation seasons (Water Rights, 1983-2018). There are currently 32 water rights/permits appropriating water from the Madison aquifer that include irrigation as a permitted use. Average annual water use for water rights/permit that contain irrigation as a permitted use is summarized in Table 2. Some irrigation water rights are incorporations of several different water permits obtained at different times. Where this occurred the years of irrigation reporting data used to estimate average annual use were limited to years most reflective of the licensed system. For new water permits (No. 2241-2 and No. 2773-2), average annual water use is estimated to be less than statutory annual volume limit of two acre-feet per acre per year (pursuant to South Dakota Codified Law 46-5-6). For Water Right No. 419-2, average annual irrigation water use is estimated to be less than 18 acre-feet.

Table 2: Estimated Average Annual Water Use By Irrigation Water Rights/Permits in the Madison Aquifer (Water Rights, 2019b and 1983-2018)

Permit No.	Estimate Average Annual Use (acre-feet/year)	Permitted or Licensed Acres	Years Reported Data used in Average	Comments
419-2	no data (18)*	6	not reporting	appropriation 18 acre-feet/year
858-2	33.1	655.75	34	also uses Cheyenne River
1009-1	33.1	53.73	36	
1096-1, 1096A-1, 1504-1, & 1670-1	83.0	322	36	related permits
1185-1	109.8	22.52	36	water use for irrigation and fish culture
1223-1	208.4	263	36	
1363-1	59.5	80.1	31	
1452-1	15.5	22.44	29	
1635-1	112.8	54.5	20	Used reporting for 1998-2017 to calculate average, most representative of current system
1650-1 (1231-1)	55.9	134	21	Supplements surface water source, combined irrigation reported under 1231-1 starting in 1997
1707A-1&1707E-1	45.7	100	11	irrigation use limited to 269 acre-feet/year, 1707E-1 time extension for 1707A-1
1725-2	0	75.1	Madison use accounted for in non-irrigation section	
1842-1	0.0	330	13	
1858-1	0.0	34	11	Madison secondary water source
1885-1	12.4	22	1	annual questionnaires started in 2017
1899-1	0.0	100	8	
1911-2	132.0	124	24	
1923-1	1.8	3	5	
1931-1	4.0	85.22	5	
1945-1	52.8	265	4	
1960-1	247.7	150	2	
2106-2	0.9	2.8	27	
2286-2	12.2	38.5	24	
2313-2	8.0	3	22	
2458-2	120.7	107	16	
2593-2	14.3	72.5	11	
2673-2	9.9	7	6	
2741-2	new permit (200)*	567	0	appropriation 200 acre-feet/year
2773-2	new permit (1134)*	100	0	appropriation 1,134 acre-feet/year
Total	2725.6	3800.16		

*further explained in text

A review of file for Water Right No. 1752-1 indicates the groundwater component of the water right is discharge from a geothermal system using water from the Madison aquifer under another permit (Water Right No. 1633-2 included in the non-irrigation portion of the hydrologic budget) that is discharged to the Bad River upstream of the diversion point for this water right (Water Rights, 2019b). Additionally in reviewing the irrigation questionnaires for Water Right No. 1752-1, irrigation under this permit appears to depend primarily on water availability in the Bad River (Water Rights, 1983-2018). Water Right No. 1185-1 appears to be reporting both irrigation and non-irrigation pumping of the water right on the annual irrigation questionnaire (Water Rights, 1983-2018). The irrigation component of Water Right No. 1650-1 is supplemental water for irrigation of acres authorized under Water Right No. 1231-1 for irrigation

from a surface water source (Water Rights, 2019b). Since Water Right No. 1650-1 is not required to report irrigation use; irrigation use from the Madison aquifer for Water Right No. 1650-1 is expected to be less than the average annual irrigation use for Water Right No. 1231-1 (Water Rights, 2019b). Therefore, irrigation under these water rights/permits is estimated to be less than 2,726 acre-feet per year based on the statutory annual volume limits for these water rights/permits.

Average annual recharge to the Madison aquifer in the Black Hills area was estimated at 137,066 acre-ft per year. Average annual appropriative withdrawals, applications, and future use reservations are summarized in Table 3 and are estimated to be less than 61,301 acre-feet per year. In considering these estimates of average annual use and recharge in relation to the amount of storage available in the aquifer, both are small percentages of the amount of water stored in this aquifer. Taking this into consideration the Madison aquifer could experience several years of drought condition with only minimal impacts to wells or springs. However, not all of the recharge to or storage in the Madison aquifer could possibly be accessed at any one location; therefore this general hydrologic budget is simply intended to demonstrate the nature of the Madison aquifer as a large water resource.

Table 3: Summary of Madison Aquifer Hydrologic Budget

Type of Permit, Right, or Application	Estimated Water Use (acre-feet per year)
Future Use Permits*	12,809
Water Permit/Rights limited by Annual Volume*	21,412
Water Permit/Rights limited by diversion rate	19,855
Irrigation Water Rights/Permits	2,726
Application No. 2585-2, deferred*	1,600
Application No. 2685-2, abeyance*	889
Application No. 1971-1, undergoing review*	2,000
Application No. 1987-1, this application*	11
Total	61,301
*annual volume limitation	

Localized Hydrologic Budget

Carter et al. (2001b)

Carter et al. (2001b) analyzed the hydrologic budgets for the Madison and Minnelusa aquifer in the Black Hills region for water years 1987 to 1996. Carter et al. (2001b) utilized nine subareas as part of their analysis, with subareas constructed based on hydraulic flow paths to minimize flow across boundaries. The proposed well location for this application is located within subarea two. The average hydrologic budget components for the Madison for water years 1987 to 1996 for subarea two are shown in Table 4. Carter et al. (2001b) notes of subarea two the large groundwater outflow rate and differences in streamflow recharge between wet and dry periods during the study timeframe for subarea two. Additionally, Carter et al. (2001b) notes

changes in storage resulting from wet and dry climatic conditions during the study period is shown in the observation well water levels for this subarea. The budget balanced over the period of study, and using the current observation well data indicates more water in storage now.

Table 4: Average Annual Hydrologic Budget Components for Subarea Two for Water Years 1987 to 1996 with Madison and Minnelusa Groundwater (modified from Carter et al., 2001b)

Combined Streamflow Recharge	Combined Precipitation Recharge	Madison Groundwater Inflow	Madison Groundwater Outflow	Combined Well Withdrawals	Combined Artesian Springflow
27.1 cfs	10.8 cfs	36.9 cfs	43.7 cfs	3.7 cfs	0 cfs
19,620 acre-feet	7,819 acre-feet	26,715 acre-feet	31,638 acre-feet	2,678 acre-feet	0 acre-feet

Changes to the hydrologic budget in this subarea (i.e. an increase in well withdrawals), will result in the hydrologic budget rebalance with either or both groundwater inflow from another subarea increasing or groundwater outflow from the subarea decreasing. When considering the appropriation requested by this application in relation to the hydrologic budget of this subarea, any change in subarea groundwater inflows or outflows to establish a new dynamic equilibrium for the subarea would be very subtle especially considering the large groundwater outflow for the subarea. Additionally given the notable impact of climatic conditions on the hydrologic budget of this subarea, the impacts of the appropriation requested by this application would be virtually immeasurable to storage and groundwater flow.

In this subarea, there are 37 water rights/permits completed into the Madison aquifer. The subarea also includes part of the future use area for the City of Spearfish. Average annual use for the Madison aquifer in this subarea can be estimated utilizing the same methodology as the hydrologic budget for the entire aquifer and by assuming full development of the future use permit in this subarea (although this a conservative assumption since the majority of the future use area for this permit is in a different subarea). This results in a conservative estimated average use for the Madison aquifer in this subarea of 9,450 acre-feet per year. Comparison of this to Madison groundwater inflows and outflows (which are available for capture), indicates that there is a reasonable probability that water is available in the area of the Madison aquifer to meet the appropriation requested by this application (up to 11 acre-feet per year average annual use).

Putnam and Long (2007)

Putnam and Long (2007) evaluated the Madison and Minnelusa aquifers in the northern half of Lawrence County for groundwater quality and flow. Putnam and Long (2007) estimated the average annual recharge rate directly to the Madison aquifer within their study area to be 16.5 cfs (11,945.5 acre-feet per year) from areal recharge (recharge from precipitation on the outcrop of the aquifer) and streamflow recharge. Additionally, Putnam and Long (2007) estimated there was 6.0 cfs (4,343.8 acre-feet per year) of recharge from streamflow loss zones in Bear Gulch and Beaver Creek being split between the Madison and Minnelusa aquifers (Putnam and Long, 2007).

There are 37 water rights/permits appropriating water, one future use permit, and one pending application within the study area of Putnam and Long (2007) (Water Rights, 2019b). Future Use Permit No. 1872-1 reserves 2,704 acre-feet per year and Application No. 1971-1 proposes to appropriate up to 2,000 acre-feet per year. Utilizing the same methodology to estimate average annual water use as previously used in this report, the estimated average annual appropriative withdrawals from the Madison aquifer within the Putnam and Long (2007) study area (including Future Use Permit No. 1872-1 and Application No. 1971-1) are estimated to be less than 15,485 acre-feet per year.

A comparison of estimated recharge to estimated withdrawals for the Putnam and Long (2007) study area show the estimated average annual withdrawals (15,485 acre-feet per year) exceed the estimated average annual recharge to the Madison aquifer (11,945.5 acre-feet per year). However, groundwater inflow entering the study area from the west is not accounted for the Putnam and Long (2007) recharge estimate. This is a result of the larger regional nature of the Madison aquifer noted in the overall aquifer hydrologic budget. This is most clearly illustrated in Putnam and Long (2007) by estimated springflow discharge from the Minnelusa and Madison aquifers exceeding estimated recharge to both aquifers by more than 30 percent of the total recharge estimate. The estimated discharge rate from springflow coupled with the fact that groundwater inflow from outside the study area was not accounted for in Putnam and Long's (2007) average annual recharge estimate indicates a reasonable probability unappropriated water is available for this proposed appropriation.

Existing Users

Area water rights/permits are shown in Figure 3 and summarized in Table 5. The nearest water right/permit to the well location for this application is Water Right No.1547-1 for Simon Contractors located 1.3 miles to the east. A review of domestic well completion reports on file with the SDDENR-Water Rights Program indicate that there are several domestic wells within one mile that are likely completed into the Madison aquifer (Water Rights, 2019c). A review of nearby well completion reports indicates that the well site for this application is likely located in an area of the Madison aquifer that can vary between water table and confined conditions based on climatic conditions (Water Rights, 2019c). Given the relatively small diversion rate requested by this application drawdown as a result of pumping is not expected to be significant, especially considering that Water Rights Program Madison aquifer observation wells located in relatively close proximity to large capacity municipal Madison aquifer wells (i.e.: Spearfish, Rapid City, and Sturgis) indicate that drawdown from pumping has historically not been adverse. Drawdown documented by Water Rights Program Madison aquifer observation wells has ranged from a few feet to tens of feet (Water Rights, 2019a). When this is considered against the natural amplitude of water level changes in the Madison aquifer (several tens of feet), it indicates a reasonable probability the diversion proposed by this application will not unlawfully impact existing users.

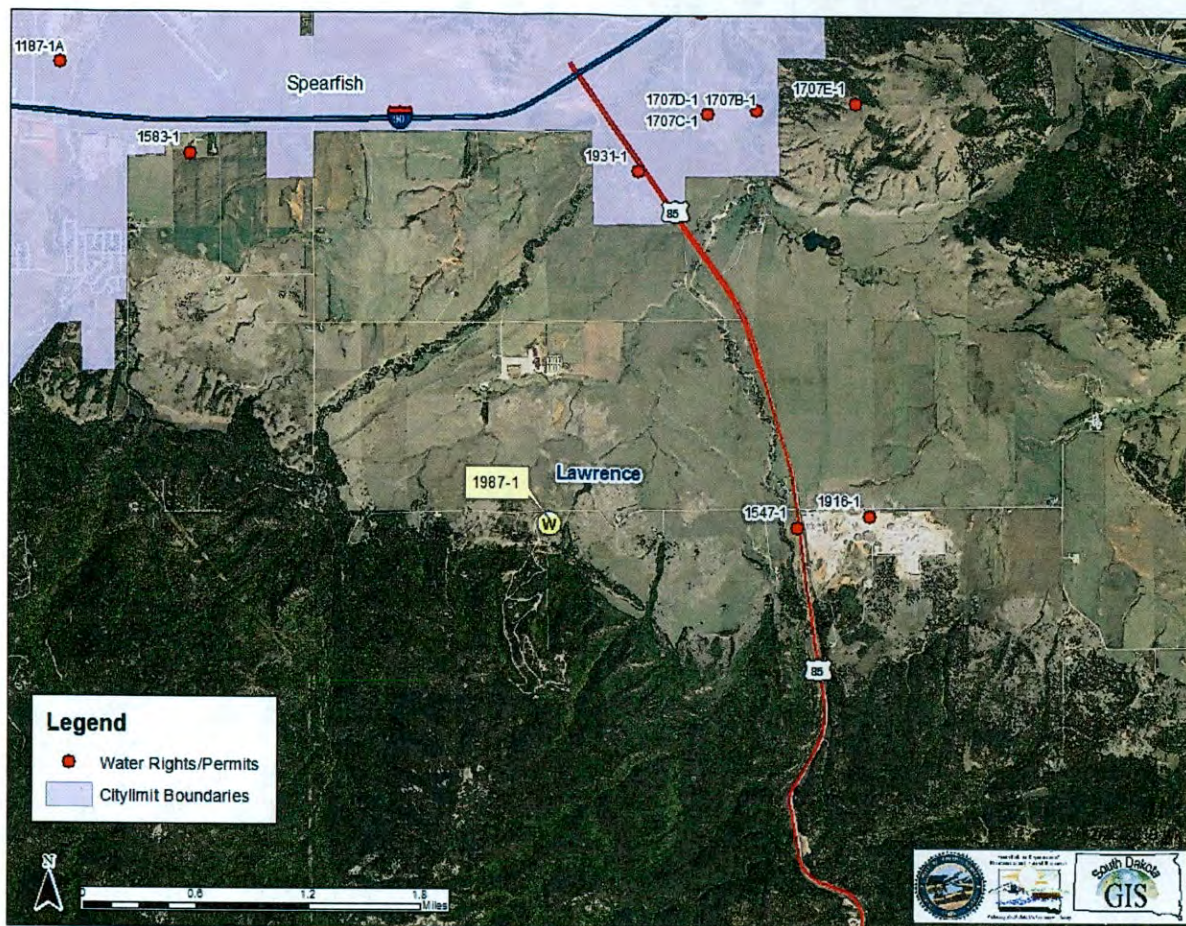


Figure 3: Water rights/permits completed into the Madison aquifer in the area of this Application No. 1987-1 (Water Rights, 2019b)

Table 5: Summary of Water Rights/Permits in Figure 3 (Water Rights, 2019a)

Permit No.	Name	Status	Use	Rate (cfs)	Acres	Annual Volume Limit (acre-feet)
1187-1A	SIMON CONTRACTORS	LC	IND & COM	0.04	n/a	n/a
1547-1	SIMON CONTRACTORS	LC	IND	0.09	n/a	n/a
1583-1	WILL/MARY ELLEN LANTIS	LC	COM	0.04	n/a	n/a
1707A-1	ELKHORN RIDGE @ FRAWLEY RANCHES LLC	PE	IRR & SHD & DOM	3.705	100	502.5 across all uses
1707B-1	CITY OF SPEARFISH	PE	SHD & COM	1.035	n/a	223.5
1707C-1	CITY OF SPEARFISH	PE	MUN	0	n/a	change of use for 1707B-1
1707D-1	CITY OF SPEARFISH	PE	MUN	0	n/a	time extension for 1707C-1
1707E-1	ELKHORN RIDGE @ FRAWLEY RANCHES LLC	PE	IRR & DOM & COM	0	n/a	time extension for 1707A-1
1916-1	SIMON CONTRACTORS	LC	IND	0.222	n/a	n/a
1931-1	ELKHORN RIDGE @ FRAWLEY RANCHES LLC	PE	IRR & COM	0.44	85.22	n/a
1945-1	FRAWLEY RANCHES LLC	PE	IRR	1.11	265	n/a

LC-water right, PE-water permit, IND-industrial, COM-commercial, SHD-suburban housing development, IRR-irrigation, DOM-domestic, MUN- municipal

In the past, the Water Management Board has recognized that to place water to maximum beneficial use a certain amount of drawdown may occur. The Water Management Board has promulgated rules that allow water to be placed to maximum beneficial use without the necessity

of maintaining artesian head pressure. An adversely impacted domestic well has been defined by the Administrative Rules of South Dakota 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.” In the case of Water Permit Application No. 2313-2 for the Coca-Cola Bottling Company of the Black Hills, the Water Management Board adopted findings of fact that noted that if the increased costs or decreased production as a result of the impacts of legitimate users on artesian head pressure could be considered an adverse impact it would conflict with SDCL 46-1-4 (Water Rights, 1995). SDCL 46-1-4 requires the water resources of the state be put to beneficial use to the maximum extent of which they are capable. Additionally, since the lower portion of the Minnelusa Formation and the lower portion of the Madison Formation generally serve as upper and lower confining units for the Madison aquifer, this application, if approved, is not expected to impact water rights/permits or domestic wells completed into other aquifers. Given all of the above there is a reasonable probability the diversion proposed this application, if approved, can be made without adversely impacting existing appropriative or domestic users with adequate wells

Public Interest

In considering the Madison aquifer in the Northern Black Hills the possibility of affecting the discharge of artesian springs could potentially be an obstacle to increased development of the Madison in this area. In 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 that “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, 2007). This is understandable since pursuant to SDCL 46-6-6.1 artesian head pressure is not protected as a means of groundwater delivery, therefore decreased discharge from these artesian springs could probably not be considered an adverse impact. Since these spring discharges contribute to stream base flow protection of their artesian head pressure may be in the public interest. However, given the relatively low diversion rate proposed by this application (0.1 cfs) it is unlikely that drawdown from the well for this application will have any impact on the aforementioned springs, since a fairly large change in the hydraulic gradient in the locale of the springs would be needed to affect the groundwater flow rates and therefore spring discharge.

Term Limitation on Madison Water Permits

In considering water rights/permit appropriating water from the Madison aquifer that involve the construction of new wells, pursuant to SDCL 46-2A-20, “...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.”

Additionally pursuant to SDCL 46-2A-21, “At the end of the twenty-year limitation, the board may cancel a permit or amend the permit with a new term limitation of up to twenty years, if the board is unable to make a finding after notice and hearing that sufficient information is available to delete the term limitation.”

Evidence is not available to justify issuing this permit without the 20 year Madison aquifer term limit.

Conclusions

1. Water Permit Application No. 1987-1 proposes to appropriate up to 11 acre-feet of water annually from the Madison aquifer at a maximum diversion rate of 0.1 cfs for a water distribution system from one well located in the NW ¼ NW ¼ Section 24 in T6N-R3E.
2. Based on a review of the hydrologic budget and the observation well data for the Madison aquifer, there is a reasonable probability unappropriated water is available for this proposed appropriation.
3. There is a reasonable probability the diversion proposed by this application can be made without adversely impacting existing appropriative or domestic users with adequate wells. Development of this application is not expected to impact springs.
4. Evidence is not available to justify issuing this permit without the 20 year Madison aquifer term limit by SDCL 46-2A-20.


Whitney Kilts

SDDENR Water Rights Program

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Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, March 05, 2019 8:06 AM
To: 'hassonpd@gmail.com'
Subject: Water Permit Application No. 1987-1
Attachments: 1987-1.pdf

Attached is a copy of the report, recommendation and information regarding the public notice for Water Permit Application No. 1987-1. As stated in the letter, please contact the Black Hills Pioneer ASAP to authorize publication and arrange for payment. Copies are being mailed to both addresses today.

Karen Schlaak

SD DENR, Water Rights Program
(605) 773-3352



RECEIVED

MAR 22 2019

WATER RIGHTS
PROGRAM

Affidavit of Publication

STATE OF SOUTH DAKOTA:

COUNTY OF LAWRENCE:

Letitia Lister of said County and State being first duly sworn, on her oath says: That the BLACK HILLS PIONEER is a legal daily newspaper of general circulation, printed and published in the City of Spearfish, in said County and State by Letitia Lister, and has been such a newspaper during the times hereinafter mentioned; and that said newspaper has a bonafide circulation of at least 200 copies weekly, and has been published within said County in the English language for at least one year prior to the first publication of the notice herein mentioned, and is printed in whole or in part in an office maintained at the place of publication; and that I, Letitia Lister, the undersigned, am the Publisher of said newspaper and have personal knowledge of all the facts stated in this affidavit; and that the advertisement headed:

Notice of Application
No. 1987-1

a printed copy of which is hereto attached, was printed and published in said newspaper for 1 successive and consecutive weeks, the first publication being made on the 13th day of March, 2019, and the last publication on the _____ day of _____, that the full amount of fees charged for publishing same, to-wit: The sum of \$25.87, insures solely to the benefit of the publisher of the BLACK HILLS PIONEER, that no agreement 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.

[Signature]
Subscribed and sworn to before me this 19th day of March, 2019

[Signature]
Notary Public, Butte County, South Dakota
My commission expires: 3-21-2023

NOTICE OF APPLICATION NO. 1987-1 to Appropriate Water

Notice is given that Centennial Vista Estates Homeowners Association, c/o Pat Hasson, PO Box 432, Spearfish SD 57783 has filed an application for a water permit to appropriate 11 acre-feet of water annually at a maximum pump rate of 0.1 cubic feet of water per second from one well completed into the Madison Aquifer (700 feet deep) located in the NW 1/4 NW 1/4 Section 34-T6N-R3E for a water distribution system. This site is located approximately 5 miles north of Deadwood SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1987-1 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 March 25, 2019.

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.

Steven M. Pimer,
Secretary,
Department of
Environment and
Natural Resources.

Published once at the
total approximate cost of
\$25.87.

#745
Mar 13

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, March 05, 2019 7:51 AM
To: Legals (legals@bhpioneer.com)
Subject: 1987-1, Centennial Vista Estates Homeowners Assoc.
Attachments: 1987-1public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on March 13, 2019.

*Centennial Vista Estates Homeowners Association, c/o Pat Hasson, PO Box 432, Spearfish SD 57783 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

SD DENR, Water Rights Program
(605) 773-3352





**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 NEWSPAPER RIGHT AWAY.**

March 5, 2019

Centennial Vista Estates Homeowners Association
c/o Pat Hasson
PO Box 432
Spearfish SD 57783

Dear Mr. Hasson:

Water Permit Application No. 1987-1 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 Black Hills Pioneer printed at Spearfish SD (Ph # 605 642-2761). 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,

Eric Gronlund
Eric Gronlund
Natural Resources Engineer
(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.

c: Pat Hasson, 3518 Westview Dr, Spearfish SD 57783

NOTICE OF APPLICATION NO. 1987-1 to Appropriate Water

Notice is given that Centennial Vista Estates Homeowners Association, c/o Pat Hasson, PO Box 432, Spearfish SD 57783 has filed an application for a water permit to appropriate 11 acre-feet of water annually at a maximum pump rate of 0.1 cubic feet of water per second from one well completed into the Madison Aquifer (700 feet deep) located in the NW 1/4 NW 1/4 Section 34-T6N-R3E for a water distribution system. This site is located approximately 5 miles north of Deadwood SD.

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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.

Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published once at the total approximate cost of _____.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

MAR 29 2019

Centennial Vista Estates Homeowners Association
c/o Pat Hasson
PO Box 432
Spearfish SD 57783

Dear Mr. Hasson:

Enclosed is Water Permit No. 1987-1 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,


Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

RECEIVED

APR 18 2019

WATER RIGHTS
PROGRAMNOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USEDate April 5, 2019TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181FROM: Centennial Vista Estates Homeowners Association
(name)
PO Box 432
(address)
Spearfish, SD 57783
(city, state, zip) (phone)

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

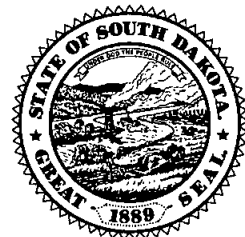
Water Permit No. 1987-1 states that the water use system is to be constructed by March 25, 2024, and water is to be put to beneficial use by March 25, 2028.
(date) (date)

The water use system was completed on May 5, 2005.
(date)

Applying the water to beneficial use was completed on May 5, 2005.
(date)

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

(signature)
PAT WALSH
7-98 PRESIDENT





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

April 23, 2019

1987-1

Pat Walsh
Centennial Vista Estates Homeowners Association
PO Box 432
Spearfish SD 57783

Dear Mr. Walsh:

I am writing to acknowledge receipt of the "Notice of Completion of Works" form that you sent in to let us know that the water use system is completed.

The system is now ready for inspection. Inspections are done on a county-by-county basis as staff time permits. You have done everything you need to do and the intervening time between the completion of your project and the staff inspection has no bearing on your water permit.

Someone from our office will contact you prior to the inspection to set up a time that is convenient for you. If you have any questions, please contact me.

Sincerely,

Genny McMath
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 1987-1

I have this day June 3, 2019 made a thorough examination of the water use system constructed by **Centenial Vista Estates Homeowners Association, PO Box 432, Spearfish SD 57783** of Permit No. **1987-1**, bearing the priority of 1/3/2019 authorizing the diversion of 0.1 cu. ft. per second water from one well for suburban housing purposes, in Lawrence County.

Inspection contact & relationship to permit holder,
if applicable:

Pat Walsh, HOA President

605-645-7258

Pat Hasson, operator

605-569-2520 (cell)

A. Works used to divert the water:

Well Information: Main Well

- 1) Well Drilling Firm: Alexander Drilling (2005)
- 2) No. of Wells 1
- 3) Depth(s) 700 feet
- 4) Well log is available Yes

Casing:

- 1) Diameter 7"
- 2) Length 670 feet
- 3) Type steel

Screen:

- 1) Type open hole
- 2) Length 30 feet
- 3) Static water level estimated @ 515' (the water level was not shown on the drillers log, the static level was estimated based on static elevation of three nearby Madison wells)

Pump:

- 1) Make Grundfos
- 2) Model 25S100-52DS
- 3) Size 6"
- 4) Capacity 28 GPM note: This is a 25 gpm rated pump producing 28 gpm as installed (air tested at time of drilling but yield not shown on log)
- 5) Horsepower rating 10 hp

Well Information: Back-up well - emergency use only (different water source)

- 1) Well Drilling Firm: Cimarron Drilling (2002)
- 2) No. of Wells 1
- 3) Depth(s) 1,462 feet
- 4) Well log is available yes

Casing:

- 1) Diameter 7"
- 2) Length 1,145 feet
- 3) Type steel

Screen:

- 1) Type open hole
- 2) Length 317 feet
- 3) Static water level 1,088 ft. (above data based on electronic well log in HOA file and thought to be log of back-up well.)

Pump:

- 1) Make Grundfos
- 2) Model 16S75-56DS
- 3) Size 6"
- 4) Capacity 17 GPM (based on drawdown to 1,140' level)
- 5) Horsepower rating 7 1/2 hp

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

- 1) Type Plastic
- 2) Size 4 and 6" mainline, 1 1/2" service lines

C. Works used to apply water to beneficial use:

Centennial Estates HOA has 28 residential lots of which 12 have homes constructed, 2 homes are under construction, 12 lots are vacant and 2 lots are considered un-buildable.

The main well pump is controlled with a variable frequency drive delivering water to a 500 gallon tank located approximately 1/2 mile south and 360 feet elevation above the well. The 500 gallon tank serves as a regulating reservoir for the booster pump. There are currently 6 homes served by this lower section of mainline. The booster pump delivers water to a 44,000 gallon above ground steel storage tank located approximately 1,900 feet southeast and 220 feet elevation above the booster. The storage tank gravity feeds the 6 homes served by this upper section of mainline and each of these homes have a booster pump to provide adequate pressure.

The well located adjacent to the 44,000 gallon storage tank was drilled in 2002 and currently serves only as emergency back-up for the system. The pump is controlled with a timer set to run 4 times per day for 15 minutes each run cycle when needed. The well has a very slow recovery and longer or more frequent run times will cause automatic shut-down from the pump controller caused by low water. The pump was last

used for a few days in 2019 due to a portion of the main line freezing. The back-up well is not used if the main well and distribution system is functioning properly.

Based on the depth of the well, Timothy Magstadt, water rights staff engineer, determined the back up well is likely not completed into the Madison aquifer. However a well completion report is not on file for this well. Based on that finding, the back-up well should not be included on the water license for Permit No. 1987-1. The back-up well only produces 17 gpm and is not use when the well authorized by Permit No. 1987-1. The use of water by a water distribution system that does not exceed the domestic use criteria of 18 gpm does not require a permit.

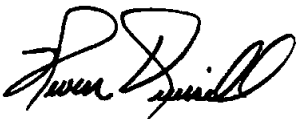
D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by: Yes
- 2) Exceptions to compliance are: Permit 1987-1 authorizes just one well. The permit holder is in compliance as long as the main well and the back-up well are not operated simultaneously.

E. Condition and Location:

1. The system is in good condition with the point of diversion located as follows:
204' S and 1,287' E of the NW corner Section 34 T6N R3E (44.444803, -103.745111)
2. The works are capable of diverting and conveying to the place of use 0.06 cu. ft. per second (28 gpm) of water which is to be used for **suburban housing** use and the license should be issued for 0.06 cfs.
3. All structures, wells and lands on map: **Yes**

F. Comments or other permit(s) associated with the project: none

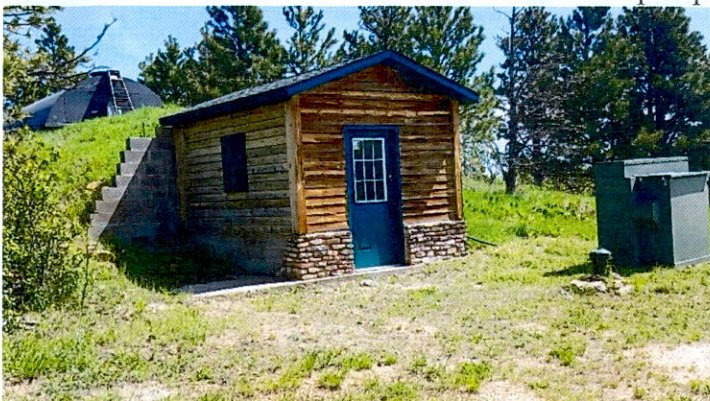


Steven Quissell
Water Rights Inspector
DENR Water Rights Program

Date report completed: June 24, 2019



Main well and pump house plumbing



Back-up well, pump house and storage tank

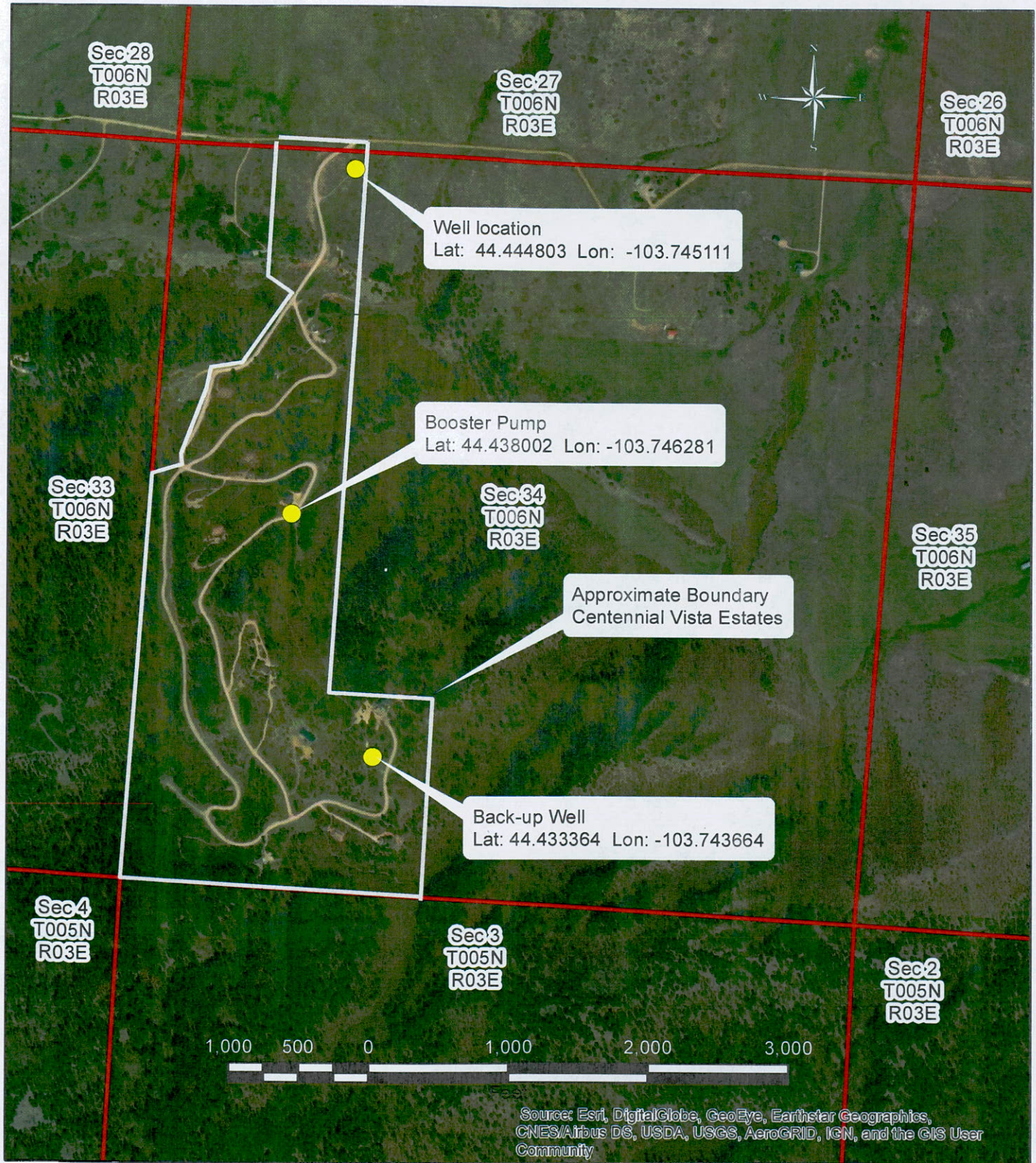


44,000 above ground steel storage tank



Booster station

Water Right #1987-1
Centennial Vista Estates Home Owners Association
6/3/2019



Steven Quissell

Steven Quissell
Water Rights Inspector
DENR Water Rights Program





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

JUN 27 2019

1987-1

Pat Hasson
Centennial Vista Estates Homeowners Association
PO Box 432
Spearfish SD 57783-0432

Dear Mr. Hasson:

Enclosed is Water License No. 1987-1. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

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

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

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 1987-1**

(1) Centennial Vista Estates Homeowners Association, PO Box 432, Spearfish SD 57783-0432 made Application No. 1987-1, January 2, 2019 for a water permit to divert 0.10 cubic feet of water per second with an annual volume of 11 acre feet of water from ground water, one well (Madison Aquifer), Lawrence County, South Dakota for suburban housing development (water distribution system) purposes. Permit No. 1987-1, with a priority date of January 3, 2019 was approved March 25, 2019 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before March 25, 2024 and for the application to beneficial use of water on or before March 25, 2028.

The permit holder submitted a "Notice of Completion of Works and Application of Water to Beneficial Use" on April 18, 2019. The "Notice" indicated the system was completed and water placed to beneficial use in 2005.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the water supply system and is entitled to divert 0.06 cubic feet of water per second (28 gallons per minute) for beneficial use. The location of the diversion point is:

- 204'S and 1,287'E of the NW corner of Section 34, T6N, R3E (NW ¼ NW ¼)
Latitude 44.444803, Longitude -103.745111

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

(4) Pursuant to South Dakota Water Law 46-5-30.1 Centennial Vista Estates Homeowners Association, PO Box 432, Spearfish SD 57783-0432 the holder and/or owner of Water Right No. 1987-1 is issued a license to appropriate water, the right to use 0.06 cubic feet of water per second from ground water, one well (Madison Aquifer) with a priority date of January 3, 2019 from the location specified in (2) of this license for suburban housing development (water distribution system) purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 1987-1 and subject to the following qualifications:

- In accordance with SDCL 46-1-14 and 46-2A-20, Water Right No. 1987-1 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. Water Right No. 1987-1 may also be cancelled for nonconstruction, forfeiture, abandonment or three permit violations pursuant to SDCL 46-1-12, 46-5-37, 46-5-37.1, and Board Rule ARSD 74:02:01:37.
- The well approved under this water right is located near domestic wells which may obtain water from the same aquifer. The well owner, under this water right, shall control his irrigation withdrawals so there is not a reduction of needed water supplies in adequate domestic wells.

Continued

- The water right holder shall report to the Chief Engineer annually the amount of water withdrawn from the Madison Aquifer.
- Water Right No. 1987-1 appropriates up to 11 acre feet of water annually.

Jeanne Goodman

Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JUN 27 2019

date

