

No. 3811-3

SOUTH DAKOTA Department of
Water & Natural Resources
Joe Foss Building Water Rights, Water Management Division
Pierre, South Dakota 57501 (605) 773-3352

July 8, 1980

Donald Tjeerdema
RR #1
Springfield, SD 57062

Dear Mr. Tjeerdema:

Enclosed herewith are, Water License No. 3811-3 and Certificate of Construction.

Water License No. 3811-3 is the final water right document completing your process of obtaining a water right.

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.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights, WMD

JH:bt

enclosures

* Permit No. 2446- has been combined with this Water License No. 3811-3 and Permit No. 2446-3 has been placed in a cancelled status.

SECOND NOTICE

Water Rights, Water Management Division
(605) 773-3352

3576-3, 3811-3
(2446-3)

June 30, 1980

Donald Tjeerdsma
RR #1
Springfield, SD 57062

Dear Mr. Tjeerdsma:

On February 7, 1980 we wrote to you concerning the final inspection fee of \$50.00 each which is due before Water License Nos. 3576-3 and 3811-3 and Certificates of Completion of Works can be issued. As of this date, the fee has not been received.

Statutes require that we charge a \$50.00 fee for inspection and issuance of each Water License. Please remit \$100.00 to cover the cost of both Water Licenses.

As indicated on previous notice, Permit No. 2446-3 will be combined with Permit No. 3811-3 when the Water License is issued, and Permit No. 2446-3 will be cancelled.

If you have any questions, please contact this office.

Sincerely,

GENIY YOUNG
Staff Assistant

gy

No. 2446-3Map No. 1838-3 Water Division No. 3 MISSOURI RIVER District
(Blanks to be Filled by the Engineer for the W. R. C.)

APPLICATION FOR PERMIT

To Appropriate Water within the State of South Dakota

(NOTE--Draw a line through items not applicable)

1. Name of Applicant Donald Tjeerdema
Postoffice address R.R. # 1 Springfield State South Dakota
If a corporation show date and place of incorporation no
2. Method of accomplishing work (contract, employment of others, or by direct labor) employment of others
3. Name of diversion work Donald Tjeerdema Irrigation Project No. 1
4. Amount of water claimed (cubic feet per second) 2.2 2.1 MAXIMUM ALLOWABLE
5. Source of water supply well
6. Location of point of diversion approximate center of SE 1/4 33-94-60

County Bon Homme

7. Annual period or periods during which water is to be used April thru October
8. Use to be made of water, (irrigation, industrial, municipal, commercial, recreation, etc.) irrigation
9. For irrigation use, Total number of acres to be irrigated 148

List below each forty acre subdivision, or lot, or fraction thereof and show number of acres to be irrigated in each.

Land Description	No. Acres Irr.	Land Description	No. Acres Irr.
N 1/4 SE 1/4 33-94-60	40		
NE 1/4 SE 1/4 33-94-60	37		
S 1/4 SE 1/4 33-94-60	39		
SE 1/4 SE 1/4 33-94-60	32		

Attach sheet if more space is needed

10. Time required to complete construction of water supply system 3 years. Additional time required to complete application of water to the proposed beneficial use 2 years.
11. Choice of newspaper for Notice of Intent to Appropriate Water publication Springfield Times
12. Principal Features of the Proposed Water Supply System.

A. Works proposed to divert water from its natural source.
well

B. Works proposed to transport water to place of use.
pipeline

C. Works proposed to apply water to beneficial use.
center-pivot sprinkler

Estimated Total Cost \$ 15,000

Attachments: Attach Form 2A if diversion from a well or dug-out, or if storage of water is proposed. Attach map.
(See instructions concerning preparation.)

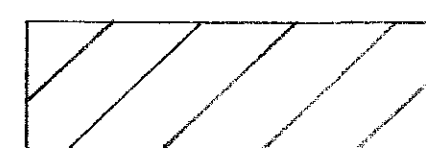
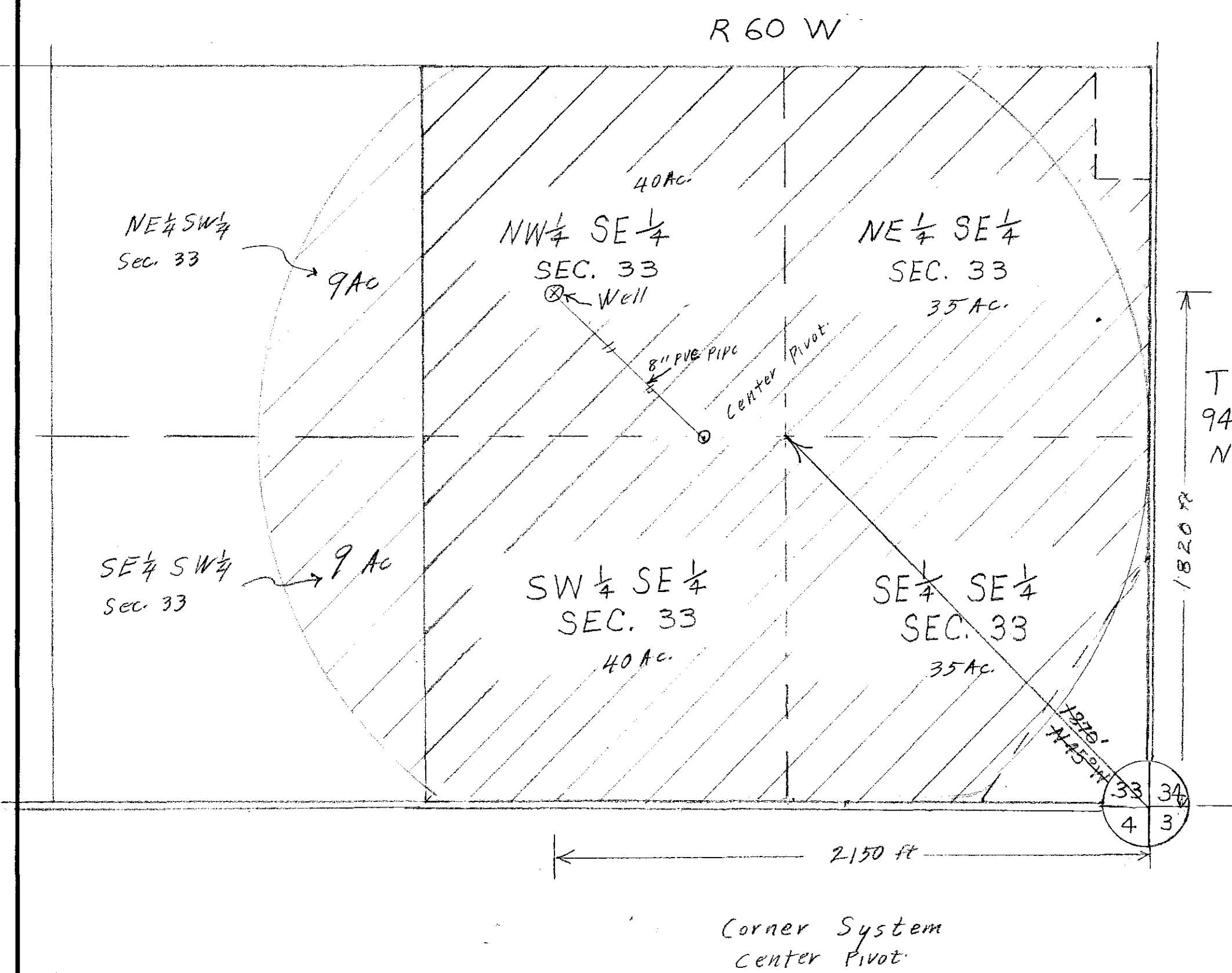
STATE OF SOUTH DAKOTA

County of Bon Homme

I, Donald Tjeerdema, the applicant, certify that I have read the foregoing application and 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 Donald TjeerdemaSubscribed and sworn to before me this 21st day of October 1925

Notary Public (or other qualified officer)



LAND TO BE IRRIGATED

ALL LANDS DESCRIBED ARE OWNED BY DONALD TJEERDSMA

LOCATION OF LAND TO BE IRRIGATED					ACRES
LOCATION	SECTION	TOWNSHIP	RANGE		
NW 1/4 SE 1/4	33	94	60		40
NE 1/4 SE 1/4	33	94	60		37
SW 1/4 SE 1/4	33	94	60		39
SE 1/4 SE 1/4	33	94	60		32
TOTAL					148

SCALE = 1" = 400'

DONALD TJEERDSMA
IRRIGATION PROJECT NO.1

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed by <i>Don</i>	Date <i>7/15</i>	Approved by	Title
Drawn			
Traced			
Checked			

WATER RIGHT APPLICATION APPROVAL

The Water Resources Commission hereby approves Water Right Application No. 2446-3

DONALD TJEERISMA
(Applicant)

R.R.#1, SPRINGFIELD
(Post Office Address)

SOUTH DAKOTA 57062
(State)

With the following modifications:

The irrigation well approved under this Permit will be located near domestic wells and other irrigation wells which may obtain water from the same aquifer. The irrigation well owner, under this Permit, shall control his irrigation withdrawals so there is not a reduction of needed water supplies in existing domestic wells or in irrigation wells having prior water rights.

*Cancelled
7-7-80
Incorporated
into W/L 3811-3*

Date of first receipt of application OCTOBER 22, 19 75

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

Date of receipt of corrected application _____, 19 _____

Approved JANUARY 22, 19 76 Recorded in Book 14 Page 204

WATER RIGHT PERMIT NO. 2446.3

The Water Resources Commission hereby grants and issues this Water Right Permit No. 2446.3 authorizing the construction of the water use system and the putting of water to beneficial use as stated in the Application and as modified in the Water Right Application approval, subject, however, to the following limitations and conditions:

1. The date from which applicant may claim right is OCTOBER 22, 19 75
2. The equivalent of at least one-fifth of the work above specified is to be completed on or before JULY 22, 19 77
3. The whole of said work is to be completed on or before JANUARY 22, 19 79
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is JANUARY 22, 19 81
5. The water appropriated shall be used for the purpose of IRRIGATION

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 injuriously affected by this appropriation.

7. The amount of the appropriation herein granted shall not exceed 2.1 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 if for the irrigation purposes said appropriation must be limited to not more than 3 acre feet per acre per year and be limited to not more than one-seventieth (1/70) of one cubic foot of water per second of time for each acre of land to which water is actually and beneficially applied for irrigation on or before JANUARY 22, 19 81; said water to be used during the following described annual period: APRIL THRU OCTOBER

Witness my hand, this 28TH day of JANUARY, 19 76

WATER RESOURCES COMMISSION

By: John H. Kitch
Chief Engineer, Executive Officer

Certificate of Construction Issued _____, 19 _____

Water License Issued _____, 19 _____

12. Principal Features of the Proposed Water Supply System (continued.)

D. Well Information or Estimates

Well Information or Estimates
(1) Drill Hole, Diameter 15 1.2 " , Depth 300 ft

(2) Casing, Type steel Diameter 1.2 Thickness _____
(wood, concrete, steel, etc)

(3) Perforated Screen.

(3) Perforated Screen.
Type steel, Diameter _____, Length 20' 0"

(4) Gravel Pack. Thickness 1.6 ft., Length of gravel pack 2' 0"

E. Dugout Information or Estimates.

(1) Surface dimensions _____, Depth _____

F. Fill out for Either a Well or a Dugout.

(1) Water Bearing Materials. (Please attach a copy to test well log if available.)

Character of Water bearing materials _____ gravel and sand

Depth to top of water bearing material 250

Depth to bottom of water bearing material 325

Thickness of water bearing material 45

Depth to water (ground surface to water level) 200

(2) Distance to nearest existing household or livestock watering wells.

(2) Distance to nearest existing household or livestock building
On same owner's property 120 rds. On property owned by others 100 rds.

G. Water Storage Dams.

If the proposed water use system contains one or more water storage dams, please show in the space below, the height, maximum water depth, surface area and storage capacity of each storage dam. The location of each water storage dam should be shown on the water right map.

Donald J. Edwards
Signature of Applicant

September 23, 1975

Mr. Donald Tjeerdema
R.R. #1
Springfield, SD 57062

Dear Mr. Tjeerdema:

We have received your WI-1 form and the water sample which you sent about 10 days ago has been analysed. You will find enclosed herewith the original copy of the report of analysis for this water. It is yours to keep against future use. Please look on the outside back cover of extension circular 654 enclosed herewith. The red cross denotes the approximate quality of your water for irrigation use. There should be no severe problem with this water.

A copy of this letter, the WI-1 form and a copy of the water analysis are being sent to the State Conservation Commission.

Sincerely yours,

L. O. Fine

L. O. Fine
Water Quality Lab

LOF:ckb

Enclosures 1

cc: State Conservation Commission

D. Pahl

Donald Boone, County Extension Agent



STATE CONSERVATION COMMISSION
SUPPORTING INFORMATION
FOR APPROPRIATION OF GROUND WATER IN ACCORDANCE
WITH SDCL 46-6-3 AS AMENDED
(This Form Required for Proposed Well Irrigation Only)

FOR COMMISSION USE ONLY

Irrigation System: _____

Water Quality: _____

Soils Capability: _____

Approved: Wesley Smith

Disapproved: _____

NAME: Donald Tjeerdema

ADDRESS: R.R. 1 Springfield, S.D.

COUNTY: Ben Hemme

LEGAL DESCRIPTION

1. WELL LOCATION: Middle of SE $\frac{1}{4}$ Sec. 33-74-60
2. AREA TO BE IRRIGATED: SE $\frac{1}{4}$ Sec 33-74-60

TYPE OF IRRIGATION

3. GRAVITY SPRINKLER (Indicate Type): Sprinkler
4. CROPS TO BE IRRIGATED: Corn, Soybeans, Alfalfa

LAND CAPABILITY FOR IRRIGATION

5. PERCENTAGE OF SLOPE: 0-2
6. PHYSICAL SOILS CLASSIFICATION FOR IRRIGATION: 75% Highmore silt loam,
25% Highmore-Folk silt clay loam

WATER QUALITY (TO BE COMPLETED BY COMMISSION)

7. SAMPLE NO.: 75-841
8. SALINITY: EC⁰ = 1156 μ mhos/cm (moderately high)
9. SODIUM: SAR = 0.89 (low)

I do hereby certify that a chemical analysis of the ground water to be
acquired for irrigation from South Dakota State University and:

the land capability for irrigation information has been acquired from
Land capability was acquired from Dee Watson WUC, Tyndall, So. Dak.
Water sample acquired from a well over the Tyndall Scotland and her supply-
ing water to Tyndall.
and:

that the legal description for the location of the well and land to be
irrigated is true and correct.

Donald Ljeandera

Subscribed and sworn before me this

2nd day of Sept. 1975.

J. Dunn

J. Dunn, Notary Public

(Title)



INSTRUCTIONS FOR PREPARING FORM WI-1

LEGAL DESCRIPTION:

Line 1 - show legal description to nearest 40 acres.
Line 2 - show legal description to nearest 40 acres.

TYPE OF IRRIGATION:

Complete Lines 3 and 4.

LAND CAPABILITY FOR IRRIGATION:

Lines 5 and 6 - Have your local Conservation District Office, or a qualified Soils Scientist serving as a consultant provide the information for this section.

WATER QUALITY:

The applicant must send a sample of the ground water to be used for irrigation to the Water Quality Laboratory, Water Resources Research Institute, South Dakota State University, Brookings, South Dakota, 57006.

A report of the analysis will be mailed to the State Conservation Commission by the Water Quality Laboratory. From this report the Commission will complete lines 7, 8, and 9. The applicant will also receive an analysis report for his records.

Certification on back of Form WI-1 must be completed by applicant and notarized.

REPORT OF ANALYSIS
Water Quality Laboratory
Water Resources Research Institute
South Dakota State University
Brookings, South Dakota 57006

Submitted by: Donald Tjeerdema
 Address: Rt. 1, Box 180
Springfield, SD 57062

Date Rec'd: September 9, 1975
 Sample No.: 75-841
 Identification: Well-
SE $\frac{1}{2}$, Sec. 33, T 94N, R 60W

WATER ANALYSIS

Calcium (Ca)	110	ppm*	5.50	me/l**
Magnesium (Mg)	52	ppm	4.26	me/l
Sodium (Na)	45	ppm	1.96	me/l
Potassium (K)	4	ppm	0.33	me/l
Sulfate (SO ₄)	390	ppm	8.11	me/l
Nitrate (as N)		ppm		me/l
Chloride (Cl)	8	ppm	0.22	me/l
Bicarbonate (HCO ₃)	293	ppm	4.80	me/l
Carbonate (CO ₃)		ppm		me/l
Iron (Fe)		ppm		me/l
Fluoride (F)		ppm		me/l
Hardness (EDTA as CaCO ₃)		ppm		g.p.g.***
Alkalinity (Methyl Orange)	240	ppm (as CaCO ₃)		
Alkalinity (Phenolphthalein)	0	ppm (as CaCO ₃)		
Electrical Conductivity	1156	micromhos per cm at 25° C.		
Sodium Adsorption Ratio	0.89			
Sodium	16.26	% of cations		
Residual sodium carbonate	0.68	me/l		
pH	7.80			
Others:				

*ppm=parts per million

***g.p.g.=grains per gallon

**me/l=milliequivalents per liter

COMMENTS: Total cations 12.05 me/l
 Total anions 13.13 me/l

By: Shirley Kitten

Service Performed

Amount Due

Irrigation analysis

\$6.00

Make checks payable to: Water Quality Laboratory

 Cut along dotted line and return the lower portion with payment

Sample No. 75-841

Amount Enclosed \$

Signed

NOTICE OF COMPLETION OF WORKS AND/OR
APPLICATION OF WATER TO BENEFICIAL USEPost Office Springfield
Date Feb. 3, 1978TO: Water Rights Commission
Joe Foss Building
Pierre, South Dakota 57501

Dear Sirs:

This is to inform you that I have completed the construction of the water diversion system and/or that I have put the water to beneficial use to the maximum extent it is going to be used, not exceeding the amounts as specified in Water Right Permit No. 2446-3

Water Right Permit No. 2446-3 states that the diversion system is to be constructed by Jan. 22, 1977 and that the water is to be put to beneficial use by Jan. 22, 1981.

The diversion system was completed on June 1, 1977.
Applying the water to beneficial use was completed on June 20, 1977.

You may schedule an inspection so that the Certificate of Construction and/or the Water License may be issued, thus completing my acquisition of a water right.

Donald Tijerina
(Signature)



No. 2446-3

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Beaumont) ss.

I, Wayne L. Bertrand hereby
certify that the annexed printed copy of Notice of Intent to Appropriate
Water was taken from the Springfield Times

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

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

Dec. 18, 1975

" 25, 1975

(Signature)

Publisher
(Title)

12-26-75

(Date Signed)

NOTICE INTENT TO
APPROPRIATE WATER

Pierre, S.D. 57501
December 9, 1975

Notice is hereby given that
Donald Tjeerdsma whose post
office is Springfield, South Dako-
ta, has made an application in
accordance with the provisions of
the water laws of South Dakota
for a permit to appropriate for
beneficial use 2.1 cubic feet of
water per second of time from the
ground water through the Tjeer-
dsma Project No. 1, the point of
diversion of which is to be located
in the Center of the SE 1/4 of
Section 53, Twp. 94N, Range 60W.
Said water to be used for the
purpose of providing irrigation on
portions of the following describ-
ed land: SE 1/4, Section 33, T94N,
R60W.

This application No. 2446-3
will be considered by the Water
Rights Commission at their office
at Pierre upon the 22nd day of
January, 1976, at 2:30 p.m. All
interested persons may appear
and be heard.

Water Rights Commission
Burton Jones
Water Rights Specialist
(December 18 and 25)

REPORT ON WATER RIGHT APPLICATIONS NO. 2444-3, 2445-3, & 2446-3
TYNDALL-SCOTLAND AQUIFER
JANUARY 19, 1976

Three water right applications have been advertised to withdraw water from the Tyndall-Scotland Aquifer located near Tyndall, South Dakota. The applications are as follows:

1. 2444-3 Duane Artnur Grimme 200' well NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 3-T94N-R60W
1.95 cfs 136 acres
2. 2445-3 Wayne Schuurmans 200' well NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 5-T94N-R60W
3.4 cfs 233 acres
3. 2446-3 Donald Tjeerdsma 300' well Center SE $\frac{1}{4}$ Sec. 33-T94N-R60W
2.1 cfs 148 acres

The attached map shows the locations of these applications in the Tyndall-Scotland Aquifer.

Tyndall-Scotland Aquifer

The Tyndall-Scotland Aquifer is an outwash deposit of sand and sands and gravels. The aquifer underlies an area of 90 square miles and includes an area of 25 square miles with a saturated thickness greater than 50 feet. Within Bon Homme County, the aquifer contains 440,000 acre feet of water. Water in the aquifer is under artesian conditions in most places.

Natural discharge from the aquifer is largely from springs in the outcrop area along the lower reaches of Emanuel Creek. A gaging station in Section 27-T93N-R60W indicates ground water discharge from this aquifer is about 1,000 gallons per minute.

The above information is from Bulletin 21, dated 1971, "Geology and Water Resources of Bon Homme County, South Dakota, Part II: Water Resources," by Donald G. Jorgenson, United States Geological Survey, and published by the South Dakota Geological Survey.

Other Wells and Water Right Permits

There are about 80 domestic wells in the Tyndall-Scotland Aquifer within Bon Homme County. The City of Tyndall has a municipal well 160 feet deep located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 21-T94N-R60W. Application No. 2199-3 for William Minow to divert up to 2.0 cfs from a well approximately 250 feet deep to irrigate up to 156 acres of land was approved by the Commission at its May 1975 meeting. The Minow permit is located in the NW $\frac{1}{4}$ Section 16-T94N-R60W about 1 $\frac{1}{2}$ miles north of the Tyndall municipal well. Application No. 2299-3 for Leslie Bohlmann to divert up to 2.2 cfs from a well 250 feet deep to irrigate up to 156 acres of land was approved by the Commission at the July 1975 meeting. The Bohlmann application is located in the

NW¼ Section 27-T94N-R60W about 1½ miles southeast of the Tyndall Well.

Observation Wells

The only known observation well, is a well located in the SE¼ SE¼ Section 20-T94N-R60W which was drilled by the U. S. Geological Survey in 1966. The observation well is about 1 mile southwest from the Tyndall Well. The well is 64 feet deep and during 1964 it had a gradual drop in water level from about 21 to 23½ feet with no recognizable drop caused by pumping from the Tyndall municipal well. The Division of Water Rights has made a tentative agreement with the City of Tyndall to participate in construction of three observation wells in this area.

Objections

Mr. Tom Alberts who is the City Attorney for the City of Avon called December 22, 1975, and stated that the City of Avon was concerned about these three water right applications. He also advised that he was representing a group of concerned farmers near the applicants. The City of Avon has expressed concern because they believe their wells are in the Tyndall-Scotland Aquifer. The geological report indicates that Avon does not obtain water from the Tyndall-Scotland Aquifer, but from an aquifer known as the Codell Sandstone Aquifer located in the Carlile Shale. This aquifer is located beneath the Tyndall-Scotland Aquifer and is a major underground water aquifer in Bon Homme County.

The proposed irrigation well for application No. 2445-3, Wayne Schuurmans, is about five miles from the City of Avon.

Conclusions

A report for a Water Right Application No. 2199-3 for William Minow dated May, 1975 indicates there should be at least ¾ mile separation between the Tyndall municipal well and any nearby irrigation wells. As will be noted on the map, the proposed applications are spaced with at least 2½ miles between the Tyndall well and the closest proposed irrigation well. Application No. 2446-3 is about 1 ¾ miles from Permit No. 2299-3.

From the information available, it does not appear that the proposed Water Right Application No. 2444-4, 2445-3 and 2446-3 would have any serious affects on the existing Tyndall municipal well, the Minow well or the Bohlmann well. There should definitely not be any affect upon the Avon city well, since the Avon well is in a different, deeper aquifer.

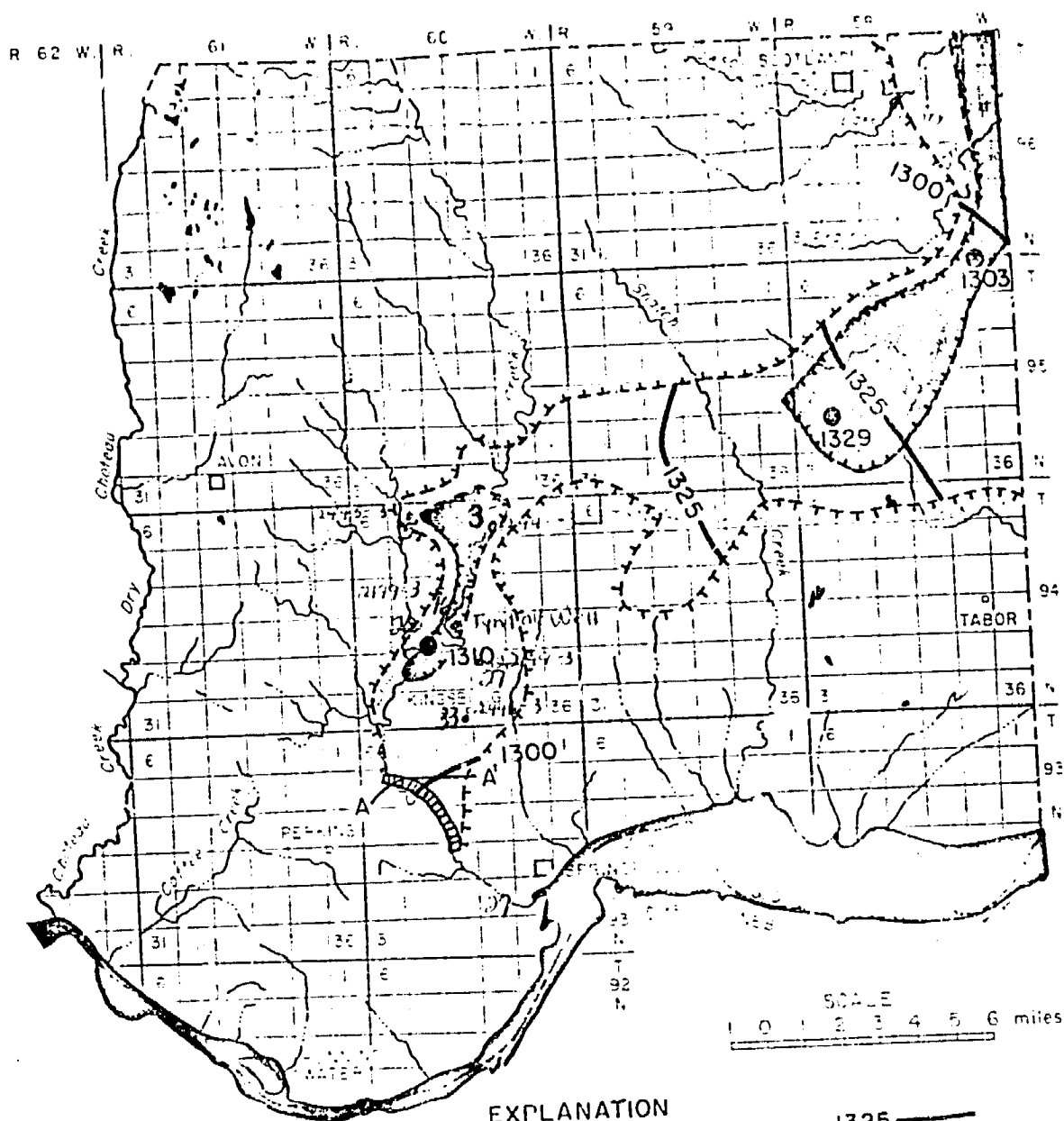
The applicants should know that they will have to control irrigation withdrawals so as not to reduce the nearby domestic supplies to less than the needed amount.

Recommendations

It is recommended that water right application no. 2444-3, 2445-3, and 2446-3 be approved containing the following qualifications:

The irrigation well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The irrigation well owner, under this Permit, shall control his irrigation withdrawals so there is not a reduction of needed water supplies in existing domestic wells or in other wells having prior water rights.

JOHN HATCH, CHIEF ENGINEER
WATER RIGHTS COMMISSION



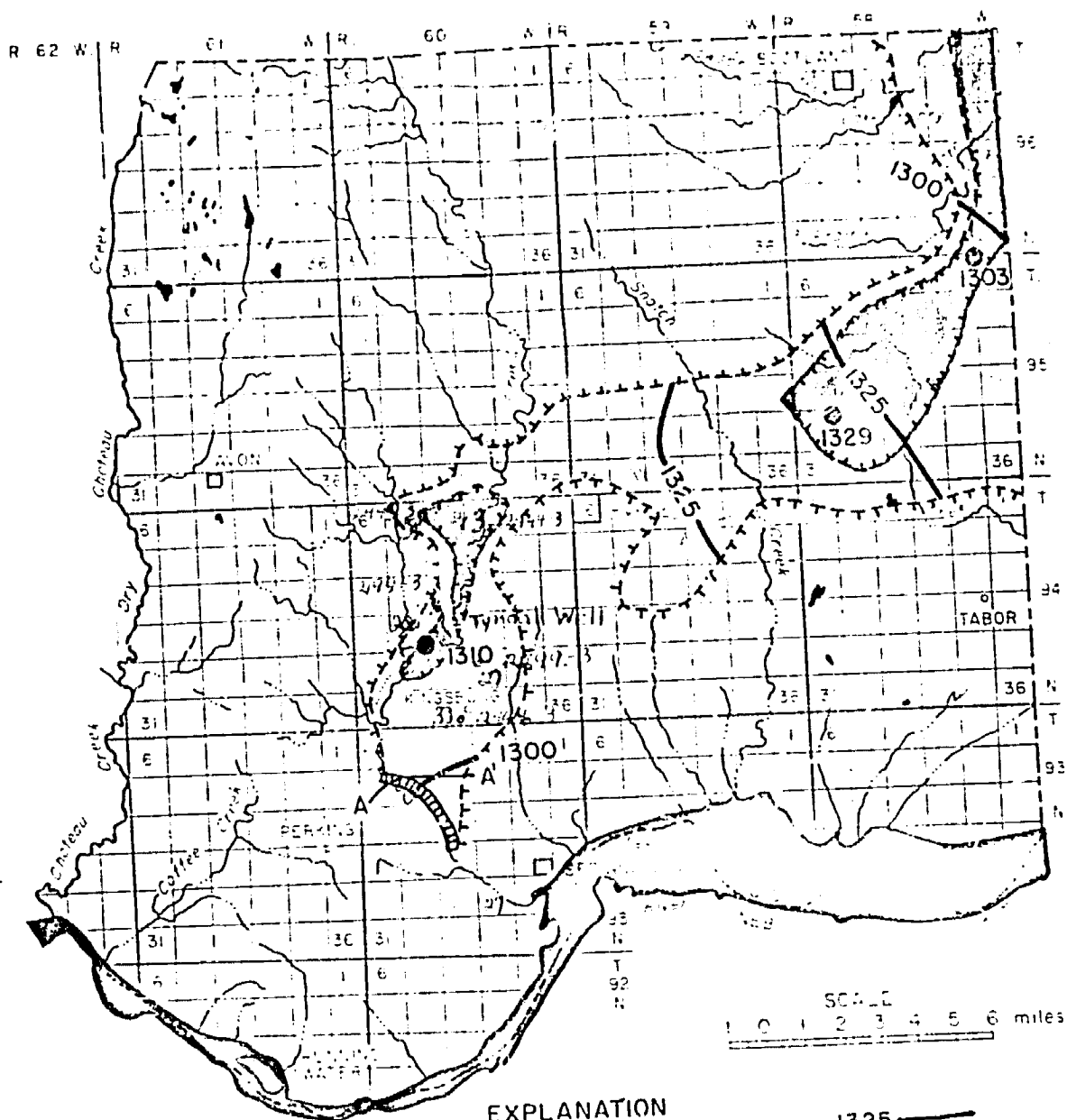
EXPLANATION

- Approximate aquifer boundary
- Aquifer outcrop
- Aquifer thickness less than 50 feet.
- Aquifer thickness more than 50 feet.
- 1310 ● Observation well. Number is altitude of potentiometric surface, 1970.

—1325—
Approximate potentiometric contour, shows altitude of potentiometric surface. Contour interval 25 feet. Datum mean sea level.

A—A' Trace of geohydrologic section (fig. 16).

Figure 14. Map showing areal extent, thickness, and potentiometric contours of the Tyndall-Scotland aquifer.



EXPLANATION

- Approximate aquifer boundary
- Aquifer outcrop
- Aquifer thickness less than 50 feet.
- Aquifer thickness more than 50 feet.
- 1310 ● Observation well. Number is altitude of potentiometric surface, 1970.

1325
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A—A' Trace of geohydrologic section (fig.16).

Figure 14. Map showing areal extent, thickness, and potentiometric contours of the Tyndall-Scotland aquifer.