

WATER PERMIT NO. 8271-3

Name of Applicant: Leon Vanderlei

Address: 40846 312th St, Springfield SD 57062 Phone: 605 661-2922

Amount of Water Claimed: 1.78 cfs Total Acres: 140 acres

Source of Water Supply: groundwater (one well)

Water to be used for: irrigation County: Bon Homme

Type of Waste Disposal System:

Location: 5 miles west of Springfield

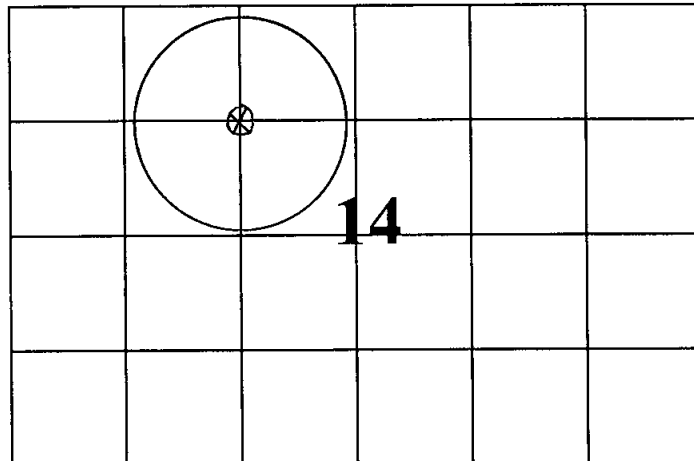
PRIORITY Date Received: 3-16-17 Application/License Fee: \$ 1050

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

Remarks:

Diversion Point: ⁵
center of NW 1/4 Section 14-
T93N-R61W

Land to be Irrigated: NW 1/4 Sec 14-T93N-R61W



Depth of Well: 240 feet deep

Well Driller: Christensen Well & Irrigation

Remarks:

Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 3-16-17

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

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

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8271-3</u> (office use only) Hydrologic Unit <u>10170101</u>
	Basin <u>Missouri River</u>
	Newspaper <u>Springfield Times</u> <u>Press & Dakotan</u>

RECEIVED
MAR 16 2017
WATER RIGHTS
PROGRAM

Application For Permit To Appropriate Water For Irrigation

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

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

1. Name to Appear on Irrigation Permit Leon Vanderlei

Note: The "Name to Appear on Irrigation Permit" must be the name in which the property to be irrigated is held in.

Mailing Address 46846 312th St Springfield SD 57062
(Address) (City) (State) (Zip Code)

Phone 605-369-2610 Mobile 605-661-2922 Email _____

2. Amount of water claimed _____ *CFS or no add'l 800 **GPM _____ ***AF Total Acreage 140
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply aquifer SW

4. Location of point of diversion 1 well centered in NW 1/4 of sec 14
(example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W)

T-93-N-R-61-W authorized by WR No. 6487-3 County Bon Homme

5. County or counties where water will be used Bon Homme

6. Annual period during which water is to be used may - sept

7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
<u>SW 1/4 of NW 1/4 sec 14</u>	<u>35</u>	<u>all in T93N-R61W</u>	
<u>NW 1/4 of NW 1/4 " "</u>	<u>35</u>		
<u>SE 1/4 of NW 1/4 " "</u>	<u>35</u>		
<u>NE 1/4 of NW 1/4 " "</u>	<u>35</u>		

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

1 well 1 center pivot

I, Leon Vanderlei, the applicant, certify under
Name of Person Title (if applicable)

penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

**SOUTH DAKOTA
WATER PERMIT NO. 8271-3**

Date of first receipt of application March 16, 2017.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8271-3 to Leon Vanderlei, 40846 312th St, Springfield SD 57062 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. 8271-3 authorizes irrigation of 140 acres located in the NW 1/4 Section 14-T93N-R61W from an existing well which is authorized by Water Right No. 6487-3. Water Right No. 6487-3 appropriates 1.89 cubic feet of water per second from one well completed into the Choteau West Aquifer (240 feet deep) located in the center of the SW 1/4 Section 14 for irrigation of 263 acres located in the SW 1/4, S 1/2 NE 1/4 and N 1/2 SE 1/4 Section 14-T93N-R61W.
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 March 16, 2017.
4. The date of approval of Permit No. 8271-3 is May 30, 2017.
5. One-fifth of the construction is to be completed on or before November 30, 2019.
6. All construction is to be completed on or before May 30, 2022.
7. Water is to be put to beneficial use on or before May 30, 2026.
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 Right No. 6487-3 and Water Permit No. 8271-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. 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

JUN 09 2017

date



Supplemental Information

(type or print)

1. Well Information (check one or both as applicable) ☐ Drilling new well(s) ☐ Using existing well(s)

a) If new wells, how many 1 Have test holes been drilled ☐ Yes ☒ No Drilled by _____
 (if yes, please provide copies of logs)

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

For either Existing or Proposed Wells:

c) Well Depth (required) 246 Depth to Top of Water Bearing Material 178 Depth to Water from Surface 156

d) Distance to nearest domestic well on applicant's property none Property owned by others 1.5 miles

2. Wastewater Disposal System Information

a) Type of System (i.e. septic tank, drain field) _____

b) System Capacity (gallons) _____ Year Constructed _____

c) Connected to the City of _____ Sanitary System

3. Dugout Information

a) Surface Dimensions _____ Depth _____

b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

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

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

b) Freeboard _____

c) Crest Width _____

Crest Length _____

d) Height _____

e) Primary Outlet Capacity _____

If pipe, diameter _____

f) Secondary Spillway Capacity _____

Spillway Width _____

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

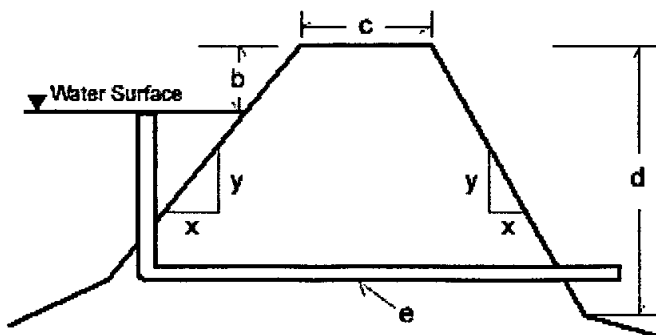
Upstream _____

Downstream _____

h) Surface Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres



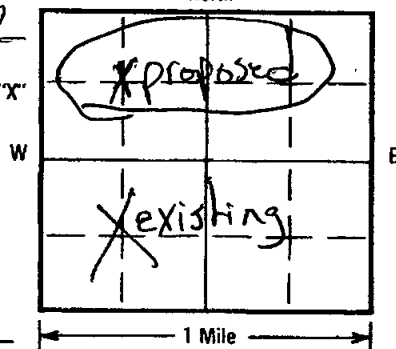
SOUTH DAKOTA WATER WELL COMPLETION REPORT

6487-3

07-92

Location SW 14 Twp 93 Rg 61W
County Bon Homme

Please mark well location with an "X"



Well Completion Date

3-30-04

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? 1200 ft. from septic tank (identify source).

PROPOSED USE:

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

METHOD OF DRILLING:

Reverse Rotary

CASING DATA:

- ☐ Steel ☒ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>SPR 26 LB/FT</u>	<u>16 IN</u>	<u>0 FT</u>	<u>240 FT</u>	<u>28 IN</u>
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Cement</u>	_____	_____ lb./gal	<u>0</u> ft	<u>20</u> ft
<u>Pneum</u>	_____	_____ lb./gal	<u>20</u> ft	<u>150</u> ft

Describe grouting procedure _____

SCREEN:

- ☒ Perforated pipe ☐ Manufactured

Diameter 16 IN Length 40 FEET

Material POC

Slot Size .085 Set From 200 Feet to 240 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? _____

Laboratory sent to for water quality analysis _____

Well Owner:

Leon Vandorlei

Business Name:

40846 317
Springfield, SD 57062

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>top silty brown clay</u>	<u>0</u>	<u>24</u>
<u>fine clay</u>	<u>24</u>	<u>73</u>
<u>ROCK</u>	<u>73</u>	<u>74</u>
<u>fine clay</u>	<u>74</u>	<u>178</u>
<u>fine sand</u>	<u>178</u>	<u>215</u>
<u>med gravel w/ shale chunks</u>	<u>215</u>	<u>240</u>
<u>ROCKS into shale</u>	<u>240</u>	<u>243</u>

STATIC WATER LEVEL

156

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: tested w/ turbine

☐ Bailed

☐ Other _____

Pumping Level Below Land Surface

184 ft. After 1 Hrs. pumped 850 GPM

1168 ft. After 2 Hrs. pumped 850 GPM

If pump installed, pump rate 850 GPM

REMARKS

This well was drilled under license # 444

And this report is true and accurate.

Drilling firm

Chastensen Well & Irrigation

Signature of License Representative:

Bob W. Chastensen

Signature of Well Owner or Equitable Property Holder:

JAN - 3 2004

Date:

WATER RIGHT PROGRAM

1-3-05



USDA - Farm Service Agency

Bon Homme Co., SD

PLSS: 14_93N_61W

Farm: 3956

February 16, 2010

1:7,537

USDA FSA maps are for FSA Program administration only. There is no guarantee or representation to the user as to the accuracy, currency, suitability or reliability. FSA MAPS DO NOT REPRESENT A LEGAL SURVEY. The user accepts the data 'as is' and assumes all risks associated with its use. Wetland points reflect records available with NRCS and may or may not constitute a full inventory of the property. The USDA Farm Service Agency assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data.

Disclaimer: Wetland identifiers do not represent the size, shape or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact wetland boundaries and determinations, or contact NRCS.

Legend

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

Wetland Determination Identifiers

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



RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 3-16, 20 17
Leon Vanderlei, 40846 312th St, Springfield SD

RECEIVED OF _____

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

Fee for Application for Permit No. <u>8271-3</u> to Appropriate Water, to construct and to put water to beneficial use	850	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>8271-3</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. 08198

By

Jeane Goodman
Chief Engineer

(KS)

Application No. 8271-3

Water Rights Program - DENR
Conversation File Documentation

NAME OF PERSON OR FILE: Leon Vanderlei

ADDRESS: 40846 312th Street, Springfield SD COUNTY: Bon Homme County

DATE: March 23, 2017 TELEPHONE: 605 661-2618

RE:

Craig Vanderlei called to indicate irrigation of the land on Leon Vanderlei's application is from the existing well authorized by Water Right No. 6487-3. No change in the diversion rate of 1.89 cfs authorized by 6487-3 will occur. Irrigation will be conducted on an alternating basis.

NAME: Eric Dumbauld

Gronlund, Eric

From: Craig Vanderlei <craig.vanderlei@gmail.com>
Sent: Tuesday, March 28, 2017 9:13 AM
To: Gronlund, Eric
Subject: Re: water permit application

Yes it is correct. Thank you

On Mar 28, 2017 9:09 AM, "Gronlund, Eric" <Eric.Gronlund@state.sd.us> wrote:

Mr. Vanderlei

This is to confirm our phone conversation in which you stated irrigation of the land on Leon Vanderlei's application is to be from the existing well authorized by Water Right No. 6487-3 located in the SW ¼ Section 14, T93N, R61W. No change in the diversion rate of 1.89 cfs authorized by 6487-3 will occur. Irrigation will be conducted on an alternating basis.

Eric Gronlund

Water Rights Program, DENR

605 773-3352

eric.gronlund@state.sd.us

NOTICE OF APPLICATION NO. 8271-3 to Appropriate Water

Notice is given that Leon Vanderlei, 40846 312th St, Springfield SD 57062 has filed an application for a water permit to irrigate 140 acres located in the NW 1/4 Section 14-T93N-R61W from an existing well which is authorized by Water Right No. 6487-3. Water Right No. 6487-3 appropriates 1.89 cubic feet of water per second from one well completed into the Choteau:West Aquifer (240 feet deep) located in the center of the SW 1/4 Section 14 for irrigation of 263 acres located in the SW 1/4, S 1/2 NE 1/4 and N 1/2 SE 1/4 Section 14-T93N-R61W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8271-3 with qualifications 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. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

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 May 30, 2017.

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.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. 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.

Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published once at the total approximate cost of _____.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

denr.sd.gov

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

May 10, 2017

Leon Vanderlei
40846 312th St
Springfield SD 57062

Dear Mr. Vanderlei:

Water Permit Application No. 8271-3 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 Springfield Times printed at Springfield SD (Ph # 605 369-2441) and the Press & Dakotan printed at Yankton SD (Ph # 605 665-7811). You will need to contact the newspaper(s) and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper(s) to authorize publication of your Notice and to arrange for payment. Early contact with the paper(s) can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund
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.

Schlaak, Karen

From: Schlaak, Karen
Sent: Wednesday, May 10, 2017 1:41 PM
To: 'Tera Schmidt'
Subject: 8271-3, Leon Vanderlei
Attachments: 8271-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on May 17, 2017.

Leon Vanderlei, 40846 312th St, Springfield SD 57062 (605 369-2610 or cell 605 661-2922) has been notified to contact you to authorize publication and arrange for payment.

Please send the affidavit or return the attached Proof of Publication form ASAP.

Let me know if you have questions. Please acknowledge receipt of this email.

Karen Schlaak

SD DENR, Water Rights Program
(605) 773-3352



Schlaak, Karen

From: Schlaak, Karen
Sent: Wednesday, May 10, 2017 1:40 PM
To: times@gwtc.net
Subject: 8271-3, Leon Vanderlei
Attachments: 8271-3public.short.docx; FORM8.FRM.doc

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Karen Schlaak
SD DENR, Water Rights Program
(605) 773-3352



Affidavit of Publication
RECEIVED

State of South Dakota }
County of Bon Homme } SS

MAY 22 2017

**WATER RIGHTS
PROGRAM**

Rebecca Ly Being first duly sworn
says that the **Springfield Times** is a legal weekly news-
paper for publication of legal and other official notices as
required by Chapter 298 of the Session Laws of South
Dakota, 1939; that it has bona fide paid circulation of
more than two hundred copies weekly; that it is pub-
lished in English language in the City of Springfield, Bon
Homme County, South Dakota, and has been admitted
to the United States mail under second class mailing
privilege for more than one year prior to the first publi-
cation of the notice herein mentioned, and that it is
printed in an office maintained at the place of publica-
tion at Springfield, South Dakota, and that deponent is
the publisher in charge of the advertising department of
said newspaper; that the advertisement headed

Not. to Approp Water # 8271-3
68 @ 38

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

.....May 17, 2017.....	20.....
.....20.....	20.....
.....20.....	20.....
.....20.....	20.....

That the full amount of the fee charged for the publica-
tion of said notice, \$ 25.84, inures to the benefit
of the publisher of said newspaper, that no agreement or
understanding for the division thereof has been made
with any other person, and that no part has been agreed
to be paid to any person whomsoever.

Rebecca Ly, publisher
Subscribed and sworn to before me this

17 day of May, 2017.
Peggy Schelske
Notary Public, South Dakota
My Commission Expires 10-24-2021

.....
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No. 6487-3. Water Right No. 6487-3 ap-
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14 for irrigation of 263 acres located in the
SW 1/4, S 1/2 NE 1/4 and N 1/2 SE 1/4
Section 14-T93N-R61W.

Pursuant to SDCL 46-2A-2, the Chief
Engineer recommends APPROVAL of
Application No. 8271-3 with qualifica-
tions because 1) unappropriated water is
available, 2) existing rights will not be un-
lawfully impaired, 3) it is a beneficial use
of water, and 4) it is in the public interest.
The Chief Engineer's recommendation
with qualifications, the application, and
staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund
for this information, or other informa-
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Steven M. Pirner, Secretary, Department
of Environment and Natural Resources.
Published once at the total approximate
cost of \$25.84

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

RECEIVED
MAY 19 2017
WATER RIGHTS
PROGRAM

LEON VANDERLEI
40846 312TH ST
SPRINGFIELD SD 57062

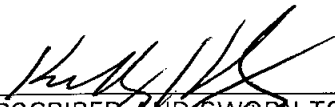
STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

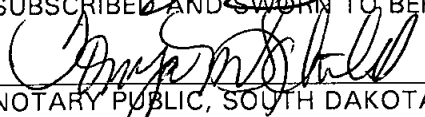
KELLY HERTZ, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE MANAGING EDITOR OF YANKTON
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
YANKTON DAILY PRESS AND DAKOTAN, A LEGAL DAILY NEWSPAPER
PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY
AND STATE, AND ONE OF THE OFFICIAL NEWSPAPERS OF THE SAID
COUNTY OF FACTS STATED IN THIS AFFIDAVIT; THAT THE ANNEXED
5 + 17 NOTICE OF APPLICATIO

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 17th DAY OF May, 2017
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$26.92 ENSURES TO THE
BENEFITS OF THE PUBLISHER OF SAID NEWSPAPER AND THAT NO
AGREEMENT AND UNDERSTANDING FOR THE DIVISION THEREOF HAS
BEEN MADE WITH ANY OTHER PERSON, AND THAT NO PART THEREOF
HAS BEEN AGREED TO BE PAID TO ANY PERSON WHOMSOEVER.

PUBLISHED ON: 05/17/2017

FILED ON: 05/17/2017


SUBSCRIBED AND SWORN TO BEFORE ME THIS 17th DAY OF May, 2017


NOTARY PUBLIC, SOUTH DAKOTA
MY COMMISSION EXPIRES 08/19/2021

Ad text : 5+17

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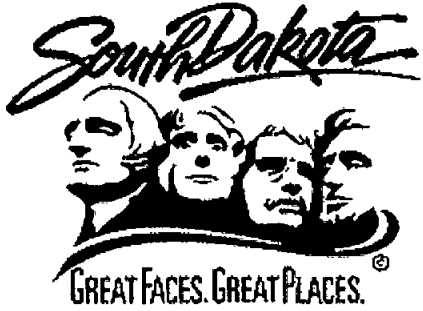
Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8271-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineers recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

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 May 30, 2017.

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.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. 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.

Steven M. Pirner, Secretary, Department of Environment and Natural Resources.
Published once at the total approximate cost of \$26.92.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

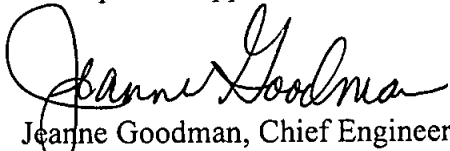
**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8271-3, Leon Vanderlei**

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. 8271-3, Leon Vanderlei, 40846 312th Street, Springfield SD 57062.

The Chief Engineer is recommending APPROVAL of Application No. 8271-3 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 Right No. 6487-3 and Water Permit No. 8271-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. 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
May 10, 2017

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 8271-3
LEON VANDERLEI
AND
WATER PERMIT APPLICATION NO. 8272-3
CRAIG VANDERLEI
MAY 10, 2017

Water Permit Application No. 8271-3 proposes to irrigate up to 140 acres located in the NW ¼ Sec. 14-T93N-R61W from an existing well authorized by Water Right No. 6487-3. Water Right No. 6487-3 authorizes the irrigation of 263 acres located in the SW ¼, S ½ NE ¼, and N ½ SE ¼ Sec. 14-T93N-R61W at a maximum diversion rate of 1.89 cubic feet of water per second (cfs). The well authorized by Water Right No. 6487-3 is completed into the Choteau: West aquifer and is located in the center of the SW ¼ Sec. 14-T93N-R61W; all in Bon Homme County. Water Permit No. 7081-3 also uses the well authorized by Water Right No. 6487-3. Application No. 8271-3 proposes to use the diversion rate authority authorized under Water Right No. 6487-3 and operate the existing and proposed irrigation systems on an alternating basis.

Water Permit No. 8272-3 proposes to irrigate up to 70 acres located in the E ½ NE ¼ Sec. 36-T94N-R61W at a maximum diversion rate of 1.11 cfs from a well completed into the Choteau: West aquifer. The well is located in the SE ¼ NE ¼ Sec. 36-T94N-R61W; all in Bon Homme County. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres.

AQUIFER: Choteau: West (CH: W)

Aquifer Characteristics:

The West management unit of the Choteau aquifer has been previously called the Choteau aquifer by Christensen (1970), Jorgensen (1971), and Kume (1977). In the remainder of this report, the aquifer will be called the Choteau: West aquifer as identified by Hedges and others (1982). Figure 1 is a map showing the locations of the well sites both applications intend to use, the approximate aquifer boundary (Hedges et. al, 1982) for the Choteau: West aquifer, and DENR-Water Rights Program observation wells completed into the Choteau: West aquifer.

The Choteau: West aquifer underlies portions of Bon Homme, Charles Mix, and Douglas Counties (Hedges et. al, 1982). The aquifer is primarily composed of outwash and western-origin stream deposits that are buried (Kume, 1977). The outwash is composed of several layers of sand and gravel intermixed with layers of till (Kume, 1977). Hedges and others (1982) estimated the Choteau: West aquifer underlies approximately 218,400 acres and contains an estimated 1,474,200 acre-feet (ac-ft) of recoverable water in storage. The aquifer is almost exclusively under confined conditions with a few localized locations, such as along Dry Choteau Creek, where unconfined conditions can be encountered (Hedges et. al, 1985; Kume, 1977; Water Rights, 2017a).

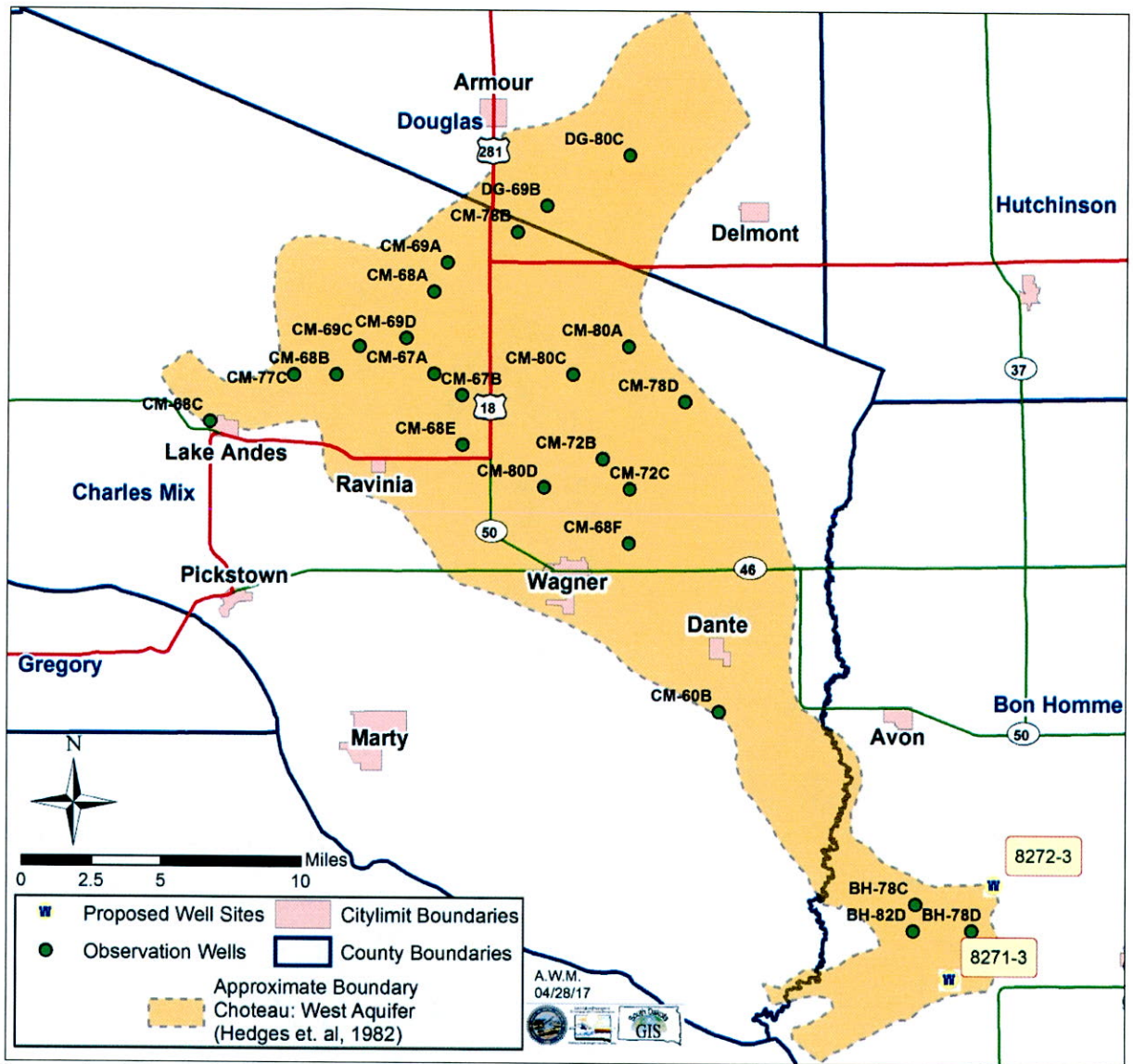


Figure 1- Map of proposed well sites, approximate Choteau: West aquifer boundary, and observation wells

Table 1 shows the lithology at the well Application No. 8271-3 proposes to use which is authorized by Water Right No. 6487-3 and the lithology at a test hole drilled for Application No. 8272-3. The sand and gravel below 178 ft. at the well site for Application No. 8271-3 and below 190 ft. at the proposed well site for Application No. 8272-3 are aquifer materials in the Choteau: West aquifer.

SOUTH DAKOTA CODIFIED LAW (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 this 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 effects on existing rights from the aquifer that are pertinent to these applications.

Table 1- Lithology at the well sites for Application Nos. 8271-3 and 8272-3

Application No. 8271-3			Application No. 8272-3		
From (ft)	To (ft)	Material	From (ft)	To (ft)	Material
0	24	top soil & silty brown clay	0	60	top soil & brown clay
24	73	blue clay	60	110	sticky blue clay
73	74	rock	110	123	med. to coarse greenish sand
74	178	blue clay	123	190	very sticky blue clay
178	215	fine sand	190	205	coarse greenish sand
215	240	med. gravel with shale chunks	205	208	clay
240	243	rocks into shale	208	220	very coarse sand/very fine gravel - greenish
			220	240	very coarse sand/fine gravel & some rocks
Static Water Level	03/30/2004	156 ft	Static Water Level	03/16/2015	Estimated to be 105 ft

WATER AVAILABILITY:

These applications propose to appropriate water from the Choteau: West aquifer. The probability of unappropriated water available from the 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.” If the source of the water is older or lower than the Greenhorn Formation and a water distribution system has applied for a permit, the Board need not consider the recharge/withdrawal issue. In this case, the aquifer is not stratigraphically lower than the Greenhorn Formation and neither applicant is a water distribution system.

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 in addition to other data to determine that the quantity of water withdrawn annually from the aquifer does not exceed the estimated average annual recharge of the aquifer.

The DENR-Water Rights Program monitors 25 observation wells completed into the Choteau: West aquifer (Water Rights, 2017a). The three observation wells in the area of the well sites proposed by these applications, BH-78C, BH-78D, and BH-82D, are shown in Figures 1 and 2. The hydrographs for these three observation wells are shown in Figures 3, 4, and 5, respectively. Figure 2 also shows the well locations for water rights/permits authorized to withdraw water from the Choteau: West aquifer in the area of the proposed well sites. Observation well BH-78C appears to not be functioning properly. Records for DENR-Water Rights Program maintenance and development of the observation well indicate the well has not yielded water well (Water Rights, 2017a). Furthermore, the water level shown in the hydrograph barely shows the effects of climate on the water level when other observation wells in the area both completed into the Choteau: West aquifer and into other aquifers show the cyclic effect of climate. Therefore, BH-78C is not representative of the Choteau: West aquifer.

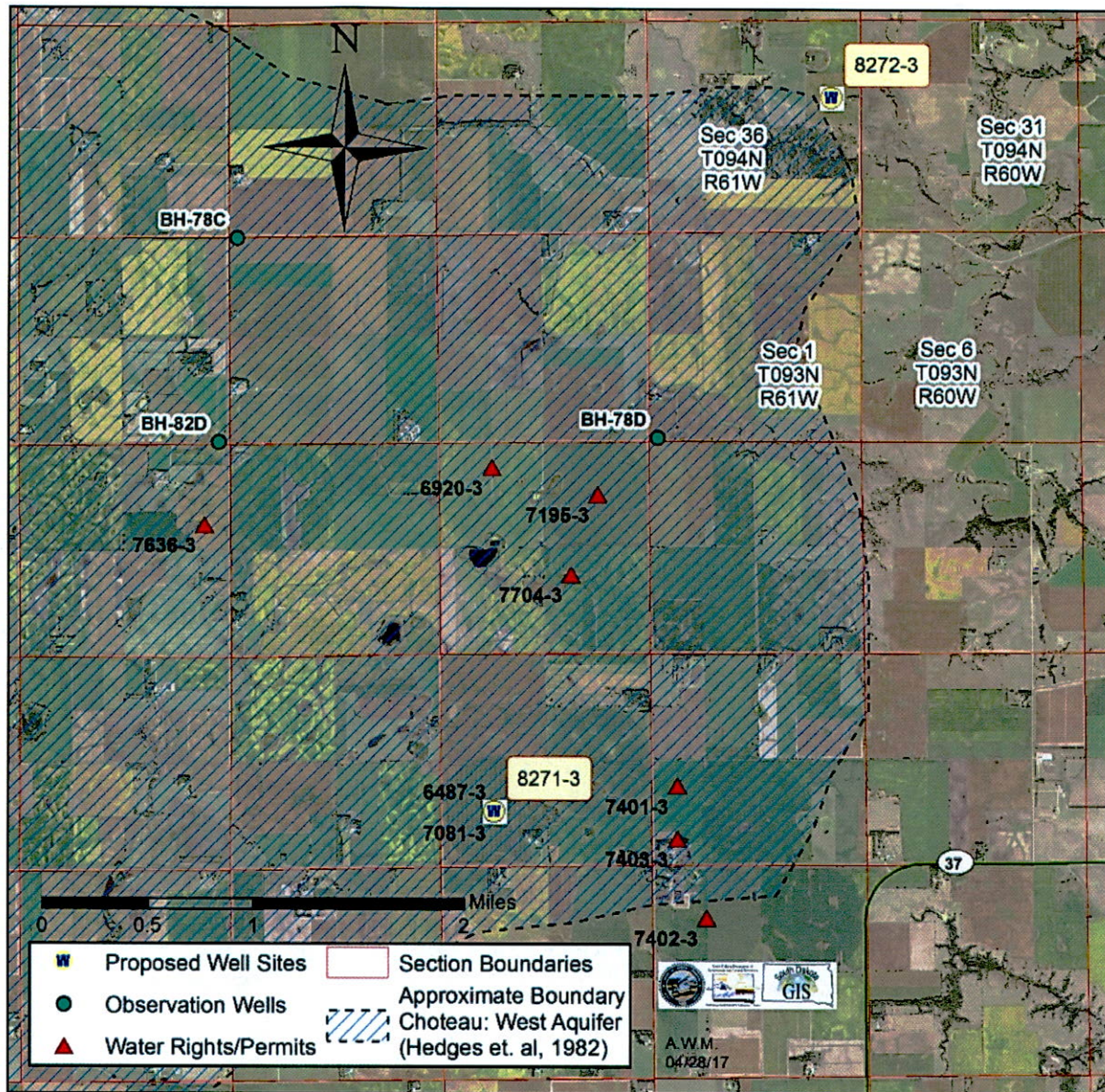


Figure 2- Map of the Choteau: West observation wells (Water Rights, 2017a) and water rights/permits (Water Rights, 2017b) in the proximity of the proposed well sites for Application Nos. 8271-3 and 8272-3

Table 2- Water rights/permits shown in Figure 2.

Permit No.	Name	Status	Use	CFS	Acres
6487-3	Leon Vanderlei	LC	IRR	1.89	263
6920-3	Ernest R Namminga	PE	IRR	2.22	160
7081-3	Leon Vanderlei	PE	IRR	0	140
7195-3	Craig Vanderlei	PE	IRR	2	245
7401-3	Leon Vanderlei	PE	IRR	2	60
7402-3	Craig Vanderlei	PE	IRR	2	270
7403-3	Craig Vanderlei	PE	DOM	0.075	N/A
7636-3	Verlyn Jelsma	PE	IRR	0.58	69
7704-3	Ivan Jelsma	PE	IRR	1.78	136
LC= Water Right, PE= Water Permit, IRR= Irrigation, DOM= Domestic					

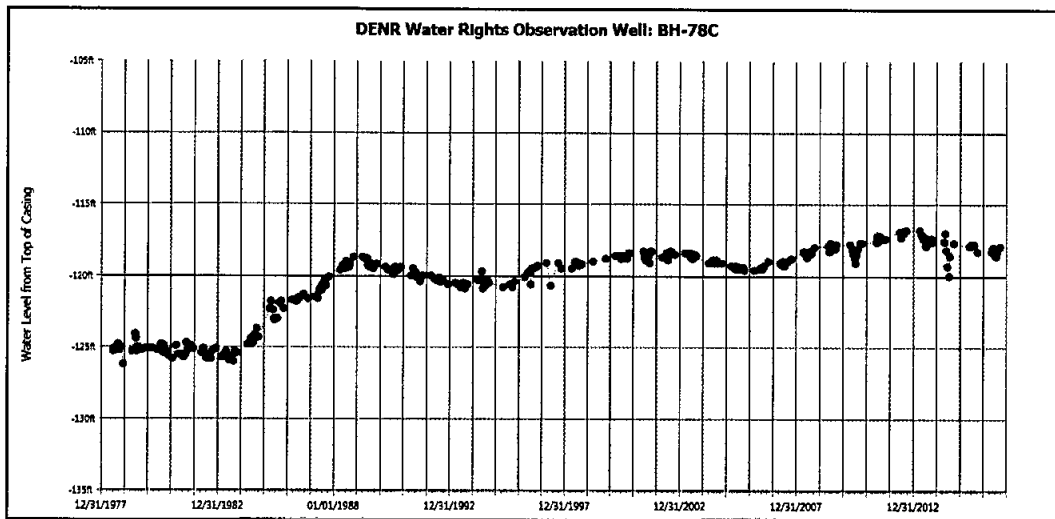


Figure 3- Hydrograph for observation well BH-78C (Water Rights, 2017a)

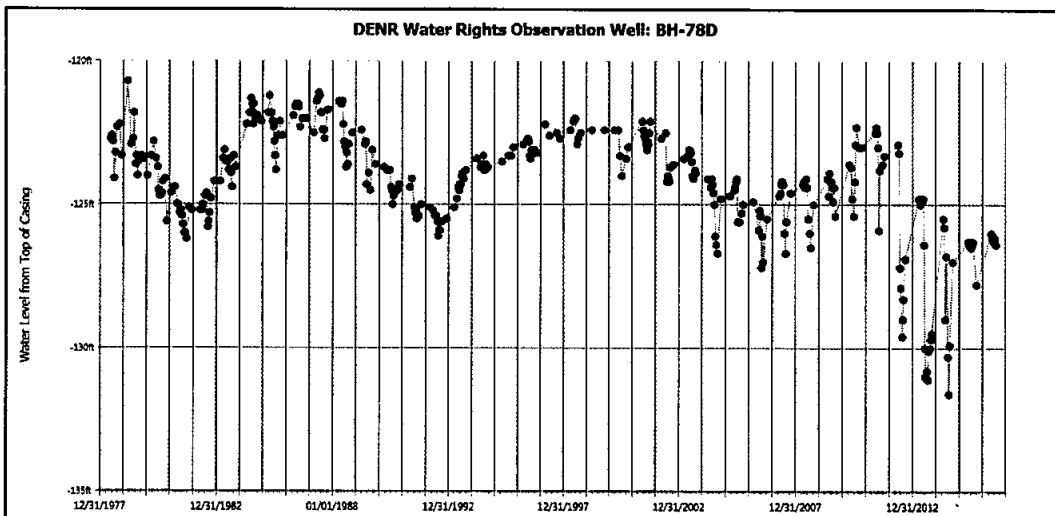


Figure 4- Hydrograph for observation well BH-78D (Water Rights, 2017a)

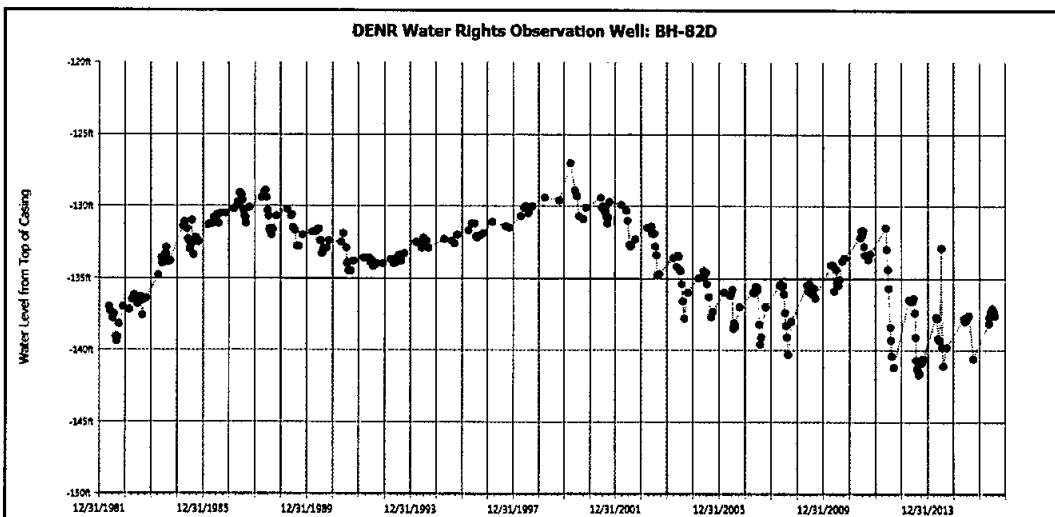


Figure 5- Hydrograph for observation well BH-82D (Water Rights, 2017a)

The hydrographs for BH-78D and BH- 82D document the water level in the aquifer is dominated by climatic conditions. The water levels rise during wetter periods when recharge exceeds withdrawals plus natural discharge and slowly decline during drier periods when withdrawals plus natural discharge exceed recharge to the aquifer. The hydrographs for the other observation wells completed into the Choteau: West aquifer agree with BH-78D and BH-82D. When climate dominates the water level of an aquifer, recharge to and natural discharge from an aquifer significantly exceed withdrawals. Natural discharge from an aquifer can be captured for pumping. Recognizing that, the hydrographs show there is unappropriated water available from the Choteau: West aquifer.

The hydrographs for 18 of the 24 representative observation wells completed into the Choteau: West aquifer show a lower water level now than at the beginning of their respective periods of record. The Choteau: West aquifer is almost entirely under confined conditions. This means that the change in water level from the beginning of the respective well's period of record to now represents a change in artesian head pressure in the aquifer with very little change in actual volume of water in storage in the aquifer. There are also 17 observation wells, not all the same wells, which show an overall trend of water levels from stable to slightly rising over their respective period of record. The seven observation wells that show a general declining water level trend show in the last few years the water level has been relatively stable. It is probable the water level of the aquifer is approaching a new equilibrium with the increased diversion from the aquifer (see Table 4) especially in areas that have had recent development.

Potentiometric surface contours for the Choteau: West aquifer for May 2016, May 2007, May 1997, and May 1992, show the gradient of the aquifer and the configuration of the potentiometric surface has stayed relatively the same over time in the aquifer. If the gradient is constant, recharge to the aquifer must also be constant. There are a few ways to increase the amount of water pumped from an aquifer: increase recharge, decrease natural discharge, remove water from storage, or a combination of the three. As previously stated the recharge is constant. While some of the hydrographs show lower water levels now than at the beginning of their respective periods of record, that change in water level is entirely within the artesian head pressure of the aquifer, which means very little water has been removed from storage. Therefore, natural discharge from the Choteau: West aquifer has been decreased. Additional natural discharge from an aquifer can be captured for pumping. Therefore, the observation well data shows there is unappropriated water available from the Choteau: West aquifer for these proposed appropriations.

Recharge and Discharge:

Recharge:

The Choteau: West aquifer receives recharge from adjacent till and numerous saturated lenticular outwash bodies and possibly from the Niobrara Marl in Charles Mix and Douglas Counties (Kume, 1977). The observation well data shows there is potential for leakage from the Niobrara aquifer to the Choteau: West aquifer in T98N-R63W and possibly other areas along the northwestern side of the Choteau: West aquifer (Water Rights, 2017a). In Bon Homme County, recharge to the aquifer comes from seepage from Choteau Creek and Dry Choteau Creek and percolation through till cover where the aquifer is near land surface (Jorgensen, 1971).

Hedges and others (1985) noted the unconfined portion of the Choteau: West aquifer has a recharge rate of 4.1 in/yr. However since the Choteau: West aquifer is almost completely under confined conditions, it would be more appropriate to use the recharge rate range of 0.15 to 0.6 in/yr. Hedges and others (1985) suggested for use in development and management programs of confined aquifers. Using the recharge rate range of 0.15 to 0.6 in/yr., it is estimated the recharge rate to the Choteau: West aquifer ranges from 2,730 to 10,920 ac-ft/yr.

Discharge:

The Choteau: West aquifer discharges through losses to springs, seepage into surrounding drift and bedrock, and well withdrawals (Kume, 1977). There are 54 water rights/permits authorizing the withdrawal of water from the Choteau: West aquifer (Water Rights, 2017b). There are six water rights/permits authorizing the withdrawal of water for non-irrigation purposes as shown in Table 3. The City of Wagner, Water Right Nos. 569-3 and 1782-3, is connected to Randall Community Water District (Friedeman, 2017) and uses the rural water system as their primary water source. Therefore, the City of Wagner is expected to use little water under their water permits. The estimated annual use by non-irrigation permits is 351 ac-ft/yr. This estimate is based on pumping at the maximum permitted diversion rate for 60 percent of the time. The DENR-Water Rights Program has used this estimate for some time, and the Water Management Board has accepted this method as reasonable.

The historic irrigation use from the Choteau: West aquifer is shown in Table 4. Over the period of record the average annual irrigation pumpage is 2,572 ac-ft/yr. However, the use by Water Permit Nos. 8224-3 and 8231-3, which were approved in 2016 for the irrigation of 135 and 104 acres respectively, are not reflected in Table 4. In general, the application rate for irrigation in the eastern half of South Dakota is less than 10 inches per acre per year. Using that application rate, Water Permit Nos. 8224-3 and 8231-3 are expected to pump less than 200 ac-ft/yr. combined. Therefore, expected average annual irrigation pumping is expected to be less than 2,773 ac-ft/yr.

Table 3- Non-irrigation water rights/permits authorizing the withdrawal of water from the Choteau: West aquifer (Water Rights, 2017b)

Permit No.	Name	County	Status	Use	CFS	Ac-ft
296-3	Charles H Ahrens	CM	LC	REC/DOM	0.3	130
297-3	Charles H Ahrens	CM	LC	REC	0.3	130
569-3	City of Wagner	CM	LC	MUN	1.1	*
1782-3	City of Wagner	CM	LC	MUN	0.89	*
7276-3	Red & Lori Sparks	DG	LC	COM/LCO	0.134	58
7403-3	Craig Vanderlei	BH	PE	DOM	0.075	33
CM= Charles Mix, DG = Douglas, BH= Bon Homme, MUN= Municipal, REC= Recreation, DOM= Domestic, COM= Commercial, LCO= Livestock Confinement Operation					Total	351

Table 4- Historic irrigation use from the Choteau: West aquifer (Water Rights, 1979-2016)

Year	No. of Permits Reporting	Appropriation (ac-ft)	Pumpage (ac-ft)
2015	46	21882.36	4306.86
2014	45	21296.36	3966.34
2013	43	20906.12	4141.1
2012	33	17312.12	6042.81
2011	35	19324.12	1872.77
2010	35	19324.12	614.83
2009	35	19492.12	1163.81
2008	34	19212.12	2443.95
2007	34	19108.12	3363.59
2006	34	19943.8	3598.83
2005	36	19563.8	2896.82
2004	34	18843.8	2819.08
2003	33	15696	2526.26
2002	33	15995.8	3223.92
2001	33	16475.8	1625.24
2000	33	16475.8	3009.11
1999	40	19675.8	1248.07
1998	42	18975.8	697.51
1997	42	19087.8	1509
1996	42	19087.8	1795.61
1995	42	20410.8	999.46
1994	41	20146.8	2026.03
1993	45	21835.8	334.2
1992	46	23224.8	1682.6
1991	45	23080.8	4056.5
1990	45	23400.8	3716
1989	45	23565.8	3984.1
1988	44	23245.8	4537.4
1987	42	23080.8	2198
1986	42	23108.8	2986
1985	43	23810.8	2377
1984	44	24770.8	1692
1983	40	21761.8	1368.89
1982	39	20935.8	1647.15
1981	48	21657	3132
1980	47	21477	2644
1979	49	21477	2933
Min	33	15696	334.2
Max	49	24770.8	6042.81
Avg.	40.2	20504.6	2572.4

There are a number of domestic wells on file with the SD DENR-Water Rights Program that are completed into the Choteau: West aquifer (Water Rights, 2017c). Domestic use from the aquifer is not significant compared to the volume of water pumped for appropriative use.

Hydrologic Budget:

The average annual appropriative use from the Choteau: West aquifer is expected to be less than 3,124 ac-ft/yr. Application Nos. 8271-3 and 8272-3, if approved, are expected to use less than 117 and 59 ac-ft/yr., respectively. Thus the estimated average annual appropriative pumping from the Choteau: West aquifer is expected to be less than 3,300 ac-ft/yr. The range of estimated average annual recharge rates based on Hedges and others (1985) recharge rate range is from 2,730 to 10,920 ac-ft/yr. The estimated average annual use is on the low end of the recharge rate estimate range. The lower end of the recharge rate range is not supported by the observation well data, and recharge to the Choteau: West aquifer is likely greater than 2,730 ac-ft/yr. Therefore,

there is a reasonable probability unappropriated water is available for these proposed appropriations.

EXISTING WATER RIGHTS:

Figure 6 is a map of the area around the well sites Application Nos. 8271-3 and 8272-3 propose to use. The map includes Choteau: West and Niobrara aquifer water rights/permits, because there is a potential for leakage between the aquifers in this area. This potential for leakage also means there is a potential for drawdown from pumping in one aquifer to transfer to nearby wells completed into the other aquifer. The potential for drawdown is limited and would be controlled and limited by the relatively small transmissivity of the Niobrara aquifer. Therefore, the drawdown caused by pumping these proposed diversions is expected to be minimal on nearby Niobrara aquifer wells. Application No. 8271-3 proposes to use the well authorized by Water Right No. 6487-3 which is also used by Water Permit No. 7081-3. The nearest wells authorized by other appropriative rights, authorized by Water Permit No. 7401-3 and 7403-3, are approximately 0.9 miles east of the well authorized by Water Right No. 6487-3 as shown in Figure 6. The nearest appropriative well to the proposed well site for Application No. 8272-3, authorized by Water Permit No. 7286-3, is approximately 0.8 miles east of the proposed well site. Figure 6 is a map of the area near the well sites proposed by Application Nos. 8271-3 and 8272-3. The water rights/permits shown in Figure 6 are listed in Table 5.

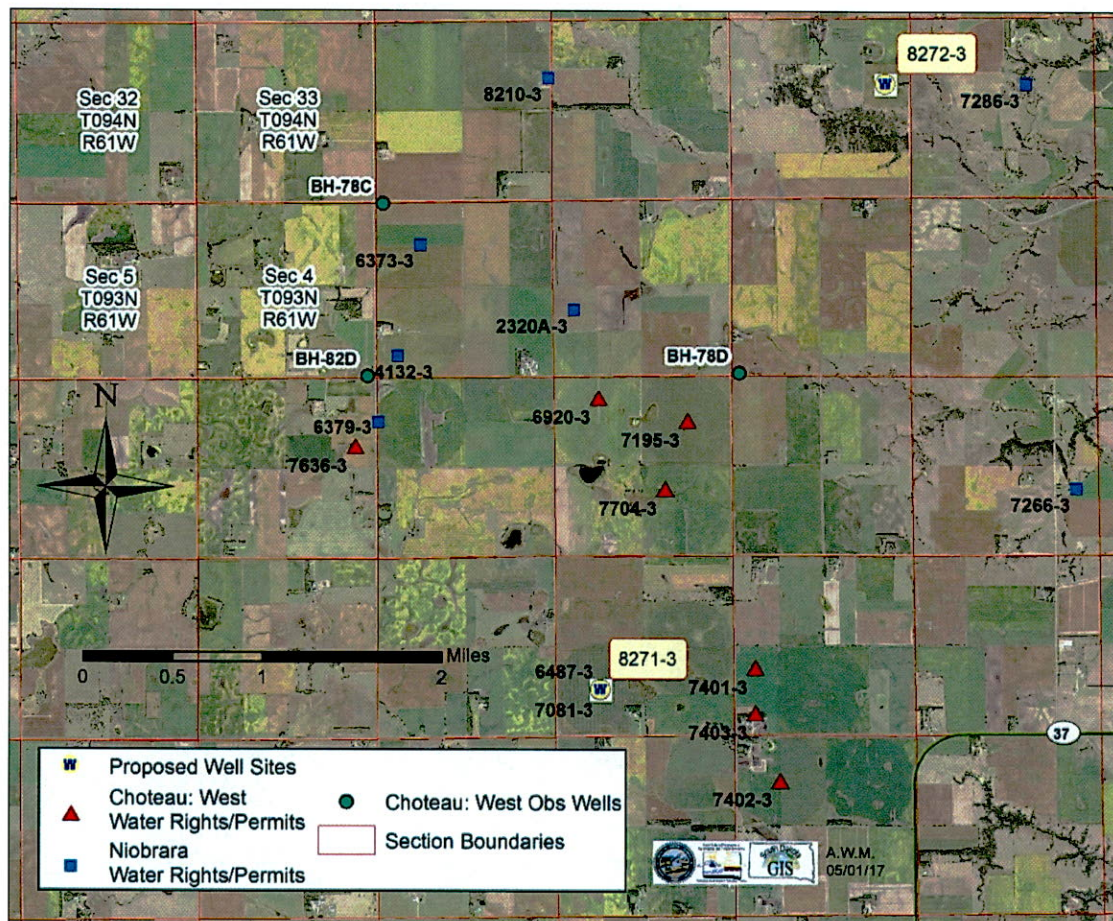


Figure 6- Map of the water rights/permits (Water Rights, 2017b) and observation wells (Water Rights, 2017a) in the area of the well sites for Application Nos. 8271-3 and 8272-3

Table 5- Water rights/permits shown in Figure 6

Permit No.	Name	Status	Aquifer	Use	CFS	Acres
2320A-3	Ernest R. Namminga	LC	NBRR	IRR	1.78	248
4132-3	Harold Tjeerdsma	LC	NBRR	IRR	2	164
6373-3	Ernest R. Namminga	PE	NBRR	IRR	1.78	128
6379-3	Leon Vanderlei	LC	NBRR	IRR	1.67	136
6487-3	Leon Vanderlei	LC	CH:W	IRR	1.89	263
6920-3	Ernest R. Namminga	PE	CH:W	IRR	2.22	160
7081-3	Leon Vanderlei	PE	CH:W	IRR	0	140
7195-3	Craig Vanderlei	PE	CH:W	IRR	2	245
7266-3	Verlyn & Jermie Jelsma	PE	NBRR	IRR	1.33	109
7286-3	Brian Kozak	PE	NBRR	IRR	1.44	196
7401-3	Leon Vanderlei	PE	CH:W	IRR	2	60
7402-3	Craig Vanderlei	PE	CH:W	IRR	2	270
7403-3	Craig Vanderlei	PE	CH:W	DOM	0.075	N/A
7636-3	Verlyn Jelsma	PE	CH:W	IRR	0.58	69
7704-3	Ivan Jelsma	PE	CH:W	IRR	1.78	136
8210-3	Craig Vanderlei	PE	NBRR	IRR	1.11	140
LC= Water Right, PE= Water Permit						
NBRR= Niobrara, CH:W= Choteau: West						
IRR= Irrigation, DOM= Domestic, N/A= Not Applicable						

The hydrographs for observation wells completed into the Choteau: West aquifer document a reduction in artesian head pressure in the aquifer during the irrigation season, especially in the areas where there is a concentration of irrigation water rights/permits. The exact amount of drawdown created as a result of pumping an individual well cannot be quantified without aquifer testing, but it can be estimated.

The drawdown expected to be created by pumping Application Nos. 8171-3 and 8172-3 should be less than 10 feet and less than five feet, respectively, approximately one mile from the well sites. Based on domestic and appropriative wells, test holes, and observation well data, there is more artesian head pressure below the lowest measured water level for both BH-78D and BH-82D than the estimated maximum drawdown either application would create and there is generally more than 10 feet of artesian head pressure at the well for completion reports on file the Water Rights Program for Choteau: West aquifer wells (Water Rights, 2017a, 2017b, and 2017c). Below the artesian head pressure, the saturated aquifer material thickness in the area can be up to 88 feet. However, the proximity of the proposed well sites near the edge of the aquifer means the thickness of the aquifer does reach 0 feet. Generally, wells completed into the Choteau: West aquifer in this area have a saturated thickness of at least 40 feet (Water Rights, 2017c).

SDCL 46-6-6.1 does not protect artesian head pressure as a means of delivery of water and the Water Management Board has consistently recognized to place water to maximum beneficial use a certain amount of drawdown may occur. The South Dakota Supreme Court has ruled SDCL 46-6-6.1 does not grant the Board "...unbridled power to approve irrigation projects without giving consideration to the maintenance of artesian head pressure as a method of delivery. This statute merely requires a balancing of interests between irrigation and delivery of water by artesian pressure for domestic use" (*Fraser et. al v. Water Rights Commission of the Department of Natural Resource Development*, 1980, 294 N.W.2d 784). The Water Management Board to

balance interests between high capacity well use and domestic use has defined an “adversely impacted domestic well” in ARSD 74:02:04:20(7) as:

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

In the past, the Water Management Board has recognized to place water to maximum beneficial use, a certain amount of drawdown may occur. Since the aquifer is under confined conditions at the existing well site for Application No. 8271-3 and at the proposed well site for Application No. 8272-3, drawdown due to pumping may extend some distance from the well sites. The Water Management Board considered the delivery of water by artesian head pressure versus maximum beneficial use of water issue for Water Right No. 2313-2 for Coca-Cola Bottling Company of the Black Hills. The Water Management Board adopted Findings of Facts and Conclusions of Law that noted reservation of artesian head pressure for delivery of water would be inconsistent with SDCL 46-1-4 which states, “general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable...” (Water Rights, 1995). Furthermore, the Water Management Board found if increased cost or decreased production as a result of impacts on artesian head pressure by legitimate users is to be considered an adverse impact it would also be in conflict with SDCL 46-1-4 (Water Rights, 1995). With that in mind, some existing well owners may need to lower their pumps to accommodate for deeper water levels depending on the specific characteristics of the Choteau: West aquifer at the well sites. However when considering the statute (SDCL 46-6-6.1), rule (ARSD 74:02:04:20(7)), and the artesian head pressure of the aquifer, well interference from these proposed diversions is not expected to cause an adverse impact. Therefore, there is a reasonable probability that any interference created by pumping for these proposed appropriations will not be adverse to existing appropriative or domestic users.

SDCL 46-5-6:

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of one cfs for every 70 acres, or “the equivalent thereof.” The statute does provide that: “The Water Management Board may allow a greater diversion, in volume or rate or both, if the method of irrigation, any time constraints on diversion of water, or the type of soil so requires. However, no annual volume may be greater than three acre-feet per acre delivered to the land.” Water Permit Application No. 8272-3 proposes to divert water at a maximum rate of 1.11 cfs for the irrigation of 70 acres. No reason was specifically stated in the application for the request in excess of the statutory limit. However, the applicant intends to operate a center pivot system in a “windshield wipe” orientation. This center pivot orientation is known to often require a diversion rate in excess of the statutory limit and has been accepted by the Water Management Board previously as a reasonable request.

HISTORICAL CONCERNS:

There was concern over the impact of irrigation development on artesian head pressure in this area and from this aquifer in the 1950’s. Irrigation pumping caused declines in the water levels in

domestic wells resulting in some wells no longer flowing at land surface and other wells requiring their pumps to be lowered. The early controversies have been resolved and the most recent issue in the area regarding the Choteau: West aquifer was a complaint filed in 1989 regarding a pump no longer able to pump water. That issue was resolved by lowering the pump inlet.

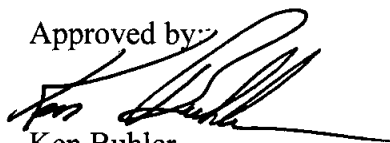
CONCLUSIONS:

1. Application No. 8271-3 proposes to irrigate 140 acres located in Bon Homme County using the well and diversion rate authority authorized by Water Right No. 6487-3.
2. Water Right No. 6487-3 authorizes the irrigation of 263 acres at a maximum diversion rate of 1.89 cfs from a well authorized to withdraw water from the Choteau: West aquifer.
3. Water Permit No. 7081-3 authorizes the irrigation of 140 acres using the well and diversion rate authority from Water Right No. 6487-3.
4. Application No. 8272-3 proposes to irrigate 70 acres located in Bon Homme County from one well to be completed into the Choteau: West aquifer at a maximum diversion rate of 1.11 cfs.
5. Based on the observation well data and the hydrologic budget, there is a reasonable probability unappropriated water is available for this proposed appropriation.
6. There is a reasonable probability the diversions proposed by these applications can be made without adversely impacting existing appropriative or domestic users.
7. Application No. 8272-3 has requested a diversion rate in excess of the statutory limit of one cfs per 70 acres. The orientation of the center pivot system requires the requested diversion rate and is a reasonable request.
8. There were concerns regarding declining artesian head pressure caused by irrigation pumping from the Choteau: West aquifer in the 1950's. Changes in South Dakota water law have made the early controversies non-issues.



Adam Mathiowetz, PE
SD DENR-Water Rights Program

Approved by:



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

- Christensen, C.M. 1970. Major Ground-Water Aquifers in Bon Homme County, South Dakota. Water Information Circular 4. SD DENR-Geological Survey. Vermillion, South Dakota.
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- Water Rights. 1979-2016. "1979-2015 Irrigation Questionnaires": SD DENR-Water Rights Program, Joe Foss Building, Pierre, South Dakota.
- Water Rights. 2017a. Observation Well Files. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
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- Water Rights. 2017c. Well Completion Reports. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
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DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

JUN 09 2017

Leon Vanderlei
40846 312th St
Springfield SD 57062

Dear Mr. Vanderlei:

Enclosed is Water Permit No. 8271-3 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

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

Sincerely,

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

enclosures

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8271-3

I have this day, February 22, 2018, made a thorough examination of the water use system constructed by Leon Vanderlei, 40846 312th St., Springfield, SD 57062, holder of Permit No. 8271-3, bearing the priority of March 16, 2017 utilizing diversion rate authority to 1.89 cu. ft. per second of the waters held under Water Rights No. 6487-3 of ground water (Choteau West aquifer) for irrigation purposes, in Bon Homme County.

Inspection contact: Leon Vanderlei, Owner

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Christensen Well
- 2) No. of Wells 1
- 3) Depth(s) 240 feet
- 4) Well log is available Y

Casing:

- 1) Diameter 16 inches
- 2) Length 200 feet
- 3) Type Plastic

Screen:

- 1) Type PVC
- 2) Length 40 feet
- 3) Static water level 156 feet

Pump:

- 1) Make Western Land Roller
- 2) Model Unknown
- 3) Capacity 850 GPM

Motor:

- 1) Make US Electric
- 2) Model No. Unknown
- 3) Horsepower rating 100 hp

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

- 1) Type PVC
- 2) Size 8 inches
- 3) Length 2,600 feet

C. Works used to apply water to beneficial use:

Center pivot:

- 1) Make T&L
- 2) Overall length 1,300 feet
- 3) Number of towers 8
- 4) End gun Yes
- 5) Capacity 850 GPM

Chemigation Equipment:

- 1) Does chemigate Y
- 2) Main line check valve Y
- 3) Inspection port/air relief Y
- 4) Low pressure drain Y
- 5) Discharge is 20' from source Yes with hose
- 6) Interlock type mechanical
- 7) Injection pump positive displacement
- 8) Injection check valve Y
- 9) Injection line check valve or positive displacement pump Y

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Yes
- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period Yes
- 3) Exceptions to compliance are: None

E. Condition and Location:

1. The system is in good condition with the point(s) of diversion located as follows: Well: 1,340 feet north and 1,340 feet east from the SW corner of Section 14-T93N-R61W (Latitude 42.86936, Longitude -98.02541 – near the center of the SW1/4).
2. The works are capable of diverting and conveying to the place of use 1.89 cu. ft. per second of water which is to be used for irrigation purposes. Water has been put to beneficial use to the maximum extent as follows: all in Section 14-T93N-R61W

<u>NE1/4NW1/4</u>	<u>34 acres</u>
<u>NW1/4NW1/4</u>	<u>34 acres</u>

<u>SE1/4NW1/4</u>	<u>34 acres</u>
<u>SW1/4NW1/4</u>	<u>34 acres</u>

comprising a total of 136 acres of land utilizing 1.89 cfs of diversion rate authority under Water Right No. 6487-3. (See note at the bottom of page)

3. All structures, wells and lands on map Yes

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

Water Permit No. 8271-3 and Water Right No. 6487-3 should be incorporated into one water license since they use the same well.

This permit uses the same well that is used under Permit No. 6487-3. The latitude and longitude coordinates were obtained using a handheld GPS unit. Because Permit No. 6487-3 provided water for Permit No. 7081-3 for a time in the past, the center pivots for Permits 8271-3, 6487-3, 7401-3 and 7081-3 are all tied together with 8 inch plastic pipe. If necessary all of the pivots can be fed from this well or they can be fed by the well associated with Permit No. 7401-3 if one well or the other is temporarily out of service.

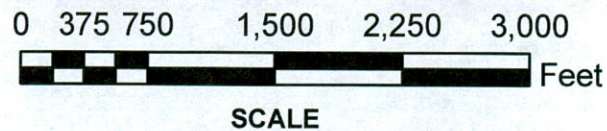
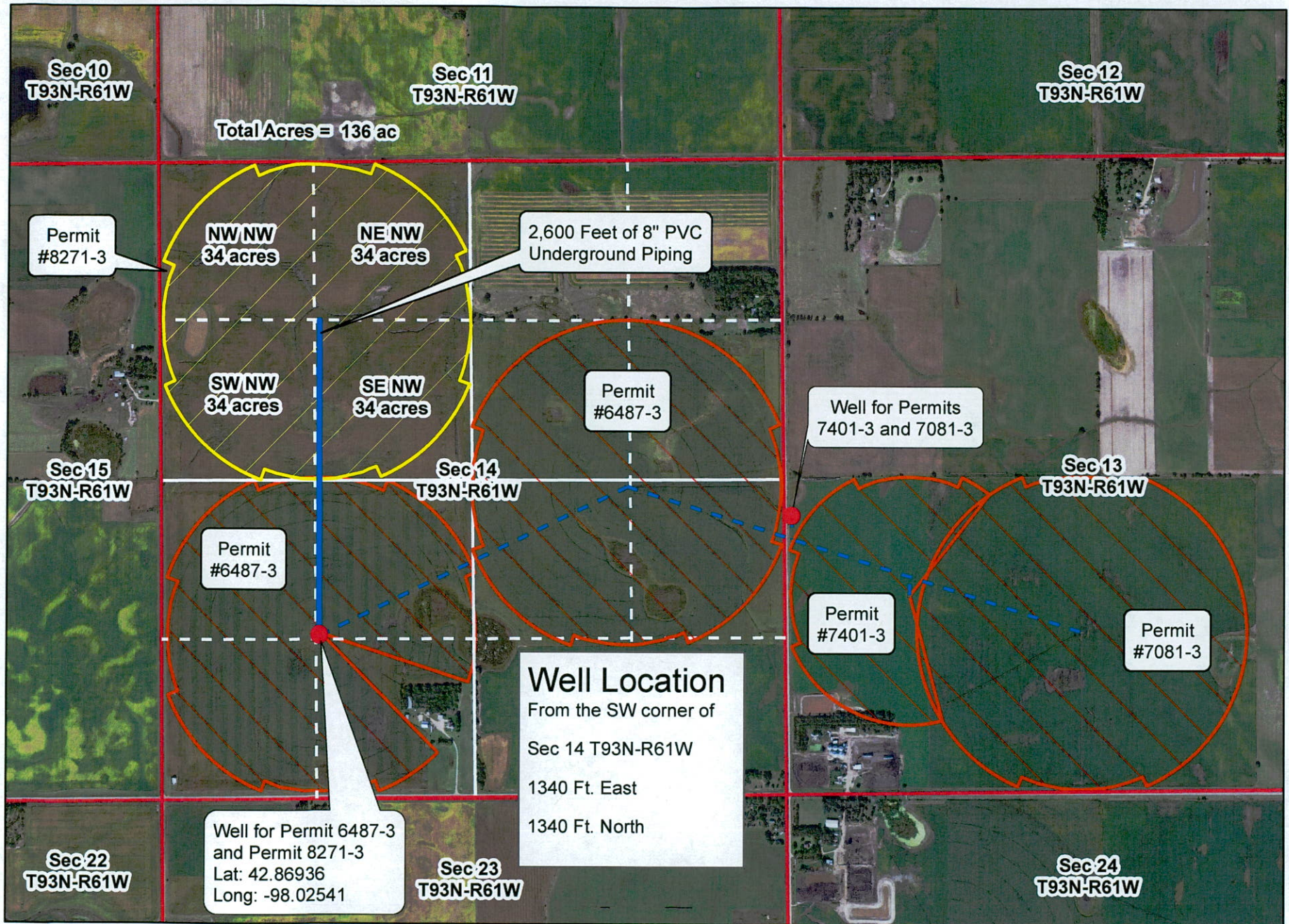
Keith DeJong

Keith DeJong
Water Rights Inspector
DENR, Water Rights Program

Date report completed: May 30, 2018

Note: Upon incorporating Nos. 6487-3 and 8271-3, the acreage previously licensed under No. 6487-3 (263 acres in the SW 1/4, S ½ NE ¼ and N ½ SE ¼ Section 14, T93N, R61W) will be included on Water License No. 8271-3. The acreage originally licensed under No. 6487-3 will retain a priority date of March 12, 2004. The acreage authorized under No. 8271-3 in the NW ¼ Section 14, will retain a priority date of March 16, 2017.
(Note added by Genny McMath)

Water Right No. 8271-3



Keith DeJong
Keith DeJong, PE
Staff Engineer
April 6, 2018



8271-3

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
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<http://denr.sd.gov>

JUN 04 2018

6487-3
8271-3

Leon Vanderlei
40846 312th St
Springfield SD 57062

Dear Mr. Vanderlei:

Enclosed is Water License No. 8271-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

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

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

Note: Upon licensing, the applicable portions of Water Right No. 6487-3 were incorporated into Water License No. 8271-3.

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8271-3**

(1) Leon Vanderlei, 40846 312th St., Springfield SD 57062 made Application No. 8271-3, March 16, 2017 for a water permit to add acreage to Water Right No. 6487-3 using the existing well (Choteau: West Aquifer) located in Bon Homme County, South Dakota. Permit No. 8271-3, with a priority date of March 16, 2017 was approved May 30, 2017 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before May 30, 2022 and for the application to beneficial use of said water on or before May 30, 2026.

Water Right No. 6487-3, with a priority date of March 12, 2004, authorizes diversion of 1.89 cubic feet of water per second (cfs) from one well to irrigate 263 acres in the SW $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$ and N $\frac{1}{2}$ SE $\frac{1}{4}$ Section 14, T93N, R61W. Water Permit No. 8271-3 authorized use of the existing well to irrigate 140 acres in the NW $\frac{1}{4}$ Section 14, T93N, R61W.

The applicable portions of Water Right No. 6487-3 have been incorporated into this Water License. A priority date of March 12, 2004 is retained for 1.89 cfs. Priority dates, as they pertain to the acreage irrigated are described in (3) of this license.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 1.89 cubic feet of water per second for beneficial use. The location of the diversion point is:

- 1,340'N and 1,340'E of the SW corner of Section 14, T93N, R61W (approximate center of the SW $\frac{1}{4}$)
Latitude 42.86936, Longitude -98.02541

If needed, the above described well can also be used to supply water to the land authorized under Water Right No. 7401-3 located in the S $\frac{1}{2}$ Section 13, T93N, R61W.

(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 14, T93N, R61W					
NE $\frac{1}{4}$ SW $\frac{1}{4}$	34 acres	SW $\frac{1}{4}$ NE $\frac{1}{4}$	34 acres	NE $\frac{1}{4}$ NW $\frac{1}{4}$	34 acres
NW $\frac{1}{4}$ SW $\frac{1}{4}$	34 acres	SE $\frac{1}{4}$ NE $\frac{1}{4}$	34 acres	NW $\frac{1}{4}$ NW $\frac{1}{4}$	34 acres
SW $\frac{1}{4}$ SW $\frac{1}{4}$	34 acres	NW $\frac{1}{4}$ SE $\frac{1}{4}$	34 acres	SE $\frac{1}{4}$ NW $\frac{1}{4}$	34 acres
SE $\frac{1}{4}$ SW $\frac{1}{4}$	25 acres	NE $\frac{1}{4}$ SE $\frac{1}{4}$	34 acres	SW $\frac{1}{4}$ NW $\frac{1}{4}$	34 acres
Total of 399 acres					

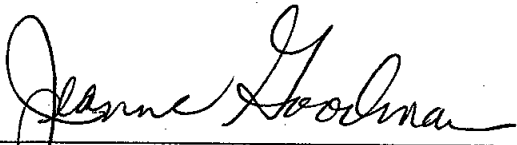
Priority date of March 12, 2004, as established under No. 6487-3, is retained for the SW $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$ and N $\frac{1}{2}$ SE $\frac{1}{4}$
Priority date of March 16, 2017, as established under No. 8271-3, is retained for the NW $\frac{1}{4}$

(4) Pursuant to South Dakota Water Law 46-5-30.1 Leon Vanderlei, 40846 312th St., Springfield SD 57062 the holder and/or owner of Incorporated Water Right No. 8271-3 is issued a license to appropriate water, the right to use 1.89 cubic feet of water per second from ground water, one well (Choteau: West Aquifer) with priority dates of March 12, 2004 and March 16, 2017 from the location specified in (2) of this license for irrigation purposes.

continued

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8271-3 and subject to the following qualifications:

- The well approved under Nos. 6487-3 and 8271-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
- 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

JUN 04 2018
date





DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

No. 8271-3

August 21, 2020

Leon Vanderlei
40846 312th St
Springfield SD 57062

Dear Mr. Vanderlei:

The irrigation season is in full swing. This has led to the Department of Environment and Natural Resources (DENR) fielding inquiries regarding end gun overspray on to roads.

DENR has received an inquiry alleging the irrigation system located in the SW 1/4 Section 14-T93N-R61W had irrigation water from the end gun hitting the road. This irrigation system is covered by Water Right No. 8271-3 with you listed as the owner.

It is common for center pivots to have stops which can be engaged to shut off the operation of the end gun when the pivot nears a road. Please take steps to ensure end gun stops are functioning properly so there is not direct overspray on to the road.

A water right holder is not allowed to operate an irrigation system in violation of state water law, which includes unauthorized end gun overspray upon land not authorized by the water right. Continued overspray can result in DENR taking enforcement action.

If you don't believe your irrigation system is causing the overspray, or if you have any questions, please contact me at (605) 773-3352 or by email at ron.duvall@state.sd.us

Thank you for your cooperation,

Ron Duvall
Water Rights Program, DENR
605 773-3352