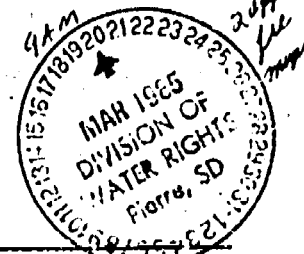


No. 522A-2 Hydrologic Unit 10120/07
 Map No. Same Basin Upper Cheyenne
 Newspaper Custer Co. Chronicle Box 551 (Thurs)

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

Check use of water: Industrial ☐ Commercial ☒ Municipal ☐ Other Common Distribution System ☐
 Rural Water System ☐ Suburban Housing ☐ Geothermal Heat ☐ Institutional ☐ Recreational ☐
 Domestic ☒ (above 18gpm) Other ☐

Type of Application: Check one or more of the following

New ☒ Vested Right ☐ Future Use ☐ Change Use ☐☐ Amend Permit No. _____ with old priority date retainedChange diversion point(s) ☐ Add diversion point(s) ☐ Other ☐ _____☒ Application to: Change diversion point(s) ☐ Add diversion point(s) ☒ on Permit No. 522-2☐ Construction to use water reserved by Future Use Permit No. _____1. Name of Applicant Jewel Cave National Monument Phone No. 673-2288Post Office Address P.O. Box 351, Custer, South Dakota State 57730
(Street, RR or Box) 0.09 Zip Code2. Amount of water claimed (c.f.s.) 0.11 cfs (50 gpm) (522-2 licensed for 0.02 cfs)3. Source of water supply Well4. Location of point of diversion SW $\frac{1}{4}$, NE $\frac{1}{4}$, Section 2, T4S, R2E, Black Hills MeridianThe pre-1965 headquarters area of Jewel Cave National Monument.County Custer5. Counties where water will be used Custer6. Annual period during which water is to be used Year-round

7. Give a brief description of proposed 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)

See information supplied with original application for permit No. 522-2. This well will provide a supplemental water source to back up the existing well. It will be tied into the existing distribution system. The two wells will be used on an alternating basis and will not be used simultaneously so we do not anticipate any overall increase in the amount of water used annually.

Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map (see instruction)

STATE OF SOUTH DAKOTA)
 County of Custer)⁵⁵

I, Dennis L. Ditmanson, Unit Manager, Jewel Cave Nat. Mon. the applicant, certify that I have read the foregoing application, have examined the attached map and that the matters therein stated are true and that I intend, and am able to complete the necessary construction.

Signed [Signature]Subscribed and sworn to before me this 22 day of March 1985

ROBERT A. ALBRECHT
 Notary Public, CUSTER CO., S. DAK.
 My Commission Expires JAN. 7, 1989

Notary Public (or other qualified officer)

WATER PERMIT

The Water Management Board hereby approves Water Permit Application No. 522A-2
Jewell Cave National Monument P.O. Box 351 Custer
(Applicant) (Post Office Address)
South Dakota 57730 With the following qualifications.
(State) (Zip Code)

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.

Date of first receipt of application March 20, 1985.

Date of return to applicant for correction, amendments or changes required —, 19—.

Date of receipt of corrected application —, 19—. Approved May 15, 1985.

The Water Management Board hereby approves this Water Permit No. 522A-2 authorizing the construction of the water use system and the placing of water to beneficial use as stated in the Application and as qualified in the Water Permit approval, subject, however, to the following limitations and conditions:

1. The date from which applicant may claim right is March 20, 1985.
2. The equivalent of at least one-fifth of the specified work is to be completed on or before November 15, 1987.
3. The whole of said work is to be completed on or before May 15, 1990.
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is May 15, 1984.
5. The water appropriated shall be used for the purpose of Commercial Use.
6. The prior right of all persons who, by compliance with the laws of the State of South Dakota, have acquired a right to the use of water must not be unlawfully impaired by this appropriation.
7. The amount of the appropriation herein granted shall not exceed 0.09 cubic feet per second; neither shall it exceed the capacity of the above described water supply system nor shall it exceed the amount of water needed for beneficial uses served and to which water is actually and beneficially applied for Commercial Use on or before May 15, 1994; said water to be used during the following described annual period: January 1 to December 31.

WATER MANAGEMENT BOARD
 By: John Hatch
Chief Engineer
 Division of Water Rights
 Dept. of Water and Natural Resources
JUN 24 1985, 19—

Supplemental Information

(type or print in ink)

1. Well Information - Proposed construction

- a) Drill Hole Diameter 27'-810' - 10 5/8" Depth 810'
- b) Casing Type Steel Diameter 8 5/8" Thickness not less than .322"
- c) Screen Type Not Used perforated 767'-807' w/ 2 3/4" x 1/2" slots @ 8 slots/ft. Diameter Thickness
- d) Gravel Pack Thickness Not Used Cement grouted from surface to depth of 80' Length of Gravel Pack
- e) Depth to Top of Water Bearing Material Approximately 495' (see drillers log)
- f) Depth of Water (ground surface to water level) 420'
- g) Distance to nearest existing domestic well:
On applicants property approximately 150 yds. On property owned by others unknown

2. Dugout Information Estimates

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

3. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below. The locations of each dam should 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) Outlet Dimensions:
Pipe diameter

Spillway width

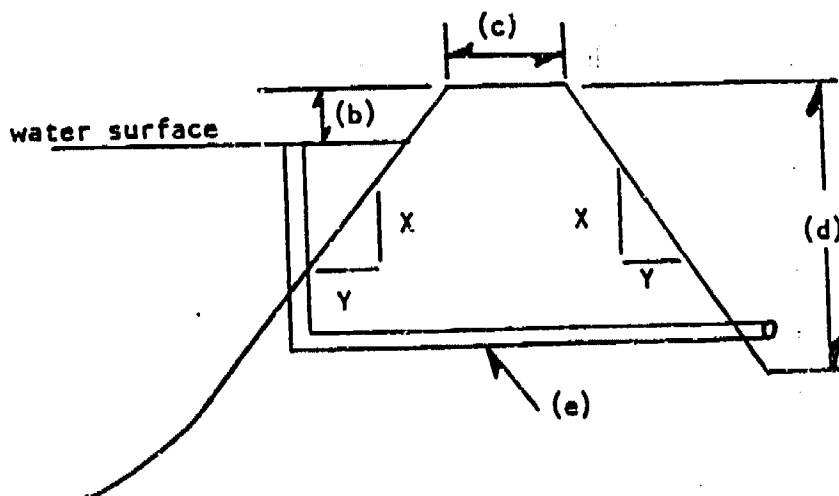
f) X & Y Slope
Upstream

Downstream

Surface Area of Impoundment

Storage acre feet

Drainage area above dam



[Signature]
Signature of Applicant

RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT

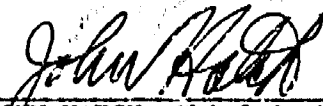
APPLICATION NO. 522A-2, Jewel Cave National Monument

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Water and Natural Resources concerning Water Permit Application No. 522A-2, Jewel Cave National Monument, PO Box 351, Custer SD.

The Chief Engineer is recommending APPROVAL of Application No. 522A-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) in the public interest with 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.

See the attached report for additional information.



JOHN HATCH, Chief Engineer
March 27, 1985

Considered: _____

WATER PERMIT NO. 522A-2

MAP No. Same

Name of Applicant Jewel Cave National Monument

Post Office Address P.O. Box 351 Custer, S.D. 57730

Amount of Water Claimed 0.09 additional Total Acres _____

Source of Water Supply groundwater

Water to be used for Dom County Custer

About _____ miles _____ of _____

PROOF OF PUBLICATION: Received 1st 4-26-85 Not Received _____

APPLICATION: Approved May 15, 1985 Subject to _____

F.F. & C.L. Adopted _____ Not Approved _____ Deferred _____

PRIORITY Date Received 3-20-85 Fee \$50.00 Remarks application for
3-20-85 one additional well and 0.09 cfs additional diversion

Corrected Application Received _____ Period of Annual Use Jan. 1 to Dec. 31

WATER QUALITY APPROVAL RECEIVED N.A. APPROVED/CONDITIONAL (Circle one)

WI-1 Description same as Application YES NO REMARKS _____

Diversion Point SW⁴ NE⁴ sec. 2 T4S-R2E

Land to be Irrigated _____

	2				

Well Log: Driller Taylor Drilling Licensed YES X NO _____

Depth of Well 810 feet REMARKS _____

Type of Map USGS Topo PREPARED BY Dennis Dittmanson Reviewed and the Number
assigned on 3-25-85 By Kevin C. Larson

STATE OF SOUTH DAKOTA WELL DRILLERS REPORT

Location NW 1/4 NE 1/4 Sec 2 Twp 45 Rg 2 E

County

Grater (South Dakota)

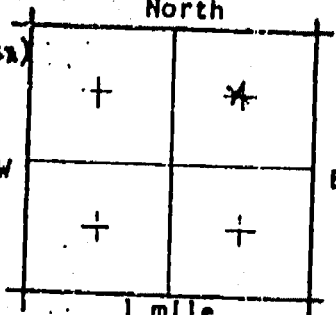
North

W

E

1 mile

Please mark well location with an "X"



Well Completion Date January 4, 1985

PROPOSED USE: ☒ Public ☐ Domestic ☒ Municipal ☐ Test Holes ☐ Irrigation ☐ Industrial ☐ Stock

Method of Drilling:

Air Rotary

WELL CONSTRUCTION:

Diameter of hole 10 3/4 inches Depth 810 feet

Casing: ☒ Steel ☐ Plastic ☐ Other
Specify _____

Pipe Weight Diameter From To
36 lb/ft 8 3/4 inches 0 feet 810 feet
_____ lb/ft _____ inches _____ feet _____ feet

Was a well screen used? ☐ Yes ☒ No

If Not Specify Slot & casing
Screen Type _____ Slot Size 1/4" x 2 1/2"
Length _____ Diameter _____

Was Casing left open end? ☒ Yes ☐ No

Was a Packer or seal used? ☐ Yes ☐ No

If so what material?

Was well gravel packed? ☐ Yes ☒ No

Was well grouted? ☒ Yes ☐ No

Describe grouting procedure grouted from surface

to what depth? 80 feet

What was grouting material? Cement

If cement, how many sacks? 35

Location of packer(s) and screen or perforated

pipe perfs 770-810

8 perfs 1 ft

Was WELL PLUGGED OR ABANDONED? ☐ Yes ☒ No

If so how and with what material?

Well Owner: Ref. # UX-1200-4-B181

Name National Park Service, RMR-AG

Address P.O. Box 25237
Denver, Colorado 80225-0237

Well Log: Att: Ron Hermance Depth

Formation	From	To
<u>Minnelusa</u>	<u>0</u>	<u>40</u>
<u>Madison</u>	<u>40</u>	<u>447</u>
<u>Englewood</u>	<u>447</u>	<u>495</u>
<u>Deerwood</u>	<u>495</u>	<u>810</u>

STATIC WATER LEVEL 420 Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

If other; specify _____

Can well be completely shut off? _____

WELL TEST DATA:

☐ Pumped
☐ Bailed Describe: Air Developed
☒ Other

Pumping Level Below Land Surface

720 ft. After 8 hrs. pumped 200 GPM

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

Remarks: Circulation was lost at 120' so depths of formations are approximate. May have encountered Precambrian ^{within} 100' of T.D.

This well was drilled under license # 331

and this report is true and accurate.

TAYLOR DRILLING COMPANY Ralph Taylor

Drilling Firm Signed by
2310-12 Commerce Road, Rapid City, SD 57702

Date 1-21-85

REPORT ON WATER PERMIT APPLICATION NO. 522A-2

JEWEL CAVE NATIONAL MONUMENT

March 26, 1985

Permit Application No. 522A-2 proposes to add a well to the existing water system and to divert an additional 0.09 cubic feet per second from both wells. The additional well has a total depth of 810 feet and produces water from the Deadwood Formation.

The Deadwood Formation is Cambrian in age and consists of sandstone, dolomite and shale layers. It has a maximum thickness of over 600 feet in northwestern South Dakota and pinches out in northern Fall River County. It is estimated that there are 281 million acre feet of recoverable groundwater in the Deadwood Formation (Rahn, 1979). However, it is utilized very little as a groundwater source with the exception of some domestic and stock wells near the outcrop area. The well log submitted by Taylor Drilling indicates a total depth of 810 feet with the top of the Deadwood at approximately 495 feet. The pumping test data submitted indicates a specific well capacity of approximately 0.75 gpm/ft of drawdown. The casing was grouted from the surface to 80 feet. There are no water permits on file in the area of this application except No. 522-3 which is held by Jewel Cave National Monument.

Conclusions

1. From the pumping data submitted it appears that this well will produce the 50 gpm requested.
2. The well is under artesian conditions with a static water level of 420 feet.
3. The only other well in the area is also owned by Jewel Cave. If both wells are operated at the same time interference may be a problem.
4. The use of the water is a beneficial use.

Kevin C. Larson

KEVIN C LARSON
Natural Resources Engineer III

Rahn, Perry, Ground Water Resources of Western South Dakota SDSM & T, Project No. 2533, August, 1979.

Burch, Stephen, Analysis of Groundwater and Streamflow Data Western Dakotas Region of South Dakota. DWNr, 1984.

Darton, N.H. and Sidney Paige, Geologic Atlas-Central Black Hills Folio, USGS. 1925.

Division of Water Rights "Domestic Well Log File" DWNr-Division of Water Rights, Foss Building, Pierre SD, 1985.

Instruction to Newspaper - Publish first publication of the following Notice on or before April 4, 1985 with 2nd publication 1 week later. The applicant is responsible for payment.

NOTICE OF HEARING on Application No. 522A-2 to Appropriate Water
~~and/or to Amend Water Permit or Water Rights No.~~

Notice is hereby given that Jewel Cave National Monument whose mailing address is P.O. Box 351, Custer, South Dakota has made an application for a permit

to appropriate an additional 0.09 cfs and to add a diversion point to the water supply system authorized by permit No. 522-2. The additional well is 810 feet deep and into the Deadwood formation and is located in the SW1/4 Section 2, T4S-R2E. The water will be used for Jewel Cave National Monument purposes.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends
APPROVAL of Application No. 522A-2 because 1) unappropriated water is available,
2) will be no unlawful impairment of existing rights, 3) is beneficial use of water and
4) is in the public interest.

This application will be considered by the Water Management Board at Civil Defense Room, Basement, Capitol Building, Pierre, SD May 15 1985 at 10:00 am.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to make a determination on this application after it reaches a conclusion based upon facts presented at the public hearing. Any interested person who may be affected by a Board decision and who intends to participate in the hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the Applicant and the Chief Engineer by May 3, 1985. The petition may be informal, but it must include a statement describing the petitioner's interest in the application, the reason for the petitioner's opposition to or support of the application, and the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

This application is made pursuant to the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17, 46-5-1 thru 46-5-16, 46-5-24, 46-5-25, 46-5-30.2, 46-5-31; 46-2A-1 thru 46-2A-10, 46-2A-12; (ground) 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14; (future use) 46-5-38 thru 46-5-40, (transfer lands) 46-5-30.4, 46-5-33 thru 46-5-35; (10,000 AFA) 46-5-20.1, 46-5-8.1; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15; (future use) 74:02:01:24 thru 74:02:01:25; (10,000 AFA) 74:02:01:15:02 thru 74:02:01:15:05.

This hearing is an adversary proceeding. The applicant or any person, after filing a petition, has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

Any person wishing a copy of the Chief Engineer's recommendation, further information on this application or to assure access to the hearing by the handicapped can contact the Water Rights Division, DWNHR, Joe Foss Bldg, Pierre SD (605 773-3352) for assistance prior to the hearing date. The time of the hearing will be automatically extended for at least twenty days upon written request of the applicant or any person who has filed a petition to oppose or support the application. The request for extension must be filed with the Chief Engineer by May 3, 1985.

RECEIPT

Division of Water Rights

No 4 9976 -

South Dakota Department of Water and Natural Resources

Pierre, March 20, 1985

RECEIVED OF Jewel Cave Nat'l Monument, PO Box 351, Custer, SD 57730

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

Fee for Application for Permit No. <u>582A-2</u> to Appropriate Water, to construct works and to put water to beneficial use	50	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. _____		
Fee for Filing Transfer Form		
Fee for Filing Extension Request		
Fee for Certified Copy of		
Fee for Print Copy of Map		
Fee for Certifying		
Fee for		
(Any Other Work Provided by Law)	Total	50 00

By

John Hatcher
Chief Engineer JOHN HATCHER (ms)

Form 8 - Proof of Publication - Notice of
Intent to Appropriate Water

No. 1923-2

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Custer) ss.

I, Randall O'Neill hereby
certify that the annexed printed copy of Notice of Intent to Appropriate
Water was taken from the Custer County Chronicle

A newspaper which during the whole time of publication of said notice
herein after stated, has been and is printed and published in the Custer
County Chronicle of Custer

County of Custer and State of South Dakota;
that the said notice was published in said newspaper on the following
two dates:

April 02, 1985

April 09, 1985

Randall O'Neill
(Signature)
Publisher
(Title)
April 02, 1985
(Date Signed)

Cost of Printing: April 02, 85 - 24.35
April 09, 1985 - 12.18
TOTAL - 13.83

Notice of Hearing

NOTICE OF HEARING on Application
No. 522A-2 to Appropriate Water. Notice
is hereby given that Jewell Cave National
Monument whose mailing address is P.O.
Box 351, Custer, South Dakota has made
an application for a permit to appropriate
an additional 0.09 cfs and to add a diver-
sion point to the water supply system
authorized by permit No. 522-2. The addi-
tional well is 810 feet deep and into the
Dakota formation (see location on the
SW corner of Section 2, T4S, R2S, E10S, SD
W8, 100' east of Jewell Cave National
Antiquities Monument, 1923-2).

Pursuant to SDCL 46-2A-2, the Chief
Engineer of the Water Rights Division
recommends APPROVAL of Application
No. 522A-2 because 1) unappropriated water
is available, 2) will be no unlawful
impairment of existing rights, 3) is bene-
ficial use of water and 4) is in the public
interest. This recommendation is subject to
this application will be considered by
the Water Management Board at Civil
Engineers Room, Basement, Capitol Build-
ing, Pierre, SD May 15, 1985 at 10:00
a.m. and 1:00 p.m. The Board will
The recommendation of the Chief En-
gineer is not final or binding upon the
Board and the Board is authorized to make
a determination on this application after
hearing. A conclusion based upon facts
presented at the public hearing. Any in-
terested person who may be affected by a
Board decision and who intends to partici-
pate in the hearing before the Board and
present evidence or cross-examine witnesses
must according to SDCL 1-26, must file a
written petition with BOTH the Applicant
and the Chief Engineer by May 3, 1985.
The petition may be informal, but it must
include a statement describing the peti-
tioner's interest in the application, the rea-
son for the petitioner's opposition (or in
support of the application), and the signa-
ture and mailing address of the petitioner
or his legal counsel. If legal counsel is
obtained, the applicant need not file a
petition. This application is made pursuant to the
provisions of SDCL 46-2A-1 thru 46-2A-15,
46-2A-17, 46-2A-18, 46-2A-19, 46-2A-20,
46-2A-21, 46-2A-22, 46-2A-23, 46-2A-24,
46-2A-25, 46-2A-26, 46-2A-27, 46-2A-28,
46-2A-29, 46-2A-30, 46-2A-31, 46-2A-32,
46-2A-33, 46-2A-34, 46-2A-35, 46-2A-36,
46-2A-37, 46-2A-38, 46-2A-39, 46-2A-40,
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46-2A-217, 46-2A-218, 46-2A-219, 46-2A-220,
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46-2A-997, 46-2A-998, 46-2A-99

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 522-2

(1) WHEREAS, On the 25th day of February, A. D. 1959,
the US National Park Service, Wind Cave National Park,
Hot Springs, SD
 made Water Right Application No. 522-2 for a permit to use .11 cubic feet per second of the waters
 of groundwater (one well)
 County of Custer State of South Dakota, for domestic and public
purposes, and
 (2) WHEREAS, On the 8th day of April, A. D. 1959,
 Permit No. 522-2 with a date of priority of February 25, 1959
 was issued to said applicant for the diversion of said water, and provide for the completion of construction of the water
supply system therein described on or before the 8th day of April, A. D. 1959 and for the
 application to beneficial use of said water on or before the 8th day of April, A. D. 1959

and:

(3) WHEREAS, It is hereby certified that the applicant has complied with the provisions of the laws of the State of South Dakota
 relating to completion of the construction of the water supply system and is entitled to divert .02 cubic feet
 per second of water for beneficial use and,

(4) WHEREAS, It is hereby certified that the applicant has complied with the provisions of the laws of the State of South Dakota
 relating to the application of water to beneficial use of the following extent,

water supplies for domestic, public recreational, fire protection, wildlife
watering for use at Jewel Cave National Monument

(5) NOW, THEREFORE, by the virtue of the authority vested in us by the laws of the State of South Dakota, We hereby grant and confer to U.S. National Park Service, Wind Cave National Park

of Pierre, South Dakota
the holder and owner of said permit No. 522-2 a water right, dating from February 15, 1975
in use of .02 cubic feet per second of the waters
of groundwater (non-salt)

in the County of Custer and State of South Dakota, or so much thereof as may be necessary for the
purposes hereinbelow mentioned, to be diverted at a point just S. corner, Section 2, T10, R2E
at an angle of 55° 05' northwesterly from the section line between S. corner and
the NE corner of the same Section 2

and conducted to and upon through the federal Cave National Monument's distribution
system

for the purpose of domestic and public recreational use

Subject to any Provisions listed in Water Right Permit No. 522-2 and subject to the laws of the State of South Dakota.

WITNESS, My hand and seal of our office at Pierre, South Dakota
this 16th day of March A.D.
Nineteen hundred and Eighty-one

WATER MANAGEMENT BOARD

By: J. R. H. H. H.
Chief Engineer Executive Officer
JRM: HAT

WATER RIGHTS DIVISION
(605) 773-3352

March 21, 1985

Jewel Cave National Monument
P.O. Box 351
Custer, South Dakota 57730

ATTENTION: Dennis L. Ditmanson

Dear Mr. Ditmanson:

I am returning your permit application for your signature and notarization. Also your \$50.00 filing fee will cover a diversion rate of up to 0.10" (45 gpm). Anything above 45 gpm to 75 gpm the filing fee would be \$150.00. We have received your \$50.00. The advertising deadline for the May Water Management Board meeting is March 29, 1985. If you have any questions please contact this office.

Thank you,

Kevin C. Larson
Natural Resources Engineer

KCL:ms
Enc.

SOUTH DAKOTA
Department of
Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

WATER RIGHTS DIVISION
(605) 773-3352

March 21, 1985

Jewel Cave National Monument
P.O. Box 351
Custer, South Dakota 57730

ATTENTION: Dennis L. Ditmanson

Dear Mr. Ditmanson:

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Thank you,

Kevin C. Larson

Kevin C. Larson
Natural Resources Engineer

KCL:ms
Enc.

Mr. Ditmanson:

Thank you for the prompt response and for the opportunity to correct the oversight. Regarding the fee, I called in prior to submitting this application and was advised that this was the required fee to simply modify our existing permit. We are not in need of additional water.

Respectfully,

D.L. Ditmanson

Equal Opportunity Employer



SOUTH DAKOTA
Department of
Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501

Water Rights Division
605 773-3352

522A-2

JUN 24 1985

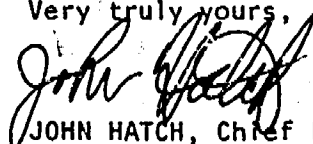
Jewell Cave National Monument
P.O. Box 351
Custer, South Dakota 57730

Dear Sir:

Enclosed herewith is your Water Permit No. 522A-2 as approved by the Water Management Board authorizing you to construct your water diversion system and the water to beneficial use, not exceeding the limits as specified in said Water Permit No. 522A-2.

Also enclosed is Form 10, Notice of Completion of Works and Application of Water to Beneficial Use, which you are to complete and submit to the Chief Engineer when you have completed the system and/or have put the water to beneficial use. An inspection can then be scheduled so that your Water License may be issued to you, thus completing your acquisition of a Water Right.

Very truly yours,



JOHN HATCH, Chief Engineer
Water Rights Division

JH: ms

enclosure

PLEASE NOTE: Certain changes can be made in your permit within the five year construction period, usually without affecting the priority date provided an application to amend your permit is made within the five year period--i.e. changes in location or number of diversion points (wells) or location of land to be irrigated. Well locations for wells into the same aquifer can be moved up to 660 feet without application.

Applications to amend a permit after the five year construction period will be assigned a new priority date. Applications to change water sources, to add lands or increase original diversion rates, if approved will usually receive the date of the new application as a priority date regardless of the five year construction period.

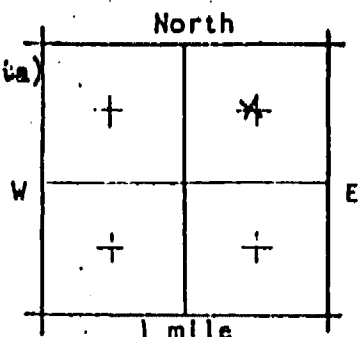
STATE OF SOUTH DAKOTA WELL DRILLERS REPORT

Location NW 1/4 NE 1/4 Sec 2 Twp 45 Rg 2 E

County

Custer (South Dakota)

Please mark well location with an "X"



Well Completion Date January 4, 1985

PROPOSED USE: ☒ Public ☐ Domestic ☒ Municipal ☐ Test Holes ☐ Irrigation ☐ Industrial ☐ Stock

Method of Drilling:

Air Rotary

WELL CONSTRUCTION:

Diameter of hole 10 3/4 inches Depth 810 feet

Casing: ☒ Steel ☐ Plastic ☐ Other
Specify

Pipe Weight Diameter From To
36 lb/ft 8 3/4 inches 0 feet 810 feet
 lb/ft inches feet feet

Was a well screen used? ☐ Yes ☒ No

If Not Specify Slotted casing

Screen Type Slot Size 1/2" x 2 3/4"
Length Diameter

Was Casing left open end? ☒ Yes ☐ No

Was a Packer or seal used? ☐ Yes ☐ No

If so what material?

Was well gravel packed? ☐ Yes ☒ No

Was well grouted? ☒ Yes ☐ No

Describe grouting procedure grouted from surface

To what depth? 80 Feet

What was grouting material? Cement

If cement, how many sacks? 35

Location of packer(s) and screen or perforated pipe perfs 770-810

8 perfs / ft.

WAS WELL PLUGGED OR ABANDONED ☐ Yes ☒ No

If so how and with what material?

Well Owner: Ref. # CX-1200-4-B181

Name National Park Service, BMR-AC

P.O. Box 25287

Address Denver, Colorado 80225-0297

Well Log: Att: Ron Hermance Depth

Formation	From	To
<u>Minnelusa</u>	<u>0</u>	<u>40</u>
<u>Madison</u>	<u>40</u>	<u>447</u>
<u>Englewood</u>	<u>447</u>	<u>495</u>
<u>Deadwood</u>	<u>495</u>	<u>810</u>

STATIC WATER LEVEL 420 Feet

If flowing: closed in pressure PSI

GPM flow through inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

If other; specify

Can well be completely shut off?

WELL TEST DATA:

☐ Pumped

☐ Balled Describe: Air Developed

☒ Other

Pumping Level Below Land Surface

720 ft. After 8 Hrs. pumped 200 GPM

 ft. After Hrs. pumped GPM

 ft. After Hrs. pumped GPM

Remarks: Circulation was lost at 120' so depths of formations are approximate. May have encountered Precambrian within 120' of T.D.

This well was drilled under license # 331

and this report is true and accurate.

TAYLOR DRILLING COMPANY Ralph Taylor

Drilling Firm Signed by

2310-12 Commerce Road, Rapid City, SD 57702

1-21-85

Date



United States Department of the Interior

NATIONAL PARK SERVICE

JEWEL CAVE NATIONAL MONUMENT
CUSTER, SOUTH DAKOTA 57730

IN REPLY REFER TO:

L54

February 20, 1985

South Dakota Department of
Water and Natural Resources
Water Rights Division
Joe Foss Building
Pierre, South Dakota 57501

Gentlemen:

In December of last year, we undertook the drilling of a test well here at Jewel Cave National Monument. The purpose of this project was to locate a water source to supplement our present well which was drilled in 1959, (S.D. Permit No. 522-2, February 25, 1959.).

Since that time, increased visitation and related developments have greatly increased the need for an additional water source to serve the Monument. Last year 102,000 people visited Jewel Cave. The present well produces at a rate of approximately 7gpm which does not quite keep up with our average daily demand of 10,000 to 12,000 gallons during the heavy use season. The resulting deficit creates problems relating to fire protection and other issues.

The test well was successful in locating a good source of water. The site is approximately 100 yards from the existing well and will be tied into the existing distribution system,

We now are in a position to apply for a permit to utilize this new source. Please forward the appropriate forms and the necessary information to begin this process, along with any other materials we may need.

Thank you for your assistance.

Sincerely,


Dennis L. Dittmanson
Unit Manager



Forms sent 2/25/85

U. S. Department of the Interior
National Park Service, RMR-AC
655 Parfet Street, P.O. Box 25287
Denver, Colorado 80225-0297

Jewel Cave National Monument-Drill Potable Water Well-Drilled by Taylor Drilling Company
Custer, South Dakota 2310-12 Commerce Road
Rapid City, SD 57702

Ref. CX-1200-4-B181

WELL LOG:

Minnelusa formation:

- 0-10 dolomite, medium crystalline, granular, slightly yellow; dolomite very finely crystalline, brown to white; chert; translucent, some spar calcite
- 20 dolomite, same, and some free sand, medium to coarse, rounded
- 30 dolomite, finely crystalline, red to brown, lavender and gray, more sand as above
- 40 dolomite, fine to medium crystalline, lavender, yellow, some sandy, less free sand; trace chert

Madison formation:

- 40-50 limestone, very finely crystalline, white to pale lemon yellow
- 60 limestone, weathered yellow, with yellow clay
- 70 limestone very finely crystalline, light yellow to faintly pink, white; some calcite spar
- 80 limestone, similar, slightly earthy, dolomitic, mostly light gray
- 90 dolomite, slightly earthy, light gray to greenish gray
- 100 dolomite, very finely crystalline, light gray to slightly yellow
- 110 dolomite, same, and some recrystallized cave lining, some chert
- 120 dolomite, very finely crystalline, pastel yellow and pink to white, trace chert.
(Last sample recovered. No returns to T.D.)
- Lost circulation.
- 120-138 hard & fractured
- 138-167 very hard & smooth
- 167-168 void
- 168-180 very hard & fractured
- 180-200 moderately hard
- 200-220 hard w/some fracturing
- 220-238 moderately hard (drilled steady & smooth)
- 238-447 hard to very hard & smooth

Englewood formation? 447

- 447-469 moderately hard & smooth
- 469-495 hard & smooth

Deadwood formation? 495

- 495-720 drilled steady & fairly smooth like SS, appeared to pick-up some water at 495-515 & 530-600, difficult to tell after that, but quite sure more water was encountered between 600' & T.D.
- 720-810 moderately hard & smooth

All measurements are from ground level

T.D.: 810' diameter of borehole: 0-27': 17½"
27-810': 10 5/8"

Static water level: 420'

Sanitary surface seal: 7'-80'

Well cased to 810' w/ 8 5/8" C.D. Casing 36 lbs./L. Ft.

Perforated 767'-807' w/ 2 3/4" X 1/2" slots 8 slots/ft.

U.S. Department of the Interior
National Park Service, RMR-AC
655 Parfet Street, P.O. Box 25287

REF: CX-1200-4-B181

Jewel Cave National Monument-Drill Potable Water Well

Drilled by: Taylor Drilling Company
2310-12 Commerce Road
Rapid City, SD 57702

PUMPING TEST:

STATIC WATER LEVEL: 420'

11/20/84 TIME	GPM	DRAW DOWN LEVEL
12:00 P.M. (noon)	30	420
12:05	30	450
12:10	30	455
12:15	30	458
12:20	30	459
12:25	30	460
12:30	30	460
12:35	70	488
12:40	70	497
12:45	70	499
12:50	70	500
12:55	70	500
1:00	70	500
1:30	70	500
2:00	70	500
2:30	70	500
3:00	70	500
3:30	70	500
4:00	70	500
4:30	70	500
5:00	changed to 60	500
5:05	60	480
recovered to 480 in 2½ minutes		
5:15	60	420
5:20	60	479
5:25	60	484
5:30	60	487
5:35	60	489
5:40	60	490
5:45	60	490
6:00	30	420
6:05	30	453
6:10	30	456
6:15	30	458
6:20	30	459
6:25	30	460
6:30	30	460
6:35	30	460
6:40	30	460
6:45	30	460
6:50	30	460
6:55	30	460
7:00	30	460
7:30	30	460
8:00	30	460
8:30	30	460
9:00	30	460

TIME	GPM	DRAW DOWN LEVEL
9:30	30	
10:00	30	460
10:30	30	460
11:00	changed to 60	460
11:05	60	460
11:10	60	482
11:15	60	486
11:20	60	489
11:25	60	490
11:30	60	491
11:45	60	491
12:00 Midnight	60	491
12:30 A.M.	60	491
1:00	60	491
1:30	60	491
2:00	60	491
2:30	60	491
3:00	60	491
3:30	60	491
4:00	60	491
4:30	60	491
5:00	60	491
5:30	60	491
6:00	60	491
6:30	60	491
7:00	60	491
7:30	60	491
8:00	60	491
8:30	60	491
9:00	60	491
9:30	60	491
10:00	60	491
10:30	60	491
11:00	60	491
11:30	60	491
12:00 Noon	60	491
12:30 P.M.	60	491
1:00	60	491
1:30	60	491
2:00	60	491
2:30	60	491
3:00	changed to 80	491
3:05	80	491
3:10	80	512
3:15	80	518
3:20	80	521
3:25	80	522
3:30	80	522
4:00	80	523
4:30	80	523
5:00	80	523
5:30	80	523
6:00	80	523

U.S. Department of the Interior
National Park Service, RMR-AC
655 Parfet Street, P.O. Box 25287

REF: CX-1200-4-B181

Jewel Cave National Monument-Drill Potable Water Well

Drilled by: Taylor Drilling Company
2310-12 Commerce Road
Rapid City, SD 57702

PUMPING TEST:

STATIC WATER LEVEL: 420'

12/20/84 TIME	GPM	DRAW DOWN LEVEL
12:00 P.M. (noon)	30	420
12:05	30	450
12:10	30	455
12:15	30	458
12:20	30	459
12:25	30	460
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12:35	70	488
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6:45	30	460
6:50	30	460
6:55	30	460
7:00	30	460
7:30	30	460
8:00	30	460
8:30	30	460
9:00	30	460

REF: CX-1200-4-B181 cont'd "PUMPING TEST"

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3:20	80	522
3:25	80	522
3:30	80	523
4:00	80	523
4:30	80	523
5:00	80	523
5:30	80	523
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655 Parfet Street, P.O. Box 25287
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Custer, South Dakota
Ref. CX-1200-4-B181
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Sanitary surface seal: 7'-80'

Well cased to 810' w/ 8 5/8" O.D. Casing 36 lbs./L. Ft.
Perforated 767'-807' w/ 2 3/4" X 1/2" slots 8 slots/ft.

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

NR 416963

Pierre, August 7, 20 01

RECEIVED OF US. Dept of the Interior, National Park Service, Jewel Cave National Monument
the following amount in fees for services rendered as provided for by law: Larry Dilts, PO Box 351, Custer SD 57730

Fee for Application for Permit No. _____ to Appropriate Water, to construct
and to put water to beneficial use _____

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. 522-2 (522A-2)

Fee for Filing Transfer Form _____

Fee for Filing Extension Request _____

Fee for _____

50 00

(Any Other Work Provided by Law)

Total

50 00

By Darlene Erbe
Chief Engineer

Approval of Location Change and/or Additional Diversion Point(s)

NAME: Jewel Cave National Monument

ADDRESS: PO Box 351, Custer, SD 57730

DATE: 10/22/01 **COUNTY:** Custer **TELEPHONE:** (605)673-2061

AUTHORITY:

Pursuant to SDCL 46-5-13.1, the location of a diversion point may be changed or additional diversion points may be licensed provided the following conditions are met and the potential for interference with other existing diversions is not increased:

- **Developed water source same as permitted source and no additional water appropriated**

Water Permit No. 522A-2 authorized an appropriation of 0.09 cubic feet per second (cfs) of water from a well located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 2 T4S R2E for use at the Monument. The system as developed is appropriating 0.02 cfs of water in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 2 T4S R2E within the as permitted Deadwood Formation water source. No additional water is being appropriated.

- **If irrigation, no new land is irrigated**

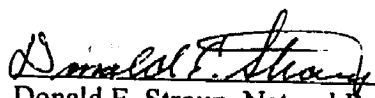
No land is irrigated, water is for commercial use.

- **Review of Existing Diversions**

This action does not interfere with any existing diversions.

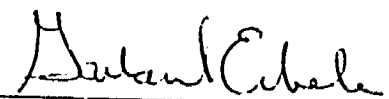
RECOMMENDED ACTION

Based on the above criteria, it is recommended that the diversion point be licensed as developed in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 2 T4S R2E.

 10/22/01
Donald E. Stroup, Natural Resources Project Engineer
Water Rights Program

The Chief Engineer makes a finding pursuant SDCL 46-5-13.1 and ARSD 74:02:01:14.01 that:

This change in location and/or additional diversion point(s) does not increase the potential for adverse effects to existing diversions.


Garland Erbele, Chief Engineer
Water Rights Program

**Permit No. 522A-2
Custer County**

To: Chief Engineer, Water Rights Program, DENR Foss Bldg., Pierre, SD 57501

Other permit/license(s) associated with project: **522-2**

Contact Person & Address: Larry Dilts, Jewel Cave National Monument, PO Box 351, Custer, SD 57730

Report Of Examination Of Works

On **October 15, 2001**, I made a thorough examination of the water use system authorizing the appropriation of 0.09 cubic feet per second (cfs) of water from a well for commercial purposes at Jewel Cave National Monument and bearing the priority date of March 20, 1985.

The well and distribution system are in good condition and capable of pumping water at 10 gallons per minute (gpm) or 0.02 cfs. The diversion point for the well permitted by No. 522A-2 is in the NW¼ NE¼ Section 2 T4S R2E (N43.7357° W103.8414°), 3695-feet East and 898-feet South of the Northwest Corner of the section. The diversion point for the well licensed by No. 522-2 is in the SE¼ NE¼ Section 2 T4SR2E 4170-feet East and 1580-feet South of the Northwest Corner of the section.

Review of Permit Qualifications And Regulations:

- 1) Special qualifications to permit being abided by: **Yes**
- 2) All structures, wells and lands on map: **Yes**
- 3) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period: **NA**
- 4) Exceptions to compliance are: **None**

Report On the Specifics of the System

Diversion Point Information:

- | | |
|---|-----------------------------------|
| 1) Well Drilling Firm: Taylor Drilling Co. | 2) No. of Wells: 1 |
| 3) Depth(s): 810-feet | 4) Well log available: Yes |

Casing:

- 1) Diameter: **8.625-inch**
- 2) Length: **810-feet**
- 3) Type: **Steel**

Screen:

- | | |
|--|---------------------------|
| 1) Type: Slotted Pipe | 2) Length: Unknown |
| 3) Static water level: 420-feet | |

Pump\ Motor:

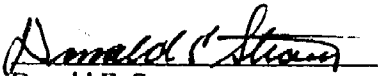
- | | |
|---|-------------------------------------|
| 1) Pump Make: Unknown, Submersible, Electric | 2) Pump Model: NA |
| 3) Capacity: 10 gpm | 4) Motor Make: NA |
| 5) Motor Model No.: Unknown | 6) Horsepower rating: 1.5 hp |

Distribution System:

- 1) Type: **Tied into existing system documented under License 522-2**
- 2) Length: **NA feet**

COMMENTS:

License No. 522-2 and Permit No. 522A-2 should be incorporated into one license with priority dates of 2/25/59 and 3/20/85, 0.02 cfs each date for a total of 0.04 cfs of water diverted. The diversion point for No. 522A-2 should be changed to the NW¼ NE¼ Section 2 T4S R2E.



Donald E. Stroup

Natural Resources Project Engineer
DENR, Water Rights Program

10/27/01
Date



October 30, 2001

522A-2
DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

522-2

Jewel Cave National Monument
Larry Dilts
PO Box 351
Custer SD 57730

Dear Mr. Dilts:

On October 15, 2001 the investigation of your water use system, including the extent of application of water to beneficial use, as developed under Water Permit No. 522-2, was completed by Donald E Stroup, a staff engineer with our program. The final water right document, the water license, can now be issued.

State law requires that we charge a \$50.00 fee for the investigation and issuance of the water license. Upon receipt of the \$50.00 fee from you, we will complete processing your water license. The check or money order for the fee should be made payable to the "Water Rights Program".

Your licensed water right will be similar to a property right that can not be lost as long as the water use continues and you abide by the permit requirements.

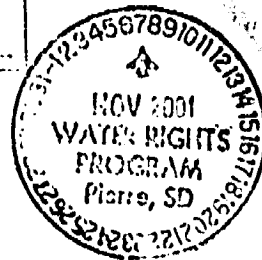
If you have any questions regarding the water permit, investigation of your water use system or payment of the fee, please contact Genny McMath with our program at (605) 773-3352.

Sincerely,

Karen Schlaak

Karen Schlaak
Environmental Scientist
Water Rights Program
(605) 773-3352

Approved for payment by <i>Larry D. Dilts</i>
Justification: <i>State Requirement</i>
Account No.: <i>1569-MW2</i>
Budger Object Class: <i>(254A)</i>
PAID-THIRD PARTY DRAFT
TRD # <i>DEI # 53 1569-C-1082</i>





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

DEC 07 2001

522A-2

Jewel Cave National Monument
PO Box 351
Custer, SD 57730

Dear Sir:

Enclosed is Water License No. 522A-2. This is the final water right document completing your process of obtaining a Water Right. Enclosed is Receipt No. 416963 in the amount of \$50.00 which you paid for the investigation and issuance of the Water License.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the well authorized by Water Right No. 522A-2, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

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

Sincerely,

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

enclosures

STATE OF SOUTH DAKOTA
WATER LICENSE NO. 522A-2

(1) Jewel Cave National Monument, PO Box 351, Custer SD 57730 made Application No. 522A-2, March 20, 1985 for a water permit to divert 0.09 cubic feet of water per second (cfs) from groundwater (one well), Custer County, South Dakota for commercial use purposes. Permit No. 522A-2, with a priority date of March 20, 1985 was approved May 15, 1985 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before May 15, 1990 and for the application to beneficial use of said water on or before May 15, 1994.

Water Right No. 522-2, with a priority date of February 25, 1959 authorized 0.02 cfs from one well. The applicable portions of No. 522-2 have been incorporated into No. 522A-2.

An investigation conducted for licensing purposes found an additional diversion point developed under Water Permit No. 522A-2. Pursuant to SDCL 46-5-13.1, the Chief Engineer makes a finding that the additional diversion point does not increase the potential for interference with existing water rights.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 0.04 cubic feet of water per second for beneficial use. The location of the diversion points are: No. 522-2 - 4,170 feet east and 1,580 feet south of the northwest corner (SE 1/4 NE 1/4) and No. 522A-2 - 3,695 feet east and 898 feet south of the northwest corner (NW 1/4 NE 1/4); both located in Section 2-T4S-R2E.

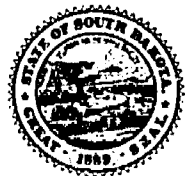
(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use.

(4) Pursuant to South Dakota Water Law 46-5-30.1 Jewel Cave National Monument, PO Box 351, Custer SD 57730 the holder and/or owner of Incorporated Water Right No. 522A-2 is issued a license to appropriate water, the right to use 0.04 cubic feet of water per second from groundwater (two wells) with priority dates of February 25, 1959 (0.02 cfs) and March 20, 1985 (0.02 cfs) from the locations specified in (2) of this license for commercial use purposes. This license is subject to any limitations or qualifications listed in Incorporated Water Right No. 522A-2 and subject to South Dakota State Law.

Garland Erbele

GARLAND ERBELE, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

DEC 07 2001
date



GEOLOGICAL SURVEY

43°45'

ATOMIC ENERGY COMMISSION



UNIT MANAGER

APP # 522 A-2

#522A-2
Jewel Cave National Monument
PO Box 351
Custer, SD 57730

Jewel Cave National Monument

522A-2 Well

522-2 Well

Donald E. Stroup 10/22/01
Donald E. Stroup
Natural Resources Project Engineer
DENR Water Rights Program

0.8 0 0.8 1.6 Miles

Donald E. Stroup 10/22/01
Donald E. Stroup
Natural Resources Project Engineer
DENR Water Rights Program

522A-2

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
ATOMIC ENERGY COMMISSION

103°52'30"
43°45'

NW 1/4 NE 1/4
Sec 2 T45 R2E

50'

R. 2 E.

(SIGNAL HILL) R. 3 E.

