

No. 2445-3Map No. 1837-3 Water Division No. 3 MISSOURI RIVER District
(Blanks to be filled by the Engineer for the W. R. C.)

APPLICATION FOR PERMIT

8155

To Appropriate Water within the State of South Dakota

NOTE: Draw a line through items not applicable)

1. Name of Applicant CANOE WAYNE SCHULMANS
 Post office address BY ACTION OF TYNDALE State S. DAK.
 Date of incorporation 3-27-80 BY NA.
 2. Method of accomplishing work (contract employment of others, or by direct labor) Employment of others
 3. Name of diversion work Wayne Schumanns Irrigation Project #1
 4. Amount of water claimed (cubic feet per second) 3.4 2.33 MAXIMUM ALLOWABLE
 5. Source of water supply well
 6. Location of point of diversion in NW 1/4 SE 1/4 Sec. 5-94-60

County Bon Homme

7. Annual period or periods during which water is to be used April - 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 233

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.
SW 1/4 NE 1/4 Sec 5	21	NE 1/4 SE 1/4 Sec 5	39
SE 1/4 NE 1/4 Sec 5	20	SE 1/4 SW 1/4 Sec 5	15
NE 1/4 SW 1/4 Sec 5	17	SW 1/4 SE 1/4 Sec 5	36
NW 1/4 SE 1/4 Sec 5	40	SE 1/4 SE 1/4 Sec 5	36

Attach sheet if more space needed SE 1/4 NW 1/4 Sec 5 9

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 TYNDALE Tribune & Register
 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

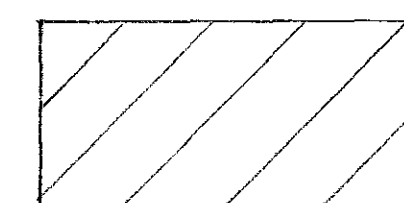
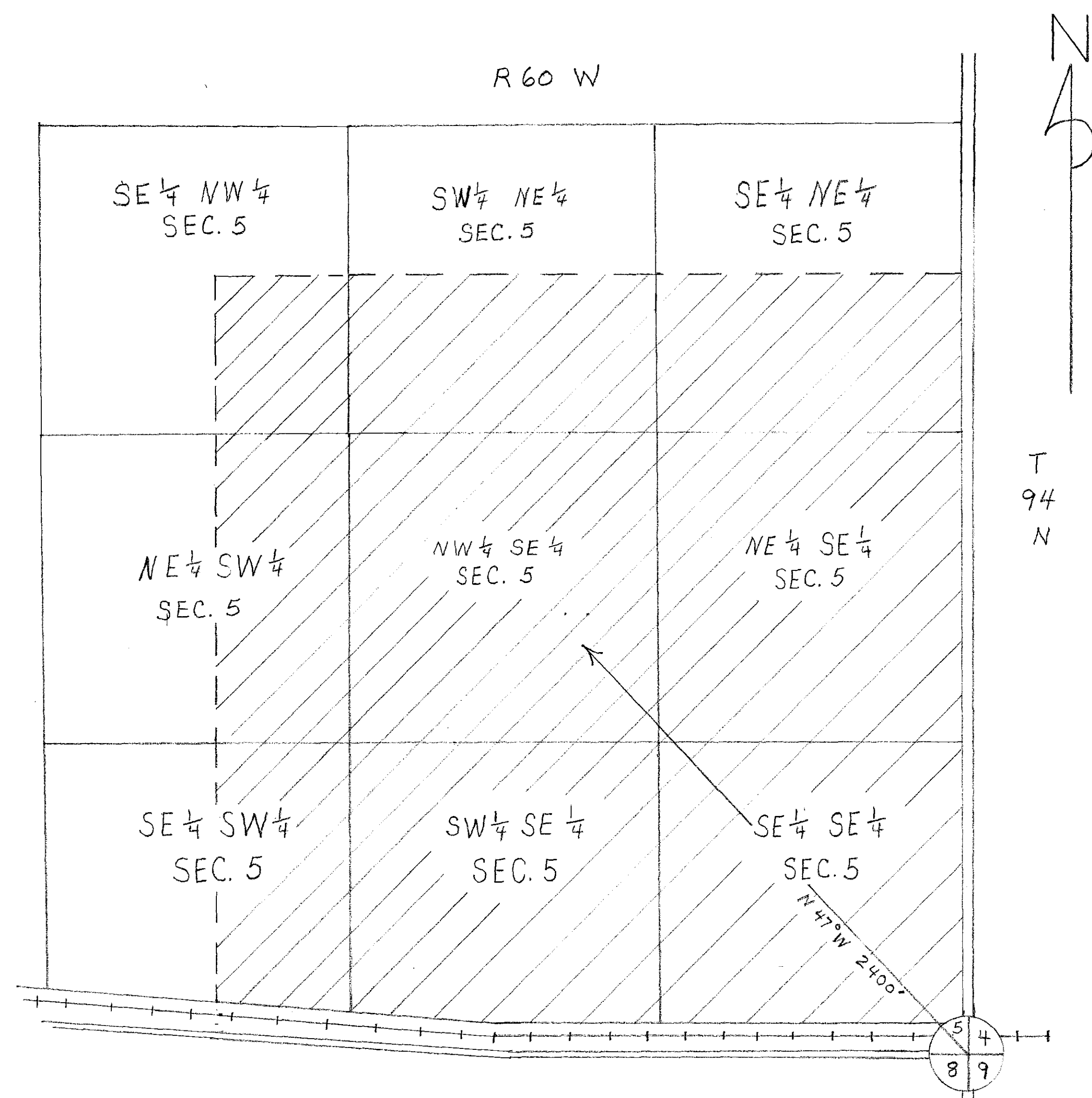
C. Works proposed to apply water to beneficial use.

center-pivot-sprinklerEstimated Total Cost \$ 45,000

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

STATE OF SOUTH DAKOTA)

County of Bon Homme)I, Wayne Schumanns, 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 Wayne SchumannsSubscribed and sworn to before me this 6th day of October 1975Wesley M. Quinn
Notary Public (or other qualified officer)



LAND TO
BE IRRIGATED

ALL LANDS DESCRIBED ARE OWNED BY WAYNE SCHUURMANS

LOCATION OF LAND TO BE IRRIGATED				
LOCATION	SECTION	TOWNSHIP	RANGE	ACRES
SW $\frac{1}{4}$ NE $\frac{1}{4}$	5	94	60	21
SE $\frac{1}{4}$ NE $\frac{1}{4}$	5	94	60	20
NE $\frac{1}{4}$ SW $\frac{1}{4}$	5	94	60	17
NW $\frac{1}{4}$ SE $\frac{1}{4}$	5	94	60	40
NE $\frac{1}{4}$ SE $\frac{1}{4}$	5	94	60	39
SE $\frac{1}{4}$ SW $\frac{1}{4}$	5	94	60	15
SW $\frac{1}{4}$ SE $\frac{1}{4}$	5	94	60	36
SE $\frac{1}{4}$ SE $\frac{1}{4}$	5	94	60	36
TOTAL				224

LAND DESCRIBED IS OWNED BY TERRY SCHUURMANS

LOCATION OF LAND TO BE IRRIGATED				
LOCATION	SECTION	TOWNSHIP	RANGE	ACRES
SE $\frac{1}{4}$ NW $\frac{1}{4}$	5	94	60	9
TOTAL				9

GRAND TOTAL 233 AC.

SCALE 1" = 400'

WAYNE SCHUURMANS
IRRIGATION PROJECT NO. 1

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed by _____	Date _____	Approved by _____
Drawn by _____		Title _____
Traced by _____		Title _____
Checked by _____		Sheet _____
		Drawing No. _____

MAP NO 1837-3 (APPL NO 2445-3)

WATER RIGHT APPLICATION APPROVAL

The Water Resources Commission hereby approves Water Right Application No. 2445-3
WAYNE SCHUURMANS TYNDALL
 (Applicant) (Last Office Address)
SOUTH DAKOTA 57066 With the following modifications:
 (State)

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 -
 3/27/80 incorporated into 4474-3*

Date of first receipt of application OCTOBER 7 19 75
 Date of return to applicant for correction, amendments or changes required _____ 19 ____
 Date of receipt of corrected application OCTOBER 20 19 75
 Approved JANUARY 22 19 76 Recorded in Book 14 Page 203

WATER RIGHT PERMIT NO. 2445.3

The Water Resources Commission hereby grants and issues this Water Right Permit No. 2445.3 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 7 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 3.33 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 - OCTOBER

Witness my hand this 28TH day of JANUARY 19 76

WATER RESOURCES COMMISSION

By:

John Hatch
 Chief Engineer, Executive Officer

Certificate of Construction Issued _____ 19 ____

Water License Issued _____ 19 ____

6-29-76

Tom Alberts

Arvon 296-3218

~~10~~

called concerning
W.R. 2445-3 Wayne Schuurmans
R. R. Tyndall
irrigating 270 acres
when authorized 233
acres and drilling
his well ~~in~~ along
road in SE¹ NE¹
Sec 5 when authorized
in NW¹ SE¹ Sec. 5

I contacted Paul
Worm, AAA Well
Drilling, Ft Pierre

who advised he had
drilled the well along
the road & installed
a ^{1200 gpm} pump.

6-30-76

589-368 I was unable to
→ contact Wayne Schuurmans.
Did contact Duane
Swanson & Lester
Sybrant, Sand Hills
Implement, Bassett
Nebraska 1-402-684-2331
who advised ~~the~~
Schuurmans pivot
was 13 towers, 1640'
with 240' ^(line) end arm
which would irrigate
250-260 acres.

The location of the pivot center was about 1750' N from railroad tracks and 1700' east from road.

Tom Alberts was in office 6-30-76. We advised him that as long as well is located w/i authorized acreage we did believe Schuurman to be in violation and that Schuurman was irrigating more than authorized (about 20 acres), but we

were not going to require him to reduce the ~~land~~ acres irrigated, since he was not exceeding the authorized diversion of 3,33 cfs.

Wrote letter to Schuurman requesting application for additional acreage prior to Sept. meeting.

Oct 19 1976

2445-3

Dear Sir:

We received your letter yesterday and after looking over the aerial map we find we have all the right descriptions, just some more ~~acres~~ ^{feet} more acres. After we got our permit & Standhill came out & measured the area for a system for sure, they found we could put one and sweep one & cover more acres with the original system.

With all the complications we had we never thought that our permit wasn't for that many acres. Will send along a copy of our map. We suppose the corrected acres should be more like this:

SW 1/4 NE 1/4	Sec 5 -	40A
SE 1/4 NE 1/4	Sec 5 -	28A
NE 1/4 SW 1/4	Sec 5 -	20A
NW 1/4 SE 1/4	Sec 5 -	46A
NE 1/4 SE 1/4	Sec 5	48A
SE 1/4 SW 1/4	Sec 5	15A
SW 1/4 SE 1/4	Sec 5	36A
SE 1/4 SE 1/4	Sec 5	26A
SE 1/4 NW 1/4	Sec 5	18A



(Our soil conservation agent is on vacation so couldn't measure exact, so this is a bit

June 30, 1976

Mr. Wayne Schuurmans
Rural Route
Tyndall, SD 57066

Dear Mr. Schuurmans:

We have received a complaint concerning the amount of land you are irrigating and the amount authorized. You are authorized 233 acres.

Since we were unable to contact you by phone, we contacted Sand Hills Implement, Bassett, Nebraska concerning the size of center pivot system you had purchased. The amount of land actually being irrigated is apparently 250-260 acres.

We have told persons complaining that you are irrigating more than 233 acres, but as long as you are not exceeding the authorized withdrawal of 3.33 cubic feet per second (1495 gpm) we would not at this time require you to change the system to irrigate only 233 acres. Mr. Paul Worm, Ft. Pierre, your well driller, has advised you are pumping 1200 gpm.

The difference between authorized and actual irrigated acreage does need to be corrected. Apparently portions of the West half of the SW $\frac{1}{4}$ of Section 5 and the SW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 5, both in T94N, R60 need to be included in the authorized acreage. This should be done as soon as possible.

We are enclosing the necessary application forms as the increase in acreage must be advertised. You will also need a map and the \$8.00 fee. Another chemical analysis is not necessary. You should try to have the completed forms in this office by September 3, 1976 to permit advertisement prior to the Water Rights Commission Meeting September 29 and 30, 1976.

Please advise if you have any questions on this matter.

Very truly yours,

John Hatch, Chief Engineer
Water Rights Commission

645. 2445-3

Publish first publication, on or before January 3, 1976

**NOTICE
INTENT TO APPROPRIATE WATER**

Pierre, South Dakota 57501

December 21, 1976

Notice is hereby given that Wayne Schuurmans
whose post office address is Tyndall, South Dakota, has made an application in accordance
with the provisions of the water laws of South Dakota for a permit to appropriate for beneficial use
3.33 cubic feet of water per second of time from the ground water through the
Schuurmans Project No. 1, the point of diversion of which is to be located in the _____

NE 1/4 SE 1/4

of Section 5, Twp. 94N, Range 60W. Said water to be used for the purpose
of providing irrigation on the following described land:

SE 1/4, S 1/4 NE 1/4, E 1/2 SE 1/4, SE 1/4 NW 1/4, Section 5, T90N, R60W

This application No. 2445-3 will be considered by the Water Rights Commission at their office at
Pierre upon the 22nd day of January, 1976, at 2:30 PM M. All interested
persons may appear and be heard.

WATER RIGHTS COMMISSION

By:

BURTON F. JONES
Water Rights Specialist

BFJ/bw
cc: Wayne Schuurmans, Tyndall, S.D. 57006

No. 2445-3

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)

County DeWitt) ss.

I, Mary J. Bertrand hereby

certify that the annexed printed copy of Notice of Intent to Appropriate

Water was taken from the Tyndall Tribune & Register

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 Tyndall in

County of DeWitt 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 the
Wayne Schuurmans whose post
office address is Tyndall, South
Dakota, has made an application
in accordance with the provisions
of the water laws of South Dakota
for a permit to appropriate for
beneficial use 3.33 cubic feet of
water per second of time from the
ground water through the
Schuurmans Project No. 1, the
point of diversion of which is to
be located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ of
Section 5, Twp. 94N, Range 60W.
Said water to be used for the
purpose of providing irrigation on
portions of the following describ-
ed land: SE $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$, E $\frac{1}{2}$
SW $\frac{1}{4}$, SE $\frac{1}{4}$, NW $\frac{1}{4}$, Section 5,
T90N, R60W.

This application No. 2445-3
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 Arthur 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 1974 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 Alber, 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 effects on the existing Tyndall municipal well, the Minow well or the Bohlmann well. There should definitely not be any effect upon the Avon city well, since the Avon well is in a different, deeper aquifer.

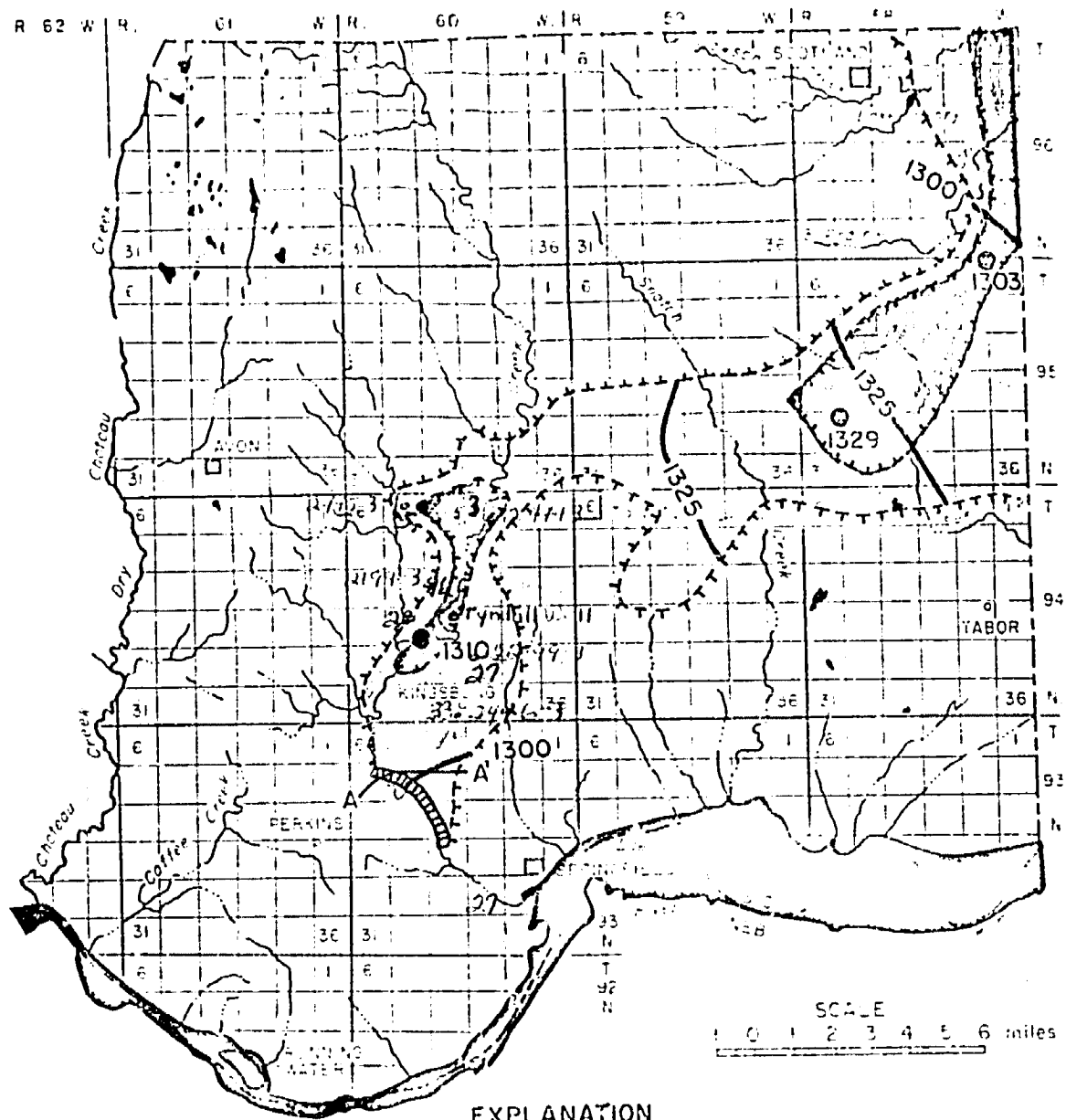
The applicants should know that they will have to control irrigation withdrawals so as not to reduce the nearby domestic supplies to less than the needed amount.

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.

October 17, 1975

Mr. Wayne Schuurmans
Tyndall, SD 57066

Dear Mr. Schuurmans:

Enclosed please find the original copy of the report of analysis of sample 75-922 submitted here by you on September 29. This is your copy to keep. Also you will find enclosed a copy of extension circular 654. On the outside back cover of this circular, is a water quality diagram showing the approximate utility of your sample in a nationally used diagram for irrigation. You will note that it is moderately high in salinity but low in sodium.

The soil which you have (Higmore) is only moderately permeable in the sub-soil. It has quite a tendency for a dense clay horizon below about 9 inches. With this being the case, you will have difficulty moving water to lower depths in the soil and keeping a progressive salt moving downward. However, by judicious use of the water, you will have a successful agriculture for a considerable number of years. By judicious use I mean careful irrigation, putting on at least 2 1/2 to 3 inches, and preferably more occasionally, every time you irrigate. Also, you should irrigate as infrequently as possible, that is, perhaps no more than 3 times a growing season. Some seasons it would be better if you could get by with irrigating only once or not at all. Such techniques tend to reduce the damage of salt in cases like this.

A copy of this letter, the WI-1 form, and 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

cc: State Conservation Commission

D. Pahl

Donald Boone, County Extension Agent



Conservation
Commission
Form WI #1

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 OF
Irrigation System: _____
Water Quality: _____
Soils Capability: _____
Approved: ALAN D. FID.
Disapproved: _____

NAME: WAYNE SCHULLMAN'S
ADDRESS: TYNDALL, S. DAK. 57066
COUNTY: Bead Homme Co.

LEGAL DESCRIPTION

1. WELL LOCATION: NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 5-94-60
2. AREA TO BE IRRIGATED: Approx. 200 ac. in SE $\frac{1}{4}$ E $\frac{1}{2}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 3
94-60

TYPE OF IRRIGATION

3. GRAVITY (SPRINKLER) (Indicate Type): Center-Pivot
4. CROPS TO BE IRRIGATED: CORN & BEANS

LAND CAPABILITY FOR IRRIGATION

5. PERCENTAGE OF SLOPE: 0-2 %
6. PHYSICAL SOILS CLASSIFICATION FOR IRRIGATION: HIGHMORE SILT LOAM

WATER QUALITY (TO BE COMPLETED BY COMMISSION)

7. SAMPLE NO.: 75-972
8. SALINITY: EC = 1040 μ mhos/cm (moderately high)
9. SODIUM: SAR = 0.79 (low)

SOIL CONSERVATION SERVICE

Wing Linn.

24th day of September 19 75.

Vlasta Miller
Vlasta Miller
Notary Public

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

Submitted by: Wayne Schuurmans
 Address: Tyndall, SD 57066

Date Rec'd September 29, 1975
 Sample No. 75-222
 Identification Well
SE 1/4, Sec. 5, T 94N, R 60W

WATER ANALYSIS

Calcium (Ca)	160	ppm*	3.00	me/l**
Magnesium (Mg)	52	ppm	4.26	me/l
Sodium (Na)	42	ppm	1.93	me/l
Potassium (K)	7	ppm	0.13	me/l
Sulfate (SO ₄)	362	ppm	7.53	me/l
Nitrate (as N)		ppm		me/l
Chloride (Cl)	4	ppm	0.13	me/l
Bicarbonate (HCO ₃)	298	ppm	4.88	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)	244	ppm (as CaCO ₃)		
Alkalinity (Phenolphthalein)	0	ppm (as CaCO ₃)		
Electrical Conductivity	1040	micromhos per cm at 25° C.		
Sodium Adsorption Ratio	0.74			
Sodium	12.82	% of cations		
Residual sodium carbonate	0.00	me/l		
pH	7.64			
Others:				

*ppm=parts per milli. n.
 **me/l=milliequivalent per liter

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

COMMENTS: Total cations 14.27 me/l
 Total anions 12.54 me/l

By: Shirley Littan

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. 75-222

Amount Enclosed \$

Signed