

WATER PERMIT NO. 7962-3

Name of Applicant: **Riverview Farms, c/o Gary Foster**

Address: **19758 466th Ave, Bruce SD 57220** Phone: **605 690-0579**

Amount of Water Claimed: **1.11 cfs** Total Acres: **55 acres**

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

Water to be used for: **irrigation** County: **Brookings**

Type of Waste Disposal System:

Location: **15 miles northwest of Brookings**

PRIORITY Date Received: **2-11-14** Application/License Fee: **\$ 700**

Corrected Application Received: Period of Annual Use: **May 1 – September 30**

Remarks: **Requesting diversion rate greater than statutory limit**

Diversion Point: **approximate center of NE 1/4 Sec**
18-T112N-R50W

Land to be Irrigated: **E 1/2 NE 1/4 Sec 18-T112N-**
R50W

Depth of Well: **46 feet**

Well Driller:

Remarks:

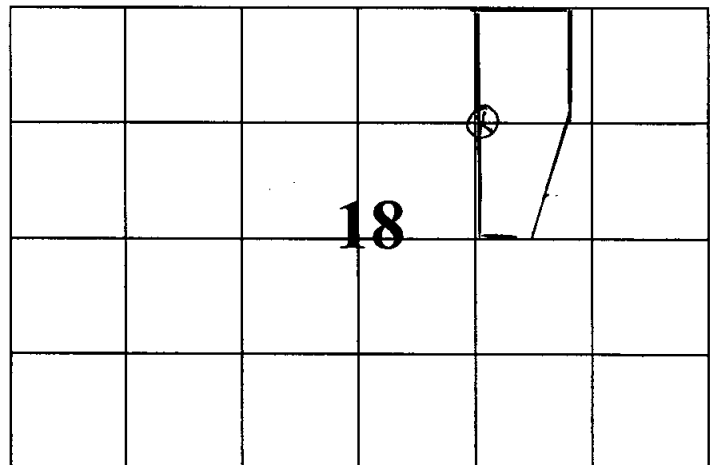
Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **2-11-14**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



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

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

No. 7962-3 (office use only)
Hydrologic Unit 10170202
Basin Sioux River
Newspaper Brookings Register
PO Box 177 57006 605-692-6271

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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 Riverview Farms or Gary Foster
(check one) ☐ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent _____
(name and complete address if different than above name)
- Mailing Address 19758 466th Ave Bruce SD 57220-5124
(Address) (City) (State) (Zip Code)
- Home Phone 605 873-2694 Cell 605 690-0579 Email _____
2. Amount of water claimed 1.11 *CFS or 500 **GPM ***AF Total Acreage 55A
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)
3. Source of water supply well
4. Location of point of diversio NE 1/4 of Sec 18 T112 R50
(approximate center) (wells in SW 1/4 NE 1/4 section 12-T104N-R53W) County Brookings
5. County or counties where water will be used Brookings
6. Annual period during which water is to be used May 1 - Sept 30
7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
NE 1/4 of the NE 1/4 Sec 18 T112 50	30		
SE 1/4 of the NE 1/4 Sec 18 T112 50	25		

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

Requesting a diversion rate greater than statutory limit

I, Riverview Farms Gary Foster, 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. 7962-3

Date of first receipt of application February 11, 2014.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7962-3 to Riverview Farms c/o Gary Foster, 19758 466th Ave, Bruce SD 57220 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. 7962-3 appropriates 1.11 cubic feet of water per second from one well to be completed into the Big Sioux:Brookings Aquifer (46 feet deep) located in the approximate center of the NE 1/4 Section 18 for irrigation of 55 acres located in the E 1/2 NE 1/4 Section 18; all in T112N-R50W.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: May 1 – September 30.
3. The date from which applicant may claim right is February 11, 2014.
4. The date of approval of Permit No. 7962-3 is April 21, 2014.
5. One-fifth of the construction is to be completed on or before October 21, 2016.
6. All construction is to be completed on or before April 21, 2019.
7. Water is to be put to beneficial use on or before April 21, 2023.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

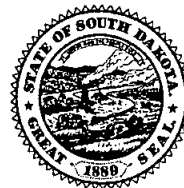
1. The well approved under Water Permit No. 7962-3 and this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 7962-3 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. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 7962-3 authorizes a maximum diversion rate of 1.11 cfs for the irrigation of 55 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER-MANAGEMENT BOARD

By: _____

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

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 ____ Have test holes been drilled ☐ Yes ☒ No Drilled by Lacey Drilling
(if yes, please provide copies of logs)

b) If existing wells, how many 1 Provide copy of log(s), if available. Drilled by _____

c) Well Depth 46 ft 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 1300 ft

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)

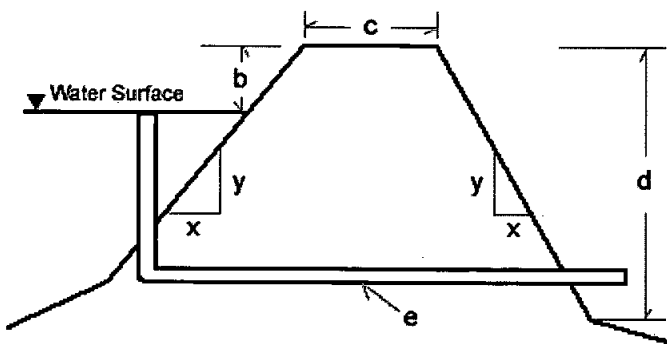
Upstream _____

Downstream _____

h) Surface Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres





PPLS: 18_T112N_R50W

Data use subject to license.

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www.delorme.com

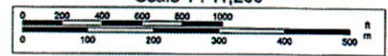


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Scale 1 : 11,200



1" = 933.3 ft

Data Zoom 14-2

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Wells — Pumps
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LACEY WELL DRILLING
~~Box 24~~
Dell Rapids, South Dakota 57022
Telephone (605) 428-5979

Down-Hole Camera
Water Specialists
Irrigation Supplies

GARY Foster (Fosters River View Farm) 2-18-14
19758 466^{1/2} Ave.
Bruce, So. Dak. 57220

Test Hole

0-3 Topsoil
3-36 Gray Gravel
36-38 Blue Clay
SW-6'

Drilled 2-18-14
By: LACEY Well Drilling Inc.
Ln: 111
Driller: JOAN Redder-Lacey
Joan Redder-Lacey

Farmer Imp & Ill
Phone # 605-692-6153
ATT Tom Pierce

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 2/11, 20 14

RECEIVED OF Farmer's Implement (Foster) 3023 E Hwy 14 Brookings SD 57006

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

Fee for Application for Permit No. <u>7962-3</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>7962-3</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. **06741**

By J. J. J. J. J.
Chief Engineer



**DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES**

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



**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 7962-3, Riverview Farms**

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. 7962-3, Riverview Farms, c/o Gary Foster, 19758 466th Avenue, Bruce SD 57220.

The Chief Engineer is recommending APPROVAL of Application No. 7962-3 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 well approved under Water Permit No. 7962-3 and 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 well authorized by Permit No. 7962-3 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. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 7962-3 authorizes a maximum diversion rate of 1.11 cfs for the irrigation of 55 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Jeanne Goodman, Chief Engineer
April 4, 2014

REPORT TO THE CHIEF ENGINEER

WATER PERMIT APPLICATION NO. 7962-3

Riverview Farms c/o Gary Foster

March 12, 2014

Water Permit Application No. 7962-3 proposes to appropriate groundwater at a maximum diversion rate of 1.11 cubic feet of water per second (cfs) from one well to be completed into the Brookings management unit of the Big Sioux aquifer. The well is expected to be 46 feet deep and located in the approximate center of the NE¼ of Section 18, T112N-R50W. Water will be used to irrigate 55 acres located in the E½ NE¼ of Section 18, T112N-R50W. The applicant is requesting a diversion rate in excess of the statutory limit.

AQUIFER: Brookings management unit of the Big Sioux aquifer (BS: B)

HYDROGEOLOGY:

The Brookings management unit of the Big Sioux aquifer is an alluvium mantled outwash consisting of well-sorted, permeable, medium to coarse sand and fine to medium gravel. Generally, the aquifer is underlain by till and, when buried, overlain by till. The aquifer is often under unconfined conditions near the Big Sioux River and can be confined elsewhere (Hamilton, 1989).

Stonesifer (2013) constructed a composite map based on delineation of the Big Sioux: Brookings aquifer by Hamilton (1989), Hansen (1988), Hedges and others (1982), and Kume (1985). In total the Big Sioux: Brookings aquifer underlies approximately 323,000 acres of Brookings, Codington, Deuel, Hamlin, Kingsbury, and Moody Counties (Hamilton, 1989; Hansen, 1988; Hedges and others, 1982; Kume, 1985; Stonesifer, 2013). From the average thickness of 30 feet and a commonly assumed storativity of 0.15, the Big Sioux: Brookings aquifer is estimated to contain 1,453,000 acre-feet (ac-ft) of recoverable water in storage (Hedges and others, 1982; Hamilton, 1989; Kume, 1985).

The Brookings management unit is hydraulically connected to the North management unit to the north, the Battle Creek aquifer to the west, the North Deer Creek, Unnamed Creek, Six Mile Creek, and Aurora management units to the east, and the Moody management unit to the south (Hedges and others, 1982). The aquifer is hydraulically connected to many surface waters, specifically the Big Sioux River. Water in the aquifer generally moves south and locally towards the river (Hamilton, 1989).

The proposed well site is located within one half mile of the Big Sioux River. The test hole log submitted recorded gravel from three to 36 feet below ground surface with a static water level of six feet below ground surface. This generally corresponds with other data of the area (SD Geological Survey, 2014).

SDCL 46-2A-9

Pursuant to SDCL 46-2A-9, a permit to appropriate water may be issued only if there is a reasonable probability that there is unappropriated water available for the applicant's proposed

use, that the proposed diversion can be developed without unlawful impairment of existing rights and that the proposed use is a beneficial use and in the public interest. This report will address the availability of unappropriated water and existing rights from the aquifer that are pertinent to this application.

WATER AVAILABILITY:

The probability of unappropriated water available from an aquifer can be evaluated by considering SDCL 46-6-3.1, which requires "No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source." If the source of the water is older or lower than the Greenhorn Formation and a public water system has applied for a permit, the Board need not consider the recharge/withdrawal issue. Here, a public water system is not involved and the aquifer is not older or lower than the Greenhorn Formation therefore withdrawal/recharge issue must be considered.

HYDROLOGIC BUDGET:

Recharge:

Recharge to the Big Sioux: Brookings aquifer occurs through infiltration of precipitation in areas where the aquifer is at or near land surface, seepage through till, lake deposits, and underlying aquifers, and inflow from the Big Sioux River and its tributaries during times of high stages (Hamilton, 1989; Kume, 1985).

Hedges and others (1985) determined the average recharge rate to the entire Big Sioux aquifer system by base flow analysis to be 6.5 inches per year (in/yr). Koch (1980) estimated average recharge to the Big Sioux aquifer in Brookings, Deuel, and Hamlin Counties by modeling to be 6.57 in/yr to the unconfined portions. Kume (1985) estimated recharge to the Big Sioux aquifer in Hamlin and Deuel Counties to be 5.11 in/yr. Hansen (1988) estimated recharge to the Big Sioux aquifer in Moody County by modeling to be on average 4.85 in/yr. Hedges and others (1985) estimated recharge specifically of the Brookings management unit by observation well analysis to be 4.0 in/yr; this is considered the best data available due to its emphasis on the management unit. Applying the recharge rate of this management unit to the area, recharge to the Big Sioux: Brookings aquifer is estimated to be 107,000 acre-feet per year (ac-ft/yr).

Koch (1980) indicates that even more water could be pumped than the estimated average recharge based on the concepts of induced recharge from surface waters due to pumpage and capture of water to pumpage prior to evapotranspiration or natural outflow.

Discharge:

Discharge from the aquifer occurs through evapotranspiration in areas where the aquifer is at or near land surface, outflow to the Big Sioux River and its tributaries during times of low stage, and well withdrawals (Hamilton, 1989; Kume, 1985). There are a total of 266 water rights/permits appropriating water from the aquifer and two pending water permit applications.

Non-irrigation water rights/permits limited by annual volume currently appropriate 5,034 ac-ft/yr of water, and non-irrigation water rights/permits limited by diversion rate currently appropriate

water at a total maximum diversion rate of 18.939 cfs. There are a total of ten future use permits reserving a total of 9,727 ac-ft/yr of water from the aquifer (Water Rights, 2014b).

Brookings-Deuel-Kingbrook and Sioux rural water systems and the municipalities of Lake Norden and Volga are required to report withdrawals from the Big Sioux: Brookings aquifer for some or all water rights/permits. Reported use of a public water supply system may not be an accurate reflection of expected use. Eventual full use of an appropriation for public water supply systems is often expected to account for future growth. Each of these entities have future use permits and subsequently any appropriation permitted but not put to beneficial use can revert back to the future use reservation. Future use permits are able to be fully developed (Water Rights, 2014b).

The municipalities of Clear Lake, Hayti, and Bruce currently use a rural water system as a primary source and their water rights/permits are retained as a standby source for security, such as fire protection. These water rights are all limited by diversion rate, totaling 2.81 cfs (Water Rights, 2014b).

The amount of water that can be expected to be withdrawn by non-irrigation use water rights/permits and future use permits at the current appropriation/reservation amount can be estimated by assuming:

- 1) water rights/permits limited by an annual volume will pump the entire volume appropriated annually,
- 2) water rights/permits limited only by diversion rate will pump at the maximum permitted diversion rate 60 percent of the time,
- 3) future use permits can be fully developed, and
- 4) water rights/permits authorized to municipalities using rural water systems as a primary source will not withdraw water.
- 5) the reported use of municipalities and rural water systems still expecting future growth is not reflective of expected average annual use; assumptions 1) and 2) will apply.

Considering these water use expectations, non-irrigation water appropriations/reservations are expected to account for 21,768 ac-ft/yr to be withdrawn from the Big Sioux: Brookings aquifer (Water Rights, 2014b).

The average of the annual irrigation pumpage is currently 8,684 ac-ft/yr, but varies from a minimum of 1,043 ac-ft/yr to a maximum of 19,483 ac-ft/yr (Water Rights, 1980-2014). There is a large variability in the data set, which can be seen in Figure 1. The annual irrigation pumpage can be attributed to two major factors: climatic and economic conditions. For example, during the drought and high commodity prices in 2012, the irrigation pumpage was much greater than the average. While the relationship between these variables is obvious, these variables are difficult to predict.

The annual irrigation appropriation from this aquifer has remained fairly steady until just recently. Since the beginning of 2013, nine irrigation water permits have been approved, authorizing irrigation of 1,272 acres. Two pending applications propose to irrigate a total of 380 acres (Water Rights, 2014b). Annual use of these permits has not yet been reported. While the maximum allowable application rate is two feet per acre per year (ft/ac/yr), in most instances

irrigators in the geographic region apply less than one ft/ac/yr. To be realistic yet conservative, assuming an application rate of one ft/ac/yr results in an expected use of these newly approved and pending permits, if approved, of 1,652 ac-ft/yr.

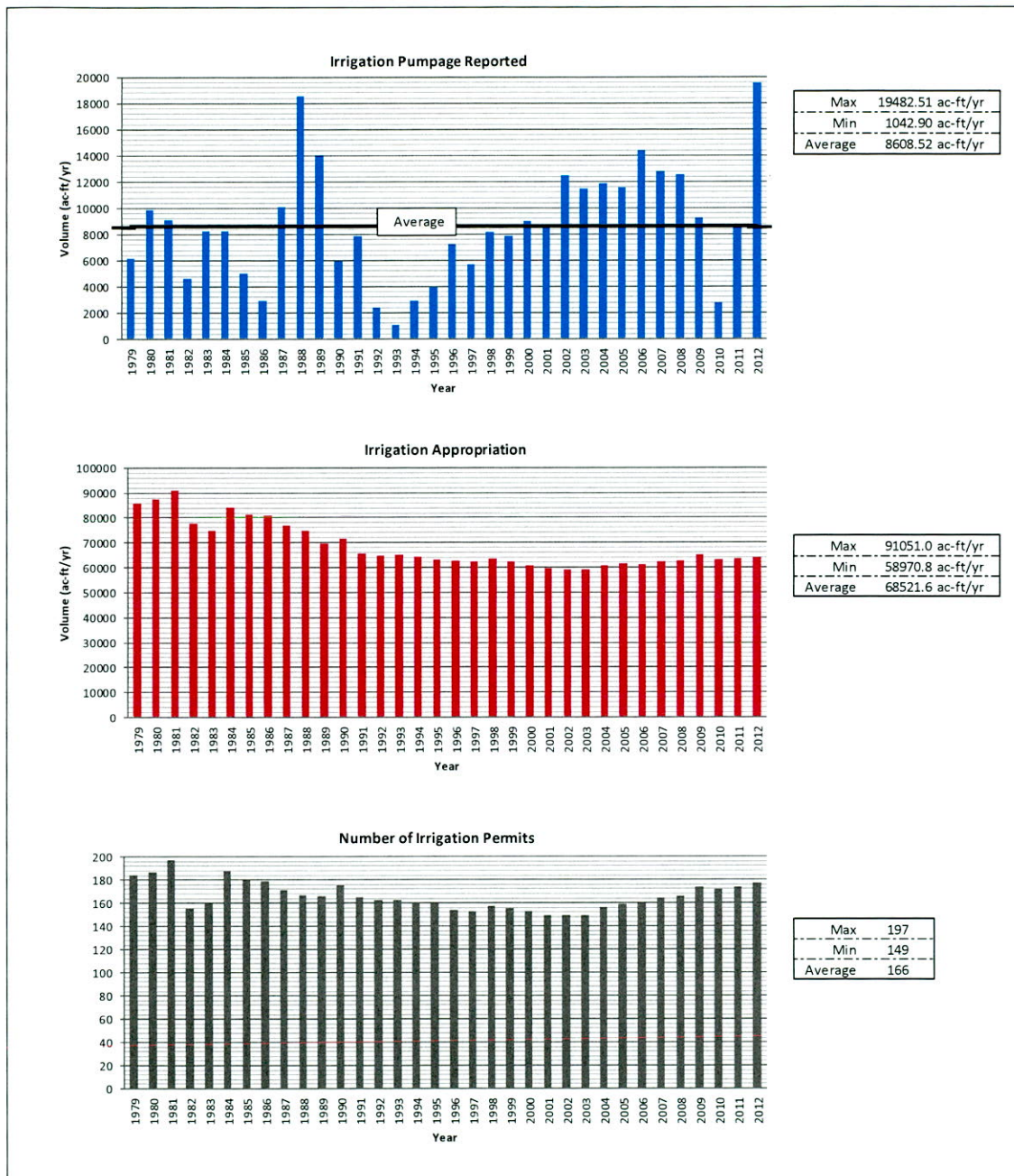


Figure 1: Historic irrigation water use from the Big Sioux: Brookings aquifer (Water Rights, 1980-2013)

While there are numerous domestic wells on file, many are no longer used as primary sources since rural water systems have been introduced in the area. Considering this, and the relatively small withdrawal authorization of a domestic well, the annual quantity of water withdrawn due

to domestic wells is not significant to the hydrologic budget of the Big Sioux: Brookings aquifer (Water Rights, 2014c).

Hydrologic Budget:

Recently, courts have ruled that if average annual recharge is used, average annual withdrawals should also be used to determine if unappropriated water is available and that data must be presented to show that it is probable that the average annual recharge exceeds the average annual discharge by at least the amount requested by the water permit application being considered (Memorandum Decision, April 29, 2005; Memorandum Decision, April 11, 2012).

The average annual recharge to the Big Sioux: Brookings aquifer is estimated to be 107,000 ac-ft/yr. The average annual withdrawal is expected to be at most 32,104 ac-ft/yr. Therefore, based on the hydrologic budget of the Big Sioux: Brookings aquifer, unappropriated water is available from the Big Sioux: Brookings aquifer to support the proposed appropriation.

OBSERVATION WELL DATA:

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

The DENR-Water Rights Program currently monitors 54 observation wells completed into the Big Sioux: Brookings aquifer that produces representative data of the aquifer. Most of these wells record steady or increasing water levels in the aquifer over the period of record. While some observation wells appear to record a decreasing water level trend, further analysis reveals that these decreases are a record of the drawdown due to pumpage of new wells in the area and do not reflect an overall decrease in water availability in the aquifer. In many cases the water table has since remained at a similar level since the development (Water Rights, 2014a). Therefore, there are no observation wells in the Big Sioux: Brookings aquifer that indicate that withdrawals have exceeded recharge.

The nearest observation well that shows representative data of the aquifer, BG-75G, is located approximately one mile southwest of the proposed well site. The hydrograph of this observation well is shown in Figure 2 (Water Rights, 2014a). Water levels in this observation well often displays cyclic conditions, recharging during wet years and declining during dry years. Pumpage is generally masked by climatic conditions. This indicates that groundwater is available for capture. Unappropriated water is available from the Big Sioux: Brookings aquifer to support the proposed appropriation.

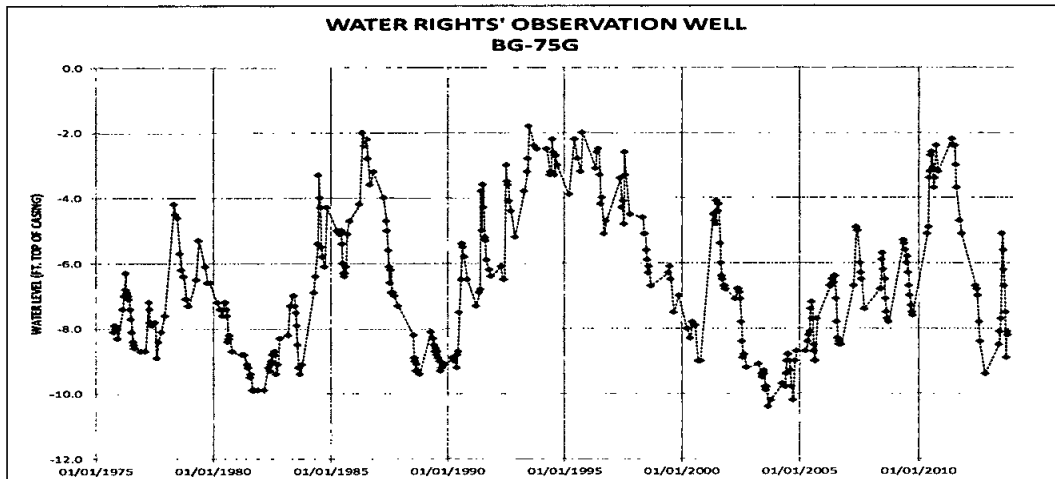


Figure 2: Hydrograph for observation well BG-75G (Water Rights, 2014a)

EXISTING WATER RIGHTS:

There are eight water rights/permits appropriating water from the Big Sioux: Brookings aquifer within one mile of the proposed well site. There is one domestic well on file that appears to be completed into the Big Sioux: Brookings aquifer within one mile. The nearest well, authorized to Water Right No. 2667-3 Bret Adee, is located approximately 3,000 feet away (Water Rights, 2014b; Water Rights, 2014c).

The water table conditions of the aquifer in this area dictate that water level drawdown due to pumping will not extend far from the wells. The close proximity of the wells to the Big Sioux River indicates that drawdown due to pumpage would be reduced due to the induced recharge. Also, the river is a strong hydraulic boundary. However, precise drawdown cannot be quantified without aquifer testing.

The Water Management Board has consistently recognized that to place water to maximum beneficial use a certain amount of drawdown may occur. Therefore, nearby adequate wells defined by ARSD 74:02:20(7) are not expected to be adversely impaired due to the diversion from the proposed well.

Conditions could occur where withdrawal exceeds the average annual recharge. In which case, the saturated thickness of the already thin aquifer could be reduced. If the saturated thickness is reduced to the extent that water rights/permits can no longer pump at their developed or "historically established" diversion rates, this may be considered an adverse impact.

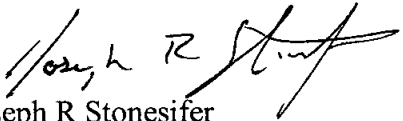
SDCL 46-5-6

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

This water permit application proposes to divert at a rate of 1.11 cfs over 55 acres, equating to 1.41 cfs per 70 acres. The applicant has indicated that a center/sweep pivot will be implemented. The diversion rate could be a requirement for operation of the pivot.

CONCLUSIONS:

1. The water permit application proposes to appropriate groundwater at a maximum diversion rate of 1.11 cfs from one well to be completed into the Big Sioux: Brookings aquifer for the irrigation of 55 acres.
2. Unappropriated water is available from the Big Sioux: Brookings aquifer to supply the proposed appropriation.
3. The proposed diversion will not adversely impair existing nearby wells.
4. This application has requested an additional diversion rate in excess of the statutory limit. This could be an operational requirement of the irrigation pivot.
5. If the saturated thickness is reduced in this thin aquifer with limited storage to the extent that water rights/permits can no longer pump at their developed or "historically established" diversion rates, this may be considered an adverse impact.



Joseph R Stonesifer
SD DENR-Water Rights Program

Approved by



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

- Hamilton, L.J. 1989. Water Resources of Brookings and Kingsbury Counties, South Dakota. Water-Resources Investigations Report 88-4185, 82 p. USGS, Huron, South Dakota.
- Hansen, H.S. 1988. Appraisal of the Water Resources of the Big Sioux Aquifer, Moody County, South Dakota. Water-Resources Investigations Report 87-4057. USGS, Huron, South Dakota.
- Hedges, L.S., Burch, S.L., Iles, D.L., Barari, R.A., and Schoon, R.A. 1982. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.

- Hedges, L.S., Allen, J., and Holly, D.E. 1985. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa. Task 7: Ground Water Recharge. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
- In the Matter of Water Permit Application No. 7239-3, by Hanson County Dairy v. Robert Bender and Stace Nelson, South Dakota First Judicial Court Civ. No. 11-54 (Memorandum Decision, April 11, 2012)
- In the Matter of Water Permit Application No. 6431-3, by Phillip W. Hines v. SD Department of Environment and Natural Resources, South Dakota Sixth Judicial Court Civ. No. HU04-37 (Memorandum Decision, April 11, 2012)
- Koch, N.C. 1980. Appraisal of the Water Resources of the Big Sioux Aquifer, Brookings, Deuel, and Hamlin Counties, South Dakota. Water-Resources Investigations Report 80-100. USGS, Huron, South Dakota.
- Kume, J. 1985. Water Resources of Deuel and Hamlin Counties, South Dakota. Water-Resources Investigations Report 84-4069. USGS, Huron, South Dakota.
- SD Geological Survey. 2014. Lithologic Logs Database, South Dakota Department of Environment & Natural Resources Geological Survey, Vermillion, South Dakota.
- Stonesifer, J. 2014. Report on Water Permit Application No. 7854-3 for David Ulvstad. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 1980-2014. "Annual Irrigation Summary by Aquifer": SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2014a. Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2014b. Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2014c. Water Well Completion Reports, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.

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APR 28 2014

Affidavit of Publication WATER RIGHTS PROGRAM

State of South Dakota

10/

Exhibit "A"

ss

County of Brookings

Jennifer Milligan of said county, first duly sworn, on oath, says: That she is the office clerk of THE BROOKINGS REGISTER, a daily newspaper, printed and published in the City of Brookings, in said County of Brookings, and State of South Dakota; that she has full and personal knowledge of the facts herein stated; that said newspaper is a legal newspaper and has a bona fide circulation of at least two hundred copies of each issue daily; that said newspaper has been published within the said County of Brookings and State of South Dakota, for more than one year prior to the first publication of Exhibit "A," hereto attached and herein mentioned, and was and is printed that the

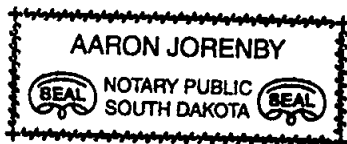
Leg#399 Notice of Applications 7962-3 and 7963-3

same was published, is hereto attached marked Exhibit said newspaper for _____ 1 times, to-wit:

April 11, 2014

said Exhibit "A" inures to the sole benefit for the publishers of said newspaper; 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:

thirty dollars and sixty-five cents \$30.65



April

14th

day of

2014

Notary Public in and for the County of Brookings, South Dakota.
My Commission expires February 22, 2020.

Legal 399, 7962-3, 7963-3
NOTICE OF APPLICATION NOS. 7962-3 AND 7963-3 TO APPROPRIATE WATER
Notice is given that Riverview Farms, c/o Gary Foster, 19758 466th Ave, Bruce SD 57220 has filed the following applications for a water permit.
Application 7962-3 proposes to appropriate 1.11 cubic feet of water per second (cfs) from one well to be completed into the Big Sioux: Brookings Aquifer (46 feet deep) located in the approximate center of the NE 1/4 Section 18 for irrigation of 55 acres located in the E 1/2 NE 1/4 Section 18; all in T112N-R50W. The applicant is requesting a diversion rate greater than the statutory limit. Application 7963-3 proposes to irrigate 33 new acres. Water Right No. 4608-3 appropriates 1.78 cfs from two wells completed into the Big Sioux: Brookings Aquifer (37 feet deep) located in the NW 1/4 SW 1/4

Section 7 to irrigate 132 acres located in the SW 1/4 Section 7; all in T112N-R50W. This application proposes to irrigate 33 new acres located in the SW 1/4 and the SW 1/4 SE 1/4 Section 7-T112N-R50W from the existing wells. This application, if approved, does not authorize any increase in the developed diversion rate.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application Nos. 7962-3 and 7963-3 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 these applications, as recommended, unless a petition is filed opposing the applications or the applicant files a petition contesting the Chief Engineer's recommendations. If a petition opposing the applications or contesting the recommendations is filed, then a hearing will be scheduled and the Water Management Board will consider these applications. Notice of the hearing will be given to the applicant and any person filing a petition. Any person interested in opposing or supporting these applications or recommendations must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendations. 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 April 21, 2014.

The petition may be informal, but must include a statement describing the petitioner's interest in the applications, the petitioner's reasons for opposing or supporting the applications, 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 address to request copies of the information pertaining to these applications. Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published once at the total approximate cost of \$30.65.



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

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



April 7, 2014

Brookings Register
PO Box 177
Brookings SD 57006

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application Nos. 7962-3 and 7963-3 to Appropriate Water. Please publish the notice once on April 11, 2014. 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 Riverview Farms, c/o Gary Foster, 19758 466th Ave, Bruce SD 57220 (Ph # 605-873-2694).

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

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

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
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NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATE, CONTACT
THE NEWSPAPER(S) RIGHT AWAY.

April 7, 2014

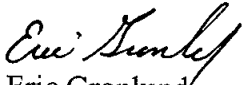
Riverview Farms
Gary Foster
19758 466th Ave
Bruce SD 57220

Dear Mr. Foster:

Water Permit Application Nos. 7962-3 and 7963-3 for irrigation use have been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Brookings Register printed at Brookings SD (Ph # 605-692-6271). You will need to contact the newspaper(s) and authorize publication of this notice. For your information, a copy of the notice, the recommendations of the Chief Engineer and reports on the applications 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(s) has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the applications.

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 applications.

Instruction to Newspaper - Publish the Notice on April 11, 2014. 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 NOS. 7962-3 and 7963-3 to Appropriate Water

Notice is given that Riverview Farms, c/o Gary Foster, 19758 466th Ave, Bruce SD 57220 has filed the following applications for a water permit.

Application No. 7962-3 proposes to appropriate 1.11 cubic feet of water per second (cfs) from one well to be completed into the Big Sioux:Brookings Aquifer (46 feet deep) located in the approximate center of the NE 1/4 Section 18 for irrigation of 55 acres located in the E 1/2 NE 1/4 Section 18; all in T112N-R50W. The applicant is requesting a diversion rate greater than the statutory limit.

Application No. 7963-3 proposes to irrigate 33 new acres. Water Right No. 4608-3 appropriates 1.78 cfs from two wells completed into the Big Sioux:Brookings Aquifer (37 feet deep) located in the NW 1/4 SW 1/4 Section 7 to irrigate 132 acres located in the SW 1/4 Section 7; all in T112N-R50W. This application proposes to irrigate 33 new acres located in the SW 1/4 and the SW 1/4 SE 1/4 Section 7-T112N-R50W from the existing wells. This application, if approved, does not authorize any increase in the developed diversion rate.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application Nos. 7962-3 and 7963-3 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 these applications, as recommended, unless a petition is filed opposing the applications or the applicant files a petition contesting the Chief Engineer's recommendations. If a petition opposing the applications or contesting the recommendations is filed, then a hearing will be scheduled and the Water Management Board will consider these applications. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting these applications or recommendations must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendations. 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 April 21, 2014.

The petition may be informal, but must include a statement describing the petitioner's interest in the applications, the petitioner's reasons for opposing or supporting the applications, 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 these applications.

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

Published once at the total approximate cost of _____.



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

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PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov



MAY 02 2014

Riverview Farms
Gary Foster
19758 466th Ave
Bruce SD 57220

Dear Mr. Foster:

Enclosed are Water Permit Nos. 7962-3 and 7963-3 authorizing construction of your water diversion systems and beneficial use of the water, not exceeding the limits as specified in the Water Permits.

Form 10's, *Notice of Completion of Works and Application of Water to Beneficial Use*, are enclosed. Please return the completed forms after you have finished the systems and have put the water to beneficial use. An investigation can then be scheduled so the water licenses may be issued, thus completing the acquisition of a water right.

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

Sincerely,

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

enclosures

7962-3
RECEIVED
JUL 16 2014
WATER RIGHTS
PROGRAM

NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USE

Date 7/15/14

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

FROM: River View Farms 90 Gary Foster
(name)

19758 466th Ave
(address)

Bruce SD 57220
(city, state, zip)

605-873-2694
(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.

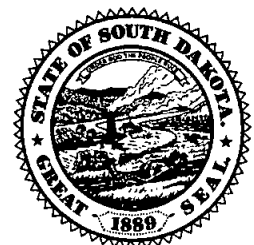
Water Permit No. 7962-3 states that the water use system is to be constructed by
April 21, 2019 , and water is to be put to beneficial use by April 21, 2023 .
(date) (date)

The water use system was completed on July 7, 2014 .
(date)

Applying the water to beneficial use was completed on July 11, 2014 .
(date)

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

[Signature]
(signature)





**DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES**

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



July 16, 2014

7962-3

7963-3

Gary Foster
River View Farms
19758 466th Ave
Bruce SD 57220

Dear Mr. Foster:

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

The projects are 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 permits.

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

79623

Date: 5/31/2014

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 7962-3

I have this day, 28 October 2014, made a thorough examination of the water use system constructed by Riverview Farms or Gary Foster, 19758 466th Ave, Bruce, SD 5720-5124 holder of Permit No. 7962-3, bearing the priority of 11 February 2014 authorizing the diversion of 1.11 cu. ft. per second of the waters of the Big Sioux: Brookings aquifer for irrigation purposes, in Brookings County.

Inspection contact & relationship **Gary Foster, owner**
to permit holder, if applicable:

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Lacey Well Drilling
- 2) No. of Wells one
- 3) Depth(s) 36 feet
- 4) Well log is available Yes

Comments: xx

Casing:

- 1) Diameter 14 inches
- 2) Length 26 feet
- 3) Type PVC

Screen:

- 1) Type PVC
- 2) Length 10 feet
- 3) Static water level 5 feet (16 May 2014)

Pump:

- 1) Make Grundfos (submersible)
- 2) Model 475S25-4
- 3) Size 6-inch
- 4) Capacity 450 GPM

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

- 1) Type Aluminum
- 2) Size 8 inches
- 3) Length 50 feet

Comments: **Above ground pipe**

C. Works used to apply water to beneficial use:

Center pivot located @ Lat/Lon: 44.51154/96.87328:

- 1) Make Lockwood
- 2) Overall length 1298 feet
- 3) Number of towers 7
- 4) End gun Nelson 100
- 5) Capacity 450 GPM

Chemigation Equipment:

- 1) Does chemigate No

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Yes

If no, describe: na

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

List any extended period of nonuse: na

- 3) Exceptions to compliance are: none

E. Condition and Location:

1. The system is in good condition with the point(s) of diversion located as follows: 1130 feet south and 1335 feet west of the NE corner of Section 18, T112N-R50W, Lat/Lon: 44.51149/-96.87329.

2. The works are capable of diverting and conveying to the place of use 1.0 cu. ft. per second of water which is to be used for irrigation. Water has been put to beneficial use to the maximum extent as follows:

NE¼NE¼ Sec. 18, T112N-R50W: 31.3 acres

SE¼NE¼ Sec. 18, T112N-R50W: 18.8 acres

comprising a total of 50.1 acres of land and the license should be issued for 1.0 cfs.

3. All structures, wells and lands on map Yes

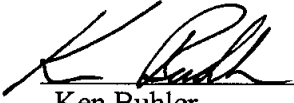
If no, describe: na

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

na

Report of Examination of Works

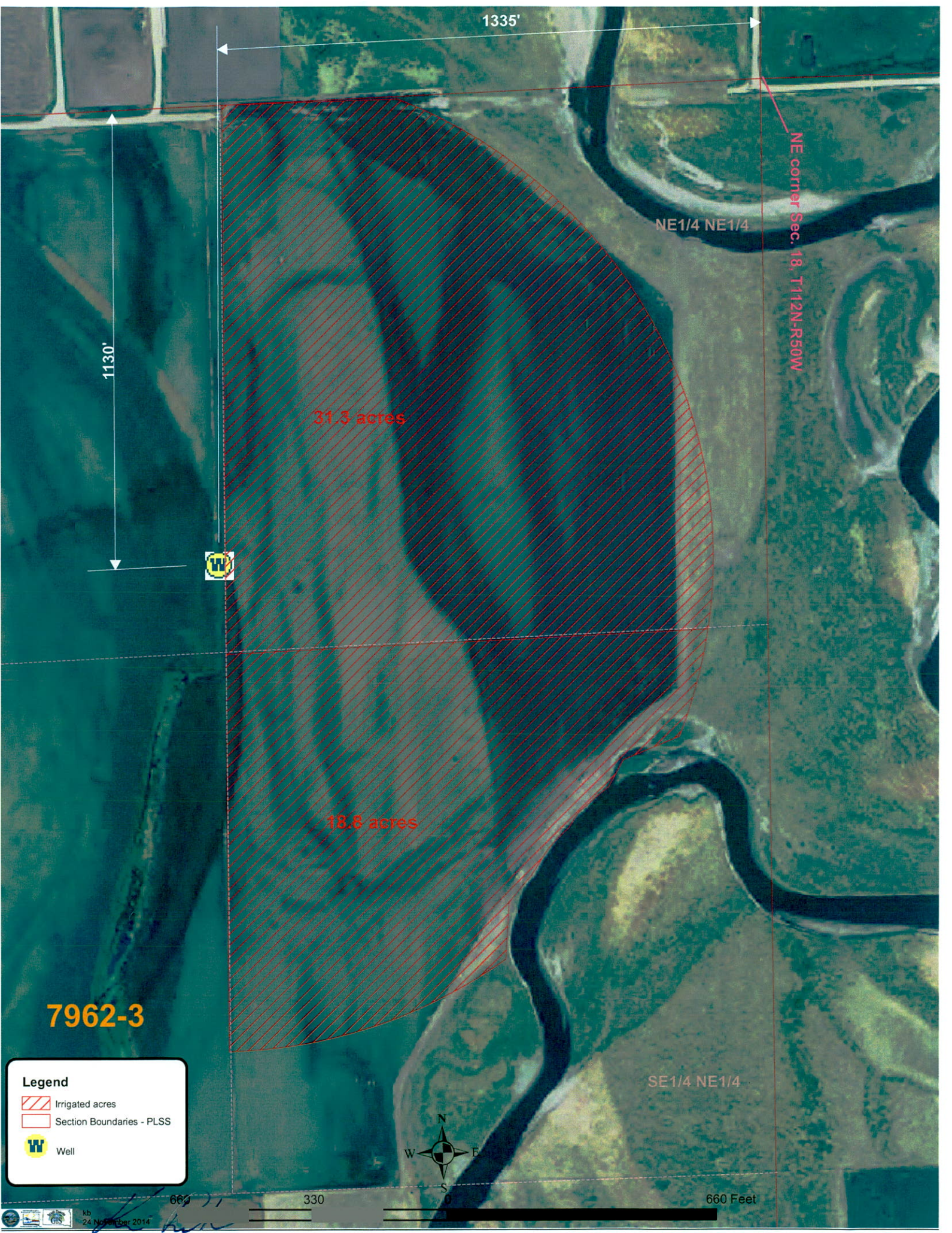
Permit No. 7962-3



Ken Buhler

DENR, Water Rights Program

Date report completed: **24 November 2014**



1335'

1130'

31.3 acres

18.8 acres

NE1/4 NE1/4

NE corner Sec. 18, T112N-R50W

SE1/4 NE1/4

7962-3

Legend

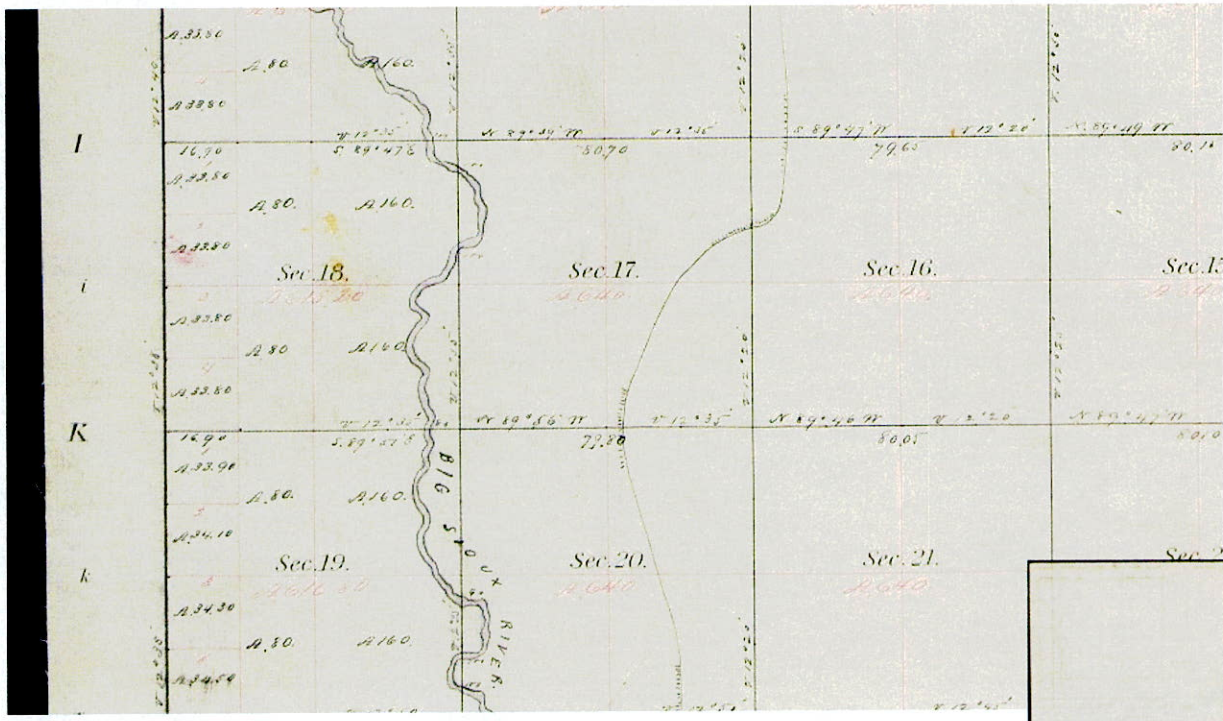
-  Irrigated acres
-  Section Boundaries - PLSS



Well



660 Feet



25%

[zoom](#)
[view](#)



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

MAR 19 2015

7962-3

Gary Foster
Riverview Farms
19758 466th Ave
Bruce SD 57220

Dear Mr. Foster:

Enclosed is Water License No. 7962-3. 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 the owner of an existing well, such as the well authorized by Water Right No. 7962-3, 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.

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

Sincerely,

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

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 7962-3**

(1) Riverview Farms, % Gary Foster, 19758 466th Ave., Bruce SD 57220 made Application No. 7962-3, February 11, 2014 for a water permit to divert 1.11 cubic feet of water per second from ground water (one well – Big Sioux Brookings Aquifer), Brookings County, South Dakota for irrigation purposes. Permit No. 7962-3, with a priority date of February 11, 2014 was approved April 21, 2014 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before April 21, 2019 and for the application to beneficial use of said water on or before April 21, 2023.

The Permit holder submitted a "*Notice of Completion of Works and Application of Water to Beneficial Use*" on July 16, 2014. The "*Notice*" stated the water use system was completed on July 7, 2014 and the water placed to beneficial use on July 11, 2014.

(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 1.00 cubic feet of water per second for beneficial use. The location of the diversion point is 1,130 feet south and 1,335 feet west of the NE corner of Section 18, T112N, R50W (NW ¼ NE ¼ - approximate center of the NE ¼)

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

Section 18, T112N, R50W	NE ¼ NE ¼	31.3 acres
	SE ¼ NE ¼	18.8 acres
	Total	50.1 acres

(4) Pursuant to South Dakota Water Law 46-5-30.1 Riverview Farms, 19758 466th Ave., Bruce SD 57220 the holder and/or owner of Water Right No. 7962-3 is issued a license to appropriate water, the right to use 1.00 cubic feet of water per second from ground water (one well – Big Sioux Brookings Aquifer) with a priority date of February 11, 2014 from the location 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. 7962-3 and subject to the following qualifications:

- The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
- The well authorized by Permit No. 7962-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with the Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. *The well was completed in May, 2014 by Lacey Well Drilling Inc. A copy of the well log is on file with the Water Rights Program.*
- Pursuant to SDCL 46-5-6 which allows for a greater diversion rate if the method of irrigation, time constraints or type of soils so requires, Water Right No. 7962-3 authorizes a maximum diversion rate of 1.00 cfs for the irrigation of 50.1 acres with an annual volume not to exceed 2 acre feet of water per acre per year. *(The original qualification specified 1.11 cfs for irrigation of 55 acres; the qualification has been modified to reflect what was actually developed.)*

- This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

Jeanne Goodman

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

MAR 19 2015

date

