

WATER PERMIT NO. 8257-3

Name of Applicant: **Thein Well Co., Inc.**

Address: **PO Boix 778, Spicer MN 56288** Phone: **320 796-2111**

Amount of Water Claimed: **0.89 cfs** Total Acres: **NA**

Source of Water Supply: **groundwater (1 well)**

Water to be used for: **commercial** County: **Clay**

Type of Waste Disposal System:

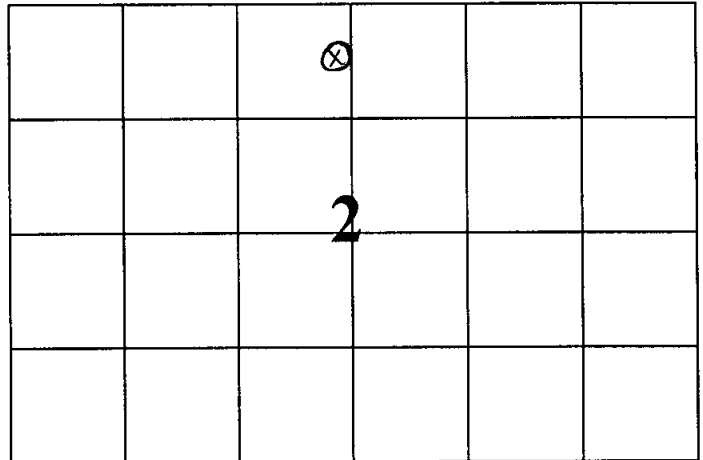
Location: **8 miles north of Vermillion**

PRIORITY Date Received: **12-27-16** Application/License Fee: **\$ 300**

Corrected Application Received: Period of Annual Use: **March 1 – December 31**

Remarks:

Diversion Point: **NE 1/4 NW 1/4 Sec 2-T93N-R52W**



Land to be Irrigated: **NA**

Depth of Well: **136**

Well Driller: **Thein Well Co., Inc.**

Remarks:

Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **12-27-16**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

RECEIVED

DEC 27 2016

WATER RIGHTS
PROGRAM

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8257-3</u> (office use only) Hydrologic Unit <u>10170102</u>
	Basin <u>Vermillion River</u> <u>605-</u>
	Newspaper <u>Plain Talk - Vermillion</u> <u>6242695</u>
	<u>Press & Dakota - yankton</u> <u>605-665-7811</u>

Application For Permit To Appropriate Water Within The State Of South Dakota

Check use(s) of water:

☐ Municipal	☐ Water Distribution System	☐ Recreational	☐ Institutional
☐ Rural Water System	☒ Commercial	☐ Fish & Wildlife	☐ Geothermal
☐ Domestic (over 18 gpm)	☐ Industrial	☒ Other <u>Water well drilling process</u>	

Type of Application:
(check one)

☒ New	☐ Vested Right (Use predates Mar 2, 1955)	☐ Future Use Reservation
☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____		
☐ Amendment/Correction to Permit No. _____		

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

1. Name to Appear on Water Permit Thein Well Co., Inc.Mailing Address PO Box 778 Spicer MN 56288
(Address) (City) (State) (Zip Code)Phone 320-796-2111 Mobile _____ Email theinwell@tds.net2. Amount of water claimed 0.089 *CFS or 40 **GPM and 0.61 ***AF or 200,000 Gallons
Flow rate and volume are both required. (*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use)3. Source of water supply Well4. Location of point of diversion 1 well in NE 1/4 NW 1/4 Sec 2, T93N, R52W County Clay
(example - 3 wells in S¹/₄, 1/4 NE1/4 section 12-T104N-R53W)If not a public water supply (e.g. municipal), will water be used outside of the area described above? ☒ Yes ☐ NoIf "Yes," where will water be used? Within 150 mile radius of above location point
(example - NW 1/4 section 12-T104N-R53W)5. County or counties where water will be used Various within 150 mile radius6. Annual period during which water is to be used Aprox. March 1 - December 31

7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

We are a water well drilling company and will use the well to fill our water trucks for the drilling process.

I, Robert P. Thein President, 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. 8257-3**

Date of first receipt of application December 27, 2016.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8257-3 to Thein Well Co Inc., PO Box 778, Spicer MN 56288 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. 8257-3 appropriates no more than one acre foot of water annually at a maximum pump rate of 0.089 cubic feet of water per second from one well completed into the Lower Vermillion:Missouri Aquifer (136 feet deep) located in the NE 1/4 NW 1/4 Section 2-T93N-R52W.
2. The water appropriated shall be used for the purpose of commercial use and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: March 1 – December 31.
4. The date of approval of Permit No. 8257-3 is March 27, 2017.
5. The date from which applicant may claim right is December 27, 2016.
6. One-fifth of the construction is to be completed on or before September 27, 2019.
7. All construction is to be completed on or before March 27, 2022.
8. Water is to be put to beneficial use on or before March 27, 2026.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The well approved under Water Permit No. 8257-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Lower Vermillion Missouri aquifer.
3. Water Permit No. 8257-3 authorizes a total annual diversion of 1.0 acre feet of water.

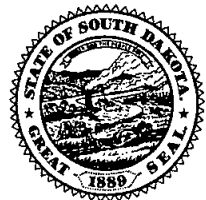
WATER MANAGEMENT BOARD

By: *Jeanne Goodman*
Jeanne Goodman, Chief Engineer

Water Rights Program

Department of Environment and Natural Resources

APR 26 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 _____ Have test holes been drilled ☐ Yes ☐ No Drilled by _____
(if yes, please provide copies of logs)

b) If existing wells, how many 1 Provide copy of log(s), if available. Drilled by Thein Well Co., Inc.
License #475

For either Existing or Proposed Wells:

c) Well Depth (required) 136 Depth to Top of Water Bearing Material 116 Depth to Water from Surface 66

d) Distance to nearest domestic well on applicant's property N/A Property owned by others Yes-Thein III Spicer, MN

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)

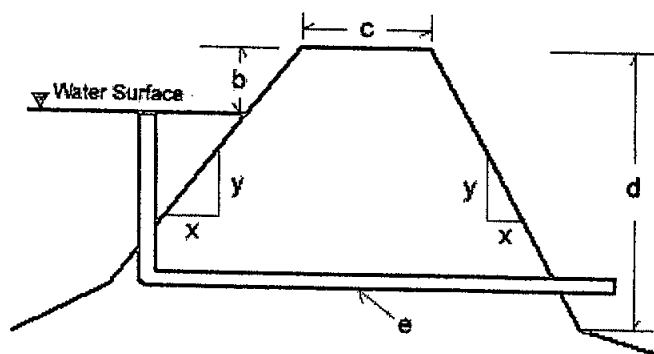
Upstream _____

Downstream _____

h) Surface Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres





Google Earth

feet
meters

2000

900



Well location: NE 1/4 NW 1/4 Sec 2 Twp 93N Rg 52W

Well Owner: Thein Well Co., Inc.

Property Owner: Thein III

Sec 34
T094N
R52W

Sec 35
T094N
R52W

Sec 36
T094N
R52W

Sec 3
T093N
R52W

Sec 2
T093N
R52W

Sec 1
T093N
R52W

Sec 10
T093N
R52W

Sec 11
T093N
R52W

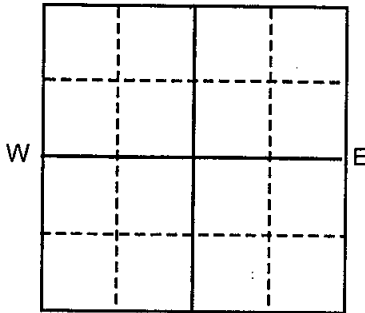
Sec 12
T093N
R52W

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NE 1/4 NW 1/4 Sec 2 Twp 93N Rg 52WCounty Clay

North

Please mark well
location with an "X"

W

E

1 Mile

Well Completion Date

March 30, 2016Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
75.0 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
LB/FT	<u>6.00</u> IN	<u>0.0</u> FT	<u>126.0</u> FT	<u>9.75</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>16</u>	<u>Lb/gal</u>	<u>0.0</u> Ft	<u>128.0</u> Ft
		<u>Lb/gal</u>	<u>Ft</u>	<u>Ft</u>

Describe grouting procedure
tremie piped

SCREEN:

☐ Perforated pipe ☒ Manufactured
Diameter 6.00 Inches Length 10.0 FeetMaterial PVCSlot Size .025 Set From 126.0 Feet to 131.0 FeetOther information .020 131.0 to 136.0

WAS A PACKER OR SEAL USED?

☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? chlorinated
☐ No, Why Not?
Lab to which water
quality sample sent for analysis

n/a - non-potable well

Well Owner: Thein Well Co., Inc.

Business Name:

Address: PO Box 778City, State, Zip: Spicer MN 56288

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top soil	0	4
Brown clay	4	23
Blue clay	23	54
Gravel	54	60
Blue clay	60	77
Fine gravel w/clay	77	84
Medium gravel w/coal	84	116
Gravel	116	130
continued in remarks		

STATIC WATER LEVEL 66.0 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☐ Other

Pumping Level Below Land Surface

84.0 Ft. After 4.0 Hrs. pumped 100.0 GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

Coal 130 - 138Sand 138 - 140GPS: N 42 54.463W 96 57.31Lower Vermillion - Missouri knThis well was drilled under license # 475 and this
report is true and accurate.Drilling firm: Thein Well Co., Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date:

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JUL 25 2016

WATER RIGHTS
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RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Thein Well Company Inc., PO Box 778, Spicer MN 56286 Date 12-27 2016

RECEIVED OF _____

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

Fee for Application for Permit No. <u>8257-3</u> to Appropriate Water, to construct and to put water to beneficial use	10000
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>8257-3</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	300.00

No. 08023

By Jamie Goodman
Chief Engineer KS



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

December 14, 2016

Thein Well Co., Inc.
Robert Thein
PO 778
Spicer MN 56288

Dear Mr. Thein:

I am writing in regard to a well driller's report filed on July 25, 2016 for a well drilled March 30, 2016. The well is located in the NE 1/4 NW 1/4 Section 2-T93N-R52W, Clay County. The report lists you as owner and business as the proposed use.

1. According to state law, a water permit is needed for any water use except for reasonable, private domestic use. Examples of commercial uses that require a water rights permit are: truckstops; motels; restaurants; bars; clubs; tourist attractions; campgrounds or any other business operation.
2. Also, as a new well owner, you need to be aware of some of your responsibilities. Enclosed is a copy of "Well Owner Responsibilities". Please review these responsibilities to ensure you are complying with all of the requirements.

Enclosed are application forms and instruction sheet to apply for a water permit. The completed forms with the application fee and map can be returned to: Water Rights Program, 523 E. Capitol, Pierre, SD 57501. Please respond by January 13, 2016.

If you believe your water use does not require a water permit or that you have an existing permit, or if help is needed completing the application forms, please contact Ron Duvall or me at (605) 773-3352. We will be happy to assist you in any way possible.

Sincerely,

Karen Schlaak
Water Rights Program
karen.schlaak@state.sd.us

enclosures

Gronlund, Eric

From: Thein Well <theinwell@tds.net>
Sent: Wednesday, December 28, 2016 8:39 AM
To: Gronlund, Eric
Subject: RE: question on water permit application that was filed.

Hi Eric,

I apologize on the error on the application. It was supposed to be 200,000 Gallons, not 20,000 Gallons. In typing the application I missed one of the zeros. We will only be filling our water trucks intermittently as needed from about March – December. Much of the time we fill our trucks close by wherever the project is located. Do we need to make a correction and resubmit the application?

*Vicki Mackedanz
Thein Well Co., Inc.
Ph: 320-796-2111
Fax: 320-796-2114
Vicki@theinwell.com*

From: Gronlund, Eric [<mailto:Eric.Gronlund@state.sd.us>]
Sent: Tuesday, December 27, 2016 4:26 PM
To: 'theinwell@tds.net'
Subject: question on water permit application that was filed.

The application states under the amount of water claimed that the maximum diversion rate from the well will be 40 gpm. The application goes on to state the use will be 20,000 gallons/annually. This volume of water equates at a pump rate of 40 gpm equates to pumping for 8.33 hours each year. Is it correct that to fill the water trucks over the course of the season will require no more than pumping for a total of 8 1/3 hours in the whole season?

Thanks

Eric Gronlund
Water Rights Program, DENR
605 773-3352
Eric.gronlund@state.sd.us



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

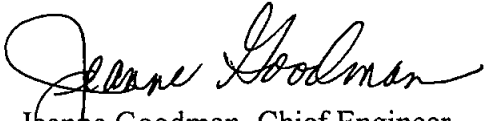
**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8257-3, Thein Well Co., Inc.**

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. 8257-3, Thein Well Co., Inc., c/o Robert Thein, PO Box 778, Spicer MN 56288.

The Chief Engineer is recommending APPROVAL of Application No. 8257-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The well approved under Water Permit No. 8257-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Lower Vermillion Missouri aquifer.
3. Water Permit No. 8257-3 authorize a total annual diversion of 1.0 acre feet of water.

See report on application for additional information.


Jeanne Goodman, Chief Engineer
February 22, 2017

REPORT TO THE CHIEF ENGINEER

Water Permit Application No. 8257-3

Thein Well Co. Inc.

January 25, 2017

Water Permit Application No. 8257-3 proposes to appropriate water at a maximum annual rate of 0.61 acre-feet per year with a maximum diversion rate of 0.89 cubic feet per second (cfs) from one well (136 feet deep) completed into the Lower Vermillion Missouri aquifer located in the NE ¼ NW ¼ Section 2 T93N-R52W. The applicant proposes to use the water for commercial use.

AQUIFER: Lower Vermillion Missouri (LVM)

HYDROGEOLOGY

The Lower Vermillion Missouri aquifer is a buried glacial outwash that is hydrologically connected to the Upper Vermillion Missouri (UVM) aquifer to the north, the Missouri: Elk Point aquifer to the south, the underlying Dakota aquifer, and the Vermillion River (Niehus 1994; Stephens, 1967; Stonesifer, 2013). The areal extents of these aquifers have been defined by their hydrogeologic features. Hedges et al (1982) delineated the boundary between the Lower Vermillion Missouri aquifer and the Missouri: Elk Point aquifer as the line where the glacial outwash aquifer transitions from buried to unburied. The boundary between the Lower Vermillion Missouri and the Upper Vermillion Missouri aquifers was originally delineated by Hedges et al. (1982); after recent investigations of the Upper Vermillion Missouri aquifer this boundary has since been identified as being an unspecified distance further south, outside of the scope of the investigations (Buhler, 2014; Holmes and Filipovic, 2015). The area that the Lower Vermillion Missouri aquifer underlies is, at maximum, 106,000 acres (Mathiowetz, 2014).

The Lower Vermillion Missouri aquifer averages 100 feet in thickness and grades from coarse sand to coarse gravel (Niehus 1994; Stephens, 1967). The groundwater flow direction is generally to the south. The aquifer is considered to be confined; however, unconfined conditions can occur locally within the aquifer and in the Vermillion River flood plain (Niehus 1994; Stephens, 1967). Assuming a storage coefficient of 0.15 (Hedges et al. 1982) and applying it to the maximum area, the aquifer has approximately 1,590,000 acre-feet of recoverable water in storage.

A water well completion report was included with Water Permit Application No. 8257-3. The well is screened from 126 to 130 feet in gravel and from 130 to 136 feet in coal. Given the location of the well and the stratigraphy, the well is most likely completed in the Lower Vermillion Missouri aquifer.

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 in the Lower Vermillion Missouri aquifer and existing rights within the aquifer.

WATER AVAILABILITY

The probability of unappropriated water available from an aquifer can be evaluated by considering SDCL 46-6-3.1, which requires “No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable 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 than or stratigraphically lower than the Greenhorn Formation and a water distribution system has applied for a permit, the Board need not take into consideration the balance of aquifer recharge and withdrawal. Here, the water source is not older or lower than the Greenhorn Formation and a water distribution system is not involved. Therefore, the balance of withdrawal and recharge must be considered.

Hydrologic Budget

Recharge

Recharge to the Lower Vermillion Missouri aquifer occurs through infiltration of precipitation, seepage from the Vermillion River, inflow from the Upper Vermillion Missouri aquifer and leakage from the underlying Dakota aquifer (Niehus, 1994; Stephens, 1967). It is presumed that the majority of the total aquifer recharge enters the aquifer through infiltration of precipitation in the unconfined portions. The unconfined areas of the aquifer have been assumed to coincide with the alluvium and shallow sand and gravels along the Vermillion River that were mapped by Jensen (2003) (Mathiowetz, 2014).

Stonesifer (2013) recalculated the average annual recharge rate to the unconfined portion of the Lower Vermillion Missouri aquifer using the same observation well analysis method as Hedges et al. (1985). In addition to using the previous data from Hedges, 167 total water years of data was included from five wells completed in the Lower Vermillion Missouri aquifer that are unconfined and monitored by the DENR-Water Rights Program (Stonesifer, 2013). Stonesifer (2013) determined that the average annual recharge rate to the unconfined portion of the Lower Vermillion Missouri aquifer is 4.58 in/yr. Stonesifer (2013) noted in their analysis that by using observation well data, the data represents both withdrawals from and recharge to the aquifer, as they occur simultaneously. When the recharge is greater than discharge, this method produces a lower than actual recharge rate. The same holds true when discharge is greater than recharge, the calculated discharge rate is lower than the actual discharge rate.

The unconfined area of the Lower Vermillion Missouri aquifer has been determined to have an area of approximately 12,000 acres using the map by Jensen (2003) and the revised Lower Vermillion Missouri aquifer boundary (Mathiowetz, 2014). Using these updated and revised numbers, the average annual recharge to the unconfined portion of the Lower Vermillion Missouri aquifer is estimated at 4,580 acre-feet per year.

Assuming that the confined portion of the Lower Vermillion Missouri aquifer is hydrogeologically similar to the confined Upper Vermillion Missouri aquifer, the recharge calculated by Hedges et al. (1985) using a regional flow-net analysis is 0.25 inches per year. This value is lower than the average recharge to other buried and confined aquifers in Eastern

South Dakota (Hedges et al., 1985). It should be noted that recharge rates calculated using flow-net analysis are suspect and conclusions based on this method are questionable (Hedges et al. 1985). Removing the unconfined area from the total area of the Lower Vermillion Missouri aquifer, the confined area is estimated at 94,000 acres. The result is an estimated aquifer recharge to the confined Lower Vermillion Missouri aquifer of 1,960 acre-feet per year. This results in a total estimated average annual recharge to the Lower Vermillion Missouri aquifer of 6,540 acre-feet per year.

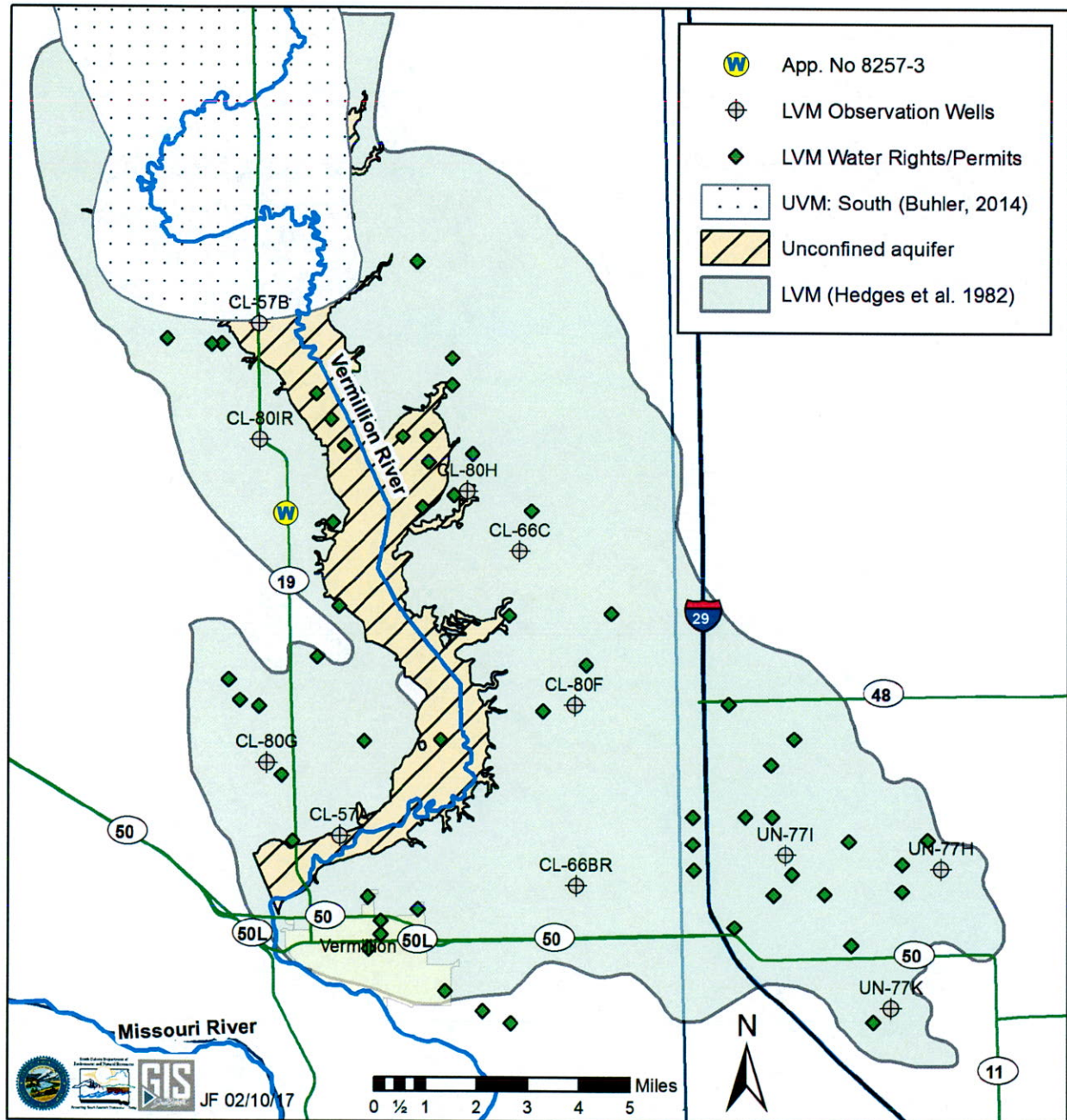


Figure 1: Map showing water rights/permits and observation wells in the Lower Vermillion Missouri aquifer (Water Rights, 2017a and 2017b) using aquifer boundaries defined by Hedges et al. (1982), Stonesifer (2013), and Buhler (2014)

Discharge

Discharge from the Lower Vermillion Missouri aquifer occurs through withdrawal from domestic, commercial, and irrigation wells, and naturally through seepage into the Vermillion River, flow from springs, aquifer outflow to the Missouri Elk Point aquifer, and evapotranspiration (Niehus, 1994; Stephens, 1967). Within the revised Lower Vermillion Missouri aquifer boundary, there are currently 59 water rights/permits authorized to appropriate water (Water Rights, 2017a).

Currently there are three water rights/permits in the Lower Vermillion Missouri that are for non-irrigation purposes. Two of these are for institutional use and have a total maximum diversion rate of 0.063 cfs, or 45.61 acre-ft/year if pumped continuously. Historically, non-irrigation rights/permits that are limited by their diversion rate, pump an annual volume equal to 60% or less of their authorized diversion rate if it were pumped continuously. It is estimated that these two water rights/permits will use 27.37 acre-ft/year. The third non-irrigation water right/permit is for commercial use and authorizes a maximum diversion rate of 0.167 cfs and a total withdrawal of 18.4 acre-ft/yr. It is assumed that a commercial water right/permit will withdraw the full volume. The total non-irrigation use in the Lower Vermillion Missouri aquifer is currently estimated at 45.77 acre-ft/yr.

From the 2015 irrigation data, there are 51 water rights/permits that are appropriating water from the Lower Vermillion Missouri aquifer (Water Rights, 1980-2016). Annual reported irrigation data from the entire period of record, 1979 to 2015, is displayed in Figure 2, which shows the appropriation amount, the reported pumpage, and the number of acres permitted for irrigation.

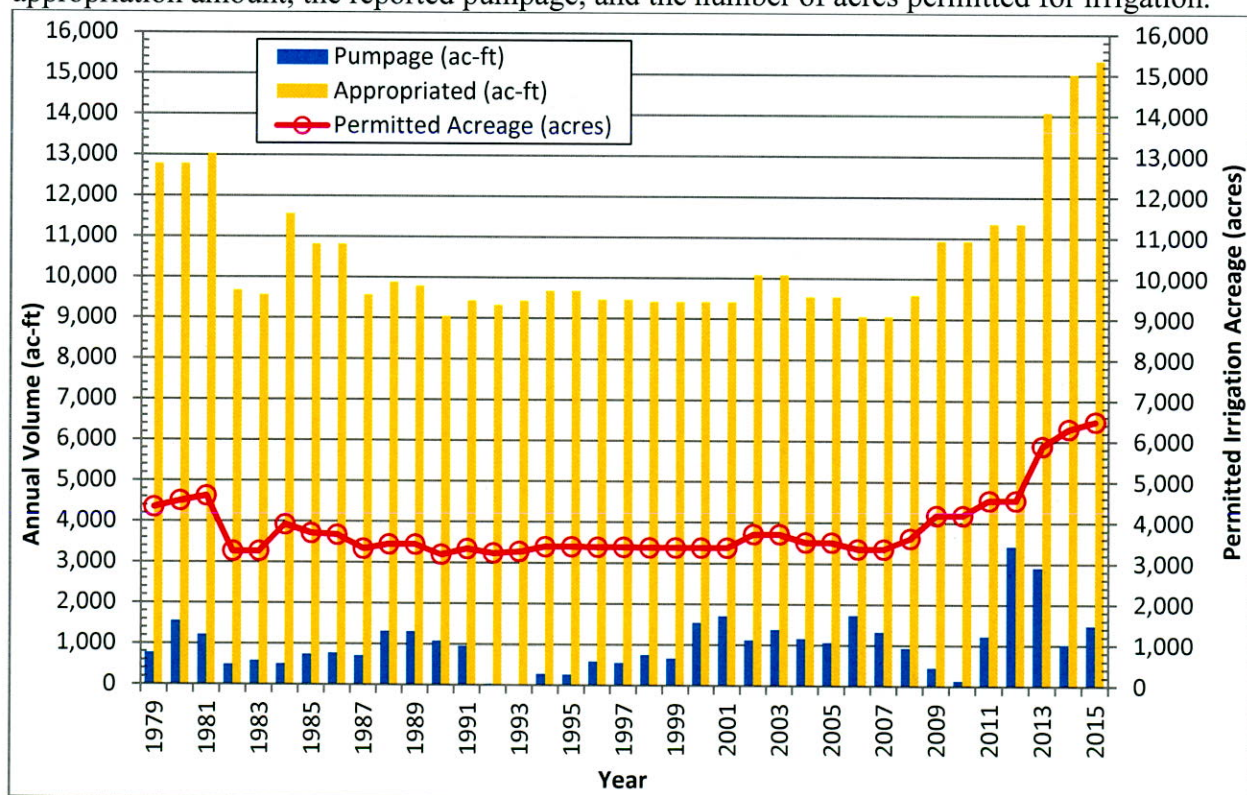


Figure 2: Reported annual irrigation data for the Lower Vermillion Missouri aquifer (Water Rights, 1980-2016)

The number of water rights/permits in the Lower Vermillion Missouri aquifer has increased in recent years in response to climatic and economic conditions. By using irrigation data from 1979 to 2012 to establish historical average annual withdrawal and application rates, the estimated average annual withdrawal can be calculated for the increase in appropriations from 2013 to 2015. From 1979 to 2012, the average annual pumpage was 957 acre-ft, irrigating an average of 3654 acres. The average number of permitted irrigation acres from 2013 to 2015 was 6244 acres, with an average annual pumpage of 1808 acre-ft. Applying the average irrigation application rate from the 1979-2012 period, 3.12 inches/acre/year, to the 2013-2015 period, the estimated average withdrawal rate for irrigation is 1635 acre-ft per year. This brings the total estimated average annual withdrawal from the Lower Vermillion Missouri aquifer to 1,681 acre-ft per year.

Hydrologic Budget

The estimated average annual recharge to the Lower Vermillion Missouri aquifer is 6,540 acre-feet per year. Withdrawals from the Lower Vermillion Missouri aquifer are estimated at an average annual rate of 1,681 acre-feet per year. This application is proposing to withdraw a maximum of 0.61 acre-feet per year from the Lower Vermillion Missouri aquifer. Seeing that the recharge to the aquifer exceeds the current and proposed estimated average annual withdrawal, there is a reasonable probability that unappropriated water is available from the Lower Vermillion Missouri aquifer for the proposed application.

Observation Well Data

The Water Rights Program monitors 12 observation wells completed in the Lower Vermillion Missouri aquifer (Water Rights, 2017b). The nearest observation well is CL-80IR located 1.5 miles to the north of the proposed well location. Water levels in this observation well are representative of other observation wells completed in the Lower Vermillion Missouri aquifer and shows periods of recharge and periods of decline depending upon climatic conditions. These climatic trends are the dominant trend and indicate that natural recharge and discharge is much greater than current well withdrawals. Considering the observation well data, there is a reasonable probability that there is unappropriated water available from the Lower Vermillion Missouri aquifer.

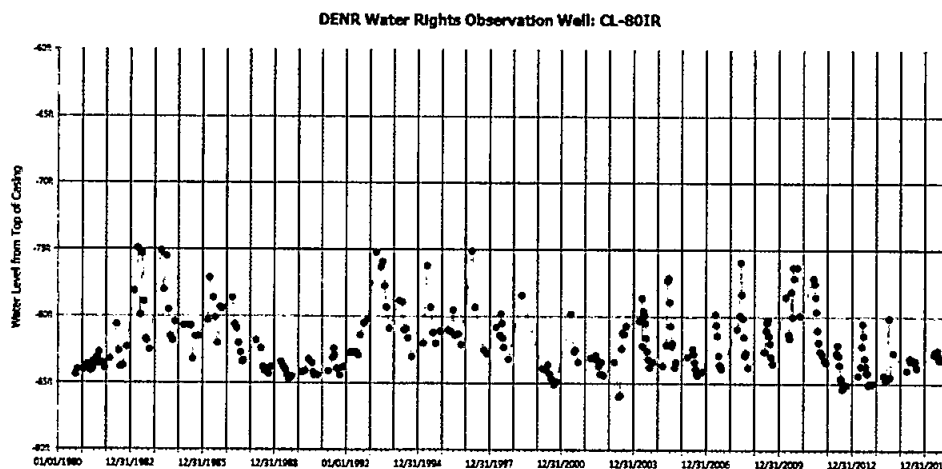


Figure 3: Hydrograph for Observation Well CL-80IR (Water Rights, 2017b)

EXISTING WATER RIGHTS

The nearest existing water right/permit is within one mile of the proposed well site, No. 7679-3, which is for irrigation of 125 acres at a diversion rate of 1.67 cfs. Another existing water right/permit, No. 7631-3, is within two miles of the proposed well site and is also used for irrigation of 108 acres at a diversion rate of 1.61 cfs (Water Rights, 2017a).

Well interference may occur but it is not expected to be significant due to the distance between the wells and the relatively small maximum instantaneous diversion rate proposed by this application. This permit, if approved, is not expected to adversely impact adequate wells in the area.

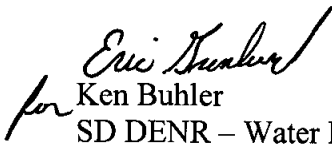
CONCLUSIONS

1. This application proposed to appropriate 0.61 acre-feet annually with a maximum diversion rate of 0.89 cfs for commercial use from one well (136 feet deep) completed in the Lower Vermillion Missouri aquifer.
2. There is a reasonable probability that unappropriated water is available from the Lower Vermillion Missouri aquifer to supply the proposed appropriation.
3. There is a reasonable probability that the diversion proposed by this application will not adversely impact adequate wells for existing water rights and domestic use.



John Farmer
SD DENR – Water Rights Program

Approved by


for Ken Buhler

SD DENR – Water Rights Program

REFERENCES

- Buhler, K. 2014. Report to the Chief Engineer on 21 Water Permit Applications from the Upper Vermillion Missouri Aquifer. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Hedges, L.S., Burch, S. L., Iles, D. L., Barari, R. A., and Schoon, R. A. 1982. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota, and Iowa. Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
- Hedges, L.S., Allen, J. and Holly, D.E. 1985. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota, and Iowa. Task 7: Ground-Water Recharge. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
- Holmes, S. L. and Filipovic, D. 2015. Hydrogeologic Investigation of the Upper-Vermillion-Missouri Aquifer. Open-File Report 93-UR. SDGS. Vermillion, SD.
- Jensen, A.R. 2003. First Occurrence of Aquifer Materials in Clay County, South Dakota. Aquifer Materials Map 1. SDGS. Vermillion, SD.
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- Stephens, J. C. 1967. Geology and Water Resources of Clay County, South Dakota. Part II Water Resources. SDGS. Vermillion, SD.
- Stonesifer, J. S. 2013. Report to the Chief Engineer on Water Permit Application No. 7918-3. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 1980-2016. "1979-2015 Irrigation Summaries by Aquifer": SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2017a. Water Right/Permit Files. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2017b. Water Rights Program Observation Well Files. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.



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.**

February 23, 2017

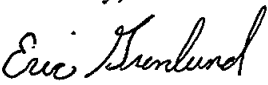
Thein Well Co Inc
Robert Thein
PO Box 778
Spicer MN 56288

Dear Mr. Thein:

Water Permit Application No. 8257-3 for commercial use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Plain Talk printed at Vermillion SD (Ph # 605-624-2695) 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
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.

Jacobson, Gail

From: Jacobson, Gail
Sent: Friday, February 24, 2017 8:57 AM
To: classifieds@plaintalk.net
Cc: Schlaak, Karen
Subject: Water Permit No. 8257-3 Thein Well Co.
Attachments: 8257-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on March 3, 2017

Thein Well Co., Robert Thein, PO Box 778, Spicer MN 56228, PH: 320-796-2111, 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.

Thanks

Gail Jacobson
D&NR – Water Rights
523 E Capitol Ave
Pierre SD 57501
605-773-3352 – Phone
605-773-4068 – Fax
gail.jacobson@state.sd.us

Jacobson, Gail

From: Jacobson, Gail
Sent: Friday, February 24, 2017 8:54 AM
To: 'tera.schmidt@yankton.net'
Cc: Schlaak, Karen
Subject: Water Permit No. 8257-3 Thein Well Co.
Attachments: 8257-3public.short.docx; FORM8.FRM.doc

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Thanks

Gail Jacobson
DENR - Water Rights
523 E Capitol Ave
Pierre SD 57501
605-773-3352 - Phone
605-773-4068 - Fax
gail.jacobson@state.sd.us

NOTICE OF APPLICATION NO. 8257-3 to Appropriate Water

Notice is given that Thein Well Co., Inc., c/o Robert Thein, PO Box 778, Spicer MN 56288 has filed an application for a water permit to appropriate no more than one acre foot of water annually at a maximum pump rate of 0.89 cubic feet of water per second from one well completed into the Lower Vermillion:Missouri Aquifer (136 feet deep) located in the NE 1/4 NW 1/4 Section 2-T93N-R52W for commercial use.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8257-3 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 March 13, 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_____.

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

VICKI MACKEDANZ THEIN WELL CO., INC.
PO BOX 778
SPICER MN 56288

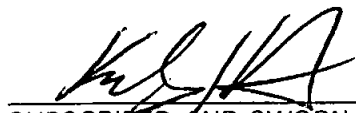
STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

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3 + 3 NOTICE OF APPLICATIO

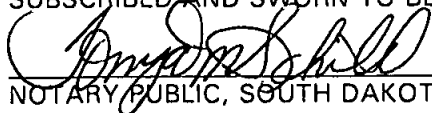
TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 3rd DAY OF March, 2017
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$25.76 ENSURES TO THE
BENEFITS OF THE PUBLISHER OF SAID NEWSPAPER AND THAT NO
AGREEMENT AND UNDERSTANDING FOR THE DIVISION 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: 03/03/2017

FILED ON: 03/03/2017



SUBSCRIBED AND SWORN TO BEFORE ME THIS 3rd DAY OF March, 2017



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

RECEIVED

MAR - 8 2017

WATER RIGHTS
PROGRAM

Ad text : 3 + 3

NOTICE OF APPLICATION NO. 8257-3 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 \$25.76.

AFFIDAVIT OF PUBLICATION

PLAIN TALK

RECEIVED

MAR - 6 2017

WATER RIGHTS
PROGRAM

THEIN WELL CO.
PO BOX 778
SPICER MN 56228

STATE OF SOUTH DAKOTA
COUNTY OF CLAY

TERA SCHMIDT, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE CLASSIFIED MANAGER OF YANKTON
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THIS AFFIDAVIT; THAT THE ANNEXED
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NO 8257-3 APPR. WATER
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PUBLISHED ON: 03/03/2017

FILED ON: 03/03/2017

Tera A Schmidt

SUBSCRIBED AND SWORN TO BEFORE ME THIS 3rd DAY OF March, 2017

[Signature]

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

Ad text : NOTICE OF APPLICATION NO. 8257-3 to
Appropriate Water

Notice is given that Thein Well Co., Inc., c/o Robert Thein, PO Box 778, Spicer MN 56288 has filed an application for a water permit to appropriate no more than one acre foot of water annually at a maximum pump rate of 0.89 cubic feet of water per second from one well completed into the Lower Vermillion: Missouri Aquifer (136 feet deep) located in the NE 1/4 NW 1/4 Section 2-T93N-R52W for commercial use.

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

Published once at the total approximate cost of \$25.46.

Publish: March 3, 2017.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

March 14, 2017

Thein Well Co Inc
Robert Thein
PO Box 778
Spicer MN 56288

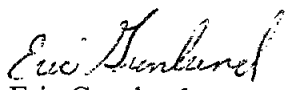
Dear Mr. Thein:

The Notice for Water Permit Application No. 8257-3 for commercial use contained an error in the maximum pump rate amount. The Notice indicated the rate to be 0.89 cubic feet of water per second (400 gallons per minute). The correct amount requested was 0.089 cubic feet of water per second (40 gallons per minute). The notice will be readvertised to correct the error to insure your water permit is free from any legal entanglements due to insufficient public notice.

The Plain Talk and Press & Dakotan have been instructed to publish the notice again on March 17th with the date for submittal of petitions being March 27th.

The cost of the publications will be paid by the Water Rights Program. Please contact us if you have any questions.

Sincerely,


Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosure

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, March 13, 2017 4:17 PM
To: classifieds@plaintalk.net
Subject: 8257-3, Thein Well Co Inc.
Attachments: 8257-3public.short.docx; FORM8.FRM.doc

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

This notice was originally published on March 3rd, but because we had an error in the notice it needs to be published again.

Please note: The Water Rights Program, 523 E Capitol, Pierre SD 57501 will pay the cost of publication.

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: Monday, March 13, 2017 4:17 PM
To: 'Tera Schmidt'
Subject: 8257-3, Thein Well Co Inc.
Attachments: 8257-3public.short.docx; FORM8.FRM.doc

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

Karen Schlaak

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



Instruction to Newspaper - Publish the Notice on March 17, 2017. Water Rights Program is responsible for payment.

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

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

RECEIVED

MAR 22 2017

WATER RIGHTS
PROGRAM

DENR
523 E CAPITOL AVE
PIERRE SD 57501-3182

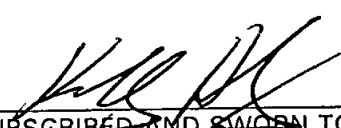
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COUNTY OF YANKTON

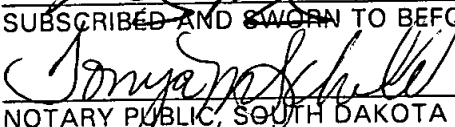
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3+17 NOTICE OF APPLICATIO

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
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PUBLISHED ON: 03/17/2017

FILED ON: 03/17/2017


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


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

Ad text : 3+17

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Steven M. Pirner, Secretary, Department of Environment and Natural Resources.
Published once at the total approximate cost of \$25.76.

March 27, 2017

PAYMENT REQUEST FORM

PAYEE: Broadcaster Press (Press & Dakotan)
319 Walnut St
Yankton SD 57078

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

DESCRIPTION OF SERVICE, PRODUCE OR TRANSFER

Republication of 8257-3 Thein Well

AMOUNT: \$25.76

FUNDING SOURCE:

GENERAL: X

FEDERAL:

OTHER:

COMMENTS:

AUTHORIZATION:



3-27-17

I declare and affirm under the penalties of perjury that this claim is in all things, true and correct. I further agree to comply with the provisions of the Civil Rights Act of 1964 and regulations issued thereunder relating to nondiscrimination in federal assisted programs.

AFFIDAVIT OF PUBLICATION

PLAIN TALK

RECEIVED

MAR 20 2017

WATER RIGHTS
PROGRAM

DENR
WATER RIGHTS PROGRAM
523 E CAPITOL
PIERRE SD 57501

STATE OF SOUTH DAKOTA
COUNTY OF CLAY

TERA SCHMIDT, BEING FIRST DULY SWORN ON OATH DEPOSES
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PUBLISHED ON: 03/17/2017

FILED ON: 03/17/2017

Tera A Schmidt

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

Christopher Schild

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Appropriate Water

Notice is given that Thein Well Co., Inc., c/o Robert Thein, PO Box 778, Spicer MN 56288 has filed an application for a water permit to appropriate no more than one acre foot of water annually at a maximum pump rate of 0.089 cubic feet of water per second from one well completed into the Lower Vermillion: Missouri Aquifer (136 feet deep) located in the NE 1/4 NW 1/4 Section 2-T93N-R52W for commercial use.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8257-3 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 March 27, 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 \$25.46.
Publish: March 17, 2017.

BROADCASTER PRESS

201 W. Cherry St.
Vermillion, SD 57069

REMIT TO:

319 Walnut St.
Yankton, SD 57078

Phone: 605-624-4429

Fax: 605-624-2696

Advertising Memo Bill

1] Memo Bill Period 03/2017		2] Advertiser/Client Name DENR	
23] Total Amount Due 25.46		4] Unapplied Amount	3] Terms of Payment
21] Current Net Amount Due .00	22] 30 Days .00	60 Days .00	Over 90 Days .00
4] Page Number 1	5] Memo Bill Date 03/14/17	6] Billed Account Number 3831 MISCE.	7] Advertiser/Client Number 3831

8] Billed Account Name and Address DENR WATER RIGHTS PROGRAM 523 E CAPITOL PIERRE SD 57501		Amount Paid: Comments: Ad #: 52305	
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Please Return Upper Portion With Payment

10] Date	11] Newspaper Reference	12] 13] 14] Description-Other Comments/Charges	15] SAU Size 16] Billed Units	17] Times Run 18] Rate	19] Gross Amount	20] Net Amount
03/17/17	52305 LLGL	NOTICE OF APPLICATION 8257-3 THEIN WELL CO 03/17 PIN PT	1.0X83.00 83.00	1 0.00	25.46	25.46
	TABS	TABS IN AD		1.31		

Statement of Account - Aging of Past Due Amounts

21] Current Net Amount Due	22] 30 Days	60 Days	Over 90 Days	*Unapplied Amount	23] Total Amount Due
0.00	0.00	0.00	0.00		25.46

BROADCASTER PRESS

(605) 624-4429

* UNAPPLIED AMOUNTS ARE INCLUDED IN TOTAL AMOUNT DUE

24] Invoice	25] Billing Period	6] Billed Account Number	7] Advertiser/Client Number	2] Advertiser/Client Name
52305	03/2017	3831	3831	DENR

March 20, 2017

PAYMENT REQUEST FORM

PAYEE: Broadcaster Press
319 Walnut St
Yankton SD 57078

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

DESCRIPTION OF SERVICE, PRODUCE OR TRANSFER

Republication of 8257-3 Thein Well

AMOUNT: \$25.46

FUNDING SOURCE:

GENERAL: X

FEDERAL:

OTHER:

COMMENTS:

AUTHORIZATION:

Deil Jackson

3-20-17

I declare and affirm under the penalties of perjury that this claim is in all things, true and correct. I further agree to comply with the provisions of the Civil Rights Act of 1964 and regulations issued thereunder relating to nondiscrimination in federal assisted programs.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

APR 26 2017

Thein Well Company Inc
PO Box 778
Spicer MN 56288

Dear Mr. Thein:

Enclosed is Water Permit No. 8257-3 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

8257-3

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

RECEIVED
MAY - 8 2017
WATER RIGHTS
PROGRAM

Date 05-03-2017

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

FROM: Thein Well Co., Inc.

(name)
PO Box 778

(address)
Spicer MN 56288
(city, state, zip)

320-796-2111
(phone)

I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

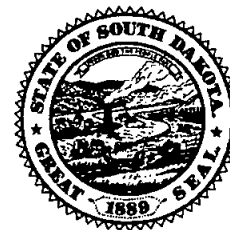
Water Permit No. 8257-3 states that the water use system is to be constructed by
March 27, 2022 , and water is to be put to beneficial use by March 27, 2026
(date) (date)

The water use system was completed on 03-30-2016
(date)

Applying the water to beneficial use was completed on 05-26-2016
(date)

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


(signature)





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

May 8, 2017

8257-3

Robert Thein
Thein Well Company Inc
PO Box 778
Spicer MN 56288 0778

Dear Mr. Thein:

I am writing to acknowledge receipt of the "Notice of Completion of Works" form that you sent in to let us know that you are completed with the water use system authorized under Water Permit No. 8257-3.

The system is now ready for inspection. Inspections are done on a county-by-county basis as staff time permits. You have done everything you need to do and the intervening time between the completion of your project and the staff inspection has no bearing on your water permit.

Someone from our office will contact you prior to the inspection to set up a time that is convenient for you. If you have any questions, please contact me.

Sincerely,

Genny McMath
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

Report of Examination of Works and/or Application of Water to Beneficial Use
For Permit No. 8257-3

I have this day, December 11, 2024, made a thorough examination of the water use system constructed by Thein Well Co., Inc., PO Box 778, Spicer, MN 56288, holder of Permit No. 8257-3, bearing the priority of December 27, 2016, authorizing the diversion of 0.089 cu. ft. per second of the waters of groundwater (Lower Vermillion: Missouri Aquifer) for commercial use in Clay County.

Inspection contact: Brian Pinkelman

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Thein Well Co., Inc.
- 2) No. of Wells 1
- 3) Depth(s) 136 feet
- 4) Well log is available Yes

Casing:

- 1) Diameter 6 inches
- 2) Length 126 feet
- 3) Type Plastic

Screen:

- 1) Type PVC
- 2) Diameter 6 inches
- 3) Length 10 feet
- 4) Static water level 66 feet

Pump:

- 1) Make Grundfos
- 2) Model P86G50F01MS
- 3) Capacity 50 GPM

Motor:

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

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

- 1) Type: Flexible hose is used to fill water trucks.

C. Works used to apply water to beneficial use:

- 1) Type: Water trucks.

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 NA
- 3) Exceptions to compliance are: None

E. Condition and Location:

1. The system is in good condition with the point(s) of diversion located as follows:
The well is 2,410 feet east and 780 feet south of the northwest corner of Section 2-T93N-R52W (Latitude 42.90770, Longitude -96.95522 – NE1/4 of the NW1/4).
2. The works are capable of diverting and conveying to the place of use 0.11 cu. ft. per second of water which is to be used for commercial purposes. Water has been put to beneficial use to the maximum extent at the Thein Well business site, and the license should be issued for 0.089 cfs.
3. All structures, wells and lands on map Yes

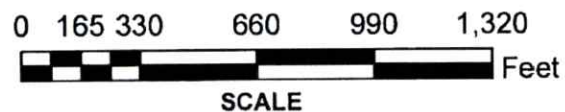
F. Comments or other permit(s) associated with the project: None.

Keith DeJong

Keith DeJong, PE Ret.
Water Rights Inspector
DANR, Water Rights Program

Date report completed: December 13, 2024

Water Permit No. 8257-3



Keith DeJong
Keith DeJong, PE Ret.
Staff Engineer
December 11, 2024



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

APR 30 2025

Thein Well Co Inc
c/o Robert Thein
PO Box 778
Spicer, MN 56288

No. 8257-3

Dear Mr. Thein:

Enclosed is Water License No. 8257-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

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

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

Sincerely,

Mark Mayer, PE
Director of Office of Water
(605) 773-3352

Note: The inspection found your system for Water Right No. 8257-3 to be capable of diverting 0.11 cfs (approx. 49 gpm). Pursuant to SDCL 46-5-6 diversion of water under this license is limited to 0.089 cfs (approx. 40 gpm).

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8257-3**

(1) Thein Well Co Inc, PO Box 778, Spicer, MN 56288, made Application No. 8257-3, December 27, 2016, for a water permit to divert 1 acre-foot of water annually at a maximum pump rate of 0.089 cubic feet of water per second from groundwater, one well (Lower Vermillion Missouri Aquifer), Clay County, South Dakota for commercial purposes. Permit No. 8257-3, with a priority date of December 27, 2016, was approved March 27, 2017, and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before March 27, 2022, and for the application to beneficial use of water on or before March 27, 2026.

(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 acre-foot of water annually at a maximum pump rate of 0.089 cubic feet of water per second for beneficial use. The location of the diversion point is:

- 2,410 feet E and 780 feet S from the NW corner of Section 2, T93N, R52W (NE ¼ NW ¼)
(Latitude 42.90770 and Longitude -96.95522)

(3) The water is to be used during the following described annual period: March 1 – December 31.

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

(5) Pursuant to South Dakota Water Law 46-5-30.1 Thein Well Co Inc, the holder and/or owner of Water Right No. 8257-3 is issued a license to appropriate water, the right to use 0.089 cubic feet of water per second from groundwater, one well (Lower Vermillion Missouri Aquifer), with a priority date of December 27, 2016, from the location specified in (2) of this license for commercial purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8257-3 and subject to the following qualifications:

1. The well approved under Water Permit No. 8257-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.

2. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Lower Vermillion Missouri Aquifer.

3. Water Permit No. 8257-3 authorizes a total annual diversion of 1.0 acre-feet of water.



Mark Mayer, PE
Director of Office of Water



date

