

DO NOT LICENSE  
THIS IS A  
TEMPORARY  
WATER PERMIT

**WATER PERMIT NO. 8244-3**

Name of Applicant: **Douglas Johnson**

Address: **41219 SD Hwy 50, Tyndall SD 57066** Phone: **605 589-3725**

Amount of Water Claimed: **1.71 cfs** Total Acres: **150 acres**

Source of Water Supply: **groundwater (one well)**

Water to be used for: **irrigation** County: **Bon Homme**

Type of Waste Disposal System:

Location: **4 miles west of Tyndall**

**PRIORITY** Date Received: **10-13-16**

Application/License Fee: **\$ 1,050**

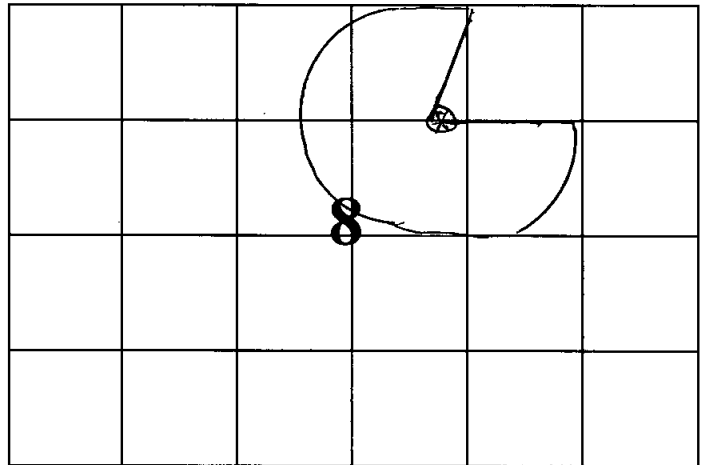
Corrected Application Received: **10-26-16**

Period of Annual Use: **May 1 – Sept 30**

Remarks:

Diversion Point: **center of NE 1/4 Sec 8-T94N-**  
**R60W**

Land to be Irrigated: **NE 1/4, N 1/2 NW 1/4 Sec 8-**  
**T94N-R60W**



Depth of Well: **300 feet deep**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **10-26-16**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: \_\_\_\_\_

|                                                                                                         |                                               |                                 |
|---------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------|
| Mail to:<br><br>DENR - Water Rights<br>523 E Capitol Ave<br>Pierre, SD 57501-3182<br>ph. (605) 773-3352 | No. <u>8244-3</u> (office use only)           | Hydrologic Unit <u>10170101</u> |
|                                                                                                         | Basin <u>Missouri River</u>                   |                                 |
|                                                                                                         | Newspaper <u>Tyndall Tribune 605-589-3242</u> |                                 |
|                                                                                                         | <u>Pioneer State - yankton 605-665-7811</u>   |                                 |

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## Application For Permit To Appropriate Water For Irrigation

Type of Application: ☒ New ☒ Vested Right ☐ Amendment/Correction to Permit No. \_\_\_\_\_  
(Use predates Mar 2, 1955)

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

1. Name to Appear on Irrigation Permit Douglas Johnson

Note: The "Name to Appear on Irrigation Permit" must be the name in which the irrigated property is held in.

Mailing Address 41219 SD Hwy 50 Tyndall SD 57066  
(Address) (City) (State) (Zip Code)

Home Phone 605-589-3725 Cell \_\_\_\_\_ Email Johnson 46@yahoo.com

2. Amount of water claimed 1.71 \*CFS or 770 \*\*GPM \*\*\*AF Total Acreage 150  
(\*Cubic Feet per Second) (\*\*Gallons per Minute) (\*\*\*)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Aquifer Well

4. Location of point of diversion 1 well in center of NE 1/4 of Sec 8  
(example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W)

94-60 Albion Township County Bon Homme

5. County or counties where water will be used Bon Homme

6. Annual period during which water is to be used Summer May 1 - Sept. 30

7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.  
(Attach sheet if more space is needed)

| Land Description | Acres | Land Description                | Acres |
|------------------|-------|---------------------------------|-------|
|                  |       |                                 |       |
|                  |       | E 1/2 NW 1/4 Sec 8 - T94N-R 60W | 30    |
|                  |       | W 1/2 NE 1/4 " " "              | 80    |
|                  |       | SE 1/4 NE 1/4 " " "             | 40    |

8. Give a description of the project. (Attach sheet if more space is needed)

center Pivot irrigation

I, Douglas Johnson, the applicant, certify under  
Name of Person Title (if applicable)

penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

**SOUTH DAKOTA**  
**TEMPORARY USE WATER PERMIT NO. 8244-3**

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Date of first receipt of application October 13, 2016.

Date of return to applicant for corrections, amendments or changes October 13, 2016.

Date of receipt of corrected application October 26, 2016.

The Chief Engineer, on behalf of the Water Management Board, issues Temporary Use Water Permit No. 8244-3 to Douglas Johnson, 41219 SD Hwy 50, Tyndall SD 57066 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Temporary Use Water Permit No. 8244-3 appropriates 1.71 cubic feet of water per second from one well to be completed into the Choteau:Tyndall Aquifer (300 feet deep) located in the approximate center of the NE 1/4 Section 8 for irrigation of 150 acres located in the W 1/2 NE 1/4, SE 1/4 NE 1/4, E 1/2 NW 1/4 Section 8; all in T94N-R60W.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: May 1 – September 30.
3. The date from which applicant may claim right is October 13, 2016.
4. The date of approval of Permit No. 8244-3 is January 9, 2017.
5. One-fifth of the construction is to be completed on or before July 9, 2019.
6. All construction is to be completed on or before January 9, 2022.
7. Water is to be put to beneficial use on or before January 9, 2026.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

**QUALIFICATIONS**

1. The city of Tyndall has priority right to this water under future use withdrawal permits. Permit No. 8244-3 is issued as a temporary use permit pursuant to SDCL 46-5-39 and is subject to this prior right if or when the city of Tyndall fully develops their reserve water supply. Permit No. 8244-3 may be subject to cancellation when the water reserved under the future use permit is put to beneficial use. The Chief Engineer must provide the permit holder six months' notice prior to cancellation of this temporary use permit.
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.

(continued)

3. The well authorized by Permit No. 8244-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

**WATER MANAGEMENT BOARD**

By:   
Jeanne Goodman, Chief Engineer  
Water Rights Program  
Department of Environment and Natural Resources

JAN 26 2017  
date



## Supplemental Information

(type or print)

1. Well Information (check one or both as applicable) ☒ Drilling new well(s) ☐ Using existing well(s)a) If new wells, how many 1 Have test holes been drilled ☒ Yes ☐ No Drilled by Heinie Irrigation  
(if yes, please provide copies of logs)b) If existing wells, how many 0 Provide copy of log(s), if available. Drilled by \_\_\_\_\_

For either Existing or Proposed Wells:

c) Well Depth (required) 300 Depth to Top of Water Bearing Material 130 Depth to Water from Surface 130d) Distance to nearest domestic well on applicant's property N/A Property owned by others 1 mile

## 2. Wastewater Disposal System Information

a) Type of System (i.e. septic tank, drain field) \_\_\_\_\_

b) System Capacity (gallons ) \_\_\_\_\_ Year Constructed \_\_\_\_\_

c) Connected to the City of \_\_\_\_\_ Sanitary System

## 3. Dugout Information

a) Surface Dimensions \_\_\_\_\_ Depth \_\_\_\_\_

b) Depth to water (ground surface to water level) \_\_\_\_\_

## 4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

b) Freeboard \_\_\_\_\_

c) Crest Width \_\_\_\_\_

Crest Length \_\_\_\_\_

d) Height \_\_\_\_\_

e) Primary Outlet Capacity \_\_\_\_\_

If pipe, diameter \_\_\_\_\_

f) Secondary Spillway Capacity \_\_\_\_\_

Spillway Width \_\_\_\_\_

g) X &amp; Y Slope (e.g. 3 to 1 is a typical slope)

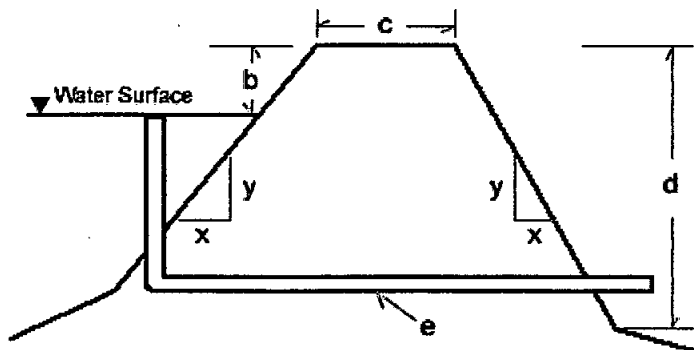
Upstream \_\_\_\_\_

Downstream \_\_\_\_\_

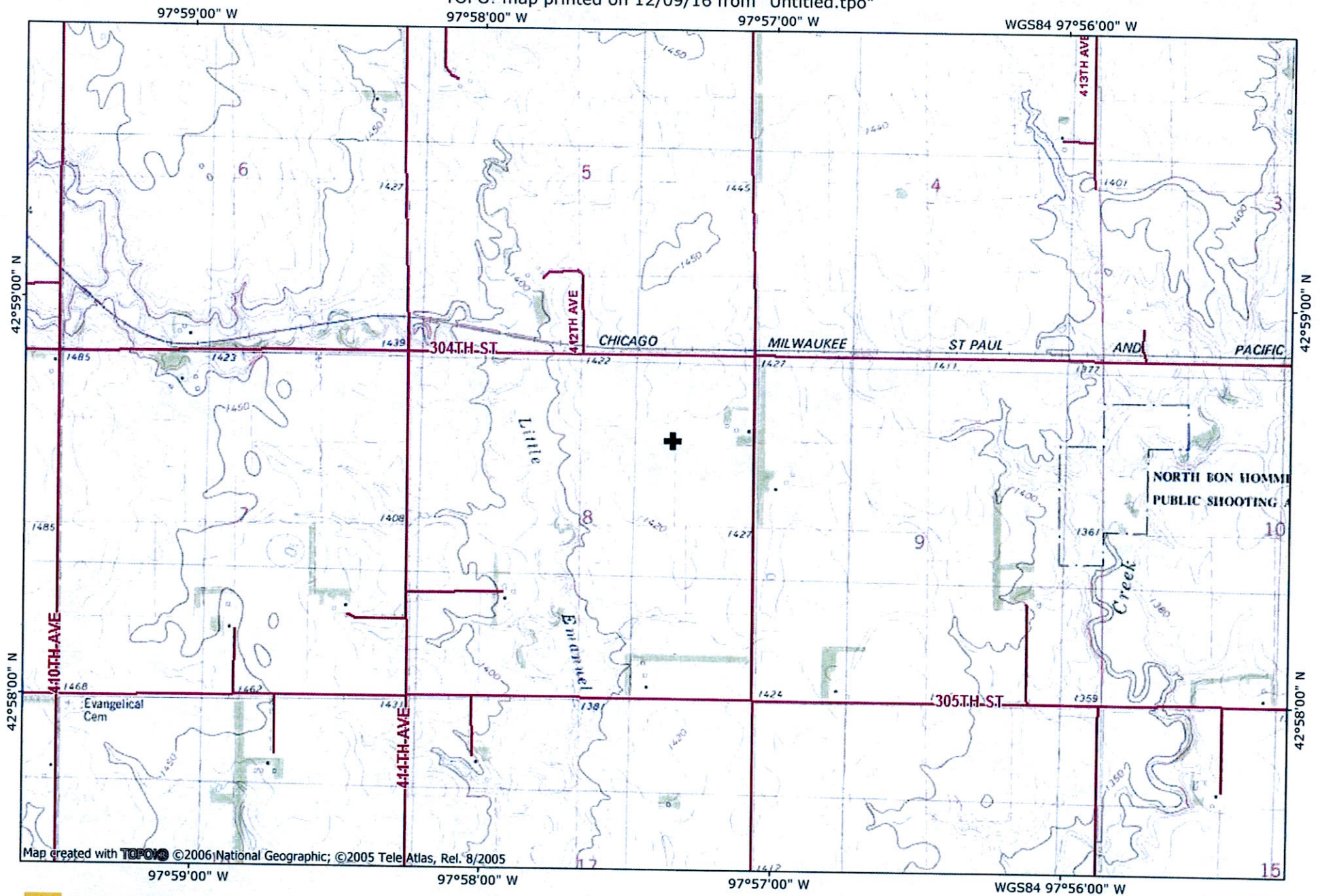
h) Surface Area of Impoundment \_\_\_\_\_

i) Storage \_\_\_\_\_ Acre Feet

j) Drainage Area Above Dam \_\_\_\_\_ Acres



TOPO! map printed on 12/09/16 from "Untitled.tpo"



0.0 0.5 miles  
0.0 0.5 1.0 km

TN\*MN  
4°  
12/09/16



Google Earth

feet  
km

4000

box AROUND NE 1/4 Section 8, 94N, 60W.  
TEST LOCATION  $42^{\circ}58.651'N$   
-  $97^{\circ}57.361'W$





The Leader in Precision Irrigation

Prepared By: **Heine Electric and Irrigation, Inc.**  
For: **Johnson, Steve- 120**

\*This one

Questions or concerns? Please call us at 402-640-1999!

Pivot center at 42.977463, -97.957062

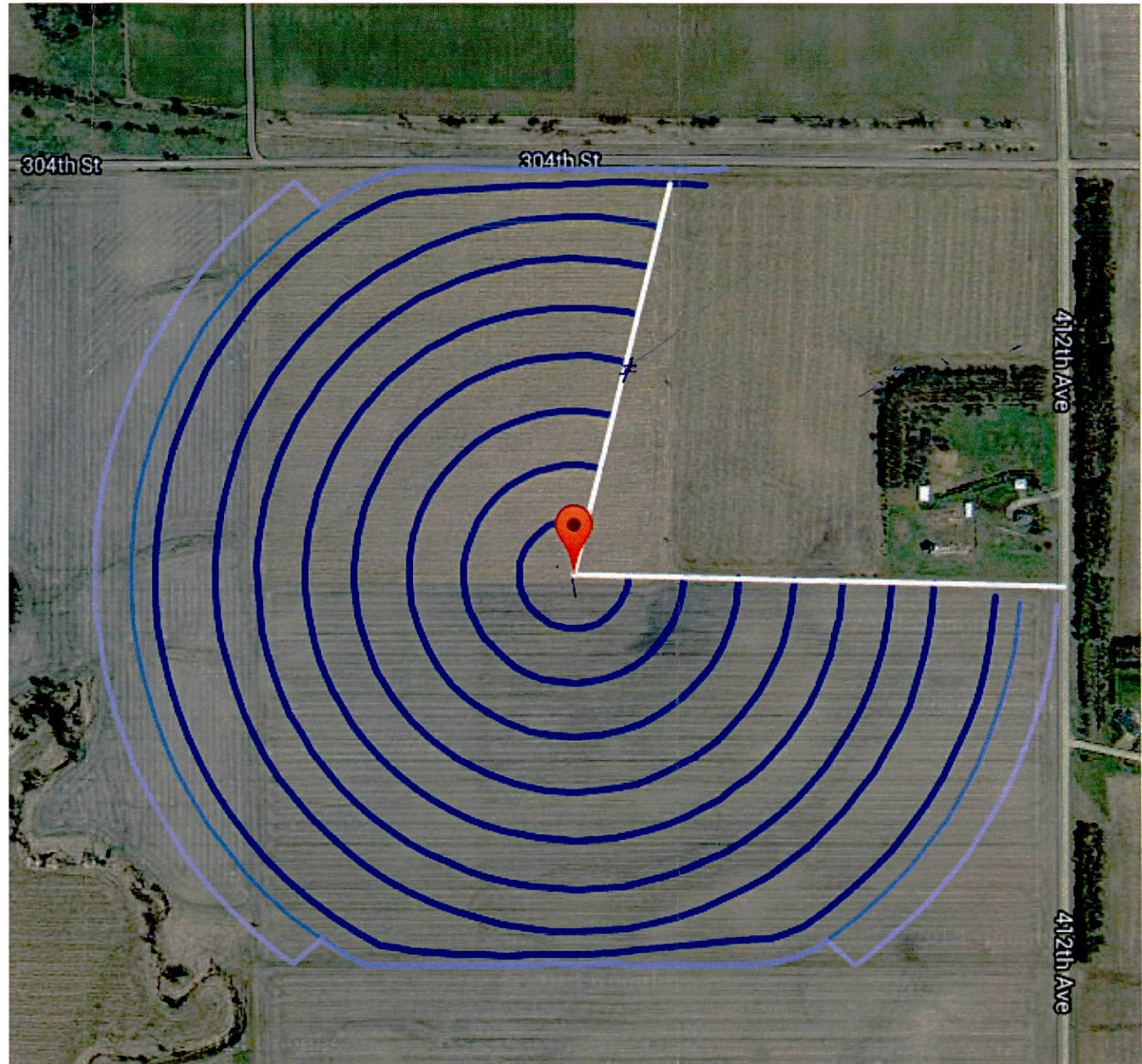
Arc Start Bearing: 91.52

Arc Stop Bearing: 13.85

[N] Spray off at 325°, on at 35°.

[S] Spray off at 145°, on at 215°.

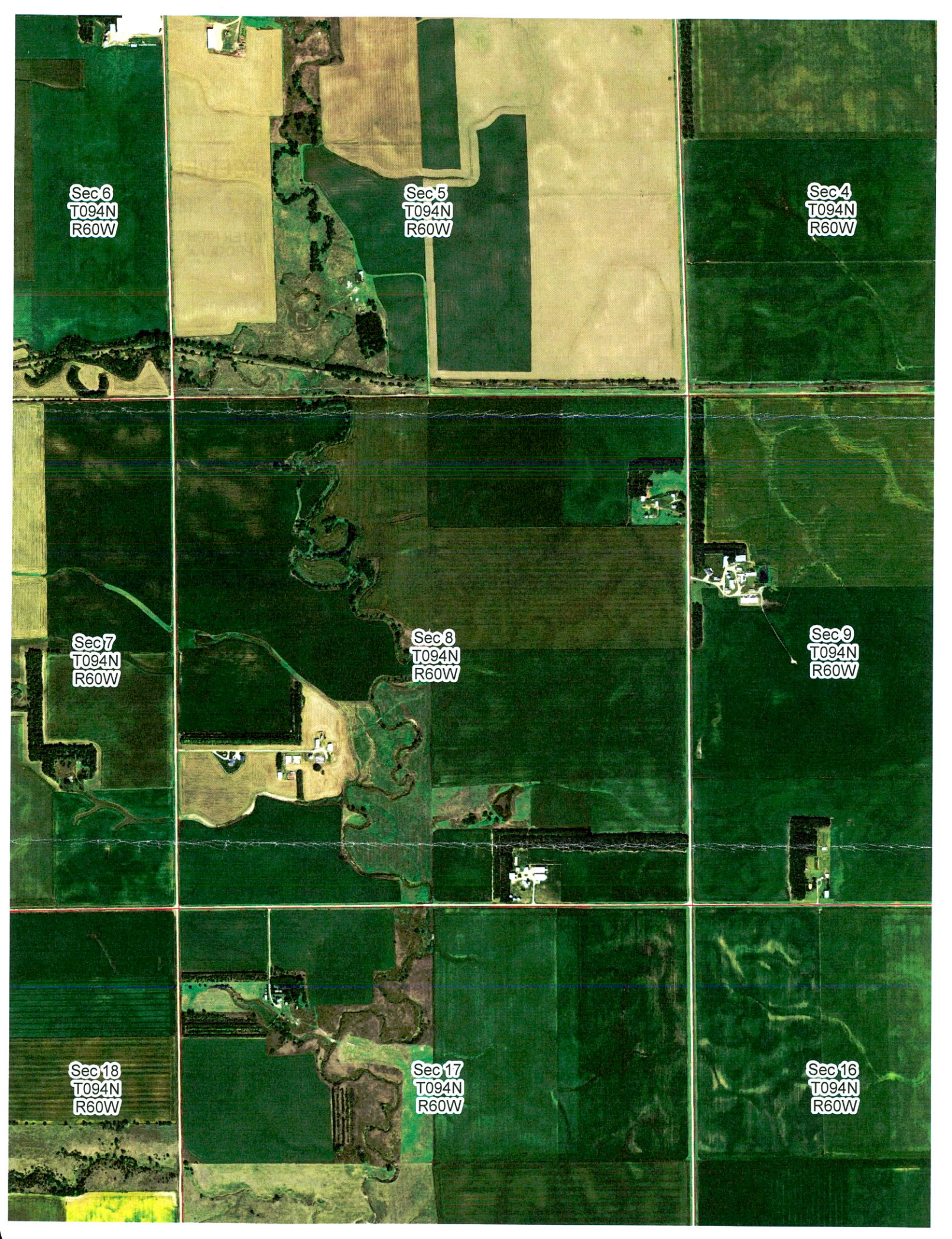
- 1 180 ft. Total: 180 ft.  
Acreage: 1.83. Total: 1.83 acres.
- 2 180 ft. Total: 360 ft.  
Acreage: 5.5. Total: 7.33 acres.
- 3 180 ft. Total: 540 ft.  
Acreage: 9.17. Total: 16.5 acres.
- 4 180 ft. Total: 720 ft.  
Acreage: 12.84. Total: 29.35 acres.
- 5 160 ft. Total: 880 ft.  
Acreage: 14.49. Total: 43.84 acres.
- 6 160 ft. Total: 1040 ft.  
Acreage: 17.39. Total: 61.23 acres.
- 7 140 ft. Total: 1180 ft.  
Acreage: 17.59. Total: 78.83 acres.
- Corner** 205 ft. Total: 1381.88 ft.  
(Corner at full extension will be ~201.88 ft.)  
Acreage: 46.96. Total: 125.79 acres.
- Overhang** 82 ft. Total: 1462.63 ft.  
Acreage: 14.17. Total: 139.97 acres.
- Spray** 120 ft. Total: 1582.63 ft.  
Acreage: 13.73. Total: 153.7 acres.



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Sec 6  
T094N  
R60W

Sec 5  
T094N  
R60W

Sec 4  
T094N  
R60W

Sec 7  
T094N  
R60W

Sec 8  
T094N  
R60W

Sec 9  
T094N  
R60W

Sec 18  
T094N  
R60W

Sec 17  
T094N  
R60W

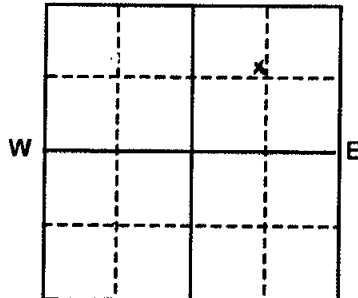
Sec 16  
T094N  
R60W

## SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location nw 1/4 ne 1/4 Sec 8 Twp 94n Rg 60wWell Owner: Steve JohnsonCounty Bon Homme

North

Please mark well  
location with an "X"

Business Name: \_\_\_\_\_

Address: 30468 411 Ave.City, State, Zip: Tyndall SD 57066

## WELL LOG:

## DEPTH

| FORMATION                            | FROM | TO  |
|--------------------------------------|------|-----|
| topsoil                              | 0    | 3   |
| Clay, brown, silty, pebbly (till)    | 3    | 28  |
| Clay, gray, silty, pebbly, rock @49' | 28   | 87  |
| Clay, gray, sandy, rock @ 87'        | 87   | 104 |
| sand, medium grained                 | 104  | 121 |
| sand, fine, w/ clay beds             | 121  | 225 |
| sand, medium to coarse (20%)         | 225  | 315 |
| clay, gray                           | 315  | 320 |

Well Completion Date

January 6, 2016

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?  
1,200.0 ft. from septic tank (identify source)

## PROPOSED USE:

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

## METHOD OF DRILLING:

Rotary

## CASING DATA:

☐ Steel ☐ Plastic ☐ Other  
 If other describe none

| PIPEWEIGHT | DIAMETER | FROM | TO | HOLE DIAMETER |
|------------|----------|------|----|---------------|
| LB/FT      | IN       | FT   | FT | IN            |
| LB/FT      | IN       | FT   | FT | IN            |
| LB/FT      | IN       | FT   | FT | IN            |

## GROUTING DATA:

| Grout Type | No. of Sacks | Grout Weight | From   | To       |
|------------|--------------|--------------|--------|----------|
| bent grout | 13           | 9.5 Lb/gal   | 0.0 Ft | 320.0 Ft |

Describe grouting procedure  
tremie through rods

## SCREEN:

☐ Perforated pipe ☐ Manufactured  
 Diameter \_\_\_\_\_ Inches Length \_\_\_\_\_ Feet  
 Material \_\_\_\_\_  
 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 \_\_\_\_\_

## DISINFECTION: Was well disinfected upon completion?

☐ Yes, How? chlorinated mix water
☐ No, Why Not?  
 Lab to which water  
 quality sample sent for analysis

## STATIC WATER LEVEL

160' FEET

If flowing: closed in pressure \_\_\_\_\_ PSI

GPM flow \_\_\_\_\_ through \_\_\_\_\_ Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other \_\_\_\_\_

Reduced flow rate \_\_\_\_\_ GPM

Can well be completely shut in? SWL estimated from nearby wells

## WELL TEST DATA:

☐ Pumped Describe: \_\_\_\_\_☐ Bailed☐ Other

Pumping Level Below Land Surface

\_\_\_\_\_ Ft. After \_\_\_\_\_ Hrs. pumped \_\_\_\_\_ GPM

\_\_\_\_\_ Ft. After \_\_\_\_\_ Hrs. pumped \_\_\_\_\_ GPM

If pump installed, pump rate: \_\_\_\_\_ GPM

## REMARKS

Location 42° 58' 39.06"  
- 97° 57' 21.66"

This well was drilled under license # 810 and this report is true and accurate.Drilling firm: Heine Electric & Irrigation, IncSignature of License Representative: Revised 12/9/16

Signature of Well Owner or Equitable Property Holder:

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Date: \_\_\_\_\_

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Date: 1-6-16  
Name: Steve Johnson  
Address: \_\_\_\_\_ Phone Number: \_\_\_\_\_  
City: Tyndall State: SD Zip: \_\_\_\_\_

NW 1/4 of the SW 1/4 of Section 8 Township 94 North  
Range 60 East West X Bowling Green County

Latitude Degree: 42 Minute: 58 Second: 45 10  
 Longitude Degree: -97 Minute: 54 Second: 36 10 (NAD 83)  
 Elevation 1482

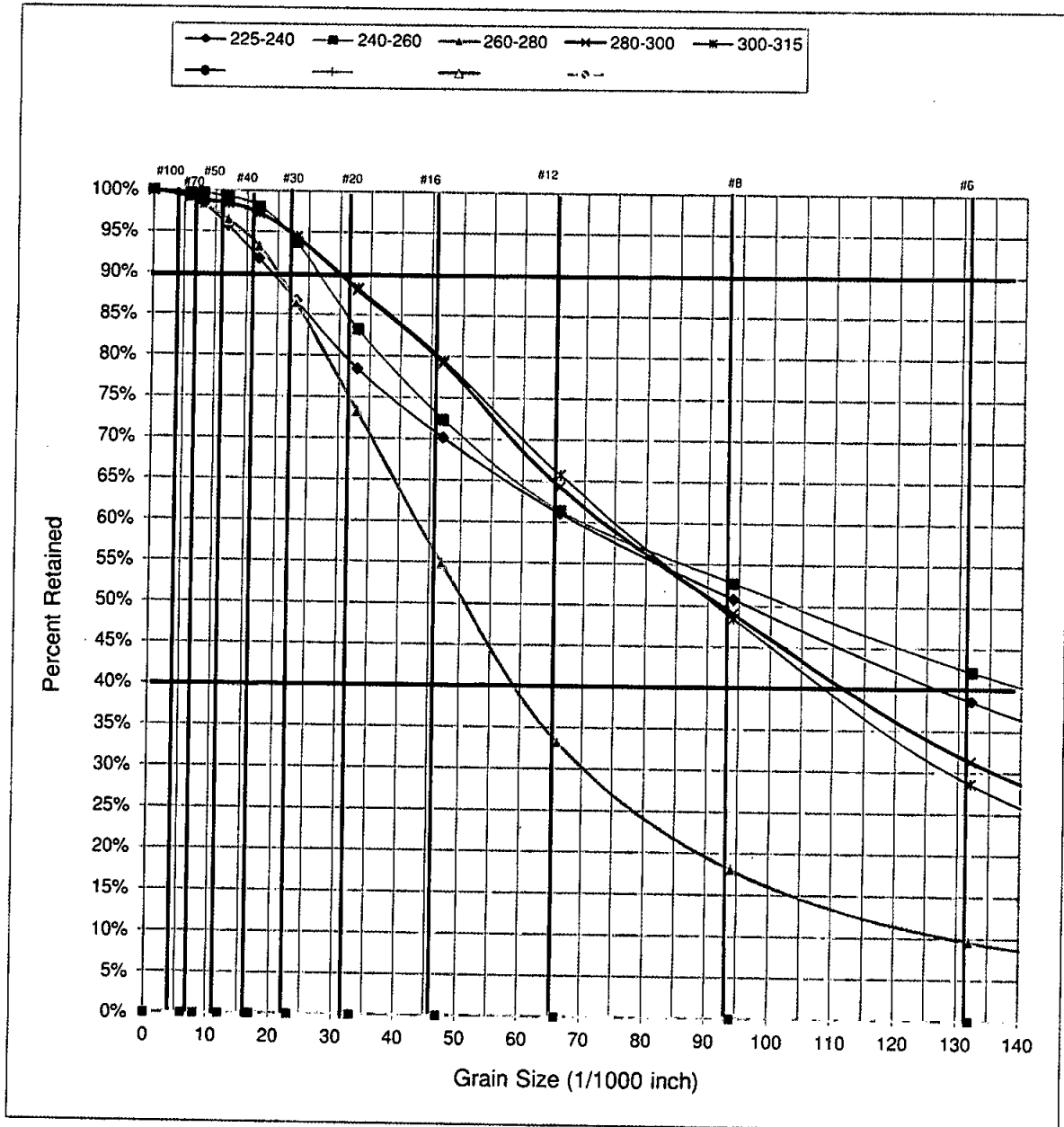
The well is \_\_\_\_\_ feet from the (N ☐ S ☐) section line and \_\_\_\_\_ feet from the (E ☐ W ☐) section line.  
Location #1 Steve Johnson 120

[illegible]

Email: [heineelectric@hartel.net](mailto:heineelectric@hartel.net)



**Farm - Residential**  
**Sales - Service**



Job Name Steve Johnson  
Location Tyndall, SD  
Driller Heine Electric & Irrigation

Sample ID 011516-1  
Analyzed by: Al Smith, 651-638-3160  
Date: 1/15/2016

Casing  $\phi$  16"  
Screen  $\phi$  16" Pipe Size

Yield Desired Yield 700 - 800 GPM  
SWL (ft) 165'

Recommended Slot Size 80 Slot From 225' - 315'  
Recommended Gravel Pack #90 Well Slot Red Flint

*Based exclusively on the samples provided by the contractor, a sieve analysis graph and suggested screen slot size is provided as requested. Since numerous construction considerations and site circumstances influence successful well completion, Johnson Screens assumes no responsibility for final well performance nor awareness of local regulations pertaining to well installations.*

# RECEIPT

## WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 10/13, 20 16

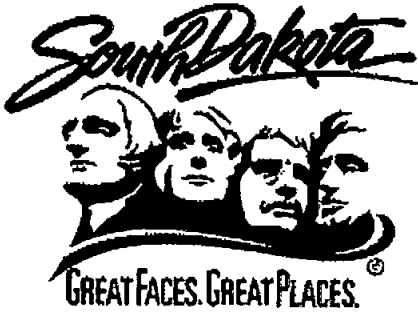
RECEIVED OF Douglas Johnson 41219 SD Hwy 50 Tyndall SD 57066

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

|                                                                                                                              |       |         |
|------------------------------------------------------------------------------------------------------------------------------|-------|---------|
| Fee for Application for Permit No. <u>8244-3</u> to Appropriate Water, to construct and to put water to beneficial use       | 850   | 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. _____                          | 200   | 00      |
| Fee for Filing Transfer Form <u>8244-3</u>  |       |         |
| Fee for _____                                                                                                                |       |         |
| Fee for Issuing New Well Driller's License No. _____ for C.Y. _____                                                          |       |         |
| Fee for Renewal of Well Driller's License No. _____ for C.Y. _____                                                           |       |         |
| Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____                                                       |       |         |
| Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____                                                    |       |         |
| (Any Other Work Provided by Law)                                                                                             | TOTAL | 1050 00 |

No. **07933**

By   
Chief Engineer



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DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3182  
<http://denr.sd.gov>

October 13, 2016

Doug Johnson  
41219 SD Hwy 50  
Tyndall SD 57066

Dear Mr. Johnson:

Thank you for submitting the *Application for a Permit to Appropriate Water* for irrigation in Bon Homme County. In order to complete the application, the following is required.

- The application states the land to be irrigated is located in the NE 1/4 Section 8-T94N-R60W. It appears from the map submitted with the application that approximately 30 acres will be located in the E 1/2 NW 1/4 Section 8. Do you agree? *yes.*
- The application also states test holes have been drilled by Heine Electric and Irrigation. If available, please submit the test hole log(s). I have reviewed our files and do not find that we have received anything for this area.

If you have any questions, please contact me.

Sincerely,

*Karen Schlaak*

Karen Schlaak  
Water Rights Program  
605 773-3352  
[karen.schlaak@state.sd.us](mailto:karen.schlaak@state.sd.us)

enclosures



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

denr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT  
APPLICATION NO. 8244-3, Douglas Johnson**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 8244-3, Douglas Johnson, 41219 SD Hwy 50, Tyndall SD 57066.

The Chief Engineer is recommending APPROVAL of Application No. 8244-3 as a TEMPORARY USE PERMIT pursuant to SDCL 46-5-39 because 1) water is available to be appropriated as a temporary use permit until the city of Tyndall, holder of a future use permit from the Choteau-Tyndall aquifer fully develops water reserved from their future use permit, 2) the proposed diversion can be developed as a temporary use permit without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The city of Tyndall has priority right to this water under future use withdrawal permits. Permit No. 8244-3 is issued as a temporary use permit pursuant to SDCL 46-5-39 and is subject to this prior right if or when the city of Tyndall fully develops their reserve water supply. Permit No. 8244-3 may be subject to cancellation when the water reserved under the future use permit is put to beneficial use. The Chief Engineer must provide the permit holder six months' notice prior to cancellation of this temporary use permit.
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.
3. The well authorized by Permit No. 8244-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

*for*   
Jeanne Goodman, Chief Engineer  
December 19, 2016

**REPORT TO THE CHIEF ENGINEER  
ON  
WATER PERMIT APPLICATION NO. 8244-3  
DOUGLAS JOHNSON  
DECEMBER 13, 2016**

Water Permit Application No. 8244-3 proposes to appropriate water from the Tyndall management unit of the Choteau aquifer for irrigation purposes. The application proposes to divert water from one well, approximately 300 feet deep, at a maximum diversion rate of 1.71 cubic feet of water per second (cfs). The well is to be located in the approximate center of the NE¼ Sec. 8, T94N-R60W and the acreage to be irrigated is located in the W ½ NE¼, SE¼ NE¼, E ½ NW¼ Sec. 8, T94N-R60W.

**AQUIFER: TYNDALL MANAGEMENT UNIT OF THE CHOTEAU AQUIFER**

**GEOLOGY AND AQUIFER CHARACTERISTICS:**

The test hole log submitted with this report identifies fine, medium and coarse grained sand with minor clay beds from 104-315 feet below grade. The static water level of the test hole was reported to be 160 feet below grade on January 6, 2016. Although the well site proposed by this application is west of any outwash deposit mapped by Jensen (2012), the altitude that the sand was encountered along with the elevation of potentiometric surface at the test hole corresponds with the Tyndall Management Unit of the Choteau aquifer.

The Tyndall Management Unit of the Choteau aquifer is a buried outwash deposit that fills a preglacial valley in central Bon Homme County. Originally this outwash was named the Tyndall-Scotland aquifer (Jorgensen, 1971) and was thought to extend to the northeast, ultimately into Yankton and Hutchinson Counties. Hedges and others, (1982) separated the "Tyndall-Scotland" aquifer into the Choteau: Tyndall aquifer and the Scotland Management Unit of the Lower James Missouri aquifer to the northeast. Observation well data suggests groundwater movement from north to south/east to west in the Choteau: Tyndall and to the north/east in the Lower James Missouri-Scotland aquifer. The boundary between the Choteau: Tyndall and Lower James Missouri: Scotland aquifers was identified near the southeast corner of T95N-R59W. The Choteau: Tyndall aquifer terminates to the southwest where Emmanuel Creek has completely incised the aquifer. The Choteau: Tyndall aquifer underlies approximately 31,300 acres of Bon Homme County and contains an estimated 140,850 acre-feet of recoverable water in storage in the county (Hedges, 1982). The aquifer is generally under confined conditions, however unconfined conditions exist locally. The aquifer is under unconfined conditions at this well site.

Capacities of seven nearby irrigation wells that are completed into the Choteau: Tyndall aquifer range from 500-1,000 gpm and specific capacities of the wells range from under 7 (gpm)/ft. to over 43 (gpm)/ft. (Buhler, 2012). The aquifer transmissivity calculated from the reported specific capacities ranges of 9,855 – 65,205 gal/day/ft. (Buhler, 2012). An aquifer test conducted at a Tyndall municipal well that is completed into the Choteau: Tyndall aquifer

indicated a transmissivity of 210,000 gal/day/ft. and a storage coefficient of 0.2 (Jorgensen, 1971).

#### **SDCL 46-2A-9**

Pursuant to SDCL 46-2A-9, a permit to appropriate water may be issued only if there is a reasonable probability that there is unappropriated water available for the applicant's proposed use, that the proposed diversion can be developed without unlawful impairment of existing rights and that the proposed use is a beneficial use and in the public interest. This report will address the availability of unappropriated water and existing rights from the aquifer that are pertinent to this application.

#### **WATER AVAILABILITY:**

Assuming the statutory limit of two ac-ft/yr per irrigated acre, this application proposes to appropriate up to 300 acre-feet annually (ac-ft/yr). However, the average annual water demand for the irrigation of 150 acres as proposed by this application is not expected to exceed 150 ac-ft/yr. The probability of 150 ac-ft/yr of unappropriated water available from an aquifer can be evaluated by considering SDCL 46-6-3.1, which requires "No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source." If the source of the water is older or lower than the Greenhorn Formation and a water distribution system has applied for a permit, the Board need not consider the recharge/withdrawal issue. Here, the source is not older than the Greenhorn Formation and a water distribution system is not involved. Therefore, the withdrawal/recharge issue must be considered.

#### *Recharge:*

Recharge to the Choteau: Tyndall aquifer is through inflow from Emmanuel Creek (Jorgensen, 1971), and potentially inflow from contiguous bedrock aquifers such as the Niobrara, Codell, and Dakota aquifers. Jorgensen (1971) also claims that infiltration is occurring as percolation of precipitation through overlying till. However, it is unclear to what extent local precipitation contributes to recharge.

Hedges and others (1985) estimated a recharge rate of 3.2 inches per acre per year (in/ac/yr) for unconfined portions of the Choteau: Tyndall aquifer. Stonesifer (2013) applied Hedges and others' methodology in 2013 to estimate an average recharge rate of 7.2 in/ac/yr to the Choteau: Tyndall aquifer. Stonesifer estimated that the unconfined portions of the aquifer encompassed approximately 2,800 acres. Therefore, the minimum recharge to the Choteau: Tyndall aquifer was estimated to be 1,700 ac-ft/yr. Capen (2014) extended the observation well period of record used by Stonesifer, and applying Stonesifer's assumptions, estimated a minimum average annual recharge of 1,408 ac-ft/yr.

#### *Discharge:*

Discharge from the Choteau: Tyndall aquifer is through springs near Emmanuel Creek, evapotranspiration, and well withdrawals (Jorgensen, 1971) as well as potential outflow to adjacent portions of the Niobrara and Codell bedrock aquifers. Currently there are a total of 28 water rights/permits appropriating water and one future use permit reserving water from the Choteau: Tyndall aquifer (Water Rights, 2016b). The City of Tyndall holds two water rights (Nos. 1075-3 and 4839B-3), authorizing a total maximum diversion rate of 2.16 cfs. However,

the City of Tyndall is supplied by BY Rural Water System and the water rights are maintained only as a back-up source for uses such as fire protection. Consequently, withdrawals under water rights held by the City of Tyndall are assumed to be negligible. The City of Tyndall holds Future Use Permit No. 4839A-3 that reserves 410 ac-ft/yr, from this aquifer. There are 25 water rights/permits appropriating water from the Choteau: Tyndall aquifer for irrigation purposes. Temporary Water Permit No. 8060-3 for Douglas Johnson authorizes a temporary appropriation of water reserved under Future Use Permit No. 4839A-3 pursuant to SDCL 46-5-39. Historic irrigation usage from the Choteau: Tyndall aquifer is shown in Table 1.

Table 1. Historic irrigation water use from the Choteau: Tyndall aquifer (Water Rights, 1980-2016).

| Year           | Number of Permits Reporting | Appropriation (ac-ft/yr) | Pumpage Reported (ac-ft/yr) |
|----------------|-----------------------------|--------------------------|-----------------------------|
| 1979           | 17                          | 8079.0                   | 983.0                       |
| 1980           | 17                          | 7966.0                   | 1943.0                      |
| 1981           | 22                          | 10210.0                  | 1418.0                      |
| 1982           | 19                          | 8576.0                   | 1564.7                      |
| 1983           | 19                          | 9043.0                   | 996.7                       |
| 1984           | 23                          | 10710.0                  | 1012.1                      |
| 1985           | 21                          | 9551.0                   | 1056.2                      |
| 1986           | 21                          | 9551.0                   | 1184.2                      |
| 1987           | 21                          | 9393.0                   | 1645.7                      |
| 1988           | 21                          | 9393.0                   | 2545.9                      |
| 1989           | 22                          | 9470.0                   | 2173.9                      |
| 1990           | 19                          | 7604.0                   | 1570.5                      |
| 1991           | 19                          | 7154.0                   | 1961.5                      |
| 1992           | 19                          | 7154.0                   | 489.3                       |
| 1993           | 19                          | 7154.0                   | 61.2                        |
| 1994           | 19                          | 7523.0                   | 633.7                       |
| 1995           | 19                          | 7523.0                   | 1104.2                      |
| 1996           | 19                          | 7672.0                   | 1034.8                      |
| 1997           | 17                          | 7179.0                   | 964.0                       |
| 1998           | 18                          | 7179.0                   | 708.2                       |
| 1999           | 18                          | 7179.0                   | 939.2                       |
| 2000           | 18                          | 7179.0                   | 1235.8                      |
| 2001           | 18                          | 7179.0                   | 919.7                       |
| 2002           | 17                          | 6759.0                   | 1613.7                      |
| 2003           | 16                          | 6138.0                   | 1496.0                      |
| 2004           | 20                          | 7288.0                   | 1680.1                      |
| 2005           | 20                          | 7288.0                   | 2006.8                      |
| 2006           | 20                          | 7240.0                   | 1693.3                      |
| 2007           | 21                          | 7410.0                   | 1931.4                      |
| 2008           | 23                          | 7824.0                   | 2138.4                      |
| 2009           | 23                          | 7824.0                   | 1024.0                      |
| 2010           | 23                          | 7824.0                   | 559.6                       |
| 2011           | 21                          | 7035.0                   | 1609.7                      |
| 2012           | 23                          | 7629.0                   | 3931.5                      |
| 2013           | 24                          | 8127.0                   | 2078.8                      |
| 2014           | 25                          | 8427.0                   | 2212.2                      |
| 2015           | 26                          | 8647.0                   | 1670.9                      |
| <b>Max</b>     | <b>26</b>                   | <b>10710</b>             | <b>3931.51</b>              |
| <b>Min</b>     | <b>16</b>                   | <b>6138</b>              | <b>61.2</b>                 |
| <b>Average</b> | <b>20</b>                   | <b>7975</b>              | <b>1454</b>                 |

#### *Hydrologic Budget:*

The average annual withdrawal of water from the Choteau: Tyndall aquifer was calculated to be approximately 1,454 ac-ft/yr from irrigation questionnaires spanning 1979-2015. An additional 410 ac-ft/yr is reserved for future use permits held by the City of Tyndall. Average annual recharge has been estimated to be 1,000 ac-ft/yr (Hedges, 1985; Jorgensen, 1971), 1,700 ac-ft/yr (Stonesifer, 2013) and approximately 1,400 ac-ft/yr (Capen, 2014). Expected average annual

withdrawal over the period of record may exceed the average annual recharge estimates if the future use permit if the future use permit was fully implemented.

**Observation Well Data:**

Administrative Rule of South Dakota Section 74:02:05:07 requires that the Water Management Board shall rely upon the record of observation well measurements in addition to other data to determine that the quantity of water withdrawn annually from the aquifer does not exceed the estimated average annual recharge of the aquifer.

The DENR-Water Rights Program monitors 10 observation wells completed into the Choteau: Tyndall aquifer (Water Rights, 2016a). Hydrographs for the observation wells are shown in Figures 1-10.

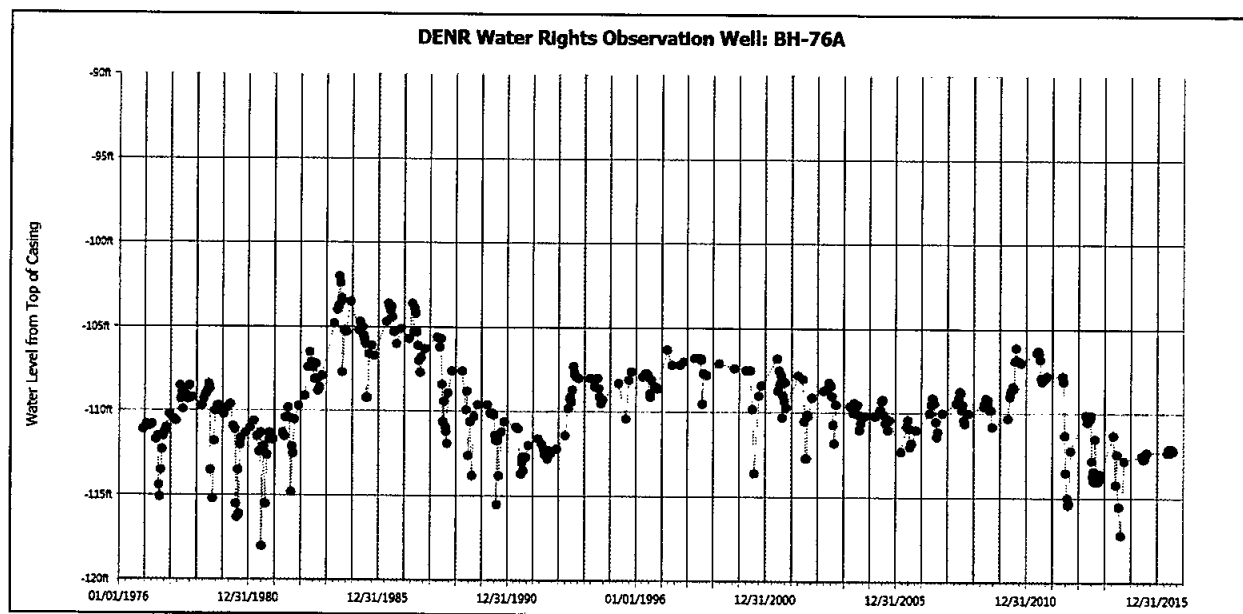


Figure 1. Hydrograph for observation well BH-76A which is completed into the Choteau: Tyndall aquifer approximately 1.6 miles northeast of the well site proposed by this application.

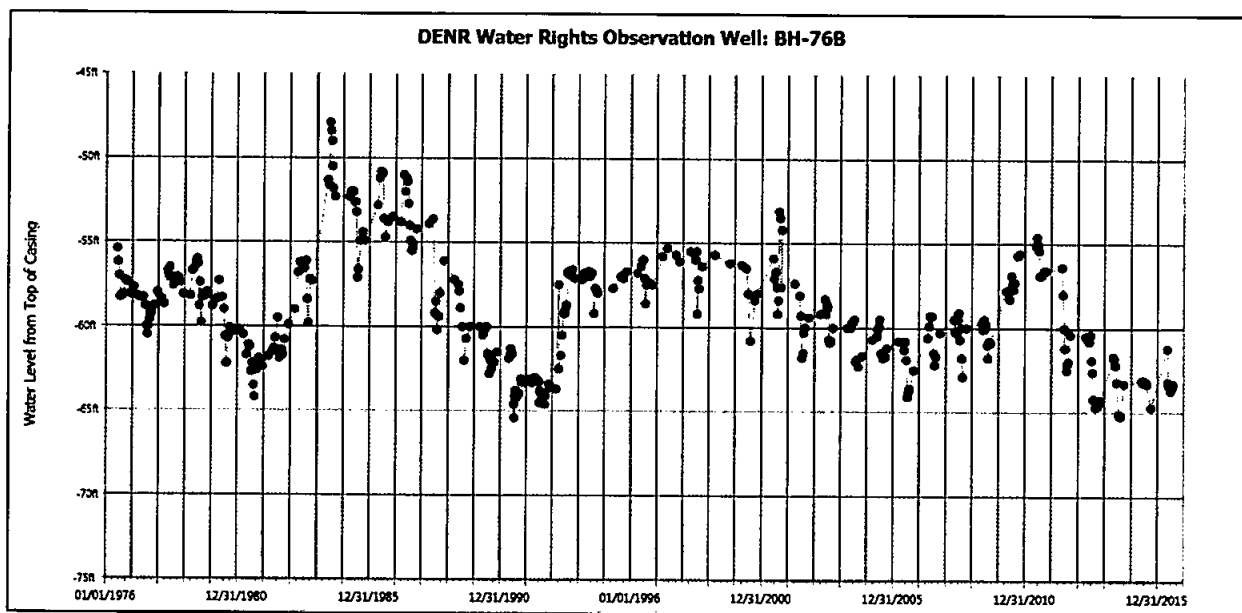


Figure 2. Hydrograph for observation well BH-76B which is completed into the Choteau: Tyndall aquifer approximately 1.7 miles southeast of the well site proposed by this application.

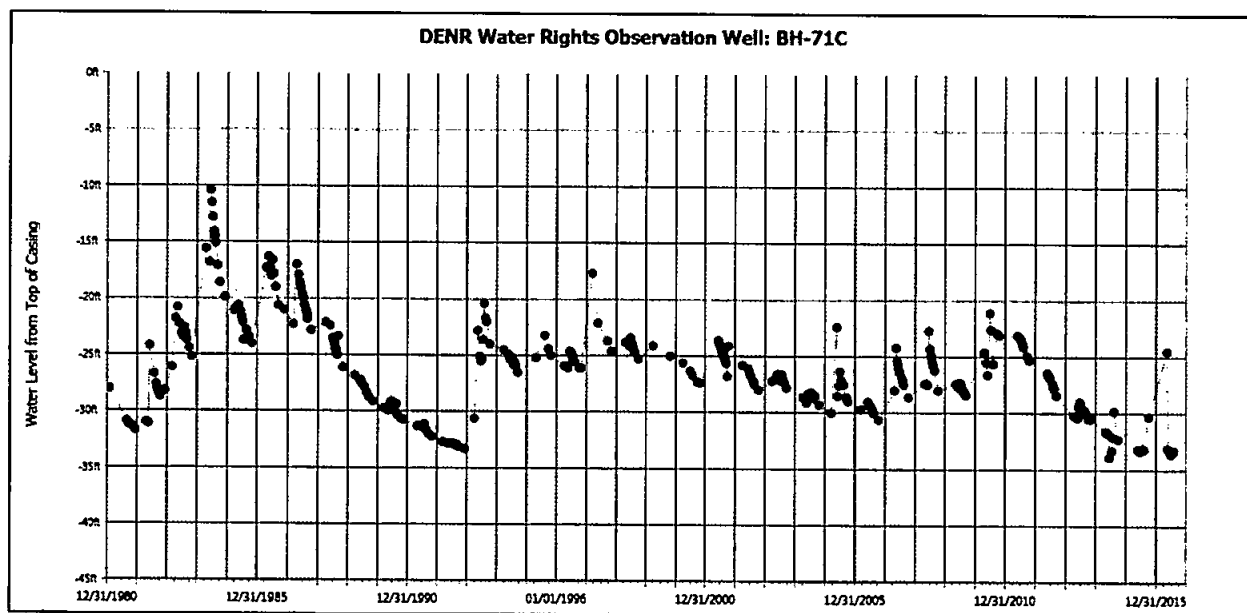


Figure 3. Hydrograph for observation well BH-71C which is completed into the Choteau: Tyndall aquifer approximately 2.25 miles south of the well site proposed by this application.

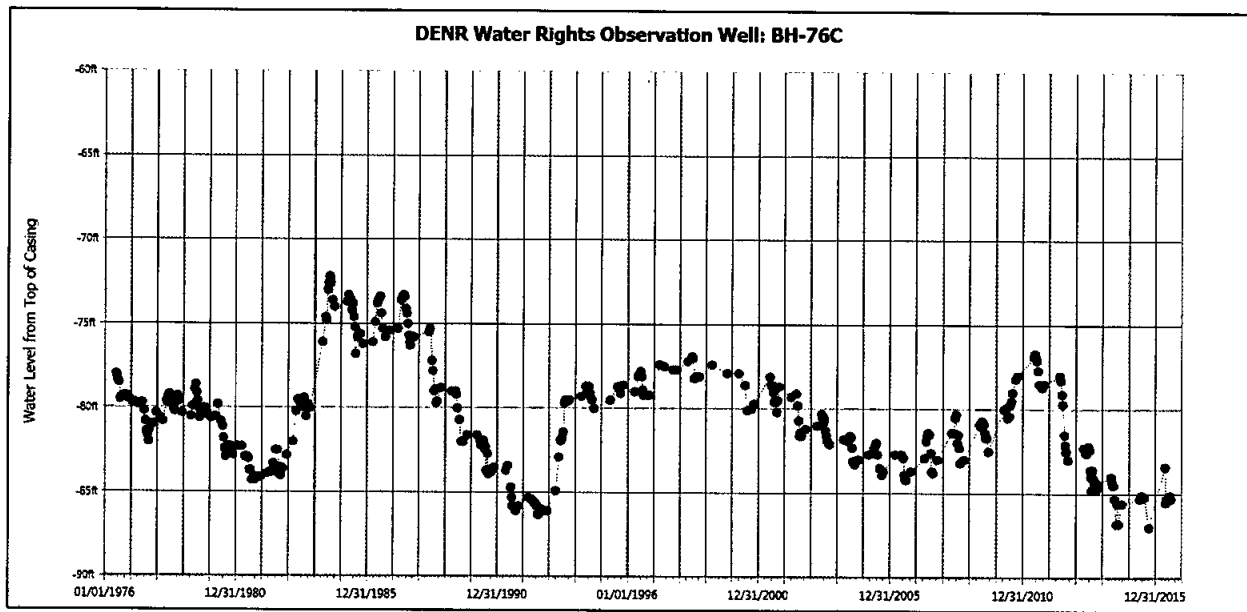


Figure 4. Hydrograph for observation well BH-76C which is completed into the Choteau: Tyndall aquifer approximately 3 miles southeast of the well site proposed by this application.

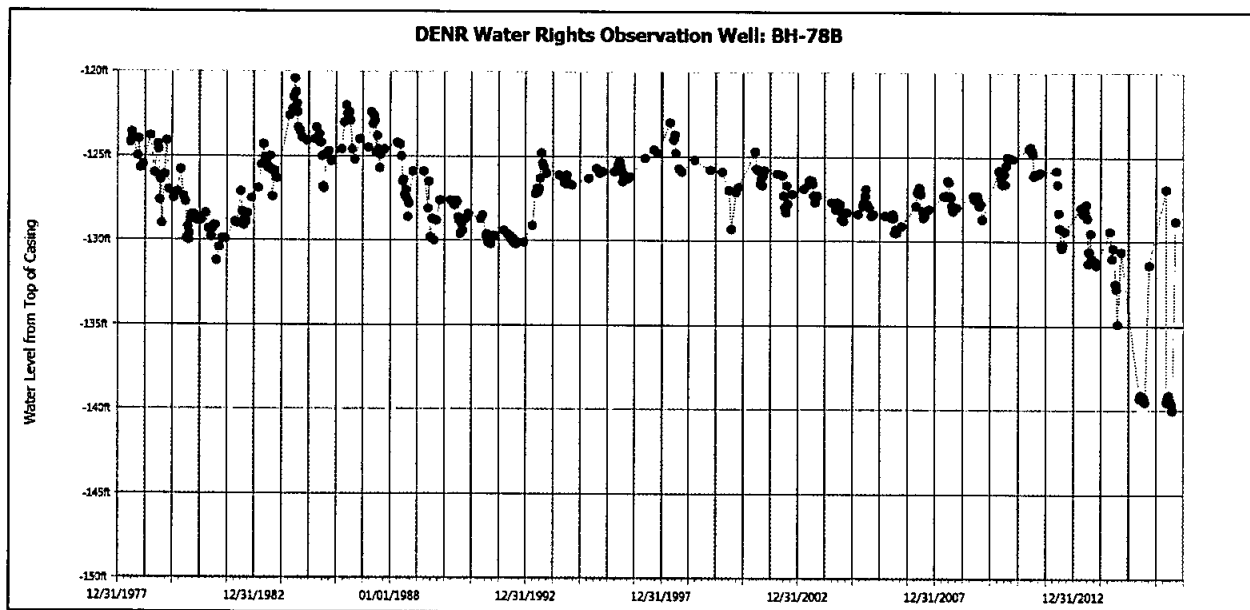


Figure 5. Hydrograph for observation well BH-78B which is completed into the Choteau: Tyndall aquifer approximately 3 miles southwest of the well site proposed by this application.

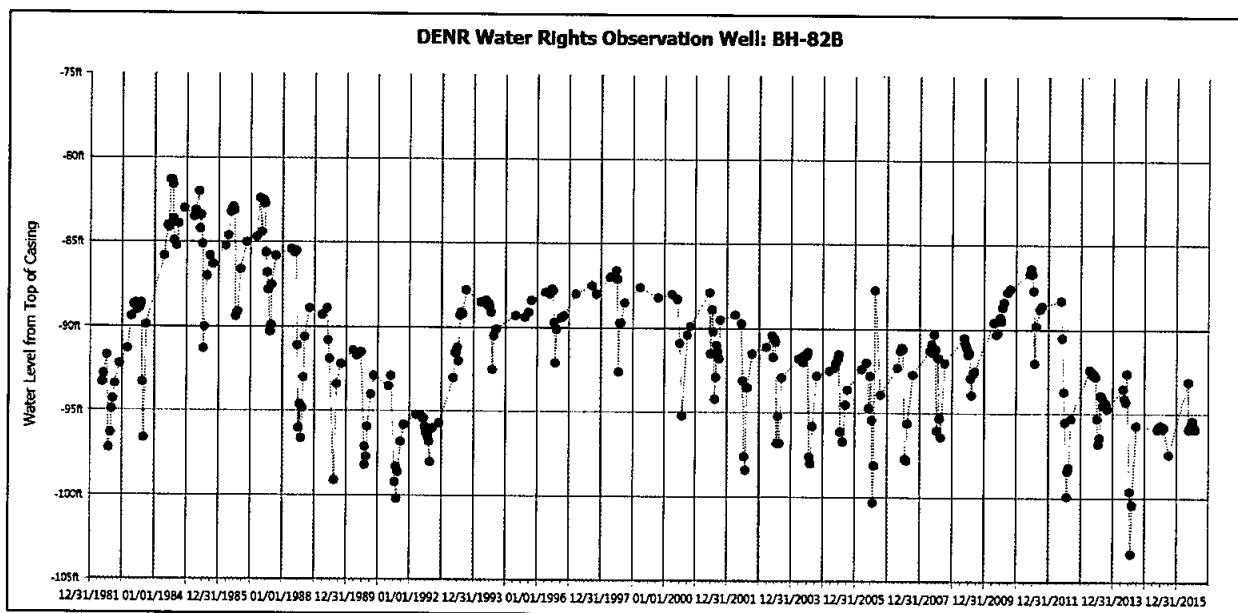


Figure 6. Hydrograph for observation well BH-82B which is completed into the Choteau: Tyndall aquifer approximately 3.7 miles southeast of the well site proposed by this application.

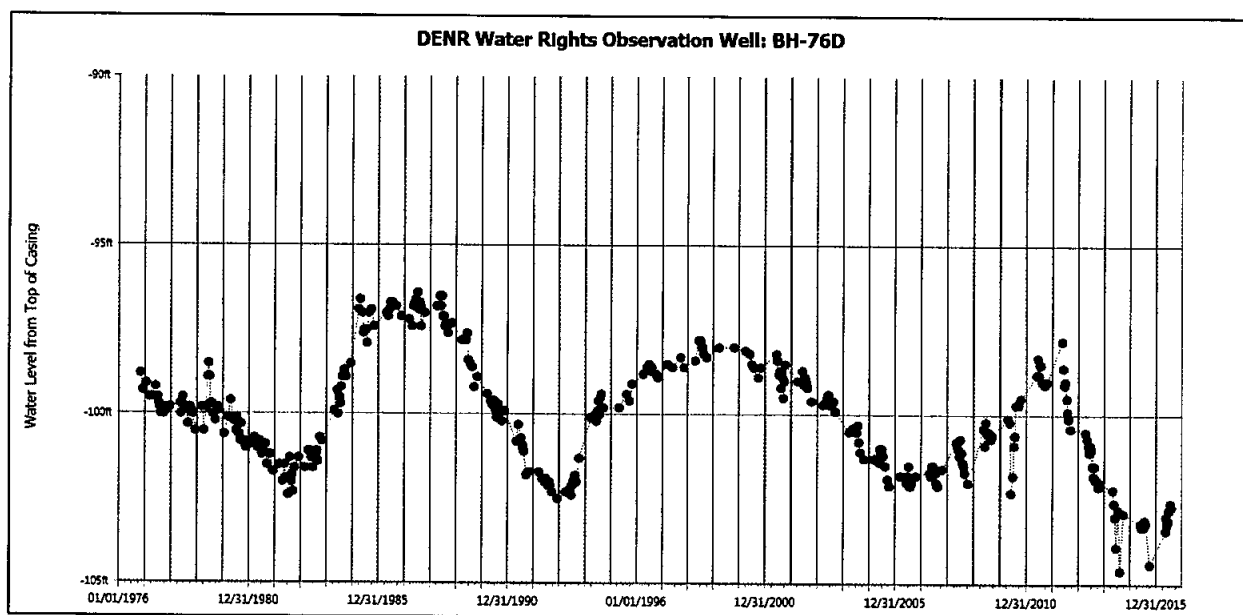


Figure 7. Hydrograph for observation well BH-76D which is completed into the Choteau: Tyndall aquifer approximately 4.5 miles south of the well site proposed by this application.

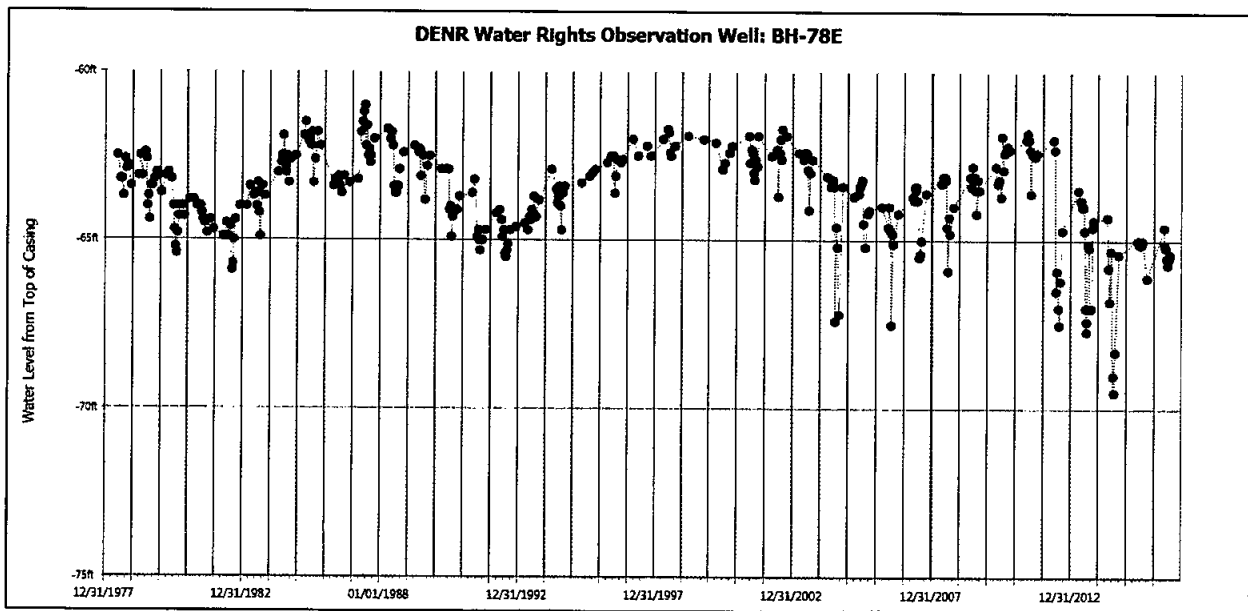


Figure 8. Hydrograph for observation well BH-78E which is completed into the Choteau: Tyndall aquifer approximately 5.7 miles south-southwest of the well site proposed by this application.

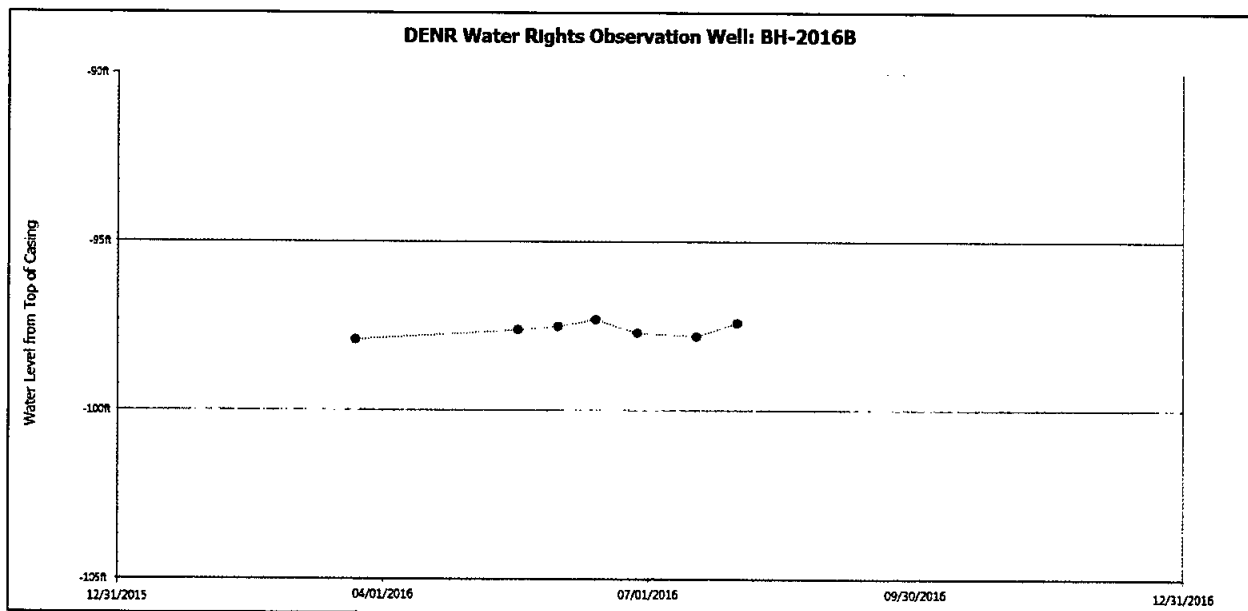


Figure 9. Hydrograph for observation well BH-2016B which is completed into the Choteau: Tyndall aquifer approximately 8 miles northeast of the well site proposed by this application.

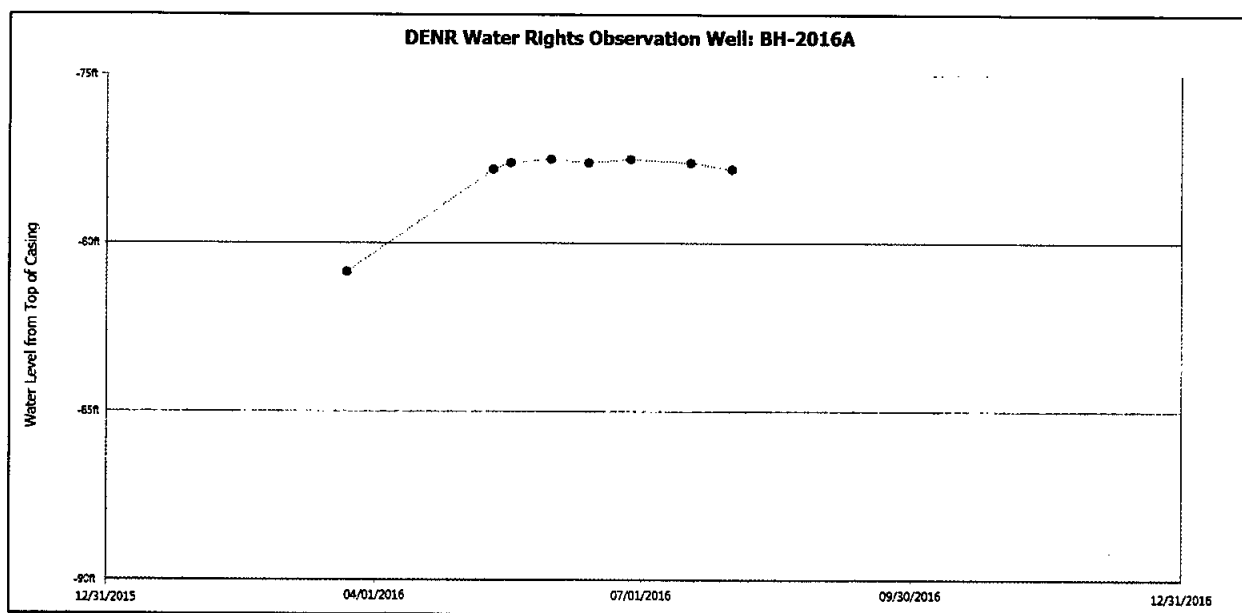


Figure 10. Hydrograph for observation well BH-2016A which is completed into the Choteau: Tyndall aquifer approximately 9.5 miles east-northeast of the well site proposed by this application.

Capen (2014) demonstrated that all eight of the observation wells that were completed into the Choteau: Tyndall aquifer at the time his report was produced displayed a declining trend line in water levels. Capen concluded that the combination of withdrawal and recharge have resulted in a decrease in the amount of water in storage in the Choteau: Tyndall aquifer and average annual recharge is not keeping pace with average annual withdrawals. Thus, Capen contended the observation well data supports the recharge estimates made using the observation well analysis method introduced by Hedges and others (1985).

However, the observation well analysis used to estimate recharge developed by Hedges and others (1985), and updated for the Choteau: Tyndall aquifer by Stonesifer (2013) and Capen (2014) essentially assumes that a rise in the water level of an aquifer is the product of recharge only. In actuality, a water level rise is the result of recharge to the aquifer exceeding discharge from the aquifer. To account for this, the observation well data may be interpreted slightly differently. The annual water level change measured in observation wells completed into the unconfined portion of the Choteau: Tyndall aquifer was used to estimate an annual difference between recharge to the aquifer and discharge from the aquifer. The average annual change in water level for the aquifer multiplied by the specific yield (assumed to be 0.20) and multiplied by the area of the unconfined portion of the aquifer (assumed to be 2,800 acres) represents the difference between recharge and discharge (i.e. the change in storage) as shown in Table 2.

Table 2. Change in storage in the Choteau: Tyndall aquifer based on water level fluctuations recorded in observation well completed in the unconfined portion of the Choteau: Tyndall aquifer (Water Rights, 2016a).

| Year    | BH-76D<br>Change<br>in<br>Water<br>Level<br>(ft/yr) | BH-76C<br>Change<br>in<br>Water<br>Level<br>(ft/yr) | BH-71C<br>Change<br>in<br>Water<br>Level<br>(ft/yr) | Average<br>Change<br>in Water<br>Level<br>(ft/yr) | Average<br>Change<br>in<br>Storage<br>(ac-<br>ft/yr) |
|---------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|
| 1982    | -0.1                                                | 0.5                                                 | 2.6                                                 | 1.0                                               | 560.0                                                |
| 1983    | 0.9                                                 | 3.6                                                 | 3.5                                                 | 2.7                                               | 1493.3                                               |
| 1984    | 1.8                                                 | 6.0                                                 | 6.6                                                 | 4.8                                               | 2688.0                                               |
| 1985    | 1.5                                                 | -2.2                                                | -5.4                                                | -2.0                                              | -1138.7                                              |
| 1986    | 0.6                                                 | 0.4                                                 | 3                                                   | 1.3                                               | 746.7                                                |
| 1987    | -0.2                                                | 0.0                                                 | -1.8                                                | -0.7                                              | -373.3                                               |
| 1988    | -0.6                                                | -3.8                                                | -3.3                                                | -2.6                                              | -1437.3                                              |
| 1989    | -1.3                                                | -2.0                                                | -3                                                  | -2.1                                              | -1176.0                                              |
| 1990    | -1.3                                                | -2.2                                                | -1.5                                                | -1.7                                              | -933.3                                               |
| 1991    | -1.5                                                | -2.0                                                | -1.6                                                | -1.7                                              | -952.0                                               |
| 1992    | -0.6                                                | -0.2                                                | -0.9                                                | -0.6                                              | -317.3                                               |
| 1993    | 1.0                                                 | 6.5                                                 | 9.1                                                 | 5.5                                               | 3098.7                                               |
| 1994    | 1.5                                                 | -0.5                                                | -2.5                                                | -0.5                                              | -280.0                                               |
| 1995    | 0.2                                                 | 1.4                                                 | 1.5                                                 | 1.0                                               | 578.7                                                |
| 1996    | 0.8                                                 | -0.6                                                | -1.1                                                | -0.3                                              | -168.0                                               |
| 1997    | 0.5                                                 | 1.5                                                 | 2.4                                                 | 1.5                                               | 821.3                                                |
| 1998    | 0.0                                                 | -0.4                                                | -1.6                                                | -0.7                                              | -373.3                                               |
| 1999    | 0.3                                                 | 0.2                                                 | 0.3                                                 | 0.3                                               | 149.3                                                |
| 2000    | -0.9                                                | -1.8                                                | -2.4                                                | -1.7                                              | -952.0                                               |
| 2001    | 0.4                                                 | 1.0                                                 | 3.3                                                 | 1.6                                               | 877.3                                                |
| 2002    | -1.1                                                | -2.5                                                | -3.9                                                | -2.5                                              | -1400.0                                              |
| 2003    | -0.3                                                | -0.9                                                | 0.2                                                 | -0.3                                              | -186.7                                               |
| 2004    | -1.4                                                | -0.9                                                | -1.5                                                | -1.3                                              | -709.3                                               |
| 2005    | -0.8                                                | -0.7                                                | 0.3                                                 | -0.4                                              | -224.0                                               |
| 2006    | 0.3                                                 | 0.0                                                 | -1.6                                                | -0.4                                              | -242.7                                               |
| 2007    | 0.2                                                 | 0.7                                                 | 2                                                   | 1.0                                               | 541.3                                                |
| 2008    | -0.4                                                | 0.0                                                 | 0.6                                                 | 0.1                                               | 37.3                                                 |
| 2009    | 1.4                                                 | 0.5                                                 | -0.4                                                | 0.5                                               | 280.0                                                |
| 2010    | 1.1                                                 | 4.5                                                 | 5.3                                                 | 3.6                                               | 2034.7                                               |
| 2011    | 0.5                                                 | -0.5                                                | -2.2                                                | -0.7                                              | -410.7                                               |
| 2012    | -1.4                                                | -4.5                                                | -3.1                                                | -3.0                                              | -1680.0                                              |
| 2013    | -1.7                                                | -1.6                                                | -1.9                                                | -1.7                                              | -970.7                                               |
| 2014    | -0.8                                                | -1.0                                                | -2                                                  | -1.3                                              | -709.3                                               |
| 2015    | -1.5                                                | -1.4                                                | 2                                                   | -0.3                                              | -168.0                                               |
| 2016    | 1.7                                                 | 1.7                                                 | -3                                                  | 0.1                                               | 74.7                                                 |
| Average | -0.034                                              | -0.034                                              | -0.057                                              | -0.042                                            | -23.467                                              |

Examination of water level data from the unconfined portion of the Choteau: Tyndall aquifer indicates that on average, observation well water levels have declined 0.042 feet per year in the aquifer between 1982 and 2016 (see Table 2). The declining water level indicates that over the period of record, the amount of water stored in the aquifer has diminished on average, approximately 23 ac-ft/yr. Considering the assumptions involved in this estimate, for all practical purposes, there has been no change in storage in the aquifer over the period of record.

Groundwater gradients in the aquifer based on observation well data provides some evidence that recharge the Choteau: Tyndall aquifer has increased and discharge to from the aquifer has decreased between 1985 and 2016. It is possible the system is equilibrating through a combination of a decrease in storage in the aquifer, a reduction in the previous discharge from the aquifer, and an increase in recharge. Future well withdrawals may also induce more recharge or decrease discharge, however at this point, data suggests that over the period of record (1982-2016) average annual recharge to the Choteau: Tyndall aquifer is approximately equal to the average annual withdrawal from the aquifer.

**SDCL 46-5-39 and SDCL 46-5-40:**

SDCL 46-5-39 allows the Water Management Board to authorize a temporary appropriation of water reserved under a future use permit. SDCL 46-5-40 states that a temporary use permit would be effective only until such time as the future use holder wants to develop the water covered by the temporary permit. The temporary permit holder is to be given six months notice after which time the temporary permit is subject to cancellation.

Future Use Permit No. 4839A-3 held by the City of Tyndall reserves 410 ac-ft/yr from the Choteau: Tyndall aquifer. Temporary Water Permit No. 8060-3 for Douglas Johnson, authorizes a temporary appropriation pursuant to SDCL 46-5-39, of water reserved under Future Use Permit No. 4839A-3 for the irrigation of 110 acres. An annual diversion limit was not established for Temporary Water Permit No. 8060-3 but the average annual diversion is not expected to exceed 110 ac-ft/yr. Therefore, there is approximately 300 ac-ft/yr of additional water reserved by the future use permit that is available for temporary appropriation through SDCL 46-5-39. Average annual water use associated with the irrigation of 150 acres proposed by this application is not expected to exceed 150 ac-ft/yr. Therefore, until the future use permit is developed, water is available for this proposed appropriation as a temporary use permit.

**EXISTING WATER RIGHTS:**

There are no records on file of domestic wells completed into the Choteau: Tyndall aquifer within approximately five miles of the well site proposed by this application (Water Rights, 2016c). As stated earlier, there are 28 existing water rights/permits, one future use permit and one temporary water permit appropriating water from the Choteau: Tyndall aquifer. One application (Water Permit Application No. 4674-3) has been denied from the aquifer. The application was denied in 1981 after the applicant requested the application be withdrawn from consideration due to unfavorable test hole results.

Some controversy accompanied irrigation development from the Choteau: Tyndall aquifer in this area in 1975. Three water permit applications, including Application No. 2445-3 which is located within one mile of the well site proposed by Application No. 8244-3, were contested by a group of farmers and the City of Avon. The applications were eventually approved. An irrigation system was developed for Water Right No. 2445-3, Wayne Schuurmans. The DENR-Water Rights Program received a complaint in 1976 regarding the system irrigating more acres than were authorized but there is no record of interference and/or water availability issues concerning the appropriation. The Water Right was eventually cancelled in 2011 due to abandonment and/or forfeiture.

The only existing water right within approximately two miles of the well site proposed by this application is Temporary Water Permit No. 8060-3 for Douglas Johnson. The well that supplies Temporary Water Permit No. 8060-3 is located approximately one mile northeast of this proposed well site.

The Choteau: Tyndall aquifer observation well data documents that drawdown is not substantial very far from production wells. Hydrographs for DENR- Water Rights' observation well BH-76C (Figure 4) located within one-half mile of four irrigation permits/rights, observation well BH-76B (Figure 2) located within one-half mile of two irrigation permits/rights, and observation well BH-78E (Figure 8) located within one-half mile of a water right/permit capacity irrigation wells all show little if any impacts of the nearby pumping. Drawdown is not expected to be significant within one-half mile of a production well pumping the proposed 1.71 cfs. There is a reasonable probability that drawdown would not adversely impair existing users.

### **CONCLUSIONS:**

1. This water permit application proposes to withdraw groundwater at a maximum diversion rate of 1.71 cfs from one well to be completed into the Choteau: Tyndall aquifer for the irrigation of 150 acres.
2. Observation well data documents that water levels of observations wells completed into the Choteau: Tyndall aquifer have declined over the period of record.
3. Observation well data documents that at the current level of development, recharge to the aquifer and discharge from the aquifer are approximately equal.
4. There is not a reasonable probability that unappropriated water is available from the aquifer to supply the proposed appropriation.
5. There is a reasonable probability that this proposed diversion will not adversely impair existing nearby wells.
6. Pursuant to SDCL 46-5-39 and SDCL 46-5-40, a temporary use permit allows water reserved by future use water permits to be put to beneficial use until the future use permit holder uses the water reserved under the permit.
7. Given the amount of water reserved in the existing future use permit, there is a reasonable probability that reserved water is temporarily available from the future use permit in the Choteau: Tyndall aquifer to supply the proposed appropriation.



Ken Buhler  
SD DENR-Water Rights Program

### **REFERENCES:**

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- Water Rights, 2016a, Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2016b, Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2016c, Well Completion Report Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

# Affidavit of Publication

RECEIVED

State of South Dakota }  
County of Bon Homme } SS

JAN - 3 2017

WATER RIGHTS  
PROGRAM

*Rebecca Uz* Being first duly sworn says that the **Tyndall Tribune & Register** is a legal weekly newspaper for publication of legal and other official notices as required by Chapter 298 of the Session Laws of South Dakota, 1939; that it has bona fide paid circulation of more than two hundred copies weekly; that it is published in English language in the City of Tyndall, Bon Homme County, South Dakota, and has been admitted to the United States mail under second class mailing privilege for more than one year prior to the first publication of the notice herein mentioned, and that it is printed in an office maintained at the place of publication at Tyndall, South Dakota, and that deponent is the publisher in charge of the advertising department of said newspaper; that the advertisement headed

*Doug Johnson* No. 8244-3 to Appropriate Water  
78 @ 38

a printed copy of which is hereto attached, was printed and published in said newspaper for the successive weeks, upon the following dates:

|                     |          |
|---------------------|----------|
| ..... Dec. 28, 2016 | ..... 20 |
| ..... 20            | ..... 20 |
| ..... 20            | ..... 20 |
| ..... 20            | ..... 20 |

That the full amount of the fee charged for the publication of said notice, \$ 29.64, inures to the benefit of the publisher of said newspaper, that no agreement or understanding for the division thereof has been made with any other person, and that no part has been agreed to be paid to any person whomsoever.

*Rebecca Uz, Publisher*  
Subscribed and sworn to before me this  
28 day of Dec 2016  
*Peggy Schaefer*  
Notary Public, South Dakota  
My Commission Expires Dec. 24, 2021

## NOTICE OF APPLICATION

NO. 8244-3 to Appropriate Water

Notice is given that Douglas Johnson, 41219 SD Hwy 50, Tyndall SD 57066 has filed an application for a water permit to appropriate 1.71 cubic feet of water per second from one well to be completed into the Choteau: Tyndall Aquifer (300 feet deep) located in the approximate center of the NE 1/4 Section 8 for irrigation of 150 acres located in the W 1/2 NE 1/4, SE 1/4 NE 1/4, E 1/2 NW 1/4 Section 8; all in T94N-R60W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8244-3 as a TEMPORARY USE PERMIT pursuant to SDCL 46-5-39 because 1) water is available to be appropriated as a temporary use permit until the city of Tyndall, holder of a future use permit from the Choteau: Tyndall Aquifer fully develop water reserved from their future use permit, 2) the proposed diversion can be developed as a temporary use permit without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by January 9, 2017.

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Steven M. Pirner, Secretary,  
Department of Environment  
and Natural Resources.

Published once at an approximate cost of \$29.64

(Dec. 28)

# AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

RECEIVED

JAN - 3 2017

WATER RIGHTS  
PROGRAM

DOUGLAS JOHNSON  
41219 SD HWY 50  
TYNDALL SD 57066

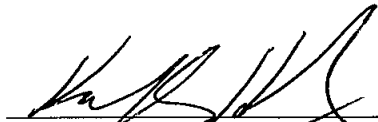
STATE OF SOUTH DAKOTA  
COUNTY OF YANKTON

KELLY HERTZ, BEING FIRST DULY SWORN ON OATH DEPOSES  
AND SAYS THAT (S)HE IS THE MANAGING EDITOR OF YANKTON  
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE  
YANKTON DAILY PRESS AND DAKOTAN, A LEGAL DAILY NEWSPAPER  
PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY  
AND STATE, AND ONE OF THE OFFICIAL NEWSPAPERS OF THE SAID  
COUNTY OF FACTS STATED IN THIS AFFIDAVIT; THAT THE ANNEXED  
12+28 NOTICE OF APPLICAT

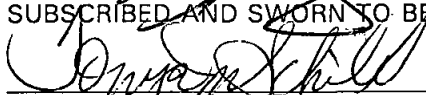
TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE  
NEWSPAPER ON THE 28th DAY OF December, 2016  
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION  
OF SAID NOTICE TO WIT: \$28.38 ENSURES TO THE  
BENEFITS OF THE PUBLISHER OF SAID NEWSPAPER AND THAT NO  
AGREEMENT AND UNDERSTANDING FOR THE DIVISION THEREOF HAS  
BEEN MADE WITH ANY OTHER PERSON, AND THAT NO PART THEREOF  
HAS BEEN AGREED TO BE PAID TO ANY PERSON WHOMSOEVER.

PUBLISHED ON: 12/28/2016

FILED ON: 12/28/2016



SUBSCRIBED AND SWORN TO BEFORE ME THIS 28th DAY OF December, 2016



NOTARY PUBLIC, SOUTH DAKOTA  
MY COMMISSION EXPIRES 08/19/2021

Ad text : 12+28

NOTICE OF APPLICATION NO. 8244-3 to Appropriate Water

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Steven M. Pirner, Secretary, Department of Environment and Natural Resources.  
Published once at the total approximate cost of \$28.38.

**Schlaak, Karen**

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**From:** Schlaak, Karen  
**Sent:** Monday, December 19, 2016 1:02 PM  
**To:** ttribune@byelectric.com  
**Subject:** 8244-3, Douglas Johnson  
**Attachments:** 8244-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on December 28, 2016.

Douglas Johnson, 41219 SD Hwy 50, Tyndall SD 57066 (605 589-3725) has been notified to contact you to authorize publication and arrange for payment.

Please send the affidavit or return the attached Proof of Publication form ASAP.

Let me know if you have questions. Please acknowledge receipt of this email.

*Karen Schlaak*  
Water Rights Program  
523 E Capitol Ave  
Pierre SD 57501  
Phone: 605 773-3352

**Schlaak, Karen**

---

**From:** Schlaak, Karen  
**Sent:** Monday, December 19, 2016 1:02 PM  
**To:** 'Tera Schmidt'  
**Subject:** 8244-3, Douglas Johnson  
**Attachments:** 8244-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on December 28, 2016.

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*Karen Schlaak*  
Water Rights Program  
523 E Capitol Ave  
Pierre SD 57501  
Phone: 605 773-3352



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

denr.sd.gov

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

December 19, 2016

Douglas Johnson  
41219 SD Hwy 50  
Tyndall SD 57066

Dear Mr. Johnson:

Water Permit Application No. 8244-3 for use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Tyndall Tribune & Register printed at Tyndall SD (Ph # 605-589-3242) and the Press & Dakotan printed at Yankton SD (Ph # 605-665-7811). You will need to contact the newspaper(s) and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper(s) to authorize publication of your Notice and to arrange for payment. Early contact with the paper(s) can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund  
Natural Resources Engineer  
(605) 773-3352

enclosures

**NOTE:** If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

NOTICE OF APPLICATION NO. 8244-3 to Appropriate Water

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Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published once at the total approximate cost of\_\_\_\_\_.



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

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

denr.sd.gov

JAN 26 2017

Douglas Johnson  
41219 SD Hwy 50  
Tyndall SD 57066

Dear Mr. Johnson:

Enclosed is Temporary Use Water Permit No. 8244-3 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Jeanne Goodman, Chief Engineer  
Water Rights Program  
(605) 773-3352

enclosures

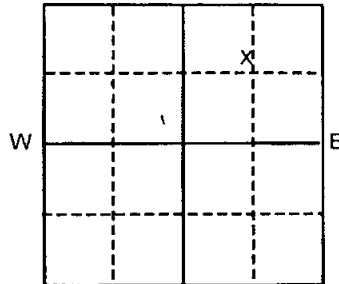
## SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NW ¼ NE ¼ Sec --5-- Twp 94 Rg 60w

based call from Steve Johnson Sec 8

County Bon Homme

Please mark well  
location with an "X"

Well Completion Date

28 April 2017

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?  
1,340.0 ft. from Septic tank (identify source)

## PROPOSED USE:

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

## METHOD OF DRILLING:

Reverse rotary

## CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe

| PIPEWEIGHT | DIAMETER | FROM   | TO       | HOLE DIAMETER |
|------------|----------|--------|----------|---------------|
| LB/FT      | 16.00 IN | 0.0 FT | 220.0 FT | 22.00 IN      |
| LB/FT      | IN       | FT     | FT       | IN            |
| LB/FT      | IN       | FT     | FT       | IN            |

## GROUTING DATA:

| Grout Type | No. of Sacks | Grout Weight | From   | To       |
|------------|--------------|--------------|--------|----------|
| Bentonite  | 76           | 9.5 Lb/gal   | 0.0 Ft | 216.0 Ft |
|            |              | Lb/gal       | Ft     | Ft       |

Describe grouting procedure  
Tremie method

## SCREEN:

☐ Perforated pipe ☐ Manufactured

Diameter 16.00 inches

Length

40.0 Feet

Material PVC

Slot Size .085 Set From 220.0 Feet to 260.0 Feet

Other information

## WAS A PACKER OR SEAL USED?

☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

## DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? HTH tablets

☐ No, Why Not?
Lab to which water  
quality sample sent for analysis

Well Owner: Steve Johnson

Business Name:

Address: 30468 411th Ave

City, State, Zip: Tyndall SD 57066

## WELL LOG:

| FORMATION                         | DEPTH |     |
|-----------------------------------|-------|-----|
|                                   | FROM  | TO  |
| Top soil                          | 0     | 4   |
| Glacial till                      | 4     | 42  |
| Gray sandy clay                   | 42    | 103 |
| Sand and gravel with clay streaks | 103   | 147 |
| Blue clay                         | 147   | 184 |
| Blue clay with gravel             | 184   | 218 |
| sand and gravel                   | 218   | 260 |
|                                   |       |     |
|                                   |       |     |

STATIC WATER LEVEL 121.0 FEET

If flowing: closed in pressure PSI

GPM flow through Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate GPM

Can well be completely shut in?

## WELL TEST DATA:

☒ Pumped Describe:

☐ Bailed

☐ Other

Pumping Level Below Land Surface

123.0 Ft. After 1.0 Hrs. pumped 700.0 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: GPM

## REMARKS

Elevation: 1428' asl

42°58'39"N

97°57'24"W

Choteau: Tyndall WR

This well was drilled under license # 810 and this report is true and accurate.

Drilling firm: Heine Electric &amp; Irrigation

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date: 10-27-17

RECEIVED

NOV 02 2017

WATER RIGHTS  
PROGRAM

8244-3

**Affidavit of Water Use**

Form 2B

(Type or Print in Ink)

Note: This Form is supplemental to Form 2 and is to be used when an affidavit is needed to document historical water use, primarily with vested right claims.

**Affidavit Of Construction Of Water Use System  
And Application Of Water To Beneficial Use**

**RECEIVED****DEC 07 2017****WATER RIGHTS  
PROGRAM**

Name of Applicant (Same as Form 2)

Douglas Johnson

Mailing Address

41219 SD Hwy 50 Tyndall SD 57066

(Address)

(City)

(State)

(Zip Code)

A. Notice of Appropriation

12/28/16

Date of Posting

12/28/17

Date of Recording

12

Recording Date

B. Date of start of construction of water supply system

April 1<sup>st</sup> 2017

C. Date that water was first applied to beneficial use

June 15, 2017

D. Name of owner of original water supply system

E. Amount of water originally applied to beneficial use

770 gpm

F. Present use of water - amount of water now being used

Irrigation

Date that this water was first used

4/1/17

G. Chronological History of Water Use

I, Douglas Johnson

the applicant, certify that I have read the foregoing and that the matters therein are true.

I, the undersigned do hereby certify that I know about the water use system described above, that I have read the foregoing, and that the matters therein are true.

Douglas Johnson, 20 17

\_\_\_\_\_, 20 \_\_\_\_

## Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8244-3

I have this day, July 16, 2018, made a thorough examination of the water use system constructed by Douglas Johnson, 41219 Hwy 50, Tyndall, SD 57066, holder of Permit No. 8244-3, bearing the priority of October 13, 2016 authorizing the diversion of 1.71 cu. ft. per second of the waters of groundwater (Choteau: Tyndall Aquifer) for irrigation purposes, in Bon Homme County.

Inspection contact: Douglas Johnson, Owner

### A. Works used to divert the water:

#### Well Information:

1) Well Drilling Firm: Heine Electric &

Irrigation, Inc.

2) No. of Wells 1

3) Depth(s) 260 feet

4) Well log is available Yes

#### Casing:

1) Diameter 16 inches

2) Length 220 feet

3) Type Plastic

#### Screen:

1) Type PVC

2) Length 40 feet

3) Static water level 121 feet

#### Pump:

1) Make Borer Wholesale

2) Model 11RK-0

3) Capacity 800 GPM

#### Motor:

1) Make John Deere

2) Model No. 4045

3) Horsepower rating 93 hp

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

1) Type Galvanized      2) Size 8 inches      3) Length 12 feet

### C. Works used to apply water to beneficial use:

#### Center pivot:

1) Make Valley

2) Overall length 1,484 feet

3) Number of towers 8

4) End gun Yes

5) Capacity 800 GPM

#### Chemigation Equipment:

1) Does chemigate No

**D. Compliance with Permit Requirements:**

- 1) Permit qualifications being abided by Yes
- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period They began using the system in June, 2017 and a questionnaire does not show up on the website yet.
- 3) Exceptions to compliance are: The pump rating is for 800 gpm and the permit is for 770 gpm.

**E. Condition and Location:**

1. The system is in good condition with the point(s) of diversion located as follows: Well: 1,670 feet west and 1,400 feet south from the northeast corner of Section 8-T94N-R60W (Latitude 42.97739, Longitude -97.95729 – SW1/4NE1/4).
2. The works are capable of diverting and conveying to the place of use 1.78 cu. ft. per second of water which is to be used for irrigation purposes. Water has been put to beneficial use to the maximum extent as follows: all in Section 8-T94N-R60W

|                   |                 |
|-------------------|-----------------|
| <u>NE1/4NW1/4</u> | <u>11 acres</u> |
| <u>SE1/4NW1/4</u> | <u>12 acres</u> |
| <u>SE1/4NE1/4</u> | <u>32 acres</u> |

|                   |                 |
|-------------------|-----------------|
| <u>NW1/4NE1/4</u> | <u>36 acres</u> |
| <u>SW1/4NE1/4</u> | <u>39 acres</u> |

comprising a total of 130 acres of land and uses 1.71 cfs.

3. All structures, wells and lands on map Yes

**F. Comments or other permit(s) associated with the project:** This is a temporary water permit and should not be licensed.

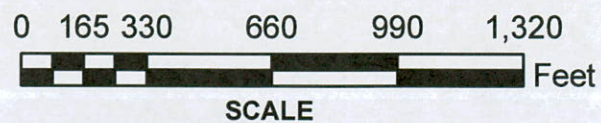
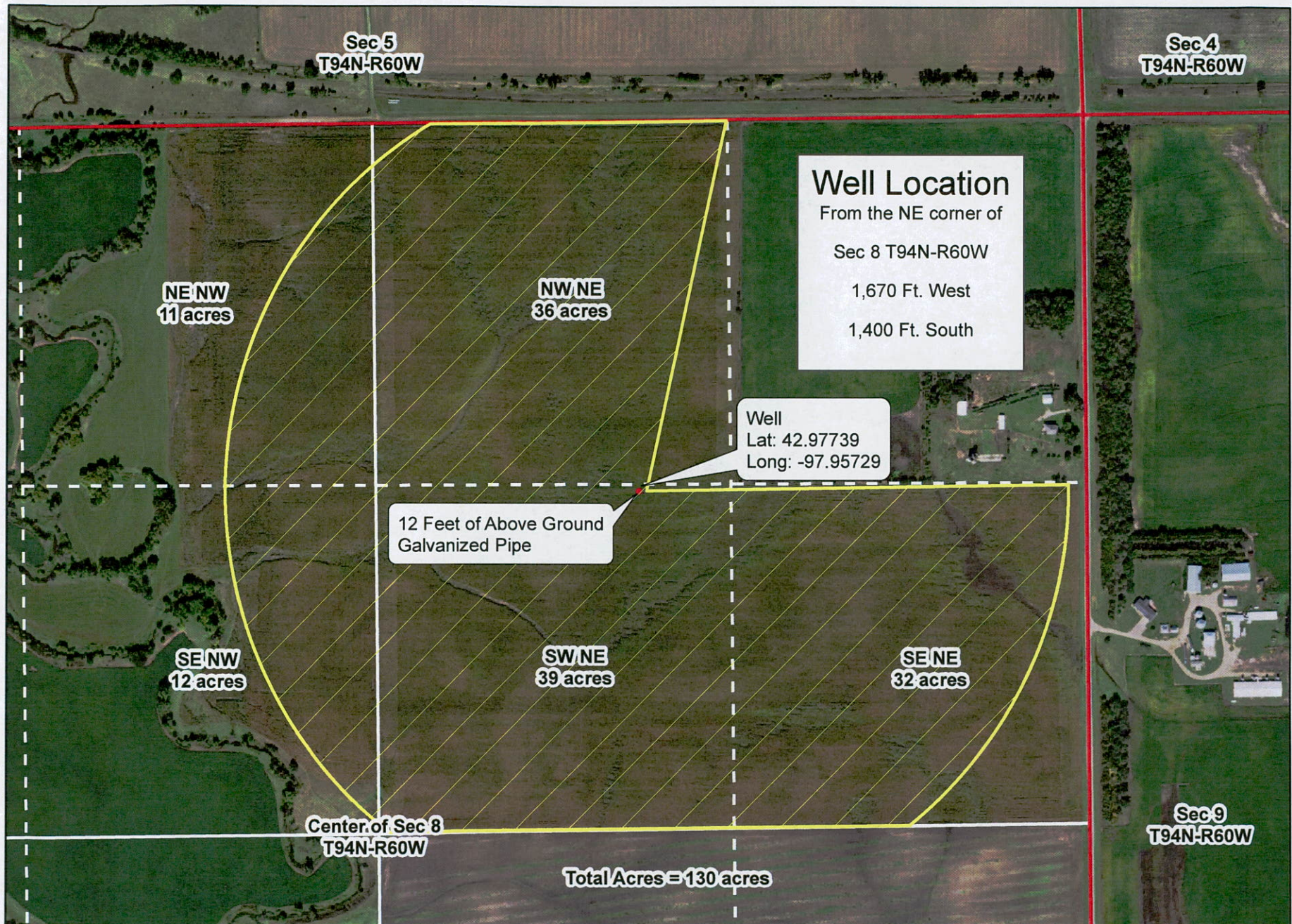


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Keith DeJong  
Water Rights Inspector  
DENR, Water Rights Program

Date report completed: July 30, 2018

# Water Right No. 8244-3



*Keith DeJong*  
Keith DeJong, PE  
Staff Engineer  
July 30, 2018



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3182  
<http://denr.sd.gov>

SEP 26 2018

8244-3

Douglas Johnson  
41219 Hwy 50  
Tyndall SD 57066

Dear Mr. Johnson:

Enclosed is Reissued Temporary Use Water Permit No. 8244-3. The temporary use water permit was reissued to reflect the system as developed. The reissued permit is based on a July 30, 2018 field investigation done by a staff engineer with our program. A copy of his map is included showing the location of the diversion point and acres irrigated.

For your information SDCL 46-6-27 requires that if in the future, the owner of an existing well 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.

The Reissued Temporary Use Water Permit is subject to the qualifications listed in the permit. If you have any questions, please contact our office.

Sincerely,

Jeanne Goodman, Chief Engineer  
Water Rights Program  
(605) 773-3352

enclosures

**Note: The investigation of your water use system found works capable of 1.78 cfs (about 800 gpm). You are not authorized to divert more than the original permitted amount of 1.71 cfs (about 767 gpm)**

**REISSUED  
SOUTH DAKOTA  
TEMPORARY USE WATER PERMIT NO. 8244-3  
AS DEVELOPED**

---

On January 9, 2017, the Chief Engineer, on behalf of the Water Management Board, issued Temporary Use Water Permit No. 8244-3 to Douglas Johnson, 41219 SD Hwy 50, Tyndall SD 57066 authorizing construction of the water use system and placement of water to beneficial use.

1. On July 30, 2018, an investigation was conducted of the water use system described in Temporary Use Water Permit No. 8244-3. The investigation found the system had been developed as follows: One 260 feet deep well (Choteau: Tyndall Aquifer) located 1,670'W and 1,400'S of the NE corner of Section 8, T94N, R60W (SW  $\frac{1}{4}$  NE  $\frac{1}{4}$ ) Latitude 42.97739, Longitude -97.95729; The temporary use permit holder is authorized to divert 1.71 cubic feet of water per second from the above well to irrigate 130 acres located in Section 8, T94N, R60W described as follows:

|                                   |          |                                   |          |                                   |          |
|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|
| NE $\frac{1}{4}$ NW $\frac{1}{4}$ | 11 acres | SE $\frac{1}{4}$ NW $\frac{1}{4}$ | 12 acres | SW $\frac{1}{4}$ NE $\frac{1}{4}$ | 39 acres |
| SE $\frac{1}{4}$ NE $\frac{1}{4}$ | 32 acres | NW $\frac{1}{4}$ NE $\frac{1}{4}$ | 36 acres |                                   |          |

2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: May 1 - September 30.
3. The date from which the temporary use water permit holder may claim right is October 13, 2016.
4. Water rights obtained in compliance with laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

**QUALIFICATIONS**

1. The City of Tyndall has priority right to this water under future use withdrawal permits. Permit No. 8244-3 is issued as a temporary use permit pursuant to SDCL 46-5-39 and is subject to this prior right if or when the city of Tyndall fully develops their reserve water supply. Permit No. 8244-3 may be subject to cancellation when the water reserved under the future use permit is put to beneficial use. The Chief Engineer must provide the permit holder six months' notice prior to cancellation of this temporary use permit.
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.

continued

**Reissued Temporary Use Water Permit No. 8244-3**

**Douglas Johnson**

**Page 2**

3. The well authorized by Permit No. 8244-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. *The well was drilled by Heine Electric & Irrigation in April, 2017. A copy of the well completion report is on file with the Water Rights Program.*
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

**WATER MANAGEMENT BOARD**

By:



Jeanne Goodman, Chief Engineer

Water Rights Program

Department of Environment and Natural Resources

**SEP 26 2018**

date

