

WATER PERMIT NO. 7323-3

Name of Applicant: **Barry & Robin Vculek**

Address: **1109 S 7th St, Oakes ND 58474** Phone: **701 742-3050**

Amount of Water Claimed: **3.56 cfs** Total Acres: **264 acres**

Source of Water Supply: **groundwater (2 wells)**

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

Type of Waste Disposal System:

Location: **10 miles northwest of Eureka**

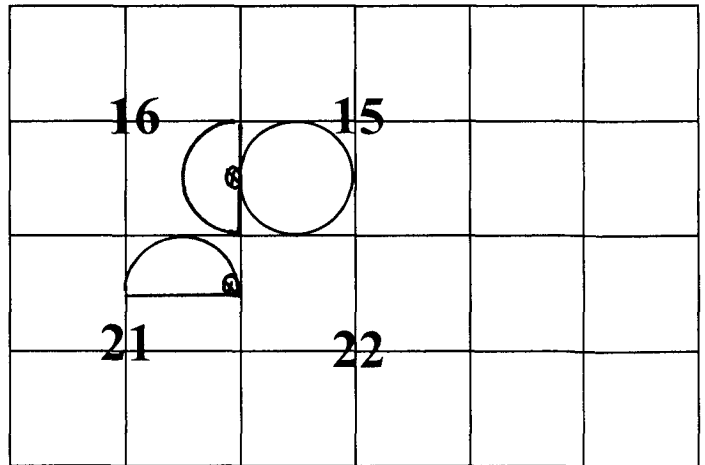
PRIORITY Date Received: **2-15-12** Application/License Fee: **\$ 1,250.00**

Corrected Application Received: Period of Annual Use: **April 1 – Sept 30**

Remarks:

Diversion Point: **NE ¼ NE ¼ Sec 21 and E ½ SE ¼
Sec 16; all in T127N-R71W**

Land to be Irrigated: **N ½ NE ¼ Sec 21, E ½ SE ¼
Sec 16 and SW ¼ Sec 15; all in T127N-R77W**



Depth of Well: **65 feet**

Well Driller: **M & W Drilling**

Remarks:

Type of Map: **aerial**

Prepared by: **Jayson Johnson, FSA**

Reviewed and the Number Assigned on: **2-15-12**

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. <u>7323-3</u>	Hydrologic Unit <u>10130106</u>
	Basin <u>Missouri River</u>	
	Newspaper <u>Northwest Blade PO Box 797</u> <u>Eureka 57437</u> <u>605-281-2631</u>	

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FEB 15 2012

WATER RIGHTS
PROGRAM

Application For Permit To Appropriate Water For Irrigation

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

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

1. Name of Applicant Barry & Robin Vculek Phone 701-742-3050(check one) ☒ Owner ☐ Tenant/lesseeMailing Address 1109 So. 7 St. Oakes ND 58474
(Address) (City) (State) (Zip Code)2. Amount of water claimed 3.56*CFS or 1600**GPM ***AF Total Acreage 264
(*Cubic Feet per Second) (**Gallons per Minute) (***Acre Feet - storage capacity of dam/dugout or annual use if applicable)3. Source of water supply Ground water4. Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County McPherson

1 well SE corner of N 1/2 NE 1/4 21-127-71 (NE 1/4 NE 1/4)
1 well 1320' N of the SE corner of E 1/2 S 1/4 16-127-71 (E 1/2 SE 1/4)

5. County or counties where water will be used McPherson6. Annual period during which water is to be used April-September 307. 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
N 1/2 NE 1/4 21-127-71	66		
E 1/2 SE 16-127-71	66		
SW 1/4 15-127-71	<u>132</u>		

8. Give a description of the project. (Attach sheet if more space is needed)
Center pivot irrigation. Pumping volume calculated at 800 GPM per well.STATE OF NORTH DAKOTA)
County of Dickey) SS

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, Barry and Robin Vculek, 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 Barry & Robin VculekSubscribed and sworn to before me this 10 day of February 20 12

NANCY WIEMANN
Notary Public
STATE OF NORTH DAKOTA
My Commission Expires
April 30, 2014

Notary Public signature [Signature]

SOUTH DAKOTA
WATER PERMIT NO. 7323-3

Date of first receipt of application February 15, 2012.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7323-3 to Barry & Robin Vculek, 1109 S 7th St, Oakes ND 58474 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. 7323-3 appropriates 3.56 cubic feet of water per second from two wells to be completed into the Spring Creek:McPherson Aquifer (65 feet deep) located in NE 1/4 NE 1/4 Section 21 and E 1/2 SE 1/4 Section 16 to irrigate 264 acres located in the N 1/2 NE 1/4 Section 21, E 1/2 SE 1/4 Section 16 and the SW 1/4 Section 15; all in T127N-R71W.
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: April 1 – September 30.
3. The date from which applicant may claim right is February 15, 2012.
4. The date of approval of Permit No. 7323-3 is April 23, 2012.
5. One-fifth of the construction is to be completed on or before October 23, 2014.
6. All construction is to be completed on or before April 23, 2017.
7. Water is to be put to beneficial use on or before April 23, 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 Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 7323-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

By: Garland Erbele

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

MAY 14 2012
date



Supplemental Information

(type or print in ink)

1. Well Information - Proposed Construction

- a) Drill Hole Diameter 17 Depth 65
- b) Casing Type Plastic Diameter 12" Thickness 5/8"
- c) Screen Type Stainless steel Diameter 12" Thickness 3/8"
- d) Gravel Pack pea rock Length of Gravel Pack 50'
- e) Depth to Top of Water Bearing Material 25'
- f) Depth to Water (ground surface to water level) 20
- g) Distance to nearest existing domestic well:
- On applicant's property 1 mile On property owned by others over 1 mile

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) _____
- b) System Capacity (gallons) _____ Year Constructed _____
- c) Connected to the City of _____ Sanitary System

3. Dugout Information

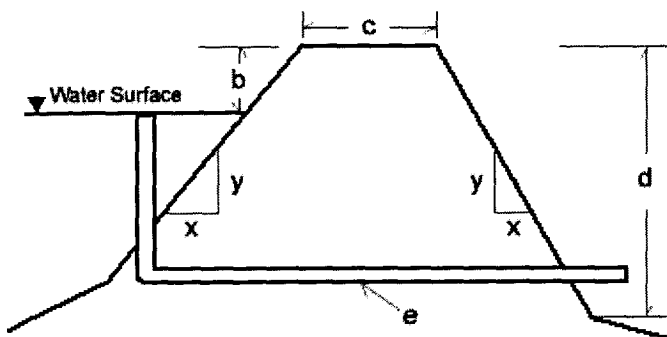
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

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

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

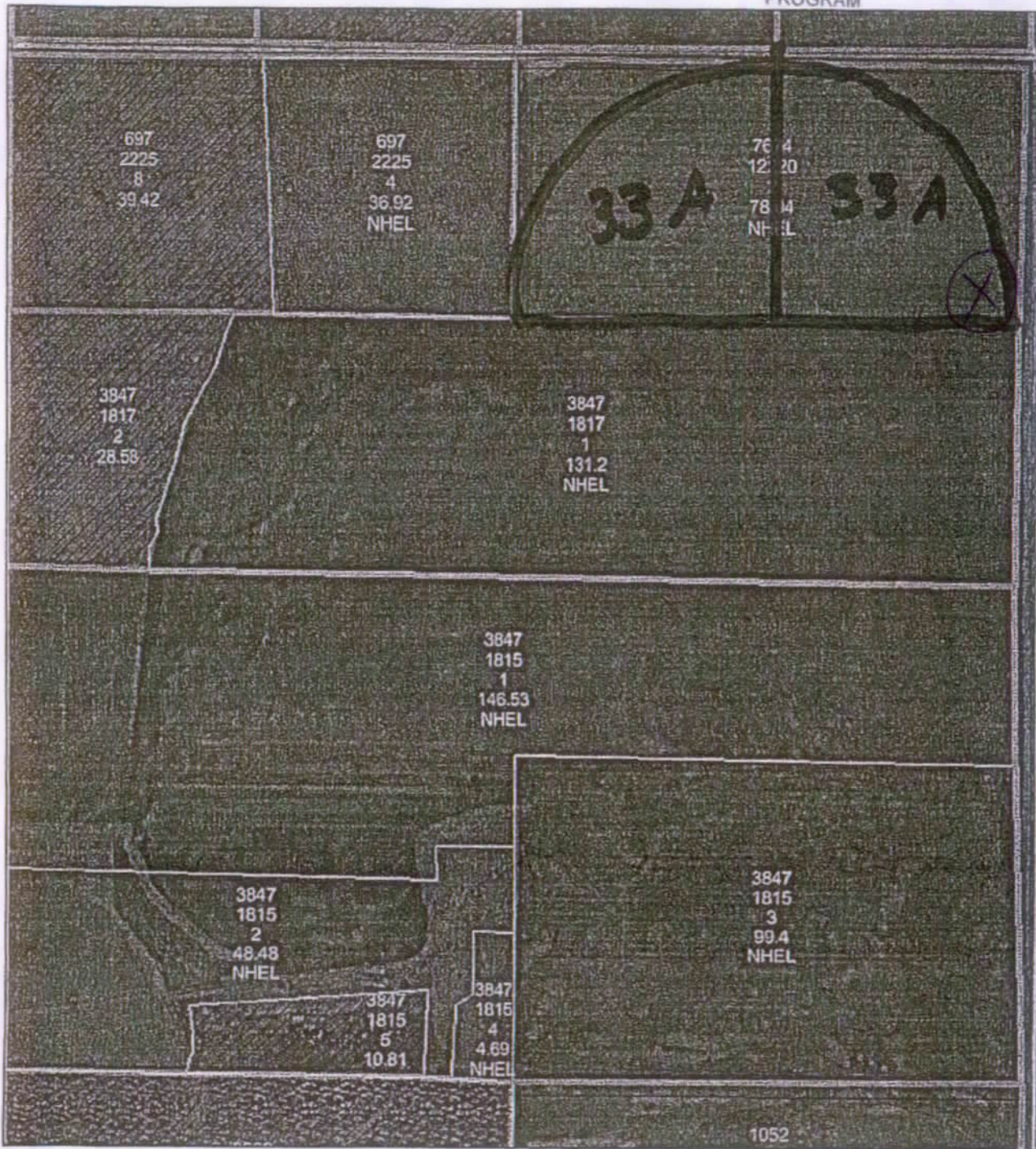
- b) Freeboard _____
- c) Crest Width _____
Crest Length _____
- d) Height _____
- e) Primary Outlet Capacity _____
If pipe, diameter _____
- f) Secondary Spillway Capacity _____
Spillway Width _____
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream _____
Downstream _____
- h) Surface Area of Impoundment _____
- i) Storage _____ Acre Feet
- j) Drainage Area Above Dam _____ Acres



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USDA - Farm Service Agency

McPherson, SD

21-127N-71W

1:8,468

May 17, 2007

Legend 2008

- Tract Boundaries
- Section-Township-Range
- Easements
- CRP
- Common Land Units
- Rangeland

Wetland Determination Identifiers

- Restricted Use
- Limited Restrictions
- Exempt from Conservation Compliance Provisions



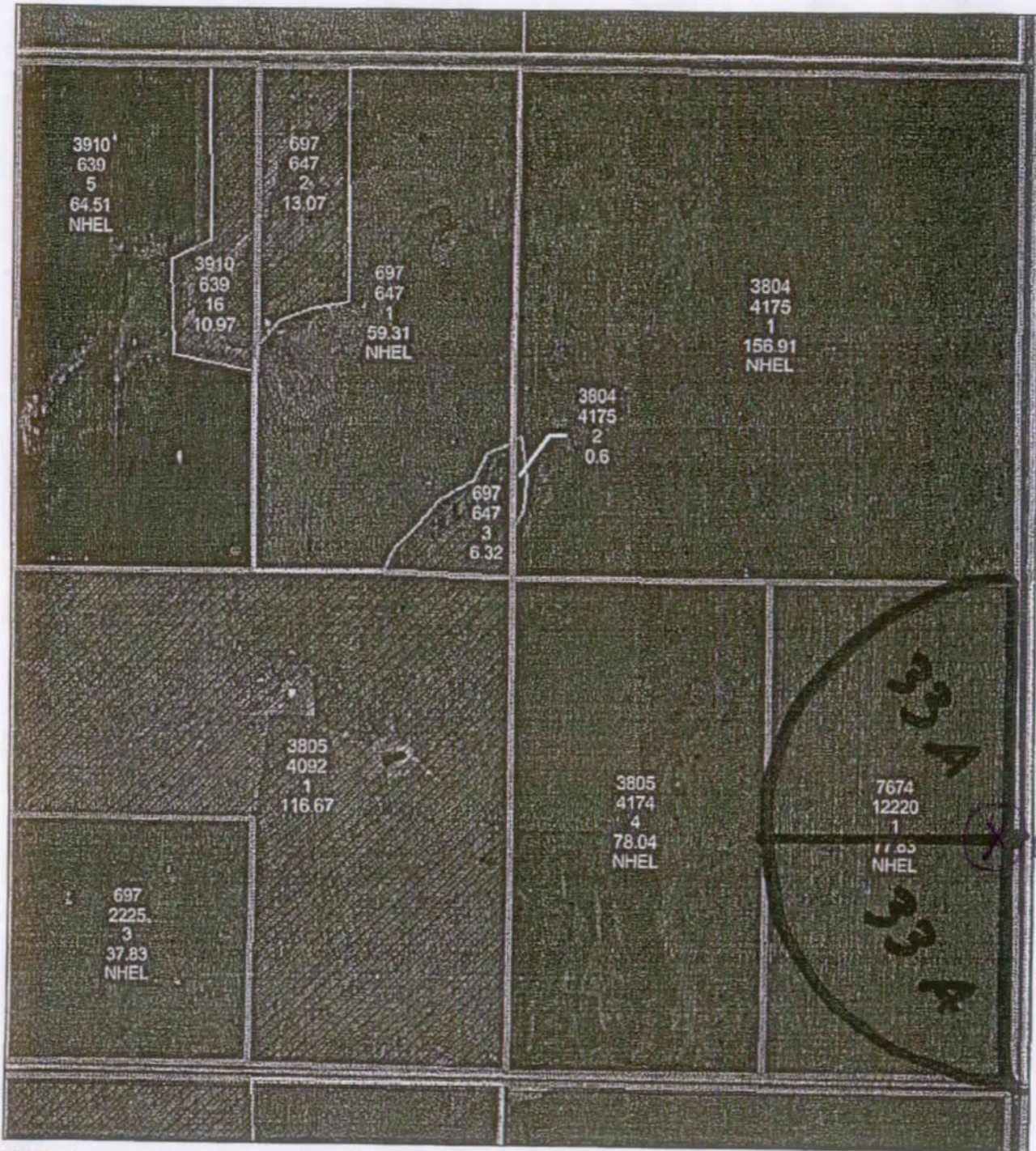
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SD-So. 8748
John FSA CEO

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WATER RIGHTS
PROGRAM



USDA USDA - Farm Service Agency

McPherson, SD

16-127N-71W

1:8,497

May 17, 2007

Legend 2008

- Tract Boundaries
- Section-Township-Range
- Easements
- CRP
- Common Land Units
- Rangeland

Wetland Determination Identifiers

- Restricted Use
- Limited Restrictions
- Exempt from Conservation Compliance Provisions



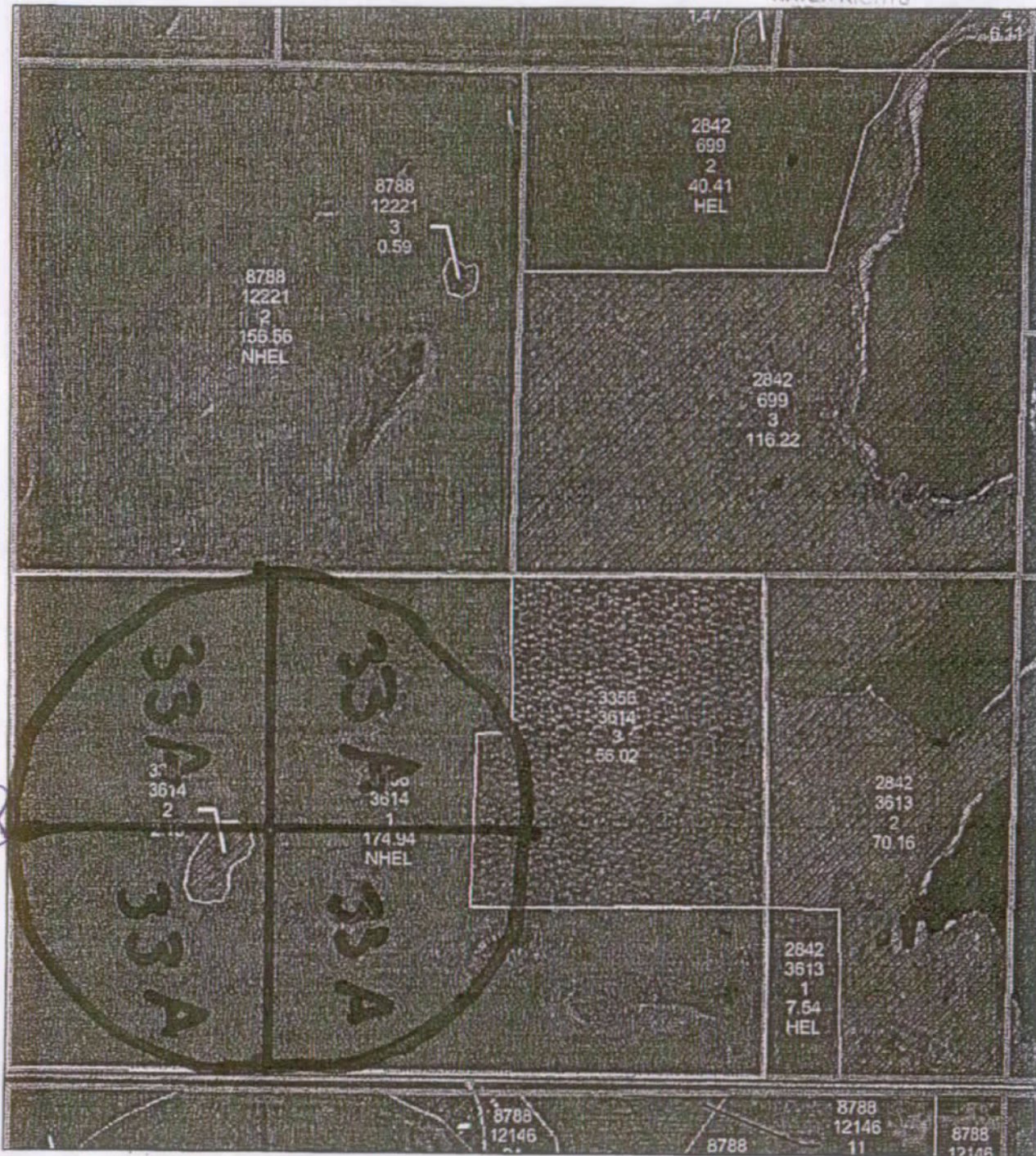
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SD - No.
Farm 8788
FSA-CEB

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WATER RIGHTS



USDA - Farm Service Agency

McPherson, SD

15-127N-71W

1:8,567

May 17, 2007

Legend

- Tract Boundaries
- Section-Township-Range
- Easements
- CRP
- Common Land Units
- Rangeland

Wetland Determination Identifiers

- Restricted Use
- Limited Restrictions
- Exempt from Conservation Compliance Provisions



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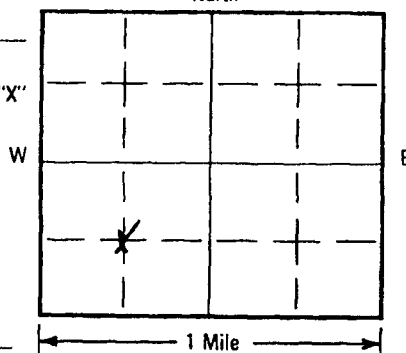
Handwritten signature: J. S. Pharo FSA-CEO

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location C 1/4 SW 15 Twp 127 Rg 71
 County McPherson Co.,
 North

Please mark well location with an "X"



Well-Completion Date

12-7-11

LOCATION:

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

PROPOSED USE:

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

METHOD OF DRILLING:

Forward RotaryCASING DATA: ☐ Steel ☐ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
_____	_____	_____ lb./gal	_____ ft	_____ ft
_____	_____	_____ lb./gal	_____ ft	_____ ft

Describe grouting procedure _____

SCREEN: ☐ Perforated pipe ☐ Manufactured

Diameter _____ IN Length _____ FEET

Material _____

Slot Size _____ Set From _____ Feet to _____ Feet

Other information _____

WAS A PACKER OR SEAL USED? ☐ YES ☐ NO

If so, what material? _____

Describe packer(s) and location? _____

DISINFECTION: Was well disinfected upon completion?

_____ YES, How: _____

_____ NO, Why Not? _____

Laboratory sent to for water quality analysis _____

Well Owner: Four Star Ag. (Barry Vculek)Business Name: Oakes, N. D.

Address: _____

WELL LOG:

Test #1	FORMATION	DEPTH	
		FROM	TO
	Topsoil	0	2
	Coarse sand-Gravel	2	12
	Gr. Clay	12	38
	Shale	38	60

STATIC WATER LEVEL _____ Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

☐ Pumped

Describe: _____

☐ Bailed☐ Other

Pumping Level Below Land Surface

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS Drilled W/ Pre chlorinated WaterThis well was drilled under license # 434

And this report is true and accurate.

Drilling firm M & W Drilling

Signature of License Representative:

Joe Wucetich

Signature of Well Owner or Equitable Property Holder:

Barry Vculek

Date: _____

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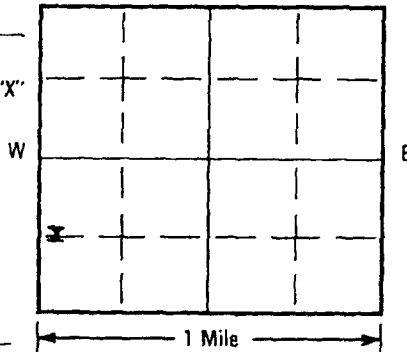
WATER RIGHTS PROGRAM

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location 1/4 SW 15 Twp 127 Rg 71
 County McPherson Co. North

Please mark well location with an "X"



Well-Completion Date

12-8-11

LOCATION:

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

PROPOSED USE:

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

METHOD OF DRILLING:

Forward Rotary

CASING DATA:

- ☐ Steel ☐ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
_____	_____	_____ lb./gal	_____ ft	_____ ft
_____	_____	_____ lb./gal	_____ ft	_____ ft

Describe grouting procedure _____

SCREEN: ☐ Perforated pipe ☐ Manufactured

Diameter _____ IN Length _____ FEET

Material _____

Slot Size _____ Set From _____ Feet to _____ Feet

Other information _____

WAS A PACKER OR SEAL USED? ☐ YES ☐ NO

If so, what material? _____

Describe packer(s) and location? _____

DISINFECTION: Was well disinfected upon completion?

_____ YES. How: _____

_____ NO. Why Not? _____

Remarks _____

Laboratory sent to for water quality analysis _____

Well Owner: Four Star ag. (Barry Vculek)

Business Name: Oakes, N. D.

Address: _____

WELL LOG:

Test #2 FORMATION	DEPTH	
	FROM	TO
Topsoil	0	2
Coarse sand-Gravel	2	13
Br. clay	13	15
Gr. clay	15	35
Coarse sand-Gravel	35	60
Shale	60	65

STATIC WATER LEVEL _____ Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

☐ Pumped

Describe: _____

☐ Bailed

☐ Other

Pumping Level Below Land Surface

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS Drilled w/ pre chlornated Water

This well was drilled under license # 434

And this report is true and accurate.

Drilling firm M & W Drilling

Signature of License Representative:

Joe Wucetich

Signature of Well Owner or Equitable Property Holder:

Barry Vculek

Date: _____

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DEC 13 2011

WATER RIGHTS PROGRAM

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

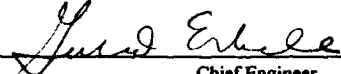
Date 2/15, 20 12

RECEIVED OF Four Star Ag 1109 S 7th St Oakes ND 58474

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

Fee for Application for Permit No. <u>7323-3</u> to Appropriate Water, to construct and to put water to beneficial use	1050	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>7323-3</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	1050 00

No. 05355

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. 7323-3, Barry & Robin Vculek**

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. 7323-3, Barry and Robin Vculek, 1109 S 7th Street, Oakes ND 58474.

The Chief Engineer is recommending APPROVAL of Application No. 7323-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The wells approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 7323-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Garland Erbele, Chief Engineer
March 28, 2012

NOTE: Please review the staff report on this application carefully. The two borings do not indicate a lot of permeable material present in this area. In addition, the land proposed for irrigation by this application is covered by Water Permit No. 6258-3. The time limit for construction and placement of water to beneficial use under this permit has expired. Permit No. 6258-3 will be inspected and a license issued only for the irrigation currently developed.

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 7323-3
BARRY & ROBIN VCULEK
MARCH 2, 2012

Water Permit Application No. 7323-3 proposes to appropriate 3.56 cubic feet of water per second from two wells approximately 65 feet deep, to be completed into the Spring Creek-McPherson aquifer. The wells are to be located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 21, T127N-R71W and the E $\frac{1}{2}$ SE $\frac{1}{4}$ Section 16, T127N-R71W. Water is to be used to irrigate 264 acres located in the N $\frac{1}{2}$ NE $\frac{1}{4}$ Section 21, T127N-R71W; the E $\frac{1}{2}$ SE $\frac{1}{4}$ Section 16, T127N-R71W and the SW $\frac{1}{4}$ Section 15, T127N-R71W.

AQUIFER: McPherson management unit of the Spring Creek aquifer (SC:M)

GEOLOGY AND AQUIFER CHARACTERISTICS:

The McPherson management unit of the Spring Creek aquifer consists of sand and gravel deposited as glacial outwash probably “during the last episodes of melting of the continental ice sheet” (Hamilton, 1974). The deposition of the outwash was limited to channels between large blocks of ice and till (Hamilton, 1974). The McPherson management unit of the Spring Creek aquifer underlies approximately 101,200 acres of McPherson County and contains an estimated 307,000 acre-feet of recoverable water in storage in the County (Hedges and others, 1982), (see figure 1). The maximum thickness of the Spring Creek aquifer is estimated to be 85 feet however, the average thickness is about 30 feet (Hamilton, 1982). Test hole logs submitted with this application, for two borings identified as being less than one-quarter mile apart, do not show a lot of permeable material present. The one test hole shows only 11 feet of “coarse sand-gravel” and the other shows two layers of “coarse sand-gravel” (11 and 25 feet thick respectively) with 22 feet of clay in-between the permeable layers. The extent of the lenticular clay bed encountered in the test hole is unknown and could influence potential well yields.

There are 11 irrigation wells within approximately two miles of the well sites proposed by this application (Water Rights, 2012c). The amount of permeable material encountered in these 11 wells ranged from 28-66 feet (Water Rights, 2012c). An irrigation well about one-half mile east of the well sites proposed by this application encountered around 66 feet of saturated thickness and irrigation well about one-half mile to the northeast has 43 feet of saturated material (Water Rights, 2012c). A number of the existing irrigation wells are capable of producing 800 gallons per minute (gpm) from as little as 32-43 feet of sand and gravel. However, the well with the thickest reported permeable material (66 feet) also had the lowest calculated transmissivity and only had a 600 gpm pump installed in it. Well and aquifer characteristics from nearby irrigation wells are shown in table 1.

Yield (gpm)	Specific Capacity (gpm/ft)	Transmissivity * (gal/day/ft)
800	51	76,500
600	32.74	49,110
160	37.5	56,250
300	66.7	100,000
310	79.89	119,835
800	63.56	95,340
800	55.65	83,475
* Transmissivity calculated from ("Transmissivity From Specific Capacity").		

Table 1. Well and aquifer characteristics from nearby irrigation wells (Water Rights, 2012c).

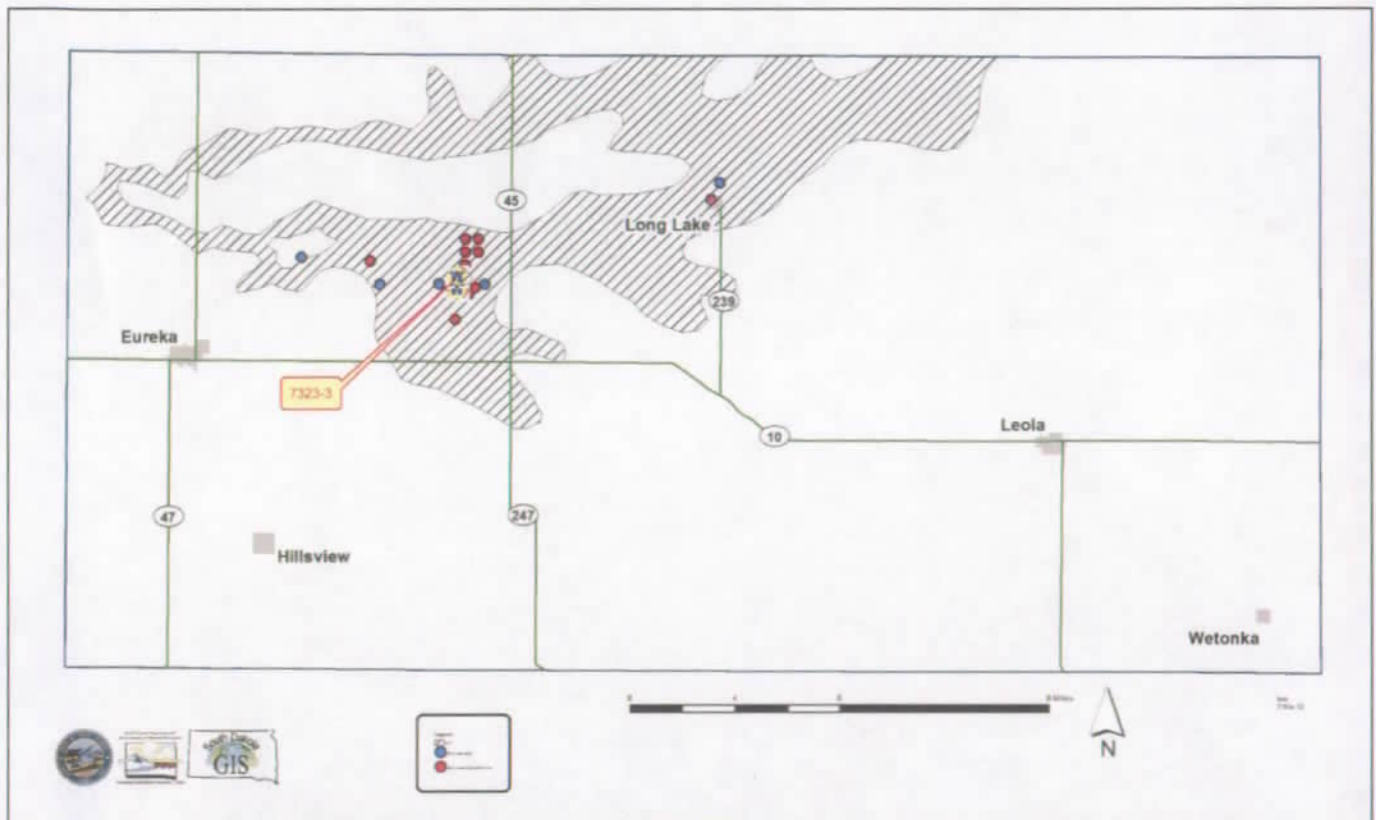


Figure 1. Extent of the McPherson management unit of the Spring Creek aquifer, location of DENR-Water Rights Observation Wells, existing SC:M Water Rights/Permits and the site of 7323-3 (modified from Hedges and others, 1982)

SDCL 46-2A-9

Pursuant to SDCL 46-2A-9, a permit to appropriate water may be issued only if there is 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 water availability and existing rights issues only.

WATER AVAILABILITY:

This application proposes to appropriate 528 acre-feet annually from the Spring Creek: McPherson aquifer. Although the actual water use if this application is approved will be less than 528 acre-feet/year. 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 that 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."

Recharge versus Withdrawals:**Recharge:**

Recharge to the Spring Creek: McPherson aquifer which occurs through infiltration of precipitation falling on the aquifer surface has not been quantified. However, the Spring Creek: McPherson aquifer is considered a "non-buried aquifer" in the "surface system" by Hedges and others (1985). Other non-buried aquifers in the surface system in this area include the Bowdle aquifer and the Selby aquifer. Recharge rates determined for these aquifers using observation well analysis, is estimated to be 2 inches/year for the Selby aquifer and between 2 and 2.7 in/yr in the Bowdle aquifer (Hedges and others, 1985). Based on recharge rates for these similar aquifers, a recharge rate of 2 inches/year is assumed for McPherson management unit of the Spring Creek aquifer. The average annual recharge for the Spring Creek: McPherson would be approximately 16,850 acre-feet/yr.

Withdrawals:

There are five existing water rights/permits appropriating water from the Spring Creek: McPherson, they are shown in table 1 (Water Rights, 2012b).

PERMIT NO.	NAME	STATUS	USE	CFS	ACRES
3012-3	Mavin Morlock	LC	IRR	2.0	211
3656-3	Barry & Robin Vculek	LC	IRR	3.0	380
3925A-3	Jeff Neuharth	LC	IRR	3.0	160
5706-3	Border Club	LC	COM	.01	N/A
6258-3	Barry & Robin Vculek	PE	IRR	12.0	940

Table 1. Water Rights/Permits appropriating water from the McPherson management unit of the Spring Creek aquifer

Water use from the Spring Creek: McPherson is principally for irrigation. A summary of the reported pumping from the aquifer for irrigation is shown in table 2.

YEAR	NO. PMTS	APPROPRIATION (Acre-feet)	PUMPED (Acre-feet)
2010	4	4133	1004.81
2009	4	4133	606.04
2008	4	4133	1351.83
2007	4	4133	1545.84
2006	5	4739	2770.28
2005	5	4739	1415.5
2004	5	4739	1224.48
2003	5	4739	1904.35
2002	5	4739	2095.91
2001	4	2859	611.4
2000	4	2859	560.3
1999	4	2859	340.49
1998	4	2859	442.37
1997	4	2859	285
1996	4	2859	317
1995	4	2619	120.64
1994	4	2619	317.19
1993	4	2859	21
1992	4	2859	374.8
1991	4	2859	456.1
1990	4	2859	715
1989	4	2859	838
1988	4	2859	1075.2
1987	3	2379	350
1986	3	2379	198
1985	4	2699	410
1984	5	2819	388
1983	3	2379	256.15
1982	3	2379	211.58
1981	6	3779	308
1980	5	3456	566

Table 2. Water use reported for irrigation from the Spring Creek: McPherson aquifer.

Withdrawals from the Spring Creek: McPherson aquifer are expected to be considerably less the average annual recharge to the aquifer and there is a reasonable probability that unappropriated water is available from the aquifer for this 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 to the aquifer”.

The DENR-Water Rights Program monitors five observation wells completed into the McPherson management unit (Water Rights, 2012a). Three of the wells are located within three miles of well sites proposed by Water Permit Application No. 7323-3. Hydrographs for the observation wells are shown in figures 2-5.

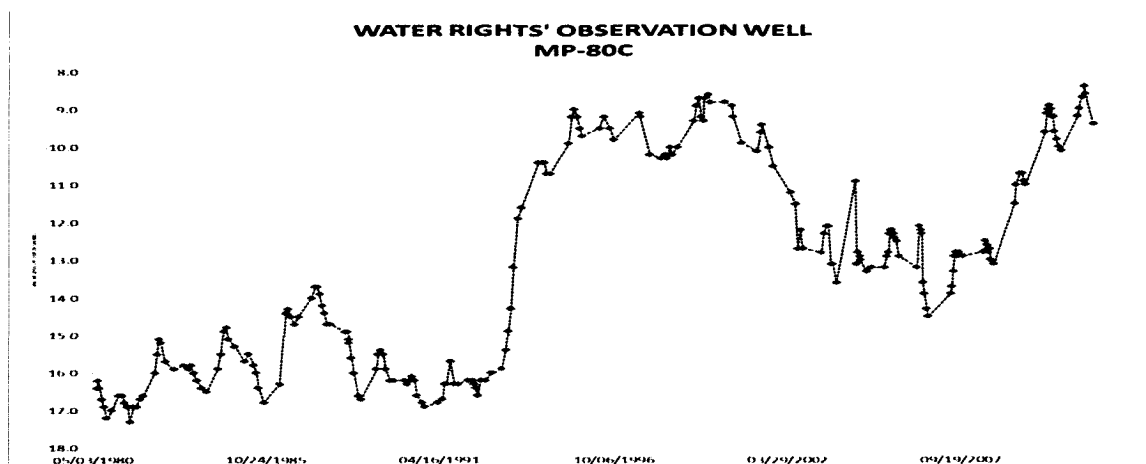


Figure 2. SD DENR-Water Rights Program observation well completed into the Spring Creek: McPherson aquifer located approximately three miles west of 7323-3.

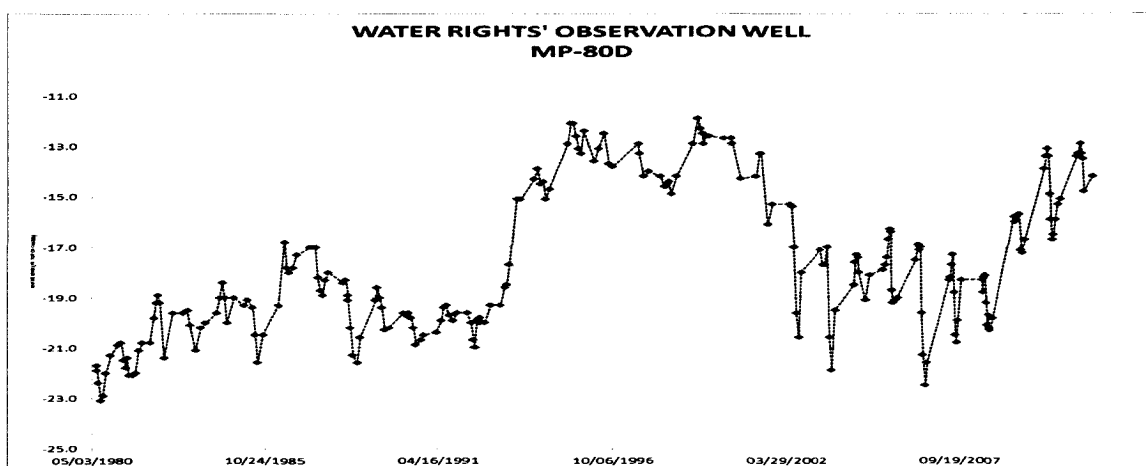


Figure 3. SD DENR-Water Rights Program observation well completed into the Spring Creek: McPherson aquifer located approximately three-fourths of a mile southwest of 7323-3.

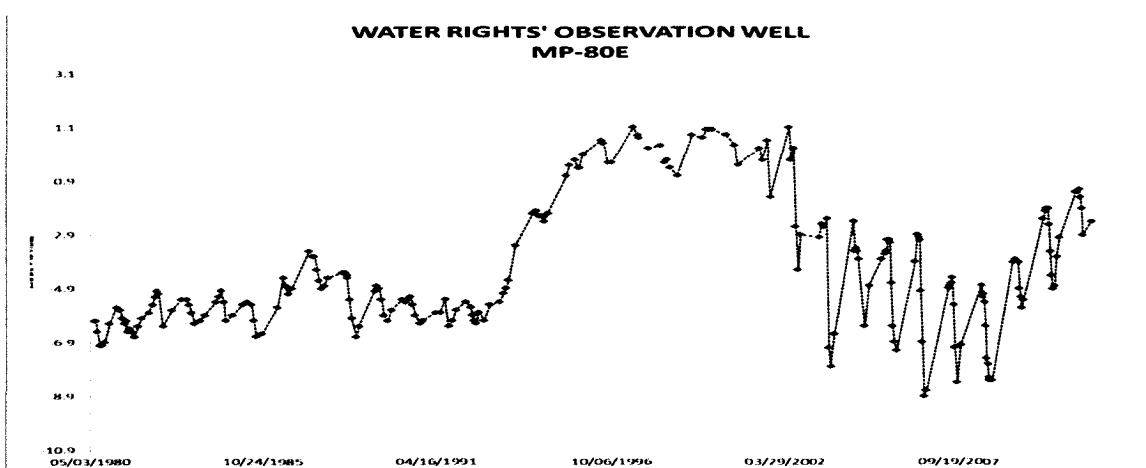


Figure 4. SD DENR-Water Rights Program observation well completed into the Spring Creek: McPherson aquifer located approximately one mile east of 7323-3.

Water level data for the observation wells show the aquifer is responsive to climatic conditions with rising water levels during wet years and gradually declining water levels during dry years. The effects of increased irrigation development beginning in 2002, may be noticeable in figures 3 and 4. In general, the observation well data show that there is more water in storage in the aquifer now than in 1980 and unappropriated water is available for this appropriation.

EXISTING WATER RIGHTS:

All of the water rights/permits appropriating water from the McPherson management unit of the Spring Creek aquifer except for Water Right Nos. 3925A-3 and 5706-3 are located within approximately two miles of the well sites proposed by this application (see figure 1). There are a total of 11 irrigation wells supplying these nearby appropriations. The three nearest existing irrigation wells are located one-half mile east, one-half mile southeast and one-half mile northeast, respectively from the well sites proposed by this application. The Water Rights/Permits that authorize these three nearby irrigation wells (Water Right No. 3656-3 and Water Permit No. 6258-3) are currently held by Barry and Robin Vculek. The nearest irrigation well that is not controlled by Barry and Robin Vculek, supplies Water Right No. 3012-3, Mavin Morlock and it is located about one and one-quarter miles south of the well sites proposed by this application supplies.

Observation well data shows that there is not a lot of drawdown created by pumping a single well in the Spring Creek: McPherson aquifer. For example, observation well MP-80E is located within one-half mile of a 600 gpm irrigation well covered under Water Right No. 3656-3. Diversions have been made under Water Right No. 3656-3 for the entire period of record for the observation well (1980-2011) with little if any impact to the water level (see figure 4). The observation well hydrograph does show some fluctuations beginning in 2002 that may be attributable to the additional irrigation that was added to the area (Water Permit No. 6258-3). The fluctuation (2-6 feet total) would not be considered significant provided there is sufficient saturated thickness of the aquifer. As stated earlier, the saturated thickness of the Spring Creek McPherson aquifer is variable.

In the consideration of impacts this appropriation may have to existing water rights/permits, the Jacob Straight-Line method was applied. Although the method relies on some oversimplifying assumptions, it allows aquifer characteristics to be used to plot estimates of drawdown relative to time and drawdown relative to distance from a pumped well.

Water Permit Application No. 7323-3 proposes to divert up to 3.56 cfs from two wells. The configuration of the resulting drawdown cone if this application is approved depends on the pumping rate(s) of each well and the transmissivity of the aquifer. Using the Jacob method of analysis and assuming that: (1) there is sufficient saturated thickness at the southern well site proposed by this application and the entire appropriation (3.56 cfs) is pumped from a single well, (2) the well is pumped continuously for the 153 day irrigation season, and (3) the storage coefficient of the Spring Creek: McPherson is 0.15; the maximum extent of the drawdown cone would only be 6,062 feet. Therefore, interference with the well that supplies Water Right No. 3012-3 should not be an issue.

The Jacob straight-line method was also used to show the drawdown that can be expected in the vicinity of the well or wells that this application proposes to use, under four scenarios: (1)

equally distributing the pumping between two wells (i.e. 789.9 gallons per minute per well); (2) pumping all of the water from one well (i.e. 1597.8 gallons per minute from one well); (3) assuming the highest transmissivity calculated from area wells (i.e. 119,835 gallons per day per foot); or (4) assuming the lowest transmissivity calculated from area wells (i.e. 49,110 gallons per day per foot). The Distance-drawdown plots under these scenarios are shown in figures 5 and 6.

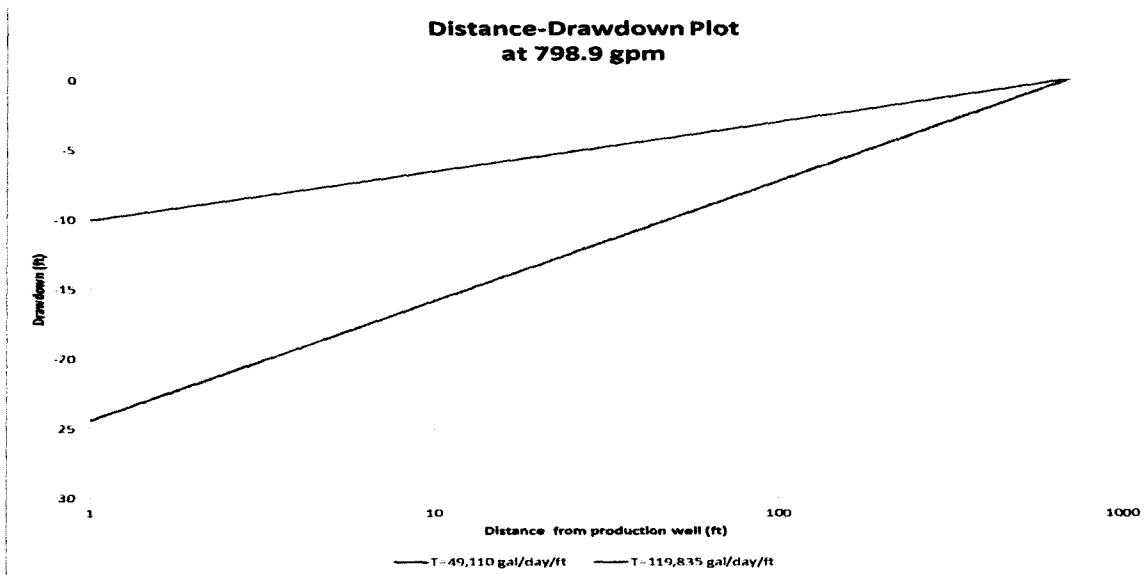


Figure 5. Distance-drawdown plot showing drawdown per well assuming Application No. 7323-3 is approved and two wells are used equally.

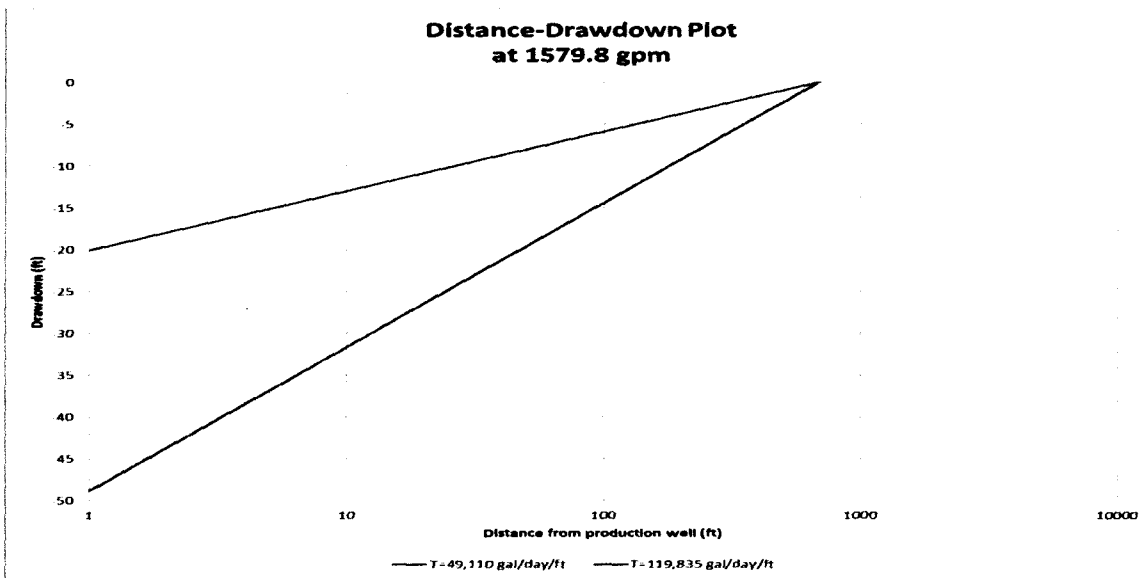


Figure 6. Distance-drawdown plot showing drawdown per well assuming Application No. 7323-3 is approved and all the water is pumped from one well.

Based on figures 5 and 6, it can be seen that it is unlikely that drawdown caused by this proposed pumping will be significant in the irrigation wells within one-half mile of the well sites proposed by Application No. 7323-3. Regardless, as stated earlier, the water rights/permits for the three irrigation wells that are within one-half mile of this proposed project are held by Barry and Robin Vculek. Any interference issues between wells controlled by the same operator would become a management issue for the operator. If the water rights/permits change ownership, well interference would be dealt with on a priority basis if necessary.

Cumulative impacts:

The close proximity of the irrigation wells pumping from the Spring Creek: McPherson aquifer and the fact that the aquifer can be fairly thin could lead to a situation where the cumulative impact of pumping several wells causes water level declines that cannot be attributed to any one single well. The cumulative effect of irrigation development on water levels may actually be shown in figures 2-4. Observation well MP-80C is located about three and one-half miles from the center of the concentration of irrigation wells, and impact of development in 2002 is not apparent on the water levels (see figure 2). Observation well MP-80D is located about one and one-half miles from the center of the 2002 development and there may be some water level fluctuations that can be attributed to development (see figure 3). Observation well MP-80E is within about one mile of the 2002 irrigation development and there appears to be drawdown from the pumping (see figure 4), although as stated above, direct well interference has never been apparent from nearby irrigation wells. Even if the withdrawals from the aquifer do not exceed recharge to the aquifer, the cumulative impact of irrigation development in this concentrated area could reduce the amount of water available for existing irrigation wells. If the water levels in existing irrigation wells decline to the extent that they can no longer pump at their "historically established" diversion rates, "shut-off" orders may be necessary on a priority basis.

The irrigation of N $\frac{1}{2}$ NE $\frac{1}{4}$ Section 21, T127N-R71W and the E $\frac{1}{2}$ SE $\frac{1}{4}$ Section 16, T127N-R71W was authorized under Water Permit No. 6258-3. All of the construction for Water Permit No. 6258-3 was to be completed before September 5, 2006 and water was to be put to beneficial use before September 5, 2010. The right to use Water Permit No. 6258-3 to irrigate these parcels has probably been forfeited. Water Permit No. 6258-3 was contested and there was a hearing before the Water Management Board. The board approved the permit and there have not been any complaints or issues regarding the diversion.

CONCLUSIONS:

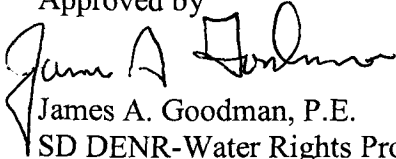
1. Portions of the acreage this application proposes to irrigate are covered under Water Permit No. 6258-3. The time limits for construction and putting water to beneficial use have expired and the portion of Water Permit No. 6258-3 that authorizes irrigation of the acres has probably been forfeited due to non-construction.
2. Water Permit No. 6258-3 was contested and approved following a hearing before the Water Management Board in 2001. Approval of the permit has not resulted in any appropriation or impairment issues and the DENR-Water Rights Program has not received any complaints regarding the permit.
3. There is a reasonable probability that unappropriated water is available from the McPherson management unit of the Spring Creek aquifer for this appropriation.

4. There is a reasonable probability that this appropriation would not adversely impair existing water rights.



Ken Buhler
SD DENR-Water Rights Program

Approved by



James A. Goodman, P.E.
SD DENR-Water Rights Program

REFERENCES:

- Hamilton, L.J., 1974, Major Aquifers in McPherson, Edmunds and Faulk counties, South Dakota: S.D. Geological Survey Information Pamphlet No. 8, 12 p.
- Hamilton, L.J., 1982, Geology and Water Resources of McPherson, Edmunds, and Faulk Counties, South Dakota: Part II: Water Resources: S.D. Geological Survey Bulletin 26, 60 p.
- Hedges, L.S., Burch, S.L., Iles, D.L., Barari, R.A., Schoon, R.A., 1982, Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report; U.S. Army Corps of Engineers Contract DACW 45-80-C-0185
- Hedges, L.S., Allen, J., and Holly, D.E, 1985, Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 7: Ground Water Recharge, South Dakota DENR-Geological Survey, Vermillion, SD
- “Transmissivity from Specific Capacity.” Aquifer Test Forum sponsored by HydroSOLVE, Inc.
3 Mar.2011< <http://www.aqtesolv.com/forum/transcap.asp>
- Water Rights, 2011, “2010 Irrigation Summary by Aquifer”: SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD
- Water Rights, 2012a, Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2012b, Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2012c, Well Completion Report Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County of McPherson) SS

I, Cindy Schumacher

certify that the attached printed Notice was taken

from the Northwest Blade

printed and published in Eureka, SD

County of McPherson and

state of South Dakota. The notice was published

in the newspaper on the following two dates:

April 5, 2012

April 12, 2012

Cost of Printing \$45.60

Cindy Schumacher
(Signature)

Copy Editor
(Title)

4-11-2012
(Date Signed)

NOTICE OF APPLICATION

NO. 7323-3 to Appropriate Water

Notice is given that Barry & Robin Vculek, 1109 S 7th St, Oakes ND 58474 has filed an application for a water permit to appropriate 3.56 cubic feet of water per second from two wells to be completed into the Spring Creek:McPherson Aquifer (65 feet deep) located in NE 1/4 NE 1/4 Section 21 and E 1/2 SE 1/4 Section 16 to irrigate 264 acres located in the N 1/2 NE 1/4 Section 21, E 1/2 SE 1/4 Section 16 and the SW 1/4 Section 15; all in T127N-R71W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7323-3 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 in-

terest. 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 April 23, 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 twice at the total approximate cost of \$46.80 at .01 cents per reader.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

March 28, 2012

Northwest Blade
PO Box 797
Eureka SD 57437

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7323-3 to Appropriate Water to be published twice. Please publish the first notice on April 5, 2012 with the second publication 7 days later. 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, before you make the first publication. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Barry and Robin Vculek, 1109 S. 7th St. Oakes ND 58474 (Ph # 701-742-3050).

Please send the Water Rights Program the first publication immediately. The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** 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

-----CUT HERE-----

No. 7323-3

TO: Eric Gronlund
Water Rights Program
Joe Foss Building
Pierre SD 57501-3181

Date _____

We are in receipt of your letter of March 28, 2012 enclosing Notice to Appropriate Water by Application No. 7323-3 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper



**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 DATES, CONTACT
THE NEWSPAPER RIGHT AWAY.

March 28, 2012

Barry & Robin Vculek
1109 S 7th St
Oakes ND 58474

Dear Mr. & Mrs. Vculek:

Water Permit Application No. 7323-3 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 Publisher of the Northwest Blade printed at Eureka SD (Ph # 605-284-2631). You will need to contact the newspaper 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 to authorize publication of your Notices and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization, the publisher has been instructed to publish your notice once each week for two consecutive weeks. 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 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 application.

Instruction to Newspaper - Publish first Notice on April 5, 2012 with the second publication 7 days later. The applicant is responsible for payment. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352 or email: Karen.schlaak@state.sd.us.

NOTICE OF APPLICATION NO. 7323-3 to Appropriate Water

Notice is given that Barry & Robin Vculek, 1109 S 7th St, Oakes ND 58474 has filed an application for a water permit to appropriate 3.56 cubic feet of water per second from two wells to be completed into the Spring Creek:McPherson Aquifer (65 feet deep) located in NE ¼ NE ¼ Section 21 and E ½ SE ¼ Section 16 to irrigate 264 acres located in the N ½ NE ¼ Section 21, E ½ SE ¼ Section 16 and the SW ¼ Section 15; all in T127N-R71W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7323-3 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 April 23, 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 twice 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

MAY 14 2012

Barry & Robin Vculek
1109 S 7th St
Oakes ND 58474

Dear Mr. & Mrs. Vculek:

Enclosed is Water Permit No. 7323-3 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

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NE 1/4 SE 1/4 Sec 16 Twp 127 Rg 71

County McPherson North

Please mark well location with an "X"

Well completion Date 12-12-12

Distance from nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.)
? 2000 ft. from stock pond (identify source)

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

METHOD OF DRILLING:
Forward Rotary

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

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>SDR21 LB/FT</u>	<u>12 IN</u>	<u>1 FT</u>	<u>46 FT</u>	<u>17 1/2 IN</u>
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:
 Grout Type Flowable Grout No. of Sacks 7 Grout Weight 10 Lb/gal From 0 Ft To 32 Ft
 Describe grouting procedure Flowable Grout Bottom To Top

SCREEN: ☐ Perforated pipe ☒ Manufactured
 Diameter 12 Inches Length 20 Feet
 Material stainless steel
 Slot Size 1060 Set From 46 Feet to 66 Feet
 Other information _____

WAS A PACKER OR SEAL USED? ☐ Yes ☒ No
 If so, what material? _____
 Describe packer(s) and location _____

DISINFECTION: Was well disinfected upon completion?
☒ Yes, How? chlorine
☐ No, Why Not? _____
 Lab sample sent to for water quality analysis _____

Well Owner: Barry Kulek
 Business Name: Four Star Ag
 Address1: 1109 25th St Oakes
 Address2: _____
 City, State, Zip: Oakes, ND 58474

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Top Soil</u>	<u>0</u>	<u>1</u>
<u>Yellow Clay</u>	<u>1</u>	<u>3</u>
<u>Sand & Gravel</u>	<u>3</u>	<u>8</u>
<u>Blue Clay</u>	<u>8</u>	<u>21</u>
<u>Fine Sand</u>	<u>21</u>	<u>34</u>
<u>Coarse Sand & Gravel</u>	<u>34</u>	<u>66</u>
<u>Shale</u>	<u>66</u>	

STATIC WATER LEVEL: 12' 6" FEET
 If flowing: closed in pressure _____ PSI
 GPM flow _____ through _____ Inch pipe
 Controlled by ☐ Valve ☐ Reducers ☐ Other _____
 Reduced flow rate _____ GPM
 Can well be completely shut in? _____

WELL TEST DATA:
☒ Pumped Describe: Submersible Pump
☐ Bailed
☐ Other _____

Pumping Level Below Land Surface
35 Ft. After 5 Hrs. pumped 990 GPM
 _____ Ft. After _____ Hrs. pumped _____ GPM
 If pump installed, pump rate: _____ GPM

REMARKS

RECEIVED
DEC 26 2012
WATER RIGHTS PROGRAM

This well was drilled under license # 285
 And this report is true and accurate.
 Drilling firm: Manixowski Well Drilling, Inc.
 Signature of License Representative: [Signature]
 Signature of Well Owner or Equitable Property Holder: _____
 Date: _____

Please return White Copy to DENR Water Rights

523 E. Capitol Ave., Pierre SD 57501

7323-3

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE 1/4 NE 1/4 Sec 21 Twp 127 Rg 71

County MEYERSDALE

North

Please mark well location with an "X"

Well completion Date 7-2-15

1 Mile

Well Owner: Four Star Ag.

Business Name: Same

Address1: 1109 S. 7th Str.

Address2: Oakes, N. D.

City, State, Zip:

FORMATION	DEPTH	
	FROM	TO
Topsoil	0	2
Br sand-gravel	2	15
Gr. clay-silt layers	15	37
Fine-some med. sand	37	43
Gravel-Coarse sand	47	95

STATIC WATER LEVEL 10.2 GR. W. FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced flow rate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

☒ Pumped Describe: 27.36

☐ Bailed

☐ Other 27.36

Pumping Level Below Land Surface 12.2 Ft. After 1 Hrs. pumped 27.36 GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

RECEIVED

JUL 16 2015

WATER RIGHTS PROGRAM

This well was drilled under license # 434

And this report is true and accurate.

Drilling firm: MEW Drilling Inc

Signature of License Representative: [Signature]

Signature of Well Owner or Equitable Property Holder: [Signature]

Date: _____

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes

☒ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

Forward

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe SR-21

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

GROUTING DATA:

Grout Type Ben. gr. No. of Sacks 14 Grout Weight _____ From _____ To _____

_____ Lb/gal _____ Ft _____ Ft

Describe grouting procedure primed from top to screen

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 12 Inches Length 40 Feet

Material PVC

Slot Size .080 Set From 55 Feet to 95 Feet

Other information _____

WAS A PACKER OR SEAL USED? ☐ Yes ☒ No

If so, what material? _____

Describe packer(s) and location _____

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? Chlorinated

☒ No, Why Not? irr. well

Lab sample sent to for water quality analysis _____

Please return White Copy to DENR Water Rights

523 E. Capitol Ave., Pierre SD 57501

7-28-15

Permit No. 7323-3
Missouri River - Water District

Contact Person & Address: **Barry Vculek, 1109 S 7th St, Oakes ND 58474**

Report of Examination of Works

On, 5/27/16, I made a thorough examination of the water use system constructed by **Barry & Robin Vculek** holder of Permit No. 7323-3, bearing the priority of February 15, 2012 authorizing the diversion of 3.56 cu. ft. per second of the waters of **ground water (Spring Creek-McPherson Aquifer)** for **irrigation** purposes, in **McPherson** County.

The system is in the following condition **good**. The points of diversion are located from the **SE corner of Sec 16 T127N-R71W: Div Pt 1; 1335 ft N & 50 ft W** with latitude of 45.81406 and a longitude of -99.40749; from the **NE corner of Sec 21 T127N-R71W: Div Pt 2; 1310 ft S & 50 ft W** with latitude of 45.80683 and a longitude of -99.40748 as determined using **GPS**.

The works are capable of diverting and conveying to the place of use 3.56 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:

Land is located in **Sec 15 T127N-R71W**

NW ¼ SW ¼ - 33 ac NE ¼ SW ¼ - 33 ac SE ¼ SW ¼ - 33 ac SW ¼ SW ¼ - 33 ac

Land is located in **Sec 16 T127N-R71W**

NE ¼ SE ¼ - 33 ac SE ¼ SE ¼ - 33 ac

Land is located in **Sec 21 T127N-R71W**

NW ¼ NE ¼ - 33 ac NE ¼ NE ¼ - 33 ac

comprising a total of 264 acres of land and the license should be issued for 3.56 cfs.

Review of Permit Qualifications And Regulations:

- 1) Special qualifications to permit being abided by **yes**
- 2) All structures, wells and lands on map **yes**
- 3) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period **yes**.
- 4) Exceptions to compliance are: **none**

Report On the Specifics of the System

System Information:

Well Information: Well No. 1 supplies center pivot in SE ¼ Sec 16 & SW Sec 15 all in T127N-R71W

- 1) Well Drilling Firm: **M&W Drilling**
- 2) No. of Wells 1
- 3) Depth(s) 66 feet
- 4) Well log is available **yes**

Casing:

- 1) Diameter 12 inches
- 2) Length 46 feet
- 3) Type **pvc**

Screen:

- 1) Type **stainless steel**
- 2) Length 20 feet
- 3) Static water level 12.6 feet

Pump:

- 1) Make **NA**
- 2) Model **submersible**
- 3) Size 9 in
- 4) Capacity 800 GPM

Motor:

- 1) Make **NA**
- 2) Model No. **submersible**
- 3) Horsepower rating **NA** hp

Center pivot: Located in SE ¼ Sec 16-T127N-R71W

- 1) Make **Zimmatic**
- 2) Overall length 1280 feet
- 3) Number of towers 9
- 4) End gun **yes**

- 5) High or low pressure low 6) Capacity 800 GPM

Center pivot: Located in SW ¼ Sec 15-T127N-R71W

- 1) Make Reinke 2) Overall length 1280 feet
3) Number of towers 7 4) End gun yes
5) High or low pressure low 6) Capacity 800 GPM

Well Information: Well No. 2 supplies center pivot in NE ¼ Sec 21-T127N-R71W

- 1) Well Drilling Firm: M&W Drilling 2) No. of Wells 1 3) Depth(s) 95 feet 4) Well log is available yes

Casing:

- 1) Diameter 12 inches 2) Length 55 feet 3) Type pvc

Screen:

- 1) Type pvc 2) Length 40 feet 3) Static water level 10.2 feet

Pump:

- 1) Make NA 2) Model submersible 3) Size 7 4) Capacity 800 GPM

Motor:

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

Distribution lines:

- 1) Type pvc 2) Size 8 inches 3) Length 1400 feet

Center pivot: Located in NE ¼ Sec 21-T127N-R71W

- 1) Make Valley 2) Overall length 1280 feet
3) Number of towers 7 4) End gun yes
5) High or low pressure low 6) Capacity 800 GPM

CHEMIGATION EQUIPMENT:

- 1) Does chemigate yes 2) Main line check valve yes
3) Inspection port/air relief yes 4) Low pressure drain yes
5) Discharge is 20' from source no 6) Interlock type electric
7) Injection pump type positive displacement 8) Injection check valve yes
9) Injection line check valve or positive displacement pump yes
10) All chemigation equipment appears to be installed in the proper position and complies with chemigation laws and rules no, I discussed with well owner, Mr. Vculek, the need to install a hose to provide for low pressure drain discharge 20 feet away from the wells. Mr. Vculek said he would have them installed before the irrigation season starts.

Comments : none



September 6, 2016

Mark D. Rath
Natural Resources Engineer III
DENR, Water Rights Program

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

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

Date 5-27-16

FROM: Barry Vaulter
(name)
1109 S 7th St
(address)
Oakton ND 58474 701-742-3050
(city) (state) (zip) (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.

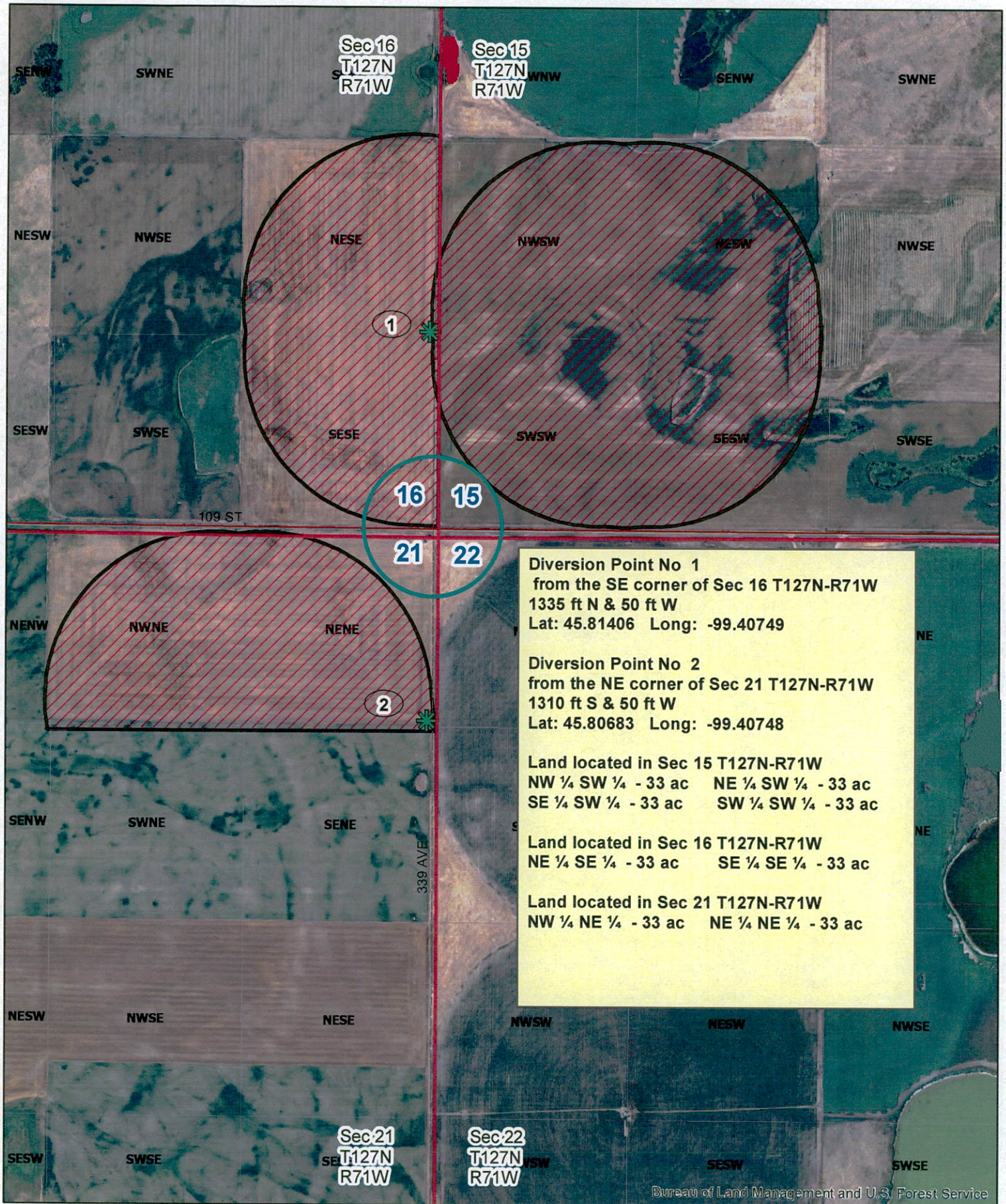
Water Permit No. 7323-3 states that the water use system is to be constructed by 4/23/17, and water is to be put to beneficial use by 4/23/21
(date) (date)

The water use system was completed on 6/1/15
(date)

Applying the water to beneficial use was completed on 7/1/15
(date)

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





Diversion Point No 1
 from the SE corner of Sec 16 T127N-R71W
 1335 ft N & 50 ft W
 Lat: 45.81406 Long: -99.40749

Diversion Point No 2
 from the NE corner of Sec 21 T127N-R71W
 1310 ft S & 50 ft W
 Lat: 45.80683 Long: -99.40748

Land located in Sec 15 T127N-R71W
 NW ¼ SW ¼ - 33 ac NE ¼ SW ¼ - 33 ac
 SE ¼ SW ¼ - 33 ac SW ¼ SW ¼ - 33 ac

Land located in Sec 16 T127N-R71W
 NE ¼ SE ¼ - 33 ac SE ¼ SE ¼ - 33 ac

Land located in Sec 21 T127N-R71W
 NW ¼ NE ¼ - 33 ac NE ¼ NE ¼ - 33 ac



0 400 800 1,600 2,400 3,200 Feet



Mark D. Keith
 July 27, 2016

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 7323-3**

(1) Barry & Robin Vculek, 1109 S 7th St, Oakes ND 58474 made Application No. 7323-3, February 15, 2012 for a water permit to divert 3.56 cubic feet of water per second from ground water, two wells (Spring Creek – McPherson Aquifer), McPherson County, South Dakota to be used for irrigation purposes. Permit No. 7323-3, with a priority date of February 15, 2012 was approved April 23, 2012 and issued to the applicants for diversion of water with construction of the described water supply system to be completed on or before April 23, 2017 and for the application to beneficial use of said water on or before April 23, 2021.

(2) It is certified that the permit holders have complied with the provisions of South Dakota State Law relating to completion of the water supply system and are entitled to divert 3.56 cubic feet of water per second for beneficial use. The location of the diversion points are:

- 1,335 feet N & 50 feet W of the SE corner of Section 16, T127N, R71W (NE ¼ SE ¼ Section 16);
- 1,310 feet S & 50 feet W of the NE corner of Section 21, T127N, R71W (NE ¼ NE ¼ Section 21).

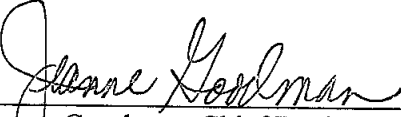
(3) The permit holders have complied with the provisions of South Dakota State Law relating to the application of water to beneficial use to irrigate the following land:

Section 15, T127N, R71W		Section 16, T127N, R71W		Section 21, T127N, R71W	
NW ¼ SW ¼	33.0 acres	NE ¼ SE ¼	33.0 acres	NW ¼ NE ¼	33.0 acres
NE ¼ SW ¼	33.0 acres	SE ¼ SE ¼	33.0 acres	NE ¼ NE ¼	33.0 acres
SE ¼ SW ¼	33.0 acres				
SW ¼ SW ¼	33.0 acres				
Total 264 acres					

(4) Pursuant to South Dakota Water Law 46-5-30.1 Barry & Robin Vculek, 1109 S 7th St, Oakes ND 58474 the holders and/or owners of Water Right No. 7323-3 are issued a license to appropriate water, the right to use 3.56 cubic feet of water per second from ground water, two wells (Spring Creek – McPherson Aquifer) with a priority date of February 15, 2012 from the locations specified in (2) of this license for irrigation purposes.

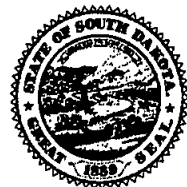
This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 7323-3 and subject to the following qualifications:

- The wells approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
- The wells authorized by Permit No. 7323-3 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. ***Wells were completed in 2012 and in 2015. Copies of the logs are on file with the Water Rights Program.***
- This Permit is approved subject to the irrigation water use questionnaire being submitted each year.



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

SEP 12 2016
date





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

September 12, 2016

6258-3
7323-3

Barry & Robin Vculek
1109 S 7th St
Oakes ND 58474

Dear Mr. & Mrs. Vculek:

Enclosed are Water License Nos. 6258-3 and 7323-3. They are the final water right documents completing your process of obtaining Water Rights. Included with each license is a map prepared by the staff engineer who conducted the field investigation.

The staff engineer also investigated your Water Right No. 3656-3 that authorizes irrigation of land in Section 22, T127N, R71W. That investigation found an additional well and an increase in the diversion capability from what is authorized by the existing water right. In response, you filed Water Permit Application No. 8232-3 in order to get permitting in place to reflect the irrigation system. That application was contested during the public notice process and is pending hearing before the Water Management Board. Pending a favorable outcome of the hearing on Application No. 8232-3, a water license will then be issued incorporating Nos. 3656-3 and 8232-3. The issuance of Water License Nos. 6258-3 and 7323-3 is a separate action from this pending contested application.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the wells authorized by each water right, 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.

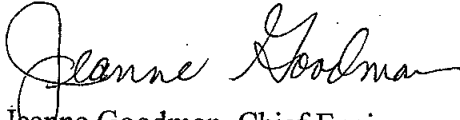
In regard to the equipment used for applying chemicals and/or fertilizer through your irrigation systems, the staff engineer indicated he spoke with you about the absence of a low pressure drain. Enclosed is a copy of Water Management Board rules dealing with chemigation. "Appendix A" shows the minimum requirements for the equipment. Low pressure drains are required and must be in place to prevent contamination of the water source. If after reading through the rules you have questions concerning placement of the equipment, please contact our program.

Page 2

Barry & Robin Vculek

As long as you use the water beneficially, as stated in the Water Licenses, 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,

A handwritten signature in cursive script that reads "Jeanne Goodman".

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

enclosures

NOTE: With reference to Water License No. 6258-3, the investigation found your irrigation system capable of diverting 9.58 cubic feet of water per second (cfs) which is equivalent to approximately 4,300 gallons per minute. The statutory limit for the 622 acres developed is 8.89 cfs which is equivalent to approximately 4,000 gpm. Diversion of water under this water license is limited to 8.89 cfs.

FILE DOCUMENTATION FOR WATER RIGHT NO. 7323-3

Water Right No. 7323-3 authorizes diversion of 3.56 cubic feet of water per second (cfs) from two wells (Spring Creek – McPherson Aquifer) located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 16 and the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 21, T127N, R71W to irrigate 264 acres located in the SW $\frac{1}{4}$ Section 15; E $\frac{1}{2}$ SE $\frac{1}{4}$ Section 16; and N $\frac{1}{2}$ NE $\frac{1}{4}$ Section 21, all in T127N, R71W.

Based on ownership changes filed April 27, 2018 and May 21, 2018, Water Right No. 7323-3 was divided and reissued to reflect separate ownership as follows:

- **No. 7323A-3: Mark & Kim Hoffman, 35415 Plum Rd, Leola SD 57456** authorizing diversion of 2.67 cfs from one well located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 16, T127N, R71W to irrigate 198 acres located in the SW $\frac{1}{4}$ Section 15 and E $\frac{1}{2}$ SE $\frac{1}{4}$ Section 16, T127N, R71W;
- **No. 7323B-3: Mark & Heidi Morlock, 33820 112th St., Eureka SD 57437** authorizing diversion of 0.89 cfs from one well located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 21, T127N, R71W to irrigate 66 acres located in the N $\frac{1}{2}$ NE $\frac{1}{4}$ Section 21, T127N, R71W.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

March 15, 2018

6258-3
7323-3

Mark & Kim Hoffman
35415 Plum Rd
Leola SD 57456

Dear Mr. & Mrs. Hoffman:

I am writing in follow-up to my phone conversation today with Kim concerning Water Right Nos. 6258-3 and 7323-3 held by Barry & Robin Vculek. Enclosed are copies of each water right and the corresponding map that goes with each one.

In reference to **Water Right No. 6258-3**, Sam Braun has filed an ownership change for the land in Section 10, T127N, R71W authorized under the water right. It is my understanding you now own the land described in Section 15, T127N, R71W. The water right will need to be divided and reissued to reflect separate ownership.

I have enclosed a partially completed transfer form for use in filing the ownership change. Please review the form and make any necessary corrections. Upon completion, please sign the form and return it to our office with a required filing fee of \$50.00. The check or money order for the fee can be made payable to the Water Rights Program. Once the form and filing fee are received, Water Right No. 6258-3 will be divided and reissued as:

- 6258A-3: Sam Braun
- 6258B-3: Mark & Kim Hoffman (or whatever name you wish to have on the water right, for example either your names or the name of a Trust or LLC etc)

With reference to **Water Right No. 7323-3**, I am enclosing a transfer form to file for an ownership change on the portions of land you own. I am working on getting in contact with Bill Edwards to file an ownership change for the portion he now owns. You may hold on to the transfer form and complete it with the appropriate legal descriptions as soon as you know for sure if you are purchasing the SW ¼ Section 15 described on the water right. A \$50 fee is also required for filing an ownership change with No. 7323-3. Once we receive the completed transfer forms back from you and from Mr. Edwards, Water Right No. 7323-3 will be divided and reissued to reflect separate ownership.

March 15, 2018

Page 2

Mark & Kim Hoffman

If you have any questions, please contact me.

Sincerely,

A handwritten signature in cursive script that reads "Genny McMath".

Genny McMath

Water Rights Program

(605) 773-3352

email: genny.mcmath@state.sd.us

enclosures: copy of Water Right Nos. 6258-3 & 7323-3
 transfer forms