

WATER PERMIT NO. 1931-1

Name of Applicant: Elkhorn Ridge @ Frawley Ranches LLC

Address: 12600 W Colfax Ave, Ste B-130, Lakewood CO80215 Phone: 303-233-4000

Amount of Water Claimed: 0.44 cfs Total Acres: 85.22 acres

Source of Water Supply: groundwater (one well)

Water to be used for: irrigation & commercial County: Lawrence

Type of Waste Disposal System:

Location: 5 miles east of Spearfish

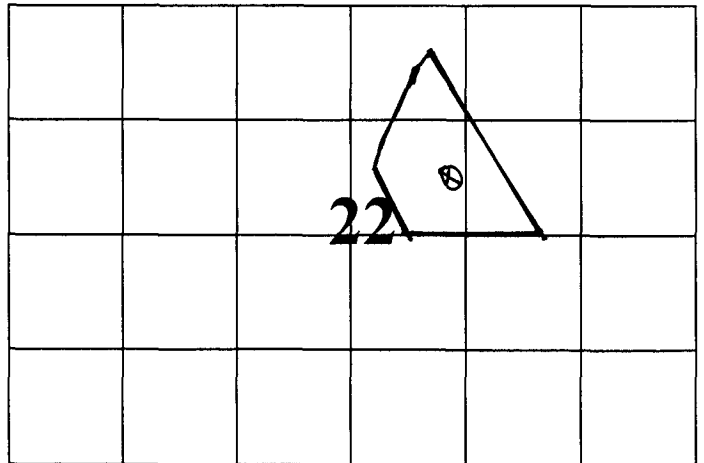
PRIORITY Date Received: 8-17-12 Application/License Fee: \$ 950

Corrected Application Received: Period of Annual Use: April 1 – October 31

Remarks:

Diversion Point: Tract A of NE 1/4 Sec 22-T6N-
R3E

Land to be Irrigated: Tract A of NE 1/4 Sec 22-
T6N-R3E



Depth of Well: > 1000 feet deep

Well Driller:

Remarks:

Type of Map: plat

Prepared by:

Reviewed and the Number Assigned on: 9-17-12

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

SD Form - 1002LD v3

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

RECEIVED

AUG 17 2012

WATER RIGHTS
PROGRAM

Mail to: PMB 2020 DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	(office use only)	
	No. <u>1931-1</u>	Hydrologic Unit <u>10120203</u>
	Basin _____	
	Newspaper _____	

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

Check use(s) of water:

- | | | | |
|---|--|--|--|
| ☐ Municipal | ☐ Suburban Housing | ☐ Recreational | ☐ Institutional |
| ☐ Rural Water System | ☒ Commercial | ☐ Fish & Wildlife | ☐ Geothermal Heat |
| ☐ 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 of Applicant Elkhorn Ridge at Frawley Ranches LLC Phone 303-233-4000

(check one) ☒ Owner ☐ Tenant/lessee

Mailing Address 12800 W. Colfax Ave Ste B-130 Lakewood CO 80215
 (Address) (City) (State) (Zip Code)

2. Amount of water claimed 0.44 *CFS or 200 **GPM 85.22 Acres ***
 (*Cubic Feet per Second) (**Gallons per Minute) (***)Acres - storage capacity of dam/pond or annual use if applicable

3. Source of water supply New Madison Well

4. Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Lawrence

1 well in tract A of the NE 1/4 Sec 22 T69 R3E
and 85.22 acres

5. County or counties where water will be used Lawrence

6. Annual period during which water is to be used APRIL 1 THRU OCT. 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) Water for swimming pool
FOR LAWN IRR. AT ELKHORN RIDGE RESORT
AND FOR FUTURE PROJECTS AT ELKHORN RIDGE RESORT
20189 US HWY 85 - Spearfish, SD the well not used for drinking water

STATE OF SOUTH DAKOTA)
 County of LEWIS & CLARK) SS

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)

I, DONALD G. HANSEN, the applicant, certify that I have read this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.

Applicant's signature Donald Hansen

Subscribed and sworn to before me this 14th day of August 2012



Brandi Hahn
 Notary Public signature

My Commission expires:
08-03-2018

**SOUTH DAKOTA
WATER PERMIT NO. 1931-1**

Date of first receipt of application August 17, 2012.

Date of return to applicant for corrections, amendments or changes August 21, 2012.

Date of receipt of corrected application September 14, 2012.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 1931-1 to Elkhorn Ridge at Frawley Ranches LLC, 12600 W Colfax Ave, Ste B-130, Lakewood CO 80215 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. 1931-1 appropriates 0.44 cubic feet of water per second from one well to be completed into the Madison Aquifer (1000 feet deep) located in Tract A of the NE 1/4 Section 22 to irrigate portions of 85.22 acres located in Tract A of the NE 1/4 Section 22; all in T6N-R3E. The water will also be used for commercial purposes at Elkhorn Ridge RV Park.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: April 1 – October 31.
3. The date from which applicant may claim right is August 17, 2012.
4. The date of approval of Permit No. 1931-1 is December 3, 2012.
5. One-fifth of the construction is to be completed on or before May 3, 2015.
6. All construction is to be completed on or before December 3, 2017.
7. Water is to be put to beneficial use on or before December 3, 2021.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

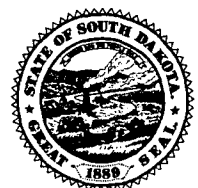
QUALIFICATIONS

1. The well approved under 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. 1931-1 shall be constructed by a licensed well driller and construction 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. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 1931-1 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. 1931-1 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.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

By: Garland Erbele
Garland Erbele, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JAN 17 2013
date



Form 2A

(Complete applicable portions only)

Supplemental Information

(type or print in ink)

1. Well Information - Proposed Construction

- a) Drill Hole Diameter 8 3/4" Depth 1000' +
- b) Casing Type New Steel Diameter 7" Thickness 272
- c) Screen Type _____ Diameter _____ Thickness _____
- d) Gravel Pack _____ Length of Gravel Pack _____
- e) Depth to Top of Water Bearing Material 900' Madison F.M.
- f) Depth to Water (ground surface to water level) 400' - 450'
- g) Distance to nearest existing domestic well: ☒ 0.8 MILES
- On applicant's property No On property owned by others YES

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field)
- b) System Capacity (gallons) _____ Year Constructed 2012
- c) Connected to the City of Spearfish Sanitary System

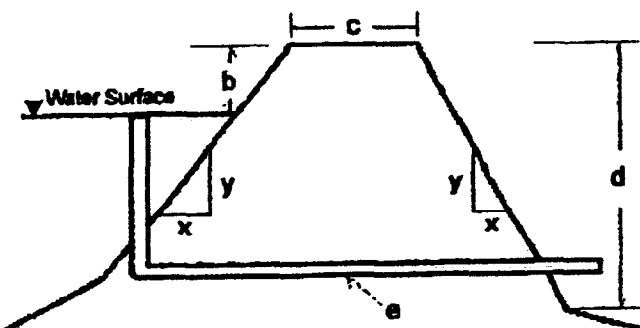
3. Dugout Information

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

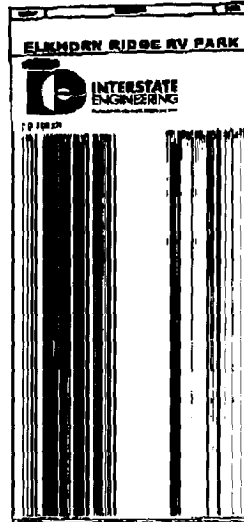
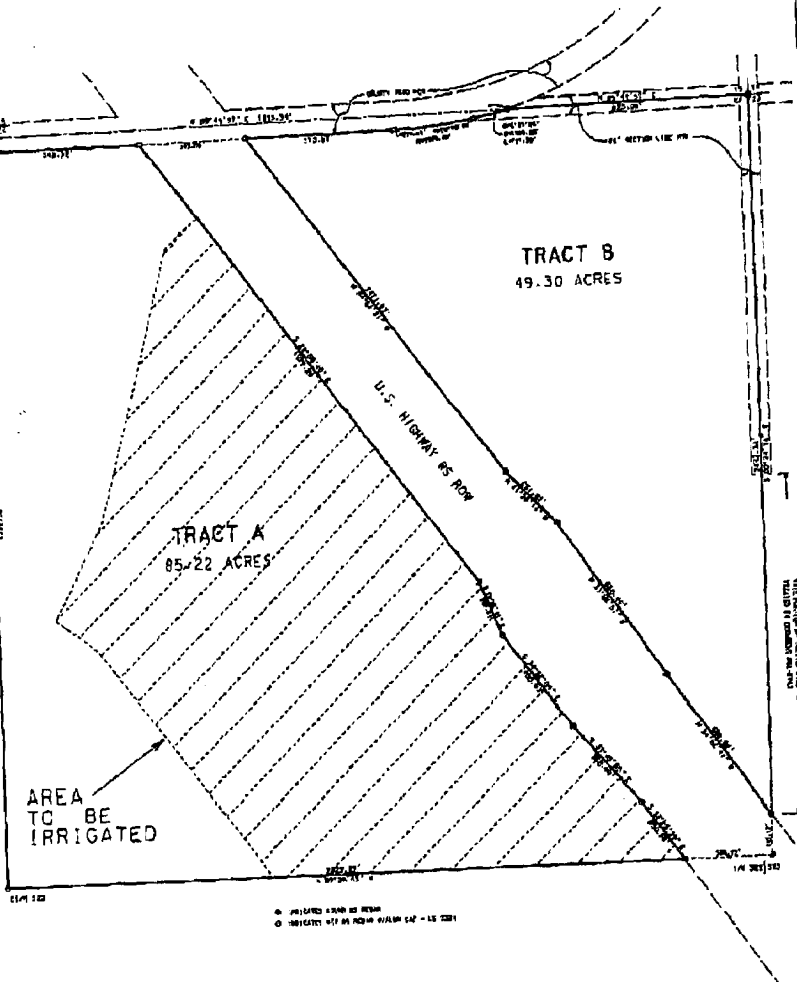
4. Water Storage Dams

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.

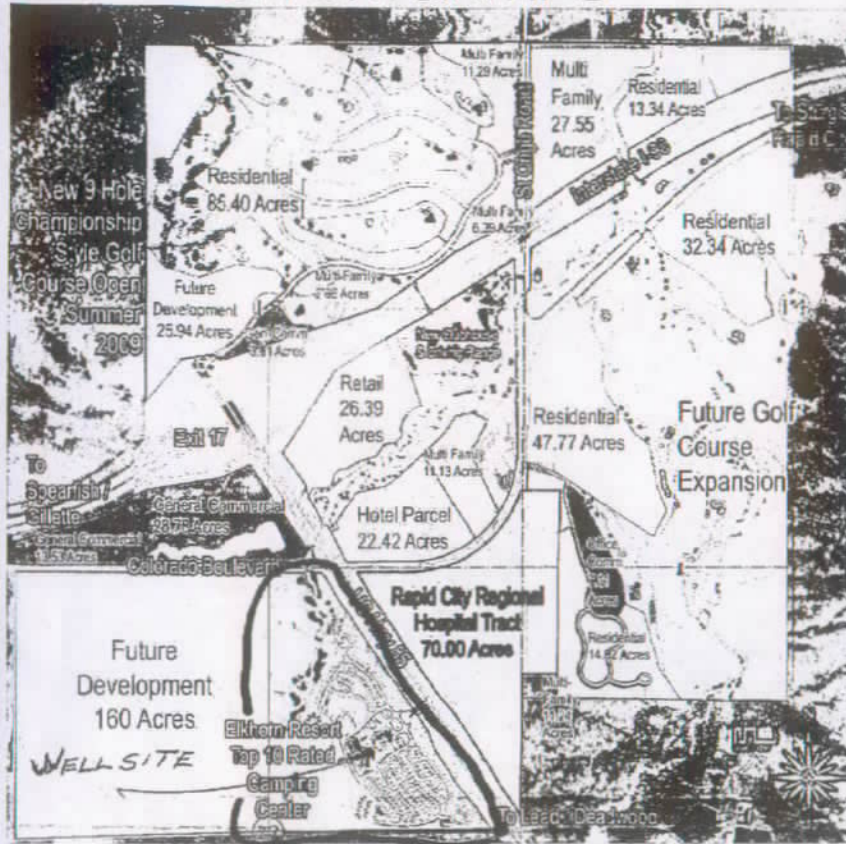
- a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:



- 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



DEVELOPMENT ~ INVESTMENT OPPORTUNITIES



See back of page for Development Location Map

**Exit 17
(I-90-Hwy 85)
Spearfish/Deadwood,
South Dakota**

- 1,000 Acres
- Convenience Store
- Liquor Store
- Golf Course
- Retail Center – Big Box
- Office Park– Light Industrial
- Hotels – Motels
- Restaurants/Fast Food
- Senior Living Housing
- Patio Homes
- Single Family
- Town Homes
- RV Park/Resort
- Regional Hospital



ELKHORN RIDGE

Darryl Propp
12600 W. Colfax Ave., B130
Lakewood, CO 80215
303-233-4000



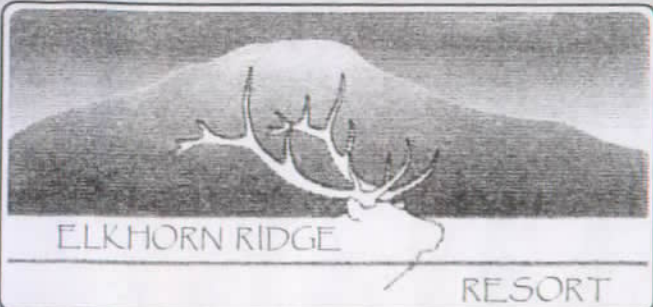
**Wyss
Associates, Inc.**

Patrick Wyss, FASLA
728 Sixth Street
Rapid City, SD 57701
605-348-2268

FrawleyRanches.com

RECEIVED





20189 US Hwy. 85 • Spearfish, SD 57783
Lawrence County

(605) 722-1800 • Toll Free: 877-722-1800

Fax: (605) 722-1802

Legend

- Shower/Laundry
- Playground
- Dump Station
- Tent Camping
- Fire Pit
- Event Center

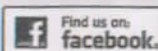
Elkhorn Ridge Golf Course Nearby

TV Channels

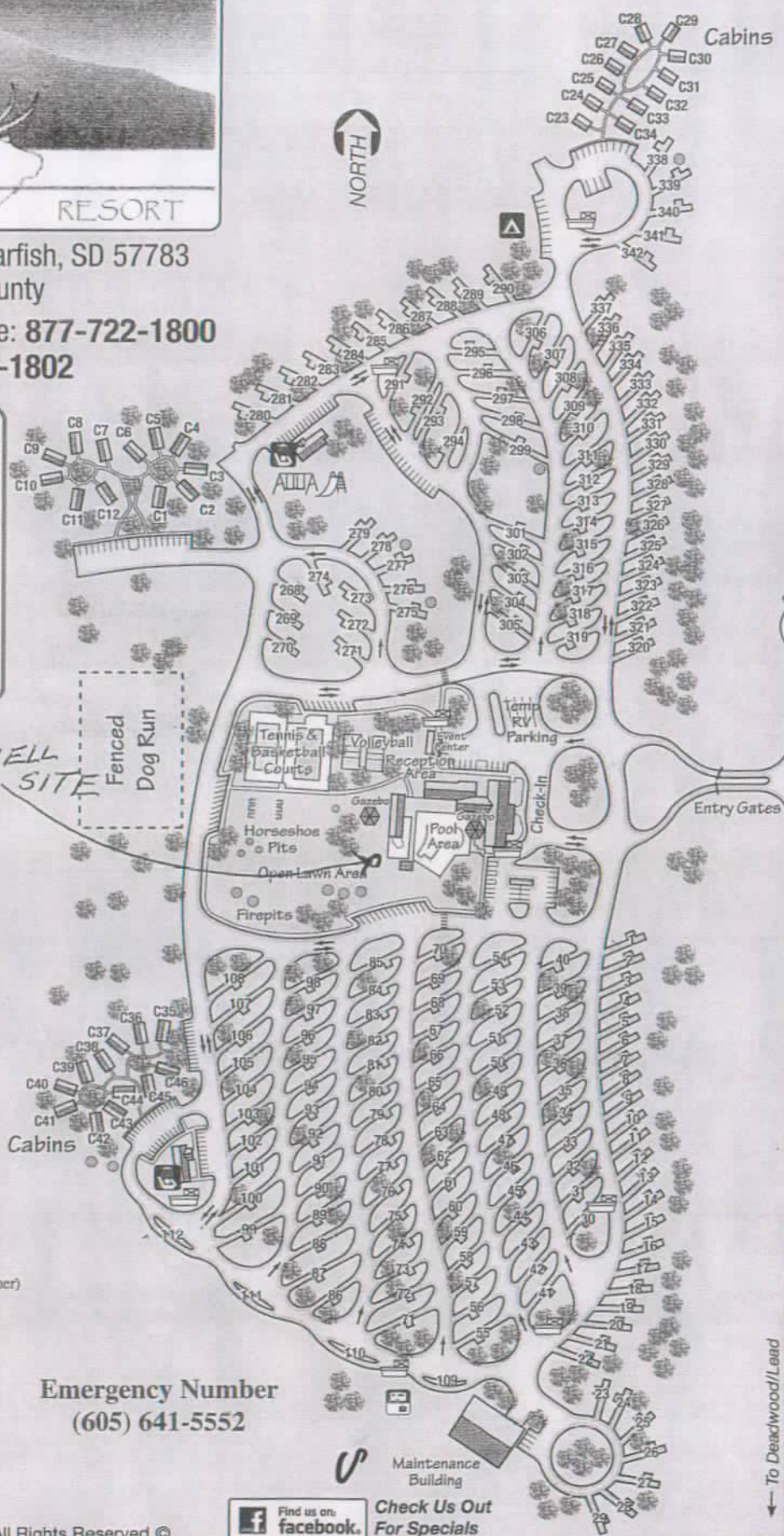
2	TV GUIDE	45	TNT
4	KOTA/ABC	46	SPIKE
5	KBHE	47	USA
6	QVC	48	SYFY
8	KEVN/FOX	49	TV-LAND
10	KNBN/NBC	50	ALN
11	KKRA	51	TBS
13	KCLO/CBS	52	FX
14	KWBN	53	COMEDY
15	WGN	54	LMN
17	DISNEY	55	truTV
19	ABC FAMILY	56	TCM
20	APL	57	HSN
21	NICK	58	HGTV
22	TOON	59	DIY
23	DISXD	60	SOAP
24	FSN	61	TBN
25	FSC	62	LIFE
26	ESPN	63	FOOD
27	ESPN2	64	E!
29	ESPNN	65	STYLE
30	GOLF	68	MSNBC
31	SPEED	69	CNBC
33	NFL	70	TWC (Weather)
34	OUTDR	71	CNN
35	VS	74	HLN
36	NGC	78	FNC
37	HALMRK	79	BH7TV
38	A&E	90	MUSIC
39	TRAVEL	104	MTV
40	HIST	105	VH1
41	DSC	106	GAC
42	TLC	107	CMT
43	AMC	108	BET
44	BRAVO		

Emergency Number
(605) 641-5552

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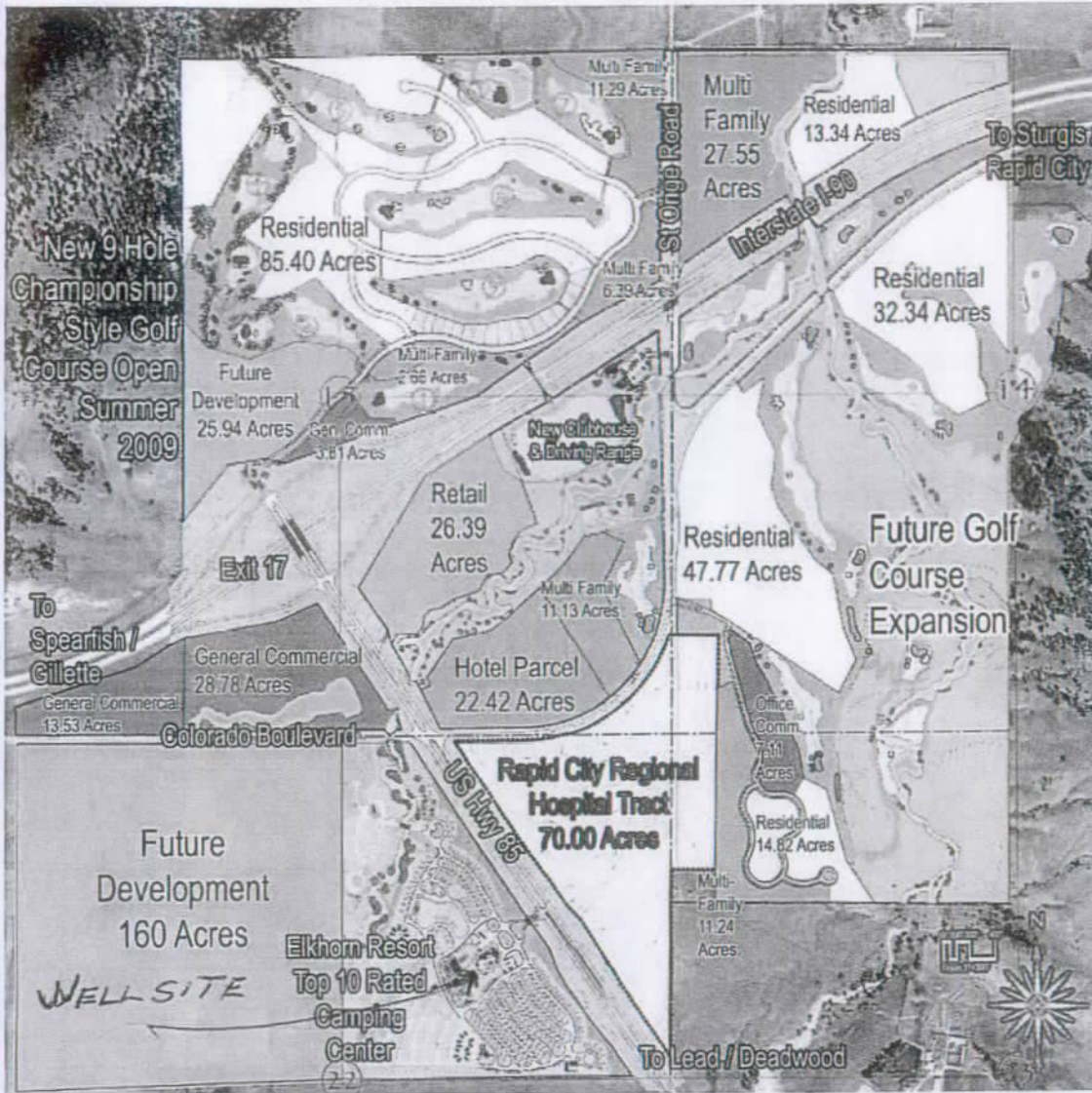


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Propp Realty presents South Dakota opportunities!

DEVELOPMENT ~ INVESTMENT OPPORTUNITIES



See back of page for Development Location Map

**Exit 17
(I-90-Hwy 85)
Spearfish/Deadwood,
South Dakota**

- 1,000 Acres
- Convenience Store
- Liquor Store
- Golf Course
- Retail Center – Big Box
- Office Park– Light Industrial
- Hotels – Motels
- Restaurants/Fast Food
- Senior Living Housing
- Patio Homes
- Single Family
- Town Homes
- RV Park/Resort
- Regional Hospital



ELKHORN RIDGE

Daryll Propp
12600 W. Colfax Ave., B130
Lakewood, CO 80215
303-233-4000



**Wyss
Associates, Inc.**

Patrick Wyss, FASLA
728 Sixth Street
Rapid City, SD 57701
605-348-2268

FrawleyRanches.com

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AUG 17 2012
WATER RIGHTS
PROGRAM

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 8/20, 20 12

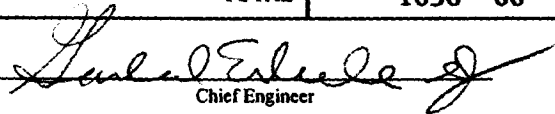
RECEIVED OF Elkhorn Ridge RV Park 20189 US Hwy 85 Spearfish SD 57783

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

Fee for Application for Permit No. <u>1931-1</u> to Appropriate Water, to construct and to put water to beneficial use	850	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>1931-1</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	1050 00

No. **05538**

By


Chief Engineer



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

August 21, 2012

Donald Hansen
Elkhorn Ridge RV Park
20189 US Hwy 85
Spearfish SD 57783

Dear Mr. Hansen:

Thank you for submitting the *Application for a Permit to Appropriate Water* for irrigation and commercial use. In order to complete the application, the following is required.

- Enclosed are the maps submitted with the application. The map needs to reference a section corner. Please outline the acres be irrigated. The map must be signed by one of the following: Registered Land Surveyor, Registered Professional Engineer or by any other government employee who normally prepares maps as a part of his assigned duties.
- A check for \$1,050.00 was submitted. This is the application/license filing fee for irrigation of 121 acres to 180 acres. What is the total number of acres to be irrigated?
- On the application, please complete item No. 2, Amount of water claimed.
- The application states the water is for lawn irrigation and future projects. You should be aware that if the application is approved, it will receive a five year construction period to complete the project.
- Will this well provide water to the resort for purposes other than lawn irrigation?

If you have any questions, please contact Eric Gronlund or me.

Sincerely,

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

enclosures

Water Rights Program - DENR
Conversation File Documentation

NAME OF PERSON OR FILE: Water Permit Application for Elkhorn Ridge Resort

ADDRESS: 12600 W Colfax Avenue Ste B-130, Lakewood CO 80215 COUNTY: Lawrence County

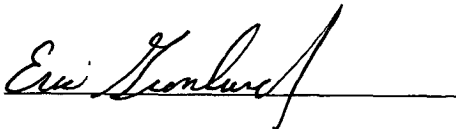
DATE: September 13 and 14, 2012 TELEPHONE:

RE: completion of application

Don Hansen call on September 13, 2012 indicated he was faxing me information in hopes of completing their application. Karen Schlaak had wrote to them on August 21, 2012.

Specifically he provided:

- A map showing the acres to be irrigated
- A statement that 140 acres would be irrigated. I questioned this as the area on the map excluding the property sold to Rapid City Regional Hospital in the NE ¼ of Section 22, T6N, R3E can not exceed 90 acres and this does not account for the highway that bisects the two properties. On September 4, 2012, Mr. Hansen called back after talking with his engineer and 85.22 acres is the total number of acres to be irrigated. This is the footprint of the development acres so actual acres may be less due to buildings, roads, parking lot, etc.
- The amount of water to be appropriated is 200 gpm.
- The application includes irrigation and other commercial uses at the development such as filling the swimming pool. The well will not be the potable water source for the development. We also had a discussion that obtaining a permit does not provide for future development needs outside the 5 year construction period.

NAME: 



20189 U.S. Hwy 85
Spearfish, SD 57783
Office: 605-722-1800
Fax: 605.722.1802
www.elkhornridgervresort.com

FAX

TO ERIC GROLAND FROM DON HANSEN
DATE 9-14-12 2:30 PM Re WATER RIGHTS INFO
FAX 605-773-4068 CC _____
PHONE _____ PAGES _____
☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Please give me a call

thanks

Don H.

2. D. Hansen

DEPARTMENT of ENVIRONMENT

Elkhorn Ridge Resort
Elkhorn Ridge RV Park
20189 US Hwy 85
Spearfish SD 57783

605-722-1802

p.2

Dear Mr. Hansen:

Thank you for submitting the *Application for a Permit to Appropriate Water* for irrigation and commercial use. In order to complete the application, the following is required.

- Enclosed are the maps submitted with the application. The map needs to reference a section corner. Please outline the acres to be irrigated. The map must be signed by one of the following: Registered Land Surveyor, Registered Professional Engineer or by any other government employee who normally prepares maps as a part of his assigned duties.
MAP INCLUDED
 - A check for \$1,050.00 was submitted. This is the application/license filing fee for irrigation of 121 acres to 180 acres. What is the total number of acres to be irrigated?
APPROX. 140 AC.
 - On the application, please complete item No. 2, Amount of water claimed. *200 GPM*
 - The application states the water is for lawn irrigation and future projects. You should be aware that if the application is approved, it will receive a five year construction period to complete the project.
 - Will this well provide water to the resort for purposes other than lawn irrigation?
WATER WILL ALSO BE USED FOR SWIMMING POOL
- If you have any questions, please contact Eric Gronlund or me.

Sincerely,

Karen Schlaak

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

enclosures

SD FORM - 1000LD V3
FORM 2: Application for uses other than irrigation
(type or print)

Mail to: PMB 2020 DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. _____	(office use only) Hydrologic Unit _____
	Basin _____	
	Newspaper _____	

RECEIVED

AUG 17 2012

WATER RIGHTS
PROGRAM

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

Check use(s) of water:

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

Type of Application:
(check one)

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



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1931-1, Elkhorn Ridge at Frawley Ranches 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. 1931-1, Elkhorn Ridge at Frawley Ranches LLC, c/o Donald G. Hansen, 12600 W Colfax Avenue, Suite B-130, Lakewood CO 80215..

The Chief Engineer is recommending Approval of Application No. 1931-1 for 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. 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. 1931-1 shall be constructed by a licensed well driller and construction 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. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 1931-1 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. 1931-1 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.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Garland Erbele, Chief Engineer

November 15, 2012

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 1931-1
ELKHORN RIDGE@ FRAWLEY RANCHES LLC.
NOVEMBER 14, 2012

Water Permit Application No. 1931-1 proposes to appropriate water from a well completed into the Madison aquifer at a maximum diversion rate of 0.44 cubic feet of water per second (cfs). The well is to be located in Tract A of the NE¼ Section 22, T6N-R3E and is expected to be approximately 1000 feet deep. This application proposes to use the water for commercial purposes at Elkhorn Ridge RV Park and to irrigate portions of 85.22 acres located in Tract A of the NE¼ Section 22, T6N-R3E.

AQUIFER: MADISON (MDSN)

GEOLOGY AND AQUIFER CHARACTERISTICS:

The Madison aquifer is a major regional aquifer that underlies parts of Montana, North Dakota, South Dakota, Wyoming and Canada. The aquifer underlies most of western South Dakota and a small part of Eastern South Dakota.

The Madison aquifer contains an estimated 644,827,200 acre-feet of recoverable water in storage in Western South Dakota (Allen and others, 1985) and 51,512,300 acre-feet of recoverable water in storage in Eastern South Dakota (Hedges and others, 1982).

The Madison aquifer occurs within the Mississippian aged Madison Limestone which is locally known as the Pahasapa Limestone. The Madison Limestone is a massive limestone and dolomite with relatively low primary permeability and porosity. Extensive secondary porosity and permeability occur within the Madison in the form of fractures and solution openings. The upper portion of the Madison Limestone in particular is karstic with caves, solution collapse features and enlarged conduits. A number of high yield wells have been developed in the Madison aquifer where these enhanced porosity and permeability features are favorable. The average porosity of the Madison is estimated to be 11% and the effective porosity from which recoverable water can be obtained by wells is assumed to be 5% (Rahn, 1979). The Madison Limestone is estimated to be between 400 feet thick (Carter and Redden, 1999a; and Carter and Redden, 1999b) and 450 feet thick in this area (Gries, 1981). In general, the Madison dips to the northeast in this area at approximately 400 feet per mile (Carter and Redden, 1999a). However, due to influence of the structural dome (Elkhorn Peak) located approximately one and one-half miles northeast of the well site proposed by this application, the beds are nearly horizontal in this immediate area. The top of the Madison is estimated to be approximately 770 feet below ground surface at the well site proposed by this application (Carter and Redden, 1999a).

In addition to the structural dome noted above, the well site proposed by this application is located nearly midway between two major geologic structures. The site is approximately four and one-half miles west of the Whitewood Anticline and approximately four miles east of the Belle Fourche Anticline (DeWitt and others, 1989).

The Madison is generally considered an excellent aquifer in terms of its potential to supply good quality water to relatively productive wells, especially near the outcrop (recharge area). The well site proposed by this application is located approximately three miles northeast of the Madison outcrop (Strobel and others, 1999). The lower portion of the Madison and the underlying Englewood Formation form a lower confining zone (Strobel and others, 1999). The Minnelusa Formation unconformably overlies the Madison aquifer and generally serves as an upper confining layer. However, "The hydraulic connection between the Madison Limestone and Minnelusa Formation is spatially variable and may result from faults, fractures, and breccia pipes. Collapse features ... may be pathways for vertical movement of water between these two units." (Putnam and Long, 2007). The water levels of DENR-Water Rights' observation wells in the area indicate very distinct potentiometric surfaces in the Minnelusa and Madison, and suggest the aquifers are hydraulically separated (see Figure 1).

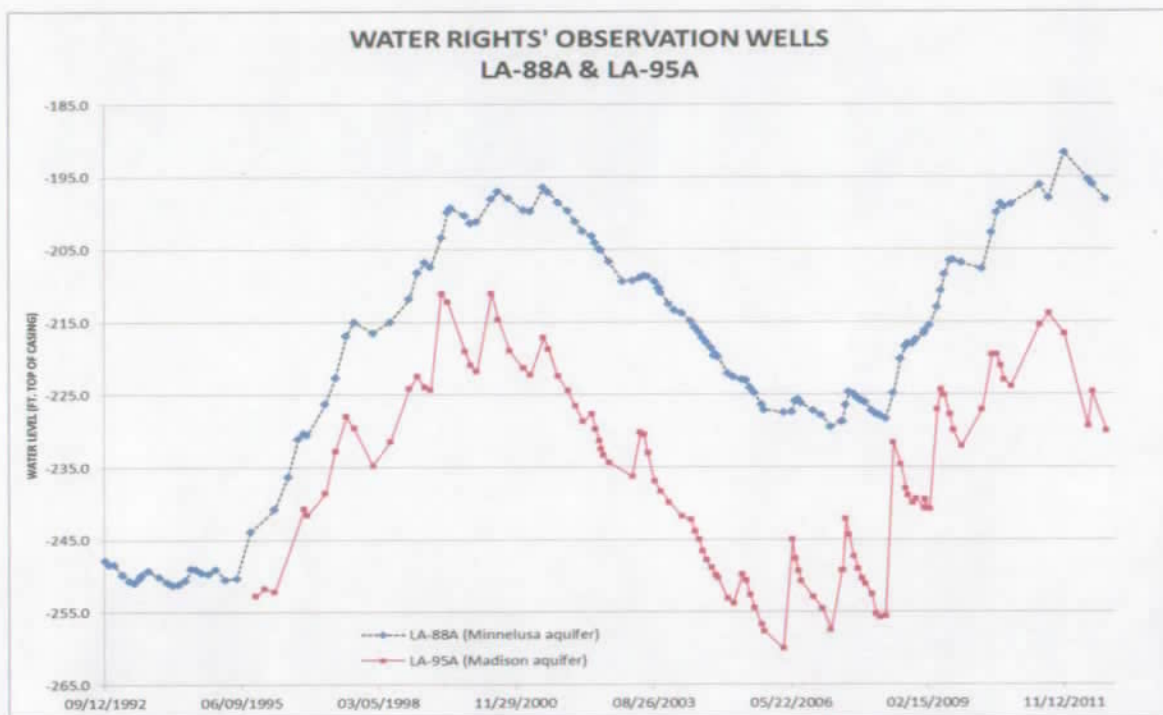


Figure 1. Hydrograph comparing potentiometric surfaces of the Madison aquifer with the Minnelusa aquifer

SDCL 46-2A-9

Pursuant to SDCL 46-2A-9, a permit to appropriate water may be issued only if there is reasonable probability that there is unappropriated water available for the applicant's proposed use, that the proposed diversion can be developed without unlawful impairment of existing rights and that the proposed use is a beneficial use and in the public interest.

WATER AVAILABILITY:

The probability of unappropriated water available for appropriation can be evaluated by considering SDCL 46-6-3.1 which requires that:

"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.”

Water Balance:

Recharge to the Madison aquifer occurs through streamflow losses and direct infiltration of precipitation at the outcrop area. “Precipitation recharge [in the Black Hills] is consistently larger than streamflow recharge; however, the relative proportion of streamflow recharge increases as combined recharge decreases” (Carter and others, 2001a). Recharge to the Madison aquifer in South Dakota has been estimated to range from 140,000 to 400,000 acre-feet per year (Woodward-Clyde, 1981). Woodward-Clyde however, essentially defined the Madison aquifer as everything between the Precambrian and the Cretaceous shales. As part of the Black Hills Hydrology Study, the average annual recharge to the Madison aquifer from 1931-1998 was estimated to be approximately 137,000 ac-ft/yr (Carter and others, 2001a).

The high cost of Madison wells, except very near the outcrop, and the availability of groundwater from shallower sources, has limited domestic development from the aquifer. Carter and others, (2001b) estimate “Self-supply Domestic” and “Livestock Watering” only account for approximately 2.25% of the water use from the Madison aquifer. In general, well withdrawals from the Madison are for uses which require water rights/permits. The majority of the water rights/permits from the aquifer in South Dakota are from Butte, Lawrence, Meade, Pennington and Fall River Counties. The Madison supplies water for irrigation, geothermal, industrial, and commercial uses. However, by far the major use of the aquifer in South Dakota is for water distribution systems (suburban housing development and municipal use). The cities of Spearfish, Belle Fourche, Sturgis, Rapid City, Box Elder, and Edgemont all depend on water from wells completed into the Madison aquifer.

There have been a total of 215 applications made for appropriations from the Madison; the statuses of these applications are shown in table 1.

STATUS	NUMBER
Approved and licensed	95
Approved and not licensed	60
Future Use reservation	7
Incorporated into a license	28
Cancelled	20
Denied	1
Deferred	1
Withdrawn	2
Pending	1

Table 1. Water permit applications from the Madison aquifer in South Dakota

There are currently a total of 162 appropriations, one pending application plus one deferred application from the Madison aquifer in South Dakota. Assuming that: (1) future use permits will be fully developed; (2) appropriations with a specified annual volume limitation will divert to their maximum limit; and (3) appropriations limited by diversion rate only, will be used at 60 percent of full time usage at their maximum diversion rate; the appropriations represent a potential maximum annual withdrawal from the Madison aquifer of approximately 55,000 ac-

ft/yr. The assumptions used to estimate the potential maximum withdrawal from the aquifer are extremely conservative and represent a “worst case scenario.”

Almost all of the water use from the Madison aquifer in South Dakota is from the Black Hills area. The withdrawals from all wells completed into the Madison aquifer in the Black Hills of South Dakota and Wyoming, where estimated to average 12,310 acre-feet annually from 1987-1996 (Carter and others, 2001b). The “potential maximum annual withdrawal” from the aquifer for 1996, using the assumptions given above for the appropriations in 1996 is 35,831 ac-ft/yr. Applying the 1996 “potential maximum annual withdrawal” to the estimated average annual use ratio, the average annual withdrawal corresponding with a potential maximum annual withdrawal of 55,000 ac-ft/yr would be less than 20,000 ac-ft/yr.

The quantities of both the average annual recharge and the average annual use for the Madison aquifer are both small percentages of the amount of water stored in the Madison aquifer so the aquifer can actually withstand several years of drought conditions with only minimal impact to wells or springs. Comparison of average annual recharge and average annual withdrawal estimates for the Madison aquifer indicate that unappropriated water is available from the Madison aquifer. The simple water budget comparing the estimated average annual recharge and the potential withdrawal by existing wells and current appropriations is not intended to suggest that all of the water that is in storage in the Madison or that all of the recharge to the aquifer is available for this appropriation, merely to demonstrate that in general the Madison aquifer is an immense resource that is relatively untapped.

Localized Hydrologic Budget:

Carter and others (2001b):

Carter and others (2001b) developed hydrologic budgets for the Madison and Minnelusa aquifers combined, using nine subareas to cover the Black Hills. The subareas were identified on the basis of hypothetical flowpaths and were selected with the intent of minimizing flow across the boundaries. The well that is to be used to supply this appropriation is located between Carter and others’ (2001b) subarea 1 and subarea 2. The hydrologic budgets for these subareas balanced from 1987-1996, by estimating that water enters these subareas through streamflow recharge, precipitation recharge and groundwater inflow. Water is assumed to exit these subareas through groundwater outflow, artesian springflow and well withdrawals (see Table 2).

Stream-flow recharge	Precipitation recharge	Minnelusa ground-water inflow	Madison ground-water inflow	Minnelusa ground-water outflow	Madison ground-water outflow	Artesian spring-flow	Well withdrawals
36.7 cfs	131.9 cfs	15.4 cfs	0	35.6 cfs	43.7 cfs	90.3 cfs	14.5 cfs

Table 2. Hydrologic budget for the subareas that includes the area near the well site proposed by Application No. 1931-1-2 for Water Years 1987-1996. Modified from (Carter and others, 2001b).

There are currently 71 water rights/permits, including one future use permit, appropriating water, from the Madison aquifer from the two subareas surrounding this proposed well site. Although Water Permit Nos. 1707A-1 and 1707E-1 for Frawley Ranches; and Water Permit Nos. 1707B-1, 1707C-1 and 1707D-1 for the city of Spearfish may be subject to cancellation due to non-

construction. The amount of water that can be expected to be withdrawn through appropriative uses from the Madison can be estimated by assuming: 1) water rights/permits limited by an annual volume will pump the entire volume appropriated, 2) water rights/permits limited only by diversion rate will pump at the maximum permitted diversion rate 60 percent of the time, and 3) the future use permit can be fully developed. Under current appropriations, given the assumptions listed above, the well withdrawal from the two subareas is estimated to be less than 35 cfs. Other variables of a hydrologic budget for these subareas, (i.e. springflow, groundwater inflow and groundwater outflow) are all dependent on the groundwater gradient at the subarea boundaries or near the springs. The increase of well withdrawals compared with the estimates given in Table 2 has resulted in adjustments to the other interdependent variables of the hydrologic budget to achieve a new dynamic equilibrium (i.e. balanced water budget) for the area. It can be assumed that with a very subtle change in the hydraulic gradient at either the inflow zone or the outflow zone, a new dynamic equilibrium would be established in this area with virtually immeasurable impacts to the amount of water in transient storage. Therefore, there is a reasonable probability that unappropriated water is available from this subarea for this proposed use.

Putnam and Long (2007):

On an even more localized scale, Putnam and Long (2007) evaluated an area consisting of approximately 416 square miles roughly centered in the vicinity of the well that is to be used to supply Permit No. 1931-1 (see Figure 2.)

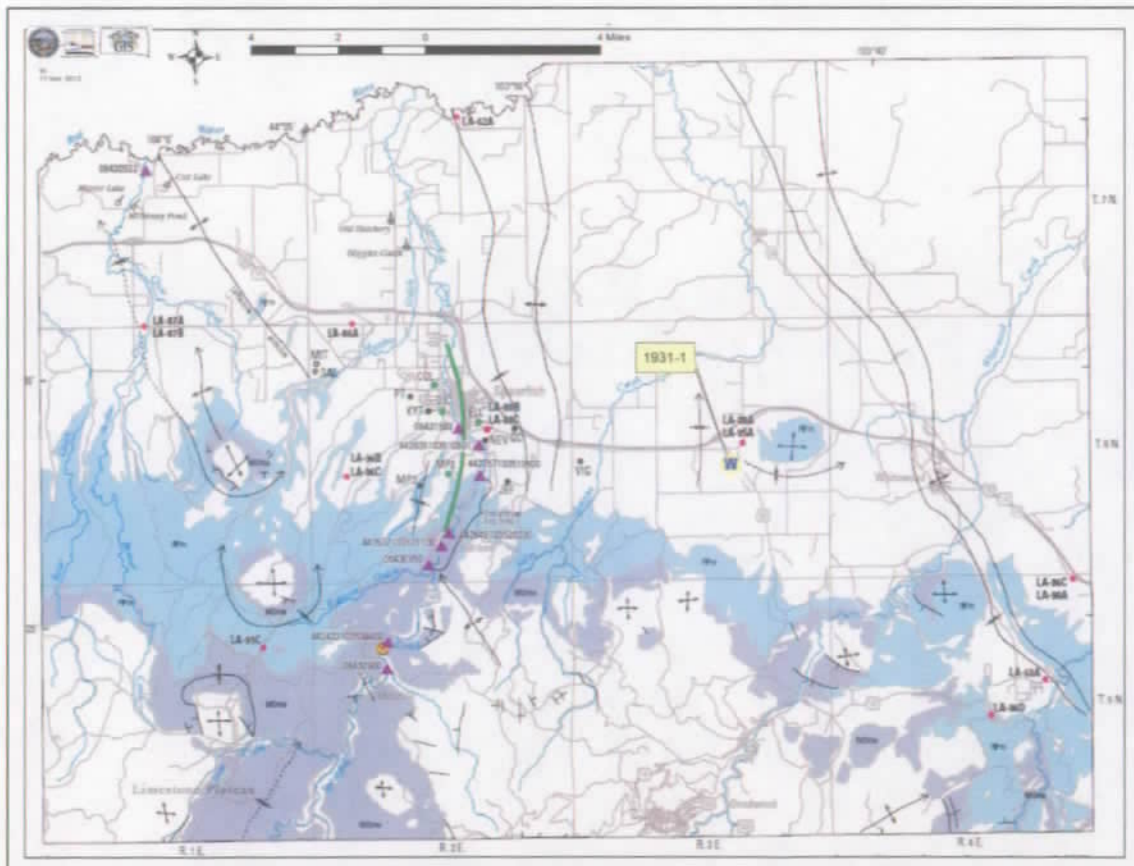


Figure 2. Location of Putnam and Long (2007) study area, (modified from (Putnam and Long, 2007)

An average annual recharge rate to the Madison aquifer for the area was estimated to be 16.5 cfs. Sources of recharge in the area were identified as areal recharge (8.0 cfs), streamflow recharge from Spearfish Creek (6.5 cfs) and streamflow recharge from False Bottom Creek (2.0 cfs) (Putnam and Long, 2007). In addition, Putnam and Long (2007) estimated an average annual recharge rate of 2.0 cfs to the Madison and Minnelusa aquifers combined from Bear Gulch and an average annual recharge rate of 2.0 cfs to the Madison and Minnelusa aquifers combined from Beaver Creek. There have been 40 water permit applications filed for appropriations from the Madison aquifer from the Putnam/Long study area. The status of these applications is shown in Table 3.

STATUS	NUMBER
Approved and licensed	21
Approved and not licensed	12
Future Use reservation	1
Incorporated into a license	6

Table 3. Water permit applications from the Madison aquifer from the Putnam/Long study area.

The amount of water that can be expected to be withdrawn through appropriative uses from the Madison aquifer from the area shown in Figure 2 was estimated by assuming: 1) water rights/permits limited by an annual volume will pump the entire volume appropriated (4,882.4 ac-ft/yr), 2) water rights/permits limited only by diversion rate will pump at the maximum permitted diversion rate 60 percent of the time (5,603.94 ac-ft/yr), and 3) future use permits can be fully developed (2,730 ac-ft/yr). The average annual withdrawal under current appropriations from the Madison aquifer from the Putnam/Long area is estimated to be 13,216.3 ac-ft/yr (18.25 cfs). As noted earlier, Water Permit Nos. 1707A-1 and 1707E-1 for Frawley Ranches; and Water Permit Nos. 1707B-1, 1707C-1 and 1707D-1 for The City of Spearfish may be subject to cancellation due to non-construction, thus reducing the estimated average withdrawals by 736 ac-ft/yr (1.02 cfs).

It is likely that the average annual recharge rate to the Madison aquifer that originates in the area shown in Figure 2 exceeds the expected average annual withdrawal that will result from the current appropriations. It is important to note that in addition to the recharge that originates in the area, water enters the Madison aquifer in this area from groundwater inflow from the west. The regional aspect of the Madison aquifer in this area is demonstrated most clearly in the fact that Putnam and Long (2007) identified the discharge from artesian springs in the area exceeds the recharge that occurs within the area.

Observation Well Data:

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

The Water Rights Program monitors 26 observation wells completed into the Madison aquifer in the Black Hills area (Water Rights, 2012a). There are seven Madison aquifer observation wells in the area shown in Figure 2. Hydrographs for the wells show the aquifer’s response to climatic conditions and clearly demonstrate the system is recharged (see Figures 3-9).

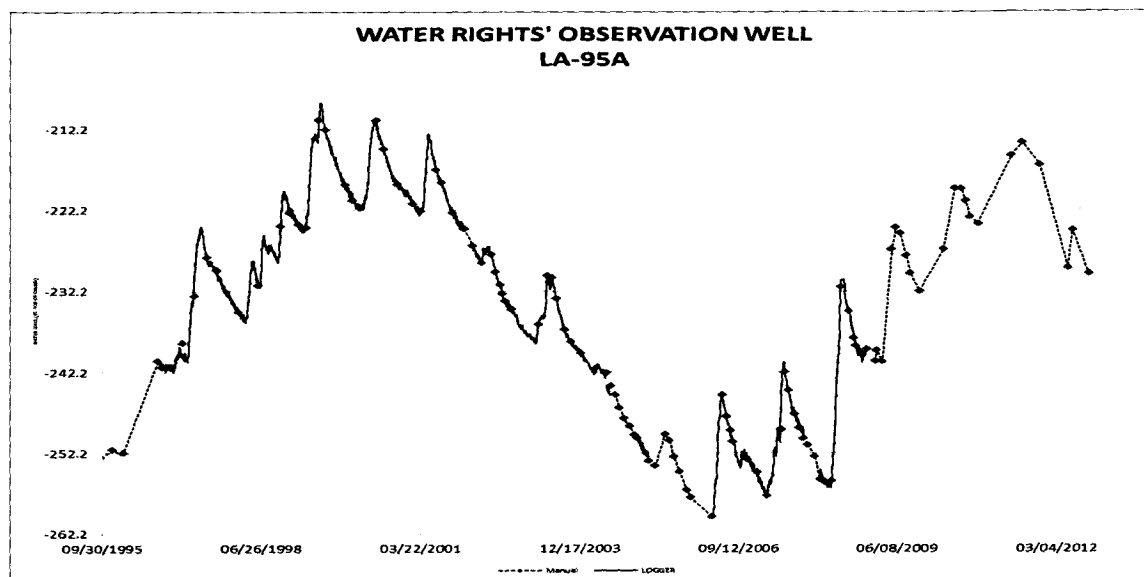


Figure 3. DENR-Water Rights' observation well completed into the Madison aquifer located approximately 0.6 miles northeast of the well site proposed by Application No. 1931-1.

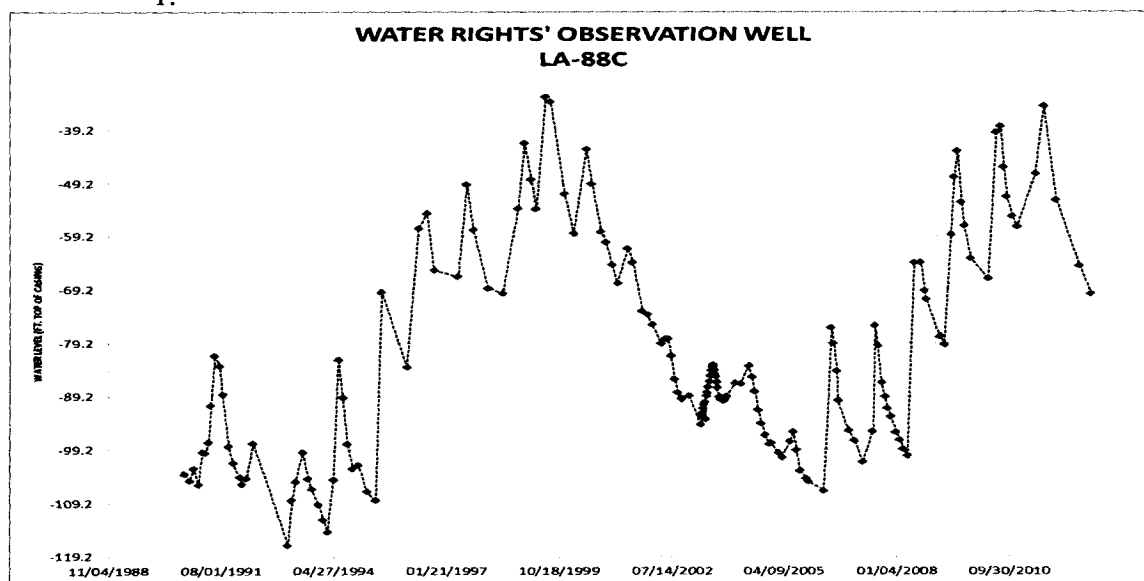


Figure 4. DENR-Water Rights' observation well completed into the Madison aquifer located approximately 5.6 miles west-northwest of the well site proposed by Application No. 1931-1.

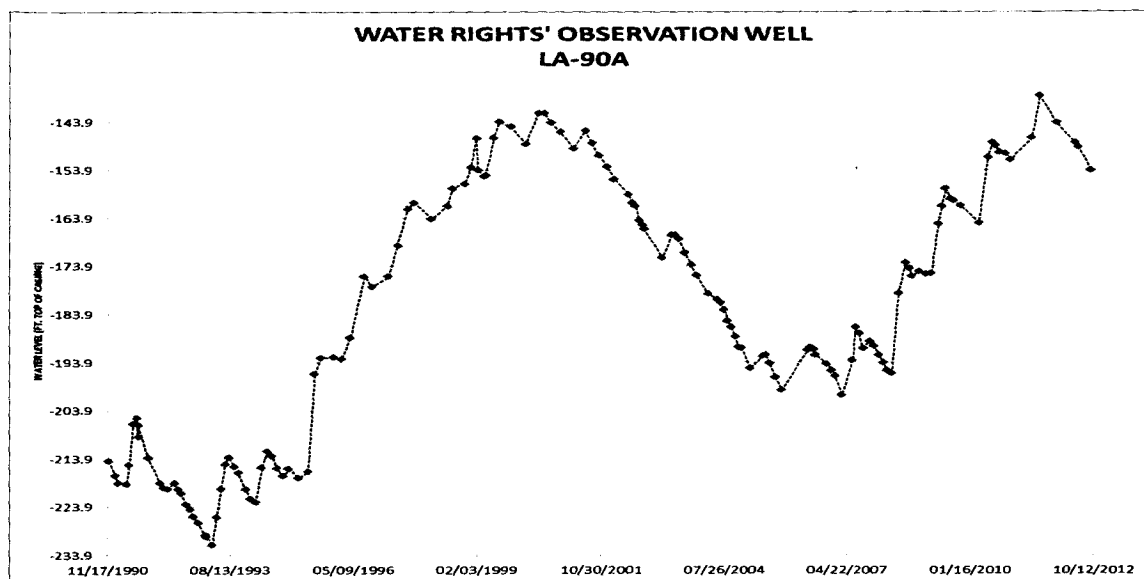


Figure 5. DENR-Water Rights' observation well completed into the Madison aquifer located approximately 8.4 miles east southeast of the well site proposed by Application No. 1931-1.

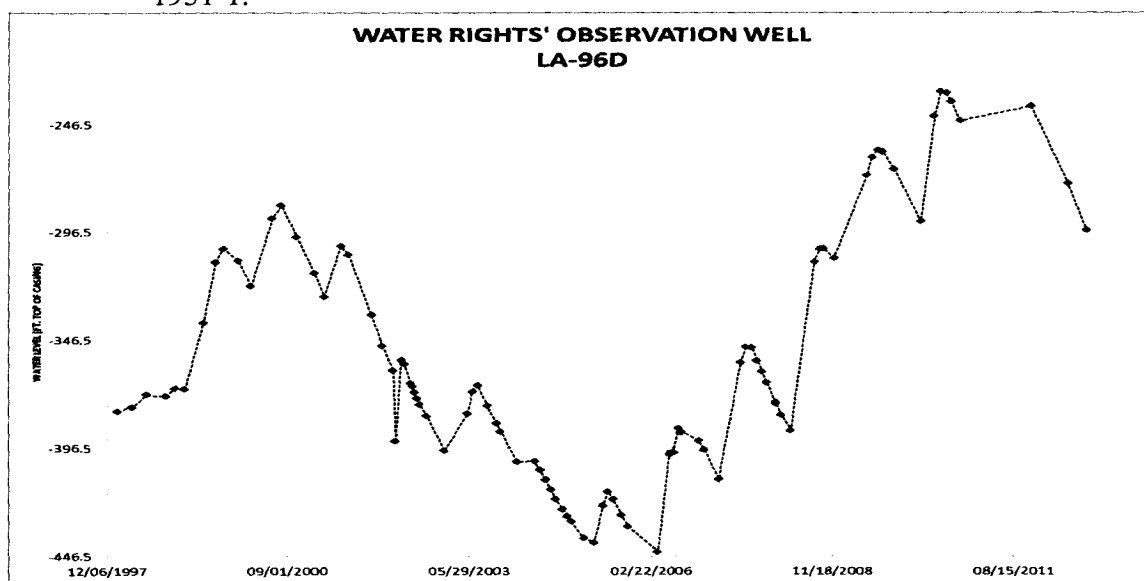


Figure 6. DENR-Water Rights' observation well completed into the Madison aquifer located approximately 8.4 miles southeast of the well site proposed by Application No. 1931-1.

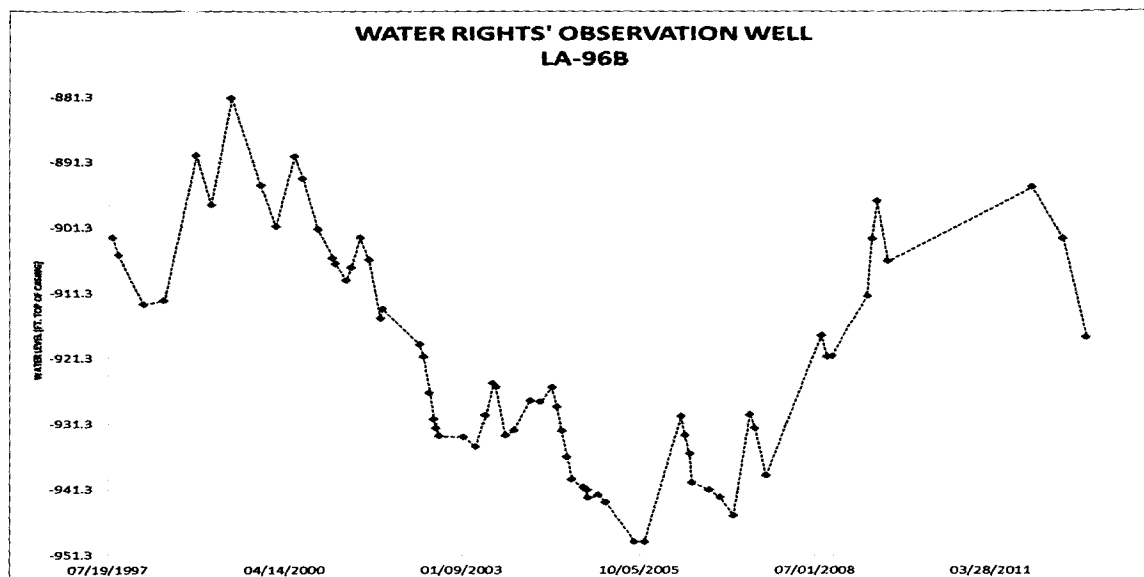


Figure 7. DENR-Water Rights' observation well completed into the Madison aquifer located approximately 8.7 miles west of the well site proposed by Application No. 1931-1.

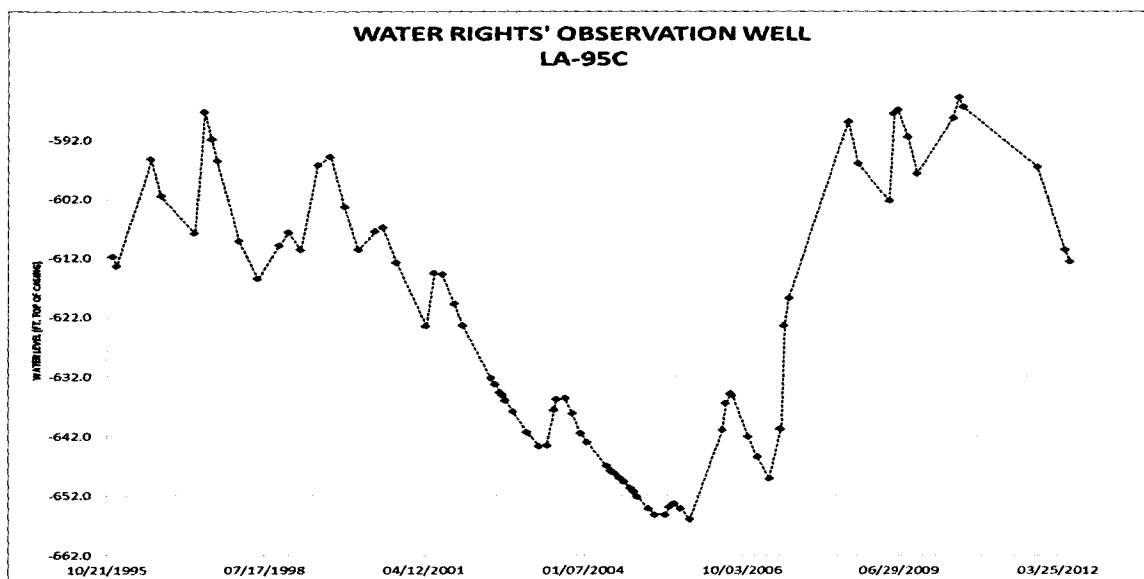


Figure 8. DENR-Water Rights' observation well completed into the Madison aquifer located approximately 11.5 miles southwest of the well site proposed by Application No. 1931-1.

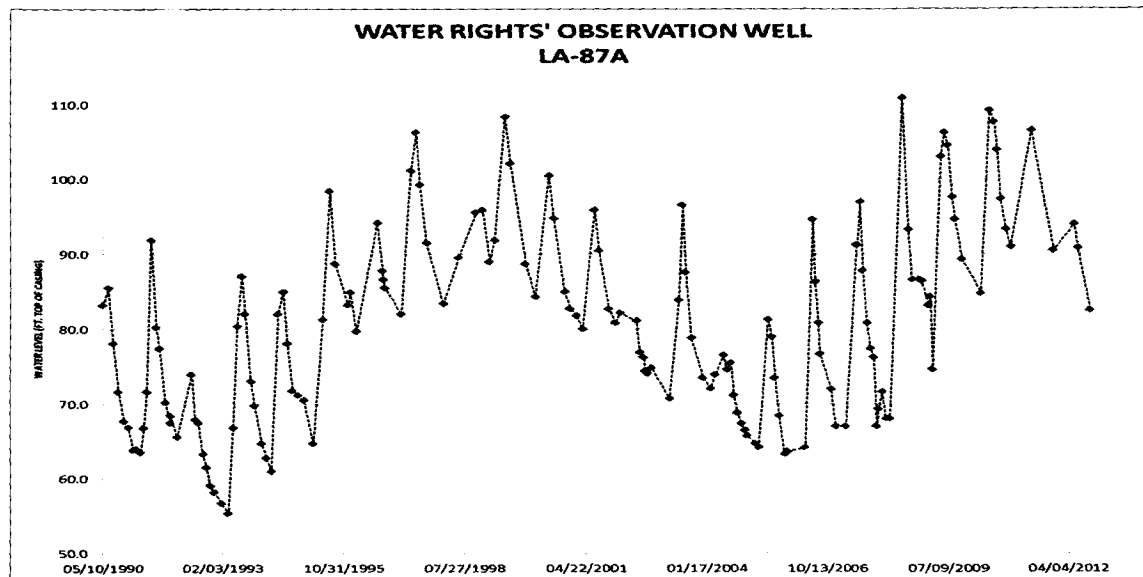


Figure 9. DENR-Water Rights' observation well completed into the Madison aquifer located approximately 13.7 miles west-northwest of the well site proposed by Application No. 1931-1.

The analysis of the DENR-Water Rights Program observation well data provides a qualitative means of assessing the aquifer and provides the best information reasonably available to evaluate the hydrologic budget for the Madison aquifer. Observation well data showing a steady, continual decline of the aquifer's water level or artesian pressure could indicate that withdrawals from the aquifer were exceeding recharge. In addition, water level fluctuations in an aquifer dominated by the influences of well withdrawals, or a change in the gradient of the potentiometric surface could indicate that well pumping is a significant component in the system relative to recharge and/or natural withdrawals.

Observation well data for the Madison aquifer documents: 1) upward trending water levels; 2) that at the current level of development, climatic conditions greatly mask any temporal effects of well withdrawals thus the combined recharge to and natural discharge from the Madison aquifer significantly exceeds long term well withdrawals; and 3) the potentiometric surface of the aquifer has been relatively unchanged over time. Therefore, the observation well data shows that unappropriated water is available from the Madison aquifer.

AFFECTS ON EXISTING RIGHTS:

Water Rights/Permits supplied by wells completed into aquifers that are stratigraphically above or below the Madison are not expected to be affected by Madison aquifer withdrawals since the lower Minnelusa Formation and the lower Madison Limestone generally serve as upper and lower confining units for the Madison aquifer

There are 10 water rights/permits appropriating water from the Madison aquifer within approximately two miles of the well site proposed by this application. As noted earlier, Water Permit Nos. 1707A-1 and 1707E-1 for Frawley Ranches; and Water Permit Nos. 1707B-1, 1707C-1 and 1707D-1 for The City of Spearfish may be subject to cancellation due to non-construction.

Assuming the water permits listed are cancelled, there are no appropriations from the Madison aquifer within one mile of the well site proposed by this application.

It is difficult to precisely estimate the amount and extent of drawdown that will result from pumping a well completed into the Madison aquifer since the well conditions are site specific. The transmissivity of the aquifer is very heterogenous with values that range over several orders of magnitude (Putnam and Long, 2007). In addition the aquifer characteristics of the Madison can vary considerably within a short distance (Greene, 1993). The transmissivity of the Madison at flow zone between subarea 1 and subarea 2 was estimated at 5,589 feet squared per day (ft^2/d) (Carter and others, 2001b). Applying the estimated transmissivity and assuming a storage coefficient of $S = 2 \times 10^{-4}$, the drawdown 1,000 feet from a well pumping 0.44 cfs would be less than 33 feet after one year of continuous pumping based on the Theis Equation (see Figure 10) ("Theis Equation Calculator"). The Theis equation requires a number of simplifying assumptions, some of which may not apply in this case; however, the solution is still useful to show that drawdown should not be significant.

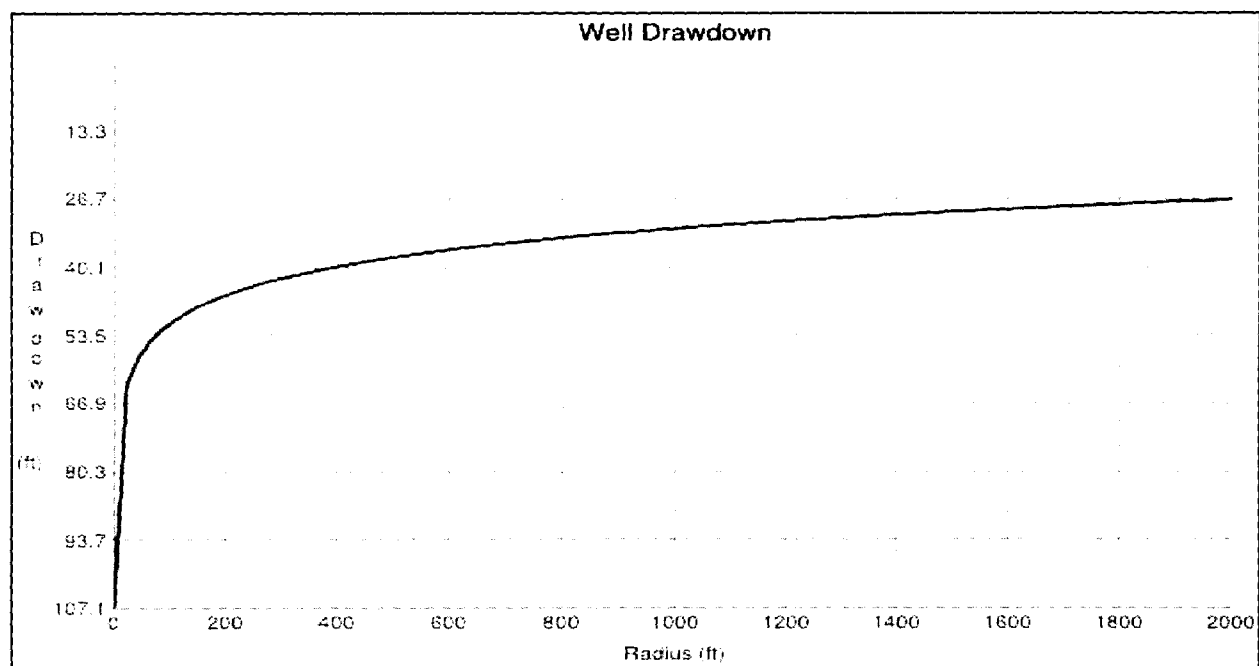


Figure 10. Drawdown predicted from a well pumping 0.44 cfs from the Madison aquifer, continuously for one year, assuming $T = 5,589 \text{ ft}^2/\text{d}$, $S = 2 \times 10^{-4}$, $t = 1 \text{ yr}$. (modified from ("Theis Equation Calculator"))

If this application is approved, the drawdown caused by pumping a well 0.44 cfs is not expected to adversely impact domestic wells or wells with supplying prior appropriation due to the distances between wells. Well interference is not expected to be significant. This is especially the case when considering the Madison is under artesian conditions with several hundred feet of head pressure at the documented natural fluctuation in this area (see Figure 3). Wells supplying existing Water Rights/Permits and domestic uses are protected from adverse impacts per Water Management Board rules 74:02:04 and 74:02:05, which were promulgated pursuant to SDCL 46-6-6.1. These rules provide for the regulation of large capacity wells to the degree necessary to

maintain an adequate depth of water for a prior appropriator in wells that have the ability to produce water **independent of artesian pressure**. Simply put, the pump placement in a prior appropriator's well is not necessarily protected.

If the water levels in the Madison aquifer were to decline, owners of existing wells bear the responsibility of lowering the pump inlet in the well to the top of the aquifer, if necessary. Increased lift would decrease the pump discharge; or require a larger pump or a different type of a pump to maintain the same output.

An increase in operating expenses that may result from interference between wells is not necessarily an adverse impact. The Water Management Board considered this situation in the matter of Water Permit Application 2313-2, Coca-Cola Bottling Company of the Black Hills (Water Rights, 1995). The Board adopted findings of fact and conclusions of law that basically state that if the increased cost or decreased production is considered an adverse impact, it could be in conflict with SDCL 46-1-4, which requires South Dakota's water resources to be put to beneficial use to the fullest extent of which they are capable.

It should be noted however, that well interference (drawdown) measured at Water Rights' observation wells located near high capacity municipal wells in Spearfish, Sturgis and Rapid City has never been significant (i.e. drawdown of only a few feet or tens of feet) (Water Rights, 2012a).

Given the distance between the well that is to supply this appropriation and existing Madison wells, well interference is not expected to be adverse.

The well site proposed by this application is located within the area reserved for future use by Future Use Permit No. 1872-1 for the City of Spearfish. Although the effect on existing water rights must be considered to place water reserved by the future use permit to beneficial use, following issuance of a permit, the permit will retain the priority date of the future use permit and be senior to Permit No. 1931-1 (if approved). Considering the size of the future use area reserved, approval of this application should not interfere with Spearfish's ability to develop their future use permit.

PUBLIC INTEREST:

Historically, "public interest issues" have been issues raised by the public during Water Management Board hearings. However, the Chief Engineer has raised the question of whether the Board should consider a large decrease in spring output as a public interest issue if such a decrease would occur. The Water Management Board accepted that SD Water Law does not protect artesian head pressure as a means of diversion and determined that well interference resulting in decreased discharge from these "artesian" springs likely could not be considered an adverse impact. The Board concluded 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 Management Board Findings dated 19 March 2007 (Paragraph 11)). Consequently, the Board has conditioned a number of recent water permits appropriating water from the Madison aquifer with a qualification such as:

“The Permit Holder shall control withdrawals from the well so there is not a significant adverse effect on the water flow from area springs or a significant adverse effect on the water quality and character in area springs.”

Although there are a number of springs in the subareas defined by Carter and others (2001b) in which this proposed project is to be located, all of them are located northwest of the well site proposed by this application. Neither Rahn and Gries, (1973); Putnam and Long (2007); nor Carter and others (2001) identify springs within approximately seven and one half miles of this proposed well site.

A fairly large change in the hydraulic gradient in the vicinity of the springs would be necessary to significantly affect the groundwater flow rates and consequently the spring's discharge. Given the distance involved and the relatively low diversion rate proposed by this application, it is unlikely that drawdown from this well would have a measurable impact on the spring discharge.

TERM LIMITATION:

SDCL 46-2A-20 requires that "... 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 the 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, show 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."

Pursuant to SCL 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."

Although the criteria for approval of a water permit established by SDCL 46-2A-9 are met, (i.e., there is a reasonable probability that unappropriated water is available for the applicant's proposed use, and this proposed diversion can be developed without unlawful impairment of existing rights) evidence is not available to justify issuing this permit without a term limitation of 20 years.

CONCLUSIONS:

1. The Madison aquifer is a major regional aquifer and a viable source of water for this proposed appropriation.
2. This application proposes to appropriate 0.44 cubic feet of water per second. There is no limit to the annual volume of water that can be diverted other than the physical constraints of the maximum diversion rate.
3. There is a reasonable probability that unappropriated water is available in the Madison aquifer to supply this appropriation.

4. There is a reasonable probability this appropriation can be made without adversely impacting existing water rights including domestic users.
5. Information is not available to justify issuing these permits without a term limitation of 20 years.
6. Following notice and a public hearing, the Water Management Board can cancel this permit or amend it with a new term limitation after 20 years.



Ken Buhler
Natural Resources Engineer

REFERENCES:

- Allen, J.C., Iles, D.L., and Petres, A.K., 1985, Analysis of Groundwater and Streamflow Data, Western Dakotas Region of South Dakota, Tasks 3A.B.C. and 4A.B: Groundwater Resources Inventory: US Army Corps of Engineers Contract DAWC 45-82-C-0151, SD DENR-Geological Survey, Vermillion SD
- Carter, J.M., Driscoll, D.G., and Hamade, G.R., 2001a, Estimated Recharge to the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota and Wyoming, Water Years 1931-98: U.S. Geological Survey Water-Resources Investigations Report 00-4278, 66 p
- Carter, J.M., Driscoll, D.G., Hamade, G.R., and Jarrell, G.J., 2001b, Hydrologic Budgets for the Madison and Minnelusa Aquifers, Black Hills of South Dakota and Wyoming, Water Years 1987-1996: Water-Resources Investigations Report 01-4119, U.S. Department of the Interior, U.S. Geological Survey, Rapid City, SD
- Carter, J.M., and Redden, J.A., 1999a, Altitude of the Top of the Madison Limestone in the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas HA-744-D, 2 sheets, scale 1:100,000
- Carter, J.M., Redden, J.A., 1999b, Altitude of the Top of the Deadwood Formation in the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas HA-744-E, 2 sheets, scale 1:100,000
- DeWitt, E., Redden, J.A., Buscher, D.P., and Wilson, A.B., 1989, Geologic Map of the Black Hills Area, South Dakota and Wyoming: U.S. Geological Survey IMAP-1910, scale 1:250,000
- Greene, E.A., 1993, Hydraulic Properties of the Madison Aquifer System in the Western Rapid City Area, South Dakota: U.S. Geological Survey Water-Resources Investigations Report 93-4008, 56 p.
- Gries, J.P., 1981, unpublished maps prepared for the Office of Drinking Water, South Dakota Dept. of Water and Natural Resources for the Underground Injection Control Program.

- Hedges, L.S., Burch, S.L., Iles, D.L., Barari, R.A., and Schoon, R.A., 1982, Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 1: Bedrock Topgraphy [Sic.] and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base. Prepared for U.S. Army Corps of Engineers, contract DACW 45-80-C-0185
- Rahn, P.H., 1979, Ground Water Resources of Western South Dakota: U.S. Army Corps of Engineers, SDSM&T Project #2533
- Rahn, P.H., and Gries, J.P., 1973, Large Springs in the Black Hills, South Dakota and Wyoming: South Dakota Geological Survey Report of Investigations 107, 46 p.
- Putnam, L.D., and Long, A.J., 2007, Characterization of Ground-Water Flow and Water Quality for the Madison and Minnelusa Aquifers in northern Lawrence County, South Dakota: U.S. Geological Survey Scientific Investigations Report 2007-5001, 61 p.
- Strobel, M.L., Jarrell, G.J., Sawyer, J.F., Schleicher, J.R., and Fahrenbach, M.D., 1999, Distribution of Hydrogeologic Units in the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas HA-743, 3 sheets, scale 1:100,000
- “Theis Equation Calculator.” i-calcul⁸ 13 Nov.. 2012<<http://www.icalcul8.com/theis.php>”
- Water Rights Program, 1995, Findings of Fact, Conclusions of Law and Final Decision in the Matter of Water Permit Application No. 2313-2, Coca-Cola Bottling Company of The Black Hills , SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD 57501
- Water Rights Program, 2012a, Observation Well Files, DENR-Water Rights Program, Joe Foss Building, Pierre, SD 57501
- Water Rights Program, 2012b, Water Permit/Right Files, DENR-Water Rights Program, Joe Foss Building, Pierre, SD 57501
- Water Rights Program, 2012c, Well Completion Report Files, DENR-Water Rights Program, Joe Foss Building, Pierre, SD 57501
- Woodward Clyde Consultants, 1981, Well Field Hydrology Technical Report, for the ETSI Coal Slurry Pipeline Project, U.S. Dept. of the Interior, Bureau of Land Management

RECEIVED

NOV 30 2012

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 1931-1

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 23rd day of Nov, 2012, and the last publication on the _____ day of _____, _____, that the full amount of fees charged for publishing same, to-wit: The sum of \$ 25.77, 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.

Subscribed and sworn to before me this 21st day of Nov, 2012

Ar. Keith Richards
Notary Public, Lawrence County, South Dakota
My commission expires: 10-24-2016

NOTICE OF APPLICATION NO. 1931-1 to Appropriate Water

Notice is given that Elkhorn Ridge at Frawley Ranches LLC, 12600 W Colfax Ave, Ste B-130, Lakewood CO 80215 has filed an application for a water permit to appropriate 0.44 cubic feet of water per second from one well to be completed into the Madison Aquifer (1000 feet deep) located in Tract A of the NE 1/4 Section 22 to irrigate portions of 85.22 acres located in Tract A of the NE 1/4 Section 22; all in T6N-R3E. The water will also be used for commercial purposes at Elkhorn Ridge RV Park.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1931-1 subject to a 20-year term limitation because 1) although evidence is not available to justify issuing the permit without a 20 year term limitation, there is reasonable probability that there is unappropriated water available, 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. 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.

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 December 3, 2012.

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. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application.

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

Published once at the
total approximate cost of
\$24.87.

#253
Nov. 23

Schlaak, Karen

From: Schlaak, Karen
Sent: Friday, November 16, 2012 9:19 AM
To: 'Black Hills Pioneer Spearfish (legals@bhpioneer.com)'
Subject: Notice of Application No. 1931-1
Attachments: 1931-1public.short.docx

Contacts: Black Hills Pioneer Spearfish

Attached is the text of the Notice of Application No. 1931-1 for Elkhorn Ridge at Frawley Ranches. This notice is to be published on November 23, 2012. Donald Hansen with Elkhorn Ridge RV Park should be contacting you to authorize publication and arrange for payment. Paper copies being mailed today. Please acknowledge receipt of this.

If you have questions, please let me know.

Karen Schlaak
Water Rights Program
Phone: 605 773-3352
Fax: 605 773-4068



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

November 16, 2012

Black Hills Pioneer
PO Box 7
Spearfish SD 57783

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 1931-1 to Appropriate Water. Please publish the notice once on November 23, 2012. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published and arrange for payment. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Elkhorn Ridge at Frawley Ranches LLC, 12600 W Colfax Ave., Ste. B-130, Lakewood CO 80215 (Ph # 303-233-4000).

Please send the Water Rights Program an affidavit or the enclosed Proof of Publication form immediately.

The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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**NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATE, CONTACT
THE NEWSPAPER(S) RIGHT AWAY.**

November 16, 2012

Elkhorn Ridge at Frawley Ranches LLC
12600 W Colfax Ave #B-130
Lakewood CO 80215

Dear Sir:

Water Permit Application No. 1931-1 for commercial 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(s) 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(s) to authorize publication of your Notice and to arrange for payment. Early contact with the paper(s) 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

Natural Resources Engineer

(605) 773-3352

c: Donald G Hansen, Elkhorn Ridge RV Park, 20189 US Hwy 85, Spearfish SD 57783

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 November 23, 2012. The applicant is responsible for payment. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352 or email: Karen.schlaak@state.sd.us.

NOTICE OF APPLICATION NO. 1931-1 to Appropriate Water

Notice is given that Elkhorn Ridge at Frawley Ranches LLC, 12600 W Colfax Ave, Ste B-130, Lakewood CO 80215 has filed an application for a water permit to appropriate 0.44 cubic feet of water per second from one well to be completed into the Madison Aquifer (1000 feet deep) located in Tract A of the NE 1/4 Section 22 to irrigate portions of 85.22 acres located in Tract A of the NE 1/4 Section 22; all in T6N-R3E. The water will also be used for commercial purposes at Elkhorn Ridge RV Park.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1931-1 subject to a 20-year term limitation because 1) although evidence is not available to justify issuing the permit without a 20 year term limitation, there is reasonable probability that there is unappropriated water available, 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. 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.

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 December 3, 2012.

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. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

Published once at the total approximate cost of_____.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
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PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

JAN 17 2013

Elkhorn Ridge at Frawley Ranches LLC
12600 W Colfax Ave # B-130
Lakewood CO 80215

Dear Sir:

Enclosed is Water Permit No. 1931-1 authorizing construction of your 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,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

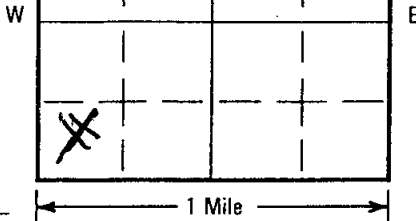
SOUTH DAKOTA WATER WELL COMPLETION REPORT

1931-1

07-92

Location SW 1/4 SW 1/4 Sec 25 Twp 6N Rg 3-E
 County Lawrence North

Please mark well location with an "X"



Well Completion Date

6-21-13

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? 1/4 ft. from HA (identify source).

PROPOSED USE:

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

METHOD OF DRILLING:

Rotary - Air - Water

CASING DATA:

☒ Steel ☐ Plastic ☐ Other

If other describe _____

PIPEWEIGHT DIAMETER FROM TO HOLE DIAMETER
23 LB/FT 7 IN 0 FT 860 FT 8 3/4 IN
 _____ LB/FT _____ IN _____ FT _____ FT _____ IN
 _____ LB/FT _____ IN _____ FT _____ FT _____ IN

GROUTING DATA

Grout Type Portland No. of Sacks 200 Grout Weight 94 1/2 lb./gal From 10 ft To 860 ft
Type III _____ lb./gal _____ ft _____ ft

Describe grouting procedure Pressure Grout thru casing
Displace w water by Mud Pump

SCREEN: ☐ Perforated pipe ☐ Manufactured

Diameter _____ IN Length _____ FEET

Material _____

Slot Size _____ Set From _____ Feet to _____ Feet

Other information _____

WAS A PACKER OR SEAL USED? ☐ YES ☒ NO

If so, what material? _____

Describe packer(s) and location? _____

DISINFECTION: Was well disinfected upon completion?

☒ YES, How: Chlorine

Laboratory sent to for water
 quality analysis

☐ NO, Why Not? PellettsOWNER TO Complete

Well Owner: Elk Horn Ridge R.V. Park
 Business Name: _____
 Address: 20189 U.S. Hwy 85
Spaulding, SD 57783

WELL LOG:

DEPTH

FORMATION	FROM	TO
<u>Gravel</u>	<u>0'</u>	<u>4'</u>
<u>Spaulding Shale</u>	<u>4'</u>	<u>245'</u>
<u>Minnekahta Limestone</u>	<u>245'</u>	<u>295'</u>
<u>Opeche</u>	<u>295'</u>	<u>400'</u>
<u>Minnekahta</u>	<u>400'</u>	<u>850'</u>
<u>Madison</u>	<u>850'</u>	<u>1250'</u>

STATIC WATER LEVEL

290

Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

☐ PumpedDescribe: Air - Developed☐ Bailed☒ Other

Pumping Level Below Land Surface

800

ft. After

2

Hrs. pumped

60-80

GPM

ft. After

Hrs. pumped

GPM

If pump installed, pump rate

85

GPM

REMARKS

owner HAS PermitThis well was drilled under license # 568

And this report is true and accurate.

Drilling firm Cimason Drilling Inc.

Signature of License Representative:

Michael P. Deather

Signature of Well Owner or Equitable Property Holder:

RECEIVED**JAN 10 2014**

Date: _____

**WATER RIGHTS
PROGRAM**

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 1931-1

I have this day, June 5, 2018 made a thorough examination of the water use system constructed by Elkhorn Ridge @ Frawley Ranches LLC, 12600 West Colfax, Suite B-130, Lakewood, CO. 80215 of Permit No. 1931-1 bearing the priority of 8/17/2012 authorizing the diversion of 0.44 cu. ft. per second of water from one Madison aquifer well for irrigation and commercial purposes in Lawrence County.

Inspection contact & relationship to permit holder,
if applicable:

J R Hamblet
Owner Representative, for Propp Frawley properties
605-391-6970

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Cimarron Drilling (6/13)
- 2) No. of Wells 1
- 3) Depth(s) 1,250 feet
- 4) Well log is available Yes

Casing:

- 1) Diameter 7"
- 2) Length 860 feet
- 3) Type Steel

Screen:

- 1) Type open hole
- 2) Length 390 feet
- 3) Static water level 290 (air test, 60-80 gpm @ 800 ft.)

Pump:

- 1) Make Grundfos
- 2) Model 85S200-18
- 3) Size 6"
- 4) Capacity 78 GPM (est. 770' TDH)
- 5) Horsepower rating 20 hp

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

- 1) Type PVC pipelines
- 2) Size 2 inches
- 3) Length Varies feet

C. Works used to apply water to beneficial use:

The system supplies a multiple zoned underground sprinkler system which irrigates the front entrance lawns for Elkhorn Ridge Resort, the lawn areas adjacent to the pool and tennis courts, and the lawns surrounding cabins in three separate pods. The system also supplies a water fill station and chlorinated water for the pool. All other uses at the resort including the Lodge, cabins and RV hookups are supplied with municipal water from the City of Spearfish. Municipal water also serves as a backup supply for the pool and irrigation.

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Yes

Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period Yes Irrigation use reported 2013 - 2016

List any extended period of nonuse: none

- 2) Exceptions to compliance are: none

E. Condition and Location:

1. The system is in good condition with the point of diversion as follows:

1,882' S and 1,510' W of NE corner Section 22 T6N R3E (44.469184, -103.735257)

2. The works are capable of diverting and conveying to the place of use 0.17 cubic feet per second of water (78 gpm) which is to be used for sprinkler irrigation and commercial use. Water has been put to beneficial use to the maximum extent as follows:

Section 22 T6N R3E

NW $\frac{1}{4}$ NE $\frac{1}{4}$ 0.8 acres SW $\frac{1}{4}$ NE $\frac{1}{4}$ 2.3 acres

SE $\frac{1}{4}$ NE $\frac{1}{4}$ 0.2 acres

comprising a total of 3.3 acres of land and the license should be issued for 0.17 cubic feet per second.

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 11, 2018



Well with pump house @ upper left

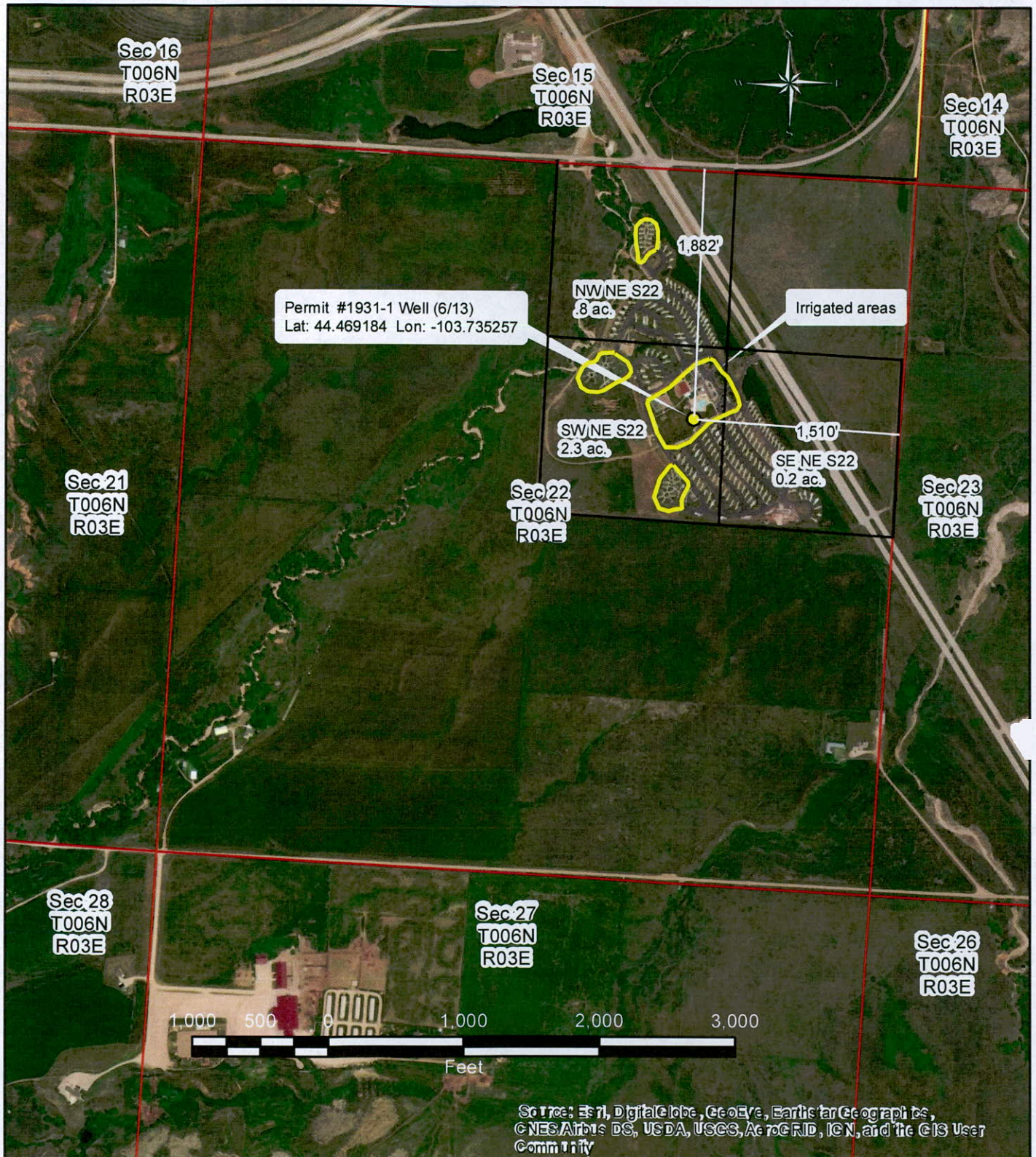


Incoming plumbing – 2" from Madison well (with gauge)
City water (backup supply) through 4" line (blue)



Sand filter and heaters for pool

Water Right #1931-1
Elkhorn Ridge @ Frawley Ranches, LLC
6/5/2018



Steven Quissell

Steven Quissell
 Water Rights Inspector
 DENR Water Rights Program





1931-1

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

SEP 04 2019

1888-1
1931-1

Elkhorn Ridge at Frawley Ranches LLC
& Elkhorn Ridge Water Association
c/o Daryll Propp
126000 W Colfax, Suite B130
Lakewood CO 80215

Dear Mr. Propp:

Enclosed are Water License Nos. 1888-1 and 1931-1. These are the final water right documents completing the process of obtaining a Water Right. Also, included with the licenses are maps prepared by the staff engineer who conducted the investigation and the receipt for payment of the \$50 license fee for No. 1881-1.

For your information SDCL 46-6-27 requires that if in the future the owner drills a replacement well and has no plan to use the old existing 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 Licenses, 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,

A handwritten signature in cursive script that reads 'Jeanne Goodman'.

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

enclosures

c: J.R. Hamblet

STATE OF SOUTH DAKOTA
WATER LICENSE NO. 1931-1

(1) Elkhorn Ridge at Frawley Ranches LLC, 12600 W Colfax Ave, Ste B-130, Lakewood CO 80215 made Application No. 1931-1, August 17, 2012 for a water permit to divert 0.44 cubic feet of water per second from one well - Madison Aquifer, Lawrence County, South Dakota for irrigation and commercial purposes. Permit No. 1931-1, with a priority date of August 17, 2012 was approved December 3, 2012 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before December 3, 2017 and for the application to beneficial use of water on or before December 3, 2021.

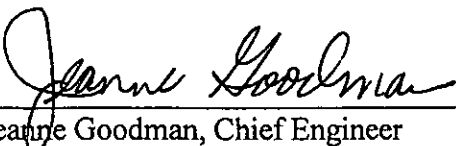
(2) The water supply system has been completed and water applied to beneficial use in accordance with South Dakota State Law. Pursuant to South Dakota Codified Law 46-5-30.1, the holder and/or owner of Water Right No. 1931-1 is issued a license, bearing a priority date of August 17, 2012 to appropriate 0.17 cubic-feet-of-water-per-second-from one well - Madison Aquifer to irrigate 3.3 acres. Water is also supplied for commercial use at the Elkhorn Ridge RV Park.

The diversion point is located: 1,882 feet south and 1,510 feet west of the NE corner of Section 22-T6N-R3E (SW 1/4 NE 1/4). The acres authorized for irrigation are as follows:

<u>Section 22-T6N-R3E</u>			
NW 1/4 NE 1/4	0.8 acres	SW 1/4 NE 1/4	2.3 acres
SE 1/4 NE 1/4	0.2 acres		
Total 3.3 acres			

(3) This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Permit No. 1931-1 including 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. 1931-1 shall be constructed by a licensed well driller and construction 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. *The well was drilled by Cimarron Drilling Inc. in June, 2013. A copy of the log is on file with the Water Rights Program.*
3. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 1931-1 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. 1931-1 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.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.



Jeanne Goodman, Chief Engineer

Water Rights Program
Department of Environment and Natural Resources

SEP 04 2019

date

