

WATER PERMIT NO. 7415-3

Name of Applicant: Bakker Crossing Golf Course

Address: 47172 Clubhouse Rd, Sioux Falls SD 57108 Phone: 605 368-9700

Amount of Water Claimed: 0.89 cfs Total Acres: 34 acres

Source of Water Supply: groundwater (2 add'l wells)

Water to be used for: irrigation County: Lincoln

Type of Waste Disposal System:

Location: 2 miles east of Tead

PRIORITY Date Received: 9-4-12 Application/License Fee: \$ 700

Corrected Application Received: Period of Annual Use: April 1 – Oct 31

Remarks:

Diversion Point: NW 1/4 SE 1/4 and NE 1/4 SE 1/4

Sec 29-T100N-R50W

Land to be Irrigated: SE 1/4 Sec 29 and E 1/2 NE

1/4 Sec 32-T100N-R50W

Depth of Well: 432 feet deep

Well Driller:

Remarks:

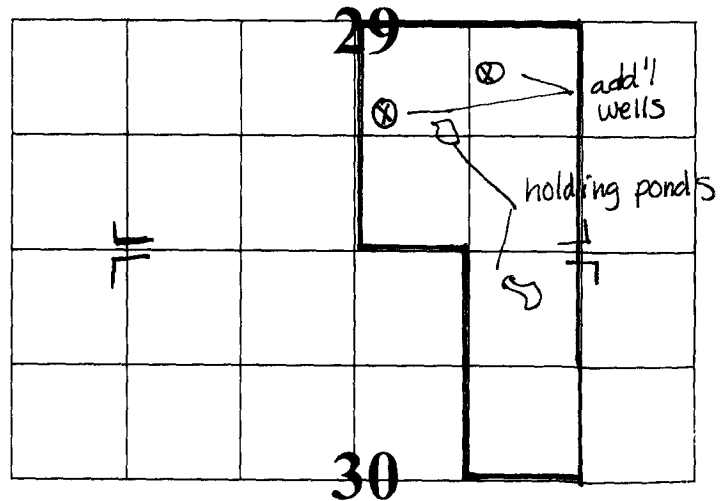
Type of Map: aerial

Prepared by: Maggie Elliot, City of SF

Reviewed and the Number Assigned on: 9-5-12

By: Karen Schlaak

Notice of Hearing - date to intervene: _____



FORM 2: Application for irrigation in South Dakota
(type or print)

Mail to:
PMB 2020
DENR - Water Rights
523 E Capitol Ave
Pierre, SD 57501-3182
ph. (605) 773-3352

(office use only)
No. 7415-3 Hydrologic Unit 10120203
Basin Sioux River 764-2000
Newspaper Sioux Valley News P.O. Box 255 Canton 57013
Argus Leader P.O. Box 2037 57112 331-2200

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SEP - 3 2012
WATER RIGHTS PROGRAM

Application For Permit To Appropriate Water For Irrigation

Type of Application: ☐ New ☐ Vested Right ☒ Amendment/Correction to Permit No. 6195-3

(Use predates Mar 2, 1955)

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

Incremental increase of diversion rate of 400 gpm from wells, and additional diversion rate from ponds of 500 gpm. Increase area irrigated by approximately 34 acres. This includes adding two additional wells.

1. Name of Applicant Bakker Crossing Golf Course Phone (605) 368-9700

(check one) ☒ Owner ☐ Tenant/lessee

Mailing Address 47172 Clubhouse Road Sioux Falls SD 57108
(Address) (City) (State) (Zip Code)

2. Amount of water claimed 0.89 *CFS or ad'l 400 **GPM ***AF Total Acreage 34
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Sioux Quartzite (2 add'l wells)

4. Location of point of diversion (example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W) County Lincoln
Two existing wells; plus two additional wells located, one in the NW 1/4 SE 1/4 Sec. 29-T100N-R50W, and the other in the NE 1/4 SE 1/4 Sec. 29-T100N-R50W.

5. County or counties where water will be used Lincoln

6. Annual period during which water is to be used April 1-October 31

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
All in T100N-R50W. No add'l property to 6195-3		Sec. 29 NE 1/4 SE 1/4 additional	4
Sec. 32 NE 1/4 NE 1/4 additional	4.5	NW 1/4 SE 1/4 additional	5.5
SE 1/4 NE 1/4 additional	8	SW 1/4 SE 1/4 additional	9
		SE 1/4 SE 1/4 additional	3

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

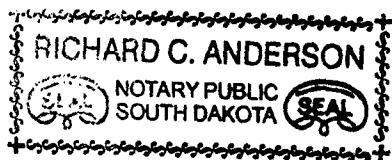
STATE OF SOUTH DAKOTA)
County of Lincoln)

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Also, attach map and any other technical information. (see instructions)

I, Donn W. Hill, Manager, the applicant, certify that I have read this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.

Applicant's signature Donn W. Hill

Subscribed and sworn to before me this 30th day of August 20 12



Richard C. Anderson
Notary Public signature
Expires: 12/16/2014

**SOUTH DAKOTA
WATER PERMIT NO. 7415-3**

Date of first receipt of application September 4, 2012.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7415-3 to Bakker Crossing Golf Course, 47172 Clubhouse Road, Sioux Falls SD 57108 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. 7415-3 appropriates 0.89 cubic feet of water per second (cfs) from two new wells to irrigate 34 acres and the acres authorized by Water Right No. 6195-3. The permit also increases the diversion rate from the holding ponds for application of water for irrigation.

Water Right No. 6195-3 authorizes 0.44 cfs from two wells located in the SE 1/4 SE 1/4 and the NW 1/4 SE 1/4 Section 29 for irrigation of 61 acres located in the SE 1/4 Section 29 and E 1/2 NE 1/4 Section 32; all in T100N-R50W. Water is diverted from the wells to two existing holding ponds with a total storage capacity of 5 acre feet of water located in the NW 1/4 SE 1/4 Section 29 and the NE 1/4 NE 1/4 Section 32; all in T100N-R50W. Water is authorized for diversion from the holding ponds for irrigation of the golf course.

This permit authorizes an additional 0.89 cfs [400 gpm] from two news wells located in the N 1/2 SE 1/4 Section 29-T100N-R50W to irrigate an additional 34 acres and the acres authorized by Water Right No. 6195-3 in the area described in the above paragraph. This permit defines a diversion rate of 2.0 cfs from the holding ponds for irrigation of the authorized acres. The golf course is authorized to appropriate a total of 1.33 cfs from four wells to irrigate 95 acres including greens, fairways, roughs and driving range. Water from the wells may be applied directly to the irrigated land or diverted to holding ponds prior to irrigation.

2. The amount of the appropriation may not exceed 3 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: April 1 – October 31.
3. The date from which applicant may claim right is September 4, 2012.
4. The date of approval of Permit No. 7415-3 is November 19, 2012.
5. One-fifth of the construction is to be completed on or before May 19, 2015.
6. All construction is to be completed on or before November 19, 2017.
7. Water is to be put to beneficial use on or before November 19, 2021.
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 Water Right No. 6195-3 and Water Permit No. 7415-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.

(continued)

2. The wells authorized by Permit No. 7415-3 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. The total diversion rate from the wells authorized by Water Right No. 6195-3 and Water Permit No. 7415-3 is limited to 1.33 cfs diverted directly for irrigation of the 95 acres or to the holding ponds prior to irrigation.
4. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Water Right No. 6195-3 and Water Permit No. 7415-3 authorizes a combined maximum diversion rate of 2.0 cfs from the holding ponds for the irrigation of 95 acres with an annual volume not to exceed 3 acre feet of water per acre per year.
5. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

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

JAN 02 2013
date



Supplemental Information

(type or print in ink)

1. Well Information - Proposed Construction

- a) Drill Hole Diameter 10" Depth est. 432'
- b) Casing Type Steel Diameter 6"-8" Thickness 0.25
- c) Screen Type none Diameter none Thickness
- d) Gravel Pack none Length of Gravel Pack none
- e) Depth to Top of Water Bearing Material none
- f) Depth to Water (ground surface to water level) est. 136'
- g) Distance to nearest existing domestic well:

On applicant's property Rural Water

On property owned by others Rural Water

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

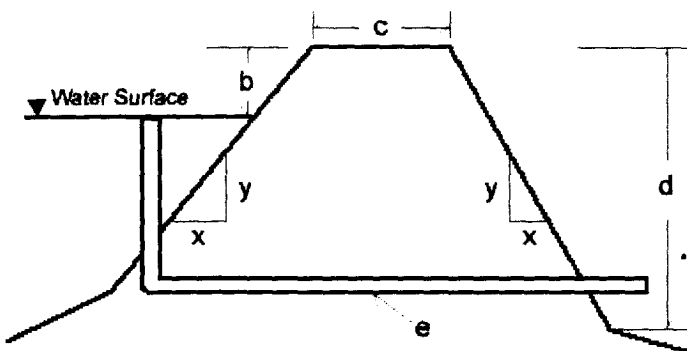
3. Dugout Information

- a) Surface Dimensions Two ponds: approx 0.75 surface acres each Depth approx. 10'
- b) Depth to water (ground surface to water level) varies

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

WATER RIGHT NO. 6195-3
Donn Hill, Bakker Crossing Golf Course
R50W

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WATER RIGHTS

T100N



Maggie Elliott

Maggie Elliott
GIS Analyst
City of Sioux Falls- GIS Division
August 29, 2012

0 500 1,000 2,000
Feet

Pump House



Proposed Well



Well



8. Give a description of the project.

Application for additional water use: two additional wells and additional irrigated acres to Water Right No. 6195-3.

Water Right No. 6195-3 currently appropriates 200 gpm from two wells for irrigation of 61 acres at the golf course. Water is diverted from the wells to two existing holding ponds and then pumped from the ponds at a rate of up to 400 gpm for irrigation at the golf course. This application seeks 1) two additional wells; 2) a 400 gpm increase in diversion rate authority from groundwater; 3) increase the diversion rate from the holding ponds by 500 gpm for application of water for irrigation; and 3) to irrigate 34 additional acres. If approved, the golf course will be authorized to appropriate 600 gpm from up to four wells to irrigate 95 acres including greens, fairways, roughs and driving range. Water from the wells may be applied directly to the irrigated land or diverted to holding ponds prior to irrigation. Water from the holding ponds may be diverted at a rate of 900 gpm for irrigation. The golf course is requesting a diversion rate greater than the statutory limit for irrigation of 95 acres due to the type of irrigation system and time constraints on when water can be applied to the golf course. Bakker Crossing also requests up to 3 acre feet per acre due to the water requirements of turf.

Eric,

Thanks for your
assistance. Feel
free to call or
email me.

Donna

261-3387

RECEIPT
WATER RIGHTS PROGRAM
South Dakota Department of Environment and Natural Resources

Date 9/5, 20 12

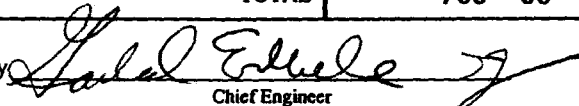
RECEIVED OF Bakker Crossing LLC 47122 Clubhouse Rd Sioux Falls SD 57108

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

Fee for Application for Permit No. <u>7415-3</u> to Appropriate Water, to construct and to put water to beneficial use	500	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>7415-3</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	700 00

No. **05563**

By


Chief Engineer



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 7415-3, Bakker Crossing Golf Course**

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. 7415-3, Bakker Crossing Golf Course, c/o Donn W Hill, 47172 Clubhouse Rd, Sioux Falls SD 57108.

The Chief Engineer is recommending APPROVAL of Application No. 7415-3 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 Water Right No. 6195-3 and Water Permit No. 7415-3 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. 7415-3 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. The total diversion rate from the wells authorized by Water Right No. 6195-3 and Water Permit No. 7415-3 is limited to 1.33 cfs diverted directly for irrigation of the 95 acres or to the holding ponds prior to irrigation.
4. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Water Right No. 6195-3 and Water Permit No. 7415-3 authorizes a combined maximum diversion rate of 2.0 cfs from the holding ponds for the irrigation of 95 acres with an annual volume not to exceed 3 acre feet of water per acre per year.
5. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Garland Erbele, Chief Engineer

October 29, 2012

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 7415-3
BAKKER CROSSING GOLF COURSE
OCTOBER 22, 2012

Water Permit Application No. 7415-3 proposes to appropriate up to 163 acre-feet annually (ac-ft/yr) from the Sioux Quartzite aquifer. This application proposes to divert water from two wells to be completed in the N½ SE¼ of Section 29, T100N-R50W, at a maximum rate of 0.89 cubic feet of water per second (cfs) to holding ponds authorized by Water Right No. 6195-3. Water will be diverted from the holding ponds to irrigate a total of 95 acres of the golf course including greens, fairways, roughs and the driving range. Approval of this permit will also authorize the irrigation of 34 acres located in the SE¼ Section 29, T100N-R50W and the E½ NE¼ Section 2, T100N-R50W that were not authorized by Water Right No. 6195-3. This permit application also proposes authorization of a diversion rate up to 900 gallons per minute (gpm) from the holding ponds to irrigate the acreage authorized by Water Right No. 6195-3 and Water Permit No. 7415-3, if approved. Water Permit Application No. 7415-3 proposes to appropriate an annual volume up to three acre-feet per acre for the 34 new acres to be irrigated and increase the appropriation for the 61 acres covered under Water Right No. 6195-3 from two ac-ft/yr to three ac-ft/yr.

Water Right No. 6195-3 currently authorizes a diversion rate up to 0.44 cfs from two wells located in the SE¼ SW¼ and the NW¼ SE¼ of Section 29, T100N-R50W for irrigation of 61 acres located in the SE¼ of Section 29, T100N-R50W and the E½ NE¼ of Section 32, T100N-R50W. Water is diverted from the wells to two existing holding ponds with a total storage capacity of five acre-feet, located in the NW¼ SE¼ of Section 29, T100N-R50W and the NE¼ NE¼ of Section 32, T100N-R50W. Water has been diverted from the ponds at a rate of 0.89 cfs (400 gpm) for irrigation.

The combined appropriations of Water Right No. 6195-3 and Water Permit No. 7415-3 (if approved) will authorize a maximum diversion rate of 1.34 cfs (600 gpm), from up to four wells to irrigate 95 acres. Water from the wells may be diverted to holding ponds or applied directly to the irrigated land. Water may be diverted from the holding ponds at a rate of 1.61 cfs (900 gpm) for irrigation. The diversion rate from the ponds exceeds the statutory limit of one cfs per 70 acres due to the type of irrigation system and time constraints at the golf course.

AQUIFER: Sioux Quartzite (SOUX)

GEOLOGY AND AQUIFER CHARACTERISTICS:

The Sioux Quartzite is a Precambrian aged ortho-quartzite (i.e. a sedimentary formation composed of massive, pink and red colored quartz sand cemented to a non-porous quartzite with silica) (Baldwin, 1949). The Sioux Quartzite appears to overlie the crystalline basement rocks in the area "except for minor intrusions" and estimates of its maximum thickness range from under 1,000 feet to over 3,000 feet (McCormick, 2004). The thickness of the quartzite is unknown in this area because only a small amount of drilling was done into it due to its extreme hardness (Niehus, 1994). Pre-glacial streams incised numerous irregular valleys on the quartzite surface resulting in a craggy and rugged upper surface (Baldwin, 1949). The well logs (Water Rights, 2012b) and test holes ("Lithologic Logs Database") for this area indicate the depth to the quartzite ranges from 118-234

feet below ground surface within approximately one mile of the well sites proposed by this application. The Sioux Quartzite is overlain by glacial drift, quartzite wash and/or the Splittrock Creek Formation.

Except for the places where the quartzite is interbedded with mudstone and poorly cemented sand, the primary (intergranular) porosity of the rock is generally extremely low and it is typically not considered an aquifer material. However, locally the Sioux Quartzite does yield water from fractures and porous zones (McCormick, 2007), and it is considered a minor aquifer in Lincoln County (Niehus, 1997). The depth and development of the fracture system in the Sioux Quartzite is unknown but water-supply wells commonly penetrate the quartzite to a depth of 200 feet or less (Lindgren and Niehus, 1992). Since the orientation and density of joints or fractures in the rock are difficult to predict, the aquifer characteristics of the quartzite are site specific and highly variable.

Where the Sioux Quartzite is an aquifer it is commonly under unconfined conditions near outcrop areas and confined conditions elsewhere. The site of this proposed appropriation is located approximately 7.5 miles south of the nearest Quartzite outcrop (Martin and others, 2004), and the aquifer is under confined condition. The predominant chemical constituents in water from the Sioux Quartzite aquifer are calcium and sulfate (Lindgren and Niehus, 1992). Recharge to the Sioux Quartzite probably occurs by infiltration of precipitation and snowmelt in southern Minnehaha County where the Sioux Quartzite crops out (Niehus, 1997). In addition, Split Rock Creek is probably a source of recharge at Palisades State Park (Niehus and Lindgren, 1994). Groundwater movement in the aquifer is predominantly to the south and southwest following the regional dip in the Sioux Quartzite surface (Lindgren and Niehus, 1992). Water-level fluctuations in observation wells completed in the Sioux Quartzite aquifer show a close correlation with long-term trends in precipitation (Niehus, 1994).

The DENR-Water Rights Program does not monitor any observation wells completed into the Sioux Quartzite aquifer and historic water level data is limited. Lindgren and Niehus (1992) published a hydrograph for a Sioux Quartzite observation well located approximately 16 miles north of the well sites proposed by this application. The observation well data identifies approximately 8.5 feet of fluctuation in response to climatic conditions, over the period of record (water years 1980-1987). Long term historic water level data for the aquifer is limited to water well completion reports. Review of the completion reports on file with the DENR-Water Rights Program (Water Rights, 2012b) indicates withdrawals from the aquifer have not exceeded recharge. The withdrawals proposed by this application are not expected to cause the withdrawals from the Sioux Quartzite aquifer to exceed the average annual recharge to the aquifer.

EXISTING WATER RIGHTS/PERMITS

Unlawful impairment of wells in the Sioux Quartzite:

Since SDCL 46-2A-9 requires that a permit to appropriate water may only be issued if the proposed diversion can be developed without unlawful impairment of existing rights, consideration must be giving to what constitutes unlawful impairment or an adverse impact.

The Water Management Board rules (ARSD 74:02:04:20(7)) define an adversely impacted domestic well as:

“a well in which the pump intake was set at least 20 feet below the top of the aquifer at the time of construction or, if the aquifer is less than 20 feet thick, is as near to the bottom of the aquifer as is practical and the water level of the aquifer has declined to a level that the pump will no longer deliver sufficient water for the well owner's needs”

The rules do not identify what constitutes an adverse impact to a prior appropriator. The Board has however promulgated rules pursuant to SDCL 46-6-6.1 that regulate large capacity wells with the intent of maintaining an adequate depth of water for prior appropriators; and providing for the lowering of the pump in prior appropriator's wells.

One of the principal Board rules addressing SDCL 46-6-6.1 is ARSD 74:02:05:02, which requires that the spacing of large capacity wells is to be controlled to assure domestic use and other prior water right water supplies in **adequate wells**. An adequate well is defined by ARSD 74:02:04:20(6) as:

“a well constructed or rehabilitated to allow various withdrawal methods to be used, to allow the inlet to the pump to be placed not less than 20 feet into the saturated aquifer or formation material when the well is constructed, or to allow the pump to be placed as near to the bottom of the aquifer as is practical if the aquifer thickness is less than 20 feet;”

ARSD 74:02:05:02 can be interpreted to say that if an affected well is not an adequate well then spacing (ie: interference) need not be considered. The rule implies, when considering the definition of an adequate well, that 20 feet is an “adequate depth of water for prior appropriators” as required SDCL 46-6-6.1. However, in the Sioux Quartzite aquifer, 20 feet is seldom a sufficient depth of water to be a dependable supply for a well.

Defining adverse interference issues in the Sioux Quartzite aquifer is further complicated by the fact that unlike the case of most other aquifers where the maximum drawdown that could result from pumping a large capacity well is limited by the aquifer thickness, in the quartzite aquifer the maximum drawdown is limited by the well depth.

Therefore, in assessing if well interference is an adverse impairment, provided the affected well is adequate, the depth of the affected well must also be taken into consideration. Although depth is a critical factor in a well's ability to tolerate interference in the Sioux Quartzite, minimum well depth is not regulated.

Even though minimum well depth is not dictated by statute or rule, ARSD 74:02:04:60 does specify the requirements for the installation of pumps in wells. The rule requires that the depth of the pump setting shall be determined by dividing the specific capacity determined for the well into the required yield and adding at least 10 additional feet. Obviously the minimum depth of the pump setting as determined by ARSD 74:02:04:60 could be used as a quasi-minimum well depth standard. For example, the bottom of a well with a specific capacity of 1 gallon per minute per foot of drawdown (gpm/ft), permitted for 20 gallons per minute (gpm), would need to be at

least 30 below the static water level; and the bottom of a well with a specific capacity of 0.5 gpm/ft, permitted for 20 gpm, would need to be at least 50 feet deeper than the static water level.

If the depth of a well allows for pump placement per ARSD 74:02:04:60 and interference requires the well be deepened, that interference could be considered an adverse impact. Conversely, if the affected well is not deep enough to allow compliance with the requirements of ARSD 74:02:04:60, interference that would require deepening of the well would not be an adverse impact. It is important to note that unlike the standard defining an adequate well, the pump installation standard does not fix the setting to the static water level or the specific capacity at the time of construction. The pump setting and ultimately the depth of a well must be able to accommodate for seasonal and climatic fluctuations of the static water level and/or a change of the well's specific capacity.

In a well interference situation involving the Sioux Quartzite, the static water level and specific capacity would be used to determine the minimum (i.e. highest) pump setting for the affected well. After allowing for seasonal and climatic conditions, well interference that caused the pump to be lowered below the calculated pump setting would be unlawful impairment.

Review of Existing Water Rights:

In addition to domestic use wells, (the closest one on file with the DENR-Water Rights Program is approximately one mile away), there are nine water rights/permits appropriating groundwater within approximately three miles of the site proposed by this application (Water Rights, 2012a). The six appropriations from the Sioux Quartzite aquifer within three miles are shown in table 1.

PERMIT NO	NAME	PRIORITY DATE	STATUS	USE	CFS
1554-3	TOWN OF TEA	04/10/1968	LC	MUN	0.09
4936-3	CASA DEL ROSA WATER INC	11/09/1982	LC	SHD	0.033
759-3	TOWN OF TEA	01/26/1961	LC	MUN	0.07
6118-3	THE LAKES AT PRAIRIE GREEN HOMEOWNERS ASSOCIATION	12/24/1998	LC	REC	0.111
6552-3	LANDSCAPE GARDEN CENTERS	11/15/2004	PE	COM	0.123
7224-3	MIDLAND NATIONAL LIFE	11/04/2010	PE	GEO	0.8

Table 1. Water Rights/Permits appropriating water from the Sioux Quartzite aquifer within approximately three miles of the site proposed for appropriation by Application No. 7415-3

The nearest diversion point for an appropriation listed in Table 1 is the well that supplies Water Right No. 4936-3, which is located approximately 1.5 miles west-southwest of well sites proposed by Application No. 7415-3

Since the porosity of the Sioux Quartzite aquifer is generally small, the drawdown in a pumped well may be significant; however, it may be somewhat limited in areal extent. Drawdown in the quartzite is not expected to be uniform in all directions because the flow is mainly through fractures.

Bakker Crossing Golf Course wells and Casa Del Rosa Water Inc. well:

The nearest existing well supplying an appropriative right to the wells proposed by this application is authorized by Water Right No. 4936-3, Casa Del Rosa Water Inc. The Casa Del

Rosa well is located approximately 1.5 miles west-southwest of the well sites proposed by this application. The SD Well Completion Report on file for the Casa Del Rosa Water Inc well indicates it is 250 feet deep, had a static water level in November 1982 of 130 feet below grade and was capable of producing 15 gpm when air developed from a depth of 160 feet below grade. From the data provided on the completion report the specific capacity of the well can be determined to be at least 0.5 gpm/ft. Since the maximum diversion rate authorized for the Casa Del Rosa Water Inc well by Water Right No. 4936-3 is 0.033 cfs (14.8 gpm) the pumping level of the well would be expected to be no lower than 29.6 feet below the static water level. ARSD 74:02:04:60 requires a pump setting of 39.6 feet below the static water level of the well. Since the Casa Dell Rosa Water Inc well is more than 169.6 feet deep the well complies with ARSD 74:02:04:60. Well Interference caused by pumping the wells this application proposes to use is not going to "dry up" the Casa Del Rosa Water Inc well. It appears the Casa Del Rosa Water Inc well is deep enough to allow for the pump to be lowered to accommodate most any interference from the wells proposed by this application. However, since the Casa Del Rosa Water Inc well is an adequate well, and appears to be deep enough to both comply with ARSD 74:02:04:60 and be a dependable water supply; the water right authorizing use of the well should provide protection from another user either causing the loss of water production or increased operating expenses.

The drawdown cone created by pumping a well is defined by the aquifer characteristics. The aquifer storativity (S) mainly affects the amplitude of the drawdown and since the S of the Sioux Quartzite aquifer is probably fairly low, the drawdown at a production well can be expected to be fairly significant. Although from the limited pumping data available from the existing Bakker Crossing wells can be interpreted as documenting favorably fractured rock was intersected by each of the wellbores. These fractures may act to effectively increase the radius of the production well, thereby decreasing the well's drawdown (Huntley and others, 1992).

Aquifer Transmissivity (T) affects the shape of the drawdown. The specific capacities of the existing Bakker Crossing wells are at least 1.08 gpm/ft, and 0.71 gpm/ft. Huntley and others (1992) report that there appears to be a linear relationship between specific capacity and transmissivity (log of specific capacity to the log of transmissivity in fractured rock). Given the specific capacities are low; the T for the Sioux Quartzite aquifer must be correspondingly low. Since the T is low for the Sioux Quartzite aquifer, the drawdown curve should be narrow and deep. It is unlikely with the presumed low transmissivity of the Sioux Quartzite that drawdown from the wells proposed by this application would be more than just a few feet at the distance that separates the Bakker Crossing wells and the Casa Del Rosa Water Inc. well (approximately one and one-half miles). The well interference would not be significant compared to natural water level fluctuations in the aquifer. Given the distances involved, interference is not expected to be significant in any of the prior appropriator's wells.

SDCL 46-5-6

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of one cubic foot of water per second for every seventy acres, or "the equivalent thereof". The statute provides that the Water Management Board may allow a greater diversion if the method of irrigation so requires. The diversion rate requested exceeds the statutory limit of one cfs per 70 acres due to the type of irrigation system and time constraints at the golf course.

Conclusions:

1. The Sioux Quartzite is a viable aquifer in this area.
2. The Sioux Quartzite is under confined/artesian conditions in this area.
3. Recharge to the Sioux Quartzite aquifer is through infiltration of precipitation and possibly through streamflow losses.
4. Average annual recharge has not been quantified for the Sioux Quartzite aquifer.
5. The DENR-Water Rights Program does not monitor any observation wells completed into the Sioux Quartzite aquifer.
6. Historic water level data for the aquifer is limited to water well completion reports. Completion reports on file with the DENR-Water Rights Program indicate withdrawals from the aquifer have not exceeded recharge.
7. There is a reasonable probability that approval of this application will not cause withdrawals from the aquifer to exceed average annual recharge to the aquifer.
8. Unlawful impairment in the Sioux Quartzite aquifer can be considered drawdown to the extent that an affected well that is both adequate pursuant to ARSD 74:02:04:20(7) and allows for a pump setting pursuant to ARSD 74:02:04:60 experiences a loss of water production or increased operating expense that can be attributed to another well.
9. The nearest well supplied from the Sioux Quartzite aquifer to this application site is located over one mile away.
10. Well interference if this application is approved is not expected to be adverse.
11. In the past, the Board has considered a diversion rate in excess of one cfs per 70 acres acceptable for golf courses.



Ken Buhler
DENR-Water Rights Program

References:

- Baldwin, B, 1949, A Preliminary Report on the Sioux Quartzite: South Dakota Geological Survey Report of Investigations 063, 34 p.
- Huntley, D., Nommensen, R. and Steffey, D., 1992, The Use of Specific Capacity to Assess Transmissivity in Fractured-Rock Aquifers. Ground Water. v.30, no. 3, pp.396-402
- Lindgren, R.J., and Niehus, C.A., 1992, Water Resources of Minnehaha County, South Dakota: U.S. Geological Survey Water-resources Investigations Report 91-4101, 80p
- "Lithologic Logs Database." South Dakota Department of Environment & Natural Resources Geological Survey. 19 Oct. 2012
- Martin, J.E., Sawyer, J.F., Fahrenbach, M.D., Tomhave, D.W., Schulz, L.D., 2004, Geologic Map of South Dakota: South Dakota Geological Survey General Map 10, Scale 1:500,000
- McCormick, K.A., Hammond, R.H., 2004, Geology of Lincoln and Union Counties, South Dakota: South Dakota Geological Survey Bulletin 39, 43 p

- McCormick, K.A., 2007, First Occurrence of Aquifer Materials in Lincoln County, South Dakota: South Dakota Geological Survey Aquifer Materials Map 26, scale 1:100,000
- Niehus, C.A., 1994, Water Resources of Lincoln and Union Counties, South Dakota: U.S. Geological Survey Water-Resources Investigations Report 93-4195, 57 p.
- Niehus, C.A., 1997, Major Aquifers in Lincoln and Union Counties, South Dakota: South Dakota Geological Survey Information Pamphlet 49, 26 p.
- Niehus, C.A., and Lindgren, R.J., 1994, Major Aquifers in Minnehaha County, South Dakota: South Dakota Geological Survey Information Pamphlet 46, 22 p.
- Water Rights Program, 2012a, "Water Permit/Right Files", South Dakota DENR-Water Rights Program, Joe Foss Building, Pierre, SD
- Water Rights Program, 2012b, "Well Completion Report Files", South Dakota DENR-Water Rights Program, Joe Foss Building, Pierre, SD

Affidavit of Publication

STATE OF SOUTH DAKOTA
COUNTY OF LINCOLN

ANDY WILCOX

being first duly sworn on his oath says; that the Sioux Valley News is a legal weekly newspaper of general circulation as required by South Dakota Code of Nineteen Hundred Thirty-Nine, and any acts amendatory thereto, printed and published by the Sioux Valley News, Inc., in Canton, in said county and State, and has been such legal newspaper during the time hereinafter mentioned; that he is and during all of said time was publisher of said newspaper and has personal knowledge of the facts stated in this affidavit; that the advertisement headed:

Bakker Crossing Golf Course DENR Notice of Application No. 7415-3 to Appropriate Water

a printed copy of which is hereto attached, was printed and published in said newspaper for ONE successive week(s) upon the following dates, to-wit:

November 8, 2012

that the full amount of the fees charged for publishing the same to-wit: the sum of \$39.71 inures solely to the benefit of the publishers of said newspaper; that no agreement or understanding for any division of this sum has been made with any other person; and that no part of said sum has been agreed to be paid to any person whomsoever.

Ascribed and sworn to before me this 8th day of
November, 2012.

Notary Public, South Dakota

(Seal)



My Commission Expires
12/9/2014

NOTICE OF APPLICATION NO. 7415-3 to Appropriate Water

Notice is given that Bakker Crossing Golf Course, c/o Donn W Hill, Manager, 47172 Clubhouse Rd, Sioux Falls SD 57108 has filed an application for a water permit to appropriate 0.89 cubic feet of water per second (cfs) from two new wells to irrigate 34 acres and the acres authorized by Water Right No. 6195-3. The application also increases the diversion rate from the holding ponds for application of water for irrigation.

Water Right No. 6195-3 authorizes 0.44 cfs from two wells located in the SE 1/4 SE 1/4 and the NW 1/4 SE 1/4 Section 29 for irrigation of 61 acres located in the SE 1/4 Section 29 and E 1/2 NE 1/4 Section 32; all in T100N-R50W. Water is diverted from the wells to two existing holding ponds with a total storage capacity of 5 acre feet of water located in the NW 1/4 SE 1/4 Section 29 and the NE 1/4 NE 1/4 Section 32; all in T100N-R50W. Water is authorized for diversion from the holding ponds for irrigation of the golf course.

This application proposes to appropriate an additional 0.89 cfs [400 gpm] from two new wells located in the N 1/2 SE 1/4 Section 29-T100N-R50W to irrigate an additional 34 acres and the acres authorized by Water Right No. 6195-3 in the area described in the above paragraph. The application seeks to define a diversion rate of 2.0 cfs from the holding ponds for irrigation of the authorized acres. If approved, the golf course will be authorized to appropriate a total of 1.33 cfs from four wells to irrigate 95 acres including greens, fairways, roughs and driving range. Water from the wells may be applied directly to the irrigated land or diverted to holding ponds prior to irrigation. The golf course is requesting a diversion rate from the holding ponds greater than the statutory limit for irrigation of 95 acres due to the type of irrigation system and time constraints on when water can be applied to the golf course. The applicant is also requesting up to 3 acre-feet per

acre due to the water requirements of turf.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7415-3 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 November 19, 2012.

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 in the Sioux Valley News on November 8, 2012 at the total approximate cost of \$39.71.

RECEIVED

NOV 13 2012

WATER RIGHTS
PROGRAM

CUSTOMER NUMBER:	003099	Argus Leader P.O. Box 677349, Dallas, TX 75267-7349
INVOICE NUMBER:	1399085	
RUN DATES:	11/8, 2012	
		LINES: AMOUNT DUE: \$97.47

Bakker Crossing
47172 S Clubhouse Rd
Sioux Falls, SD 57108

RECEIVED
NOV 13 2012
WATER RIGHTS
PROGRAM

DETACH THIS STUB AND RETURN WITH PAYMENT

PAYMENT DUE UPON RECEIPT

AFFIDAVIT OF PUBLICATION-

Customer Number: 003099
Invoice Number: 1399085

Bakker Crossing

Argus Leader AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA

COUNTY OF MINNEHAHA } ss

Linda Schulte being duly sworn, says: That The Argus Leader is, and during all the times hereinafter mentioned was, a daily legal newspaper as defined by SDCL 17-2-21, as amended published at Sioux Falls, Minnehaha County, South Dakota; that affiant is and during all of said times, was an employee of the publisher of such newspaper and has personal knowledge of the facts stated in this affidavit; that the notice, order or advertisement, a printed copy of which is hereto attached, was published in said newspaper upon

Thursday	the	8	day of	November	2012
_____	the	_____	day of	_____	2012
_____	the	_____	day of	_____	2012
_____	the	_____	day of	_____	2012
_____	the	_____	day of	_____	2012
_____	the	_____	day of	_____	2012
_____	the	_____	day of	_____	2012

and that \$97.47 was charged for publishing the same

Linda Schulte
Subscribed and sworn to before 11/8/2012

J. Zimmerman
Notary Public, South Dakota

My Commission expires December 22, 2015

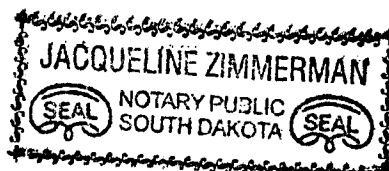
**NOTICE OF APPLICATION
NO. 7415-3 to Appropriate
Water**

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This application proposes to appropriate an additional 0.89 cfs (400 gpm) from two new wells located in the N 1/2 SE 1/4 Section 29-T100N-R50W to irrigate an additional 34 acres and the acres authorized by Water Right No. 6195-3 in the area described in the above paragraph. The application seeks to define a diversion rate of 2.0 cfs from the holding ponds for irrigation of the authorized acres. If approved, the golf course will be authorized to appropriate a total of 1.33 cfs from four wells to irrigate 95 acres including greens, fairways, roughs and driving range. Water from the wells may be applied directly to the irrigated land or diverted to holding ponds prior to irrigation. The golf course is requesting a diversion rate from the holding ponds greater than the statutory limit for irrigation of 95 acres due to the type of irrigation system and time constraints on when water can be applied to the golf course. The applicant is also requesting up to 3 acre-feet per acre due to the water requirements of turf.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7415-3 because 1) it is a beneficial use of water, and 2) existing rights will not be unlawfully impaired, 3) 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 November 19, 2012. 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 \$97.47. 1399085 Nov. 8, 2012





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

October 30, 2012

Sioux Valley News
PO Box 255
Canton SD 57013

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7415-3 to Appropriate Water. Please publish the notice once on November 8, 2012. 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 Bakker Crossing Golf Course, c/o Donn W Hill, 47172 Clubhouse Rd., Sioux Falls SD 57108 (Ph # 605-368-9700).

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

October 30, 2012

Argus Leader
PO Box 5034
Sioux Falls SD 57117

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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.

October 30, 2012

Bakker Crossing Golf Course
Donn W Hill
47172 Clubhouse Rd
Sioux Falls SD 57108

Dear Mr. Hill:

Water Permit Application No. 7415-3 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 Sioux Valley News printed at Canton SD (Ph # 605-764-2000) and the Argus Leader printed at Sioux Falls SD (Ph # 605-331-2200). 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 November 8, 2012. 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.

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Notice is given that Bakker Crossing Golf Course, c/o Donn W Hill, Manager, 47172 Clubhouse Rd, Sioux Falls SD 57108 has filed an application for a water permit to appropriate 0.89 cubic feet of water per second (cfs) from two new wells to irrigate 34 acres and the acres authorized by Water Right No. 6195-3. The application also increases the diversion rate from the holding ponds for application of water for irrigation.

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Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7415-3 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.

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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 _____.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

denr.sd.gov

JAN 02 2013

Bakker Crossing Golf Course
Donn W Hill
47172 Clubhouse Rd
Sioux Falls SD 57108

Dear Mr. Hill:

Enclosed is Water Permit No. 7415-3 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



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

May 2, 2024

7415-3

Bakker Crossing Golf Course
c/o Donn Hill
47172 Clubhouse Rd
Sioux Falls SD 57108

Dear Mr. Hill:

I am writing in regard to Water Permit No. 7415-3. The water permit authorizes diversion of water from two wells, completed into the Sioux Quartzite Aquifer, for the irrigation of 34 acres, and acres authorized under Water Right No. 6195-3 in the SE ¼ Section 29 & E ½ NE ¼ Section 32; all in T100N-R50W, Lincoln County.

In reviewing your 2023 irrigation questionnaire, we have found discrepancies in the amount of water used and have some concerns. Enclosed is a copy of your questionnaire for reference purposes.

Water Permit No. 7415-3 allows you to use up to 3 acre-feet (ac-ft) (36 inches) of water, per acre, per year. On the questionnaire you reported substantially more water use. The following information is what was reported and what is authorized:

- 30 acres irrigated
- Reported water use – 133.7 ac-ft of water (approximately 54 inches)
- Authorized water use – 90 acre-feet (30 acres x 3 ac-ft per year)

We realize that water use depends greatly on climactic conditions and may vary year to year. However, it is very rare that irrigators come close to the 36 inches per acre that is authorized. Typical water use is between 8 and 12 inches per acre. Often, irrigators do not keep track of their days or hours actually pumped and estimate numbers for the questionnaires in an effort to get them completed and back in on time. While we appreciate returning the forms in a timely manner each year, we need the forms to reflect accurate information to ensure everyone is limiting their use to the amount of water appropriated to them.

The information we receive each year from irrigators across the state is very valuable. The water use data supplied by irrigators is one of the tools we use to help determine whether an aquifer or stream is nearing full appropriation.

If you do in fact apply as much water as claimed on your questionnaire, you are exceeding the limits of your water permit and will have to reduce your discharge to stay within the authorized limit. If you simply estimated your water use, we ask that you please ensure the information reported is as accurate as possible. As stated before, the information you provide to us is very valuable. If you have any questions, please contact me.

Sincerely,

Amanda Dewell
Water Rights Program
605 773-3352
Amanda.Dewell@state.sd.us

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 7415-3

I have this day, April 11, 2023, made a thorough examination of the water use system constructed by Bakker Crossing Golf Course; 47172 Clubhouse Rd, Sioux Falls, SDS 57108 of Permit No. 7415-3, bearing the priority of September 4, 2012 authorizing the diversion of 0.89 cu. ft. per second of the waters of Sioux Quartzite Aquifer for irrigation purposes, in Lincoln County.

A. Works used to divert the water:

Well Information: for 6195-3 & 7415-3

- 1) Well Drilling Firm: 2 wells by Putzke (3rd well driller is unknown)
- 2) No. of Wells 3
- 3) Depth(s) 322-432 feet
- 4) Well log is available Y If no, explain in comments

Comments: No well log for well completed under 7415-3

Casing:

- 1) Diameter 6 inches
- 2) Length unknown feet
- 3) Type steel

Screen:

- 1) Type None
- 2) Length N/A feet
- 3) Static water level 132 - 135 feet

Pump:

- 1) Make Submersible
- 2) Model Unknown
- 3) Size Unknown
- 4) Capacity 800 total GPM

Motor:

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

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

- 1) Type Unknown – probably PVC 2) Size Unknown inches 3) Length Unknown feet

Comments: **Distances and sizes will vary throughout the golf course.**

C. Works used to apply water to beneficial use:

Buried sprinkler system

Chemigation Equipment:

- 1) Does chemigate N

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by N

If no, describe: **Pumping more than authorized (see Comment Section)**

- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period Y

- 3) Exceptions to compliance are: **Pumping more than authorized (see Comment Section)**

E. Condition and Location:

1. The system is in good condition with the point(s) of diversion located as follows: **WELL LOCATION,**
WELL #1: 1495 ft N & 1930 ft W of the SE corner Sec 29 T100N R50W, Lat 43.45060 Long -96.77481
(NW ¼ SE ¼) (7415-3)
WELL #2: 700 ft N & 1715 ft W of the SE corner Sec 29 T100N, R50W, Lat 43.44810 Long -96.77172
(SE ¼ SE ¼) (6195-3)
WELL #3: 665 ft S & 175 ft W of the NE corner sec 32 T100N, R50W, Lat 43.44434 Long -96.76801
(NE ¼ NE ¼) (6195-3)

2. The works are capable of diverting and conveying to the place of use 1.78 cu. ft. per second of water of water which is to be used for irrigation. Water has been put to beneficial use to the maximum extent as follows:

legal description/acreage

Sec 32-T100N-R50W

NE ¼ NE ¼ 16 acres

SE ¼ NE ¼ 18 acres

legal description/acreage

Sec 29-T100N-R50W

NW ¼ SE ¼ 22 acres

NE ¼ SE ¼ 12 acres

SE ¼ SE ¼ 11 acres

SW ¼ SE ¼ 16 acres

comprising a total of 95 acres of land and the license should be issued for 1.33 cfs

3. All structures, wells and lands on map Y

F. Comments or other permit(s) associated with the project:

There are two (2) permits involved with the golf course: Permits 7415-3 and 6195-3, which should be incorporated.

Only one of the two (2) authorized wells in Permit 7415-3 was constructed.

The Permit 7415-3 well is pumping 400 gpm (0.89 cfs) according to the Irrigation Questionnaire and the two (2) permit 6195-3 wells are also pumping 200 gpm each (0.89 cfs), as was told to the new Course Superintendent (Michael McBeain, cell phone 701/840-9600).

A total of 800 gpm (1.78 cfs) is being extracted from the aquifer which exceeds the total authorized rate of 1.33 cfs (0.44 cfs Permit 6195-3 & 0.89 cfs permit 7415-3).

Two holding ponds are also authorized by 6195-3. Well water is pumped into holding ponds. Water is diverted from the holding ponds for irrigation at a rate of 2.0 cfs. See 6195-3 for pond legals.

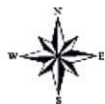
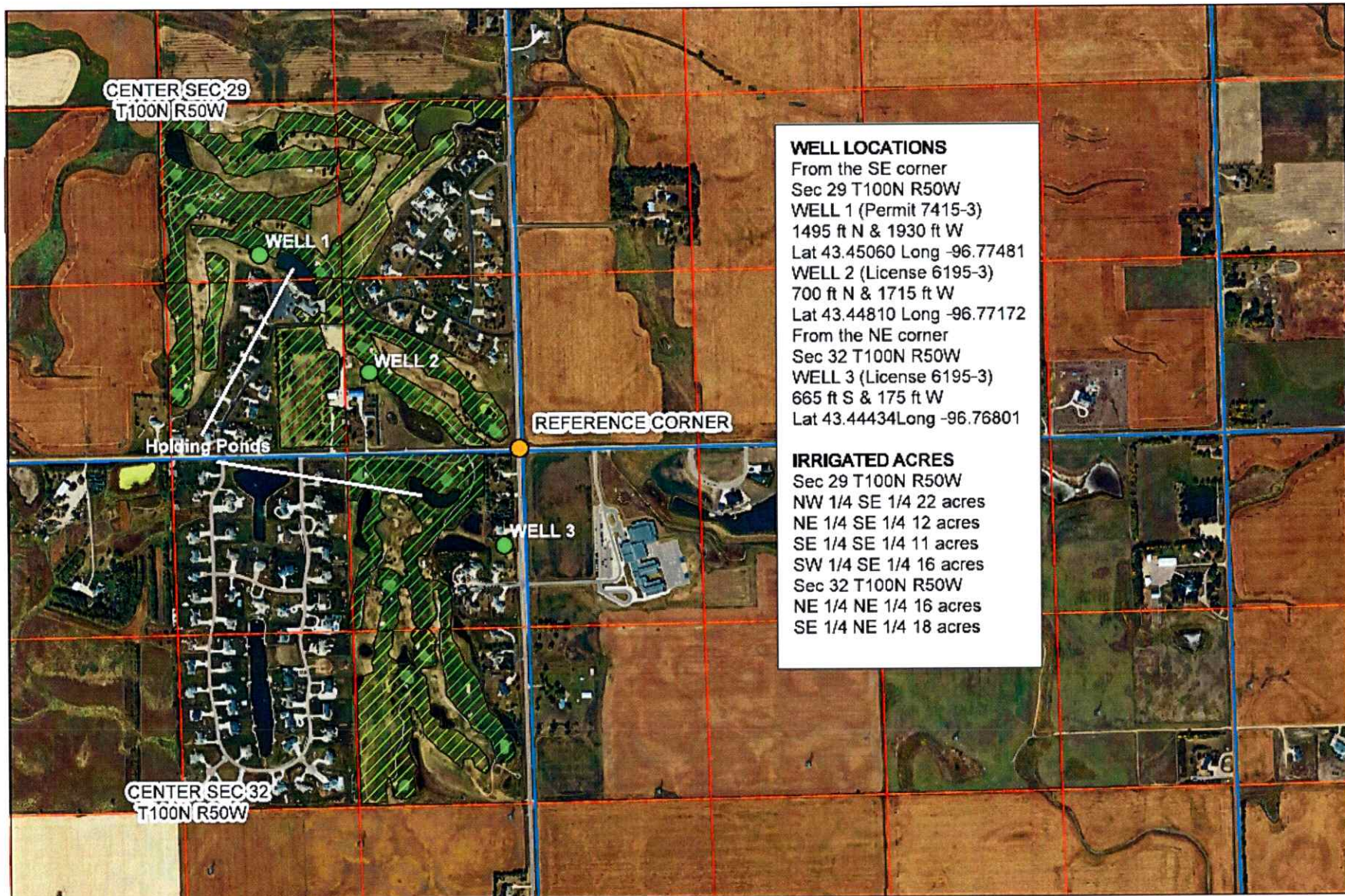
The pump rate reported in a recent Irrigation Questionnaire was used to establish the system flow capacity for the new well.

The mailing address and the telephone number in the permit materials are current.



Darrell W DeBoer
Water Rights Inspector
DANR, Water Rights Program

Date report completed: June 1, 2024



0 800 1,600 3,200 4,800 6,400 Feet

Darrell DeBoer
 Water Right Inspector
 DANR-Water Rights Program



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

JUN 17 2024

7415-3
6195-3

Bakker Crossing Golf Course
c/o Donn Hill
47172 Clubhouse Rd
Sioux Falls SD 57108

Dear Mr. Hill:

Enclosed is Water License No. 7415-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

For your information SDCL 46-6-27 requires that if in the future, the owner of an existing well, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

So long as you use the water beneficially, as stated in the Water License, State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

Eric Gronlund, Chief Engineer
Water Rights Program
(605) 773-3352

NOTES: The investigation found your irrigation system capable of diverting 1.78 cubic feet of water per second (cfs) from the well sites, which is equivalent to approximately 800 gallons per minute (gpm). Water Right No. 6195-3 and Permit No. 7415-3 authorized a combined diversion rate of 1.33 cfs (equivalent to 600 gpm). Diversion of water under this water license is limited to 1.33 cfs when pumping from the well sites.

The applicable portions of Water Right No. 6195-3 have been incorporated into Water Right No. 7415-3.

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 7415-3**

(1) Water Right No. 6195-3, held by Bakker Crossing Gold Course, authorized the diversion of 0.44 cubic feet of water per second (cfs) from groundwater, two wells (Sioux Quartzite Aquifer), for the irrigation of 61 acres. Water Right No. 6195-3 also authorizes the diversion of water from the wells into two holding ponds, with a total storage capacity of 5 acre-feet. Water may be diverted from the holding ponds at a rate of 2.0 cfs for irrigation purposes.

Bakker Crossing Golf Course, 47172 Clubhouse Road, Sioux Falls SD 57108, made Application No. 7415-3, September 4, 2012, for a water permit to divert an additional 0.89 cubic feet of water per second from groundwater, two new wells (Sioux Quartzite Aquifer), Minnehaha County, South Dakota, for the irrigation of 34 additional acres, to what was already authorized by Water Right No. 6195-3. Permit No. 7415-3, with a priority date of September 4, 2012, was approved November 19, 2012, and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before November 19, 2017, and for the application to beneficial use of water on or before November 19, 2021.

The applicable portions of Water Right No. 6195-3 have been incorporated into this license.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 1.33 cfs from the wells, and 2.0 cfs from the holding ponds, for beneficial use. The locations of the diversion points are:

- North Pond: 1,350 ft N & 1,715 ft W of the SE corner Section 29, T100N, R50W (NE ¼ SE ¼)
- South Pond: 350 ft S & 700 ft W of the NE corner Section 32, T100N, R50W (NE ¼ NE ¼)
- Well #1: 1,495 ft N & 1,930 ft W of the SE corner Section 29, T100N, R50W (NW ¼ SE ¼)
(Latitude 43.45060 & Longitude -96.77481)
- Well #2: 700 ft N & 1,715 ft W of the SE corner Sec 29 T100N, R50W (SE ¼ SE ¼)
(Latitude 43.44810 & Longitude -96.77172)
- Well #3: 665 ft S & 175 ft W of the NE corner sec 32 T100N, R50W (NE ¼ NE ¼)
(Latitude 43.44434 & Longitude -96.76801)

(3) The amount of appropriation may not exceed 3 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: April 1 – October 31.

(4) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use to irrigate to following land:

Section 29, T100N, R50W	
NE ¼ SE ¼	12 acres
NW ¼ SE ¼	22 acres
SW ¼ SE ¼	16 acres
SE ¼ SE ¼	11 acres

Section 32, T100N, R50W	
NE ¼ NE ¼	16 acres
SE ¼ NE ¼	18 acres

TOTAL: 95 acres

continued

(5) Pursuant to South Dakota Water Law 46-5-30.1 Bakker Crossing Golf Course, the holder and/or owner of Water Right No. 7415-3 is issued a license to appropriate water, the right to use 1.33 cfs from groundwater, three wells (Sioux Quartzite Aquifer), and 2.0 cfs from the two holding ponds, with priority dates of April 17, 2000, for diversion of 0.44 cfs from the wells, and September 4, 2012, for diversion of 0.89 cfs from the wells, locations specified in (2) of this license, for irrigation purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 7415-3 and subject to the following qualifications:

1. The wells approved under Water Right No. 6195-3 and Permit No. 7415-3 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. 7415-3 shall be construction be 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. *(Only one well was developed under Permit No. 7415-3.)*
3. The total diversion rate from the wells authorized by Water Right No. 6195-3 and Permit No. 7415-3 is limited to 1.33 cfs, diverted directly for irrigation of the 95 acres, or to the holding ponds prior to irrigation. *(The applicable portions of Water Right No. 6195-3 have been incorporated into Water Right No. 7415-3. All diversion authority is now held by Water Right No. 7415-3.)*
4. Pursuant to SDCL 46-5-6, which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Water Right No. 6195-3 and Permit No. 7415-3 authorize a combined maximum diversion rate of 2.0 cfs from the holding ponds for the irrigation of 95 acres with an annual volume not to exceed 3 acre-feet of water per acre per year. *(The applicable portions of Water Right No. 6195-3 have been incorporated into Water Right No. 7415-3. All diversion authority is now held by Water Right No. 7415-3.)*
5. This Water Right is approved subject to the irrigation water use questionnaire being submitted each year.



Eric Gronlund, Chief Engineer
Water Rights Program
Department of Agriculture and Natural Resources

6/17/2024
date

