

Considered: \_\_\_\_\_

WATER PERMIT NO. 1359-1

MAP No. same

Name of Applicant City of Spearfish

Post Office Address 722 Main Street

Amount of Water Claimed 2.00 Total Acres N/A

Source of Water Supply groundwater - Madison Formation

Water to be used for municipal use County Lawrence

About — miles — of Spearfish

PROOF OF PUBLICATION: Received 8/1/86 Not Received \_\_\_\_\_

APPLICATION: Approved Sept 3, 1986 Subject to \_\_\_\_\_

F.F. & C.L. Adopted \_\_\_\_\_ Not Approved \_\_\_\_\_ Deferred \_\_\_\_\_

PRIORITY \_\_\_\_\_ Date Received May 26, 1986 Fee \$475<sup>00</sup> Remarks \_\_\_\_\_

5/26/86

Corrected Application Received June 12, 1986 Period of Annual Use Jan 1 - Dec 31

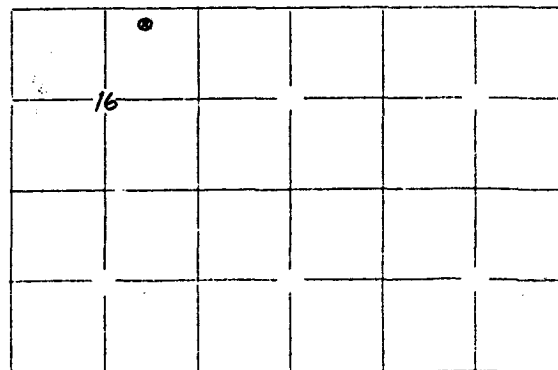
WATER QUALITY APPROVAL RECEIVED N/A APPROVED/CONDITIONAL (Circle one)

WI-1 Description same as Application YES — NO — REMARKS \_\_\_\_\_

Diversion Point well: NW 1/4 NE 1/4 of

sec. 16 - T6N - R2E

Land to be Irrigated NA



Well Log: Driller \_\_\_\_\_ Licensed YES — NO —

Depth of Well 900 ft REMARKS Proposed well depth

Type of Map Plat PREPARED BY Neil Stodolski Reviewed and the Number

assigned on June 13, 1986 By Ron Duwall

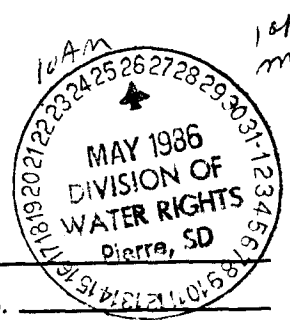
No. 1359-1 Hydrologic Unit 10120203  
 Map No. same Basin Belle Fourche R.  
 Newspaper Queen City Mail, Box 7 (Wed)

**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 retained  
☐ Change diversion point(s) ☐ Add diversion point(s) ☐ Other ☐ \_\_\_\_\_  
☐ Application to: Change diversion point(s) ☐ Add diversion point(s) ☐ on Permit No. \_\_\_\_\_  
☐ Construction to use water reserved by Future Use Permit No. \_\_\_\_\_



1. Name of Applicant City of Spearfish Phone No. 642-2666  
 Post Office Address 722 Main Street State 57783  
(Street, RR or Box) Zip Code  
 2. Amount of water claimed (c.f.s.) ~~10~~ 2.00  
 3. Source of water supply Madison  
 4. Location of point of diversion In NW $\frac{1}{4}$  NE $\frac{1}{4}$ , Sec. 16, T6N R2E B.H.M. Approximately  
400' South Of Section Line And 100' West of 1/16 Line.  
\_\_\_\_\_ County Lawrence  
 5. Counties where water will be used Lawrence  
 6. Annual period during which water is to be used January <sup>1</sup> Through December 31  
 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)

City of Spearfish intends to add a well for their municipal water supply.

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 Lawrence ss

I, Wilbur S. Tretheway 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 Wilbur S. Tretheway

Subscribed and sworn to before me this 14th day of May 1986

Theresa J. Harris  
 Notary Public (or other qualified officer)

# WATER PERMIT

The Water Management Board hereby approves Water Permit Application No. 1359-1  
City of Spearfish 722 Main Street, Spearfish  
(Applicant) (Post Office Address)  
SD 57783 With the following qualifications.  
(State) (Zip Code)

1. The construction of the proposed well shall include pressure grouting with cement of the casing from the top of the producing formation to the surface and compliance with Board well construction rules.

2. 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 May 26, 1986.

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

Date of receipt of corrected application \_\_\_\_\_, 19\_\_\_\_. Approved September 3, 1986.

The Water Management Board hereby approves this Water Permit No. 1359-1 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 May 26, 1986.

2. The equivalent of at least one-fifth of the specified work is to be completed on or before February 3, 1989.

3. The whole of said work is to be completed on or before September 3, 1991.

4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is September 3, 1995.

5. The water appropriated shall be used for the purpose of municipal 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 2.00 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 municipal use on or before Sept. 3, 1995; said water to be used during the following described annual period: Jan 1 - Dec 31

WATER-MANAGEMENT BOARD  
By: John R. Hald  
Chief Engineer  
Division of Water Rights  
Dept. of Water and Natural Resources  
NOV 14 1986, 19\_\_\_\_

# Supplemental Information

(type or print in ink)

## 1. Well Information - Proposed construction

- a) Drill Hole Diameter 16" Depth 900
- b) Casing Type Steel Diameter 14" Thickness
- c) Screen Type N/A Diameter N/A Thickness N/A
- d) Gravel Pack Thickness N/A Length of Gravel Pack N/A
- e) Depth to Top of Water Bearing Material 600'
- f) Depth of Water (ground surface to water level) 600'
- g) Distance to nearest existing domestic well:  
 On applicants property  On property owned by others 800'

## 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

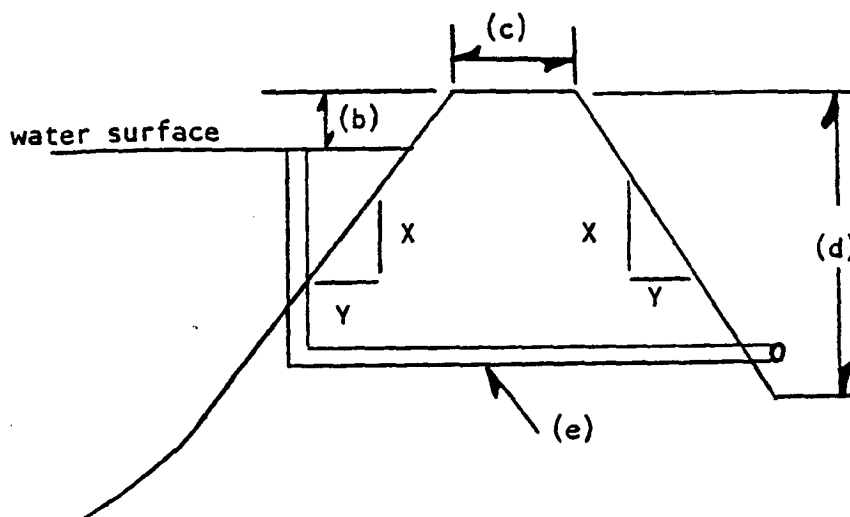
f) X & Y Slope  
 Upstream

Downstream

Surface Area of Impoundment

Storage  acre feet

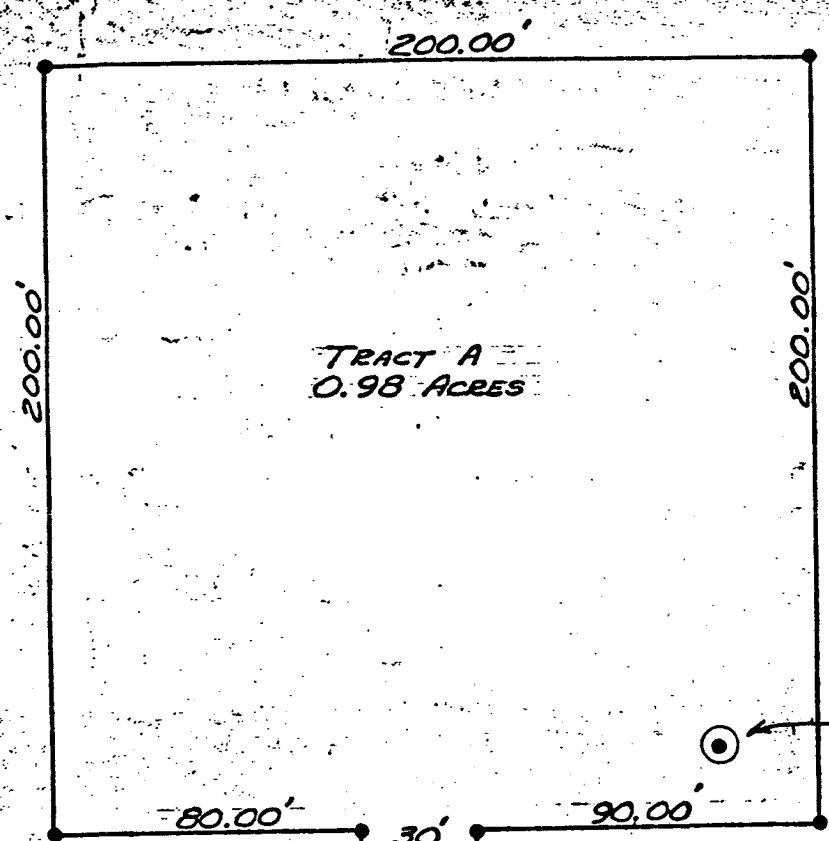
Drainage area above dam



William D. Lathrop  
 Signature of Applicant

BOOK 6 PAGE 305

PLAT OF TRACT A OF THE NW 1/4 NE 1/4 AND  
TRACT A OF THE NE 1/4 NE 1/4  
OF SEC. 16, T6N, R2E BHM



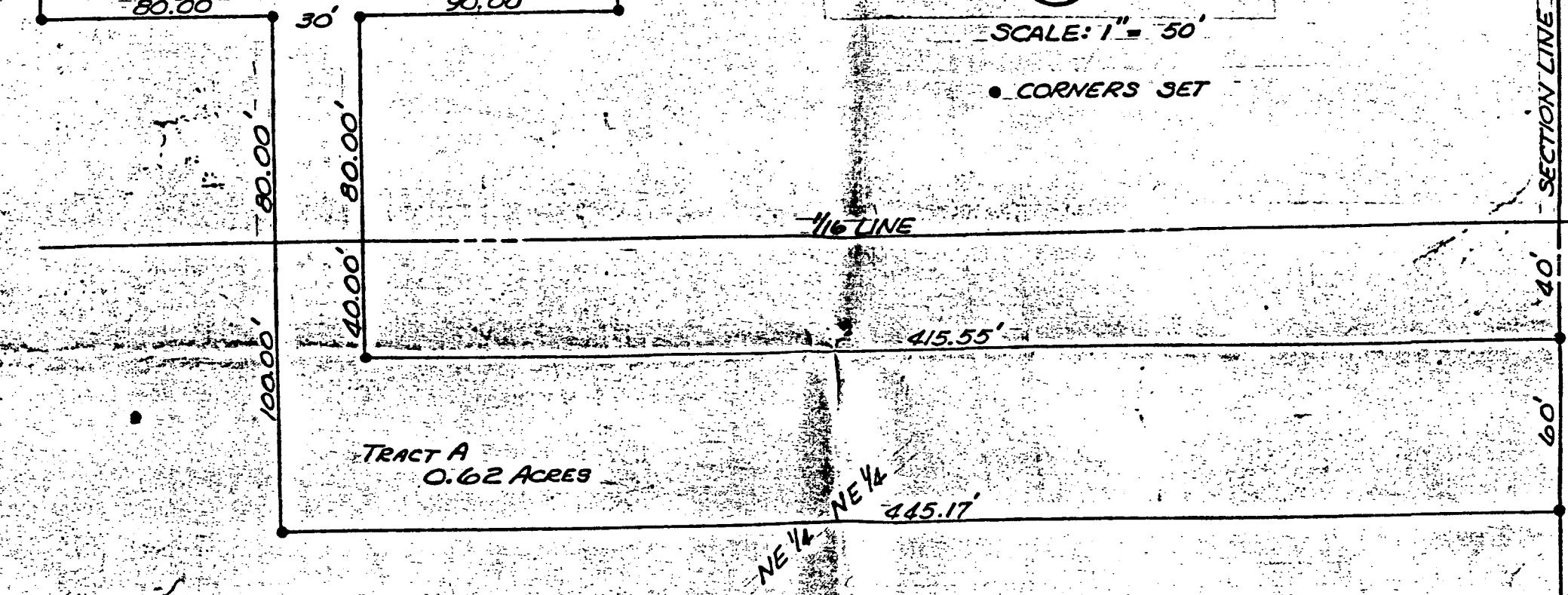
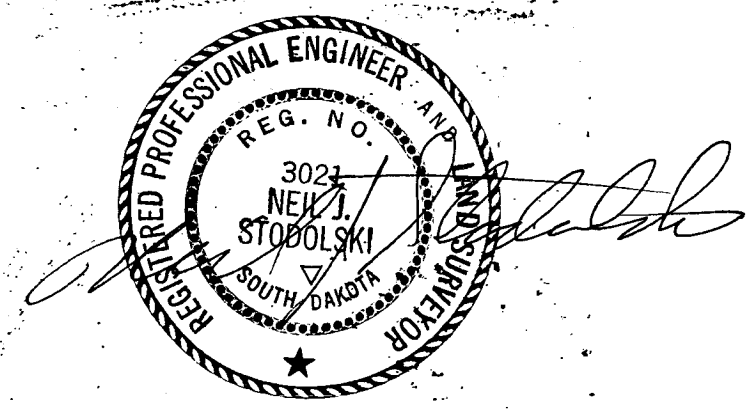
NW 1/4 NE 1/4

PROPOSED WELL SITE



SCALE: 1" = 50'

• CORNERS SET



SURVEYOR'S CERTIFICATE

Appl. No. 1359-1

# RECEIPT

Division of Water Rights

South Dakota Department of Water and Natural Resources

410485

Pierre, June 12, 1986

RECEIVED OF City of Spearfish, 722 Main, Spearfish, SD 57783

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

|                                                                                                                       |     |    |
|-----------------------------------------------------------------------------------------------------------------------|-----|----|
| Fee for Application for Permit No. 1359-1 to Appropriate Water, to construct works and to put water to beneficial use | 475 | 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)                                                                              |     |    |
| <b>Total</b>                                                                                                          | 475 | 00 |

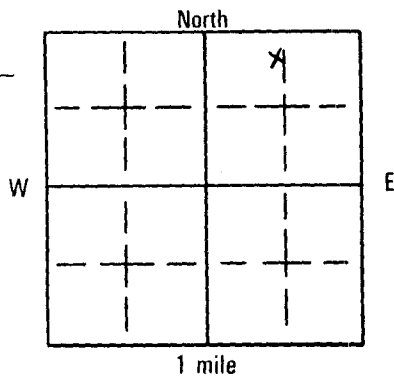
By John Hatch  
Chief Engineer JOHN HATCH/ms

## SOUTH DAKOTA WATER WELL COMPLETION REPORT

1359-1  
10-85Location NW 1/4 NE 1/4 Sec 16 Twp 6N Rg 2E

County \_\_\_\_\_

Please mark well location with in "X"

Well Completion Date November 17, 1987

## PROPOSED USE:

☐ Domestic ☒ Municipal ☐ Test Holes  
☐ Irrigation ☐ Industrial ☐ Stock

Method of Drilling:

Air Rotary

## CASING DATA:

☒ Steel ☐ Plastic ☐ Other

If other describe \_\_\_\_\_

| PIPEWEIGHT  | DIAMETER  | FROM     | TO       | HOLE DIAMETER |
|-------------|-----------|----------|----------|---------------|
| 4 LB/FT     | 10 IN     | 0 FT     | 40 FT    | 12 1/2 IN     |
| 5 LB/FT     | 12 3/4 IN | 0 FT     | 600 FT   | 14 3/4 IN     |
| 40 LB/FT    | 10 3/4 IN | 570 FT   | 631 FT   | 11 7/8 IN     |
| _____ LB/FT | _____ IN  | _____ FT | _____ FT | _____ IN      |

## GROUT:

Was the well grouted? ☒ YES ☐ NOTo what depth? 631 FEETWhat is grouting material? cementIf cement, number of sacks? ~350Describe grouting procedure all 3 casing strings are pressure grouted in place through the casingWhat was grout weight? 16 LB/GALSCREEN ☐ Perforated pipe ☐ Manufactured

Diameter \_\_\_\_\_ IN Length \_\_\_\_\_ FEET

Material \_\_\_\_\_

Slot Size \_\_\_\_\_ Set From \_\_\_\_\_ Feet To \_\_\_\_\_ Feet

Slot Size \_\_\_\_\_ Set From \_\_\_\_\_ Feet To \_\_\_\_\_ Feet

Slot Size \_\_\_\_\_ Set From \_\_\_\_\_ Feet To \_\_\_\_\_ Feet

Other information \_\_\_\_\_

Was a packer or seal used? ☐ YES ☒ NO

If so, what material? \_\_\_\_\_

Describe packer(s) and location? \_\_\_\_\_

Was well disinfected upon completion? ☒ YES ☐ NOExplain chlorine solution placed in wellBacteriological analysis ☐ YES ☒ NO

Laboratory sent to \_\_\_\_\_

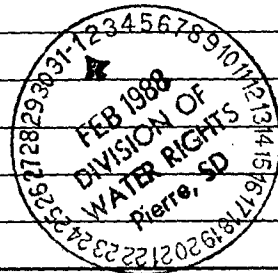
Well Owner:

Name City of SpearfishAddress 440 Canyon Spearfish, SD 57783

Well Log:

Depth

| Formation   | From | To   |
|-------------|------|------|
| Spearfish   | 0    | 20   |
| Minnehakhta | 20   | 60   |
| Opeche      | 60   | 164  |
| Minnelusa   | 164  | 560  |
| Madison     | 560  | 1270 |
| Englewood   | 1270 | 1305 |
| Whitewood   | 1305 | 1320 |

STATIC WATER LEVEL 140 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 in? \_\_\_\_\_

## WELL TEST DATA:

☒ Pumped☐ Bailed

Describe: \_\_\_\_\_

☐ Other

Pumping Level Below Land Surface

617 ft. After 12 1/2 Hrs. pumped 610 GPM

\_\_\_\_\_ ft. After \_\_\_\_\_ Hrs. pumped \_\_\_\_\_ GPM

\_\_\_\_\_ ft. After \_\_\_\_\_ Hrs. pumped \_\_\_\_\_ GPM

## REMARKS:

10 3/4" liner was set into the top of the Madison because red shale-filled caverns were encountered between 600' & 620'.

This well was drilled under license # 331

And this report is true and accurate.

Drilling firm TAYLOR DRILLING COMPANY

Signature of License Representative:

Ralph Taylor

Signature of Well Owner:

Date \_\_\_\_\_

# City of Spearfish

722 Main Street

South Dakota 57783

May 23, 1986

From Office Of



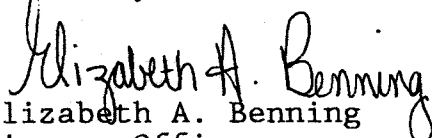
Water Rights Division  
DWNR  
Foss Building  
Pierre, SD 57501

Gentlemen:

Enclosed is an Application for Permit to Appropriate Water within the State of South Dakota for the City of Spearfish. We request this application be considered at your next Water Management Board meeting. The City will remit the application fee subsequent to our June 2nd City Council meeting.

If you have any questions, please call Water Superintendent Kyte at 642-8271 or the engineer hired by the City - Neal Stodolski, 642-4772.

Sincerely,

  
Elizabeth A. Benning  
Finance Officer

EAB:gh

# JOHN PAUL GRIES

Consulting Geologist

238 ST. CHARLES STREET  
RAPID CITY, SOUTH DAKOTA



City of Spearfish, Kyte Well

Loc. NW $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 16, T. 6 N., R. 2 E., Lawrence Co., SD

Drilled July 1987 by Taylor Drilling Co., Rapid City.

Engineer N. J. Stodolski, Spearfish

Sample log by J. P. Gries Gamma, Resistivity & caliper logs by USGS

Elevation: Total Depth 925 feet

## Spearfish formation

- 0 - 10 fill and redbeds
- 20 redbeds, weathered

## Minnekahta limestone Drillers top 21' E-log top 19'

- 20 - 40 limestone, very finely crystalline, gray to dark red
- 50 limestone, finely crystalline, pink, yellow, white, brown
- 60 limestone, finely crystalline, gray to red-brown; red shale
- 70 limestone, same; probably all cavings

## Opeche formation Sample top 70' E-log top 60'

- 70 - 80 redbeds; trace lavender
- 90 redbeds; some brecciated and recemented
- 100 redbeds; trace of brecciation
- 160 redbeds
- 170 redbeds, and orange frosted quartz grains, chert fragments, and bits of orange sandy siltstone (old erosion surface on top of Minnelusa)

## Minnelusa formation Sample top 170' E-log top 164'

- 170 - 180 sandstone, fine to medium, rounded, orange, drills to free sand
- 190 sandstone, very fine, orange to white, incoherent; trace pk dol.
- 200 sandstone, fine, white to orange, slightly better cemented
- 210 sandstone, very fine, round, white; drills to free sand
- 230 sandstone, same but better cemented
- 240 sandstone, same, well cemented
- 250 sandstone, medium, fair cementation, yellow to white
- 260 sandstone with trace pink cementation
- 270 sandstone, fine, pink to red, dolomitic,  $\frac{1}{2}$ ; dolomite, finely crystalline, pink to red, sandy
- 280 sandstone, medium, white,  $\frac{2}{3}$ ; dolomite, white to pink,  $\frac{1}{3}$
- 290 sandstone, fine to medium, yellow to white, fairly well cemented
- 310 sandstone, fine to medium, light yellow to white, dolomitic
- 320 dolomite, finely crystalline, earthy, light gray
- 330 dolomite, very finely crystalline, earthy, gray to red-brown
- 350 sandstone, fine to medium, round to subround, red-brown to colorless; some is dolomitic
- 360 sandstone, same,  $\frac{2}{3}$ ; dolomite, finely crystalline, pink,  $\frac{1}{3}$
- 370 dolomite, very finely crystalline, gray,  $\frac{3}{4}$ ; sand, white,  $\frac{1}{4}$
- 380 dolomite, same but grayer
- 390 dolomite, very finely crystalline, gray,  $\frac{3}{4}$ ; sand, fine,  $\frac{1}{4}$
- 400 dolomite, same, gray to pink; some sandy
- 410 dolomite, very finely crystalline, gray to pink, some sandy,  $\frac{1}{2}$ ; sandstone, fine, dolomitic,  $\frac{1}{2}$

# JOHN PAUL GRIES

Consulting Geologist

238 ST. CHARLES STREET

RAPID CITY, SOUTH DAKOTA

Spearfish Kyte, p. 2

- 410 - 440 sandstone, fine, pink, very dolomitic  
450 sandstone, very fine, pink to white, weak dolomite cement  
460 sandstone, fine, very dolomitic, pink to white  
470 dolomite, very finely crystalline, lavender, pink to white  
490 dolomite, very finely crystalline, earthy, gray, pale green, pink  
500 dolomite, same, dense, gray; dolomite, finely crystalline, pink, slightly sandy  
510 dolomite, finely crystalline, gray to lavender, sandy  
520 limestone, fine to medium crystalline, white to pink; 20% red shale  
530 limestone, same, some lavender to red shale; milky chert  
540 limestone, dolomitic, coarsely crystalline, yellow to pink and white; some lavender from above?  
550 limestone, white to gray, 60%; shale, red, 40%  
560 dolomite, very finely crystalline, gray to pink & nearly white

Madison (Pahasapa) formation. E-log top 560' Sample top 560'

- 560 - 580 dolomite, very finely crystalline, dense, white  
590 dolomite, same, dead white to slightly yellow; trace neat cement  
600 dolomite, calcareous, very finely crystalline; some dark red shale  
610 dolomite and shale as above, 50-50. Shale platy but not fissile  
620 dolomite and shale, same, but shale is mottled red and green  
630 limestone, slightly dolomitic, finely crystalline, white, light brown and pink. Reduce hole size for liner seat at 630 feet.  
640 no sample  
650 dolomite, calcareous, pale green cast, faintly pink and white  
660 dolomite, calcareous, finely crystalline, white to faintly lavender  
680 dolomite, very finely crystalline, light tan to white  
700 dolomite, finely crystalline, light tan to white  
710 limestone, finely crystalline, white; some spar calcite  
720 limestone, dolomitic, finely crystalline, white to faintly yellow  
740 dolomite, calcareous, finely crystalline, white to yellow; some intergranular porosity  
760 dolomite, same; some dark red cave earth; trace vuggy porosity  
770 dolomite, finely crystalline to earthy, tan, pink, green; large chips suggest broken drilling & fracture porosity  
790 dolomite, finely crystalline to medium crystalline, white to slightly yellow; trace intergranular porosity  
800 dolomite same to slightly rhombic, some intergranular porosity  
810 dolomite very fine to finely crystalline, glassy, light tan  
820 dolomite, same; some intergranular porosity  
840 dolomite, fine to medium crystalline, glassy; tr. intergran. por.  
860 dolomite, finely crystalline, glassy, white to tan; trace vuggy por.  
870 dolomite, same, some rhombic with trace vuggy and intergran. por.  
880 dolomite, fine to medium crystalline, white to tan  
890 dolomite, medium crystalline, rhombic, some porosity, white  
910 dolomite, medium crystalline to dense, tan to white  
925 dolomite, same with trace oolitic structure. Total depth

129

238 ST. CHARLES STREET  
RAPID CITY, SOUTH DAKOTA

Kyte Well.....Project 1467

930- 940 dolomite, slightly calcareous, very fine to medium crystalline,  
dense, tan to gray; trace spar calcite  
960 dolomite, slightly calcareous, very fine to dense, light brown  
to tan  
1020 dolomite, slightly calcareous, fine to medium crystalline, white  
and brown, trace calcite spar and intergranular porosity  
1040 dolomite, fine to medium crystalline, light brown  
1060 dolomite, same and some dolomite, finely crystalline, white  
1080 dolomite, same but less white  
1100 dolomite, finely crystalline, brown  
1180 dolomite, very finely crystalline, light tan to white  
1220 dolomite, same; some browner, rhombic crystals with intergranular  
porosity  
1240 dolomite, finely crystalline to slightly rhombic, light tan  
1260 dolomite, finely crystalline, white to faintly lavender and pink  
1265 dolomite, finely crystalline, lavender to yellow brown  
1270 dolomite, same with pink cast

1270-1285 dolomite same, and some definitely lavender  
1295 dolomite, finely crystalline, argillaceous, lavender  
1305 dolomite, same and some hard dark gray shale

1305-1320 Total depth Dolomite, same and dolomite, medium crystalline, rhombic crystals with intergranular porosity, light orange tan to pink.

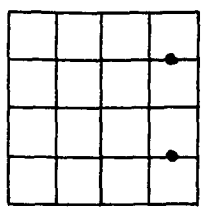
injected

The well was tested with air/at 600 feet. Water was ponded and run through a flow meter. A test at 1272 feet showed about 315 gpm; a similar test at 1320 feet also showed 315 gpm, indicating that no water was picked up in the few feet of Whitewood dolomite at the bottom of the hole.

J. P. Gries  
Certified Professional  
Geologist No. 771

# 1357-1

State So. Dak Farm \_\_\_\_\_  
County Lawrence Company City of Spearfish #4  
Sec. 15 T. 6N R. 2E Driller \_\_\_\_\_



Authority \_\_\_\_\_ Samples \_\_\_\_\_  
Date Spudded \_\_\_\_\_ 1975 Completed 1976  
Elevation 3689 gnd Method \_\_\_\_\_ T.D. 800  
Remarks: Dakota & State St. SE cor Casing: \_\_\_\_\_  
Spearfish Quad Logs: \_\_\_\_\_

660 FAL  
1350 FNL

Static -14' = +3675

Tfs 0 - 50  
MK 50 - 90  
Op. 90 - 200  
M/ 200 - 610  
C 610 - 800



17-6-99

Log of Spearfish City Well  
S $\frac{1}{2}$  NE $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 15, T. 6 N., R. 2 E.  
Lawrence County, S. Dak.  
Sample description by J. P. Gries

Drilled 1975- 1976.  
Elev. 3690 TM  
1150 FNL 600 FEL

Surface

0 - 10 no sample

Spearfish redbeds

10 - 50 siltstone, red, clean

Minnekahta formation

50 - 60 Gypsum or soft limestone  
70 limestone, pink to white, very finely crystalline  
80 limestone, gray to white, very finely crystalline  
90 limestone and faintly lavender siltstone

Opeche formation

90 - 100 siltstone, lavender to brick red  
200 siltstone and clay, brick red

Minnelusa formation

210 siltstone, as above, and sandstone, yellow to white, limy  
220 sandstone, as above, some dolomite, red clay  
230 sandstone, white, tight, limy  
240 sandstone, same, 2/3; dolomite, dense, 1/3  
270 sandstone, fine, white, tight, limy  
280 sandstone, same  
290 no sample  
310 sandstone, fine, white, calcareous or dolomite cemented  
320 sandstone, as above, 2/3; dolomite, dense, 1/3  
330 sandstone, fine, white, calcareous  
340 sandstone, as above, 80%; dolomite, 20%  
350 sandstone, as above, 50%; dolomite, 50%  
360 sandstone, as above, 80%; dolomite, 20%  
370 sandstone, same but coarser  
380 sandstone, fine, 80%; dolomite, anhydritic, 20%  
390 sandstone as above, 20%; dolomite, 80%  
400 dolomite, pink to brown, finely crystalline  
420 dolomite, as above, 50%; sandstone, fine, white, 50%  
430 dolomite, finely crystalline, pink to brown  
440 sandstone, fine, friable, slightly dolomitic  
450 dolomite, 50%; shale, maroon to red, 50%  
460 sandstone, fine, white to pink, slightly dolomitic  
470 sandstone, fine, white, 2/3; dolomite, pink, 1/3  
480 sandstone, as above  
490 sandstone, same, 2/3; shale, dark red, waxy, 1/3



Spearfish 1975 City Well, cont'd

Minnelusa formation, cont'd

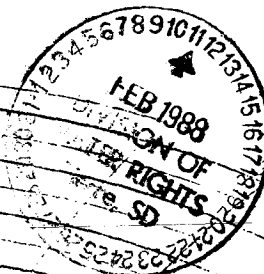
- 490-520 sandstone, fine, white to pink, 2/3; dolomite, red-brown, 1/3;  
trace red shale  
530 shale, hematite red, splintery  
540 shale, same; trace green shale; some dolomite may be detri-  
tal pebbles in shale  
550 dolomite, 1/2; sandstone, 1/2; still much shale, caved?  
570 Mostly red shale and dolomite  
580 probably all finely crystalline glassy dolomite  
590 sandstone, fine, white, 1/2; dolomite, 1/2; some red shale  
610 limestone, dolomitic, finely crystalline, pink, yellow

Pahasapa (Madison) formation

- 610-620 dolomite, very finely crystalline, white  
630, dolomite, same  
670 dolomite, same; much red shale, caved? or new?  
680 sample mostly red shale  
690 dolomite, finely crystalline, white to cream  
700 probably dolomite, almost all red shale in sample  
710 dolomite, white, dense to light brown, sugary  
720 dolomite, white to light gray  
740 probably dolomite, mostly caved shale  
750 dolomite, dense  
755 limestone, very finely crystalline, light gray brown, dense  
760 limestone, same; trace of chert, milky  
765 limestone, same, trace very finely crystalline dense, slightly  
earthy dolomite, light tan  
770 limestone, same, some milky chert, more red shale, probably cvd  
775 limestone, same  
780 limestone, same, and some dolomite as in 765  
785 limestone, same; trace of porosity  
790 limestone, finely crystalline, faintly pink cast, 80%; dol.,  
medium crystalline, glassy, pink to white, 20%  
795 limestone, as above, 50%; dolomite as above, 50%  
800 dolomite, fine to medium crystalline, glassy, milky white to  
faintly pink



TICKET NUMBER



COMPANY

DATE

3 BPM

acid 1500 gal 20% HCL

wait on water

9 1/2 BPM

2200 gal water

9 1/2 BPM

1925 gal water

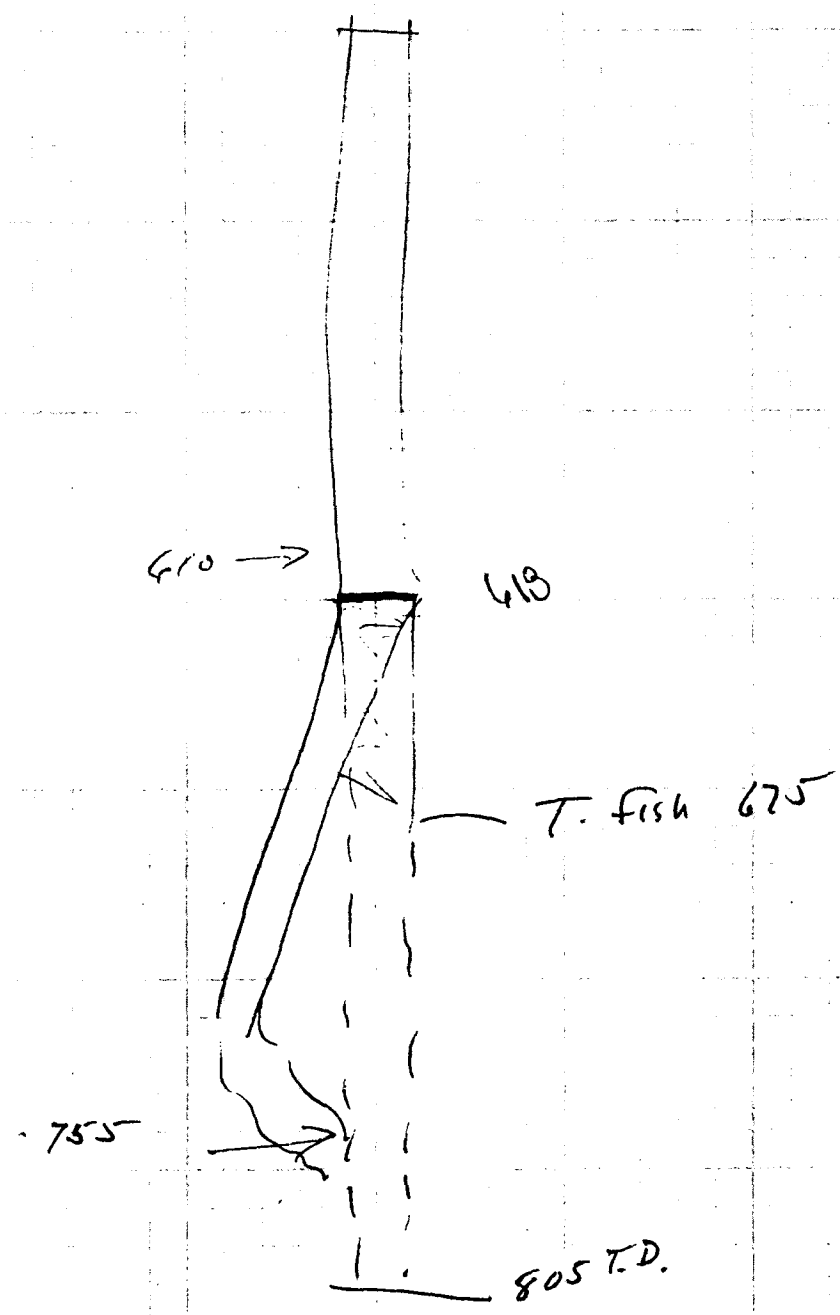
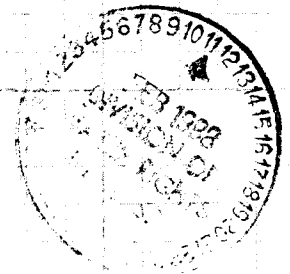
finish

City of Spearfish  
Madison water well  
9-24-76  
acidize down 3 1/4 casing

TRUCK NO.

LEASE

H.R. WELL NO.



JOHN PAUL GRIES

*Consulting Geologist*

238 ST. CHARLES STREET

RAPID CITY, SOUTH DAKOTA

Prognosis for a new Madison Water Well at Spearfish, S. D.

Location: Southwest of town, along Tollgate Flat-Tinton road. Specifically, 400 feet from north line, 2000 feet from east line of

Elevation: Approximately 3800 feet above sealevel.

Projected log:

|                              |             |
|------------------------------|-------------|
| Minnekahta limestone         | 0 - 40 feet |
| Opeche red shale             | 40 - 130    |
| Minnelusa formation          | 130 - 580   |
| Madison (Pahasapa) limestone | 580 - 1180  |

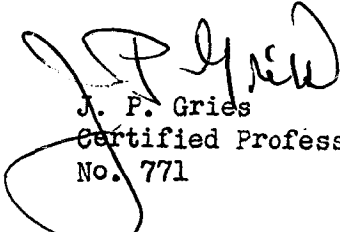
Most of the drilling will be in the Minnelusa formation, which is largely sandstone, with progressively more layers of dolomitic limestone in the lower portion. The details will be similar to those of the Dickey well, a copy of which is appended.

Casing seat. The casing should be set into the top of the Madison, to case out all of the Minnelusa formation. It is desirable to have a geologist on site which drilling below 500 feet. His function is to pick a casing seat as soon as the Madison formation is identified, but before any water-bearing cavities are encountered which would make pressure grouting of the casing difficult.

Static level: Static level in the Madison varies 20 feet or more seasonally. The mean static level is estimated to lie at about 3670 feet above sealevel, or 130 feet below the estimated surface elevation of the new well.

Projected yield and depth: Yield in the Madison formation depends upon the fractures and caverns encountered at any specific drill site. It may be that adequate water will be encountered within the first 200 feet of the formation. If adequate water is not encountered by the time 300 feet have been drilled, I recommend an acid-frac job in which dilute hydrochloric acid is injected under sufficient pressure to fracture the limestone as was done so successfully in City Well #4. Total depth will likely not exceed 880 feet.

JPG/me

  
J. P. Gries

Certified Professional Geologist  
No. 771

Log of Spearfish City Well  
S $\frac{1}{2}$  NE $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 15, T. 6 N., R. 2 E.  
Lawrence County, S. Dak.  
Sample description by J. P. Gries

Drilled 1975- 1976.  
Elev. 3690 TM  
1150 FNL 600 FEL

Surface

0 - 10 no sample

Spearfish redbeds

10 - 50 siltstone, red, clean

Minnekahta formation

50 - 60 Gypsum or soft limestone  
70 limestone, pink to white, very finely crystalline  
80 limestone, gray to white, very finely crystalline  
90 limestone and faintly lavender siltstone

Dpeche formation

90 - 100 siltstone, lavender to brick red  
200 siltstone and clay, brick red

Minnelusa formation

210 siltstone, as above, and sandstone, yellow to white, limy  
220 sandstone, as above, some dolomite, red clay  
230 sandstone, white, tight, limy  
240 sandstone, same, 2/3; dolomite, dense, 1/3  
270 sandstone, fine, white, tight, limy  
280 sandstone, same  
290 no sample  
310 sandstone, fine, white, calcareous or dolomite cemented  
320 sandstone, as above, 2/3; dolomite, dense, 1/3  
330 sandstone, fine, white, calcareous  
340 sandstone, as above, 80%; dolomite, 20%  
350 sandstone, as above, 50%; dolomite, 50%  
360 sandstone, as above, 80%; dolomite, 20%  
370 sandstone, same but coarser  
380 sandstone, fine, 80%; dolomite, anhydritic, 20%  
390 sandstone as above, 20%; dolomite, 80%  
400 dolomite, pink to brown, finely crystalline  
420 dolomite, as above, 50%; sandstone, fine, white, 50%  
430 dolomite, finely crystalline, pink to brown  
440 sandstone, fine, friable, slightly dolomitic  
450 dolomite, 50%; shale, maroon to red, 50%  
460 sandstone, fine, white to pink, slightly dolomitic  
470 sandstone, fine, white, 2/3; dolomite, pink, 1/3  
480 sandstone, as above  
490 sandstone, same, 2/3; shale, dark red, waxy, 1/3

Spearfish 1975 City Well, cont'd

Minnelusa formation, cont'd

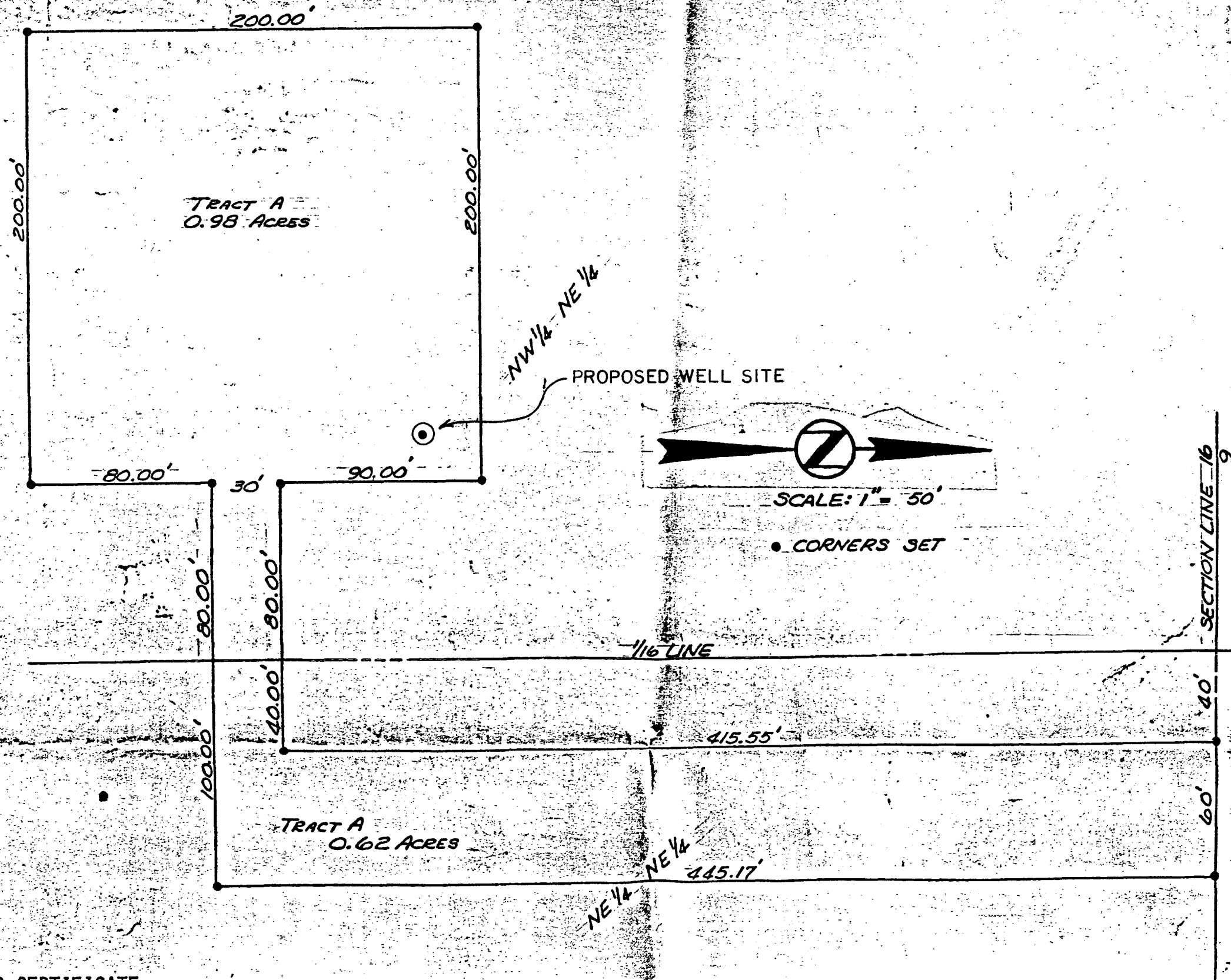
- 490-520 sandstone, fine, white to pink, 2/3; dolomite, red-brown, 1/3;  
trace red shale  
530 shale, hematite red, splintery  
540 shale, same; trace green shale; some dolomite may be detri-  
tal pebbles in shale  
550 dolomite, 1/2; sandstone, 1/2; still much shale, caved?  
570 Mostly red shale and dolomite  
580 probably all finely crystalline glassy dolomite  
590 sandstone, fine, white, 1/2; dolomite, 1/2; some red shale  
610 limestone, dolomitic, finely crystalline, pink, yellow

Pahasapa (Madison) formation

- 610-620 dolomite, very finely crystalline, white  
630, dolomite, same  
670 dolomite, same; much red shale, caved? or new?  
680 sample mostly red shale  
690 dolomite, finely crystalline, white to cream  
700 probably dolomite, almost all red shale in sample  
710 dolomite, white, dense to light brown, sugary  
720 dolomite, white to light gray  
740 probably dolomite, mostly caved shale  
750 dolomite, dense  
755 limestone, very finely crystalline, light gray brown, dense  
760 limestone, same; trace of chert, milky  
765 limestone, same, trace very finely crystalline dense, slightly  
earthy dolomite, light tan  
770 limestone, same, some milky chert, more red shale, probably cvd  
775 limestone, same  
780 limestone, same, and some dolomite as in 765  
785 limestone, same; trace of porosity  
790 limestone, finely crystalline, faintly pink cast, 80%; dol.,  
medium crystalline, glassy, pink to white, 20%  
795 limestone, as above, 50%; dolomite as above, 50%  
800 dolomite, fine to medium crystalline, glassy, milky white to  
faintly pink

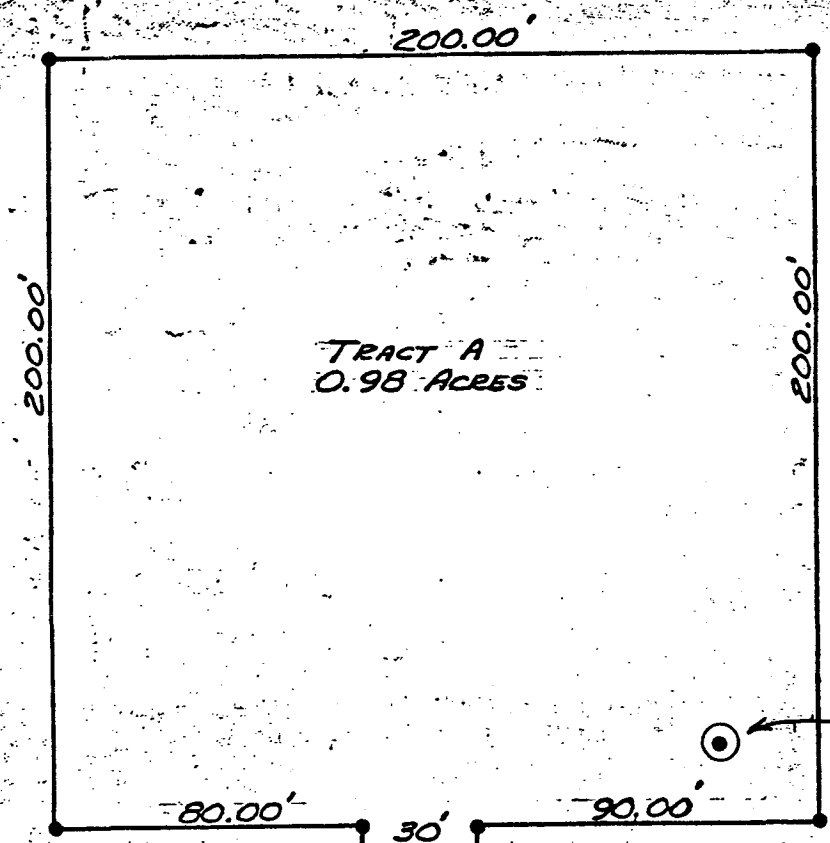
6-11-85

PLAT OF TRACT A OF THE NW 1/4 NE 1/4 AND  
TRACT A OF THE NE 1/4 NE 1/4  
OF SEC. 16, T6N, R2E BHM



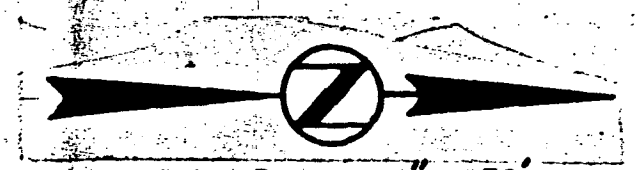
BOOK 6 PAGE 305

PLAT OF TRACT A OF THE NW 1/4 NE 1/4 AND  
TRACT A OF THE NE 1/4 NE 1/4  
OF SEC. 16, T6N, R2E BHM



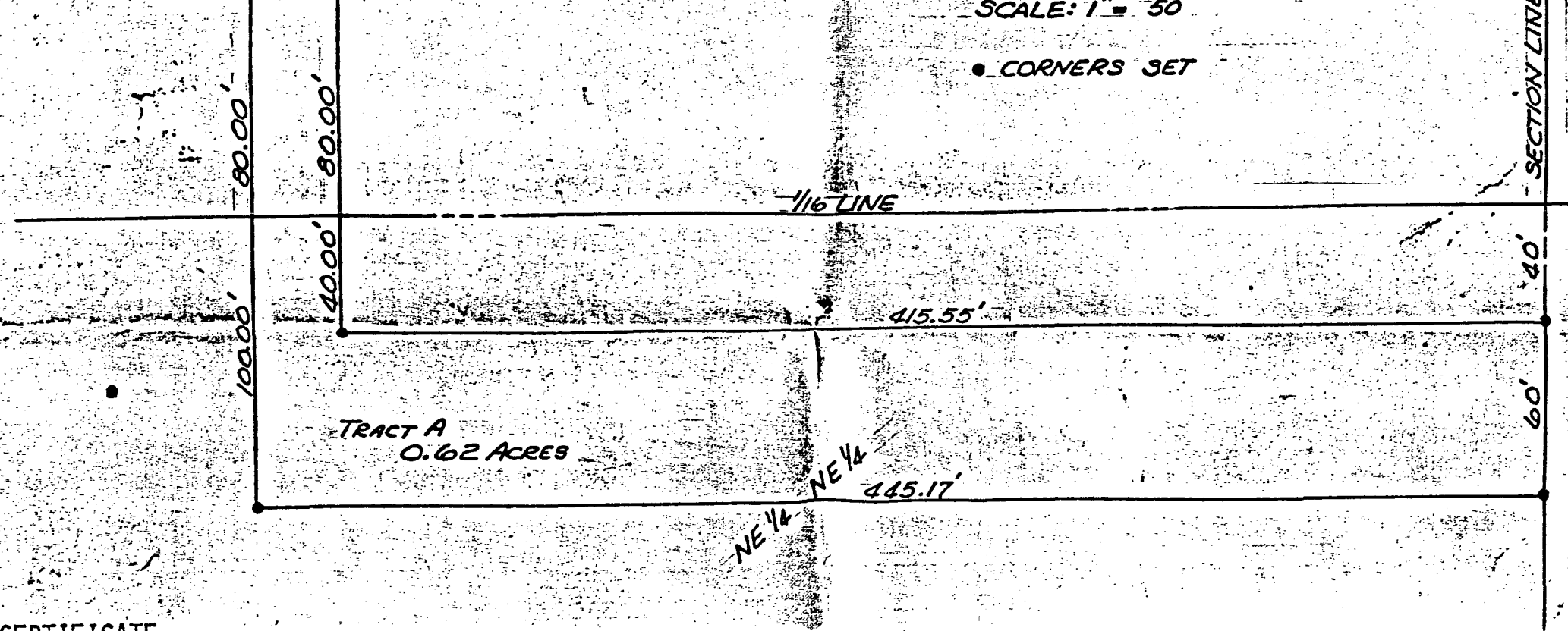
NW 1/4 NE 1/4

PROPOSED WELL SITE



SCALE: 1" = 50'

• CORNERS SET



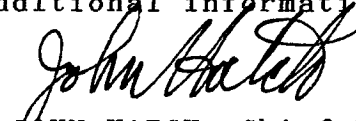
RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT  
APPLICATION NO. 1359-1, City of Spearfish

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. 1359-1, City of Spearfish, 722 Main Street, Spearfish SD.

The Chief Engineer is recommending APPROVAL of Application No. 1359-1 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) in the public interest with the following qualifications:

1. The construction of the proposed well shall include pressure grouting with cement of the casing from the top of the producing formation to the surface and compliance with Board well construction rules.
2. 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  
July 11, 1986

REPORT ON APPLICATION NO. 1359-1  
CITY OF SPEARFISH  
June 25, 1986

This application proposes to appropriate 2.00 cfs from one well 900 feet deep located in the NW 1/4 NE 1/4 of Section 16, T6N, R2E BHM. The water is for municipal use by the City of Spearfish.

Aquifer - Madison Formation (Pahasapa)

Geology and Aquifer Characteristics

The Madison Formation is a Mississippian Age Limestone typically cavernous especially in the upper part and is approximately 600 feet thick in this area (Gries, 1981). The aquifer is well known as an excellent source of good quality and quantity of water especially near the outcrop (recharge) area surrounding the Black Hills. The SDGS estimated the amount of recoverable water from the Madison to be 9.45 million acre-feet in Lawrence County (Allen, etal, 1984). The experience the City of Spearfish has had with previously developed wells indicates good development potential in this area. The Division of Water Rights does not presently monitor any Madison wells for water levels in this area, however, a cooperative program (SD-5) exists between DWNR and the USGS where the USGS has collected some water level data for this area (USGS, 1981). Most water level data is for Minnelusa wells. Water levels appear to fluctuate as much as 30-40 feet in this area for the Minnelusa. I would assume the Madison would fluctuate similarly. In a letter in the application, Gries points out that the Madison will fluctuate at least 20 feet seasonally. It is not known at this time the extent of the connection between the Minnelusa and Madison formations. Most evidence suggests water levels from the Madison Formation are higher than the Minnelusa Formation indicating ground water would be moving upward or at least the potential is there to move upward. For purposes of this brief summary, the two aquifers will be considered separate although there may be a hydrologic connection.

Also, it must be pointed out that springflow into Spearfish Creek is dependent upon discharge to the stream from groundwater from the Madison-Minnelusa (Rahn, 1973). This discharge in turn depends upon the head (water levels) in these aquifers. Wells producing from these aquifers will create drawdowns which can effect the discharge to the stream by springs. At this time, data is not available to quantify this relationship.

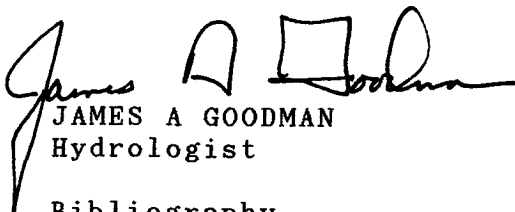
Production data for city well #2 (Permit NO. 579-1) indicates the well produced 540 gpm with 190 feet of drawdown giving a specific capacity of 2.8 gallons per foot of drawdown.

Review of Existing Water Permits

There are numerous existing rights for water from Spearfish Creek and wells in this area. Most rights are for water from the Minnelusa or other formations. The City of Spearfish does have permits for 3 Madison wells (Nos. 579-1, 1003-1 and 1229-1A) and the Spearfish Canyon Holding Company (No. 1199-1) has a permit for one Madison well. Permit No. 579-1 is located approximately one-half mile east of this proposed well site. All other permits are a greater distance away.

#### Conclusions

1. Water is available from the Madison Formation.
2. Interference is likely, however, this should not significantly affect adequately constructed Madison wells.
3. It is impossible to determine either the potential effects from the proposed well upon springflow or wells into the Minnelusa Formation. Data is not available to make a determination. Present existing development from the Madison has not knowingly affected either the springs or wells into the Minnelusa Formation. There have been no complaints concerning this issue from the Spearfish area. It is possible that the effect is there but simply not measured.
4. The Division of Water Rights is proposing to locate 2 observation wells in this area in 1986, one into the Madison and one into the Minnelusa which should help to evaluate this situation.
5. The well must be grouted with neat cement from the top of the producing formation (Madison) to the ground surface pursuant to 74:02:04:30 of the SD Well Construction Standards.

  
JAMES A GOODMAN  
Hydrologist

#### Bibliography

Allen, J.C., D.L. Iles, A.K. Petres, 1984, Analysis of Groundwater and Streamflow Data Western Dakotas Region of South Dakota, for US Army Corps of Engineers, DWNR, SDGS, Vermillion SD 57069.

Gries, J.P., 1981, Thickness of Madison Formation in SD, unpublished maps for Office of Drinking Water, DWNR, Joe Foss Building, Pierre SD 57501.

Rahn, P.H., J.P. Gries, 1973, Large Springs in the Black Hills, South Dakota and Wyoming, Report of Investigations No. 107, SDGS, Vermillion SD 57069.

USGS, 1981, Water Levels in Bedrock Aquifers in South Dakota, Open File Report 81-627, USGS, Huron SD 57350.



# Department of Water & Natural Resources

Joe Foss Building  
523 East Capitol  
Pierre, South Dakota 57501

Water Rights Division  
605 773-3352

NOV 14 1986

City of Spearfish  
722 Main Street  
Spearfish, South Dakota 57783

Dear Sir:

Enclosed herewith is your Water Permit No. 1359-1 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. 1359-1.

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.

WNR-809-5/83



# Department of Water & Natural Resources

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

Water Rights Division  
605 773-3352

July 14, 1986

NOTE:

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

City of Spearfish  
722 Main Street  
Spearfish, South Dakota 57783

Dear Sir:

Your Application No. 1359-1 for a permit to appropriate water for

municipal use, has been examined and found to  
comply with the South Dakota Water Laws and applicable rules. A notice of  
your intent to appropriate water has been sent to the Publisher of the

Queen City Mail printed at Spearfish

South Dakota. For your information, a copy of this notice, the recommendation  
of the Chief Engineer and a report on the application are enclosed. Please  
review this 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  
of intent to appropriate water and to arrange for payment. Early contact with  
the paper can eliminate delays. The publisher has been instructed to publish  
your notice once each week for two consecutive weeks with the last publication  
to occur at least thirty days before the board meeting. We must receive  
Proof of Publication before the application can be considered by the Water  
Management Board.

Sincerely,

RON DUVALL  
Natural Resources Engineer

enclosures



# Department of Water & Natural Resources

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

Water Rights Division  
605 773-3352

July 14, 1986

Queen City Mail  
Box 7  
Spearfish, South Dakota 57783

Dear Sir:

Enclosed is a Notice of Intent to Appropriate Water by City of Spearfish  
Application No. 1359-1, in Lawrence County, South Dakota. Please  
publish this notice once each week for two consecutive weeks in your paper. The  
first publication should be on, or before July 23, 1986.

The APPLICANT MUST VERIFY TO YOU THAT THE NOTICE IS TO BE PUBLISHED, before you  
make the first publication. The applicant is to pay the cost of publication and  
should make the necessary arrangements with you to pay these costs.

A copy of BOTH publications must be sent to the Water Rights Division. IMMEDIATELY  
after the FIRST publication, return a copy of the notice with the FIRST Publication  
Transmittal form on the bottom of this page. The first copy is needed to check  
the publication for errors so any corrections can be made before the second  
notice is published.

Please be sure the SECOND publication is returned with the enclosed Proof of  
Publication form. The permit application cannot be considered by the Water  
Management Board until proof of publication has been recieved.

Thank you for your assistance.

Sincerely,

RON DUVAL  
Natural Resources Engineer

cc: applicant

\*\*\*\*\* CUT HERE \*\*\*\*\*

FIRST  
Publication  
Transmittal

No. \_\_\_\_\_

Date \_\_\_\_\_

TO: Water Rights Division  
Joe Foss Building  
Pierre SD 57501-3181

We are in receipt of your letter dated \_\_\_\_\_ and Notice of Hearing to  
Appropriate Water by Application No. \_\_\_\_\_. The notice was first published  
in our issue dated \_\_\_\_\_. ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.

NAME \_\_\_\_\_ NEWSPAPER \_\_\_\_\_

*Equal Opportunity Employer*

No. 1359-1

Instruction to Newspaper - Publish first publication of the following Notice on or before **July 23, 1986** with 2nd publication 1 week later. The applicant is responsible for payment.

NOTICE OF HEARING on Application No. 1359-1 to Appropriate Water  
and/or to Amend Water Permit or Water Right No. \_\_\_\_\_

Notice is hereby given that the City of Spearfish whose mailing address is  
722 Main Street, Spearfish, South Dakota has made an application for a permit

to appropriate 2.00 cubic feet of water per second from one well (Madison Formation) 900 feet deep to be located in the NW $\frac{1}{4}$ NE $\frac{1}{4}$  of Section 16-T6N-R2E. The water is for municipal use by the City of Spearfish.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends  
**APPROVAL** of Application No. 1359-1 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 Joe Foss Building,  
Room 216, 523 E. Capitol, Pierre, South Dakota, September 3, 19 86 at 10:00 am.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny 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 August 22, 1986. The petition may be informal, but it must include a statement describing the petitioner's interest in the application, the reasons 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; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; ~~(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, DWNr, 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 August 26, 1986.

**NOTICE OF HEARING**  
on Application No. 1359-1  
to Appropriate Water

WNR-808-7/79  
Proof of Publication

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; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14; and Board Rules ARSD 74:02:01.01 thru 74:02:01:15.

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, DWR, 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 August 22, 1986.

July 23, 30



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3181

July 15, 1992

1359-1

City of Spearfish  
% Finance Officer  
722 Main Street  
Spearfish, SD 57783

Dear Sirs:

The inspection of your water use system and the inspection of the extent of application of water to beneficial use, as developed under Water Permit No. 1359-1, has been completed. Your final water right document, the Water License, can now be issued.

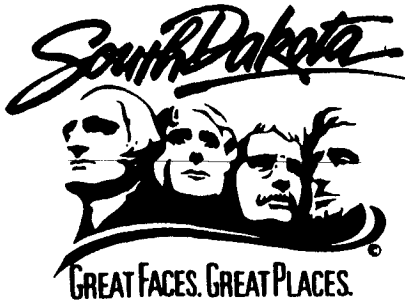
Statutes require that we charge a \$50.00 fee for the inspection and issuance of the Water License. Upon receipt of the \$50.00 fee from you, we will begin processing your Water License.

South Dakota Water Law 46-5-30.1 requires that a permit holder may not divert water until the \$50.00 license fee has been paid. Please contact us if you have any questions.

Sincerely,

Cheryl F. Frost  
Secretary  
Water Rights Division  
(605) 773-3352

NOTE: On check or money order, please specify your permit number.  
This will insure proper handling of the fee.



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3181

September 21, 1992

SECOND NOTICE

PERMIT NO: 1359-1

**NOTICE OF WATER LICENSE INSPECTION FEE REQUIREMENT**

Elizabeth Benning, Finance Officer  
City of Spearfish  
722 Main Street  
Spearfish, SD 57783

Dear Ms. Benning:

On July 15, 1992, you were notified the final inspection fee of \$50.00 is due before Water License No. 1359-1 can be issued. As of this date, the fee has not been received.

The fee is a final step in the legal process of obtaining and perfecting a water right and is required by SDCL 46-2-13(3). Upon receipt of the \$50.00 fee, your Water License will be sent to you. This is the final document for the perfection of your Water Right. A perfected water right is similar to a property right and once a water right is perfected, it cannot be lost as long as the water is used.

South Dakota Water Law 46-5-30.1 requires that a permit holder may not divert water until the License fee has been paid. Please submit the required fee immediately to avoid jeopardizing your water permit.

Very truly yours,

John Hatch, Chief Engineer  
Water Rights Division  
Phone: (605) 773-3352

Is your RETURN ADDRESS completed on the reverse side?

**SENDER**

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

1359-1

Elizabeth Benning, Finan. Off.  
City of Spearfish  
722 Main Street  
Spearfish, SD 57783

"L"

4a. Article Number

P 906 559 930

4b. Service Type

- ☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

9/22/92

5. Signature (Addressee)

*Elona Starr*

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt Service.

Do not use this space

# STATE OF SOUTH DAKOTA VOUCHER

by document  
7-31-92

- ☐ Direct  
☐ Travel  
☐ Non Cash  
☒ Cash Receipt  
☐ Cash Transfer  
☐ Investment  
☐ Appropriation Budget Transfer  
☐ Expenditure Correction  
☐ Revenue Correction  
☐ Period Ending Adjustment  
☐ Other Adjustment

| AGENCY USE ONLY                               |                   |                         | APPROVAL OFFICE ONLY                       |                  |  |
|-----------------------------------------------|-------------------|-------------------------|--------------------------------------------|------------------|--|
| Application Area<br>75                        | Vendor Number     | Invoice ID              | Voucher Number<br>64975                    | Date             |  |
| Date<br>7-29-92                               | Purchase Order ID | Document ID<br>62093020 | Delivery Date                              | Payment Due Date |  |
| (Payee, Billed Agency)<br>TO: STATE TREASURER |                   |                         | (Department, Billing Agency)<br>FROM: DENR |                  |  |

| FUNDING INFORMATION |         |          |      |          |          |         |        | Debit/Credit | Invoice |    | Dr   | Cr | U<br>C<br>S<br>O<br>D<br>E<br>R<br>E |
|---------------------|---------|----------|------|----------|----------|---------|--------|--------------|---------|----|------|----|--------------------------------------|
| S<br>E<br>Q         | Company | Account  |      | Center   |          | Project |        |              | Other   | Dr |      |    |                                      |
|                     |         | Required | User | Required | User     | Company | Number | Amount       |         |    | Code |    |                                      |
| 1                   | 3072    | 4289000  |      | 20211    | 20000022 |         |        | 805000       | cr      |    |      |    |                                      |
| 2                   |         |          |      |          | 30000023 |         |        | 745000       | cr      |    |      |    |                                      |
| 3                   | 1000    | 4229103  |      | 20411    | 2041100  |         |        | 5000         | cr      |    |      |    |                                      |
| 4                   | 3073    | 4289000  |      | 20966    | 0700007  |         |        | 462998       | cr      |    |      |    |                                      |
| 5                   |         |          |      |          | 0700007  |         |        | 51444        | cr      |    |      |    |                                      |
| 6                   |         |          |      |          |          |         |        |              |         |    |      |    |                                      |
| 7                   |         |          |      |          |          |         |        |              |         |    |      |    |                                      |
| 8                   |         |          |      |          |          |         |        |              |         |    |      |    |                                      |
| 9                   |         |          |      |          |          |         |        |              |         |    |      |    |                                      |
| 10                  |         |          |      |          |          |         |        |              |         |    |      |    |                                      |
|                     |         |          |      |          |          |         | Total  | 2098942      |         |    |      |    |                                      |

| Description of Service, Product, or Transfer |  |
|----------------------------------------------|--|
| SARA Chemical Fee                            |  |
| Drinking Water Fee                           |  |
| Insp. Comp. Work                             |  |
| Solid Waste Mgmt. Fee                        |  |
| Money deposited at the Remittance Center.    |  |
| Total                                        |  |

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

Cindy Fox  
Claimant

7-29-92  
Date

Raylene Larson  
Authorization

7-30-92  
Date

FROM: Annie Hollenbeck

TO: Cindy Cooper

DATE: 07-28-92  
TIME: 10:13

CC:

SUBJECT: Deposit 7/28/92

PRIORITY:

ATTACHMENTS:

---

This includes \$50.00 of Water Rights Inspection Fee in the Drinking Water Fund. Please correct. Water Rights has been notified.

---

FORWARDED FROM: Annie Hollenbeck

FROM: XRemit Center (SF SD)

TO: Annie Hollenbeck DENR/DENR

DATE: 07-28-92  
TIME: 09:02

CC:

SUBJECT: Deposit 7/28/92

PRIORITY:

ATTACHMENTS:

Deposit 7/28/92

|          |            |
|----------|------------|
| Water    | \$2,705.00 |
| Waste    | \$ 370.00  |
| Chemical | \$1,150.00 |

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C2093020  
7-29-92

**PURCHASE ORDER — VOUCHER**  
**of Spearfish, South Da**  
 SPEARFISH, SOUTH DAKOTA 57783  
 PHONE (605) 642-7775

PHONE (605) 642-7775



VENDOR NO. 1710

**Address** \_\_\_\_\_

**Sign and submit this form, with your invoices, to: C  
Finance Office; 722 Main Street; Spearfish, So  
Dakota 57783.**

| DEPT. #   | LINE<br>ITEM # | VENDOR<br>INVOICE # | AMOUNT       | QUANTITY AND DESCRIPTION                               | INITIALS<br>OF CITY<br>EMPLOYEE |
|-----------|----------------|---------------------|--------------|--------------------------------------------------------|---------------------------------|
| 704- 433. | 5 422          |                     | \$ 2600 . 00 | ENVIRONMENTAL FEES FOR DRINKING WATER<br>& SOLID WASTE |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
| 602-433.  | 5 422          |                     | 50 . 00      | INSPECTION AND ISSUANCE OF THE WATER<br>LICENSE        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
|           |                |                     |              |                                                        |                                 |
| TOTAL     |                |                     | 2650 . 00    |                                                        |                                 |

**If this purchase order is over \$500, it must be approved by the Mayor or the appropriate City Council member.**

## VERIFICATION

**I declare and affirm under the penalties of perjury this claim has been examined by me, and to the best of my knowledge and belief, is in all things true and correct.**

**Verification must be signed here.** 

Date \_\_\_\_\_

**City Council meets the first and third Monday evenings of each month. Proper claims may be filed with the City Finance Office for processing at any time. Only claims processed by the Finance Office on or before Wednesday prior to each Council meeting will be presented for Council approval.**

# VENDOR CLAIM FORM



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3181

July 15, 1992

1359-1

City of Spearfish  
% Finance Officer  
722 Main Street  
Spearfish, SD 57783

Dear Sirs:

The inspection of your water use system and the inspection of the extent of application of water to beneficial use, as developed under Water Permit No. 1359-1, has been completed. Your final water right document, the Water License, can now be issued.

Statutes require that we charge a \$50.00 fee for the inspection and issuance of the Water License. Upon receipt of the \$50.00 fee from you, we will begin processing your Water License.

South Dakota Water Law 46-5-30.1 requires that a permit holder may not divert water until the \$50.00 license fee has been paid. Please contact us if you have any questions.

Sincerely,

Cheryl F. Frost  
Secretary  
Water Rights Division  
(605) 773-3352

NOTE: On check or money order, please specify your permit number.  
This will insure proper handling of the fee.



Permit No. 1359-1

Water District: Belle Fourche River

Report Of Examination Of Works And/Or Application of Water To Beneficial Use:

I have this day made a thorough examination of the water use system constructed by City of Spearfish of 722 Main Street Spearfish, SD 57783

holder of Permit No. 1359-1, bearing the priority of May 26, 1986 authorizing the diversion of 2.0 cu.ft. per second the waters of groundwater for municipal uses, in Lawrence County.

I have to report on the conditions of the same as follows:

A. Works used to divert the water:

A submersible pump, 525 gallons per minute capacity

A submersible motor, 125 horse power

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

15 feet of PVC pipe and 1000 feet of steel pipe.

C. Works used to apply water to beneficial use:

Water is used for municipal uses.

The system is in the following conditions: Very good The point of diversion is located: Approximately 440 feet south, 1400 feet west from the Northeast corner of Section 16, T6N-R2E (NW1/4 NE1/4).

The works are capable of diverting and conveying to the place of use 1.17 cu.ft. per second of groundwater-Madison Formation which is to be used for municipal uses.

The license should be issued for 1.17 cfs. Application permit qualifications have been complied with ☒ Yes      No

Exceptions to compliance are: None

Date: 6/18/92

M. Rassool Ahadi

M. RASSOOL AHADI

Natural Resources Engineer III

DENR, Water Rights Division

**DATE 6/18/92**

**DIVERSION POINT LEGAL LOCATION: NW1/4 NE1/4 Section 16, T6N-R2E**

a) **Pump** 1) make Layne-Submersible No. of Wells 1 Depth(s) 1320 ft.  
2) model c) **Casing:** 1) diameter 16 inches  
3) size 10 inches 2) length 630 feet  
4) capacity 525 GPM 3) type Steel  
5) turbine pump - No. of stages d) **Screen:** 1) type None  
6) operating pressure 6 PSI 2) length feet

b) **Motor:** 1) make Layne-Submersible e) Static Water Level 180 ft.  
2) model No.  
3) horsepower rating 125 HP

a) type Polyvinyl Chloride (PVC) b) size 8-12<sup>\*\*</sup> inches c) length 1000 feet  
 \*\* 8 inch PVC line is used to transport water from the well to a 75,000 gallon tank approximately 15 feet away. The 12 inch Steel line is used as the main line.

- a) Soil and water permit lands agree with lands being irrigated and lands listed on permit NA (Y/N)
- b) Special qualifications to permit being abided by Y (Y/N)
- c) All structures, wells and lands on map Y (Y/N)
- d) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period NA (Y/N)

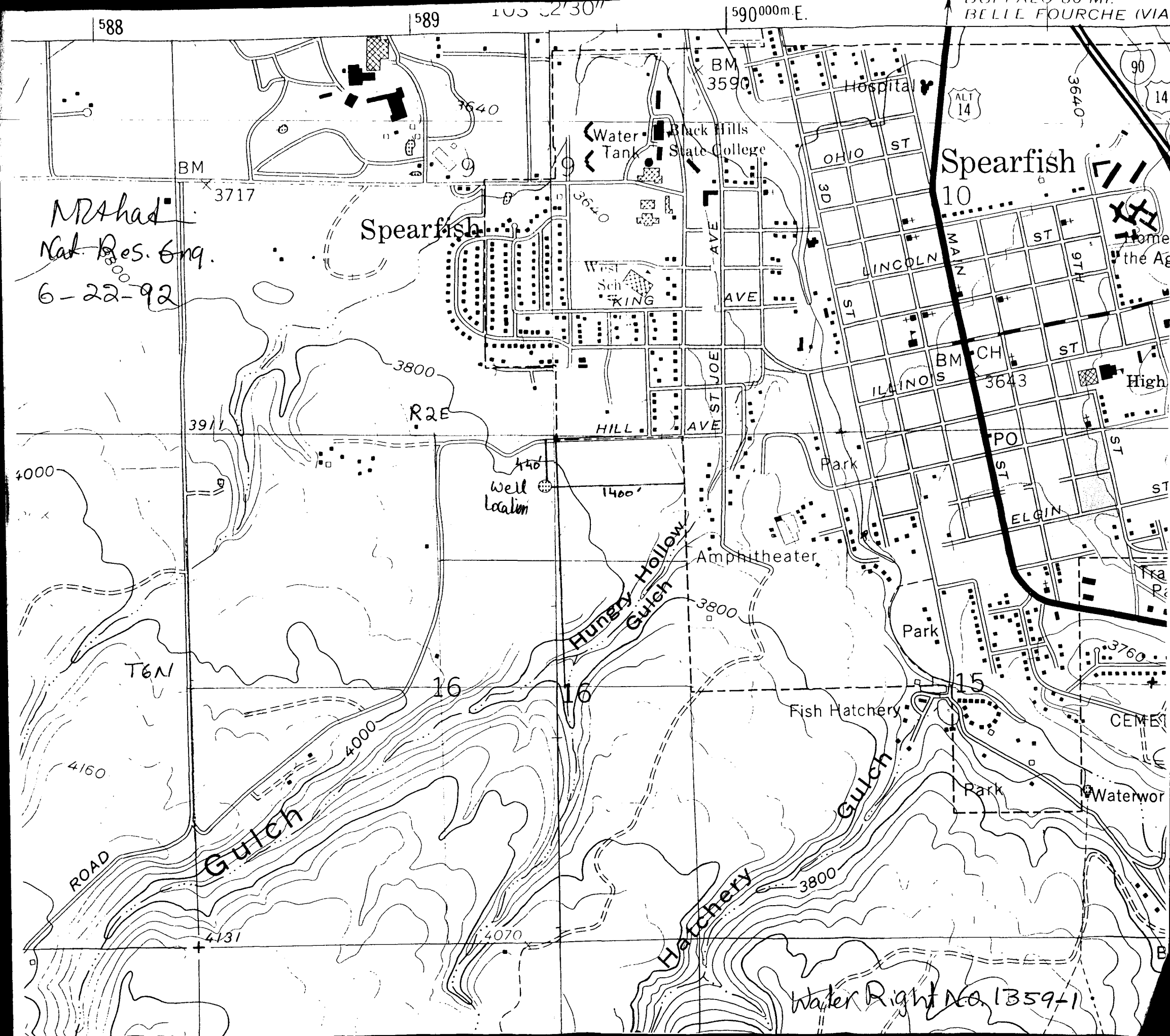
588

589

105 52' 30"

590 000m. E.

SOUTH ALCO 60 MI. BELLE FOURCHE (VIA



MR. Had  
Nat. Res. Engr.  
6-22-92

Spearfish

Spearfish

10

R2E

Well  
locationHungry Hollow  
Gulch

T6N

Gulch

Fish Hatchery

Gulch

Water Right No. 135941

STATE OF SOUTH DAKOTA

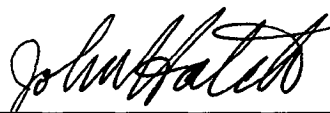
WATER LICENSE NO. 1359-1

(1) City of Spearfish of 722 Main Street, Spearfish, SD 57783 made Application No. 1359-1, May 26, 1986 for a water permit to appropriate 2.00 cubic feet of water per second from groundwater (one well), Lawrence County, South Dakota for municipal purposes. Permit No. 1359-1 with a priority date of May 26, 1986 was approved September 3, 1986 and issued to applicant(s) for diversion of water with construction of the described water supply system to be completed on or before September 3, 1991 and for the application to beneficial use of said water on or before September 3, 1995.

(2) It is certified that the applicant 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 1.17 cubic feet of water per second for beneficial use. The location of the diversion point is: approximately 440 feet south and 1400 feet west from the NE corner of Section 16, T6N, R2E (NW 1/4 NE 1/4).

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

(4) Pursuant to Section 46-5-30.1 City of Spearfish of 722 Main Street, Spearfish, SD 57783 the holder(s) and/or owner(s) of Water Permit No. 1359-1 is issued a license to appropriate water, the right to use 1.17 cubic feet of water per second from groundwater (one well) with a priority date of May 26, 1986 from the location specified in (2) of this license. The water is to be used for municipal purposes by the City of Spearfish. This license is subject to any limitations or qualifications listed in Water Permit No. 1359-1 and subject to South Dakota State Law.



NOV 23 1992

JOHN HATCH, Chief Engineer  
Water Rights Division  
Department of Environment and  
Natural Resources



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3181

NOV 23 1992

1359-1

Elizabeth Benning, Finance Officer  
City of Spearfish  
722 Main Street  
Spearfish, SD 57783

Dear Ms. Benning:

Enclosed is Water License No. 1359-1. This is the final water right document completing your process of obtaining a Water Right.

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. 1359-1, 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.

Very truly yours,

JOHN HATCH, Chief Engineer  
Water Rights Division  
(605) 773-3352

enclosures