

WATER PERMIT NO. 7526-3

Name of Applicant: Derrick Walter

Address: 27448 444th Ave, Marion SD 57043

Phone: 605 670-8134

Amount of Water Claimed: 3.6 cfs

Total Acres: 257 acres

Source of Water Supply: groundwater (2 wells)

Water to be used for: irrigation

County: Hutchinson

Type of Waste Disposal System:

Location: 12 miles northwest of Freeman

PRIORITY

Date Received: 11-15-2012

Application/License Fee: \$ 1250

Corrected Application Received: 1/26/12 Period of Annual Use: May 1 – October 1

Remarks:

Diversion Point: W 1/2 SW 1/4 Sec 12-T100N-
R57W

Land to be Irrigated: SW 1/4, W 1/2 SE 1/4, Lots
2, 3, and 4 Sec 12-T100N-R57W

Depth of Well: 200 feet deep

Well Driller:

Remarks:

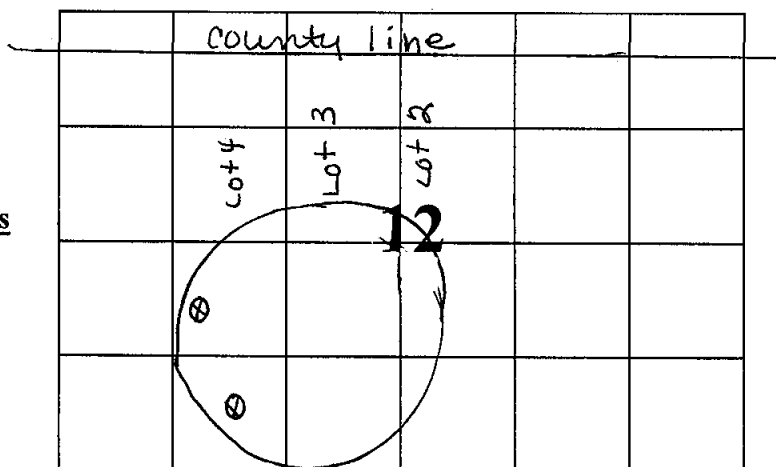
Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 11-26-12

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



SD EForm - 0499LD V4

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

(office use only)
No. 7526-3 Hydrologic Unit 10160011
Basin James River 605-925-7033
Newspaper Freeman Courier PO Box 950 57029
605-796-5514
Daily Republic PO Box 1288 Mitchell 57301

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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 Derrick Walter

(check one) ☐ Owner ☒ Tenant/lessee ☐ Owner's Legal Agent

(name and complete address if different than above name)

Mailing Address 27448 444th Ave Marion SD 57043
(Address) (City) (State) (Zip Code)

Home Phone _____ Cell 605-670-8134 Email d3walter@hotmail.com

2. Amount of water claimed 3.56 *CFS or 1600 **GPM ***AF Total Acreage 257
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Groundwater W 1/2

4. Location of point of diversion 2 wells in SW 1/4 of Section 12 T100N-R57W
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

County Hutchinson

5. County or counties where water will be used Hutchinson

6. Annual period during which water is to be used May1-Oct1

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
12-100-57 SW1/4 SW1/4 ✓	30	12-100-57 NW1/4 SW1/4 ✓	40
12-100-57 SE1/4 SW1/4 ✓	40	12-100-57 NE 1/4 SW1/4 ✓	40
		12-100-57 NW1/4 SE1/4 ✓	35
12-100-57 SW1/4 SE1/4 ✓	20	12-100-57 LOTS 2-3-4 see enclosed map	52

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

Plan to drill wells to determine if there is enough water to irrigate 257 acres in section 12 T100N R57W. See enclosed map.

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

**SOUTH DAKOTA
WATER PERMIT NO. 7526-3**

Date of first receipt of application November 15, 2012.

Date of return to applicant for corrections, amendments or changes November 16, 2012.

Date of receipt of corrected application November 26, 2012.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7526-3 to Derrick Walter, 27448 444th Ave, Marion SD 57043 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. Water Permit No. 7526-3 appropriates 3.56 cubic feet of water per second from two wells to be completed into the Niobrara Aquifer (200 feet deep) located in W 1/2 SW 1/4 Section 12 for irrigation of 257 acres located in the SW 1/4, W 1/2 SE 1/4, Lots 2, 3 & 4 Section 12; all in T100N-R57W.
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 – October 1.
3. The date from which applicant may claim right is November 15, 2012.
4. The date of approval of Permit No. 7526-3 is February 19, 2013.
5. One-fifth of the construction is to be completed on or before August 19, 2015.
6. All construction is to be completed on or before February 19, 2018.
7. Water is to be put to beneficial use on or before February 19, 2022.
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 wells 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.
2. The wells authorized by Permit No. 7526-3 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.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

By: Garland Erbele
Garland Erbele, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

MAR 19 2013
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 2 Have test holes been drilled ☐ Yes ☒ No Drilled by _____
(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 200 ft Depth to Top of Water Bearing Material _____ Depth to Water from Surface _____

d) Distance to nearest existing domestic well:

On applicant's property 1/4 mile inactive

On property owned by others 1.5 miles

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)

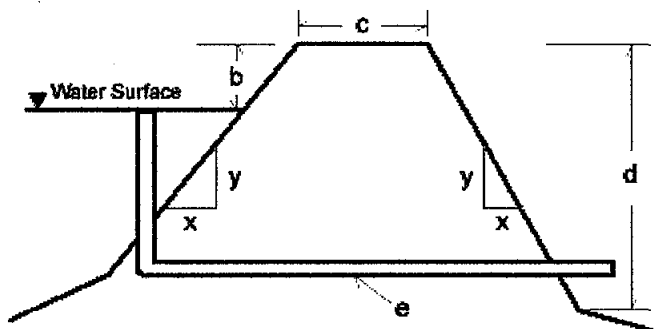
Upstream _____

Downstream _____

h) Surface Area of Impoundment _____

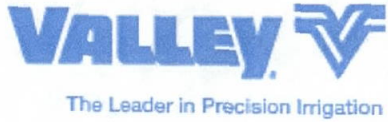
i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres



7/17/12

cPivot



Prepared By: **Heine Electric and Irrigation, Inc.**

For:

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

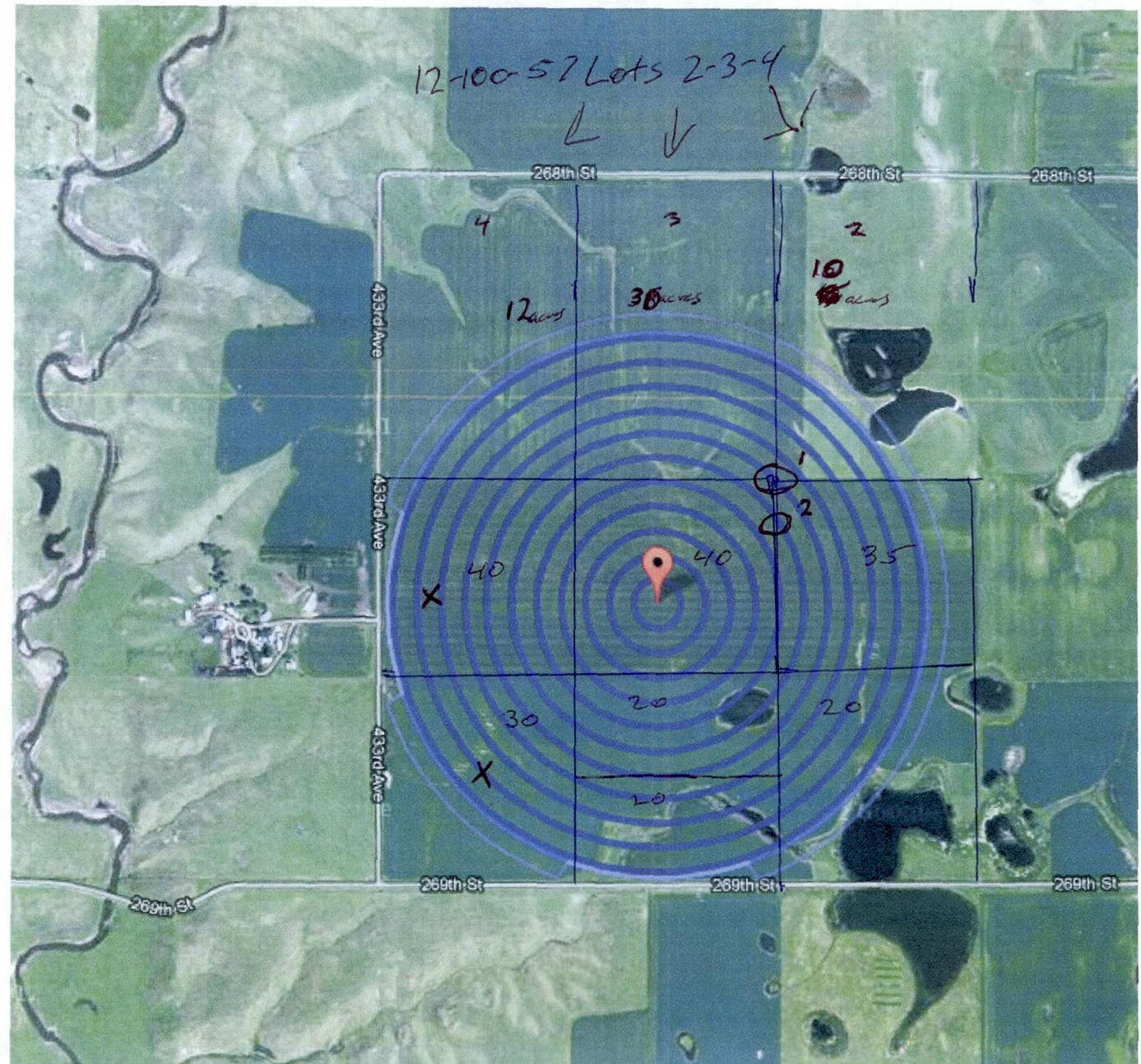
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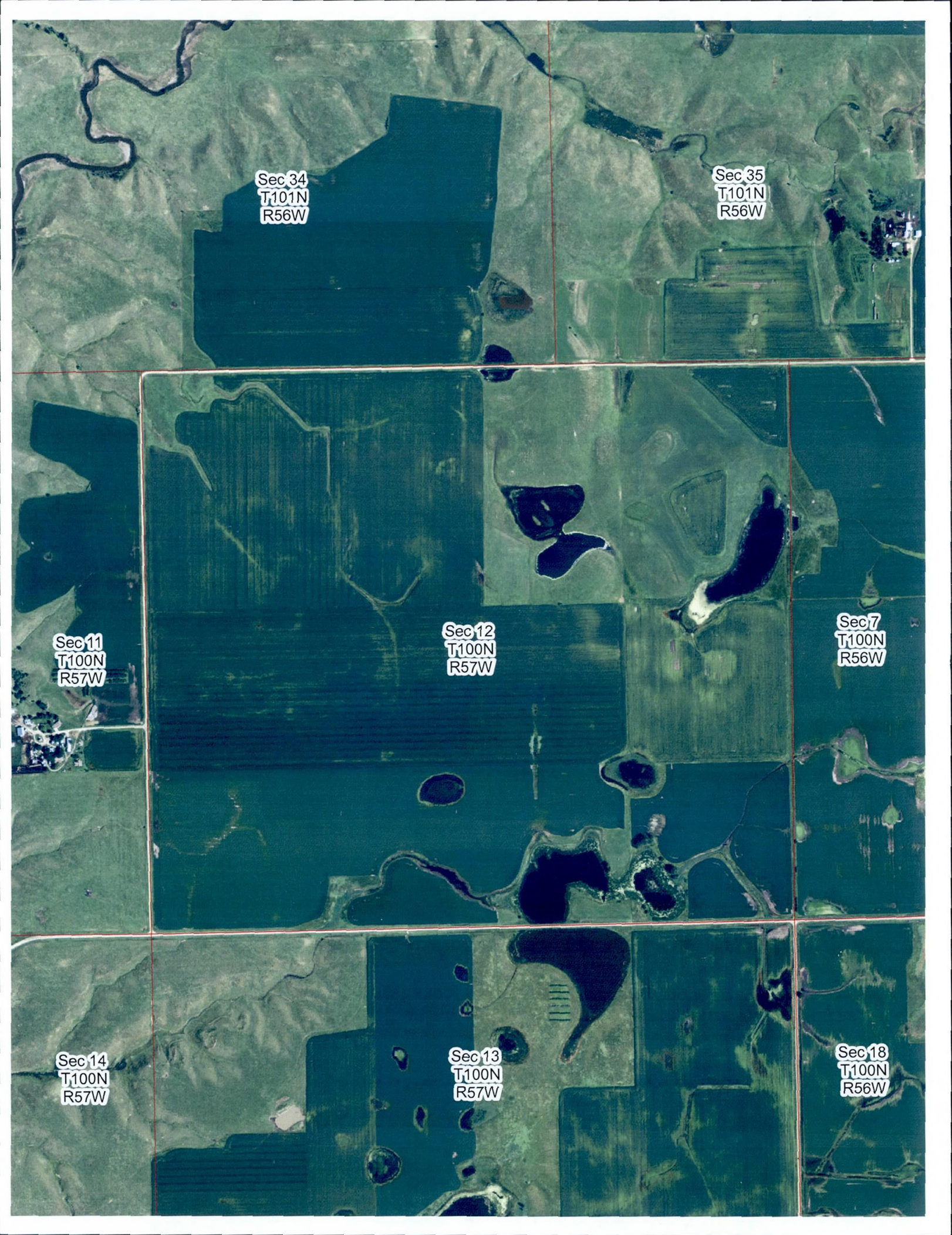
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Pivot center at 43.492183, -97.533355

- 1 160 ft. Total: 160 ft.
Acreage: 1.85. Total: 1.85 acres.
- 2 160 ft. Total: 320 ft.
Acreage: 5.55. Total: 7.4 acres.
- 3 160 ft. Total: 480 ft.
Acreage: 9.25. Total: 16.65 acres.
- 4 160 ft. Total: 640 ft.
Acreage: 12.95. Total: 29.6 acres.
- 5 160 ft. Total: 800 ft.
Acreage: 16.65. Total: 46.25 acres.
- 6 160 ft. Total: 960 ft.
Acreage: 20.35. Total: 66.61 acres.
- 7 160 ft. Total: 1120 ft.
Acreage: 24.05. Total: 90.66 acres.
- 8 140 ft. Total: 1260 ft.
Acreage: 24.08. Total: 114.74 acres.
- 9 160 ft. Total: 1420 ft.
Acreage: 30.99. Total: 145.74 acres.
- 10 160 ft. Total: 1580 ft.
Acreage: 34.69. Total: 180.43 acres.
- 11 160 ft. Total: 1740 ft.
Acreage: 38.39. Total: 218.82 acres.
- Overhang** 36 ft. Total: 1776 ft.
Acreage: 9.14. Total: 227.97 acres.
- Spray** 120 ft. Total: 1896 ft.
Acreage: 24.83. Total: **252.81 acres.**





Sec 34
T101N
R56W

Sec 35
T101N
R56W

Sec 11
T100N
R57W

Sec 12
T100N
R57W

Sec 7
T100N
R56W

Sec 14
T100N
R57W

Sec 13
T100N
R57W

Sec 18
T100N
R56W

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WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 11/16, 20 12

RECEIVED OF Walter 27448 444th Ave Marion SD 57043

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

Fee for Application for Permit No. <u>7526-3</u> to Appropriate Water, to construct and to put water to beneficial use	1050	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>75263</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	1250 00

No. 05695

By

[Signature]
Chief Engineer



7526-3

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

November 13, 2012

Derrick Walter
27448 444th Ave
Marion, SD 57043

Dear Mr. Walter:

As requested, pursuant to South Dakota Well Construction Standard 74:02:04:21, you are authorized to construct test wells in the SW¼ Section 12, T100N-R57W, prior to approval of a water permit. The test wells must be constructed in accordance with the SD Well Construction Standards. Any test holes that are abandoned must be plugged pursuant to the SD Well Construction Standards.

Authorization must be obtained before water from the well can be used. Approval of this test well does not assure issuance of a water permit. Following review of a Water Permit Application; and assessing the availability of water, the potential impacts to existing users, the beneficial use, and the public interest of a permit, the Chief Engineer will make a recommendation to the Water Management Board regarding the application. The recommendation to approve, deny, or defer the application will be publicly noticed and an opportunity afforded for the public to intervene. A public hearing may be required to consider the water permit.

Very truly yours,

GARLAND ERBELE, Chief Engineer
Water Rights Program
(605) 773-3352

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To whom it may concern:

I am asking permission to dig four test wells on my father's ground. The wells will be dug to 300 feet or less in this location. The location of the test wells will be in section 12 of Pleasant Township in Hutchinson county. The legal would be the SW ¼ 12 T100N R57W. Thank you for your time in this matter. If there are any questions please feel free to call me at 605-670-8134.

Sincerely



Derrick Walter
27448 444th Ave
Marion, SD 57043

Ph 605-670-8134
Fax 605-729-2786
Email d3walter@hotmail.com



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

November 16, 2012

Derrick Walter
27448 444th Ave
Marion SD 57043

Dear Mr. Walter:

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

- Enclosed is the aerial photo map submitted with the application. The map needs to reference a government section corner or quarter corner including section, township and range. Please identify the center point of Section 12.
- Also, please mark each proposed well location with an "X".
- On the Form 2A, Supplemental Information, 1. Well Information, please complete Item c), Well Depth. Your well driller should be able to give you an estimate of the proposed well depth.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352
karen.schlaak@state.sd.us

enclosures

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Section 12 of Pleasant Township is a small section due to this is where the county lines meet. 268th street is the county line. Lots 2,3 and 4 are 60 acre lots, not 80 acre; therefore the circle on the aerial map is $\frac{1}{2}$ mile from 269th St. and $\frac{3}{8}$ mile from 268th St. Consequently circle 2, below circle 1 on map would be the center of section 12. Section 12 is 560 acres total, not 640 acres.

Thank you

Derrick Walter



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 7526-3, Derrick Walter**

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. 7526-3, Derrick Walter, 27448 444th Avenue, Marion SD 57043.

The Chief Engineer is recommending APPROVAL of Application No. 7526-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The wells 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.
2. The wells authorized by Permit No. 7526-3 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.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

A handwritten signature in cursive script that reads "Garland Erbele".

Garland Erbele, Chief Engineer
January 25, 2013

**REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 7526-3
DERRICK WALTER
JANUARY 10, 2013**

Water Permit Application No. 7526-3 proposes to appropriate 514 acre-feet per year (ac-ft/yr) at a maximum diversion rate of 3.56 cubic feet of water per second (cfs) from two wells to be completed into the Niobrara aquifer. The wells are expected to be 200 feet deep and are to be located in the W½ SW¼ of Section 12, T100N-R57W. This permit application proposes to irrigate 257 acres located in the SW¼, W½ SE¼, Lots 2, 3, & 4 of Section 12, T100N-R57W in Hutchinson County.

AQUIFER: Niobrara (NBRR)

GEOLOGY AND AQUIFER CHARACTERISTICS:

The Niobrara aquifer is a bedrock aquifer composed of fractured, calcareous marl, interbedded with calcareous claystone, and is referred as "chalkrock." In Hutchinson and Turner Counties, the Niobrara aquifer underlies approximately 729 square miles, equating to 466,560 acres, and contains an estimated 6,998,000 acre-feet (ac-ft) of water in storage (Lindgren and Hansen, 1990).

A test hole report was not submitted with this application; however, sufficient information is available to evaluate the area of the proposed well sites. The Niobrara is the uppermost bedrock aquifer in Hutchinson and Turner Counties, consisting of three noncontiguous areas. In the area of the proposed well sites, which are located in northeastern Hutchinson County near Wolf Creek, the Niobrara is underlain by Carlile Shale and overlain by till. Near Wolf Creek the aquifer is at or near land surface and groundwater moves west toward the creek. The average thickness of the Niobrara in Hutchinson and Turner Counties is 75 feet, and in the area of the proposed well sites, the aquifer is approximately 35 to 50 feet thick. In the area of the proposed well sites, ground surface elevation is approximately 1,390 feet above mean sea level (msl), the top of the Niobrara Formation is approximately 1,280 feet above msl, and the potentiometric surface of the Niobrara aquifer is 1,350 feet above msl (Lindgren and Hansen, 1990).

Nearby well completion reports document that "chalkrock" (the Niobrara formation) begins at approximately 100 feet below ground surface west of the proposed well sites and 140 feet below ground surface east of the proposed well sites. The Niobrara is approximately 20 feet thick in the area and is overlain by "yellow" and "blue clay," and underlain by "shale." The static water level was often reported at 70 feet below ground surface, which actually ranges from 1,325 to 1,350 feet above msl (Water Rights, 2013c).

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 from the aquifer and the potential for impairment of existing rights.

WATER AVAILABILITY:

This application proposes to appropriate 514 ac-ft/yr from the Niobrara aquifer. If this application is approved, the actual water use will likely be less than the appropriation. 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."

HYDROLOGIC BUDGET:

Recharge to the Niobrara aquifer in Hutchinson and Turner Counties occurs due to direct infiltration of precipitation at the outcrop area, fractures in the Sioux Quartzite, and leakage from till. Discharge from the Niobrara aquifer in these counties occurs due to outflow to overlying and underlying aquifers, including the Lower James Missouri, Upper Vermillion Missouri, and Codell aquifers, outflow to Wolf Creek, and well withdrawals (Lindgren and Hansen, 1990).

Currently there are 59 water rights/permits appropriating water from the Niobrara aquifer in South Dakota that are authorized for a variety of uses, including irrigation, municipal, commercial, and institutional (Water Rights, 2013b). There are also many completion reports on file with the SD DENR-Water Rights Program for domestic wells that appear to be completed into the Niobrara aquifer (Water Rights, 2013c). From the Niobrara aquifer in South Dakota, the average irrigation pumpage over the period of record, 1979 to 2011, was 961 ac-ft/yr (Water Rights, 1979-2013). The pumpage due to non-irrigation use, assuming rights/permits will pump at the maximum permitted diversion rate 60 percent of the time, is estimated to be 2,600 ac-ft/yr (Water Rights, 2013b).

In Hutchinson and Turner Counties, there are currently 12 water rights/permits appropriating water from the Niobrara aquifer. Lindgren and Hansen (1990) estimated that in 1985 total pumpage from the aquifer in Hutchinson and Turner Counties was 552 ac-ft. While irrigation appropriations have increased since then, municipal, domestic, and livestock use of the aquifer have largely been replaced by rural water systems. Therefore, current pumpage from the aquifer in these counties is expected to be similar to the 1985 pumpage rate (Buhler, 2012).

To balance the hydrologic budget of the aquifer in Hutchinson and Turner Counties, recharge must equal withdrawal. At the potential annual withdrawal suggested by Buhler (2012), plus the maximum withdrawal proposed by this application, recharge must equal 0.03 in/yr to balance the hydrologic budget. This required recharge rate is exceptionally small. This potential withdrawal accounts for 0.015 percent of the estimated volume of water in the aquifer in these counties. This is not to suggest that all the water within the Niobrara aquifer is available for this proposed appropriation, but to demonstrate that in general the Niobrara aquifer is a tremendous resource.

Consider also that according to Hedges and others (1985):

“The Niobrara Formation, Niobrara Sandstone, Inyan Kara Group, and Madison Group have such high storage and low use that it is unlikely that use is approaching or exceeding recharge. Furthermore, there is no evidence of significant head loss in any of these aquifers over the years that would suggest that use is exceeding recharge.”

Therefore, there is a reasonable probability that unappropriated water is available from the Niobrara aquifer for the proposed appropriation of 514 ac-ft/yr.

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 SD DENR-Water Rights Program monitors 55 observation wells completed into the Niobrara aquifer (Water Rights, 2013a). The nearest observation well, MC-87B, is located approximately one mile northeast of the proposed well sites. The hydrograph of this observation well is shown in Figure 1. The observation well data documents cyclic conditions of water levels, recharging during wet years and declining during dry years. Temporal well withdrawal of the aquifer is masked by climatic conditions, indicating that recharge to and natural discharge from the aquifer greatly exceeds well withdrawal. Therefore, this hydrograph indicates that in general unappropriated water is available from the Niobrara aquifer to support the proposed appropriation of 514 ac-ft/yr.

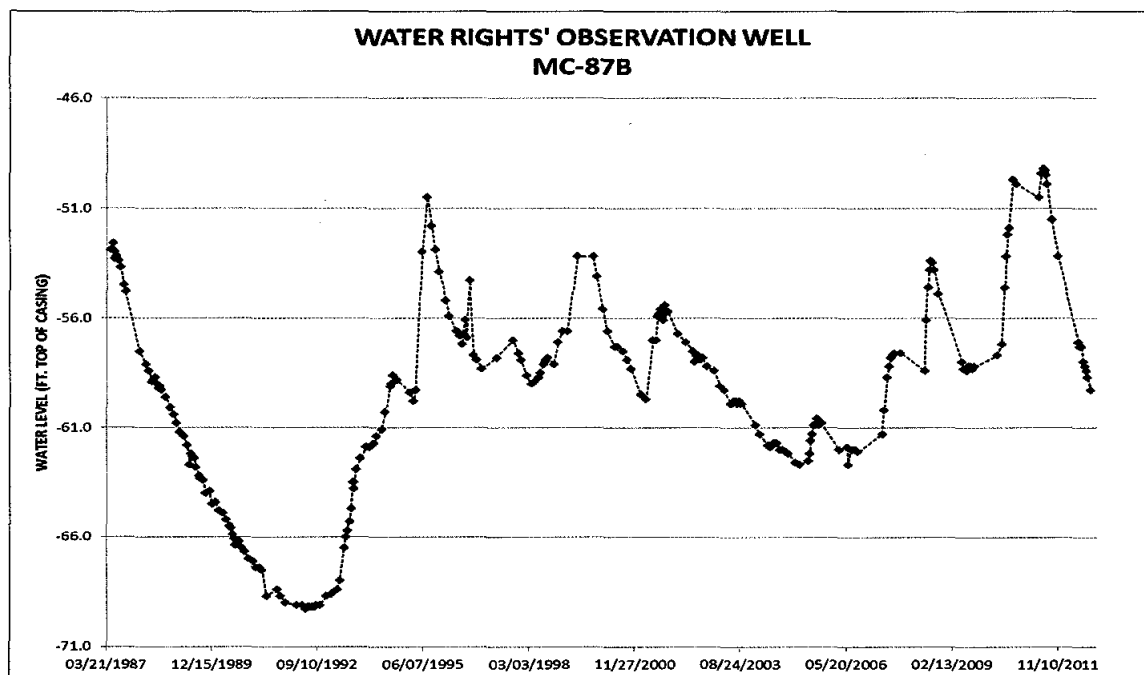


Figure 1: Hydrograph for SD DENR-Water Rights' observation well HT-87B (Water Rights, 2013a)

EXISTING WATER RIGHTS:

The nearest water rights/permits appropriating from the Niobrara aquifer are located further than seven miles from the proposed well sites (Water Rights, 2013b). There are several well completion reports on record with the SD DENR-Water Rights Program for domestic wells that appear to be completed into the Niobrara aquifer. The nearest are located further than one mile from the proposed well sites (Water Rights, 2013c).

Because the proposed well sites are under artesian conditions, some drawdown due to pumping is likely. To depict the possible effects of pumping on the aquifer in the general area, the hydrograph of observation well HT-83F is shown in Figure 2. This well is located within two miles of several water rights/permits and approximately 11 miles south of the proposed well sites (Water Rights, 2013a). The 10 to 15 foot increase in head pressure (the well becomes artesian when the water level is above 112 feet below ground surface) in 1996 can be attributed to the City of Freeman, holder of two licenses authorizing a total of 1.59 cfs, connecting to Bon Homme-Yankton Rural Water System. The recent decrease in head pressure, which is also shown in the hydrograph in Figure 1 for a well located relatively far from water rights/permits, can be attributed mostly to the recent dry conditions. Some decrease in head pressure could also be attributed in part to a new nearby water permit authorizing at maximum 5.33 cfs; this water permit is likely not completely constructed or completely in use (Water Rights, 2013b).

Based on the relationship between decrease in diversion rate and increase in head pressure in the example situation, the proposed diversion rate, 1.56 cfs, could result in approximately 10 to 15 feet of head loss in the aquifer two miles from the proposed well sites, as well. This amount of head loss is relatively minimal. As previously stated, in the area of the proposed well sites, there is approximately 70 feet of head pressure in the aquifer (Lindgren and Hansen, 1990).

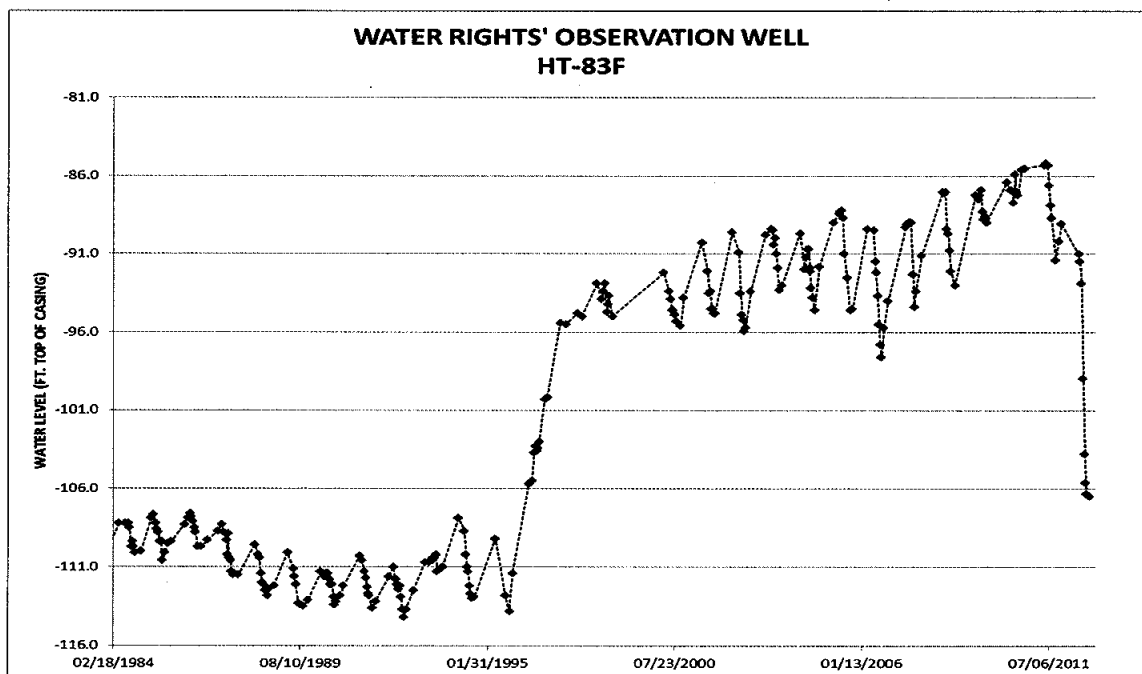
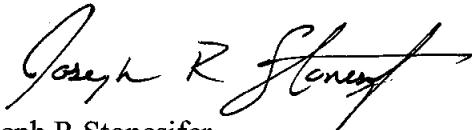


Figure 2: Hydrograph for SD DENR-Water Rights' observation well HT-83F (Water Rights, 2013a)

Considering that SDCL 46-6-6.1 does not protect artesian head pressure as a means of delivery and the Water Management Board has consistently recognized that to place water to maximum beneficial use a certain amount of drawdown may occur, a nearby adequate well defined by ARSD 74:02:20(7), which states that the pump intake must be set 20 feet below the top of the aquifer or, if the aquifer is less than 20 feet thick, as near to the bottom of the aquifer as is practical, is not expected to be adversely or unlawfully impaired. Therefore, there is a reasonable probability that any well interference from the proposed appropriation will not adversely or unlawfully impair existing users.

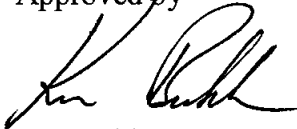
CONCLUSIONS:

1. The application proposes to appropriate 514 ac-ft/yr for irrigation from the Niobrara aquifer; however, the actual water used will likely be much less.
2. There is a reasonable probability that unappropriated water is available from the Niobrara aquifer to supply the proposed appropriation.
3. There is a reasonable probability that any possible well inference due to the proposed appropriation will not adversely or unlawfully impair existing users.



Joseph R Stonesifer
SD DENR-Water Rights Program

Approved by



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

- Buhler, K. 2012. "Water Permit Application No. 7344-3 Report." SD DENR-Water Rights Program. Joe Foss Bldg., Pierre, South Dakota.
- Lindgren, R.J. and D.S. Hansen. 1990. Water Resources of Hutchinson and Turner Counties, South Dakota. Water-Resources Investigations Report 90-4093. U.S. Geological Survey, Huron, South Dakota.
- 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, SD.
- Water Rights, 1979-2013. "Irrigation Report Summaries." SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2013a. Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2013b. Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2013c. Water Well Completion Reports, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.

884 2/9/13

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FEB - 8 2013

WATER RIGHTS
PROGRAM

**NOTICE OF
APPLICATION NO.
7526-3
to Appropriate Water**

Notice is given that Derrick Walter, 27448 444th Ave, Marion SD 57043 has filed an application for a water permit to appropriate 3.56 cubic feet of water per second from two wells to be completed into the Niobrara Aquifer (200 feet deep) located in W 1/2 SW 1/4 Section 12 for irrigation of 257 acres located in the SW 1/4, W 1/2 SE 1/4, Lots 2, 3 & 4 Section 12, all in T100N R57W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends AP-PROVAL of Application No. 7526-3 because: 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, 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 February 19, 2013.

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. 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 \$58.10

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF DAVISON)

Penny Hohbach of said county, being, first duly sworn, on oath, says; that he/she is the publisher or an employee of the publisher of The Daily Republic, a daily newspaper, published in the City of Mitchell, in said County of Davison, and State of South Dakota; that he/she has full and personal knowledge of the facts herein stated; that said newspaper is a legal newspaper as defined in SDCL 17-2-2.1 through 17-2-2.4 inclusive; that said newspaper has been published within the said County of Davison and State of South Dakota, for at least one year next prior to the first publication of the attached public notice, and that the notice, order or advertisement, a printed copy of which, taken from the paper in which the same was published, and which is hereto attached and made a part of this affidavit, was published in said newspaper for 1 issues(s), to wit:

Wednesday, February 6, 2013

That the full amount of the fee charged for the publication of the attached public notice insures to the sole benefit of the publisher or publishers; that no agreement or 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, that the fees charged for the publication thereof are: \$58.10

Signed: Penny Hohbach

Subscribed and sworn to before me this 6 day of February

Kathy Hoggman

Notary Public
County of Hanson

My Commission Expires: 10.8.2015

Prepared by: The Daily Republic, P.O. Box 1288, Mitchell S.D. 57301 605-996-5515

AFFIDAVIT OF PUBLICATION

County of Hutchinson)

) ss.

State of South Dakota)

RECEIVED

MAR - 4 2013

WATER RIGHTS
PROGRAM

Tim L. Waltner, of said county and state, being duly sworn, on his oath, deposes and says: That the Freeman Courier is a weekly newspaper of general circulation and a legal newspaper as required by law, printed and published in the town of Freeman in said county and state by Tim L. Waltner, and has been such newspaper during the time hereinafter mentioned: That I, Tim L. Waltner, the undersigned, am publisher of said newspaper in charge of the advertising department thereof, and have personal knowledge of all the facts stated in this affidavit, and that the advertisement headed **Appropriate Water**

a printed copy of which is hereto attached, was printed and published in the said newspaper for one successive issues to-wit:

The first publication on:

February 6, 2013

the second publication on:

and the third publication on:

That the full amount of the fees charged for publishing the same to-wit: The sum of \$23.44 insures solely to the benefit of the publisher of the Freeman Courier, that no agreement or understanding for any division thereof has been made with any other person whomsoever, and the amount of \$23.44 is the rate for publishing legal notices.


Subscribed and sworn to before me this 28th day of February 2013.


Notary Public
Commission expires: 10/9/18

Publication fee: \$23.44

Notary fee:

Total: \$23.44

Notice of Application No. 7526-3 to Appropriate Water

Notice is given that Derrick Walter, 27448 444th Ave., Marion SD 57043 has filed an application for a water permit to appropriate 3.56 cubic feet of water per second from two wells to be completed into the Niobrara Aquifer (200 feet deep) located in W 1/2 SW 1/4 Section 12 for irrigation of 257 acres located in the SW 1/4, W 1/2 SE 1/4, Lots 2, 3 & 4 Section 12; all in T100N-R57W.

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Published once at the total approximate cost of \$23.44

1-44FC



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

January 28, 2013

Daily Republic
PO Box 1288
Mitchell SD 57301

ATTENTION: Legal Public Notice

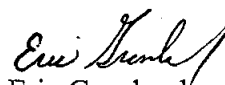
Enclosed is a Notice on Application No. 7526-3 to Appropriate Water. Please publish the notice once on February 6, 2013. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

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 Derrick Walter, 27448 444th St., Marion SD 57043 (Ph # 605-670-8134).

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

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

January 28, 2013

Freeman Courier
PO Box 950
Freeman SD 57029

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7526-3 to Appropriate Water. Please publish the notice once on February 6, 2013. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

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Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

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

January 28, 2013

Derrick Walter
27448 444th St Ave
Marion SD 57043

Dear Mr. Walter:

Water Permit Application No. 7526-3 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 Freeman Courier printed at Freeman SD (Ph # 605-925-7033) and the Daily Republic printed at Mitchell SD (Ph # 605-996-5514). 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 February 6, 2013. 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. 7526-3 to Appropriate Water

Notice is given that Derrick Walter, 27448 444th Ave, Marion SD 57043 has filed an application for a water permit to appropriate 3.56 cubic feet of water per second from two wells to be completed into the Niobrara Aquifer (200 feet deep) located in W 1/2 SW 1/4 Section 12 for irrigation of 257 acres located in the SW 1/4, W 1/2 SE 1/4, Lots 2, 3 & 4 Section 12; all in T100N-R57W.

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Published once at the total approximate cost of _____.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

MAR 19 2013

Derrick Walter
27448 444th Ave
Marion SD 57043

Dear Mr. Walter:

Enclosed is Water Permit No. 7526-3 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,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

7526-3
RECEIVED

OCT - 2 2013

WATER RIGHTS
PROGRAMNOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USEDate 9-29-13TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181FROM: Derrick Walter

(name)

27448 444th Ave

(address)

Marion, SD 57043

(city, state, zip)

605-670-8134

(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. 7526-3 states that the water use system is to be constructed by 2-19-2018, and water is to be put to beneficial use by 2-19-2022

(date)

(date)

The water use system was completed on 7-20-13

(date)

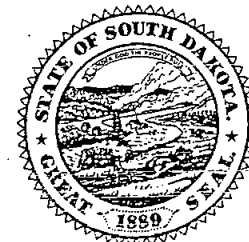
Applying the water to beneficial use was completed on 7-21-13

(date)

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

D. Walter

(signature)





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
PMB 2020
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

October 2, 2013

7526-3

Derrick Walter
27448 444th Ave
Marion SD 57043

Dear Mr. Walter:

I am writing to acknowledge receipt of the "Notice of Completion of Works" form that you sent in to let us know that you are completed with your irrigation system.

The system is now ready for inspection. Inspections are done on a county-by-county basis as staff time permits. You have done everything you need to do and the intervening time between the completion of your project and the staff inspection has no bearing on your water permit.

Someone from our office will contact you prior to the inspection to set up a time that is convenient for you. If you have any questions, please contact me.

Sincerely,

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

SOUTH DAKOTA WATER WELL COMPLETION REPORT

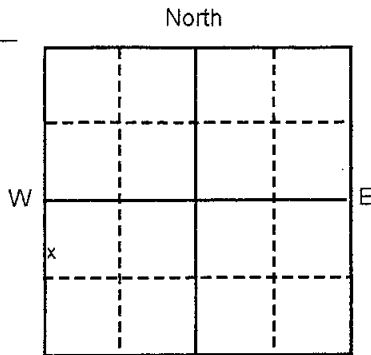
7526-3 SD EForm - 1621LD V1

11-02

Location NW 1/4 SW 1/4 Sec 12 Twp 100 Rg 57W

County Hutchinson

Please mark well location with an "X"



Well Completion Date

3/23/13

← 1 Mile →

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
1,800.0 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	<u>16.00</u> IN	<u>0.0</u> FT	<u>100.0</u> FT	<u>20.00</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>20</u>	<u>9.5</u> Lb/gal	<u>0.0</u> Ft	<u>85.0</u> Ft
		Lb/gal	Ft	Ft

Describe grouting procedure
Tremie Method

SCREEN:

☐ Perforated pipe ☒ Manufactured

Diameter 16.00 Inches Length 100.0 Feet

Material PVC

Slot Size .080 Set From 100.0 Feet to 200.0 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? _____
☒ No, Why Not? Not Required

Lab to which water quality sample sent for analysis _____

Well Owner: Derrick Walter

Business Name: _____

Address: 27448 444th Ave

City, State, Zip: Marion SD 57043

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top Soil	0	1
Brown Silty Clay	1	30
Brown & Blue Glacial Till	30	33
Sandy Blue Clay	33	100
Soft White Chalk	100	135
Dark Gray Chalk	135	160
Dark Gray Chalk w/ some Sand	160	200

STATIC WATER LEVEL

122.0 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

160.0 Ft. After 36.0 Hrs. pumped 450.0 GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

RECEIVED

APR 22 2013

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: _____

R. L. Hammond

Signature of Well Owner or Equitable Property Holder: _____

Date: 4/11/13

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>7526-3</u> (office use only) Hydrologic Unit _____
	Basin _____
	Newspaper _____

RECEIVED

APR 25 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.)

Add an additional well.1. Name to Appear on Irrigation Permit Derrick Walter(check one) ☐ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent

(name and complete address if different than above name)

Mailing Address 27448 4445 Ave Marion SD 57043
(Address) (City) (State) (Zip Code)Home Phone _____ Cell 605-670-8134 Email d3walter@hottmail.com2. Amount of water claimed _____ *CFS or _____ **GPM _____ ***AF Total Acreage _____
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply _____

4. Location of point of diversion _____
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

County _____

5. County or counties where water will be used _____

6. Annual period during which water is to be used _____

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

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

I would like to drill a 3rd well in section 12 in Pleasant Township in Hutchinson County. I am currently irrigating 150 acres and would like to expand my center pivot. By drilling a 3rd well it will give me the ability to do so. I have enclosed a map of where the current wells are located and where the new well would be located. Thank you.

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

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 Hebe Electric Drilling
(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 Depth to Top of Water Bearing Material Depth to Water from Surface

d) Distance to nearest existing domestic well:

On applicant's property On property owned by others

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)

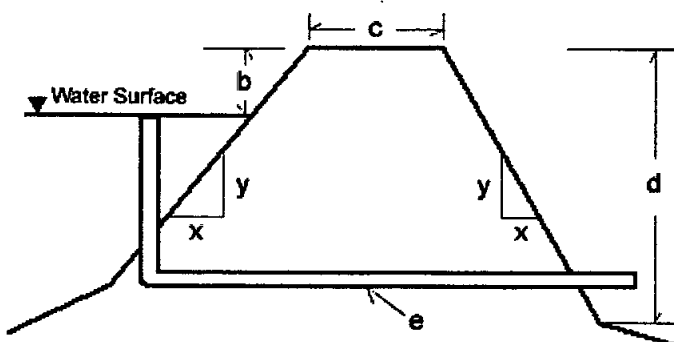
Upstream

Downstream

h) Surface Area of Impoundment

i) Storage Acre Feet

j) Drainage Area Above Dam Acres



5/8/13

cPivot



The Leader in Precision Irrigation

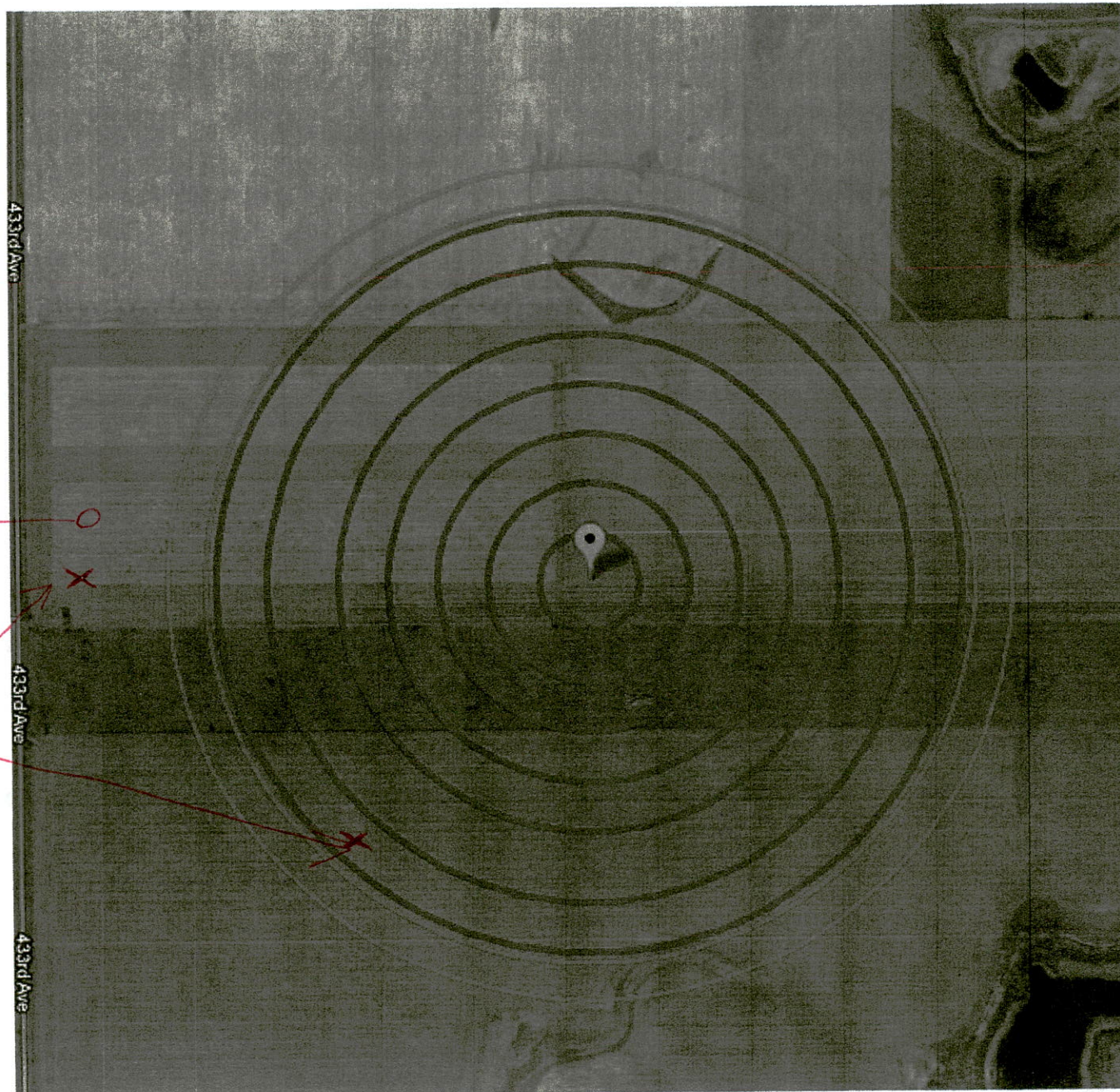
Prepared By: **Heine Electric and Irrigation, Inc.**
For: **Walter, Derrick**
Questions or concerns? Please call us at 402-640-1999!

Pivot center at 43.492168, -97.533409

- 1 160 ft. Total: 160 ft.
Acreage: 1.84. Total: 1.84 acres.
- 2 160 ft. Total: 320 ft.
Acreage: 5.54. Total: 7.39 acres.
- 3 160 ft. Total: 480 ft.
Acreage: 9.24. Total: 16.64 acres.
- 4 160 ft. Total: 640 ft.
Acreage: 12.94. Total: 29.58 acres.
- 5 160 ft. Total: 800 ft.
Acreage: 16.64. Total: 46.22 acres.
- 6 225 ft. Total: 1025 ft.
Acreage: 29.65. Total: 75.88 acres.
- 7 160 ft. Total: 1185 ft.
Acreage: 25.53. Total: 101.41 acres.
- Overhang** 36 ft. Total: 1221 ft.
Acreage: 6.25. Total: 107.67 acres.
- Spray** 120 ft. Total: 1341 ft.
Acreage: 22.2. Total: 129.87 acres.

New well

Current wells



Water Rights Program - File Documentation

NAME: Derrick Walter

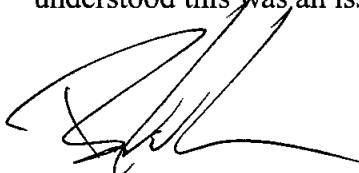
ADDRESS: 27448 444th Ave, Marion, SD 57043

DATE: April 28, 2014 **COUNTY:** Hutchinson **TELEPHONE:** (605) 670-8134

RE: Regarding change of diversion point for Water Permit No. 7526-3

COMMENTS:

On April 28, 2014, I spoke to Derrick Walter about the proposed location for a third well under Water Permit No. 7526-3. I informed him that the documentation provided in the additional diversion point request indicated that the new well would be in close proximity (400 feet) from one of the existing wells in the same system. This close proximity could lead to interference and consequently, may not provide the desired increase in diversion rate. Mr. Walter said that he understood this was an issue he would have to manage.



Bracken Capen
Water Rights Program

File No. 7526-3

Approval of Additional Diversion Point

NAME: Derrick Walter

ADDRESS: 27448 444th Ave, Marion, SD 57043

DATE: April 30, 2014 **COUNTY:** Hutchinson **TELEPHONE:** (605) 670-8134

BACKGROUND:

Water Permit No. 7526-3 appropriates 3.6 cubic feet per second (cfs) from two wells completed into the Niobrara aquifer at a depth of approximately 200 feet below ground surface. These wells, located in the W ½ SW ¼ of Section 12, T100N-R57W are intended to supply water to irrigate 257 acres in the SW ¼, W ½ SE ¼, Lots 2, 3, and 4 of Section 12, T100N-R57W. The original permit was conditioned with standard well interference, well construction and irrigation questionnaire qualifications.

Mr. Walter submitted a request to add a third well in the W ½ SW ¼ of Section 20, T100N-R57W. The basis behind this request is that the water available from the two existing wells is only sufficient to irrigate approximately 150 acres. Mr. Walter hopes to supply sufficient water from the three wells to increase the length of his pivot irrigation system and irrigate approximately 50 additional acres. The new well would be completed to a similar depth as the existing wells and would divert water from the same source, the Niobrara aquifer. Water Permit No. 7526-3 is still within the initial construction period and has until November, 2017 to complete the system.

AUTHORITY:

Pursuant to SDCL 46-5-13.1, the location of a diversion point may be changed or additional points may be licensed provided the following conditions are met and the potential for interference with other existing diversion points is not increased.

- **Developed water source is the same as licensed source and no additional water is appropriated.**

The water source authorized by Water Right No.7526-3 is the Niobrara aquifer. Both the existing and new diversion locations will be drawing water from the Niobrara aquifer.

No additional appropriation of water is authorized. Water Right No. 7526-3 appropriates 3.6 cfs and no additional diversion rate authority is being requested.

Review of Existing Diversions

The well completion report and water rights databases were reviewed for the nearest domestic wells and water rights/permits on file. There are no existing water rights/permits within three miles of the existing or new diversion points for Water Permit No. 7526-3. Therefore, water rights/permits in the area are not expected to be impacted by this additional well. The nearest

domestic well is located approximately 1.3 miles to the northeast. Given that additional diversion authority is not being requested, and this new well is no closer to the domestic well than existing wells, the potential for unlawful interference of existing domestic wells is not expected to increase with the construction of this new well.

Of the two existing wells under Water Permit No. 7526-3, the closest is approximately 400 feet from the additional well site. During a phone conversation on April 28, 2014, Mr. Walter expressed his understanding that at this distance interference between the two wells may occur. However, since both wells are part of the same irrigation system and are both owned by Mr. Walter, this potential for interference is a management issue for the permit holder.

Observation Well Data

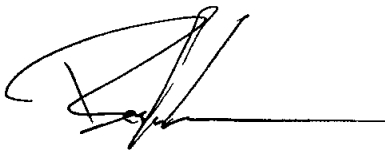
The Water Rights Program monitors a series of observation wells completed into the Niobrara aquifer. The closest observation well (MC-87B) is located approximately one mile to the northeast of the well sites in Section 12. This well has been in place since 1987 and shows static water level fluctuations of 50 to 70 feet below the top of the casing. Historic water levels in MC-87B show that aquifer levels are primarily climatically controlled with very little visible effects of pumping.

CONCLUSION:

- The additional diversion point does not propose to appropriate additional water.
- The additional diversion point will be pumping water out of the same source, the Niobrara aquifer.
- Unlawful impairment of existing water rights/permits and domestic wells is not expected to occur.

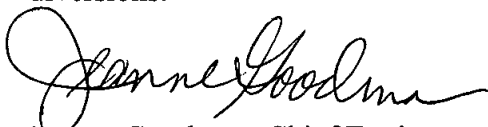
RECOMMENDED ACTION:

Based on the above criteria, it is recommended that the request for an additional diversion point in the W $\frac{1}{2}$ SW $\frac{1}{4}$ of Section 12, T100N-R57W be approved.



Bracken Capen
Natural Resources Engineer

The Chief Engineer makes a finding pursuant to SDCL 46-5-13.1 and ARSD 74:02:01:14:01 that: The additional diversion point does not increase the potential for adverse effects to existing diversions.



Jeanne Goodman, Chief Engineer
Water Rights Program



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

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



May 1, 2014

7526-3

Derrick Walter
27448 444th Ave.
Marion, SD 57043

Dear Mr. Walter:

Water Permit No. 7526-3 appropriates 3.6 cubic feet per second (cfs) of water from two wells to be completed into the Niobrara aquifer at depths of approximately 200 feet below ground surface. These wells are located in the W $\frac{1}{2}$ SW $\frac{1}{4}$ of Section 12, T100N-R57W, and supply water to irrigate 257 acres in the SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, Lots 2, 3, and 4 of Section 12, T100N-R57W.

You have submitted a request for an additional well in the W $\frac{1}{2}$ SW $\frac{1}{4}$ of Section 12, T100N-R57W. The basis behind this request is that there is insufficient water being supplied by the two existing wells to irrigate the permitted 257 acres, and you are only able to irrigate 150 acres.

The new well is located approximately 400 feet to the north of one of the two existing wells. During a phone conversation on April 28, 2014, you confirmed that you are aware of the close proximity and the potential for interference between the two wells. However, since both wells belong to you, and no interference with nearby unrelated water rights/permits or domestic wells is expected to occur, the Water Rights Program considers this to be an operational issue within your irrigation system.

Upon review of the request and pursuant to SDCL 46-5-13.1, the additional well location is authorized without application or publication of a notice of hearing pursuant to SDCL 45-2A-4. No increase in the authorized diversion rate of 3.6 cfs or the number of irrigated acres (257 acres) under Water Permit No. 7526-3 has been requested or approved. If the total diversion rate or the number of acres irrigated increases, a new water permit will need to be obtained from the SD DENR Water Rights Program.

If you have any questions, please contact Bracken Capen at (605) 773-3352.

Sincerely,

Jeanne Goodman
Chief Engineer
Water Rights Program



**DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES**

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



November 3, 2014

7526-3

Derrick Walter
43979 SD Hwy 44
Marion SD 57043 6100

Dear Mr. Walter:

Enclosed is a "Notice" dated October 17, 2014 concerning the 2014 irrigation questionnaire.

The notice was originally mailed to 27448 444th Ave, Marion SD. The post office notified us that your address has changed and I will update our records accordingly.

If you have any questions, please contact me.

Sincerely,

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

enclosures



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

June 12, 2015

Linda Glanzer
404 West 13th Ave.
Mitchell, SD 57301

Dear Ms. Glanzer:

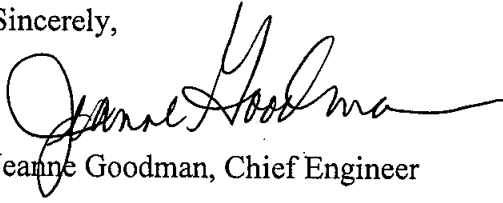
This is in response to your recent letter about springs on your pasture land in Hutchinson County. You asked the South Dakota Department of Environment and Natural Resources to look into whether new irrigation systems nearby caused the springs to quit flowing. Ken Buhler and Whitney Kilts, engineers with my staff, conducted an investigation of the area on May 13, 2015, and Ken prepared the enclosed report.

Ken and Whitney reviewed many sources of information in addition to data collected at the site. Decreased flows of the springs may be the effects of below normal precipitation, sediment build up at the springs, or increased evapotranspiration due to more vegetation near the springs. However, Ken concluded there is also a possibility the nearby irrigation may affect the amount of water produced by your springs during the irrigation season. This is because the irrigation wells pump water from the Niobrara aquifer, which in this area is an "artesian" aquifer. This means the water rises above the top of the aquifer. There is a sand/sandy clay layer on top of the Niobrara; it appears the water in the springs comes from this layer in the pasture. Pumping nearby irrigation wells lowers the water level in the Niobrara and possibly in the overlying layer. It is difficult to estimate the extent of the connection between the Niobrara and sand/sandy clay layer and to what distance from the irrigation wells any effect may be seen.

In South Dakota, state water law protects the water source, not the means of delivery. Domestic ground water use is protected from high capacity uses such as irrigation but only if a pump can be placed below the top of the aquifer. A domestic user cannot rely on artesian pressure at a well or a spring to deliver sufficient water for their needs. The Water Management Board, which oversees the use of the state's waters, is required by state law to place water to beneficial use to the fullest extent possible; the Board recognizes artesian pressure cannot reliably deliver water. The irrigation pumping near your springs cannot be restricted to ensure flow in your springs because if the springs produce water under artesian pressure, it is not protected.

Thank you for contacting DENR. Please contact Ken at (605) 773-3352 if you have further questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeanne Goodman", with a long horizontal flourish extending to the right.

Jeanne Goodman, Chief Engineer

Enclosure

Cc: Jo Jae Glanzer
Derric Walter

REPORT TO THE CHIEF ENGINEER
ON
LINDA GLANZER v. DERRIC WALTER COMPLAINT
MAY 30, 2015

Complaint:

Jo Jae Glanzer contacted the DENR-Water Rights Program on March 31, 2015 to discuss natural springs located in a pasture that his son rents. Mr. Glanzer stated that until recently the springs had been a dependable source of stock water for the pasture. However, in 2014 the springs ceased flowing during the growing season. Mr. Glanzer attributed the springs going dry to an irrigation system recently developed under Water Permit No. 7526-3, by Derrick Walter. The irrigation system is located within approximately one-half mile of the springs.

The March 31, 2015, discussion with Mr. Glanzer included using Farm Service Agency 2012 color imagery, and 24k DRGs through ESRI® ArcGIS™ 10.2, to identify the spring and estimating the elevation of it to be approximately 1330 feet above mean sea level elevation (ft. msl). The elevation of the irrigation wells associated with Water Permit No. 7526-3 was estimated in a similar manner, to be approximately 1380 ft. msl. A completion report on file for one of the irrigation wells used to supply Water Permit No. 7526-3, identified a March 23, 2013, static water level of 122 feet below land surface, (1258 ft. msl) for the Niobrara aquifer. Therefore, the potentiometric surface of the Niobrara aquifer is approximately 72 feet below ground at the springs. It was concluded that the information suggests that the Niobrara aquifer could not be a source for the springs and the irrigation was not responsible for the decreased springflow. In an attempt to identify the source of the springs, the Geologic Atlas of the United States, Olivet Folio (Todd, 1903) was consulted to assess the surface geology of the area. The Areal Geology Sheet of the Folio identified old stream deposits in the vicinity of the springs. These old stream deposits were assumed to be the source for the springs.

Mr. Glanzer also inquired about drilling a well in the area to replace the springs, and was informed the well would have to be an adequate well, constructed to allow the pump to be placed at least 20 feet below the top of the aquifer. A rough estimate of ≈150 feet was used for a well depth.

Mr. Glanzer contacted the DENR-Water Rights Program again on April 1, 2015 for a brief clarification of the earlier conversation.

On April 30, 2015, the DENR-Water Rights Program received a formal complaint from Linda Glanzer the owner of the land that has the springs on it (see appendix A).

Area Hydrogeology:

Review of the Water Resources of Hutchinson and Turner Counties, South Dakota (Lindgren and Hansen, 1990), Major Aquifer in Hutchinson and Turner Counties, South Dakota (Lindgren and Hansen, 1993), and the Sand and Gravel Resources in Hutchinson County, South Dakota (Jarrett, 1986) suggest that in this area, any saturated outwash deposits within the glacial drift are not laterally extensive to be identified as an aquifer. The First Occurrence of Aquifer Materials in

Hutchinson County, South Dakota identifies the uppermost aquifer in this area as the Niobrara aquifer (Jensen, 2007)

There are 24 completion reports on file with the DENR-Water Rights Program for wells within approximately 3.3 miles of the springs Mr. Glanzer called about. Although some of the reports identified thin sand and gravel layers or “gravel streaks” within the glacial till, only two of these wells encountered sufficient saturated sand and gravel to complete a well into. The other wells on file are completed into the bedrock aquifers: 1) Sioux Quartzite (one well); 2) Dakota aquifer (one well) and 3) the Niobrara aquifer (20 wells) (Water Rights, 2015a).

The springs in question are located in the NE¼ Sec. 14, T100N-R57W, approximately four miles south and two miles west of Bridgewater, SD (see Figure 1). These springs discharge along a tributary drainage to Wolf Creek (see Figure 2).

Todd (1903) states that: “Permanent springs [in the Olivet quadrangle] are rare, but a few occur along [the] James River and its principal tributaries.” Todd described four classes of springs in this quadrangle: 1) springs that derive their water from rainwater that seeps through the upper part of the drift into the water courses; 2) springs that derive their water from “the gravel and clay deposits capping the ancient terraces or lining the old drainage courses of the Glacial epoch”; 3) springs that derive their waters from the sands below the boulder clay [glacial till]”; and 4) springs supplied by the sandstone from the Benton [Graneros] formation”. Given the topography and geology of the area near the springs (see Figure 3), with the exception of “the Benton formation” the springs located in the NE¼ Sec. 14, T100N-R57W could derive their water from any of the main spring sources described by Todd (1903). In addition, Todd (1903) also indicates that “The Niobrara chalkstone is porous and water-bearing at some localities; in fact springs are occasionally found flowing from it, as at Scotland. Its water appears not to have much head wherever it lies immediately beneath the drift...”

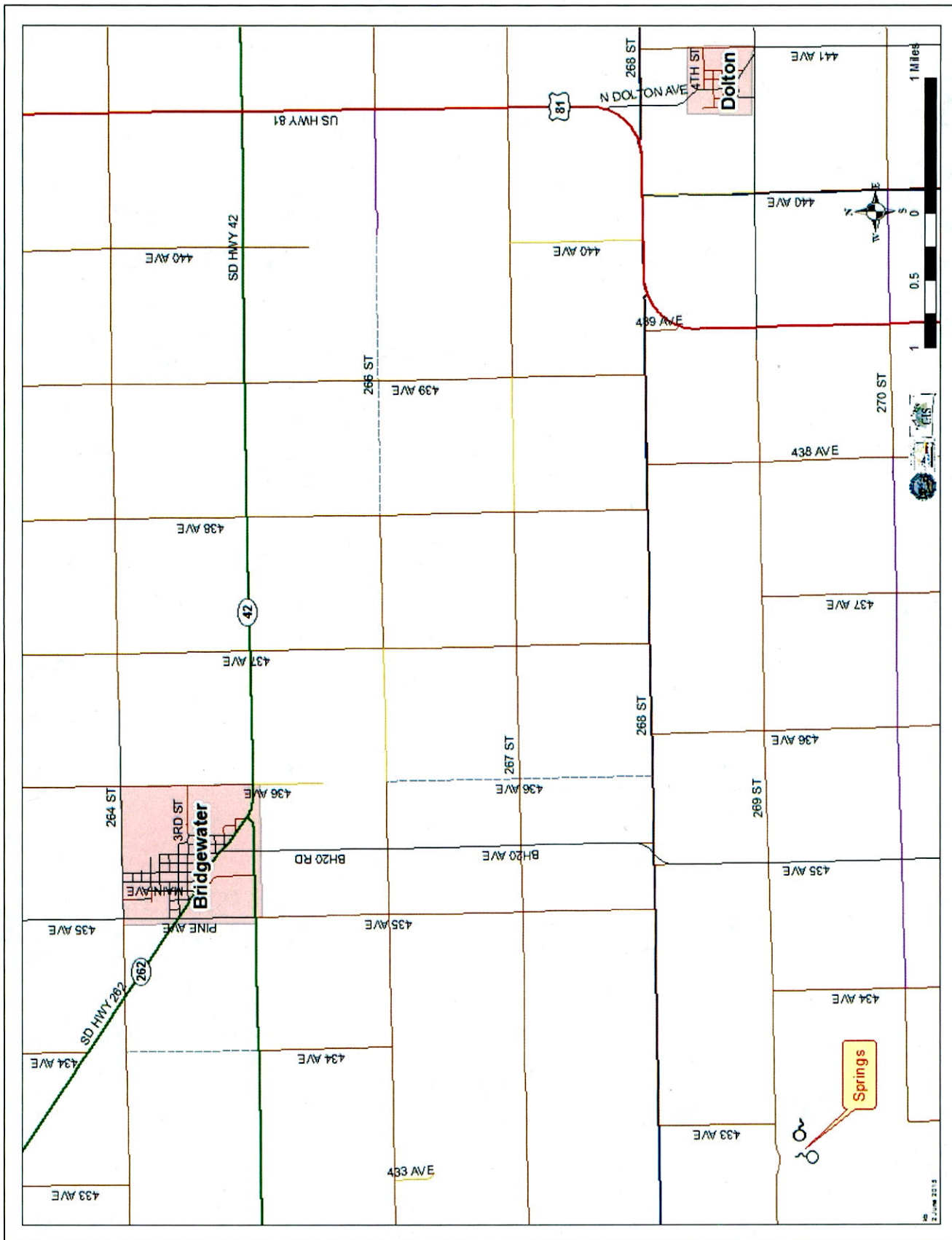


Figure 1. Location Map

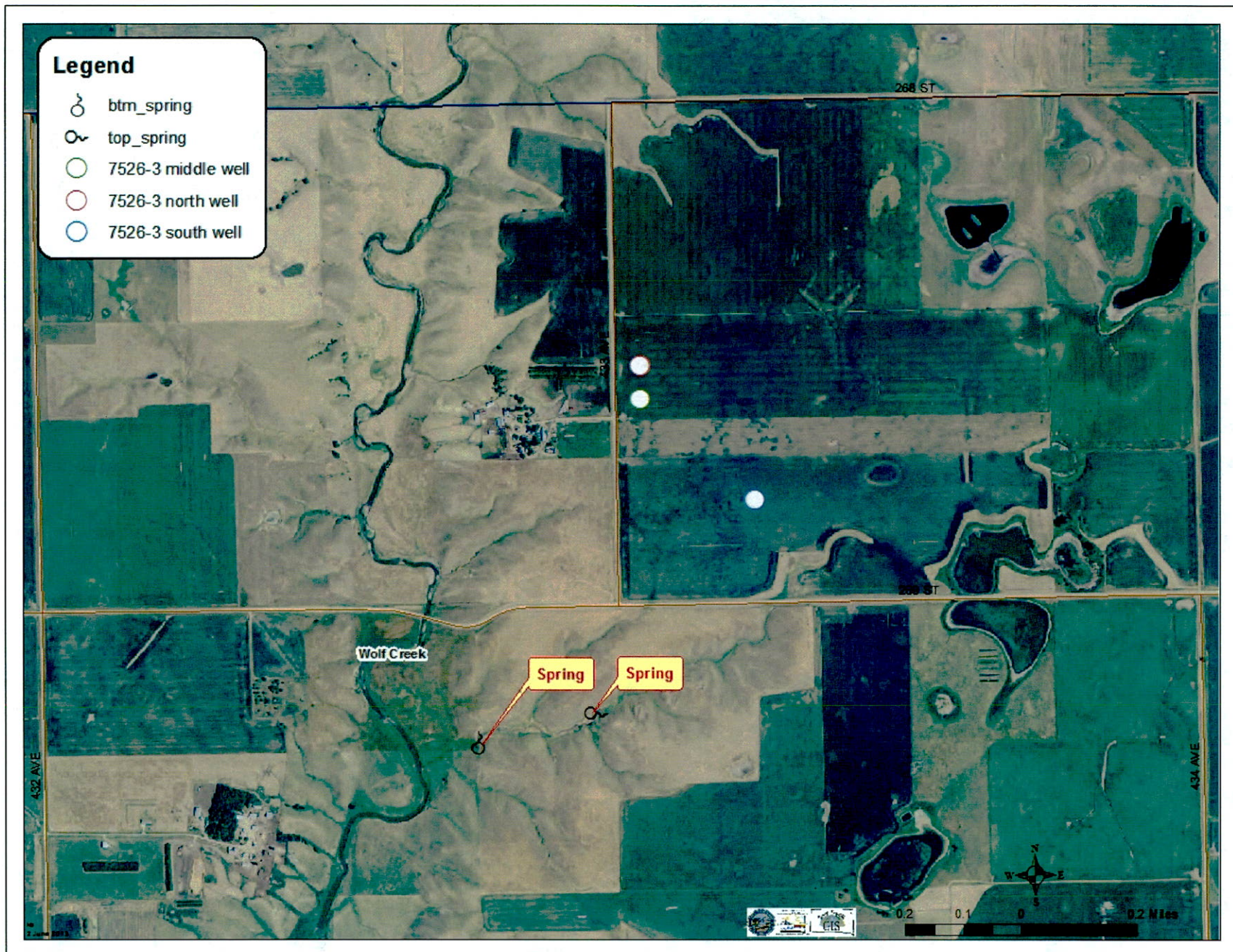


Figure 2. Location of Springs and the irrigation wells that supply Water Permit No. 7526-3

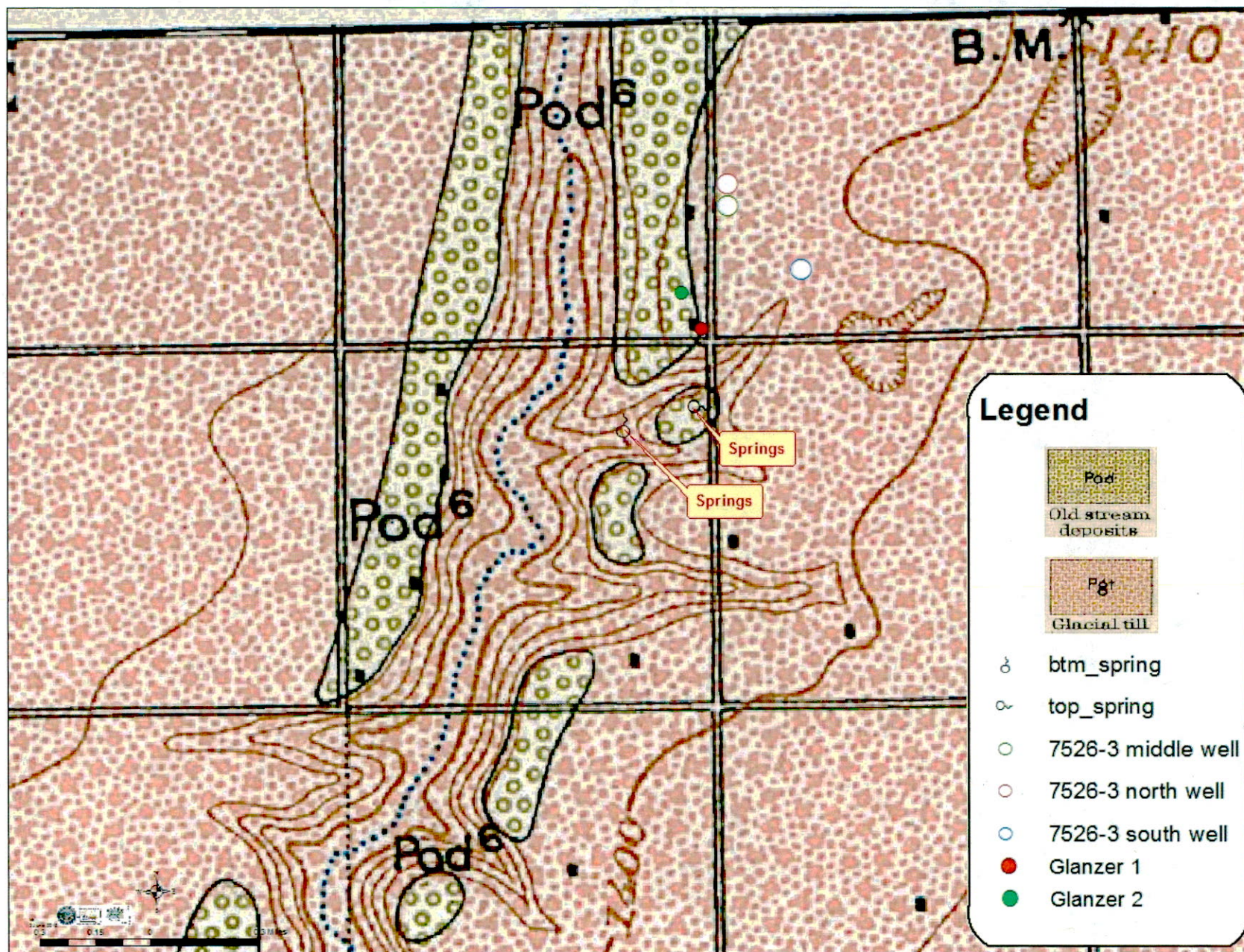


Figure 3. Areal Geology of area (Modified from Todd, 1903)

Field Investigaton:

On May 13, 2015, Water Rights staff engineers Whitney Kilts and Ken Buhler met with Derrick Walter, Dustin Walter, and Dick Hammond (Hammond Wetmore Drilling). Also contacted at the site were Jo Jae Glanzer and Elton Shoenwald (Marion Well Drilling). Water levels were measured and recorded for each of the three irrigation wells; elevations were surveyed between the three irrigation wells and to the upper most spring (see Table 1).

Table 1. Locations and relative elevations of Walter irrigation wells and the upper most spring

	North Well	Middle Well	South Well	Upper Spring
Latitude, Longitude	43.49319, -97.53938	43.49234, -97.53941	43.48977, -97.53553	43.48445, -97.54107
Measuring Point (MP) Elevation	0.00	-0.81	11.38	-61.43
Static Water Level (ft. below MP)	-69.05	-68.27	-63.25	0 (ground surface)
Water Level Elevation (ft. below North Well MP)	-69.05	-69.08	-51.87	-61.43

A reconnoiter of the tributary drainage was conducted with particular attention to the geology and geomorphology. There was no evidence of any Niobrara Formation outcropping in the drainage. Certain landforms within the drainage were characterized by a lower angle of repose suggesting a less argillaceous (clayey) material.

In addition, the static water level of a well that Marion Well Drilling was completing for Jo Jae Glanzer (Glanzer 1) in the SE corner of Sec. 11, T100N-R57W was measured to be -64.93 ft. MP. Note: Marion Well Drilling completed a second well for Jo Jae Glanzer (Glanzer 2) subsequent to the field investigation.

Evaluation:*Niobrara aquifer:*

Since data from the field investigation indicated the Niobrara aquifer potentiometric surface may be high enough to be a water source for the springs, the characteristics of the aquifer were further assessed.

The potentiometric surface of the Niobrara aquifer was interpolated: a) based on the surveyed elevations and water levels of three Walter irrigation wells relative to the spring, to be approximately 21feet higher than the spring; b) based on the water levels of the three Walter irrigation wells, the water level of the Glanzer1 well, using Lidar elevations of the wells and the spring, to be approximately 11 feet higher than the spring; and c) based on the regional potentiometric surface as defined by the observation well data for April 4, 2014 to be approximately four feet higher than the spring.

The available records of all of the wells and test holes within approximately five miles of the springs were reviewed to estimate the top of Niobrara Formation in this area (Water Rights, 2015a, Lithologic Logs 2015, and Water Rights, 2015b). Of the area wells, twenty-one penetrated the Niobrara Formation and contained sufficient information to be used in conjunction

with ESRI @ArcMap™10.2 to generate a Triangulated Irregular Network (TIN) of the top of the Niobrara Formation (i.e. a structure contour map for the Niobrara). Based on this structure contour map, the top of the Niobrara is estimated to be 33 feet below the ground surface at the “upper” spring and 18 feet below ground surface at the “lower” spring.

Deep channels have incised the Niobrara Formation in this area, and the formation pinches out against a Sioux Quartzite high a short distance to the north. Therefore, the Niobrara Formation in the vicinity of the Walter irrigation wells is isolated from other areas of the Niobrara. The DENR-Water Rights Program monitors a total of 11 observation wells completed into the Niobrara aquifer in this 342,357 acre portion of aquifer. Ten of these observation wells are located , within approximately 11 miles of the springs. Hydrographs for these wells are included in Appendix B. The location of the observation wells are shown in Figure 4 and Figure 5.

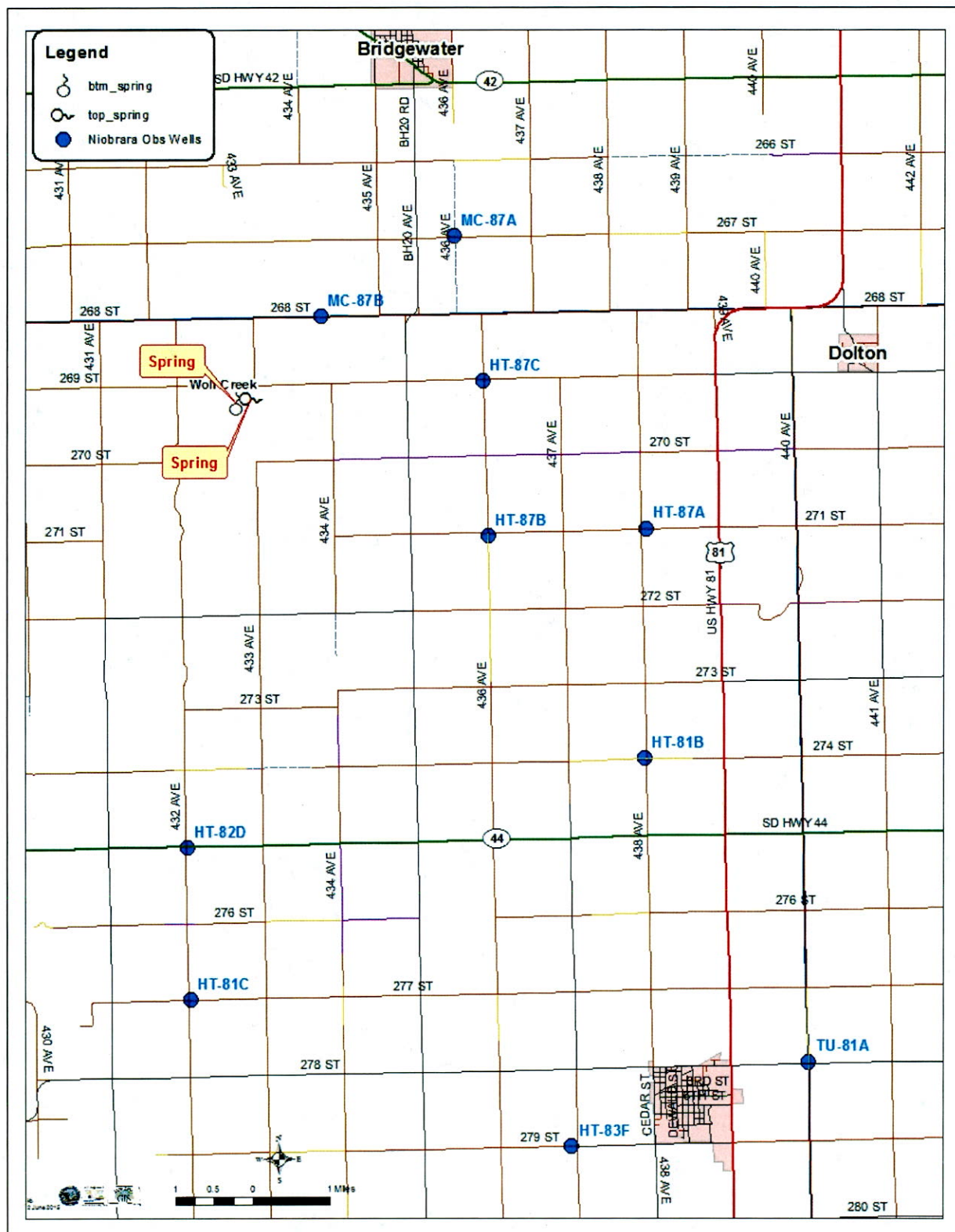


Figure 4. Location of DENR-Water Rights observation wells completed into the Niobrara aquifer.

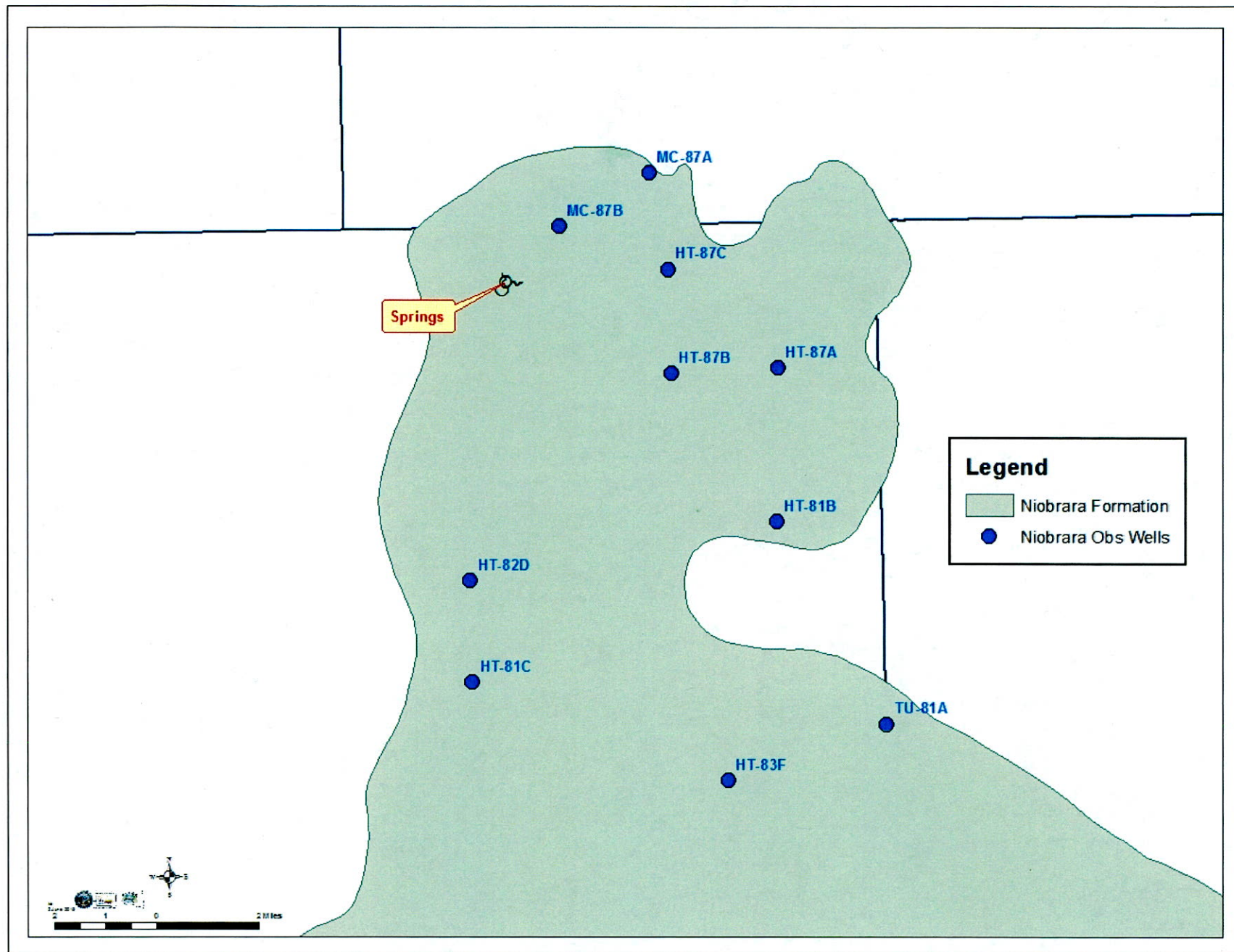


Figure 5. Niobrara Formation and DENR-Water Rights completed into the Niobrara aquifer

The nearest observation well to the springs, MC-87B, is located approximately one and one-half miles north east of the springs (see Figure 3). The hydrograph for the well (Figure 6) shows water levels were lower in 2013 and 2014 than at any other time over the period of record. Although a number of the wells show low water level spikes in the summer of 2014 (for example HT-81B) it is not clear if they are the result of measurement error. The hydrograph for MC-87B is the only one that shows a significant dip in 2013. This observation well is located within approximately one mile of wells that supply the irrigation system authorized by Water Permit No. 7526-3 and comparing MC-87B with other observation wells in this portion of the Niobrara aquifer, it is possible that the observation well may be recording drawdown from the irrigation pumping. Irrigation Questionnaires submitted for Water Permit No. 7526-3 are shown in Appendix C.

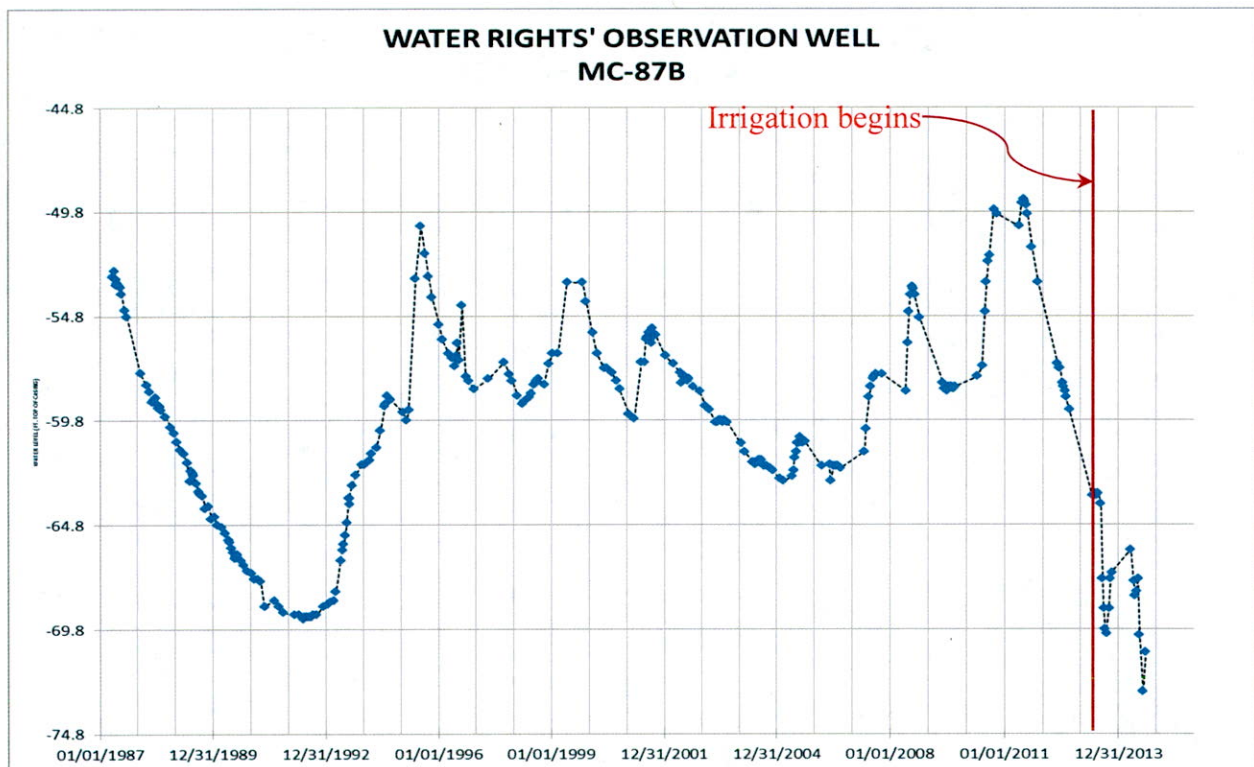


Figure 7. Hydrograph DENR-Water Rights' observation completed into the Niobrara aquifer located approximately one and one half miles from the springs.

Geological data:

A schematic showing data acquired from the well completion reports of five wells in the vicinity of the springs and the irrigation system permitted by Water Permit No. 7526-3 is shown in Figure 7. The completion reports for the wells are shown in Appendix C.

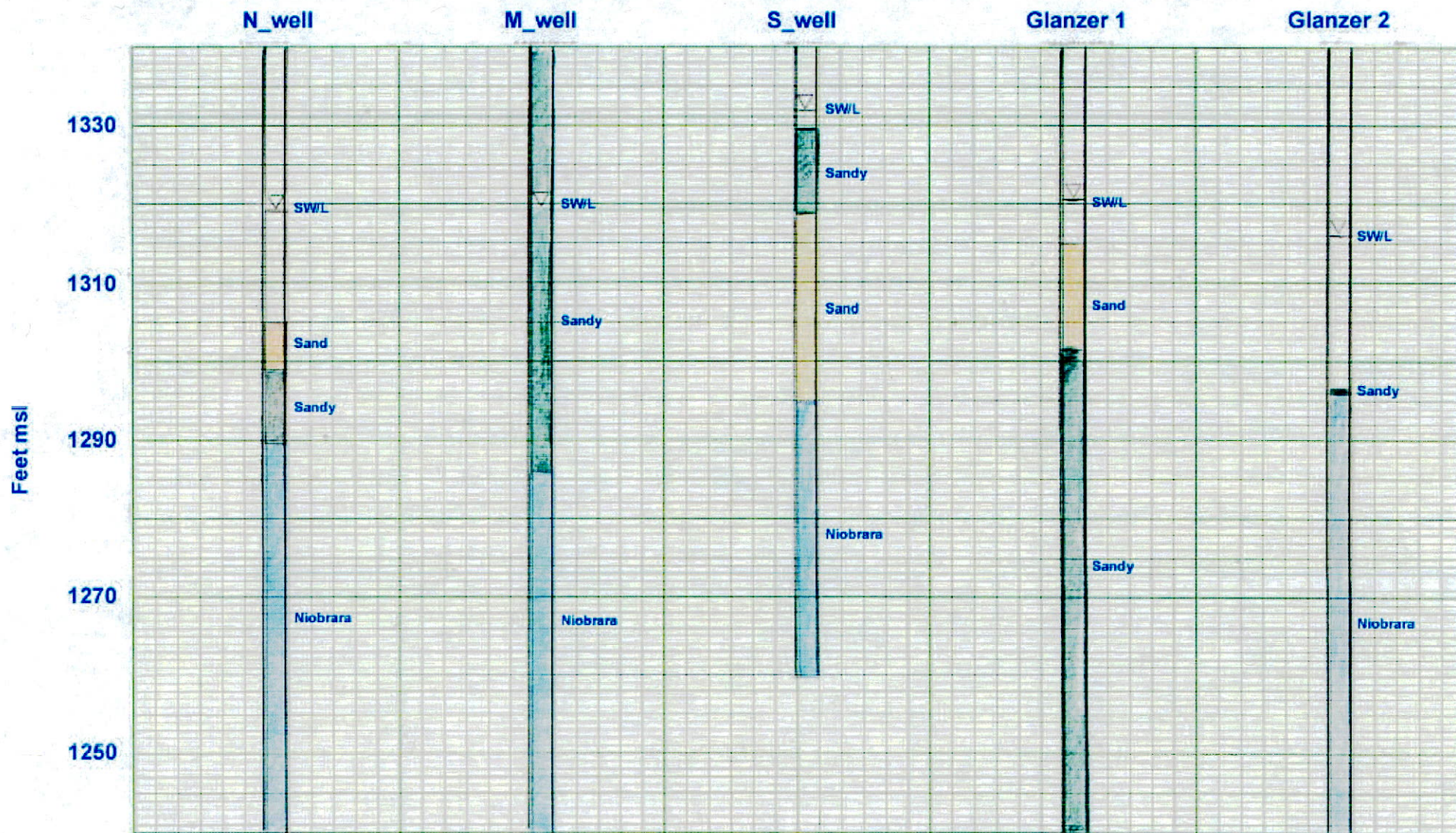


Figure 7. Schematic of hydrogeology for the area with static water level (S W/L) for the Niobrara aquifer.

As shown in the schematic, the Niobrara Formation is overlain by either sand or a sandy material at the five wells in the area and the potentiometric surface of the Niobrara aquifer is sufficiently high to fully saturate the sand/sandy material. The upper most spring is at an estimated elevation of 1322.9 ft. msl. Therefore, the spring is at an elevation where the sand/sandy material was encountered in the south well, or put another way, the drainage tributary incises the sand at about the same elevation as the spring.

Conclusion:

The springs that are located in NE¼ Sec. 14, T100N-R57W, likely discharge from “gravel and clay deposits capping the ancient terraces or lining the old drainage courses of the Glacial epoch”. Water in the old stream deposits is likely derived from upward leakage from the Niobrara aquifer. Drawdown in the Niobrara aquifer caused by well withdrawals would affect the rate of any leakage and could decrease the water available to the springs. Therefore, it is possible that pumping of the three “Walter” irrigation wells may decrease the spring discharge.



Ken Buhler
SD DENR-Water Rights Program

References:

- Lindgren, R.J., and Hansen, D.S., 1990, Water Resources of Hutchinson and Turner Counties, South Dakota: US Geological Survey Water-Resources Investigations Report 90-4093, 100p.
- Lindgren, R.J., and Hansen, D.S., 1993, Major Aquifers in Hutchinson and Turner Counties, South Dakota: SD DENR-Geological Survey Information Pamphlet No. 45, 12 p. 7 figs. 1 table
- Jarrett, M.J., 1986, Sand and Gravel Resources in Hutchinson County, South Dakota: SD Department of Water and Natural Resources Geological Survey Information Pamphlet No. 35, 48 p. 1 fig., 2 tables
- Jensen, A.R., 2007, First Occurrence of Aquifer Materials in Hutchinson County, South Dakota: SD DENR-Geological Survey Aquifer Materials Map 25, Scale 1:100,000
- Todd, J.E., 1903, Olivet Folio, South Dakota: US Geological Survey Geologic Atlas of the United States Folio GF-96, 6 p., 7 figs. 3 plates

APPENDIX A

From: Linda Glanzer605-999 – 0558

404 West 13th Avenue

Mitchell, South Dakota 57301

RECEIVED

APR 30 2015

**WATER RIGHTS
PROGRAM**

To: South Dakota Department of Water and Natural Resources

Regarding: Pastureland that has historically had spring fed water – no water now.

I own land in Hutchinson County – Pleasant Township BR – EM school District/Parcel 1907B 100.57.13.2000 and 1907B 100.57.14.1010.

135 acres of this land is used as pasture land – and has been so for many years.

My renter – Ken Glanzer – wrote me a letter on January 26 of this year to inform me of the degradation of the water situation that has developed recently.

He stated in 2012, when we suffered through the drought, the spring fed draw that we have always had continued to fulfill the needs of our pasture.

In the 2014 growing season a lot of things started to slow down with the water situation –as the installation of a large irrigation system owned by Richard Walter started. This system is less than ½ mile north of my pasture with 3 wells dug for that system.

As the irrigation season continued, the flow of the spring came to a complete stop.

My renter needs water for the cattle and I wanted to contact your office to find out how I need to proceed, where the empirical evidence shows the degradation of our supply is directly correlated to the irrigation system draw so close.

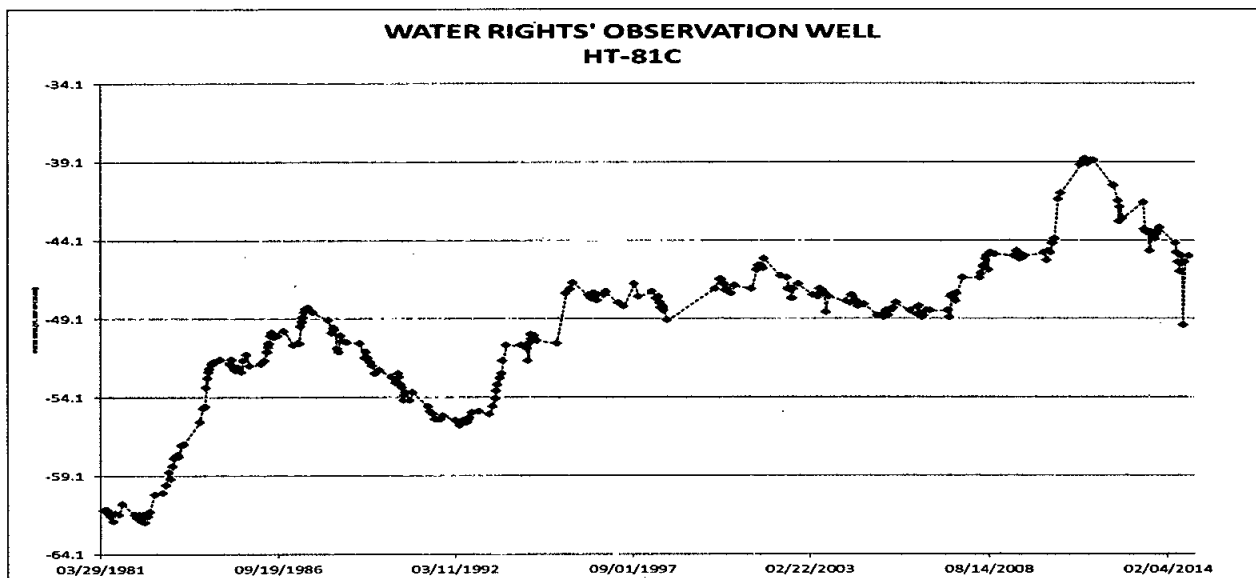
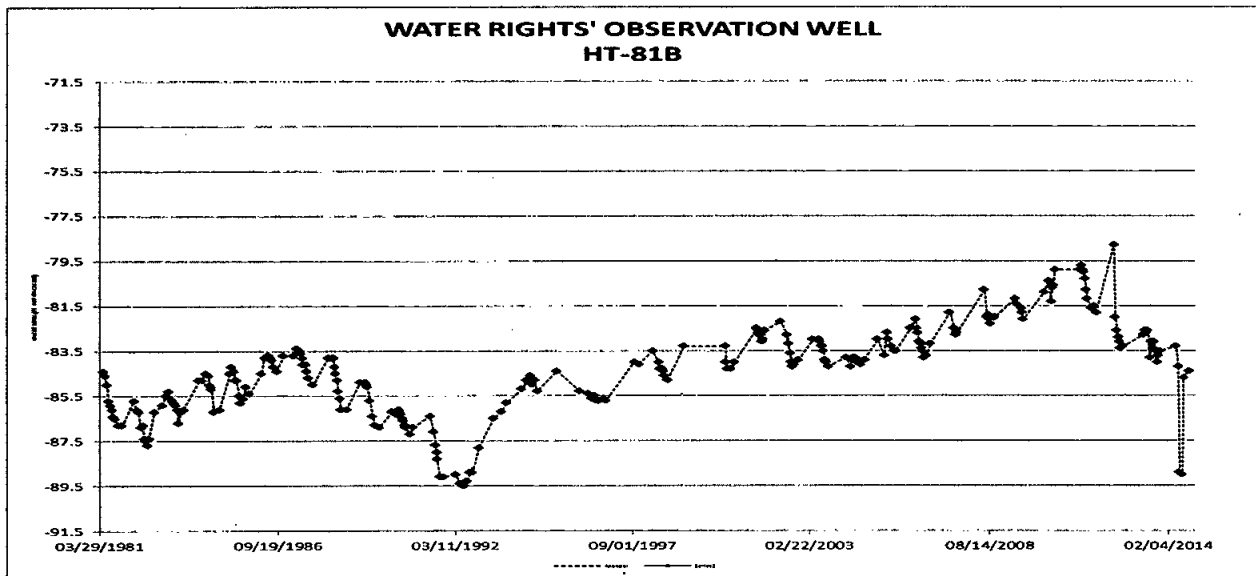
I would be happy to have someone contact me with how I must proceed to re-engender the natural spring flow that has been a hallmark of this pasture for many decades. Please feel free to call or write – as I need to move quickly to get a solution to a very detrimental problem.

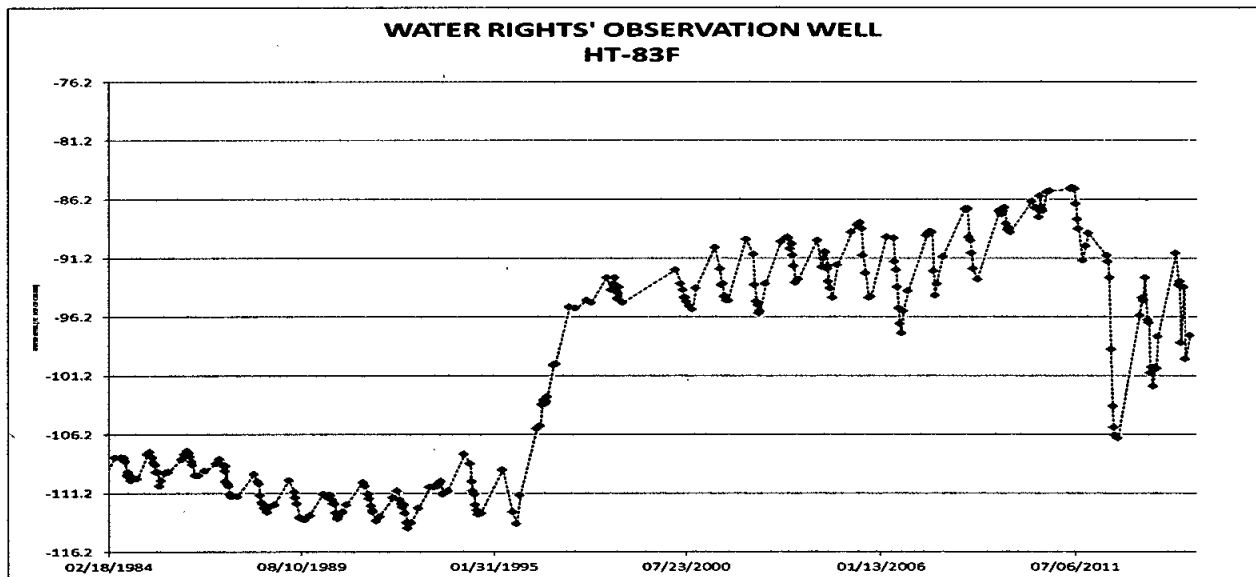
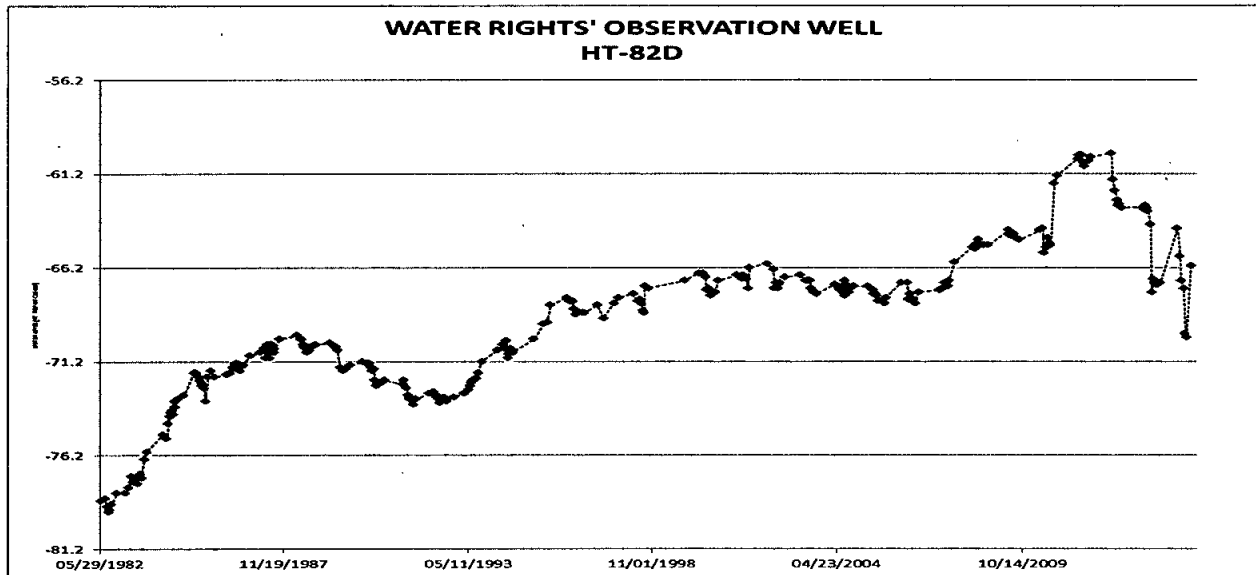
Thank you for taking the time to visit and help me position my land to be whole again.

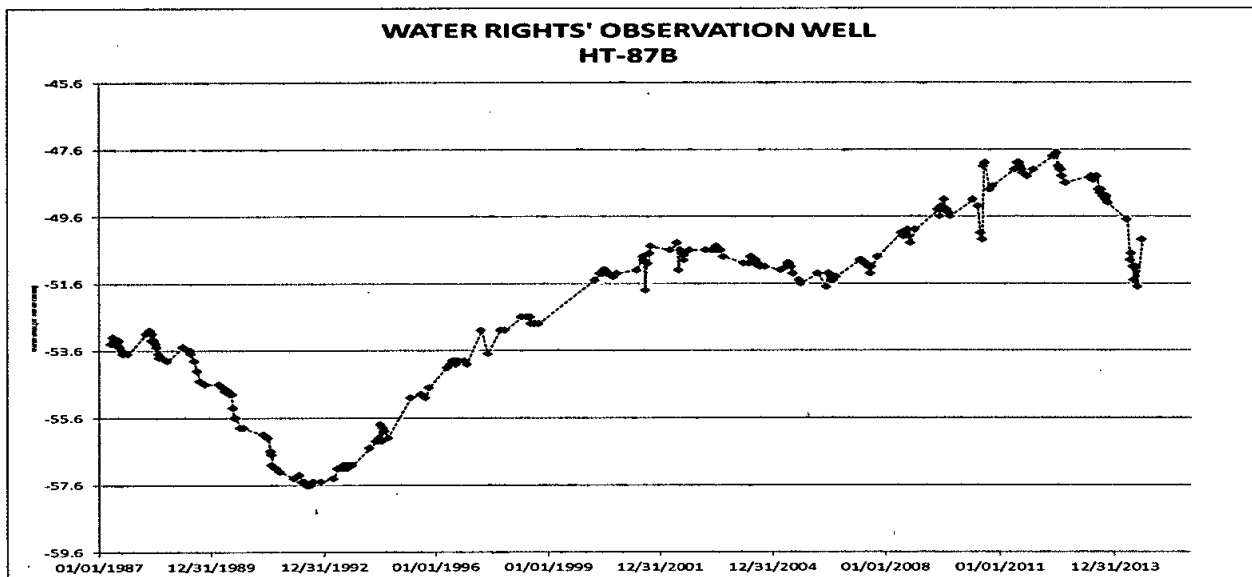
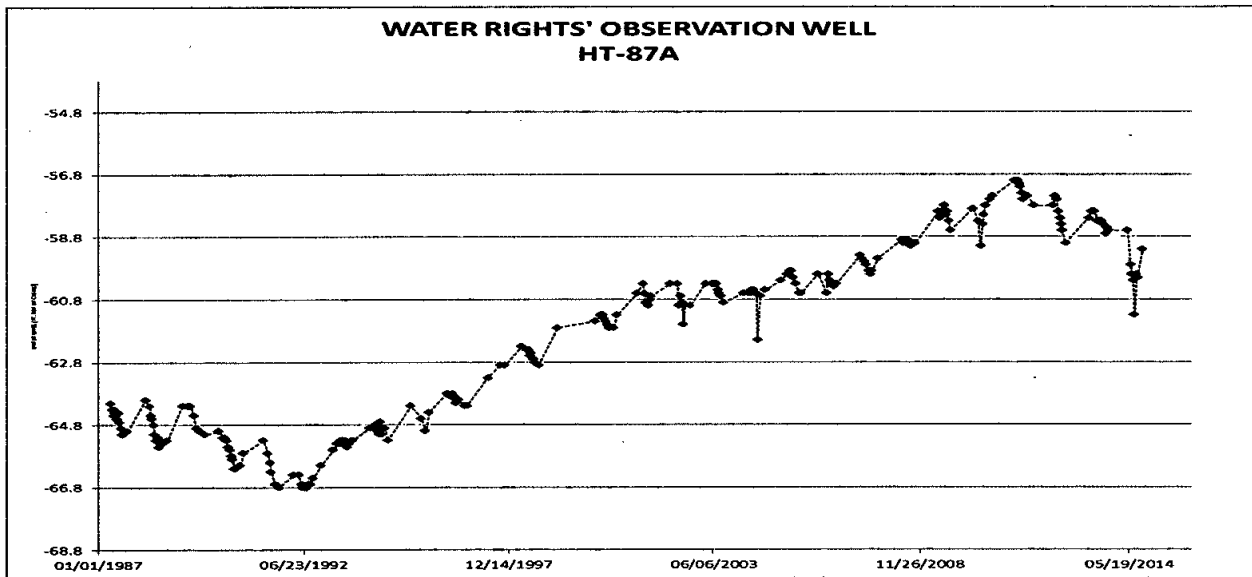


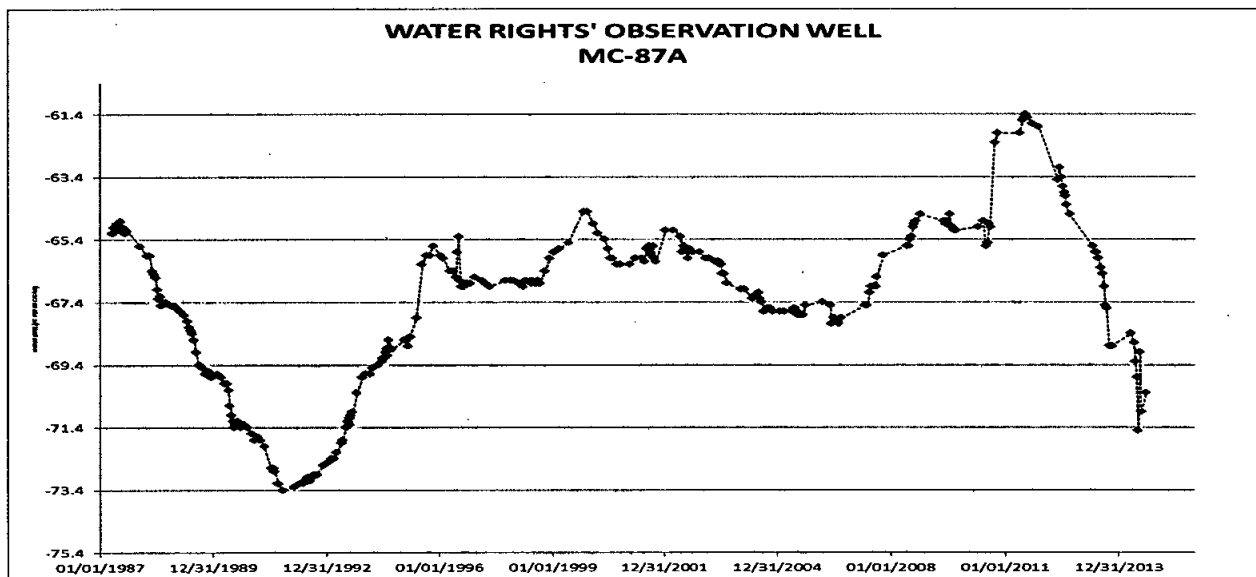
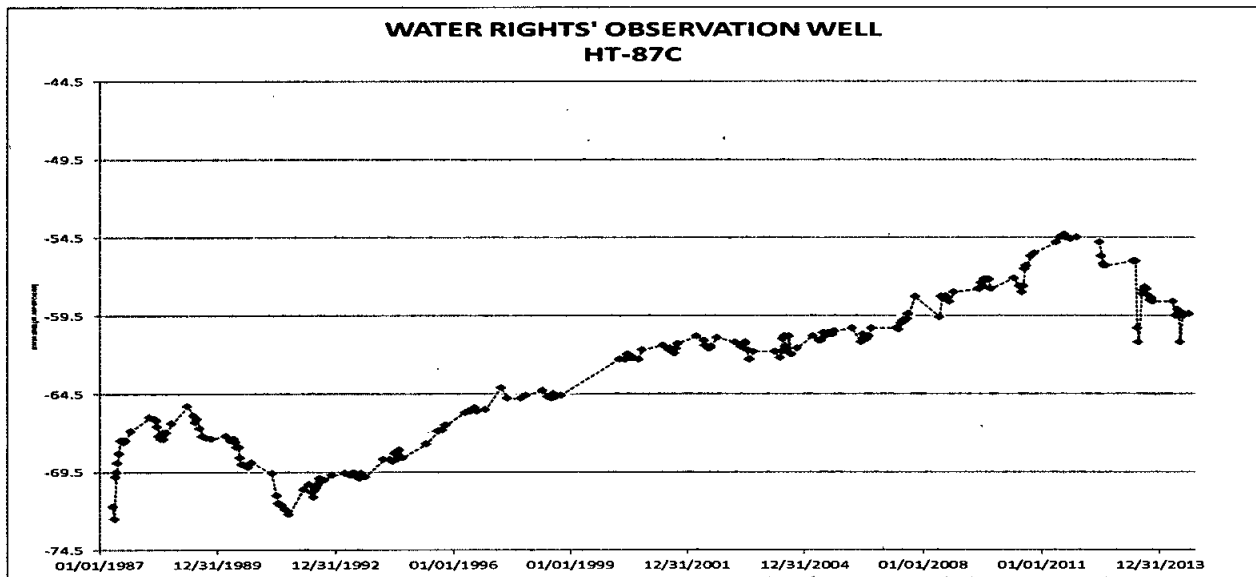
Linda Glanzer... 605 – 999 – 0558

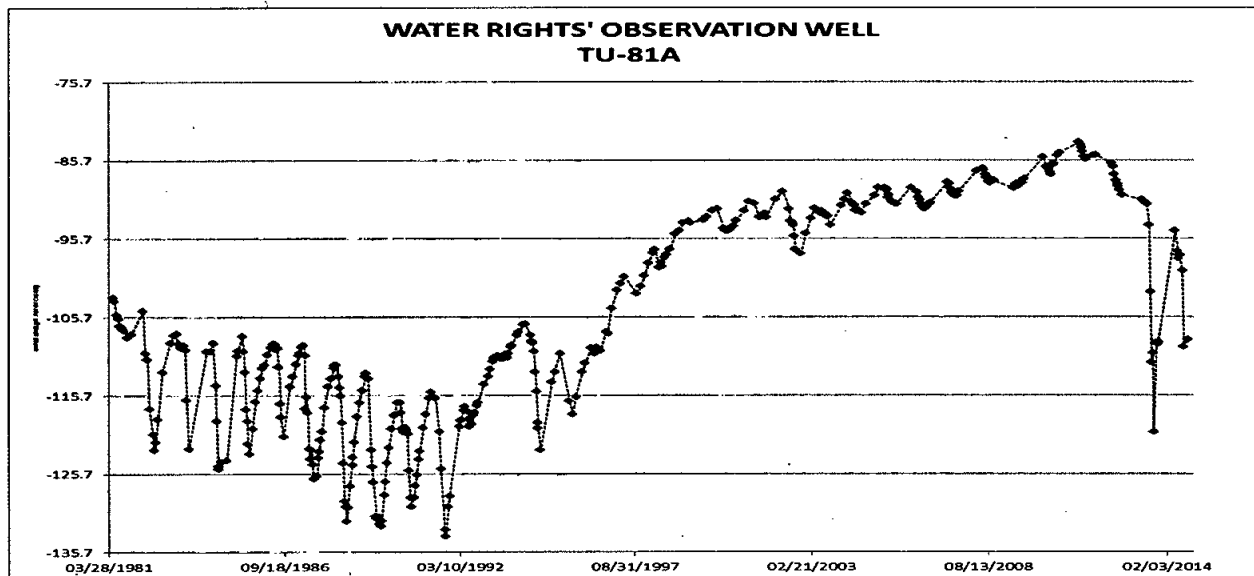
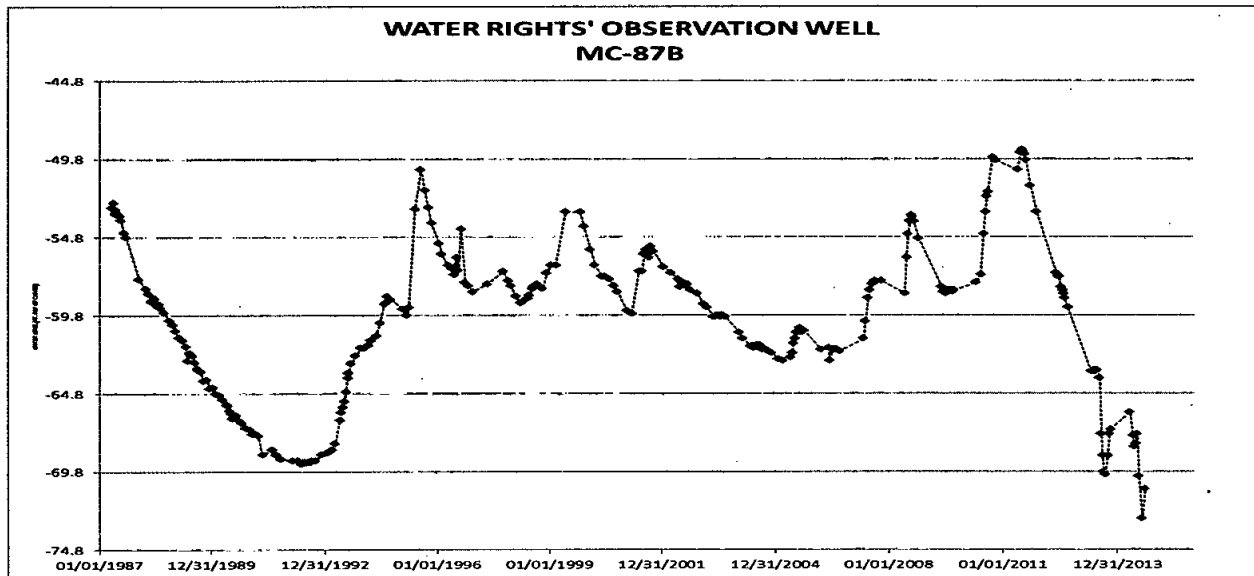
APPENDIX B











APPENDIX C

8142-3

NORTH WELL

SD EForm - 1621LD V1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location nw 1/4 sw 1/4 Sec 12 Twp 100n Rg 57w

County Hutchinson North

Please mark well location with an "X"

Well Completion Date
August 20, 2014

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
☐ Irrigation
☐ Municipal Industrial
☐ Business Institutional
☐ Test holes
☐ Monitoring well

METHOD OF DRILLING:
Direct Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other
If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	<u>16.00</u> IN	<u>0.0</u> FT	<u>100.0</u> FT	<u>22.00</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:
 Grout Type Bentonite No. of Sacks 30 Grout Weight 9.5 Lb/gal From 0.0 Ft To 90.0 Ft
 Describe grouting procedure
 tremie method

SCREEN: ☐ Perforated pipe ☒ Manufactured
 Diameter 10.00 Inches Length 80.0 Feet
 Material PVC
 Slot Size .085 Set From 78.0 Feet to 158.0 Feet
 Other Information gravel packed 158 to 75, tremie grouted between casings 75 to land surface with bentonite grout

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?
 Lb to which water quality sample sent for analysis

Well Owner: Derric Walter
Business Name: _____
Address: 27448 444th Ave
City, State, Zip: Marion SD 57043

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Topsoil	0	3
Clay, brown, pebbly, glacial till	3	35
Clay, gray, silty pebbly	35	82
Sand, coarse, pebbly	82	89
Chalk, gray, sandy	89	98
Chalk, gray, hard; lost circ @110	98	159

STATIC WATER LEVEL 65.0 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
77.0 Ft. After 3.0 Hrs. pumped 500.0 GPM
 _____ Ft. After _____ Hrs. pumped _____ GPM
 If pump installed, pump rate: 380.0 GPM

REMARKS

This well was drilled under license # 666 and this report is true and accurate.
 Drilling firm: Hammond Wetmore Drilling
 Signature of License Representative: [Signature]
 Signature of Well Owner or Equitable Property Holder: _____
 Date: 12/30/2014

MIDDLE WELL

SD EForm - 1621LD V1

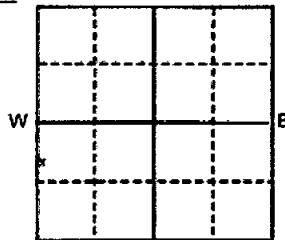
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NW ¼ SW ¼ Sec 12 Twp 100 Rg 57W

County Hutchinson

North

Please mark well
location with an "X"

Well Completion Date

3/23/13

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
1,800.0 ft. from Septic Tank (identify source)

PROPOSED USE:

☐ Domestic/Stock Irrigation
☒ Municipal Industrial
☐ Business Institutional
☐ Test holes 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	100.0 FT	20.00 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	20	9.5 Lb/gal	0.0 Ft	85.0 Ft
		Lb/gal	Ft	Ft

Describe grouting procedure
Tremie Method

SCREEN:

☐ Perforated pipe ☒ Manufactured

Diameter 16.00 Inches Length 100.0 Feet

Material PVC

Slot Size .080 Set From 100.0 Feet to 200.0 Feet

Other information

WAS A PACKER OR SEAL USED?

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

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

Well Owner: Derrick Waller

Business Name:

Address: 27448 444th Ave

City, State, Zip: Marion SD 57043

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top Soil	0	1
Brown Silty Clay	1	30
Brown & Blue Glacial Till	30	33
Sandy Blue Clay	33	100
Soft White Chalk	100	135
Dark Gray Chalk	135	160
Dark Gray Chalk w/ some Sand	160	200

STATIC WATER LEVEL 122.0 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

160.0 Ft. After 36.0 Hrs. pumped 450.0 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: GPM

REMARKS

RECEIVED

APR 22 2013

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:

Signature of Well Owner or Equitable Property Holder:

Date:

4/11/13

SOUTH WELL

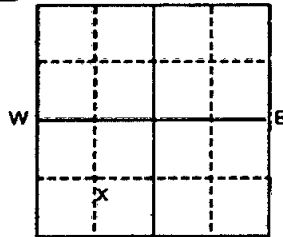
SD EForm - 1621LD V1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE ¼ SW ¼ Sec 12 Twp 100 Rg 57WWell Owner: Derrick WalterCounty Hutchinson

North

Please mark well
location with an "X"

Well Completion Date

June 5, 2013

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.):
2,600.0 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

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	16.00 IN	0.0 FT	103.0 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	25	9.5 Lb/gal	0.0 Ft	90.0 Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

Tremie Method

SCREEN:

☐ Perforated pipe ☒ ManufacturedDiameter 16.00 Inches Length 50.0 FeetMaterial PVCSlot Size .085 Set From 103.0 Feet to 153.0 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?☒ No, Why Not? Not RequiredLab to which water
quality sample sent for analysis

Business Name:

Address: 27448 444th AveCity, State, Zip: Marion SD 57043

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top Soil	0	1
Brown Glacial Till	1	44
Silty Sandy Brown Glacial Till	44	66
Silty Gray Glacial Till	66	69
Sandy Till	69	81
Fine Silty Sand	81	103
Hard White Chalk	103	138
Shale	138	143
Cemented Sand Stone	143	153

STATIC WATER LEVEL

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

RECEIVED

OCT - 4 2013

WATER RIGHTS
PROGRAMThis well was drilled under license # 666 and this
report is true and accurate.Drilling firm: Hammond-Wetmore Drilling, LLC

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date: 10/1/13

GLANZER 1				11-02																											
SOUTH DAKOTA WATER RIGHTS COMPLETION REPORT																															
Location <u>SE 1/4 SE 1/4</u> Sec <u>11</u> Twp <u>100N</u> Rg <u>57W</u>		Well Owner: <u>JO JAE GLANZER</u>																													
County <u>HUTCHINSON</u>		Business Name: <u>43155 268TH ST</u>																													
		Address: <u>BRIDGEWATER S.D. 57319</u>																													
		City, State, Zip: <u>BRIDGEWATER S.D. 57319</u>																													
Please mark well location with an "X"		Well completion Date <u>5-16-15</u> Distance to nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.) <u>1/2 Mile Septic Tank</u>																													
PROPOSED USE: ☒ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes ☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring																															
METHOD OF DRILLING: <u>ROTARY</u>																															
CASING DATA: ☐ Steel ☒ Plastic ☐ Other If other describe _____																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>PIPEWEIGHT</th> <th>DIAMETER</th> <th>FROM</th> <th>TO</th> <th>HOLE DIAMETER</th> </tr> <tr> <th>LB/FT</th> <th>IN</th> <th>FT</th> <th>FT</th> <th>IN</th> </tr> </thead> <tbody> <tr> <td><u>200#</u></td> <td><u>5</u></td> <td><u>0</u></td> <td><u>163</u></td> <td><u>10</u></td> </tr> </tbody> </table>						PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER	LB/FT	IN	FT	FT	IN	<u>200#</u>	<u>5</u>	<u>0</u>	<u>163</u>	<u>10</u>											
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Grout Type	No. of Seals	Grout Weight	From	To																											
		lb/gral	ft	ft																											
<u>DE</u>	<u>10</u>																														
SCREEN: ☒ Perforated pipe ☐ Manufactured Diameter <u>5</u> Inches Length <u>40</u> Feet Material <u>PLASTIC</u> Slot Size <u>20</u> Set From <u>103</u> Feet to <u>143</u> Feet Other information <u>20' SOLID CASING 143-163</u>																															
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? <u>ABANDONED</u> Lab sample sent to for water quality analysis ☒ No, Why Not? _____																															
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<u>SHALE</u>	<u>145</u>	<u>163</u>																													
STATIC WATER LEVEL <u>165</u> 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? _____																															
RECEIVED																															
WELL TEST DATA: <u>MAY 26 2015</u> ☒ Pumped Describe: _____ ☐ Bailed _____ ☐ Other _____ Pumping Level Below Land Surface <u>90</u> ft. After <u>10</u> hrs. pumped <u>15</u> GPM ft. After _____ hrs. pumped _____ GPM If pump installed, pump rate: _____ GPM																															
REMARKS: <u>Well continued to pump since sand & silt wouldnt stop.</u> This well was drilled under license # <u>515</u> And this report is true and accurate. Drilling firm: <u>MARION Well DRILLING</u> Signature of License Representative: _____ Signature of Well Owner or Equitable Property Holder: <u>X Joe Glanzer</u> Date: <u>5-21-15</u> 523 E Capitol Ave. Pierre SD 57501																															

GLANZER 2

☐

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location: SE 1/4 SE 1/4 Sec 11 Twp 100N Rg 57W Well Owner: JO JAE GLANZERCounty: HUTCHINSON

Please mark well location with an "X"

Well completion Date: 5-22-15

1 Mile

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

? 1/2 Mile from Septic Tank (Identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

ROTARYCASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe:

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	IN	FT	FT	IN
<u>200#</u>	<u>5"</u>	<u>0</u>	<u>88</u>	<u>10</u>
<u>88-</u>	<u>141</u>	<u>OPEN</u>		

GROUTING DATA:

GROUT TYPE	No. of Sacks	GROUT WEIGHT	FROM	TO
		LB/BL	FT	FT
<u>A-F</u>	<u>9.6</u>			

Describe grouting procedure: PRESSURE GROUTED WITH TAKEITE LEM

SCREEN:

☐ Perforated pipe ☐ Manufactured
 Diameter: NONE inches Length: feet
 Material:
 Slot Size: Set From: Feet to: Feet
Other information: CHALK OPEN 88-141WAS A PACKER OR SEAL USED? ☐ Yes ☒ No

If so, what material?

Describe packer(s) and location:

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? CHLORINELab sample sent to for water quality analysis: ☐ No, Why Not?

Please return WHITE COPY to: DENR Water Rights

Business Name:

Address: 43156 268TH STCity, State, Zip: BRIDGEWATER S.D 57319

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>TOP SOIL</u>	<u>0</u>	<u>2</u>
<u>YELLOW CLAY</u>	<u>2</u>	<u>26</u>
<u>BROWN CLAY</u>	<u>26</u>	<u>37</u>
<u>BLUE CLAY</u>	<u>37</u>	<u>86</u>
<u>ROCK LAYER</u>	<u>86</u>	<u>87</u>
<u>CHALK WHITE</u>	<u>87</u>	<u>137</u>
<u>CHALK BLACK</u>	<u>137</u>	<u>141</u>

STARTED TAKING WATER @ 101STATIC WATER LEVEL: 66 FEETIf flowing, closed in pressure: PSIGPM flow: through inch pipeControlled by: ☐ Valve ☐ Reducers ☐ Other Reduced flow rate: GPMCan well be completely shut in?

WELL TEST DATA:

☒ Pumped Describe: Pumped w/ sub pump 15 BPM
☐ Bailed
☐ Other

Pumping Level Below Land Surface:

70 ft. After 24 hrs. pumped 15 GPM ft. After hrs. pumped GPMIf pump installed, pump rate: 15 GPM

REMARKS

RECEIVED

JUN - 1 2015

WATER RIGHTS PROGRAM

This well was drilled under license # 515

And this report is true and accurate.

Drilling firm: MARION WELL DRILLINGSignature of License Representative: [Signature]Signature of Well Owner or Equitable Property Holder: [Signature]Date: 5-28-15
523 E Capitol Ave. Pierre SD 57501

APPENDIX D

Type of system used: center pivot ☒ towline ☐ big gun ☐ flood ☐ sprinklers ☐ other _____
(check all that apply)

If more room is needed, copies of this page may be made or complete blank pages and attach to this form.

MONTH IRRIGATED	CROP TYPE	*NUMBER OF ACRES IRRIGATED	PUMP RATE IN GALLONS PER MINUTE	DAYS PER MONTH WATER WAS APPLIED	AVERAGE HOURS PER DAY
MARCH					
APRIL					
MAY					
JUNE					
JULY	Corn	40	650	29	24
	alfalfa	48	↓	↓	↓
	Soybeans	62	↓	↓	↓
AUGUST	Corn	40	650	13	24
	alfalfa	48	↓	↓	↓
	Soybeans	62	↓	↓	↓
SEPTEMBER	Corn	40	650	6	24
	Soybeans	62	650	9	24
OCTOBER					

*Total number of acres irrigated should be the same as your answer in question No. 1 on reverse side of this form.

Type of system used: center pivot ☒ towline ☐ big gun ☐ flood ☐ sprinklers ☐ other _____
(check all that apply)

If more room is needed, copies of this page may be made or complete blank pages and attach to this form.

MONTH IRRIGATED	CROP TYPE	*NUMBER OF ACRES IRRIGATED	PUMP RATE IN GALLONS PER MINUTE	DAYS PER MONTH WATER WAS APPLIED	AVERAGE HOURS PER DAY
MARCH					
APRIL					
MAY 741					
JUNE					
JULY	Corn	250	750	3	24
	↓	↓	750	3	24
	↓	↓	750	7	24
AUGUST	Corn	250	500	7	12
	↓	250 130	500	3	12
	↓	250 130	500	3	12
SEPTEMBER					
OCTOBER					

*Total number of acres irrigated should be the same as your answer in question No. 1 on reverse side of this form.