

WATER PERMIT NO. 2667-2

Name of Applicant: Wind Cave National Park

Address: 26611 US Hwy 385, Hot Springs SD 57747

Phone: 605 745-4600

Amount of Water Claimed: 0.11 cfs

Total Acres: NA

Source of Water Supply: groundwater (one well)

Water to be used for: institutional use

County: Custer

Type of Waste Disposal System:

Location: 2 miles east of Wind Cave

PRIORITY

Date Received: 4-11-2011

Application/License Fee: \$700

Corrected Application Received:

Period of Annual Use: January 1 – December 31

Remarks: Serve as a back up supply to Water Right No. 419-2

Diversion Point: SE ¼ SE ¼ Sec 6-T6S-R6E

Land to be Irrigated:

Depth of Well: 400 feet deep

Well Driller: Alexander Drilling Inc.

Remarks:

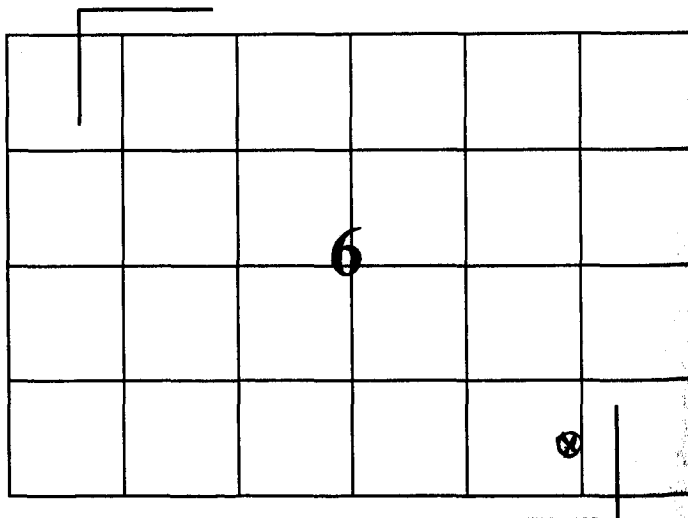
Type of Map: topo

Prepared by: Steven D Schrempp, PE

Reviewed and the Number Assigned on: 4-11-11

By: Karen Schlaak

Notice of Hearing - date to intervene: _____



Mail to:
PMB 2020
DENR - Water Rights
523 E Capitol Ave
Pierre, SD 57501-3182
ph. (605) 773-3352

(office use only)
No. 2667-2 Hydrologic Unit 10120109
Basin Upper Cheyenne
Newspaper Custer Co. Chronicle PO Box 551
605-673-2217 57730

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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.)

- Name of Applicant Wind Cave National Park Phone 605-745-4600
(check one) ☒ Owner ☐ Tenant/lessee
Mailing Address 26611 US Highway 385 Hot Springs SD 57747
(Address) (City) (State) (Zip Code)
- Amount of water claimed 0.11 *CFS or 50 **GPM ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (***Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply Minnelusa aquifer
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Custer
1 well in SE1/4 SE1/4 Section 6-T6S-R6E
- County or counties where water will be used Custer
- Annual period during which water is to be used January 1 through December 31
- 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) (WR # 419-2)
Well will serve as a back up water source for original well #1 constructed in 1956. When float located in storage tank approximately three miles west of well calls for water, well will automatically start and refill the tank. Well pumps will alternate with each call for water. Storage tanks hold approximately 600,000 gallons. One pump cycle is approximately 35,000 gallons.

STATE OF SOUTH DAKOTA)
County of Custer Fair River 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, Steven D Schremp, 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 Steven D Schremp

Subscribed and sworn to before me this 7 day of April 20 11

Notary Public signature Kevin Van Eaton
Court Clerk

**SOUTH DAKOTA
WATER PERMIT NO. 2667-2**

Date of first receipt of application April 11, 2011.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2667-2 to Wind Cave National Park, c/o Steven Schrempp, 26611 US Hwy 385, Hot Spring SD 57747 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. 2667-2 appropriated 0.11 cubic feet of water per second from one well completed into the Minnelusa Aquifer (400 feet deep) located in SE 1/4 SE 1/4 Section 6-T6S-R6E.
2. The water appropriated shall be used at Wind Cave National Park 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. 2667-2 is July 11, 2011.
5. The date from which applicant may claim right is April 11, 2011.
6. Water is to be put to beneficial use on or before July 11, 2020.
7. 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. Wind Cave National Park shall report to the Chief Engineer annually the amount of water withdrawn from the Minnelusa Aquifer.

WATER MANAGEMENT BOARD

By: _____

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

AUG 30 2011

date



Supplemental Information

(type or print in ink)

1. Well Information - Proposed Construction

See test well completion report attached

- a) Drill Hole Diameter 8.75" Depth 400 ft
- b) Casing Type steel Diameter 7" Thickness _____
- c) Screen Type steel Diameter 7" Thickness _____
- d) Gravel Pack _____ Length of Gravel Pack _____
- e) Depth to Top of Water Bearing Material 230'
- f) Depth to Water (ground surface to water level) 190'
- g) Distance to nearest existing domestic well:

On applicant's property 20'

On property owned by others > 1 mile

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) 6 acres of evaporative lagoons
- b) System Capacity (gallons) 11,000,000.00 Year Constructed 2007
- 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)

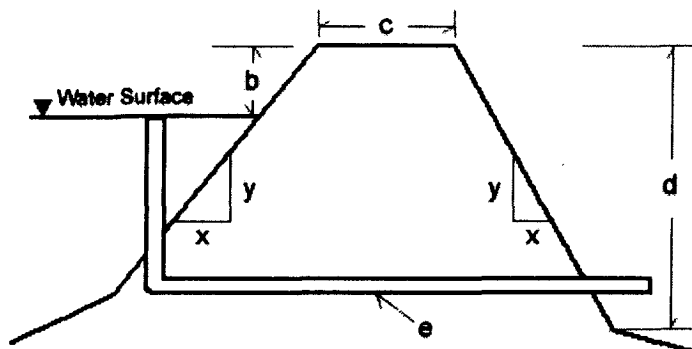
Upstream _____

Downstream _____

h) Surface Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres





REGISTERED PROFESSIONAL ENGINEER
 REG. No. 6822
 STEVEN D. SCHREMP
 SOUTH DAKOTA
Steven D. Schremp
 H-4-001

EXHIBIT A

NOT TO SCALE



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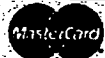
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DO NOT WRITE		ABOVE THIS LINE	
STEVE SCHREMPF WIND CAVE NATIONAL PARK XXXX XXXX XXXX 0079 SIGN HERE X The issuer of the card identified on this item is authorized to pay the amount shown as TOTAL upon proper presentation. I promise to pay such TOTAL (together with any other charges due thereon) subject to and in accordance with the agreement governing the use of such card.		↑ PLEASE DO NOT WRITE ABOVE THIS LINE ↑	
		EXPIRATION ☒ DATE CHECKED	
		10/11	
		1	
		INSPECT/LICENSE FEE 200.00	
		WR	
DATE		AUTHORIZATION	SUB
04/07/2011		098086	TOTAL 200.00
REFERENCE NO.		SERVER	TAX
001			
ID-FOLIO/CHECK NO./LIC. NO. STATE	REG./DEPT.	CLERK	TIP
			MISC.
TOTAL		200.00	

BANKCARD SALES SLIP 2 PT. 5002

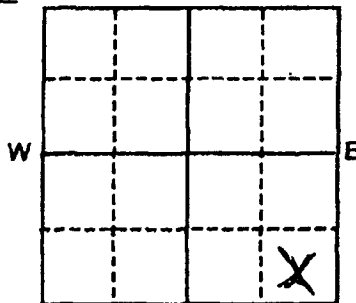
SALES SLIP

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DO NOT WRITE		ABOVE THIS LINE	
STEVEN SCHREMPF WIND CAVE NATIONAL PARK		EXPIRATION ☒ DATE CHECKED 10/11	
XXXX XXXX XXXX 0079			
SIGN HERE X			
The issuer of the card identified on this form is authorized to pay the amount shown as TOTAL upon proper presentation. I promise to pay such TOTAL together with any other charges due thereon) subject to and in accordance with the agreement governing the use of such card.			
↑ PLEASE DO NOT WRITE ABOVE THIS LINE ↑			
1	2011 CHEM STOR. FEE		50.00
	CU0009F		
1	LATE PYMT FEE		15.00
1	WR AP FEE		500.00
DATE	04/07/2011	AUTHORIZATION	044783
REFERENCE NO.	001	SERVER	TAX
ID-FOLIO/CHECK NO./LIC. NO. STATE	REG/DEPT	CLERK	TIP
			MISC.
  5462542		TOTAL	565.00

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE 1/4 SE 1/4 Sec 6 Twp 6N Rg 6E
S ECounty CusterPlease mark well
location with an "X"

Well Completion Date

February 17, 2010

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
1.0 mile from septic (Identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Rotary Downhole Hammer

CASING DATA:

☒ Steel ☐ Plastic ☐ Other
 If other describe 400 ft 7" steel

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	<u>7.00</u> IN	<u>0.0</u> FT	<u>400.0</u> FT	<u>8.75</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Portland II</u>	<u>60</u>	<u>Lb/gal</u>	<u>200.0</u> Ft	<u>0.0</u> Ft
<u>w/8% bentonite</u>		<u>Lb/gal</u>	<u>Ft</u>	<u>Ft</u>

Describe grouting procedure through 1" trimmie pipe

SCREEN:

☒ Perforated pipe ☐ Manufactured
 Diameter 7.00 Inches Length 100.0 Feet
 Material Steel
 Slot Size Set From 360.0 Feet to 300.0 Feet
 Other information 260-220 ft

WAS A PACKER OR SEAL USED?

☒ Yes ☐ NoIf so, what material? Neoprene double packer

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? w/chlorine solution☐ No, Why Not?Lab to which water
quality sample sent for analysis
MidContinent TestingWell Owner: Wind Cave National ParkBusiness Name: C/o Mt. Rushmore National MemorialAddress: 24290 Doan Mt. RoadCity, State, Zip: Keystone SD 57751

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Drift	0	3
Minnelusa	3	230
Fracture 20 gpm	230	240
Minnelusa	240	330
Fracture 50gpm	330	340
Minnelusa	340	400

STATIC WATER LEVEL 190.0 FEET

If flowing: closed in pressure _____ PSI

GPM flow 50.0 through _____ Inch pipeControlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate _____ GPM

Can well be completely shut in?

WELL TEST DATA:

☐ Pumped Describe:☐ Bailed☐ Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

This well was drilled under license # 324 and this report is true and accurate.Drilling firm: Alexander Drilling Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date:

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7-25-10



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2667-2, Wind Cave National Park**

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. 2667-2, Wind Cave National Park, c/o Steven D. Schrempp, 26611 US Highway 385, Hot Springs SD 57747.

The Chief Engineer is recommending APPROVAL of Application No. 2667-2 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. Wind Cave National Park shall report to the Chief Engineer annually the amount of water withdrawn from the Minnelusa Aquifer.

See report on application for additional information.

Garland Erbele, Chief Engineer
June 13, 2011

WATER PERMIT APPLICATION NO. 2667-2
WIND CAVE NATIONAL PARK
MAY 17, 2011

Water Permit Application No. 2667-2 proposes to appropriate 0.11 cubic feet of water per second from an existing well completed into the Minnelusa aquifer (400 feet deep). The well is located in the SE¼ SE¼ Section 16 T6S-R6E, Custer County. The water is to be used at Wind Cave National Park.

AQUIFER: Minnelusa (MNSL)

GEOLOGY AND AQUIFER CHARACTERISTICS:

The Minnelusa Formation consists of sandstone, limestone and minor shale (Redden and DeWitt, 2008), approximately 800 feet thick in this area (Carter and Redden, 1999a; Carter and Redden, 1999b). This well site is located on the outcrop (recharge area) of the Minnelusa Formation. Review of the areal geology indicates that only a small portion of the Minnelusa has been eroded away at this site and all but a small amount of the Minnelusa is present at this site (Redden and DeWitt, 2008). The porous portions of the Minnelusa Formation form the Minnelusa aquifer. Well sorted sand lenses have porosity's approaching 25%, but generally the sands have porosity's of 10%. The average porosity of the Minnelusa is estimated to be 10% and the effective porosity is assumed to be 5% (Rahn, 1979). The Minnelusa Formation underlies virtually all of western South Dakota and the Minnelusa aquifer contains over 755 million acre-feet of recoverable water in storage (Allen and others, 1985). The Minnelusa aquifer underlies approximately 740,480 acres of Custer County and contains an estimated 25,916,800 acre-feet of recoverable water in storage in the county (Allen and others, 1985). Ground water movement in the aquifer in this area is probably from west to east (Strobel, and others, 2000). The water quality of the aquifer is generally good near the outcrop but deteriorates considerably with distance from the recharge area. Estimates from regional studies of the aquifer indicate the aquifer transmissivity may range from 0.86 to 12,000 ft²/d, and the storage coefficient ranges from 0.003 to 5.0 x10⁻⁹ (Driscoll, and others, 2002). The aquifer is under unconfined conditions at this site and the static water level for the well that is to be used for this appropriation was reported to be 190 feet below ground surface on February 17, 2010.

Although the aquifer is unconfined at the well site proposed by this application, the Minnelusa is generally confined by the overlying Opeche Shale and the lower portion of the formation serves as an aquitard isolating the Minnelusa aquifer from the underlying Madison 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:

Water Balance:

The availability of unappropriated water from an aquifer can be evaluated by considering SDCL 46-6-3.1. This statute requires that an application to appropriate groundwater can not 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 average estimated annual recharge.

Recharge to the Minnelusa aquifer is primarily from infiltration of precipitation on the outcrop and stream flow losses. Average annual recharge in the Black Hills area from 1931-1998 was estimated to be approximately 112,000 acre-feet per year (Carter and others, 2001a).

There are a total of 199 appropriations from the Minnelusa aquifer in South Dakota, including one future use permit, which reserves 1,364 ac-ft/yr (Water Rights, 2010b). Future Use Permit No. 902-2 was approved in 1967, for the South Dakota Cement Plant. In 2001 the cement plant was sold from the South Dakota State Cement Plant Commission to GCC Dacotah, Inc. While the other water rights that were held by the State Cement Plant were transferred from the Commission to GCC Dacotah, Inc., Future Use Permit No. 902-2 has not been transferred. It is not clear if GCC Dacotah, Inc. fits the criteria established by SDCL-46-5-38 for an entity that is entitled to a future use reservation.

Maximum well withdrawals from the Minnelusa aquifer, assuming (1) that permits/rights with an annual withdrawal limitation (ac-ft/yr.) will use the maximum allowable; and (2) permits/rights that are limited by a diversion rate only, will use 60% of the maximum allowable (considered reasonable for water distribution systems); would be approximately 25,000 acre-feet per year. Withdrawals from wells (domestic and appropriative) completed into the Minnelusa aquifer in the Black Hills area were estimated to be 8,140 acre-feet annually from 1987-1996 (Carter and others, 2001b).

Comparison of annual recharge estimates and estimated annual well withdrawals show that well withdrawals from the Minnelusa are only a fraction of estimated average annual recharge. Therefore, based on a simple water budget, it is clear that unappropriated water is available for this appropriation. A water budget is not intended to suggest that all of the water that is in storage in the Minnelusa aquifer or that all of the recharge is available for this appropriation, merely to demonstrate that in general the aquifer is an immense resource that is relatively untapped.

Localized Hydrologic Budget:

Carter and others (2001b) developed a hydrologic budget for the Madison and Minnelusa aquifers combined, for a subarea that includes the well site proposed by this application. The hydrologic budget for this subarea balanced from 1987-1996, by estimating that water enters the subarea through streamflow recharge, precipitation recharge and groundwater inflow from the north and west. Water was assumed to exit this subarea through artesian spring discharge, well withdrawals and groundwater outflow to subareas to the east and northeast (Carter and others, 2001b). The estimates for this area are shown in table 1.

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 with-drawals
2.3 cfs	1.3 cfs	5.2 cfs	1.8 cfs	0.6 cfs	0.3 cfs	9.6 cfs	0.1 cfs

Table 1. Hydrologic budget for the subarea that includes the well site proposed by Application No. 2667-2 for Water Years 1987-1996. Modified from (Carter and others, 2001b).

Obviously, if a new hydrologic budget is to balance for this subarea (i.e. a new condition of dynamic equilibrium), with an increase of well withdrawals, either groundwater outflow must decrease, groundwater inflow from other subareas must increase, or artesian springflow must decrease. It can be assumed that with a very subtle change in the hydraulic gradient at either an inflow zone or an outflow zone, a new dynamic equilibrium would be established in this area with virtually immeasurable impacts to the amount of water in storage or artesian springflow.

Observation Well Data:

The best information available to evaluate development as it relates to recharge, is historical records and data from observation wells. The difference between withdrawal from an aquifer and recharge is reflected by the water level of the aquifer. If the water level of an aquifer continues to decline, it may suggest that withdrawals exceed recharge. The Water Rights Program monitors 23 observation wells completed into the Minnelusa aquifer in the Black Hills area (Water Rights, 2011a). Water Rights' Observation Well CU-91B is located approximately two and one-half miles south-southeast of the well site proposed by this application. The hydrograph for the well (figure 1) shows that over the period of record, withdrawals from the area have not exceeded recharge.

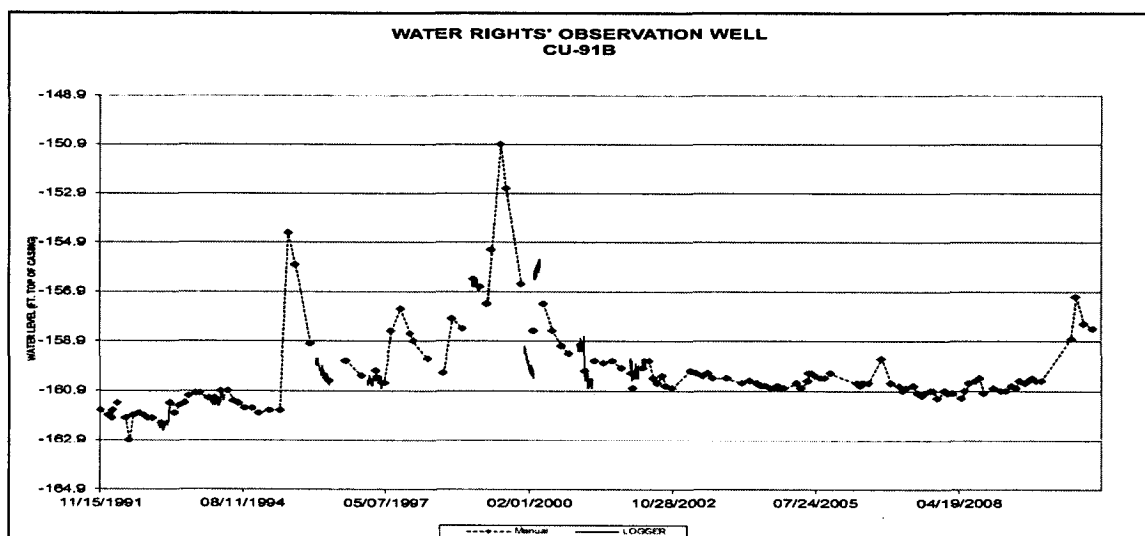


Figure 1. Hydrograph of an observation well completed into the Minnelusa aquifer approximately two and one-half miles south-southeast of the well site proposed by this application.

AFFECTS ON EXISTING RIGHTS:

There are a number of domestic wells completed into the Minnelusa aquifer in this area (Water Rights, 2011c). All of the domestic wells that are on file with the DENR-Water Rights Program are far enough from the well that is to be used to supply this appropriation that well interference should not be adverse. Water rights/permits completed into aquifers other than the Minnelusa are not expected to be affected by withdrawals from the

Minnelusa. The nearest existing appropriation from the Minnelusa aquifer: Water Right No. 2113-2, Leo Hagenson; is located approximately 4.5 miles south of the well this application proposes to use.

Since the Minnelusa aquifer is under unconfined conditions at this well site, the drawdown cone resulting from pumping this well is not expected be significant very far from the well. The distances between this proposed well and existing water rights is sufficient for the diversion rate proposed to minimize well interference. Existing rights are not expected to be unlawfully impaired if this application is approved.

CONCLUSIONS:

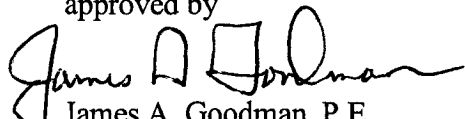
1. The Minnelusa is a viable aquifer in this area
2. The Minnelusa aquifer is under unconfined conditions at this well site.
3. There is a reasonable probability that unappropriated water is available for this appropriation.
4. Existing water rights are not expected to be unlawfully impaired if this application is approved.



Ken Bühler

SD DENR-Water Rights Program

approved by



James A. Goodman, P.E.

SD DENR-Water Rights Program

REFERENCES:

Allen, J.C., Iles, D.L., and Petres, A.K., 1984, Analysis of Groundwater and Streamflow Data Western Dakotas Region of South Dakota, Tasks 3A.B.C. and 4A.B.: Groundwater Resource Inventory: South Dakota Department of Water and Natural Resources,

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: U.S. Geological Survey, Rapid City, SD Water-Resources Investigations Report 01-4119, 53 p

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., and Redden, J.A., 1999b, Altitude of the Top of the Minnelusa Formation in the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas HA-744-C, 2 sheets, scale 1:100,000
- Driscoll, D.G., Carter, J.M., Williamson, J.E., and Putnam, L.D., 2002, Hydrology of the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Report 02-4094, 150 p.
- Rahn, P.H., 1979, Ground Water Resources of Western South Dakota: U.S. Army Corps of Engineers, SDSM&T Project #2533
- Redden, J.A., DeWitt, E., 2008, Maps showing geology, structure, and geophysics of the central Black Hills, South Dakota: U.S. Geological Survey Scientific Investigations Map 2777, 44-p. pamphlet, 2 sheets.
- 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
- Strobel, M.L., Galloway, J.M., Hamade, G.R., Jarrell, G.J., 2000, Potentiometric Surface of the Minnelusa Aquifer in the Black hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas HA-745-C, 2 sheets, scale 1:100,000
- Water Rights Program, 2011a, Observation Well Files, DENR-Water Rights Program, Joe Foss Building, Pierre, SD 57501
- Water Rights Program, 2011b, Water Permit/Right Files, DENR-Water Rights Program, Joe Foss Building, Pierre, SD 57501
- Water Rights Program, 2011c, Well Completion Report Files, DENR-Water Rights Program, Joe Foss Building, Pierre, SD 57501

Affidavit of Publication

State of South Dakota)

)ss.

County of Custer)

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Charles W. Najacht of said county, being duly sworn, on oath says that he is publisher of the Custer County Chronicle, a weekly newspaper printed and published in Custer City, said County of Custer and has full and personal knowledge of all the facts herein stated; that said newspaper is a legal newspaper and has a bona-fide circulation of at least two hundred copies weekly, and has been published within said County for fifty-two successive weeks next prior to the publication of the notice herein, mentioned, and was and is printed wholly or in part in an office maintained at said place of publication: that the

NOTICE OF APPLICATION

NO. 2667-2 TO APPROPRIATE WATER

Notice is given that Wind Cave National Park, c/o Steven D Schremp, 26611 US Hwy 385, Hot Springs SD 57747 has filed an application for a water permit to appropriate 0.11 cubic feet of water per second from one well completed into the Minnelusa Aquifer (400 feet deep) located in SE 1/4 SE 1/4 Section 6-T6S-R6E for use at Wind Cave National Park.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2667-2 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. 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 July 11, 2011.

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

Published twice at the total approximate cost of 6/22, 6/29

Wind Cave Natl Park
Notice of Application

a printed copy of which, taken from the paper in which the same was published, is attached to this sheet, and is made a part of this Affidavit, was published in said newspaper at least once each week for 2 successive week(s), on which said newspaper was regularly published, to wit:

June 22, 2011; June 29, 2011;

_____;

_____;

_____;

_____;

the full amount of the fees for the publication of the annexed notice is \$ 39.51.

Charles W. Najacht

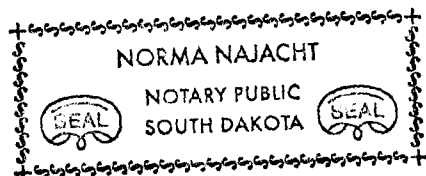
Subscribed and sworn to me before this 29

of June, 2011;

Norma Najacht

NOTARY PUBLIC

MY COMMISSION EXPIRES: May 5, 2012





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

June 14, 2011

Custer County Chronicle
PO Box 551
Custer SD 57730

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 2667-2 to Appropriate Water to be published twice. Please publish the first notice on June 22, 2011 with the second publication 7 days later. 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, before you make the first publication. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Wind Cave National Park, c/o Steven D Schrempp, 26611 US Hwy 385, Hot Springs SD 57747 (Ph # 605-745-4600).

Please send the Water Rights Program the first publication immediately. The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** 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

-----CUT HERE-----

No. 2667-2

TO: Eric Gronlund
Water Rights Program
Joe Foss Building
Pierre SD 57501-3181

Date _____

We are in receipt of your letter of June 14, 2011 enclosing Notice to Appropriate Water by Application No. 2667-2 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

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

June 14, 2011

Wind Cave National Park
Steven D Schrempp
26611 US Hwy 385
Hot Springs SD 57747

Dear Mr. Schrempp:

Water Permit Application No. 2667-2 for institutional use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Publisher of the Custer County Chronicle printed at Custer SD (Ph # 605-673-2217). 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, the publisher has been instructed to publish your notice once each week for two consecutive weeks. 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
eric.gronlund@state.sd.us

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 first Notice on June 22, 2011 with the second publication 7 days later. 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. 2667-2 to Appropriate Water

Notice is given that Wind Cave National Park, c/o Steven D Schrempp, 26611 US Hwy 385, Hot Springs SD 57747 has filed an application for a water permit to appropriate 0.11 cubic feet of water per second from one well completed into the Minnelusa Aquifer (400 feet deep) located in SE ¼ SE ¼ Section 6-T6S-R6E for use at Wind Cave National Park.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2667-2 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. 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 July 11, 2011.

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 twice at the total approximate cost of_____.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

AUG 30 2011

Wind Cave National Park
c/o Steven Schrempp
26611 US Hwy 385
Hot Springs SD 57747

Dear Mr. Schrempp:

Enclosed is Water Permit No. 2667-2 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

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 2667-2

I have this day, April 29, 2016, made a thorough examination of the water use system constructed by Wind Cave National Park, 26611 US Hwy 385, Hot Springs, SD 57747 of Permit No. 2667-2, bearing the priority of 4/11/2011 authorizing the diversion of .011 cu. ft. per second of water from one well for institutional purposes, in Custer County.

Inspection contact & relationship to permit holder, if applicable:

Doug Crossen, Facility Manager
Jeff Simons, Water System Operator
605-745-1140

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Alexander Drilling (2010)
- 2) No. of Wells 1
- 3) Depth(s) 400 feet
- 4) Well log is available Yes

Casing:

- 1) Diameter 7"
- 2) Length 400 feet
- 3) Type Steel

Screen:

- 1) Type Perforated
- 2) Length 100 feet (perforations 220 – 260 ft., 300 – 360 ft.)
- 3) Static water level 190 feet

Pump:

- 1) Make Grundfos
- 2) Model 40S200-50DS
- 3) Size 6"
- 4) Capacity 50 GPM (metered flow per operator and from pump curve)
- 5) Horsepower rating 20 hp

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

Water is delivered to four storage reservoirs located 2 ½ miles west and 495 ft. higher in elevation via a 4" HDPE pipeline. The four reservoirs store a total of 552,670 gallons and gravity feed the entire system except the campground. Water from these reservoirs is boosted an additional 185 ft. to two 10,000 gallon reservoirs gravity feeding the campground. Each pump cycle alternates between 1956 well #1 (license 419-2) and the 2010 well #2 (permit 2667-2). The 2001 well (license 419-2) is used only for monitoring. The pump cycle is controlled by a float in the main reservoir and one pump cycle is approximately 40,000 gallons.

C. Works used to apply water to beneficial use:

The wells supply the entire facility including the visitor center, maintenance and administrative facilities, seasonal housing, the campground and irrigation of the grounds.

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by : **Yes, water use figures are reported annually to DENR**
- 2) Exceptions to compliance are: **none**

E. Condition and Location:

1. The system is in good condition with the point of diversion located as follows:
**SE ¼ SE ¼ S6 T6S R6E (949 ft. north and 83 ft. west of the SE corner),
N 43.552509° W 103.441445°**
2. The works are capable of diverting and conveying to the place of use .11 cu. ft. per second (50 gpm) of water which is to be used for **institutional** use and the license should be issued for **.11 cfs**.

All structures, wells and lands on map – **Yes**

F. Comments or other permit(s) associated with the project:

The park also holds license # 419-2 authorizing .15 cfs



Steven Quissell
Water Rights Inspector
DENR, Water Rights Program

Date report completed: **May 3, 2016**

Report of Examination of Works
Permit No. 2667-2



2010 Well (#2)



1956 Well (#1)



Pump house – 2001 well background (old well #2)



Pump house appurtenances

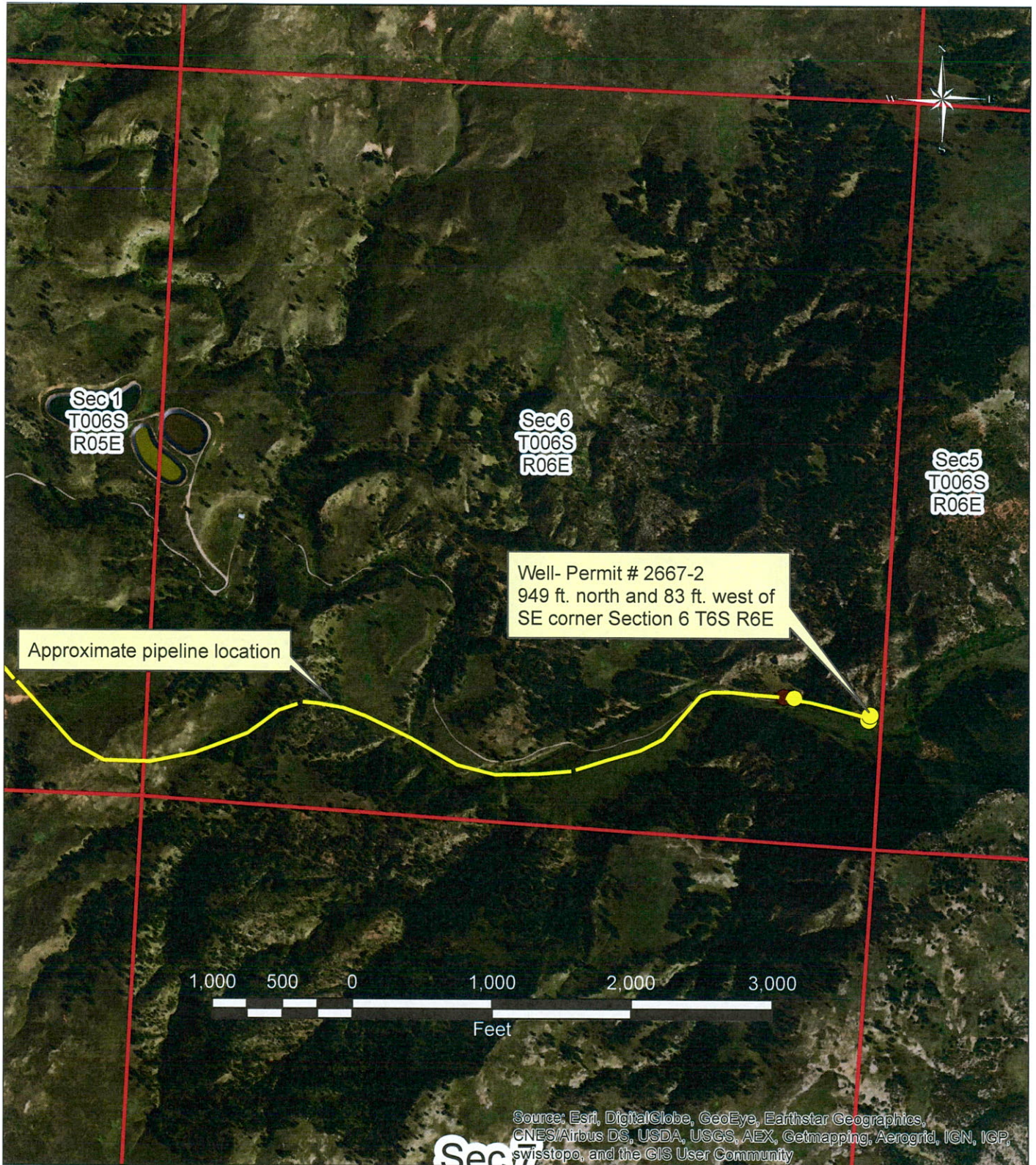


487,090 gallon underground concrete reservoir



Underground reservoirs of 14,800, 25,940, 24,840 gal.

Water Right #2667-2
Wind Cave National Park
4/29/2016

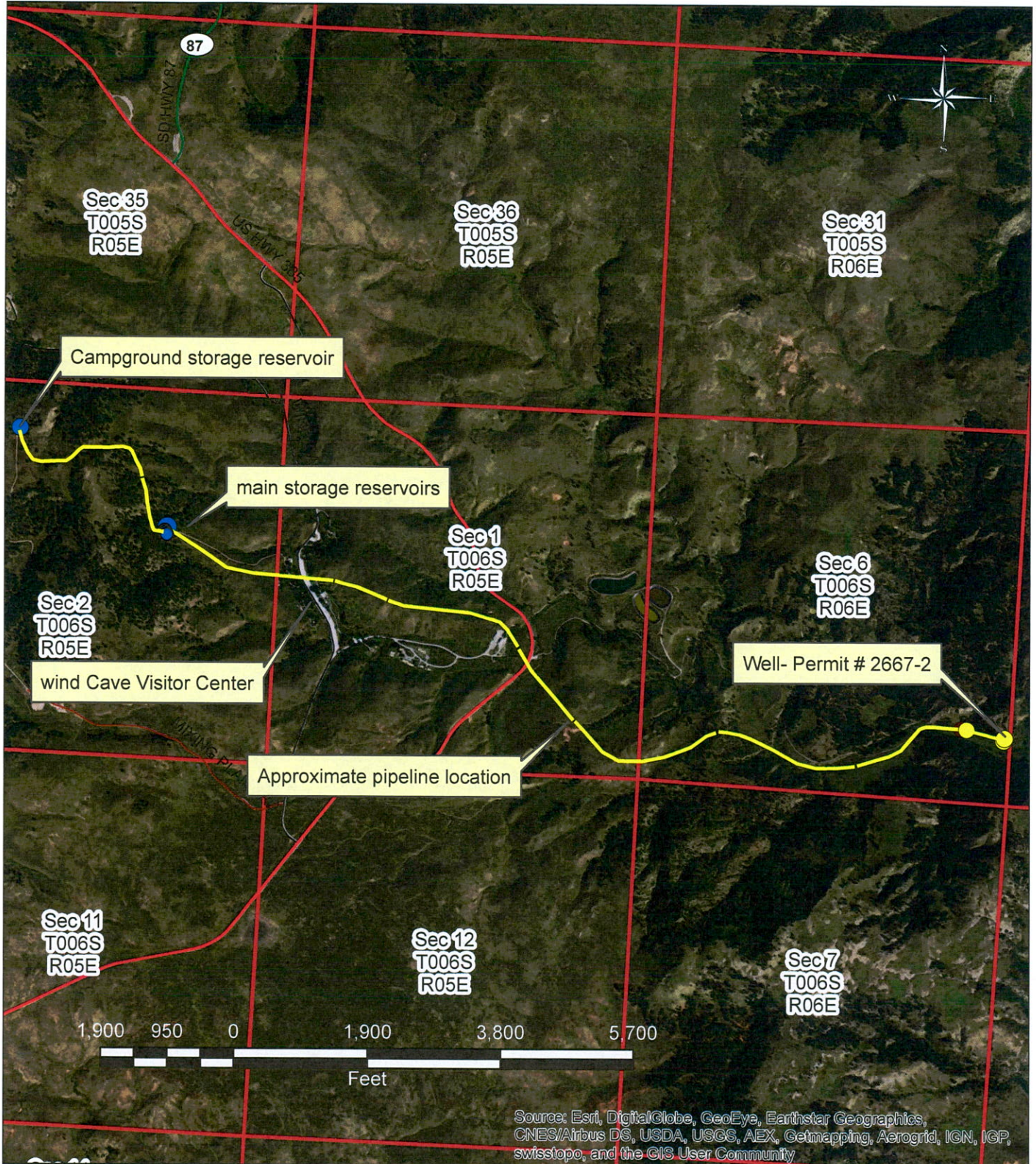


Steven Quissell

Steven Quissell
Water Rights Inspector
DENR Water Rights Program

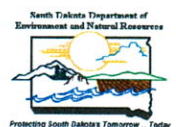


Water Right #2667-2
Wind Cave National Park
4/29/2016

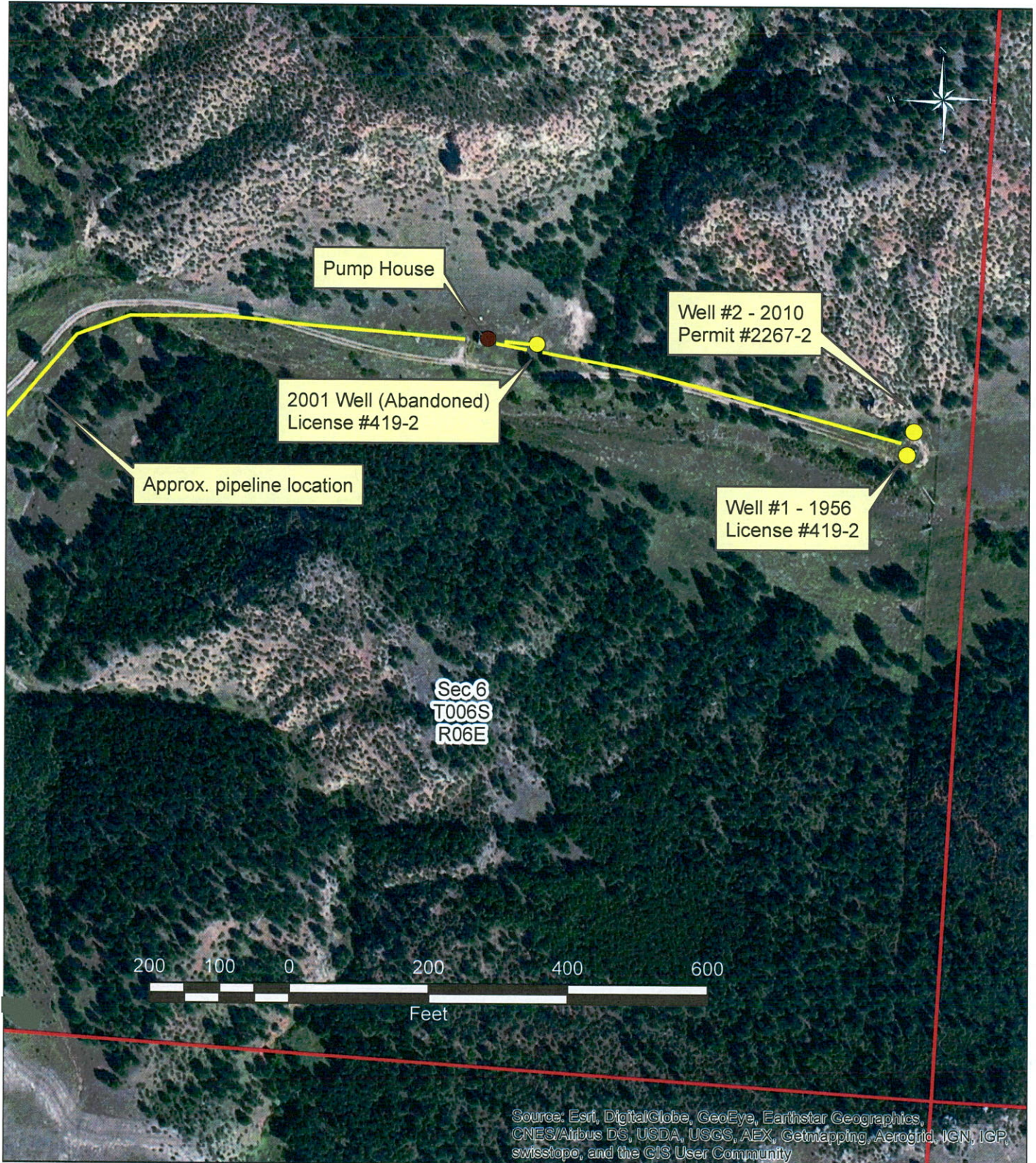


Steven Quissell

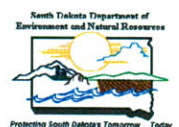
Steven Quissell
Water Rights Inspector
DENR Water Rights Program



Water Right #2667-2
Wind Cave National Park
4/29/2016



Steven Quissell
Water Rights Inspector
DENR Water Rights Program



SD EForm - 1311LD V1

Form 10

**NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USE**

MAIL TO: PMB 2020

Date

4/29/2016

DENR - Water Rights Program

523 E Capitol Ave

Pierre, SD 57501-3182

ph. (605) 773-3352

FROM:

Day Cressen JC

(name)

Wind Cave National Park, 26611 US Hwy 385

(address)

Hot Springs

(city)

S.D.

(state)

57747

(zip)

605-745-4600

(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. 2667-2 states that the water use system is to be constructed by7/11/2016

(date)

, and water is to be put to beneficial use by

7/11/2020

(date)

The water use system was completed on MAY 15, 2014

(date)

Applying the water to beneficial use was completed on MAY 15, 2014

(date)

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



STATE OF SOUTH DAKOTA

WATER LICENSE NO. 2667-2

(1) Wind Cave National Park, 26611 US Hwy 385, Hot Springs SD 57747 made Application No. 2667-2, April 11, 2011 for a water permit to divert 0.11 cubic feet of water per second from one well - Minnelusa Aquifer, Custer County, South Dakota for institutional use purposes. Permit No. 2667-2, with a priority date of April 11, 2011 was approved July 11, 2011 and issued to the applicant for diversion of water with the application to beneficial use of water on or before July 11, 2020.

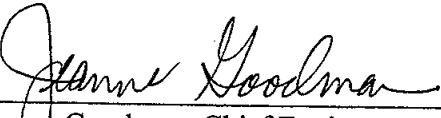
The permit holder submitted a *Notice of Completion of Works and Application of Water to Beneficial Use* on April 29, 2016. The *Notice* stated the diversion system was completed on May 15, 2014 and the water placed to beneficial use on May 15, 2014.

(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. 2667-2 is issued a license, bearing a priority date of April 11, 2011 to appropriate 0.11 cubic feet of water per second from one well - Minnelusa Aquifer for institutional use purposes.

The diversion point is located: 949 feet north and 83 feet west of the SE corner of Section 6-T6S-R6E (SE 1/4 SE 1/4).

(3) This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Permit No. 2667-2 including the following qualifications:

- 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.
- Wind Cave National Park shall report to the Chief Engineer annually the amount of water withdrawn from the Minnelusa Aquifers. *Water use reports are submitted annually and on file with the Water Rights Program.*

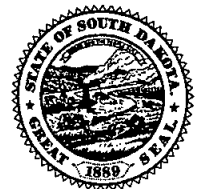


Jeanne Goodman, Chief Engineer
Water Rights Program

Department of Environment and Natural Resources

JUL 01 2016

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

denr.sd.gov

JUL 01 2016

2667-2

Wind Cave National Park
Doug Crossen, Facility Manager
26611 US Hwy 385
Hot Springs SD 57747

Dear Mr. Crossen:

Enclosed is Water License No. 2667-2. This is the final water right document completing your process of obtaining a Water Right. Also, included with your license is a map prepared by the staff engineer who conducted the investigation.

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