

WATER PERMIT NO. 7471-3

Name of Applicant: David Pierce

Address: 14078 466th Ave, Wilmot SD 57279 Phone: 605 880-1468

Amount of Water Claimed: 3.56 cfs Total Acres: 320

Source of Water Supply: groundwater (one well)

Water to be used for: irrigation County: Roberts

Type of Waste Disposal System:

Location: 5 miles south of Wilmot

PRIORITY Date Received: 10-17-2012 Application/License Fee: \$ 1350

Corrected Application Received: 10/23/12 Period of Annual Use: June 1 – September 30

Remarks:

Diversion Point: approximate center of the N 1/2
Sec 36-T122N-R50W

Land to be Irrigated: N 1/2 Section 36-T122N-
R50W

Depth of Well: 240 feet deep

Well Driller: Manikowski Well Drilling Inc.

Remarks:

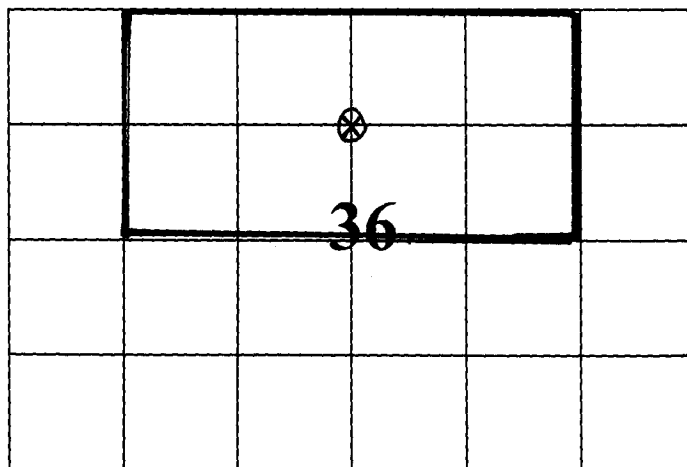
Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 10-23-2012

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



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

Mail to: PMB 2020 DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>7471-3</u> (office use only)	Hydrologic Unit <u>07020001</u>
	Basin <u>Minnesota Whitestone</u>	<u>605-938-4416</u>
	Newspaper <u>Wilmot Enterprise Box 6 57279</u>	
	<u>Public Opinion Box 10 Watertown 57201-886-6901</u>	

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OCT 17 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 David Pierce Phone 605-880-1468 cell
(check one) Owner ☐ Tenant/lessee
Mailing Address 14078 466th Ave Wilmot SD 57279
(Address) (City) (State) (Zip Code)
2. Amount of water claimed 3.56 *CFS or 1600 **GPM ***AF Total Acreage 320
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)
3. Source of water supply Well - submersible pump
4. Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Roberts
1 well NW 1/4 Sec 36 T122 N-R50 W (approximate center)
5. County or counties where water will be used Roberts
6. Annual period during which water is to be used June 1 thru September 30
7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
NW 1/4 of NW 1/4 Sec 36 T122 N R50W	40	NW 1/4 of NE 1/4 of Sec 36 T122 N R50W	40
NE 1/4 of NW 1/4 of Sec 36 T122 N R50W	40	NE 1/4 of NE 1/4 of Sec 36 T122 N R50W	40
SW 1/4 of NW 1/4 of Sec 36 T122 N R50W	40	SW 1/4 of NE 1/4 of Sec 36 T122 N R50W	40
SE 1/4 of NW 1/4 of Sec 36 T122 N R50W	40	SE 1/4 of NE 1/4 of Sec 36 T122 N R50W	40

8. Give a description of the project. (Attach sheet if more space is needed)
I plan to irrigate 2 quarters from one well - (not at the same time) The well will be between the two quarters with a buried pipe to the center of each quarter with a center pivot irrigator on each quarter. I have done a test well with well completion report attached - a water sample has been sent in to lab.

STATE OF SOUTH DAKOTA)
County of Roberts) 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, David Pierce, 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 David Pierce

Subscribed and sworn to before me this 10th day of September 2012

Brian Lien

Notary Public signature

**SOUTH DAKOTA
WATER PERMIT NO. 7471-3**

Date of first receipt of application October 17, 2012.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7471-3 to David Pierce, 14078 466th Ave, Wilmot SD 57279 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. 7471-3 appropriates 3.56 cubic feet of water per second from one well to be completed into the Reville Aquifer (240 feet deep) located in the approximate center of the N 1/2 Section 36 for irrigation of 320 acres located in the N 1/2 Section 36; all in T122N-R50W.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: June 1 – September 30.
3. The date from which applicant may claim right is October 17, 2012.
4. The date of approval of Permit No. 7471-3 is January 22, 2013.
5. One-fifth of the construction is to be completed on or before July 22, 2015.
6. All construction is to be completed on or before January 22, 2018.
7. Water is to be put to beneficial use on or before January 22, 2022.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 7471-3 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

FEB 19 2013
date



Supplemental Information

(type or print in ink)

1. Well Information - Proposed Construction

- a) Drill Hole Diameter 12" Depth 240'
- b) Casing Type PVC Diameter 12" Thickness 1/4"
- c) Screen Type Stainless steel Diameter 12" Thickness 1/8"
- d) Gravel Pack red flint Length of Gravel Pack _____
- e) Depth to Top of Water Bearing Material _____
- f) Depth to Water (ground surface to water level) 72'
- g) Distance to nearest existing domestic well:
- On applicant's property 3000' (approx.) On property owned by others _____

2. Wastewater Disposal System Information

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

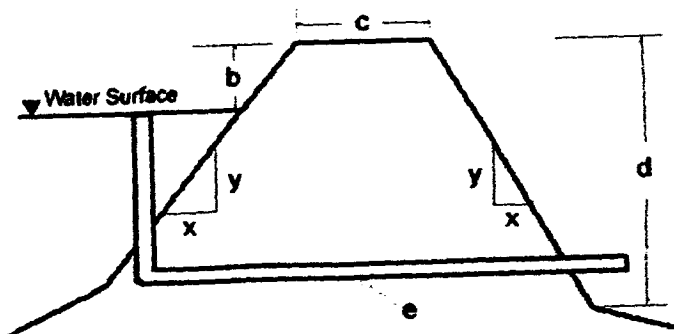
3. Dugout Information

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

4. Water Storage Dams

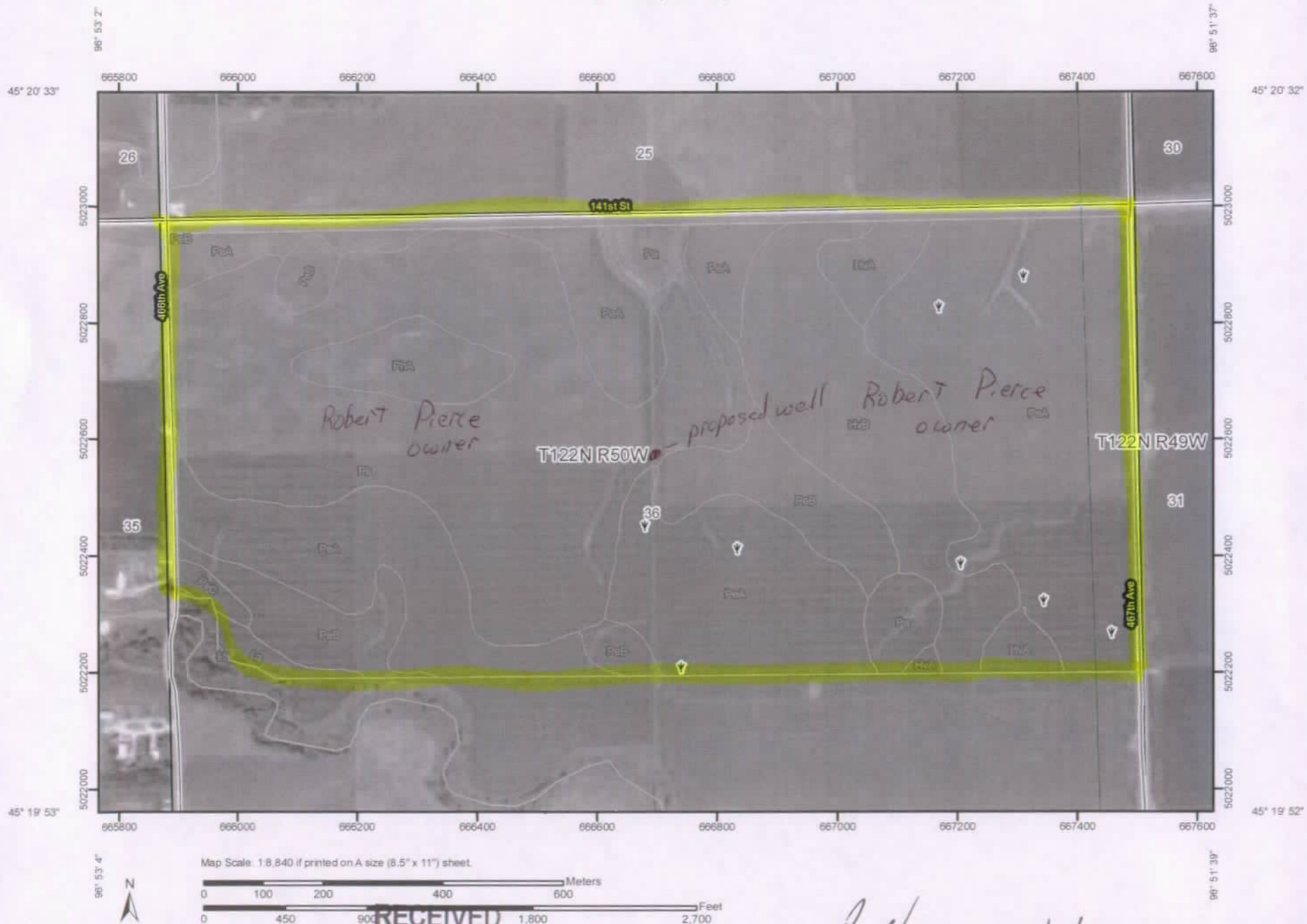
If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

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



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

Soil Map—Roberts County, South Dakota
(Pierce Irrigation map)



Southview 10/16/12
District Conservationist
USDA, NRCS

Soil Map—Roberts County, South Dakota
(Pierce Irrigation map)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot



Very Stony Spot



Wet Spot



Other

Special Line Features



Gully



Short Steep Slope



Other

Political Features



Cities



PLSS Township and Range



PLSS Section

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

MAP INFORMATION

Map Scale: 1:8,840 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Roberts County, South Dakota

Survey Area Data: Version 11, Feb 11, 2010

Date(s) aerial images were photographed: 7/18/2004; 7/21/2004

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

10/16/2012
Page 2 of 3

Map Unit Legend

Roberts County, South Dakota (SD109)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HvA	Heimdal-Svea loams, 0 to 2 percent slopes	7.8	2.6%
HvB	Heimdal-Svea loams, 2 to 6 percent slopes	33.2	10.9%
La	LaDelle silt loam	2.3	0.7%
Lt	Lamoure silty clay loam, channeled	0.1	0.0%
Pa	Pamell silty clay loam	7.1	2.3%
PeA	Peever clay loam, 0 to 2 percent slopes	128.5	42.2%
PeB	Peever clay loam, 2 to 6 percent slopes	26.2	8.6%
PeC	Peever clay loam, 6 to 9 percent slopes	1.5	0.5%
PhA	Peever-Cavour complex, 0 to 3 percent slopes	8.8	2.9%
Pk	Peever-Tonka complex	88.7	29.2%
Totals for Area of Interest		304.1	100.0%

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SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location <u>NE 1/4 NW 1/4 Sec 36 Twp 122 Rg 50</u> County <u>Roberts</u> Please mark well location with an "X" Well completion Date <u>8-15-12</u> Distance from nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.) <u>2000</u> ft. from <u>Septic</u> (identify source)		Well Owner: <u>Dan & Pierce</u> Business Name: _____ Address 1: _____ Address 2: _____ City, State, Zip: _____ WELL LOG: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">FORMATION</th> <th style="text-align: center;">DEPTH FROM</th> <th style="text-align: center;">TO</th> </tr> </thead> <tbody> <tr> <td><u>Topsoil</u></td> <td style="text-align: center;"><u>0</u></td> <td style="text-align: center;"><u>1</u></td> </tr> <tr> <td><u>Yellow clay</u></td> <td style="text-align: center;"><u>1</u></td> <td style="text-align: center;"><u>60</u></td> </tr> <tr> <td><u>Blue clay</u></td> <td style="text-align: center;"><u>60</u></td> <td style="text-align: center;"><u>140</u></td> </tr> <tr> <td><u>Blue clay fill</u></td> <td style="text-align: center;"><u>140</u></td> <td style="text-align: center;"><u>175</u></td> </tr> <tr> <td><u>Sand & Gravel</u></td> <td style="text-align: center;"><u>175</u></td> <td style="text-align: center;"><u>235</u></td> </tr> <tr> <td><u>Shale</u></td> <td style="text-align: center;"><u>235</u></td> <td style="text-align: center;"><u>240</u></td> </tr> </tbody> </table>		FORMATION	DEPTH FROM	TO	<u>Topsoil</u>	<u>0</u>	<u>1</u>	<u>Yellow clay</u>	<u>1</u>	<u>60</u>	<u>Blue clay</u>	<u>60</u>	<u>140</u>	<u>Blue clay fill</u>	<u>140</u>	<u>175</u>	<u>Sand & Gravel</u>	<u>175</u>	<u>235</u>	<u>Shale</u>	<u>235</u>	<u>240</u>
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PROPOSED USE: ☐ Domestic/Stock ☐ Municipal ☐ Business ☒ Test Holes ☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well METHOD OF DRILLING: <u>Forward Rotary</u> CASING DATA: ☐ Steel ☒ Plastic ☐ Other If other describe _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">PIPEWEIGHT</th> <th style="text-align: left;">DIAMETER</th> <th style="text-align: left;">FROM</th> <th style="text-align: left;">TO</th> <th style="text-align: left;">HOLE DIAMETER</th> </tr> </thead> <tbody> <tr> <td><u>200 LB/FT</u></td> <td><u>4 IN</u></td> <td><u>1 FT</u></td> <td><u>175 FT</u></td> <td><u>IN</u></td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER	<u>200 LB/FT</u>	<u>4 IN</u>	<u>1 FT</u>	<u>175 FT</u>	<u>IN</u>											STATIC WATER LEVEL <u>72</u> FEET If flowing: closed in pressure _____ PSI GPM flow _____ through _____ Inch pipe Controlled by ☐ Valve ☐ Reducers ☐ Other _____ Reduced flow rate _____ GPM Can well be completely shut in? _____		
PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER																				
<u>200 LB/FT</u>	<u>4 IN</u>	<u>1 FT</u>	<u>175 FT</u>	<u>IN</u>																				
GROUTING DATA: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Grout Type</th> <th style="text-align: left;">No. of Sacks</th> <th style="text-align: left;">Grout Weight</th> <th style="text-align: left;">From</th> <th style="text-align: left;">To</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td>Lb/gal</td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td>Lb/gal</td> <td> </td> <td> </td> </tr> </tbody> </table> Describe grouting procedure _____ SCREEN: ☐ Perforated pipe ☒ Manufactured Diameter <u>4</u> Inches Length <u>60</u> Feet Material <u>PVC</u> Slot Size <u>1040</u> Set From <u>175</u> Feet to <u>235</u> Feet Other information <u>Red Flint 1/8 x 1/16 Pack</u>		Grout Type	No. of Sacks	Grout Weight	From	To			Lb/gal					Lb/gal			WELL TEST DATA: ☐ Pumped Describe: <u>Pumped with 3 HP sub</u> ☐ Bailed ☐ Other _____ Pumping Level Below Land Surface <u>20.5</u> Ft. After <u>2</u> Hrs. pumped <u>71</u> GPM <u>76.5</u> Ft. After _____ Hrs. pumped _____ GPM If pump installed, pump rate: _____ GPM							
Grout Type	No. of Sacks	Grout Weight	From	To																				
		Lb/gal																						
		Lb/gal																						
WAS A PACKER OR SEAL USED? ☐ Yes ☒ No If so, what material? _____ Describe packer(s) and location _____ DISINFECTION: Was well disinfected upon completion? ☒ Yes, How? <u>chlorine</u> ☐ No, Why Not? _____ Lab sample sent to for water quality analysis _____		REMARKS RECEIVED OCT 17 2012 WATER RIGHTS PROGRAM This well was drilled under license # <u>285</u> And this report is true and accurate. Drilling firm: <u>Man-Kowsky Well Drilling Inc.</u> Signature of License Representative: _____ Signature of Well Owner or Equitable Property Holder: <u>Dan & Pierce</u> Date: <u>10-15-12</u>																						

Please return White Copy to DENR Water Rights

523 E. Capitol Ave., Pierre SD 57501

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 10/23, 20 12

RECEIVED OF David L Pierce 14078 466th Ave Williston SD 57278

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

Fee for Application for Permit No. <u>74711-3</u> to Appropriate Water, to construct and to put water to beneficial use	1150	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>74711-3</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	1350 00

No. 05630

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

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OCT 22 2012

**WATER RIGHTS
PROGRAM**

October 17, 2012

David Pierce
14078 466th Ave
Wilmot SD 57279

Dear Mr. Pierce:

Thank you for submitting the *Application for a Permit to Appropriate Water* for irrigation in Roberts County.

Enclosed is your check for \$2,100.00. The application/license filing fee to irrigate 320 acres is \$1,350.00. Please submit a check for this amount.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak

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

enclosure



**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. 7471-3, David Pierce**

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. 7471-3, David Pierce, 14078 466th Avenue, Wilmot SD 57279.

The Chief Engineer is recommending APPROVAL of Application No. 7471-3 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 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 new well authorized by Permit No. 7471-3 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
December 27, 2012

NOTE: The application states a diversion rate of 1600 gallons per minute from the well. The application also states that both quarters will not be irrigated at the same time. Applying water at a rate of 1,600 gpm to irrigate a standard quarter section pivot greatly exceeds the statutory limit on application rate. Generally standard pivots will operate at between 650 gpm and 850 gpm. If the well produces 1,600 gpm it is likely both pivot could operate at the same time so the recommendation is for the requested amount. If approved, once the system is developed the water right will be limited to the amount of water diverted from the well.

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 7471-3
DAVID PIERCE
DECEMBER 17, 2012

Water Permit Application No. 7471-3 proposes to appropriate 640 acre-feet per year (ac-ft/yr) at a maximum diversion rate of 3.56 cubic feet of water per second (cfs) from one well to be completed into the Reville aquifer. The well is expected to be approximately 240 feet deep and is to be located in the approximate center of N½ of Section 36, T122N-R50W. This permit application proposes to irrigate 320 acres located in the N½ of Section 36, T122N-R50W in Roberts County. The application states that the two quarters on Section 36, T122N-R50W will not be irrigated at the same time.

AQUIFER: Reville aquifer (REV)

GEOLOGY AND AQUIFER CHARACTERISTICS:

The Reville aquifer is a glacial meltwater deposit consisting of sand and gravel that occupies a buried preglacial bedrock valley in southern Roberts County that extends into central Grant County, as shown in Figures 1 and 2 (Hansen, 1990; Thompson, 2001). In Roberts County, the Reville aquifer is estimated to underlie 86.7 square miles and contain 315,200 acre-feet (ac-ft) of water in storage (Thompson, 2001). In Grant County, the Reville aquifer is estimated to underlie 190 square miles and contain 1 million ac-ft of water in storage (Hansen, 1990). The aquifer is under artesian conditions and groundwater movement is from north to south (Hansen, 1990; Thompson, 2001). In northern Grant County, the Reville aquifer is separated from the Veblen aquifer defined by Hansen (1990) by a buried shale bedrock ridge (Hansen, 1990).

In Roberts County, Thompson (2001) reported that the only hydraulic connection between Reville aquifer to other aquifers is near the city of Wilmot, located approximately six miles north of the proposed well site, where a thin layer of silty clay separates the Reville aquifer from what is probably the Wilmot outwash group defined by Thompson (2001), which is shown in Figure 3. Thompson (2001) indicated that the Wilmot outwash group extends into northeast Grant County; this outwash group is likely included in the Veblen aquifer defined by Hansen (1990), which is shown in Figure 4. Hansen (1990) reported that 20 miles north of the city of Twin Brooks, the Reville aquifer could be hydraulically connected to the Veblen aquifer defined by Hansen (1990), which is probably the Wilmot outwash group defined by Thompson (2001). This is probably the same hydraulic connection reported by Thompson (2001).

In Roberts County, the depth to the top of aquifer ranges from 110 feet to 660 feet and the aquifer thickness ranges from 12 to 141 feet, with an average of 56.8 feet (Thompson, 2001). The test hole nearest the proposed well site documented a thickness of 100 feet in one layer and depth to the top of the aquifer at 190 feet (Thompson, 2001). The well completion report submitted with this application reported “yellow clay” from one foot to 60 feet below ground surface, “blue clay” from 60 to 140 feet below ground surface, “blue clay till” from 140 to 175 feet below ground surface, sand and gravel from 175 to 235 feet below ground surface (Reville

aquifer materials), then shale. The static water level is 72 feet below ground surface at this location.

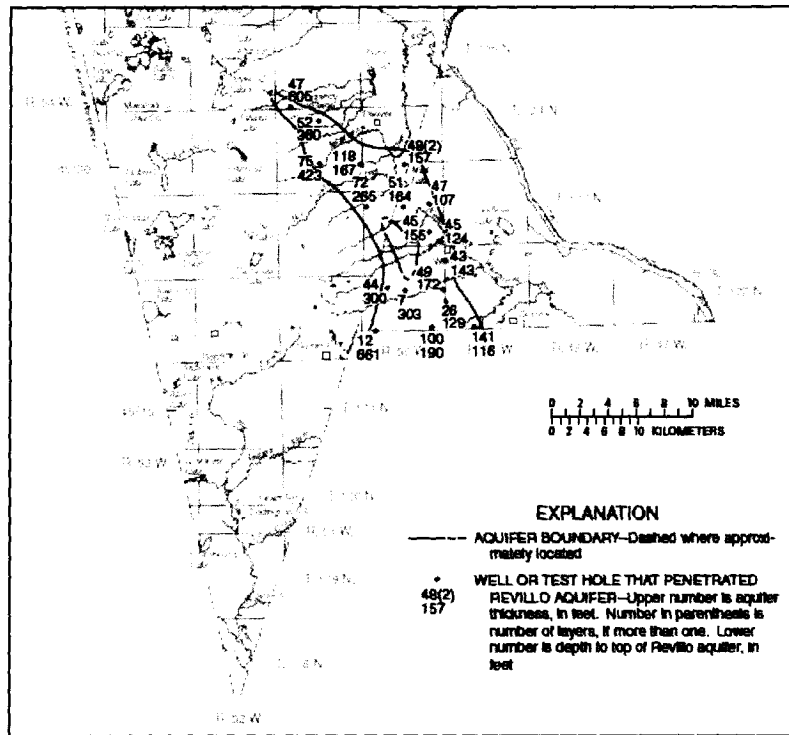


Figure 1: Thickness, depth, and extent of the Renville aquifer in Roberts County (modified from Thompson, 2001)

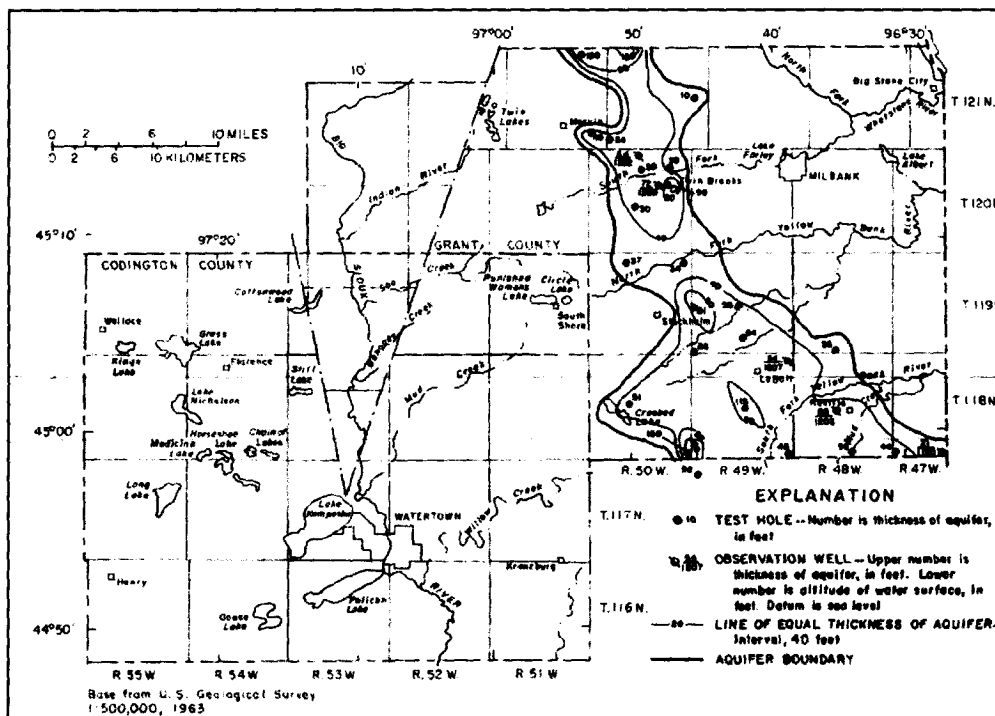


Figure 2: Thickness and extent of the Renville aquifer in Grant County (modified from Hansen, 1990)

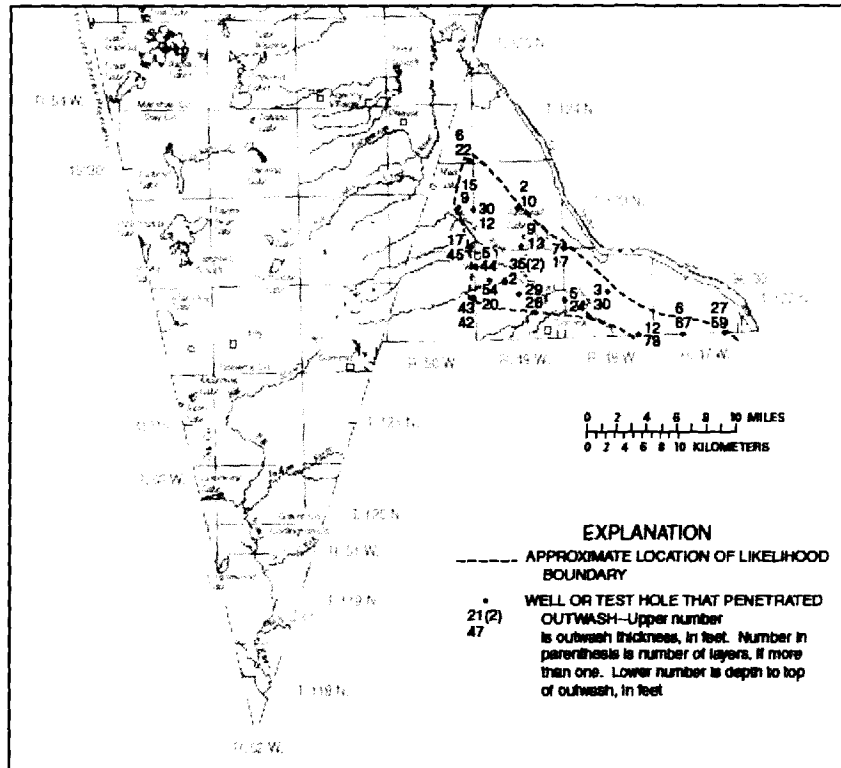


Figure 3: Thickness, depth, and extent of the Wilmot outwash group in Roberts County (modified from Thompson, 2001)

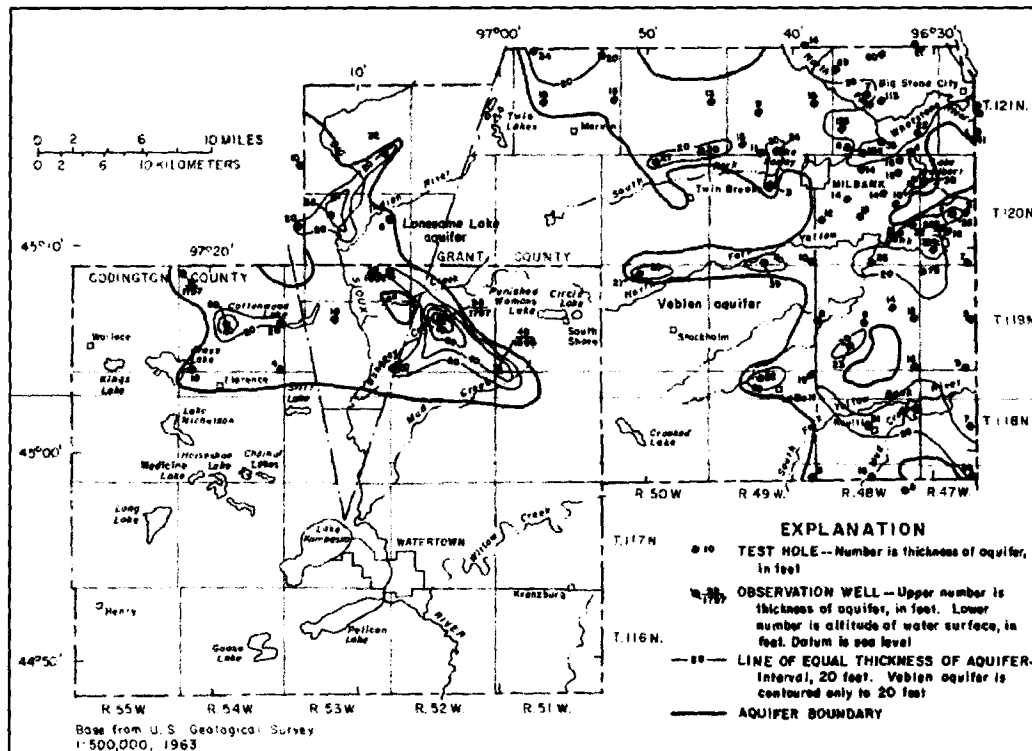


Figure 4: Thickness and extent of the Veblen aquifer in Grant County (modified from Hansen, 1990)

SDCL 46-2A-9

Pursuant to SDCL 46-2A-9, a permit to appropriate water may be issued only if there is a reasonable probability that there is unappropriated water available for the applicant's proposed use, that the proposed diversion can be developed without unlawful impairment of existing rights and that the proposed use is a beneficial use and in the public interest. This report will address the availability of unappropriated water and existing rights from the aquifer and pertinent to this application.

WATER AVAILABILITY:

This application proposes to appropriate 640 ac-ft/yr from the Revillo aquifer. If this application is approved, the actual water use will likely be less than the appropriation. The probability of unappropriated water available from an aquifer can be evaluated by considering SDCL 46-6-3.1, which requires "No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source."

HYDROLOGIC BUDGET:

Recharge:

Recharge to the Revillo aquifer in Roberts County occurs possibly due to inflow from overlying outwash lenses (Thompson, 2001). An average annual recharge rate has not been quantified for the aquifer. However, Hedges and others (1985) concluded that for management and development programs, the recharge rate to confined aquifers can be estimated to be between 0.15 and 0.60 inches per year (in/yr).

Discharge:

Discharge from the Revillo aquifer in Roberts County occurs due to well withdrawals and possible outflow to overlying outwash lenses (Thompson, 2001). Currently, a total of 10 appropriations from the Revillo aquifer, shown in Table 1 (Water Rights, 2012b).

Table 1: Appropriations from the Revillo aquifer (Water Rights, 2012b)

PERMIT NO.	NAME	COUNTY	STATUS	TYPE	CFS	ACRES	AC-FT/YR
549-3	City of Milbank	GT	FU	MUN			808
1764-3	Town of Wilmot	RB	LC	MUN	0.39		
4785-3	City of Milbank	GT	LC	MUN	0.89		
1769-3	City of Milbank	GT	LC	MUN	2.16		
3250-3	Delton L Strasser	RB	LC	IRR	1.89	132	
5482-3	Alan or Linda Scheck	GT	LC	IRR	4.28	410	
5044-3	Ray A & David R Hansen	RB	LC	IRR	2.28	459	
7148-3	Jason E Frerichs	RB	PE	IRR	1.44	60	
7306-3	Tyler Ammann	RB	PE	IRR	2.22	91	
7341-3	Tyler Ammann	RB	PE	IRR	2.71	290	
GT = Grant, RB = Roberts, MUN = Municipal, IRR = Irrigation LC = Water Right, PE = Water Permit, FU = Future Use Permit							

The amount of water that can be expected to be withdrawn by the non-irrigation use water rights/permits at the current appropriation amount can be estimated by assuming water rights/permits limited only by diversion rate will pump at the maximum permitted diversion rate 60 percent of the time and future use permits can be fully developed. At the current appropriation

amount, the total annual withdrawal from the Renville aquifer by non-irrigation use is expected to total less than 1,495 ac-ft/yr (Water Rights, 2012b).

Figure 5 shows the Renville aquifer's historic irrigation data. The development of the aquifer is relatively small. The average pumpage reported equals 267 ac-ft/yr. The maximum pumpage reported was in 2003 for 992 ac-ft/yr (Water Rights, 1997-2012).

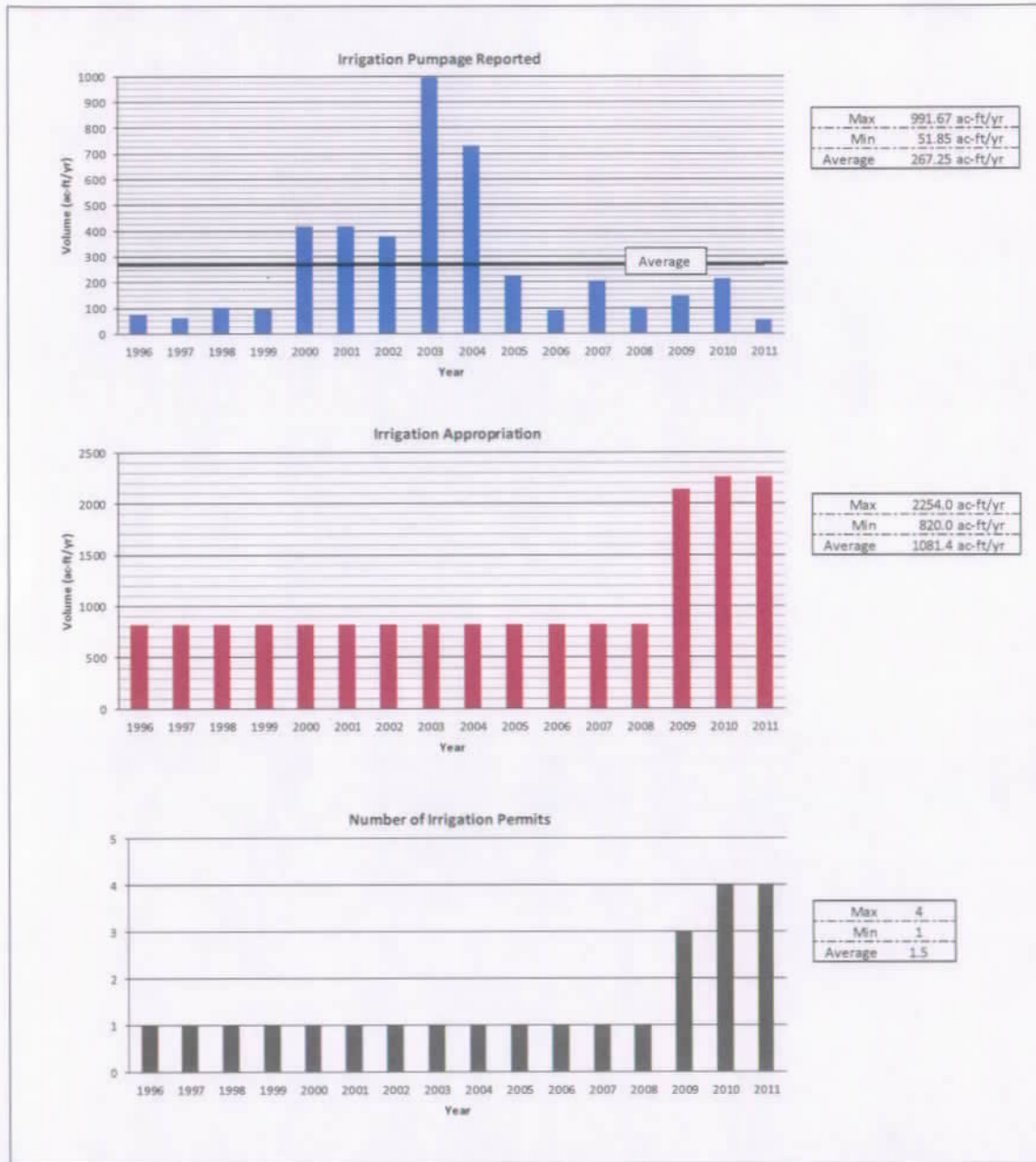


Figure 5: Historic irrigation water use from the Renville aquifer (Water Rights, 1997-2012)

In addition, there are many well completion reports on file with the SD DENR-Water Rights Program for domestic wells that appear to be completed into the Renville aquifer (Water Rights,

2012c). The annual withdrawal due to domestic use is not significant to the hydrologic budget of the aquifer.

Water Balance:

Discharge from the Reville aquifer due to well withdrawals is estimated to be at maximum 2,500 ac-ft/yr, but the actual withdrawal will often be much less. Using potential maximum withdrawal creates the most conservative estimate. To balance the hydrologic budget of the aquifer, recharge must equal withdrawal. At the maximum expected annual withdrawal, plus the maximum withdrawal proposed by this application, recharge must equal 0.21 in/yr to balance this hydrologic budget. This required recharge rate is within the general range of recharge rates for confined aquifers provided by Hedges and others (1985). While this information cannot determine if unappropriated water is in fact available from the aquifer, it can indicate that withdrawal and recharge are on the same order of magnitude. Therefore, there is a reasonable probability that unappropriated water is available from the Reville aquifer for this proposed appropriations of 640 ac-ft/yr.

Also note that the potential maximum withdrawal accounts for 0.2 percent of the estimated volume of recoverable water available from the aquifer in Roberts and Grant Counties. This is not to suggest that all the water within the Reville aquifer is available for this proposed appropriation, but to demonstrate that in general the Reville aquifer is a resource that is relatively unexploited.

OBSERVATION WELL DATA:

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

The DENR-Water Rights Program monitors five observation wells completed into the Reville aquifer, shown in Table 2. Data for these observation wells are shown in Figures 6, 7, 8, 9, and 10 (Water Rights, 2012a). The observation well data documents cyclic conditions of water levels, recharging during wet years and declining during dry years. Water levels in all five observation wells have increased over the period of record, indicating that recharge has exceeded discharge. This data also documents that, at the current level of development, temporal well withdrawal is masked by climatic conditions, indicating that recharge to and natural discharge from the aquifer significantly exceeds pumping. These hydrographs indicate that unappropriated water is available from this area of the Reville aquifer to support the proposed appropriation of 640 ac-ft/yr at the proposed well site.

Table 2: Observation wells completed into the Reville aquifer (Water Rights, 2012a)

Well	Distance from proposed well site	Figure
GT-77K	9.7 miles southeast	6
GT-79D	7.1 miles southeast	7
RB-77L	8.3 miles north	8
RB-77M	6.3 miles north	9
RB-77N	4.3 miles north	10

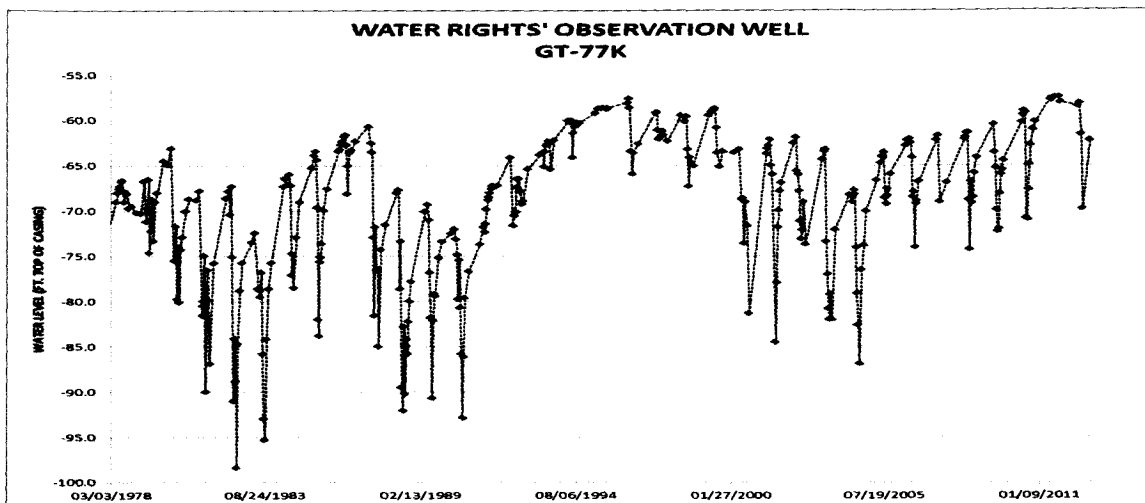


Figure 6: Hydrograph for DENR-Water Rights' observation well GT-77K (Water Rights, 2012a)

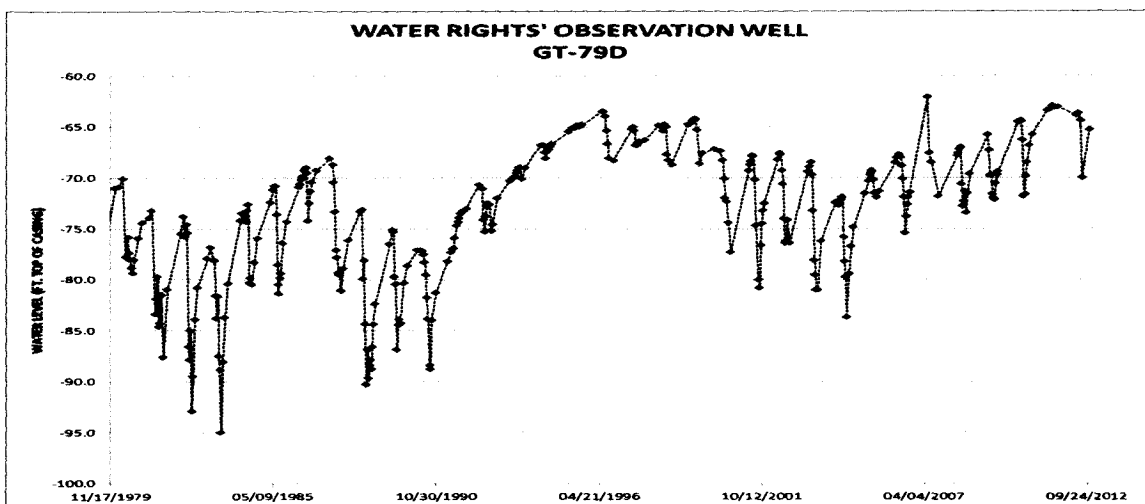


Figure 7: Hydrograph for DENR-Water Rights' observation well GT-79D (Water Rights, 2012a)

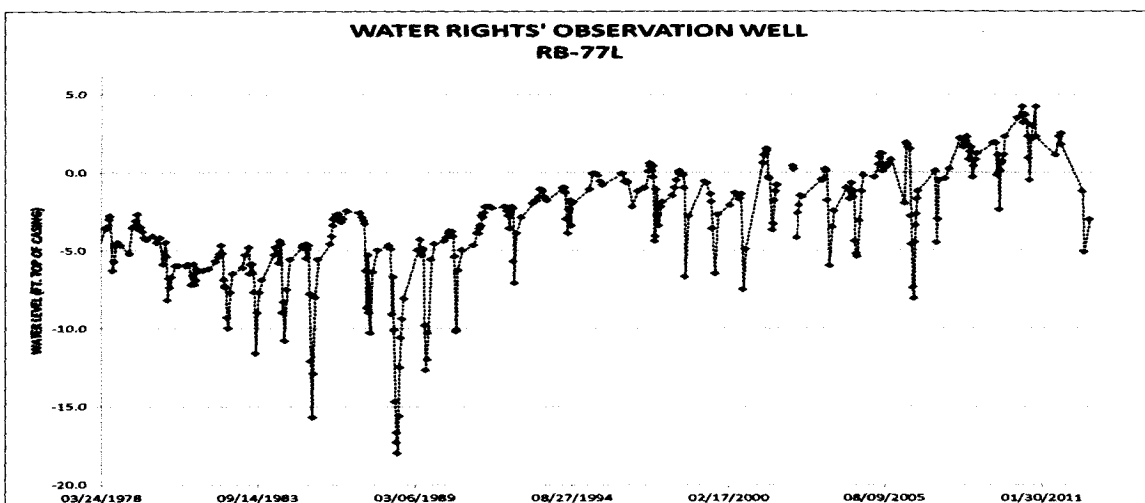


Figure 8: Hydrograph for DENR-Water Rights' observation well RB-77L (Water Rights, 2012a)

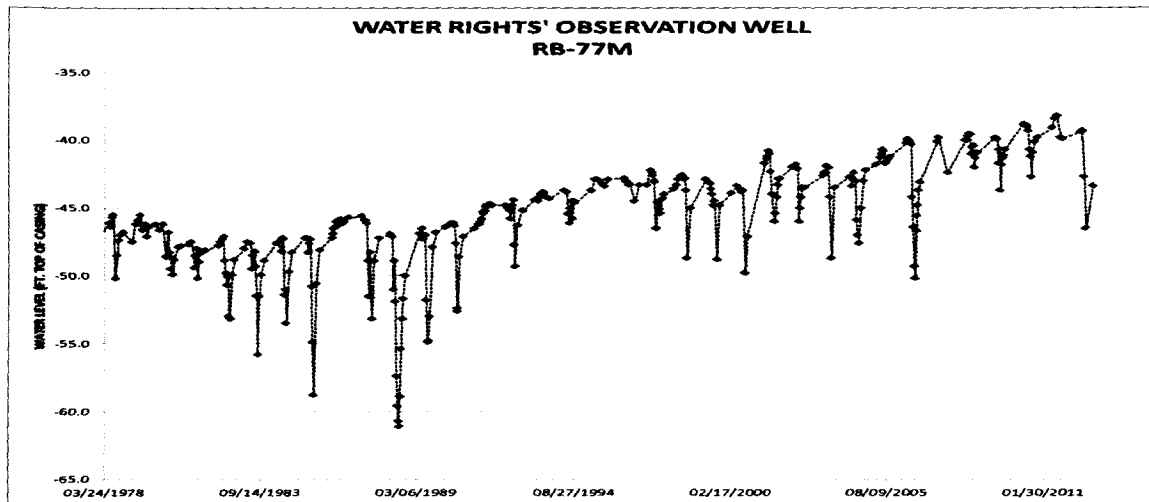


Figure 9: Hydrograph for DENR-Water Rights' observation well RB-77M (Water Rights, 2012a)

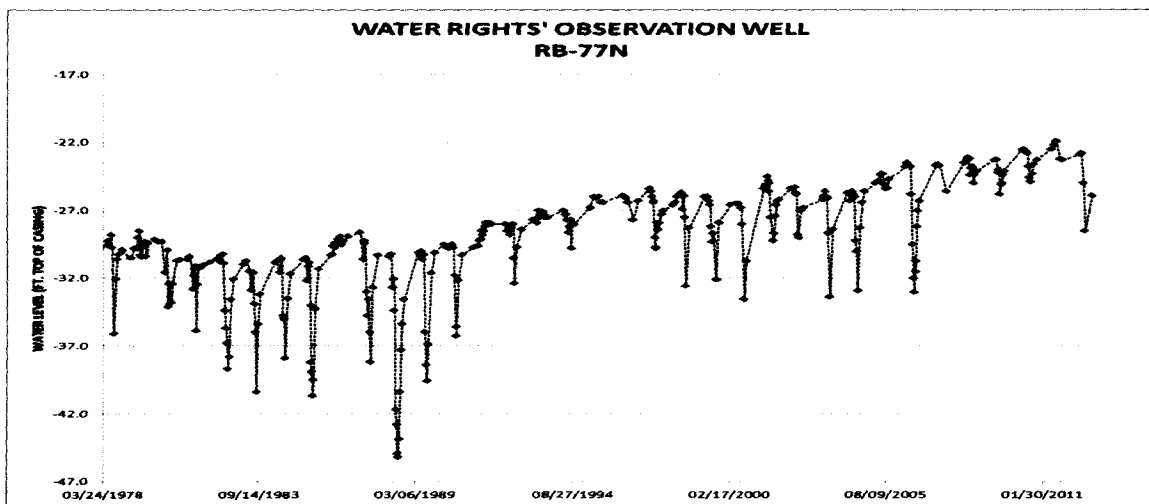


Figure 10: Hydrograph for DENR-Water Rights' observation well RE-77N (Water Rights, 2012a)

EXISTING WATER RIGHTS:

Water Right No. 3250-3 is the nearest appropriation, located approximately two and a half miles from the proposed well site. The remainder of water rights/permits withdrawing from the Revillo aquifer are located beyond three and a half miles but within ten and a half miles from the proposed well site (Water Rights, 2012b). There are three domestic wells on file with the SD DENR-Water Rights Program that appear to be completed into the Revillo aquifer that are within two and a half miles, but further than one mile, of the proposed well site (Water Rights, 2012c).

Because the aquifer at proposed well site is under artesian conditions, some drawdown due to pumping is likely. From the well test data in the well completion report submitted with this application, the specific capacity equals 15.78 gallons per minute per foot. Assuming a storativity of 0.001, the transmissivity equals 31,555 gallons per day per foot ("Transmissivity from Specific Capacity"). Assuming the well diverts water at the proposed rate of 3.56 cfs for

185 days, the estimated drawdown equals approximately 24 feet at one mile from the proposed well and approximately 14 feet at two and a half miles from the proposed well site ("Theis Equation Calculator"). This estimate of distance-drawdown is based on the maximum pumpage, creating the most conservative estimate. Actual diversion rate and pumpage will likely be less than that proposed on the application, and therefore, drawdown will likely be less.

As previously discussed, the hydrographs for observation wells completed into the Reville aquifer document the effects of pumping, however, these are minimal relative to climatic conditions. Observation GT-77K is located near several water rights/permits for municipal use and the associated hydrograph, shown in Figure 6, documents the most obvious temporal effects due to pumping. Over the period of record, water levels in this observation well fluctuated at maximum 45 feet (Water Rights, 2012a). From the well completion report submitted with this application, there is over 100 feet of head pressure in the aquifer at this location.

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

SDCL 46-5-6

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

This water permit application proposes to divert at a rate of 3.56 cfs per 320 acres, equaling 0.78 cfs per 70 acres. However, the application states that the two quarters on Section 36, T122N-R50W will not be irrigated at the same time. So, the proposed diversion rate will only be used on approximately half of the acres. This equals 1.56 cfs per 70 acres. A lower diversion rate, such as half the proposed rate, would logically be used when only irrigating half the applied acres, but this was not stated.

CONCLUSIONS:

1. The application proposes to appropriate 640 ac-ft/yr for irrigation.
2. From observation well data, there is a reasonable probability that unappropriated water is available from the Reville aquifer to supply the proposed appropriation.
3. There is a reasonable probability that this proposed well will not cause interference in existing nearby wells.
4. The application has requested an additional diversion rate in excess of one cfs per 70 acres due to not irrigating the two quarters on Section 36, T122N-R50W at the same time.



Joseph R Stonesifer
SD DENR-Water Rights Program

Approved by



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

Hansen, D.S. 1990. Water Resources of Codington and Grant Counties, South Dakota: U.S. Geological Survey Water-supply Paper 2254, 263 p.

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.

"Theis Equation Calculator." I-calcul8 Calculators and Tools. 17 December 2012
< <http://www.icalcul8.com/theis.php>>

Thompson, R.F. 2001. Water Resources of the Lake Traverse Reservation, South and North Dakota, and Roberts County, South Dakota: U.S. Geological Survey Water-Resource Investigation Report 01-4219

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17 December 2012 < <http://www.aqtesolv.com/forum/transcap.asp>>

Water Rights. 1997-2012. "Annual Irrigation Summary by Aquifer": SD DENR-Water Rights Program, Joe Foss Bldg., 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. Water Well Completion Reports, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

RECEIVED

JAN 11 2013

Form 8

WATER RIGHTS
PROGRAM

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
) SS
County of Codington)

I, Monica K. Saathoff

certify that the attached printed Notice was
taken

from the Watertown Public Opinion

printed and published in Watertown

County of Codington and

state of South Dakota. The notice was
published

in the newspaper on the following date:

January 9th, 2013

Cost of Printing \$52.07

Monica Saathoff
(Signature)

Bookkeeper

(Title)

January 9th, 2013

(Date Signed)

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

NOTICE OF APPLICATION NO. 7471-3 TO APPROPRIATE WATER

Notice is given that David Pierce, 14078 466th Ave, Wilmot SD 57279 has filed an application for a water permit to appropriate 3.56 cubic feet of water per second from one well to be completed into the Revillo Aquifer (240 feet deep) located in the approximate center of the N 1/2 Section 36 for irrigation of 320 acres located in the N 1/2 Section 36; all in T122N-R50W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7471-3 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 January 22, 2013.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

Published once at the approximate cost of \$52.25.
(January 9, 2013)

All legal notices in the Public Opinion and other South Dakota newspapers can be found at
www.sdpublishnotices.com

Affidavit of Publication RECEIVED

STATE OF SOUTH DAKOTA }
County of Roberts } ss.

JAN 11 2013

WATER RIGHTS
PROGRAM

Nancy Kimmel of said county, being first
duly sworn, on oath says, that he is publisher of
THE WILMOT ENTERPRISE, a weekly newspaper printed and
published in Wilmot, in said county of Roberts, and has full
and personal knowledge of all the facts herein stated; that said
newspaper is a legal newspaper and has a bonafide circulation
of at least two hundred copies weekly, and has been published
within said county for 52 successive weeks next prior to the
publication of the notice herein mentioned, and was and is
printed wholly or in part in an office maintained at said place
of publication; that the Notice of Application
No. 7471-3 - Pierre, a printed
copy of which, taken from the paper in which the same was
published, is attached to this sheet, and is made a part of this
affidavit, was published in said newspaper at least once in each
week for 1 successive weeks, on the day of
each week on which said newspaper was regularly published,
to-wit:

Jan 10, 2013; _____;
_____, _____;
_____, _____;
_____, _____;
_____, _____;

that the full amount of the fee is charged for publication of said
Notice insures to the benefit of the publisher of said newspa-
per; that no agreement or understanding for the division there
has been made with any other person, and that no part thereof
has been agreed to be paid to any person whomsoever and that
the fees charged for the publication there of are \$ 23.17

Nancy Kimmel

Subscribed and sworn to before me this 10th day of

January, A.D., 2013

Notary Public

Notary Public, Roberts County, South Dakota

My commission expires July 27, 2016

NOTICE OF APPLICATION

NO. 7471-3 to

Appropriate Water

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

Published once at the total
approximate cost of \$23.17.
(January 10, 2013)



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

denr.sd.gov

January 2, 2013

Public Opinion
PO Box 10
Watertown SD 57201

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7471-3 to Appropriate Water. Please publish the notice once on January 9, 2013. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published and arrange for payment. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is David Pierce, 14078 466th Ave., Wilmot SD 57279 (Ph # 605-938-4416).

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

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

Sincerely,

A handwritten signature in cursive script that reads "Eric Gronlund".

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

January 2, 2013

Wilmot Enterprise
PO Box 6
Wilmot SD 57279

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Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

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

January 2, 2013

David Pierce
14078 466th Ave
Wilmot SD 57279

Dear Mr. Pierce:

Water Permit Application No. 7471-3 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 Public Opinion printed at Watertown SD (Ph # 605-886-6901) and the Wilmot Enterprise printed at Wilmot SD (Ph # 605-938-4651). You will need to contact the newspaper(s) and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

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

Sincerely,

Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

Instruction to Newspaper - Publish the Notice on January 9, 2013. The applicant is responsible for payment. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352 or email: Karen.schlaak@state.sd.us.

NOTICE OF APPLICATION NO. 7471-3 to Appropriate Water

Notice is given that David Pierce, 14078 466th Ave, Wilmot SD 57279 has filed an application for a water permit to appropriate 3.56 cubic feet of water per second from one well to be completed into the Revillo Aquifer (240 feet deep) located in the approximate center of the N 1/2 Section 36 for irrigation of 320 acres located in the N 1/2 Section 36; all in T122N-R50W.

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Published once at the total approximate cost of _____.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

FEB 19 2013

David Pierce
14078 466th Ave
Wilmot SD 57279

Dear Mr. Pierce:

Enclosed is Water Permit No. 7471-3 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,

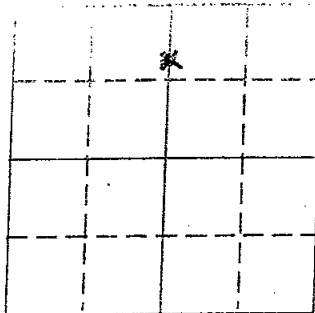
Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

SOUTH DAKOTA WATER WELL COMPLETION REPORT

7471-3
11-02Location NE 1/4 NW 1/4 Sec 36 Twp 122 Rg 50County
Roberts

North

Please mark well
location with an "X"

1 Mile

Well completion Date

8-2-2013

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

3000 ft. from Septic (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Rotary

CASING DATA:

- ☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>sd 121</u> LB/FT	<u>12</u> IN	<u>0</u> FT	<u>180</u> FT	<u>17</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Bentonite</u>	<u>30</u>	Lb/gal	<u>180</u> Ft	<u>20</u> Ft
<u>Cement</u>	<u>18</u>	Lb/gal	<u>0</u> Ft	<u>20</u> Ft

Describe grouting procedure Isometric line

SCREEN:

- ☐ Perforated pipe ☒ Manufactured

Diameter 12 Inches Length 60 FeetMaterial SSSlot Size 040 Set From 180 Feet to 240 Feet

Other information

120 50# bags, 040 Red flint

WAS A PACKER OR SEAL USED?

- ☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☐ Yes☒ No, Why Not? Irrigation

Lab sample sent to for water quality analysis

Well Owner:

David Pierce

Business Name:

Address1:

14078 466 Ave.

Address2:

City, State, Zip:

Wilmot SD 57279

WELL LOG:

DEPTH

FORMATION

FROM

TO

Topsoil01Yellow clay160Blue clay60140Blue clay / sand140178Sand / Gravel178230Gravel / Shale230240

STATIC WATER LEVEL

72

FEET

If flowing: closed in pressure

PSI

GPM flow

through

Inch pipe

Controlled by

☐ Valve☐ Reducers☐ Other

Reduced flow rate

GPM

Can well be completely shut in?

WELL TEST DATA:

☐ Pumped Describe:☐ Bailed☐ OtherAir lifted

Pumping Level Below Land Surface

Ft. After

Hrs. pumped

1000

GPM

Ft. After

Hrs. pumped

GPM

If pump installed, pump rate:

GPM

REMARKS

RECEIVED

AUG - 8 2013

WATER RIGHTS
PROGRAM

This well was drilled under license #

598

And this report is true and accurate.

Drilling firm:

Krany Well & Excav

Signature of License Representative

Signature of Well Owner or Equitable Property Owner

Date:

Aug 5, 2013

Please return WHITE COPY to: DENR Water Rights, 563 E. Capitol Ave., Pierre, SD 57501

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 7471-3

I have this day, August 13, 2021, made a thorough examination of the water use system constructed by David Pierce, 14078 466th Ave, Wilmot, SDs 57279 of Permit No. 7471-3, bearing the priority of October 17, 2012 authorizing the diversion of 3.56 cu. ft. per second of the waters of the Revilla Aquifer for irrigation purposes, in Roberts County.

A. Works used to divert the water:

Well Information:

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

Casing:

- 1) Diameter 12 inches
- 2) Length 180 feet
- 3) Type Plastic

Screen:

- 1) Type Stainless steel
- 2) Length 60 feet
- 3) Static water level 72 feet

Pump:

- 1) Make NA
- 2) Model Submersible
- 3) Size NA
- 4) Capacity 900 GPM

Motor: unknown

B. Works used to transport water to place of use: Buried pipe lines

C. Works used to apply water to beneficial use:

Center pivot:

- 1) Make (2) T & L
- 2) Overall length 1300 feet
- 3) Number of towers 7
- 4) End gun Y
- 5) Capacity 900 GPM

Chemigation Equipment:

- 1) Chemigation: Uses commercially available equipment

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Y
- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period Y
- 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: **From the NE corner SEC 36 T122N R50W, 1395 ft S & 2640 ft W, Lat 45.33670 Long -96.87255 (S ½ N ½ Sec 36)**
2. The works are capable of diverting and conveying to the place of use 2.00 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:

All land in Section 36 T122N R50W

NW ¼ NW ¼ – 35 acres
NE ¼ NW ¼ – 35 acres
SE ¼ NW ¼ – 35 acres
SW ¼ NW ¼ – 35 acres

NW ¼ NE ¼ – 35 acres
NE ¼ NE ¼ – 35 acres
SE ¼ NE ¼ – 35 acres
SW ¼ NE ¼ – 35 acres

comprising a total of 280 acres of land and the license should be issued for 2.00 cfs.

3. All structures, wells and lands on map Y

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

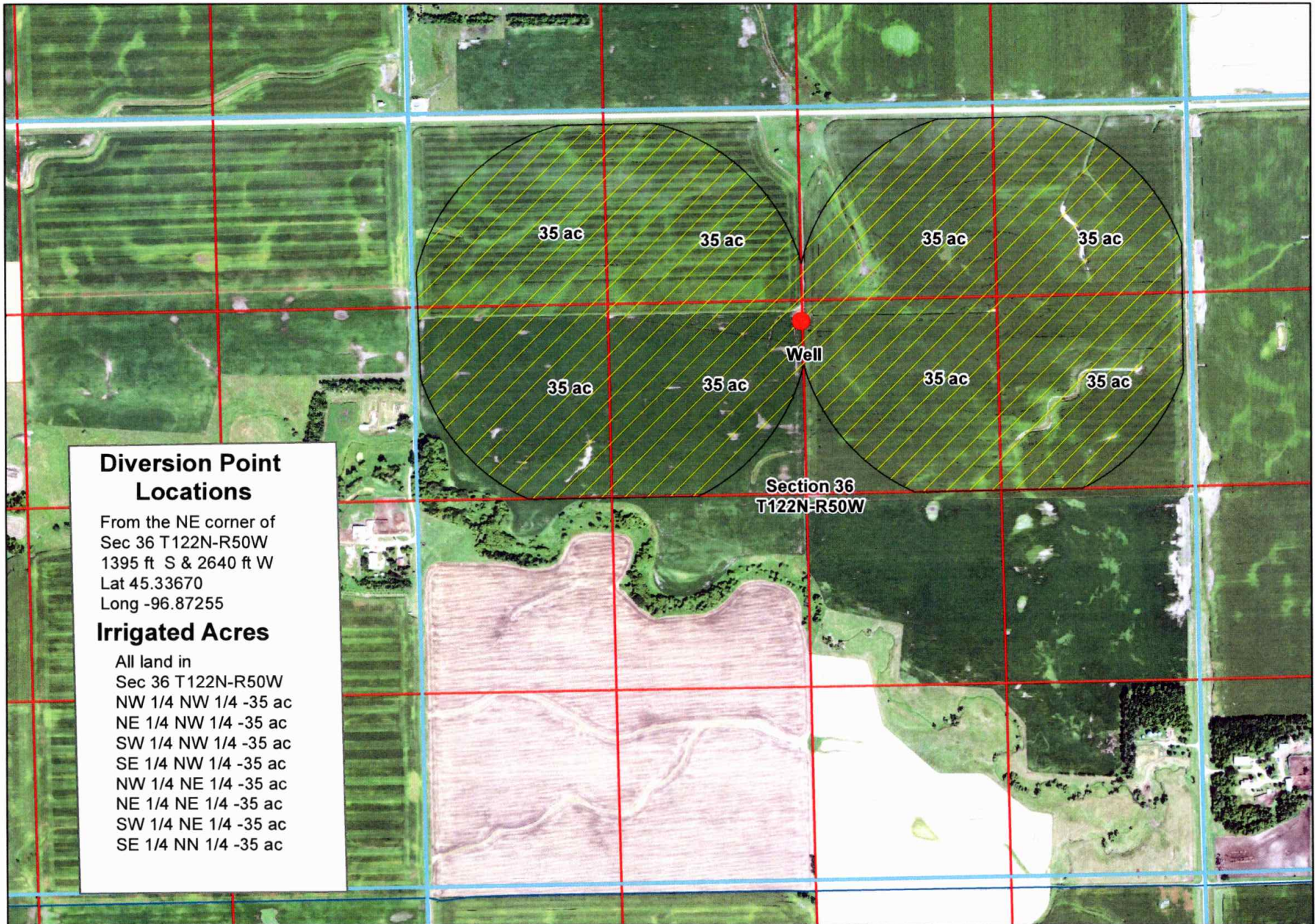
The irrigation acreage was determined via the use of FSA maps and ArcMAP software.

The address and the telephone number on the inspection materials are current.



Darrell W DeBoer
Water Rights Inspector
DANR, Water Rights Program

Date report completed: August 16, 2021



0 650 1,300 2,600 3,900 5,200 Feet



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**
JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

7471-3

AUG 20 2021

David Pierce
14078 466th Ave
Wilmot SD 57279

Dear Mr. Pierce:

Enclosed is Water License No. 7471-3. 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, State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

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

enclosures

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 7471-3

(1) David Pierce, 14078 466th Ave., Wilmot SD 57279 made Application No. 7471-3, October 17, 2012 for a water permit to divert 3.56 cubic feet of water per second from ground water, one well (Revilla Aquifer), Roberts County, South Dakota for irrigation purposes. Permit No. 7471-3, with a priority date of October 17, 2012 was approved January 22, 2013 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before January 22, 2018 and for the application to beneficial use of said water on or before January 22, 2022.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the water supply system and is entitled to divert 2.00 cubic feet of water per second for beneficial use. The location of the diversion point is:

- 1,395' S and 2,640' W of the NE corner of Section 36, T122N, R50W (S ½ N ½ Section 36)
Latitude 45.33670, Longitude -96.87255

(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 36, T122N, R50W

NW ¼ NW ¼	35 acres	NW ¼ NE ¼	35 acres
NE ¼ NW ¼	35 acres	NE ¼ NE ¼	35 acres
SE ¼ NW ¼	35 acres	SE ¼ NE ¼	35 acres
SW ¼ NW ¼	35 acres	SW ¼ NE ¼	35 acres

Total 280 acres

(4) Pursuant to South Dakota Water Law 46-5-30.1 David Pierce, 14078 466th Ave., Wilmot SD 57279 the holder and/or owner of Water Right No. 7471-3 is issued a license to appropriate water, the right to use 2.00 cubic feet of water per second from ground water, one well (Revilla Aquifer) with a priority date of October 17, 2012 from the location specified in (2) of this license for irrigation purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 7471-3 and subject to the following qualifications:

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

continued

- The well authorized by Permit No. 7471-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with the Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. ***The well was drilled in August 2013 by Kranz Well & Excavation. A copy of the well completion report is on file with the Water Rights Program.***
- This Water Right is approved subject to the irrigation water use questionnaire being submitted each year.



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

AUG 20 2021

date

