

DO NOT LICENSE
THIS IS A
TEMPORARY
WATER PERMIT

WATER PERMIT NO. 8060-3

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: **110**

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

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

Type of Waste Disposal System:

Location: **3 miles west of Tyndall**

PRIORITY Date Received: **10-31-14** Application/License Fee: **\$ 950**

Corrected Application Received: Period of Annual Use: **May 1 – September 31**

Remarks: **Applicant is requesting diversion rate greater than statutory limit**

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

Land to be Irrigated: **NW 1/4 Sec 4-T94N-R60W**

Depth of Well: **300 feet**

Well Driller: **Hammond-Wetmore Drilling**

Remarks:

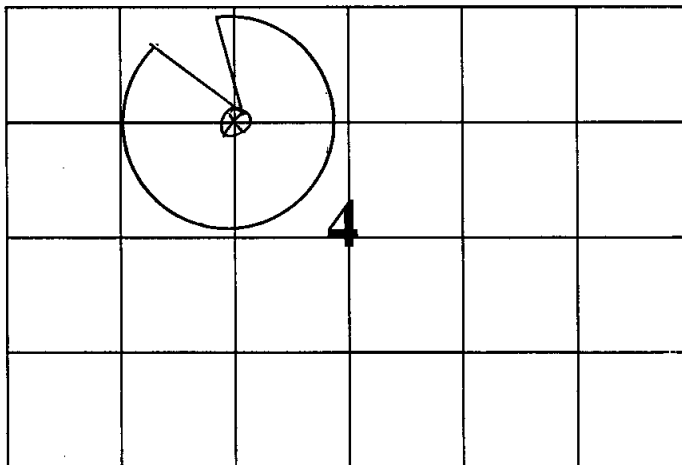
Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **11-3-14**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



FORM 2: Application for irrigation in South Dakota

(type or print)

Mail to: PMB 2020 DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8060-3</u> (office use only) Hydrologic Unit <u>10170101</u>
	Basin <u>Missouri River</u> <u>605-589-3242</u>
	Newspaper <u>Tyndall Tribune Box 520 57066</u> <u>605-665-7811</u>
	<u>Press & Dakotan 319 Walnut Yankton 57078</u>

RECEIVED
 OCT 31 2014
 WATER RIGHTS
 PROGRAM

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
 (check one) ☒ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent _____
 (name and complete address if different than above name)

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

 Home Phone 605-589-3725 Cell 464-0958 Email johnson 46 @ yahoo.com

 2. Amount of water claimed 1.71 *CFS or 770 **GPM ***AF Total Acreage 110
 (*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)
3. Source of water supply Well
 4. Location of point of diversion 1 well in center of NW 1/4 Sec. 4 94-60
 (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

Albion township County Bon Homme
5. County or counties where water will be used Bon Homme6. Annual period during which water is to be used Summer May 1 - September 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
<u>NW 1/4 Sec. 4 94-60</u>	<u>110</u>		
<u>see attachment</u>			

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

center pivot irrigation
Requesting diversion rate greater than statutory limit.

 I, Douglas Johnson, the applicant, certify that I have read this application,
 have examined the attached map, and that the matters stated are true.

SOUTH DAKOTA
TEMPORARY USE WATER PERMIT NO. 8060-3

Date of first receipt of application October 31, 2014.

The Chief Engineer, on behalf of the Water Management Board, issues Temporary Use Water Permit No. 8060-3 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. 8060-3 appropriates 1.71 cubic feet of water per second (cfs) from one well to be completed into the Choteau:Tyndall Aquifer (300 feet deep) located in the center of the NW 1/4 Section 4 for irrigation of 110 acres located in the NW 1/4 Section 4; 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 31, 2014.
4. The date of approval of Permit No. 8060-3 is January 26, 2015.
5. One-fifth of the construction is to be completed on or before July 26, 2017.
6. All construction is to be completed on or before January 26, 2020.
7. Water is to be put to beneficial use on or before January 26, 2024.
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. 8060-3 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. 8060-3 may be subject to cancellation when the water reserved under these future use permits 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. 8060-3 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.

(continued)

4. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 8060-3 authorizes a maximum diversion rate of 1.71 cfs for the irrigation of 110 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
5. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

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

FEB 17 2015

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 Heine Electric
(if yes, please provide copies of logs)b) If existing wells, how many Provide copy of log(s), if available. Drilled by c) Well Depth 300 Depth to Top of Water Bearing Material 245 Depth to Water from Surface 140

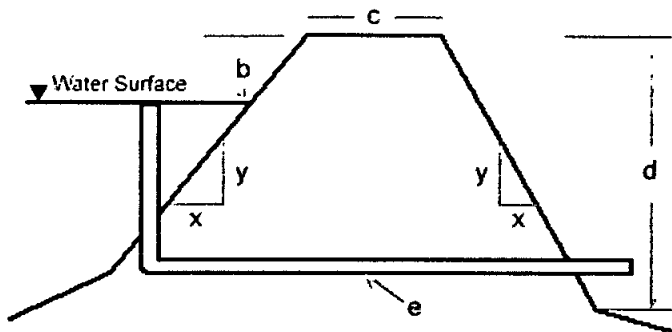
d) Distance to nearest existing domestic well:

On applicant's property None On 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.

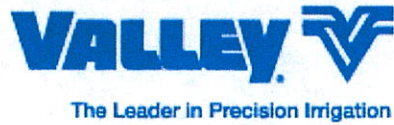
a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address: b) Freeboard c) Crest Width Crest Length d) Height e) Primary Outlet Capacity If pipe, diameter f) Secondary Spillway Capacity Spillway Width

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

Upstream Downstream h) Surface Area of Impoundment i) Storage Acre Feetj) Drainage Area Above Dam Acres

10/20/2014

cPivot



Prepared By: **Heine Electric and Irrigation, Inc.**
For: **Johnson, Doug north**
Questions or concerns? Please call us at 402-640-1999!

Pivot center at 42.991836, -97.946173
Arc Start Bearing: 354.54
Arc Stop Bearing: 323.19
[S] Spray off at 160°, on at 200°.
[E] Spray off at 70°, on at 110°.

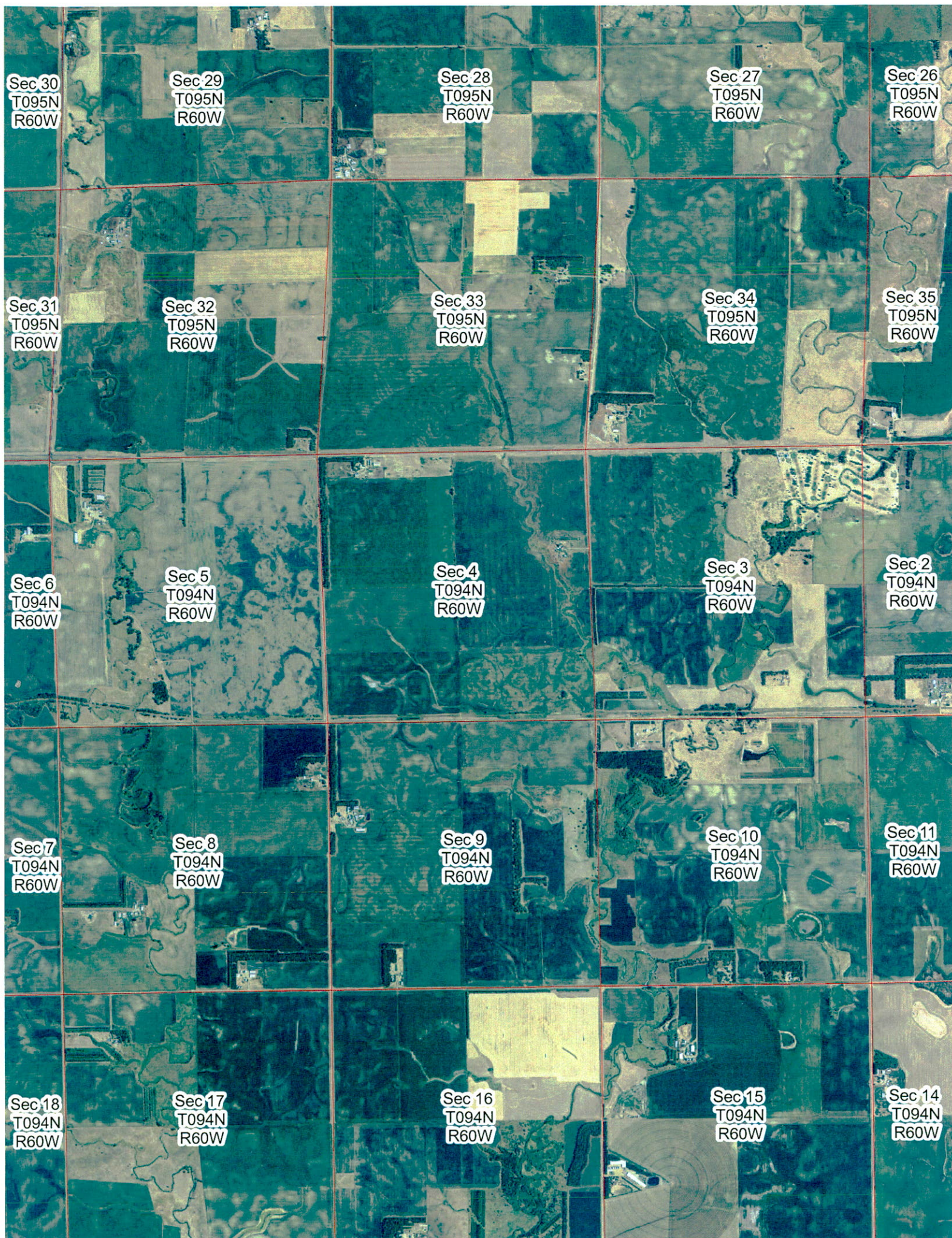
- 1 180 ft. Total: 180 ft.
Acreage: 2.13. Total: 2.13 acres.
- 2 180 ft. Total: 360 ft.
Acreage: 6.39. Total: 8.52 acres.
- 3 180 ft. Total: 540 ft.
Acreage: 10.66. Total: 19.18 acres.
- 4 180 ft. Total: 720 ft.
Acreage: 14.92. Total: 34.11 acres.
- 5 160 ft. Total: 880 ft.
Acreage: 16.84. Total: 50.95 acres.
- 6 160 ft. Total: 1040 ft.
Acreage: 20.21. Total: 71.17 acres.
- 7 160 ft. Total: 1200 ft.
Acreage: 23.58. Total: 94.75 acres.
- Overhang** 36 ft. Total: 1236 ft.
Acreage: 5.77. Total: 100.52 acres.
- Spray** 120 ft. Total: 1356 ft.
Acreage: 15.45. Total: 115.98 acres.



RECEIVED

OCT 31 2014

WATER RIGHTS
PROGRAM



Sec 30
T095N
R60W

Sec 29
T095N
R60W

Sec 28
T095N
R60W

Sec 27
T095N
R60W

Sec 26
T095N
R60W

Sec 31
T095N
R60W

Sec 32
T095N
R60W

Sec 33
T095N
R60W

Sec 34
T095N
R60W

Sec 35
T095N
R60W

Sec 6
T094N
R60W

Sec 5
T094N
R60W

Sec 4
T094N
R60W

Sec 3
T094N
R60W

Sec 2
T094N
R60W

Sec 7
T094N
R60W

Sec 8
T094N
R60W

Sec 9
T094N
R60W

Sec 10
T094N
R60W

Sec 11
T094N
R60W

Sec 18
T094N
R60W

Sec 17
T094N
R60W

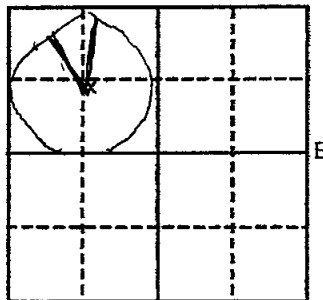
Sec 16
T094N
R60W

Sec 15
T094N
R60W

Sec 14
T094N
R60W

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location se 1/4 nw 1/4 Sec 4 Twp 94n Rg 60WCounty Bon HommePlease mark well
location with an "X"*120 acres
irrigated*

Well Completion Date

October 24, 2014

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
1,250.0 ft from septic tank (identify source)

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☒ Test holes
☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well
METHOD OF DRILLING:
direct 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
bentonite	15	9.4 Lb/gal	0.0 Ft	300.0 Ft
		Lb/gal	Ft	Ft

Describe grouting procedure
tremie

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? _____

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

Well Owner:

~~Steve Johnson~~ Douglas Johnson

Business Name:

Address:

~~30400 44th Ave~~ 41219 SD Hwy. 50

City, State, Zip:

Tyndall SD 57066

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
topsoil	0	2
Clay, tan, silty, pebbly	2	55
Clay, gray, sandy	55	105
Clay, gray, sandy w/ pebbles	105	221
Sand, gray, fine	221	245
Gravel, coarse, sandy	245	300

STATIC WATER LEVEL

140.0 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

_____ Ft. After _____

Hrs. pumped _____

GPM

_____ Ft. After _____

Hrs. pumped _____

GPM

If pump installed, pump rate: _____

GPM

REMARKS

water level estimated from nearby wells

RECEIVED

OCT 31 2014

WATER RIGHTS
PROGRAM

This well was drilled under license # _____

666

and this

report is true and accurate.

Drilling firm: Hammond Wetmore Drilling, llc

Signature of License Representative:

RH Hammond

Signature of Well Owner or Equitable Property Holder:

Date:

10/27/2014

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 11/3, 20 18

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>8060-3</u> to Appropriate Water, to construct and to put water to beneficial use	750	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. <u>8060-3</u>	200	00
Fee for Filing Transfer Form _____		
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	950 00

No. **06976**

By Jeanne Goodman
Chief Engineer



**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. 8060-3, 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. 8060-3, Douglas Johnson, 41219 SD Hwy 50, Tyndall SD 57066.

The Chief Engineer is recommending APPROVAL of Application No. 8060-3 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. 8060-3 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. 8060-3 may be subject to cancellation when the water reserved under these future use permits 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. 8060-3 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. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 8060-3 authorizes a maximum diversion rate of 1.71 cfs for the irrigation of 110 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
5. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Jeanne Goodman, Chief Engineer
January 7, 2015

**REPORT TO THE CHIEF ENGINEER
WATER PERMIT APPLICATION NO. 8060-3**

Douglas Johnson

December 31, 2014

Water Permit Application No. 8060-3 proposes to divert groundwater at a maximum diversion rate of 1.71 cubic feet of water per second (cfs) from one well to be completed into the Tyndall management unit of the Choteau aquifer. The well is expected to be approximately 300 feet deep and will be located in the approximate center of the NW¼ of Section 4, T94N-R60W. Water will be used to irrigate 110 acres located in the NW¼ of Section 4, T94N-R60W in Bon Homme County.

AQUIFER: Tyndall Management Unit of the Choteau aquifer (CH:T)

HYDROGEOLOGY:

The Choteau: Tyndall and Niobrara aquifers both occur in this area at the proposed well depth of 300 feet. The proposed well site appears to be located just within the preglacial valley that has incised the Niobrara Formation and has been filled with outwash deposits considered the Choteau: Tyndall aquifer (Tomhave and Schulz, 2004; Water Rights, 2014c). The test hole log submitted with this application shows the water bearing formation to be composed of sand and gravel rather than the chalk which would be characteristic of the Niobrara Formation. The presence of gravel rather than chalk indicates that this test hole was completed into the Tyndall Management Unit of the Choteau aquifer.

The aquifer was first identified as the Tyndall-Scotland aquifer by Jorgensen (1971). In assessing aquifers in eastern South Dakota, the Tyndall-Scotland aquifer was separated at a groundwater flow divide located approximately where Snatch Creek (shown in Figure 1 as originating in Section 30, T96N-R59W) crosses over the Choteau: Tyndall in the southeast quarter of T95N-R59W, becoming the Scotland management unit of the Lower James Missouri aquifer to the east of the divide and the Tyndall management unit of the Choteau aquifer to the west of the divide. At approximately 13 miles to the southwest of this flow divide Emmanuel Creek incises the Choteau aquifer, producing the West and Tyndall management units (Hedges and others, 1982).

The Choteau: Tyndall aquifer is an outwash deposit consisting of sands and gravels that to some extent fill a preglacial valley which incises the Niobrara aquifer and in parts of T95N-R60W cuts through the Carlile Shale to the Codell Sandstone (Jorgensen, 1971). The aquifer is buried by till except at the southern extent, where it outcrops at Emmanuel Creek. The southwest terminus of the Choteau: Tyndall aquifer occurs where Emmanuel Creek has completely incised the aquifer, leaving it entirely disconnected from the Choteau: West aquifer. The aquifer is often under artesian conditions, but water table conditions do exist locally (Jorgensen, 1971).

From these studies, the areal extent of the Choteau: Tyndall aquifer was estimated to be 24,800 acres. The aquifer is often less than 50 feet thick (Jorgensen, 1971). Hedges and others (1982) estimated the average thickness to be 30 feet. From an aquifer pump test, Jorgensen (1971) found the aquifer had a storage coefficient of 0.2. Applying this storage coefficient and thickness to the area, there is an estimated 186,000 acre-feet (ac-ft) of water in storage in the aquifer. The

Choteau: Tyndall aquifer is hydraulically connected to the Lower James Missouri: Scotland to the east, and local surface waters, including Emmanuel Creek. Water in the aquifer moves to the west in the northern portion and south in the southern portion (Jorgensen, 1971). In addition, Goodman (2003) speculates that the Choteau: Tyndall aquifer is also hydraulically connected to the underlying Codell and Dakota aquifers where the Carlile Shale has been eroded away and to the adjacent Niobrara aquifer.

At this location, the test hole log submitted with the application shows aquifer materials starting at 221 feet below ground surface and extending to at least 300 feet below ground surface where drilling was ceased. According to the test hole log, the static water level in this test hole was encountered at 140 feet below ground surface on October 24, 2014.

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:

The probability 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 public water system has applied for a permit, the Board need not consider the recharge/withdrawal issue. Here, a public water system is not involved. Therefore, the withdrawal/recharge issue must be considered.

In applying SDCL 46-6-3.1, the Sixth Judicial Circuit Court ruled in 2005 that if the Water Management Board uses average annual recharge, then it should also use average annual withdrawals to determine if unappropriated water is available from the aquifer (*Hines v. South Dakota Dept. of Environ. and Nat'l. Resources, Hughes County 04-37*) (Memorandum Decision, April 29, 2005).

A 2012 First Judicial Circuit Court's rulings basically stated that data must be presented to show it is probable the average annual recharge exceeds the average annual discharge by at least the amount requested by the water permit application being considered (*Hanson County Dairy v. Robert Bender and Stace Nelson*) (Memorandum Decision, April 11, 2012).

Later in 2012, the First Judicial Circuit Court stated that in deciding whether or not it is probable that the quantity of water withdrawn will exceed the quantity of the average estimated annual recharge is to be based according to the best information reasonably available, and that nothing in South Dakota law requires a recharge study (*Longview Farms, LLP v. South Dakota Dept. of Environ. and Nat'l. Resources*), (Memorandum Decision, May 17, 2012).

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 (Goodman, 2003). 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 year (in/yr) for unconfined portions of the Choteau: Tyndall aquifer. Data was available from a total of 16 water years from three observation wells completed into the unconfined portion of the Choteau: Tyndall aquifer. A storage coefficient of 0.15 was assumed for all aquifers in the study (Hedges and others, 1985). Applying the storage coefficient of 0.2 for the Choteau: Tyndall aquifer from Jorgensen (1971), the recharge rate was calculated at 4.3 in/yr (Stonesifer, 2013). Because recharge and discharge occur simultaneously, measurements of any increase in water levels is a measured recharge compared to discharge. Therefore, this method yields lower than actual recharge rate. Applying 4.3 in/yr to the unconfined portion of the aquifer (2,800 acres) produces a recharge rate of 1,000 ac-ft/yr.

Water levels continue to be recorded in the same three wells, and these wells often exhibit unconfined conditions (Water Rights, 2014a). The same methodology from Hedges and others (1985) was applied to water level data from these wells for a total of 82 water years, with an applied storage coefficient of 0.2. Stonesifer (2013) estimated recharge in unconfined portions of the Choteau: Tyndall aquifer (estimated at 2,800 acres) to be approximately 7.2 in/yr. Applying the estimated unconfined area recharge rate to the unconfined portion of the aquifer produces an estimated average annual recharge of at least 1,700 ac-ft/yr.

Assuming the same storage coefficient and the unconfined portion of the aquifer, nine additional water years as of 2014, and the same methodology produced a recharge rate of approximately 1,408 ac-ft/yr. Although the two are relying on the same data sets, this number is consistent with the slow decline of aquifer levels of approximately one tenth of one foot per year at an average usage of 1,430 ac-ft/yr. In this instance, irrigation questionnaires (Water Rights, 1980-2014) were used in conjunction with observable changes of water levels in observation wells. For each year, the reported usage and the calculated change in storage were added to produce an annual recharge shown in Table 1.

		BH-76D	BH-76C	BH-71C	Average	Average	Average
Year	Usage (ac-ft)	Change in Water Level (ft/yr)	Change in Water Level (ft/yr)	Change in Water Level (ft/yr)	Change in Water Level (ft/yr)	Change in Storage (ac-ft/yr)	Calculated Recharge (ac-ft/yr)
1982	1564.67	-0.1	0.5	2.6	1.0	560.0	2124.7
1983	996.66	0.9	3.6	3.5	2.7	1493.3	2490.0
1984	1012.13	1.8	6.0	6.6	4.8	2688.0	3700.1
1985	1056.16	1.5	-2.2	-5.4	-2.0	-1138.7	-82.5
1986	1184.2	0.6	0.4	3	1.3	746.7	1930.9
1987	1645.7	-0.2	0.0	-1.8	-0.7	-373.3	1272.4
1988	2545.85	-0.6	-3.8	-3.3	-2.6	-1437.3	1108.5
1989	2173.9	-1.3	-2.0	-3	-2.1	-1176.0	997.9
1990	1570.5	-1.3	-2.2	-1.5	-1.7	-933.3	637.2
1991	1961.5	-1.5	-2.0	-1.6	-1.7	-952.0	1009.5
1992	489.25	-0.6	-0.2	-0.9	-0.6	-317.3	171.9
1993	61.2	1.0	6.5	9.1	5.5	3098.7	3159.9
1994	633.66	1.5	-0.5	-2.5	-0.5	-280.0	353.7
1995	1104.18	0.2	1.4	1.5	1.0	578.7	1682.8
1996	1034.76	0.8	-0.6	-1.1	-0.3	-168.0	866.8
1997	964	0.5	1.5	2.4	1.5	821.3	1785.3
1998	708.2	0.0	-0.4	-1.6	-0.7	-373.3	334.9
1999	939.23	0.3	0.2	0.3	0.3	149.3	1088.6
2000	1235.83	-0.9	-1.8	-2.4	-1.7	-952.0	283.8
2001	919.74	0.4	1.0	3.3	1.6	877.3	1797.1
2002	1613.71	-1.1	-2.5	-3.9	-2.5	-1400.0	213.7
2003	1495.99	-0.3	-0.9	0.2	-0.3	-186.7	1309.3
2004	1680.06	-1.4	-0.9	-1.5	-1.3	-709.3	970.7
2005	2006.84	-0.8	-0.7	0.3	-0.4	-224.0	1782.8
2006	1693.26	0.3	0.0	-1.6	-0.4	-242.7	1450.6
2007	1931.36	0.2	0.7	2	1.0	541.3	2472.7
2008	2138.41	-0.4	0.0	0.6	0.1	37.3	2175.7
2009	1023.99	1.4	0.5	-0.4	0.5	280.0	1304.0
2010	559.56	1.1	4.5	5.3	3.6	2034.7	2594.2
2011	1609.67	0.5	-0.5	-2.2	-0.7	-410.7	1199.0
2012	3931.51	-1.4	-4.5	-3.1	-3.0	-1680.0	2251.5
2013	2078.8	-1.7	-1.6	-1.9	-1.7	-970.7	1108.1
2014	1625*	-0.8	-1.0	-2	-1.3	-709.3	915.7
Average	1423.89	-0.042	-0.045	-0.030	-0.039	-22.061	1407.925

Table 2: Change of water level in observation wells completed into the unconfined portion of the Choteau: Tyndall aquifer and the corresponding annual rates of recharge.

*At the time this report was written, only 19 of 25 irrigators had submitted irrigation questionnaires for 2014, the total amount of water pumped from the Choteau: Tyndall aquifer in 2014 is expected to be greater than 1625 ac-ft.

Discharge:

Discharge from the Choteau: Tyndall aquifer is through springs at the outcrop areas near Emmanuel Creek, evapotranspiration, and well withdrawals (Jorgensen, 1971) as well as potential outflow to adjacent portions of the Niobrara and Codell bedrock aquifers (Goodman,

2003). Currently there are a total of 27 water rights/permits appropriating water and one future use permit reserving water from the Choteau: Tyndall aquifer (Water Rights, 2014b).

The City of Tyndall holds two water rights, authorizing a total maximum diversion rate of 2.16 cfs, and one future use permit, authorizing a reservation of 410 ac-ft/yr, from this aquifer. These are both for municipal use. However, the City of Tyndall uses a rural water system as its primary source. The water rights that it holds 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 zero. The future use permit held by the City of Tyndall was last reviewed in 2010 and was renewed.

The remaining 25 water rights/permits are authorized for irrigation use. The appropriation amount has remained fairly constant over the period of record, as shown in Table 2 and Figure 2. However, it is likely that the total number of acres irrigated has increased as permits issued prior to 1978 appropriate three acre-feet of water per acre, whereas permits issued after this time appropriate two acre-feet per acre. The average annual irrigation pumpage is currently 1,426 ac-ft/yr and varies from a minimum of 62 ac-ft/yr to a maximum of 3,932 ac-ft/yr (Water Rights, 1980-2014). The large variability in the annual amount of water pumped from the Choteau: Tyndall aquifer can be attributed to varying climatic and economic conditions. During times of drought and/or high commodity prices, pumping can be expected to increase. At the time this report was written, the entirety of the 2014 irrigation questionnaires for the Choteau: Tyndall aquifer had yet to be received by the Water Rights Program. The 19 of 25 submitted to date report 1,625 ac-ft withdrawn in 2014.

Year	Number of Permits Reporting	Appropriation (ac-ft/yr)	Pumpage Reported (ac-ft/yr)
1979	17	8079	983
1980	17	7966	1943
1981	22	10210	1418
1982	19	8576	1564.67
1983	19	9043	996.66
1984	23	10710	1012.13
1985	21	9551	1056.16
1986	21	9551	1184.2
1987	21	9393	1645.7
1988	21	9393	2545.85
1989	22	9470	2173.9
1990	19	7604	1570.5
1991	19	7154	1961.5
1992	19	7154	489.25
1993	19	7154	61.2
1994	19	7523	633.66
1995	19	7523	1104.18
1996	19	7672	1034.76
1997	17	7179	964
1998	18	7179	708.2
1999	18	7179	939.23
2000	18	7179	1235.83
2001	18	7179	919.74
2002	17	6759	1613.71
2003	16	6138	1495.99
2004	20	7288	1680.06
2005	20	7288	2006.84
2006	20	7240	1693.26
2007	21	7410	1931.36
2008	23	7824	2138.41
2009	23	7824	1023.99
2010	23	7824	559.56
2011	21	7035	1609.67
2012	23	7629	3931.51
2013	24	8127	2078.8
2014	25	8427	1625*
Max	25	10710	3931.51
Min	16	6138	61.2
Average	19.88571	7937.647059	1425.957

Table 2: Historic water use from the Choteau: Tyndall aquifer (Water Rights, 1980-2014)

*At the time this report was written, only 19 of 25 irrigators had submitted irrigation questionnaires for 2014, the total amount of water pumped from the Choteau: Tyndall aquifer in 2014 is expected to be greater than 1625 ac-ft.

Hydrologic Budget:

The average annual withdrawal of water from the Choteau: Tyndall aquifer was calculated to be approximately 1,426 ac-ft/yr from irrigation questionnaires spanning 1979-2013. 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 range from 1,000 (Hedges, 1985; Jorgensen, 1971) to 1,700 ac-ft/yr (Stonesifer, 2013). Expected average annual withdrawal over the period of record may exceed average recharge. Given the relatively constant level of appropriation since the majority of development in 1976 (see Figure 2 and Table 2), it is not expected that the average rate of withdrawal will change dramatically with time, but it is possible that the future use permit held by the City of Tyndall will be developed. If this occurs, average withdrawals will exceed the range of calculated recharge rates.

The inconsistency in average use between Table 1 and Table 2 arises from the two different time periods that the tables represent. Because data for Observation Well BH-71C does not predate 1982, Table 1 displays the years 1982-2014. Table 2 displays the years 1979-2014.

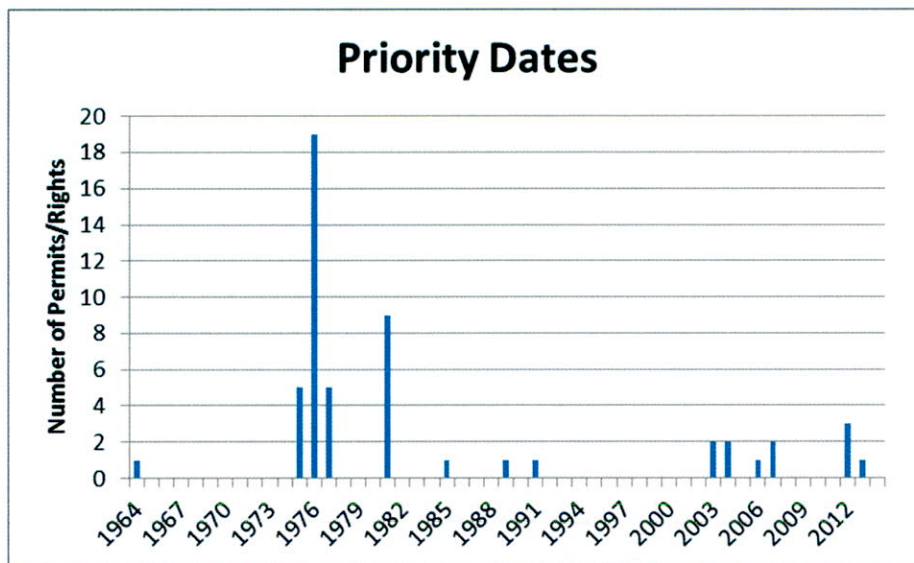


Figure 2: Historic issuing of water permits in the Choteau: Tyndall aquifer by year.

Observation Well Data:

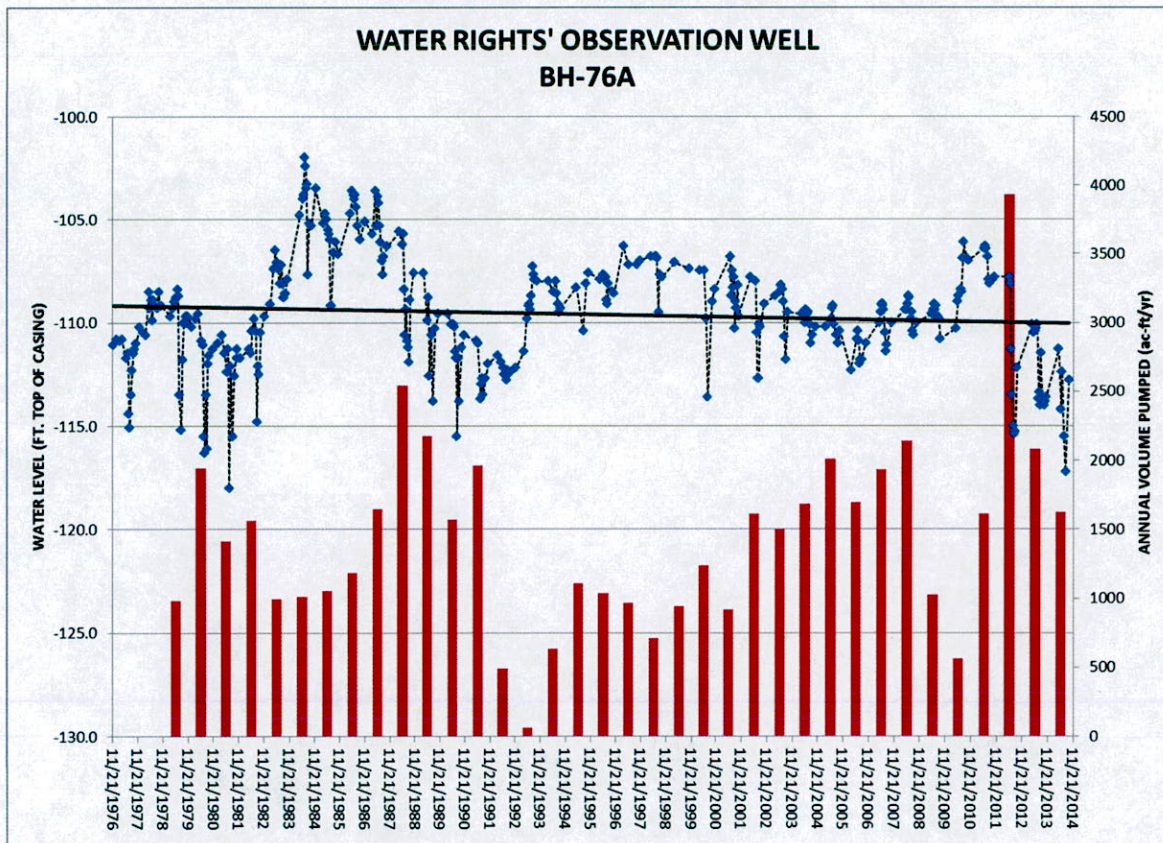
Administrative Rule of South Dakota Section 74:02:05:07 requires that “the [Water Management Board] shall rely upon the record of observation well measurements... to determine that the quantity of water withdrawn annually from the aquifer does not exceed the estimated average annual recharge of the aquifer.”

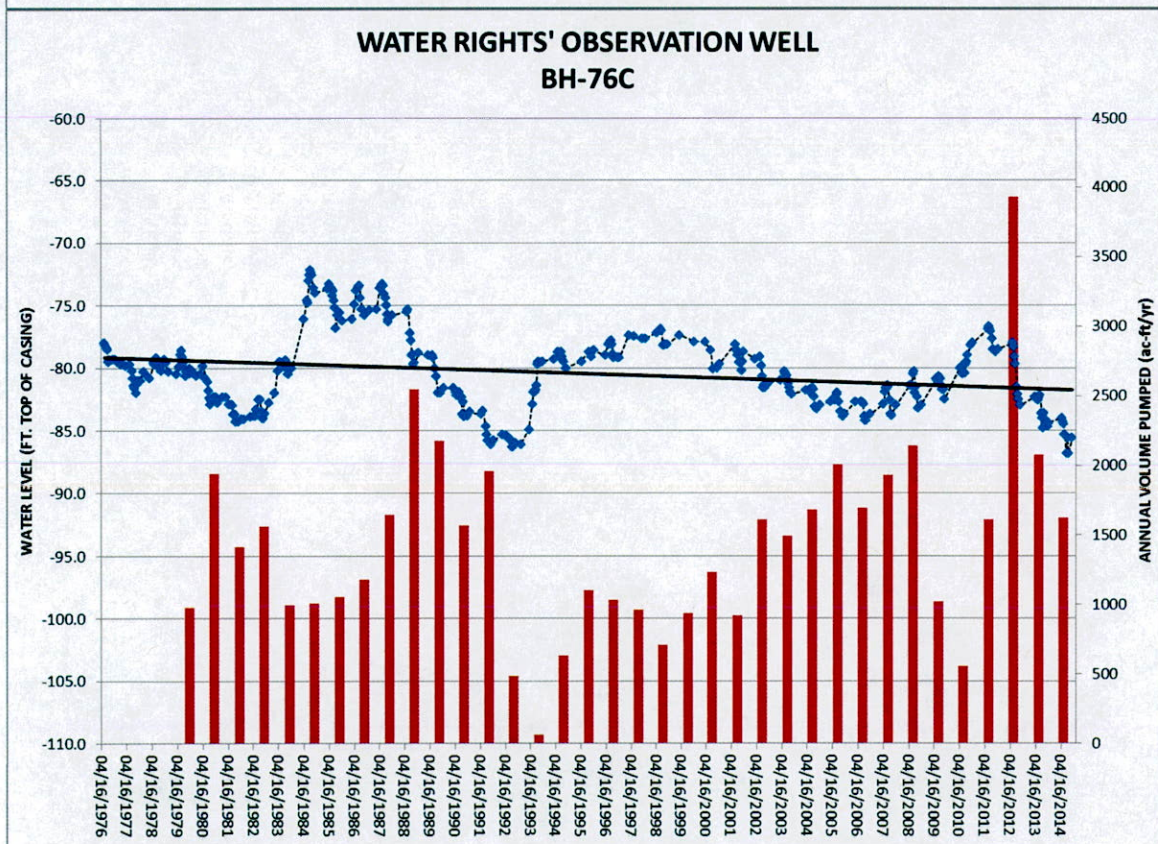
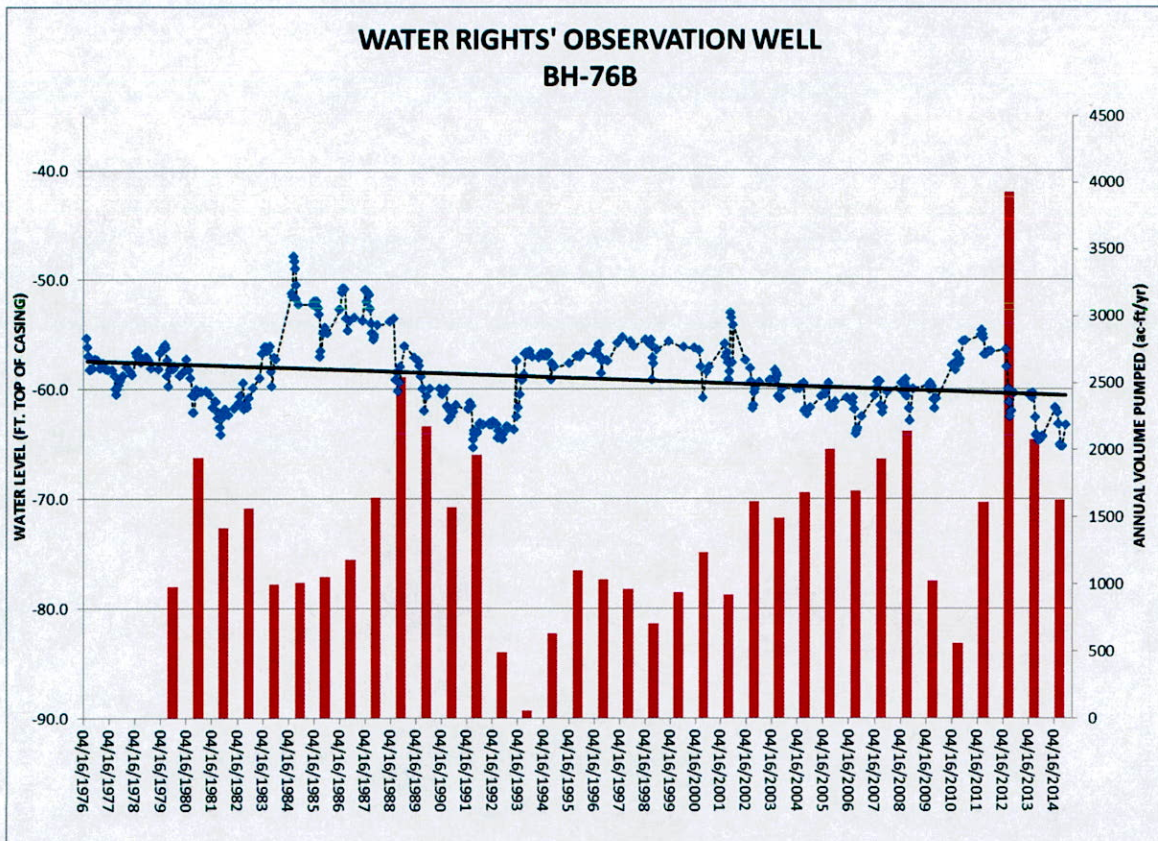
The DENR-Water Rights Program monitors eight observation wells completed into the Choteau: Tyndall aquifer (Water Rights, 2014a). Water levels for each of the eight observation wells are shown in Figures 3-10. All eight of the observation wells completed into the Choteau: Tyndall aquifer display a declining trend line in water levels. These trend lines are heavily influenced by above average pumping and/or below average recharge during 1987-1992, 2002-2008, and 2011-present.

Currently, water levels are at an all time low in several of the observation wells since water level records began. This can be attributed to an unprecedented annual withdrawal in 2012 of 3,931 ac-ft. Given the period of observation, the recurrence interval or likelihood of a repeat of 2012 withdrawals is less than three percent in the 35 year period of record. In addition, an annual

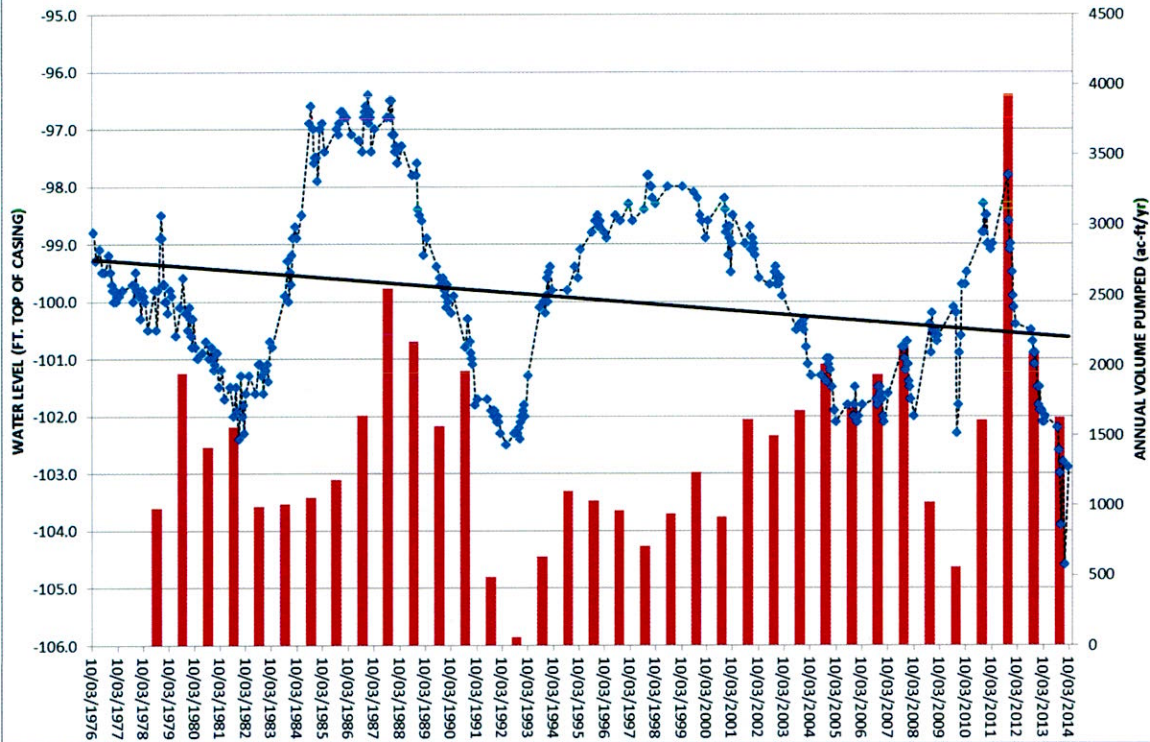
withdrawal of 2,546 ac-ft (seen in 1988) has a calculated recurrence interval of just over five percent.

The combination of withdrawal and recharge have resulted in a decrease in the amount of water in storage in the Choteau: Tyndall aquifer. Therefore, average annual recharge is not keeping pace with average annual withdrawals.

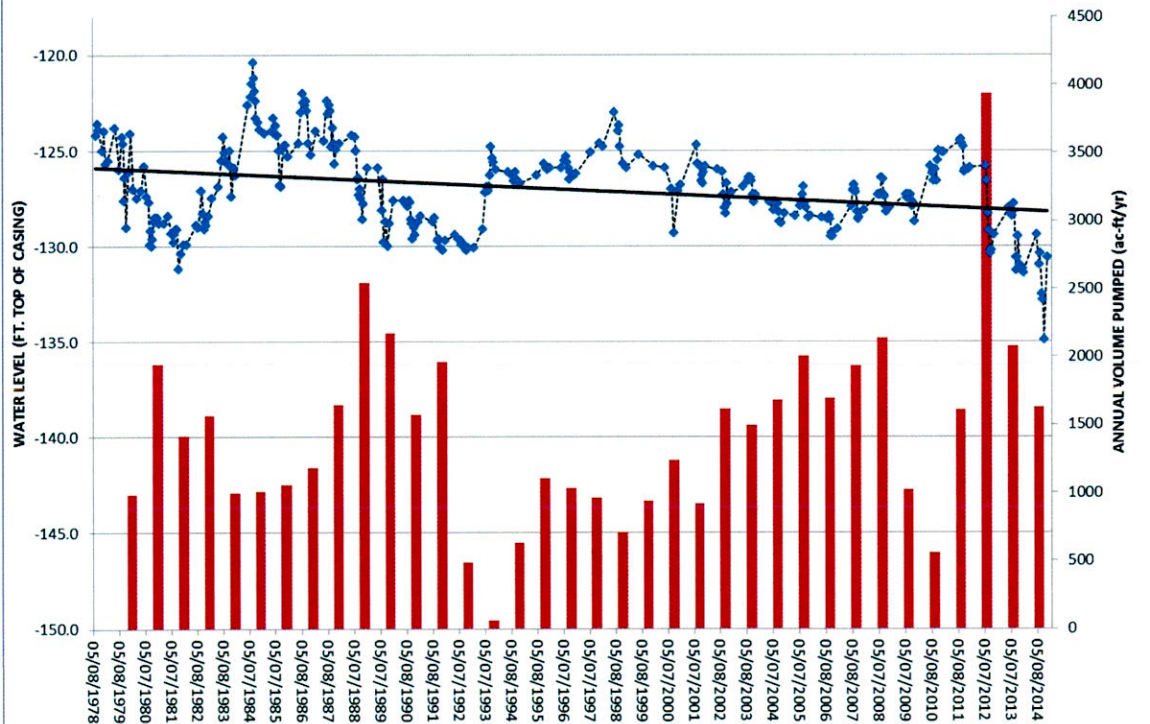




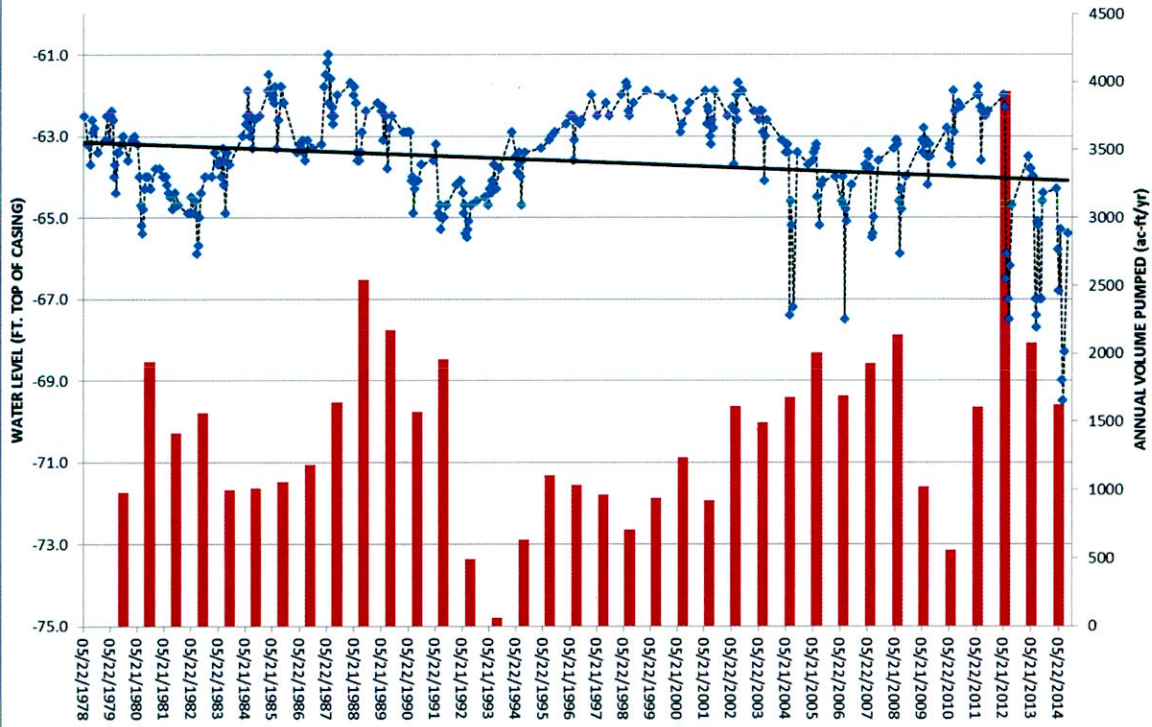
WATER RIGHTS' OBSERVATION WELL BH-76D



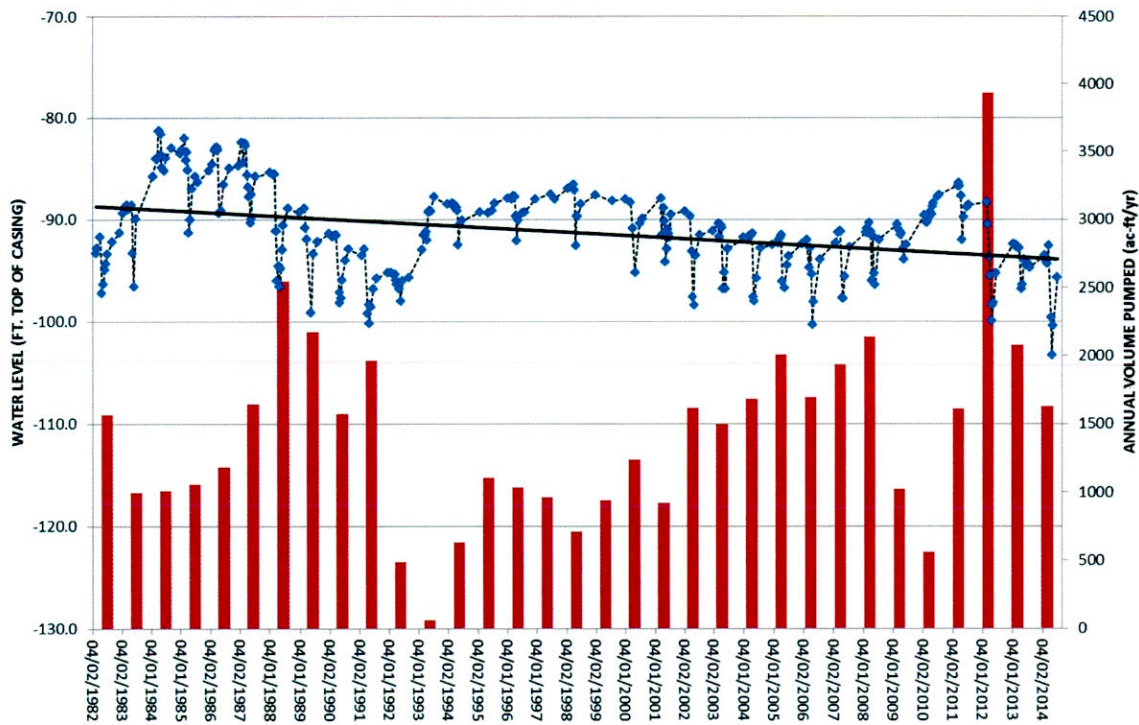
WATER RIGHTS' OBSERVATION WELL BH-78B

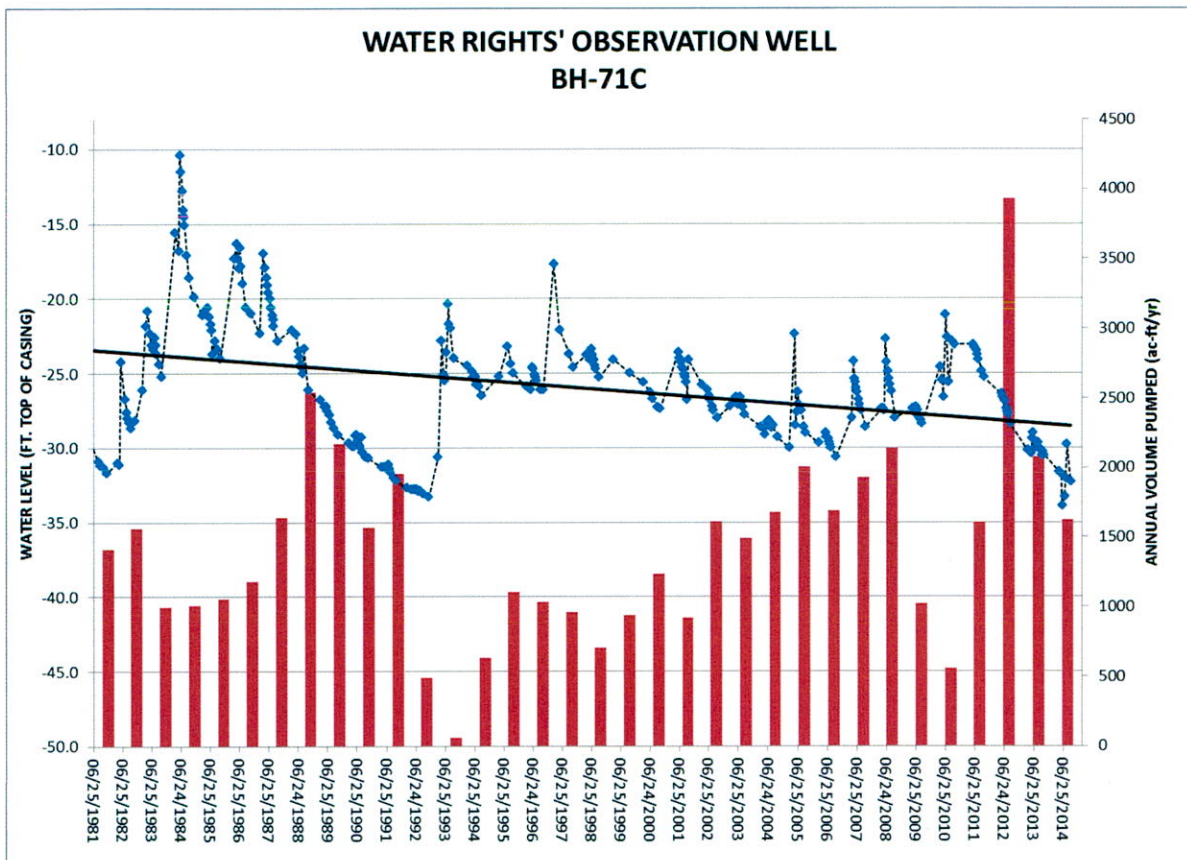


WATER RIGHTS' OBSERVATION WELL BH-78E



WATER RIGHTS' OBSERVATION WELL BH-82B





Figures 3-10: Historic water levels in the eight observation wells completed into the Choteau: Tyndall aquifer shown in blue on the left axis, annual volume pumped shown in red on the right axis. Water level trend lines are shown in black (Water Rights 2014a).

EXISTING WATER RIGHTS:

The DENR water rights database was reviewed for the nearest existing water rights/permits and domestic wells on file. The closest water rights to the proposed well site that is completed into the Choteau: Tyndall aquifer is Water Right No. 2743 (Water Rights, 2014b) with a well located approximately 1.6 miles to the east of the proposed well site. Given this distance, impairment of Water Right No. 2743-3 as well as any other water rights/permits in the region is not expected to occur. Although under water table conditions to the south (Stonesifer, 2013), the Choteau: Tyndall aquifer is confined in the area that this application proposes to divert from. The test hole log submitted with this application shows water levels that are approximately 80 feet above the water bearing formation. SDCL 46-6-6.1 does not protect artesian head pressure as a means of delivery, and it is not expected that the proposed pumping will lower water levels to unconfined conditions in the area. Therefore, adequately constructed domestic wells are not expected to experience unlawful impairment as a result of the proposed diversion. In summary, it is not expected that any domestic wells or water rights/permits in the area will be affected by the approval of this application.

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. However, 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.

Temporary use permits are intended to place water that is reserved by future use permits to beneficial use until the future use permit is developed. The future use permit in the Choteau: Tyndall aquifer reserves 410 ac-ft/yr for the City of Tyndall. The irrigation of 110 acres proposed by this application 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 than would be used by the applicant should a temporary use permit be granted. Therefore, until the future use permit is developed, water is available for this proposed appropriation as a temporary use permit.

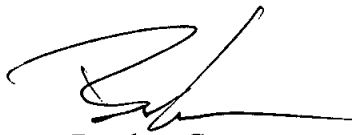
SDCL 46-5-6

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of one cubic foot of water per second for every seventy acres, or "the equivalent thereof." The statute provides that the Water Management Board may allow a greater diversion if the method of irrigation so requires.

This water permit application proposes to divert at a rate of 1.71 cfs per 110 acres, equating to 1.09 cfs per 70 acres. This request was made in order to operate the pivot at the required 750 gallons per minute or 1.71 cfs.

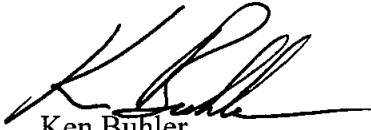
CONCLUSIONS:

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 110 acres.
2. Given the declining water levels in observations wells completed into the Choteau: Tyndall aquifer, and the expectation that the future use permit held by the City of Tyndall will be developed, there is not a reasonable probability that unappropriated water is available from the aquifer to supply the proposed appropriation.
3. There is a reasonable probability that this proposed diversion will not adversely impair existing nearby wells.
4. 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.
5. 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.
6. The application has requested an additional diversion rate in excess of one cfs per 70 acres in order to properly supply the irrigation pivot.



Bracken Capen
SD DENR-Water Rights Program

Approved by



Ken Bühler
SD DENR-Water Rights Program

REFERENCES:

- Hedges, L.S., Burch, S.L., Iles, D.L., Barari, R.A., and Schoon, R.A. 1982. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
- Hedges, L.S., Allen, J., and Holly, D.E. 1985. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa. Task 7: Ground Water Recharge. South Dakota DENR-Geological Survey, Vermillion, South Dakota.
- SD Geological Survey. 2014. Lithologic Logs Database, South Dakota Department of Environment & Natural Resources Geological Survey, Vermillion, South Dakota.
- Jorgensen, D.G. 1971. Geology and Water Resources of Bon Homme County, South Dakota, Part II: Water Resources. South Dakota DENR-Geological Survey Bulletin 21, 61 p.
- In the Matter of Water Permit Application No. 7209-3, Longview Farms, LLP v. South Dakota DENR, South Dakota First Judicial Court Civ. No. 11-146 (Memorandum Decision, May 17, 2012)
- In the Matter of Water Permit Application No. 7239-3, Hanson County Dairy v. Robert Bender and Stace Nelson, South Dakota First Judicial Court Civ. No. 11-54 (Memorandum Decision, April 11, 2012)
- In the Matter of Water Permit Application No. 6431-3, Phillip W. Hines v. South Dakota DENR, South Dakota Sixth Judicial Court Civ. No. HU04-37 (Memorandum Decision, April 11, 2012)
- Stonesifer, J.R. 2013. Report on Water Permit Application No. 7922-3, Steve Johnson. South Dakota DENR-Water Rights Program. Joe Foss Building., Pierre, South Dakota.
- Tomhave, D.W. and Schulz, L.D. 2004. Geologic Map Showing Configuration of the Bedrock Surface in South Dakota East of the Missouri River. SD DENR-Geological Survey, Vermillion, South Dakota.
- Water Rights, 1980-2014. "Irrigation Report Summaries." SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2014a. Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2014b. Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.

Water Rights. 2014c. Water Well Completion Reports, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.

Affidavit of Publication

State of South Dakota }
County of Bon Homme } SS

JAN 20 2015

WATER RIGHTS
PROGRAM

Rebecca Dy... 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 dep-
onent is the publisher in charge of the advertising department
of said newspaper; that the advertisement headed

Douglas Johnson DENR
Not. of Appl. No. 8060-3
78 @ 37.2

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

<i>Jan. 14</i> 2015	20
20	20
20	20
20	20

That the full amount of the fee charged for the publica-
tion of said notice, \$ *29.02*, 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 Dy... publisher
Subscribed and sworn to before me this
14 day of *Jan.* 2015
Regina Schulz
Notary Public, South Dakota

my commission expires Oct 24, 2015

NOTICE OF APPLICATION NO. 8060-3 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 (cfs) from one well to be completed into the Choteau: Tyndall Aquifer (300 feet deep) located in the center of the NW 1/4 Section 4 for irrigation of 110 acres located in the NW 1/4 Section 4; all in T94N-R60W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8060-3 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

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 26, 2015.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Information concerning this application is available at <http://denr.sd.gov/public>. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources

Published once at an approximate cost of \$29.02

(Jan. 14)

RECEIVED

JAN 22 2015

WATER RIGHTS
PROGRAM

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

Department of Environment and Natural Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3182

STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

KELLY HERTZ BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT 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
Application No. 8060-3

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 14th DAY OF January 2015
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$30.95 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: 1/14/2015

FILED ON: 1/16/2015

SUBSCRIBED AND SWORN TO BEFORE ME THIS 16th DAY OF January

NOTARY PUBLIC, SOUTH DAKOTA

MY COMMISSION EXPIRES 8/19/2015

1+14
NOTICE OF APPLICATION NO.
8060-3 to Appropriate Water

Notice is given that Douglas Johnson, 41219 SD Hwy 50, Tyn-dall, SD 57066 has filed an appli-cation for a water permit to appro-priate 1.71 cubic feet of water per second (cfs) from one well to be completed into the Choteau:Tyn-dall Aquifer (300 feet deep) locat-ed in the center of the NW ¼ Sec-tion 4 for irrigation of 110 acres located in the NW ¼ Section 4; all in T94N-R60W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends AP-PROVAL of Application No. 8060-3 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 Tyn-dall, holder of a future use permit from the Choteau:Tyndall aquifer

fully develop water reserved from their future use permit, 2) the pro-posed 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this applica-tion, as recommended, unless a petition is filed opposing the ap-plication or the applicant files a petition contesting the Chief En-gineer's recommendation. If a pe-tition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Manage-ment Board will consider this ap-plication. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a writ-ten petition with BOTH the appli-cant and Chief Engineer. The ap-plicant must file a petition if con-testing the Chief Engineer's rec-ommendation. The Chief Engi-neer'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 interest-ed person or the applicant must be filed by January 26, 2015.

The petition may be informal, but must include a statement describ-ing the petitioner's interest in the application, the petitioner's rea-sons for opposing or supporting the application, and the signature and mailing address of the peti-tioner or the petitioner's legal counsel, if legal counsel is ob-tained. Information concerning this application is available at <http://denr.sd.gov/public>. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pimer, Secretary, Department of Environment and Natural Re-sources.
Published once at the total ap-proximate cost of \$30.95.



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov



January 7, 2015

Tyndall Tribune & Register
PO Box 520
Tyndall SD 57066

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 8060-3 to Appropriate Water. Please publish the notice once on January 14, 2015. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published and arrange for payment. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Douglas Johnson, 41219 SD Hwy 50, Tyndall SD 57066 (Ph # 605-589-3725).

Please send the Water Rights Program an affidavit or the enclosed Proof of Publication form immediately.

The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov



January 7, 2015

Press & Dakotan
319 Walnut
Yankton SD 57078

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 8060-3 to Appropriate Water. Please publish the notice once on January 14, 2015. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published and arrange for payment. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Douglas Johnson, 41219 SD Hwy 50, Tyndall SD 57066 (Ph # 605-589-3725).

Please send the Water Rights Program an affidavit or the enclosed Proof of Publication form immediately.

The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



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.**

January 7, 2015

Douglas Johnson
41219 SD Hwy 50
Tyndall SD 57066

Dear Mr. Johnson:

Water Permit Application No. 8060-3 for irrigation 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.

Instruction to Newspaper - Publish the Notice on January 14, 2015. The applicant is responsible for payment. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352 or email: Karen.schlaak@state.sd.us.

NOTICE OF APPLICATION NO. 8060-3 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 (cfs) from one well to be completed into the Choteau:Tyndall Aquifer (300 feet deep) located in the center of the NW 1/4 Section 4 for irrigation of 110 acres located in the NW 1/4 Section 4; all in T94N-R60W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8060-3 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

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 26, 2015.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Information concerning this application is available at <http://denr.sd.gov/public>. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. 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

FEB 17 2015

Douglas Johnson
41219 SD Hwy 50
Tyndall SD 57066

Dear Johnson:

Enclosed is Temporary Use Water Permit No. 8060-3 authorizing construction of your 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

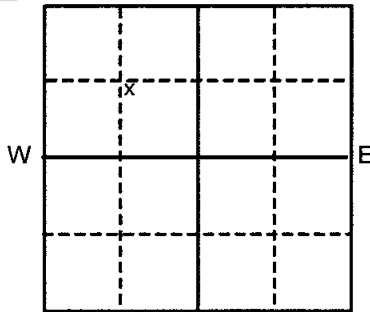
enclosures

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

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

North

Please mark well
location with an "X"

Well Completion Date

February 7, 2015

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?

1,250.0 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 ☐ OtherIf other describe none

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	<u>16.00</u> IN	<u>0.0</u> FT	<u>260.0</u> FT	<u>22.00</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>bentonite</u>	<u>35</u>	<u>9.4</u> Lb/gal	<u>0.0</u> Ft	<u>200.0</u> Ft
		Lb/gal	Ft	Ft

Describe grouting procedure
tremie

SCREEN:

☐ Perforated pipe ☒ ManufacturedDiameter 16.00 Inches Length 40.0 FeetMaterial pvcSlot Size .085 Set From 260.0 Feet to 300.0 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? chlorinated gravel☐ No, Why Not?Lab to which water
quality sample sent for analysis

Business Name:

Address: 30468 411th AveCity, State, Zip: Tyndall SD 57066

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
topsoil	0	2
Clay, tan, silty, pebbly	2	55
Clay, gray, sandy	55	105
Clay, gray, sandy w/ pebbles	105	221
Sand, gray, fine	221	245
Gravel, coarse, sandy	245	300

STATIC WATER LEVEL 136.0 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

140.0 Ft. After 2.0 Hrs. pumped 800.0 GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

water level estimated from nearby wells

RECEIVED

APR 15 2015

WATER RIGHTS
PROGRAMThis well was drilled under license # 810 and this
report is true and accurate.Drilling firm: Heine Electric & Irrigation, Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date: 2-24-15

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8060-3

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. 8060-3, bearing the priority of October 31, 2014 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) 300 feet
- 4) Well log is available Yes

Casing:

- 1) Diameter 16 inches
- 2) Length 260 feet
- 3) Type Plastic

Screen:

- 1) Type PVC
- 2) Length 40 feet
- 3) Static water level 136 feet

Pump:

- 1) Make Unknown
- 2) Model Unknown
- 3) Capacity 700 GPM

Motor:

- 1) Make Unknown
- 2) Model No. Unknown
- 3) Horsepower rating Unknown hp

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

- 1) Type Galvanized
- 2) Size 8 inches
- 3) Length 16 feet

C. Works used to apply water to beneficial use:

Center pivot:

- 1) Make Valley
- 2) Overall length 1,220 feet
- 3) Number of towers 7
- 4) End gun Yes
- 5) Capacity 700 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 Yes
- 3) Exceptions to compliance are: None

E. Condition and Location:

1. The system is in good condition with the point(s) of diversion located as follows: Well: 1,390 feet east and 1,430 feet south from the northwest corner of Section 4-T94N-R60W (Latitude 42.99177, Longitude -97.94616 – SE1/4NW1/4).
2. The works are capable of diverting and conveying to the place of use 1.56 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 4-T94N-R60W

<u>NW1/4NW1/4</u>	<u>16 acres</u>
<u>NE1/4NW1/4</u>	<u>30 acres</u>
<u>SW1/4NW1/4</u>	<u>30 acres</u>
<u>SE1/4NW1/4</u>	<u>34 acres</u>

comprising a total of 110 acres of land and the license should be issued for 1.56 cfs.

3. All structures, wells and lands on map Yes

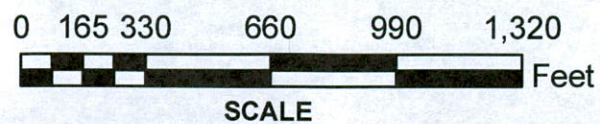
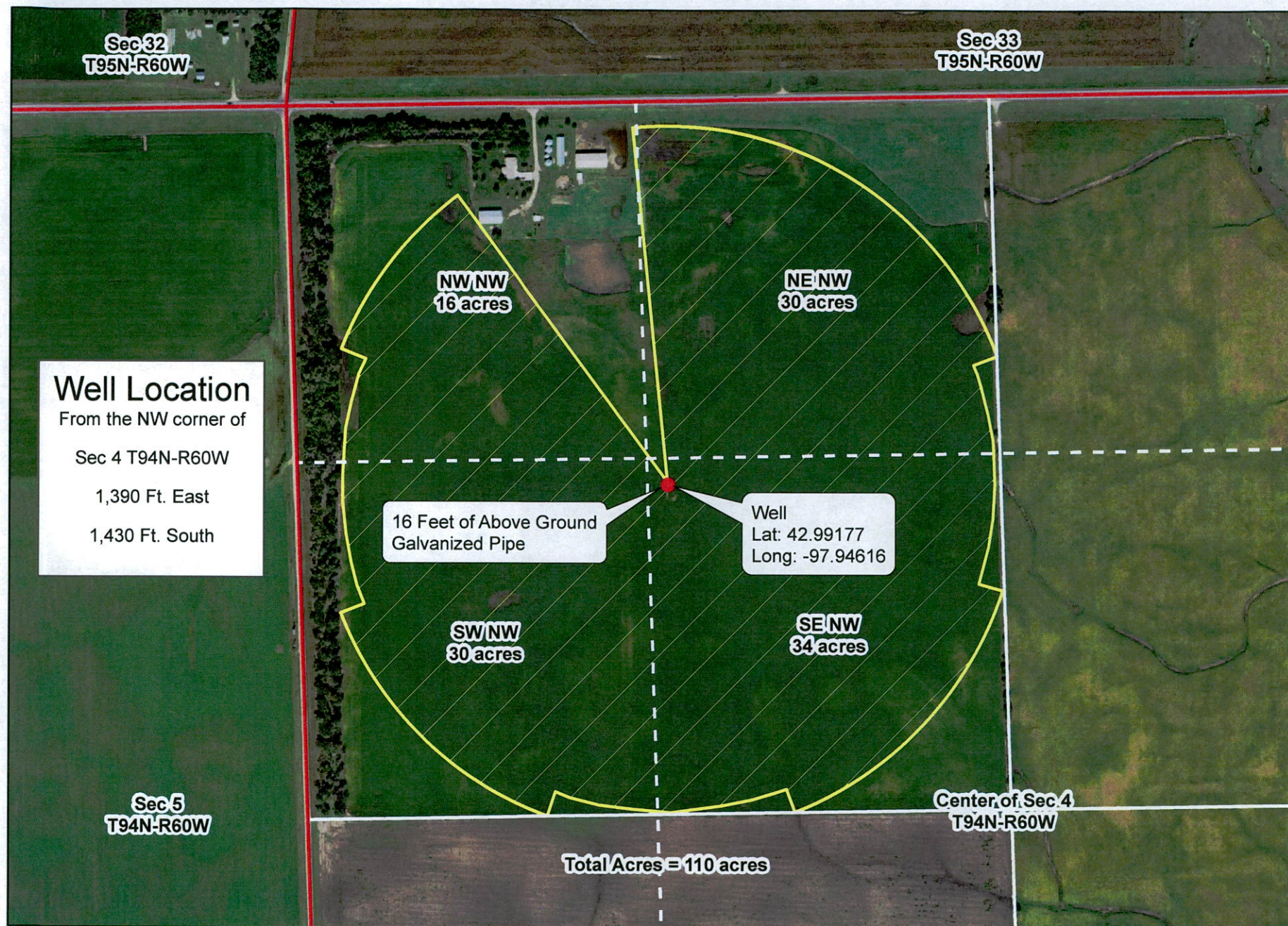
F. Comments or other permit(s) associated with the project: None

Keith DeJong

Keith DeJong
Water Rights Inspector
DENR, Water Rights Program

Date report completed: July 30, 2018

Water Right No. 8060-3



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
www.denr.sd.gov

August 7, 2018

8060-3

Douglas Johnson
41219 Hwy 50
Tyndall SD 57066

Dear Mr. Johnson:

I am writing in regard to your Temporary Use Water Permit No. 8060-3 and the recent field inspection conducted by one of our staff engineers.

The investigation found your system, as constructed, had a well and center pivot capable of diverting 1.56 cubic feet of water per second (700 gpm) to irrigate 110 acres. The original permit authorized up to 1.71 cubic feet of water per second (about 770 gpm) for irrigation of 110 acres.

"Temporary Use" permits are not licensed however the permit will be reissued to reflect the system as constructed. Prior to reissuing the permit, we need to ensure you were done with your system. **You would still have until January 26, 2020 to increase the diversion rate up to 770 gpm.**

Enclosed is a partially completed "Notice of Completion of Works" form. If the current setup of your system is complete, please fill out the enclosed form and return it to us in the envelope provided. If you have not completed the system and would like the additional time to increase the diversion rate, please give me a call.

Sincerely,

A handwritten signature in black ink that reads "Genny McMath". The signature is written in a cursive, flowing style.

Genny McMath
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

enclosures

RECEIVED

AUG 17 2018

WATER RIGHTS
PROGRAMNOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USE

Date

8/14/18

TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

FROM: Douglas Johnson

(name)

41219 Hwy 50

(address)

Tyndall SD 57066

(city, state, zip)

605 589-3725

(phone)

I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

Water Permit No. 8060-3 states that the water use system is to be constructed by
January 26, 2020 , and water is to be put to beneficial use by January 26, 2024
(date) (date)

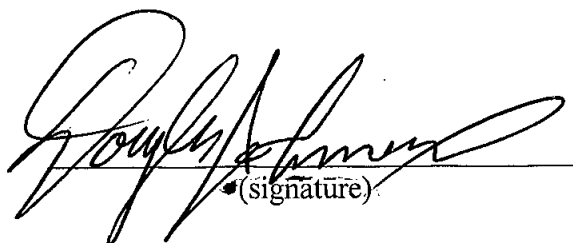
The water use system was completed on

10/24/2014
(date)

Applying the water to beneficial use was completed on

2015
(date)

You may schedule an investigation so that the water license may be issued.


(signature)





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

SEP 26 2018

8060-3

Douglas Johnson
41219 Hwy 50
Tyndall SD 57066

Dear Mr. Johnson:

Enclosed is Reissued Temporary Use Water Permit No. 8060-3. The temporary use water permit was reissued to reflect the system as developed. The reissued permit is based on a July 16, 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

**REISSUED
SOUTH DAKOTA
TEMPORARY USE WATER PERMIT NO. 8060-3
AS DEVELOPED**

On January 26, 2015, the Chief Engineer, on behalf of the Water Management Board, issued Temporary Use Water Permit No. 8060-3 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 16, 2018, an investigation was conducted of the water use system described in Temporary Use Water Permit No. 8060-3. The investigation found the system had been developed as follows: One 260 feet deep well (Choteau: Tyndall Aquifer) located 1,390'E and 1,430'S of the NW corner of Section 4, T94N, R60W (SE $\frac{1}{4}$ NW $\frac{1}{4}$) Latitude 42.99177, Longitude -97.94616. The temporary use permit holder is authorized to divert 1.56 cubic feet of water per second from the above well to irrigate 110 acres located in Section 4, T94N, R60W described as follows:

NW $\frac{1}{4}$ NW $\frac{1}{4}$	16 acres	NE $\frac{1}{4}$ NW $\frac{1}{4}$	30 acres
SE $\frac{1}{4}$ NW $\frac{1}{4}$	34 acres	SW $\frac{1}{4}$ NW $\frac{1}{4}$	30 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 31, 2014.
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. 8060-3 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. 8060-3 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. 8060-3

Douglas Johnson

Page 2

3. The well authorized by Permit No. 8060-3 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 Inc. in February, 2015. A copy of the well completion report is on file with the Water Rights Program.*
4. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 8060-3 authorizes a maximum diversion rate of 1.56 cfs for the irrigation of 110 acres with an annual volume not to exceed 2 acre feet of water per acre per year. *The diversion rate has been reduced to reflect actual development. The developed diversion rate of 1.56 cfs is slightly less than the statutory limit for irrigation of 110 acres which results in the qualification no longer being applicable.*
5. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

By: Jeanne Goodman

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

SEP 26 2018

date

