

Kansas Department of Agriculture
Division of Water Resources
PERMIT OF NEW APPLICATION WORKSHEET

1. File Number: <p style="text-align: center;">50513</p>	2. Status Change Date: <p style="text-align: center;">8/2/2022</p>	3. Field Office: <p style="text-align: center;">3</p>	4. GMD:
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5. Status: Approved Denied by DWR/GMD Dismiss by Request/Failure to Return

6. Enclosures: Check Valve N of C Form Water Tube Driller Copy Meter

<p>7a. Applicant(s) Person ID 50971 New to system <input type="checkbox"/> Add Seq# _____</p> <p style="text-align: center;">JUDITH REEDY TRUST 1907 N 200TH RD CONCORDIA, KS 66901</p>	<p>7c. Landowner(s) Person ID _____ New to system <input type="checkbox"/> Add Seq# _____</p>
<p>7b. Landowner(s) Person ID _____ New to system <input type="checkbox"/> Add Seq# _____</p> <p style="text-align: center;">7a</p>	<p>7d. Misc. Person ID _____ New to system <input type="checkbox"/> Add Seq# _____</p>

<p>8. WUR Correspondent Person ID 38381 New to system <input type="checkbox"/> Add Seq# _____ Overlap File (s) WUC Notarized WUC Form <input type="checkbox"/> Agree <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: center;">7a JOSEPH D REEDY 1704 OAT RD CONCORDIA, KS 66901</p>	<p>9. Use of Water: Changing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Surface Water</p> <p><input checked="" type="checkbox"/> IRR <input type="checkbox"/> REC <input type="checkbox"/> DEW <input type="checkbox"/> MUN</p> <p><input type="checkbox"/> STK <input type="checkbox"/> SED <input type="checkbox"/> DOM <input type="checkbox"/> CON</p> <p><input type="checkbox"/> HYD DRG <input type="checkbox"/> WTR PWR <input type="checkbox"/> ART RECHRG</p> <p><input type="checkbox"/> IND SIC: _____ <input type="checkbox"/> OTHER: _____</p>
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10. Completion Date: **12/31/2023** 11. Perfection Date: **12/31/2027** 12. Exp Date: _____

13. Conservation Plan Required? Yes No Date Required: _____ Date Approved: _____ Date to Comply: _____

14. Water Level Measuring Device? Yes No Date to Comply: _____ Date WLMD Installed: _____

Date Prepared: **7/6/2022** By: **KJN**
Date Entered: **8/8/2022** By: **LMoody**

7/7/2022
LIreland

File No. 50513	15. Formation Code: 340	Drainage Basin: REPUBLICAN RIVER	County: CD	Special Use:	Stream:																						
16. Points of Diversion			17. Rate and Quantity																								
T MOD DEL ENT	PDIV	Qualifier	S	T	R	ID	'N	'W	Rate gpm	Quantity af	Rate gpm	Quantity af	Overlap PD Files														
MOD	88594	SW NE NE	17	6S	4W	2	4009	1313	1200	183.68	1200	183.68	none														
18. Storage: Rate _____ NF Quantity _____ ac/ft Additional Rate _____ NF Additional Quantity _____ ac/ft																											
19. Limitation: 643.36 af/yr at _____ gpm (_____ cfs) when combined with file number(s) 49331, 49333, 49334																											
Limitation: _____ af/yr at _____ gpm (_____ cfs) when combined with file number(s) _____																											
20. Meter Required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No To be installed by _____ Date Acceptable Meter Installed _____																											
21. Place of Use		NE¼				NW¼				SW¼				SE¼				Total	Owner	Chg? NO	Overlap Files						
T MOD DEL ENT	PUSE	S	T	R	ID	NE ¼	NW ¼	SW ¼	SE ¼	NE ¼	NW ¼	SW ¼	SE ¼	NE ¼	NW ¼	SW ¼	SE ¼	NE ¼	NW ¼	SW ¼	SE ¼						
CHK 66765	4	6S	4W	3						40	40	40	40									160	7a	no	49333, 49334		
CHK 66764	3	6S	4W	1						40	40	40	40									160	7a	no Y	49333, 49334		
CHK 66766	9	6S	4W	1					40	40	40	40										160	7a	no	49333, 49334		
CHK 66767	17	6S	4W	1	40			40														80	7a	no Y	49333, 49334		
Comments: Reductions of the quantities under File Nos. 49333 & 49334 with the removal of File No. 49331 from the project allows the removal of the limitation as quantity is total for all files is 487.36 AF and is less than the 1.3 AF /A allowed in Cloud County																											

KANSAS DEPARTMENT OF AGRICULTURE
Division of Water Resources
M E M O R A N D U M

TO: Files

DATE: July 5, 2022

FROM: Kris Neuhauser

RE: Application, File No. 50,513

Judith Reedy Trust has filed the above referenced new application to appropriate 183.68 acre-feet of groundwater at a maximum diversion rate of 1,200 gallons per minute for irrigation use, from one well. The place of use is wholly owned by the applicant, and Judith Reedy has signed the application form stating she has access to the point of diversion. The proposed well is to be located in the Northeast Quarter of Section 17, Township 6 South, Range 4 West, Cloud County, Kansas. The requested quantity of water of 208 acre-feet, is well below the maximum allowable to irrigate the proposed 560 acres (1.3 acre-feet per acre is the maximum allowed in Cloud County). Change applications have also been filed by the applicant for existing Water Right, File Nos. 49,333 and 49,334, to create a complete overlap in place of use.

The following discussion is based on information from “Geology and Ground-Water Resources of Cloud County, Kansas”, KGS Bulletin 139 - *The Dakota Formation underlies all of Cloud County except possibly the most deeply scoured parts of the Republican River valley east of Clyde and the Chapman Creek valley southeast of Miltonvale. The Dakota Formation is overlain by younger beds in much of the western part of the county. The thickness of the Dakota Formation in Cloud County ranges from a few feet, at most, beneath the deep valleys at the east side of the county to a known maximum thickness of about 400 feet in the northwestern part of the county. The Dakota Formation is the only aquifer of major consequence in the uplands of Cloud County. In the outcrop area of the formation it yields an abundance of good water for domestic and stock use. In west-central Cloud County, where the formation is most deeply buried under younger formations, and in some other areas, where wells must be drilled to the lower part of the formation because there is no sandstone in the upper part, the water is somewhat mineralized.*

The Graneros Shale weathers to a heavy clay and forms a gentle slope from the base of the Greenhorn Limestone to the top of the Dakota Formation. The Graneros Shale underlies most of the western half of Cloud County except along the valleys of Republican and Solomon Rivers and Buffalo Creek. The thickness of the Graneros Shale in Cloud County ranges from 20 to 40 feet.

The Greenhorn Limestone crops out on or underlies much of the western part of Cloud County. The areal distribution of the Greenhorn Limestone is shown on Plate 1. The average thickness of the formation in Cloud County is about 85 feet. A few wells in Cloud County yield small quantities of water from the Greenhorn Limestone. Most of the water in the Greenhorn Limestone occurs in cracks above impervious layers, and dug wells of large diameter are constructed because of the greater infiltration area offered by this type of well. Most of the water from the Greenhorn Limestone is hard.

Based on the test hole log provided, the source of supply appears to be confined Dakota aquifer system. A sandstone layer is listed from 190 feet to 288 feet, while the static water level is listed at 82 feet below surface level. A 66-foot layer of ‘fire clay’ is listed directly above the 98-foot sandstone layer, which appears to be acting as a confining layer to the Dakota sandstone below. The static water level gives indication that the aquifer is not in equilibrium with atmospheric pressure.

At the request of the Stockton Field Office, John Munson reviewed the application and prepared a technical report. A Microsoft Teams meeting was held between Stockton Field Office and HQ DWR staff to discuss said report. It was determined that File No. 50,513 was approvable if the applicant was willing to reduce their proposed quantity to 71.36 acre-feet or reduce some combination of the proposed quantity and their existing appropriations in the two mile circle to equal 643.36 acre-feet total. Either path would allow safe yield to pass:

0.96 inches at 100%; safe yield determined to be 643.36 acre-feet; 572 acre-feet of prior appropriations; 71.36 acre-feet available

A letter was mailed on February 9, 2022, outlining the options. Kelly Stewart, Water Commissioner of the Stockton Field Office spoke with Ryan Reedy via phone call and email on March 22, 2022. Mr. Reedy indicated how they would like to split quantities amongst the new application and their existing appropriations: File No. 49,333 will be reduced to 120 acre-feet; File No. 49,334 will be reduced to 183.68 acre-feet; and File No. 50,513 will be reduced to 183.68 acre-feet.

~~156 AF (49,331)~~ + 120 AF (49,333) + 183.68 AF (49,334) + 183.68 AF (50,513) = ~~643.36 AF~~
not changed 487.36

Reduction requests were submitted for File Nos. 49,333 and 49,334 on April 18, 2022. The reductions as well as the place of use change applications will be worked as one large package with File No. 50,513.

One domestic well within one-half mile of the proposed point of diversion was identified. A notification letter was mailed on October 27, 2021. Chad Burt submitted a letter on November 8, 2021. The letter outlined the family farming history of the area and indicated opposition of the application being approved. The WRIS database shows that the applicant's senior file is a little over a mile away (File No. 49,334). Based on these nearby well locations, the point of diversion does not comply with well spacing criteria for the confined Dakota aquifer system (one-half mile to domestics and four miles to non-domestics). A waiver of spacing will need to be included.

In accordance with K.S.A. 82a-706c, the Chief Engineer retains full authority to require any water user to install meters, gages, or other measuring devices, which devices he or she or his or her agents may read at any time. Water flowmeter requirements are further described in K.A.R. 5-1-4 through K.A.R. 5-1-12. If any chemical or foreign substance is injected into the water pumped under this permit, a check valve will also need to be installed. The applicant has submitted a signed a Minimum Desirable Streamflow form, which has been properly notarized. By completing this statement, the applicant affirms his/her knowledge that there could be times when the diversion of water may not be allowed under this permit.

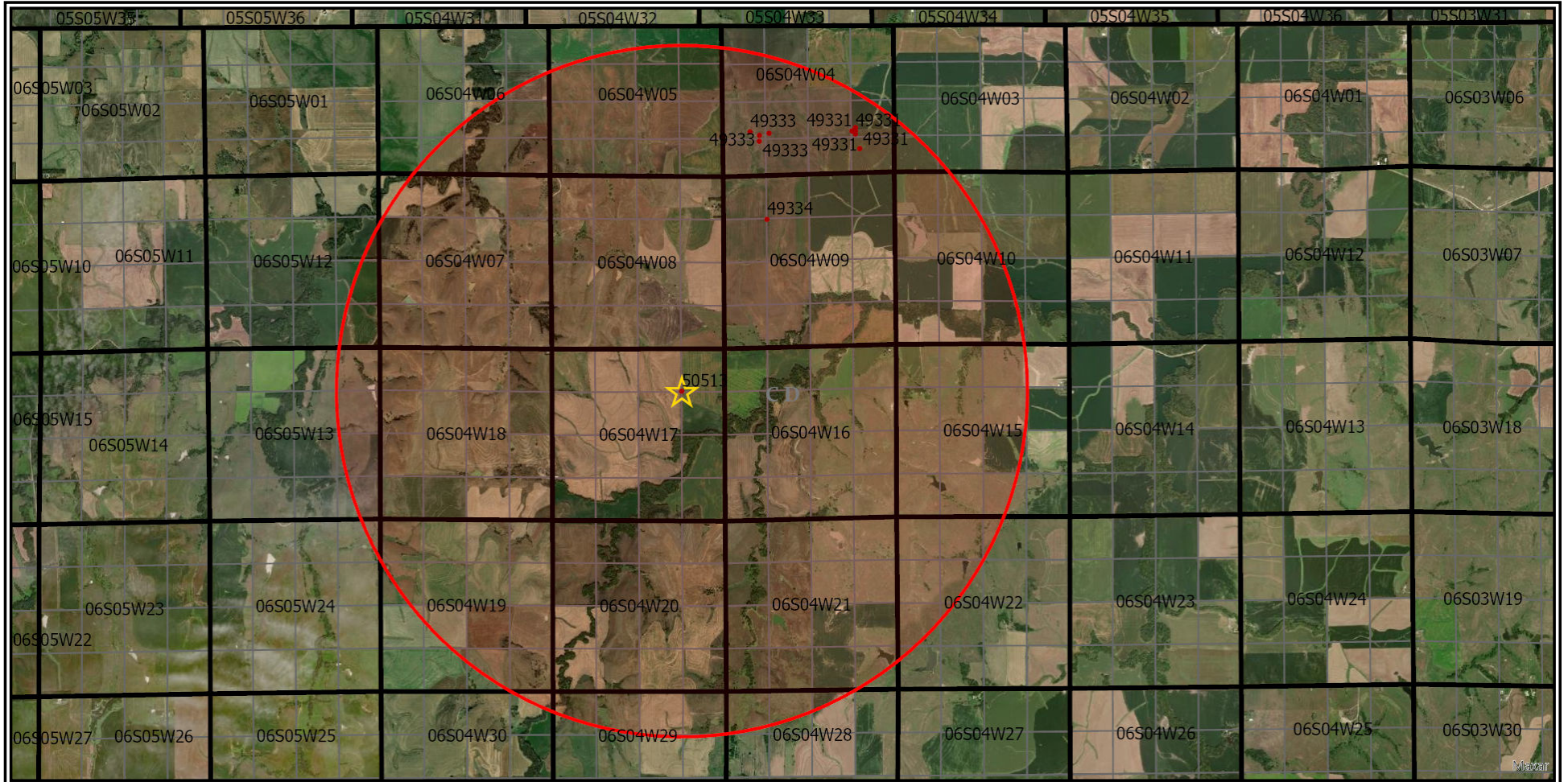
In an email conversation on June 5, 2022, Kelly Stewart, Water Commissioner of the Stockton Field Office, recommended approval of the referenced application. **The removal of the limitation was reviewed with Kelly & Kris.**

Based on the above discussion, that safe yield criteria is met with the appropriate reductions, that a waiver of well spacing will be included, and approval of the application will not impair senior water rights nor prejudicially or unreasonably affect the public interest, it is recommended that the referenced application be approved.



Kris Neuhauser
New Applications Lead
Water Appropriation Program

Safe Yield Report Sheet
Water Right- Proposed Point of Diversion
Point of Diversion in 00-00S-00
Footages from SE corner- 4,009 feet North 1,313 feet West



Analysis Results

The selected PD is in an area OPEN to new appropriations.

The safe yield based on the variables listed below is ~~1,206.37 AF~~ **643.36**

Total prior appropriations in the circle is ~~780.00 AF~~ **572 AF**

Total quantity of water available for appropriation is ~~426.37 AF~~ **643.36 AF - 572 AF = 71.36 AF available**

Safe Yield Variables

The area used for the analysis is set at 8,042 acres.

The potential annual recharge at the circle center is estimated to be ~~2.4~~ **0.96** inches.

The percent of recharge available for appropriation is ~~75%~~ **100%**

Authorized Quantity values are as of 07-JAN-2022 and are based on Appropriated and Vested ground water right and possible stream nodes for GMD #2. Domestic, Term and Temporary water rights have been excluded.

There are 4 water rights and 11 points of diversion within the circle.

File Number	Use	ST	SR	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Qind	Auth Quant	Add Quant	Tot Acres	Net Acres
A 49331 00	IRR	LR	G		NW	SE	SE	1270	1190	04	06	04W	1	WR	156.00	156.00	120.00	120.00
Same	IRR	LR	G		NW	SE	SE	1270	1290	04	06	04W	3	WR				
Same	IRR	LR	G		NW	SE	SE	1270	1090	04	06	04W	4	WR				
Same	IRR	LR	G		SW	NE	SE	1370	1190	04	06	04W	5	WR				
Same	IRR	LR	G		NW	SE	SE	1170	1190	04	06	04W	6	WR				
A 49333 00	IRR	LR	G		NW	SE	SW	1213	3846	04	06	04W	7	WR	208.00	208.00	160.00	160.00
Same	IRR	LR	G		NE	SW	SW	1256	4424	04	06	04W	8	WR				
Same	IRR	LR	G		NE	SW	SW	1147	4139	04	06	04W	9	WR				
Same	IRR	LR	G		NE	SW	SW	969	4151	04	06	04W	10	WR				
A 49334 00	IRR	LR	G			NC	NW	3875	3977	09	06	04W	1	WR	208.00	208.00	160.00	160.00
A 50513 00	IRR	AY	G		SW	NE	NE	4009	1313	17	06	04W	2	WR	208.00	208.00	560.00	80.00

From: Stewart, Kelly [KDA]
Sent: Tue 7/5/2022 4:04 PM
To: Neuhauser, Kris [KDA]
Cc: Billinger, Mark [KDA];Hageman, Nancy [KDA]
Subject: RE: 50513, 49333/49334 changes and reductions: recommendation request

Kris,

I would recommend approval of the reduction requests, change applications, and new application.

Kelly

From: Neuhauser, Kris [KDA] <Kris.Neuhauser@ks.gov>
Sent: Tuesday, July 5, 2022 11:32 AM
To: Stewart, Kelly [KDA] <Kelly.Stewart@ks.gov>
Cc: Billinger, Mark [KDA] <Mark.Billinger@ks.gov>
Subject: 50513, 49333/49334 changes and reductions: recommendation request

Kelly,

Attached are draft memos for new application 50513, change in PU applications for 49333 and 49334, and reductions for 49333 and 49334. Ryan Reedy is working on getting me the notarized signature page for the reductions. I will hold off on moving the files until I have that. I have my approvals set up so that the reductions will be signed first, then the new app and change apps will be signed.

Domestic and non-domestic spacing is not met for 50513, so waivers will need to be included. If you have any questions let me know.

Thanks!

Kris Neuhauser
New Applications Lead
Kansas Department of Agriculture, Division of Water Resources
Phone: 785-564-6643

From: Stewart, Kelly [KDA]
Sent: Thu 6/30/2022 2:10 PM
To: Neuhauser, Kris [KDA]
Subject: FW: 50513 permit adjustments

Sorry for the slow response to your e-mail, but as you know, I've been away.

From: Stewart, Kelly [KDA]
Sent: Tuesday, March 22, 2022 3:12 PM
To: Baum, Kristen [KDA] <Kristen.Baum@ks.gov>; Milner, Brandon [KDA] <Brandon.M.Milner@ks.gov>
Cc: David Means (David.Means@ks.gov) <David.Means@ks.gov>
Subject: FW: 50513 permit adjustments

Kristen,

Kris has been working on this and had written a letter offering some different options for meeting safe-yield. Below, you will see how Ryan Reedy proposes to reduce two existing permits and also the pending application. I will ask David to work up the voluntary reduction requests for 49,333 & 49,334 and you can use this e-mail to reduce the pending application.

Kelly

From: ryan reedy <reedyelectric_ag@hotmail.com>
Sent: Tuesday, March 22, 2022 3:07 PM
To: Stewart, Kelly [KDA] <Kelly.Stewart@ks.gov>; Means, David [KDA] <David.Means@ks.gov>
Subject: 50513 permit adjustments

EXTERNAL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

This is in response to conversation had about what is needed from the Reedys to describe where acre feet needs to be arranged.

Transfer of 88 acre feet from permit 49333 to 50513
Transfer of 24.32 acre feet from permit 49334 to 50513

This should bring permit 49333 to 120 acre feet
49334 to 183.68 acre feet
50513 to 183.68 acre feet

Technical Review of Application 50,513 filed by Judith Reedy

Prepared by:

John Munson, Groundwater Impairment Investigator
Water Management Services, Technical Services
Kansas Department of Agriculture, Division of Water Resources
January 18, 2022

Introduction

Judith Reedy proposes to drill an irrigation well, File No. 50,513 in the SW ¼ of the NE ¼ of the NE ¼ of Section 17, Township 6 South, Range 4 West, in Cloud County. The well is to pump 208 acre-feet per year from the Dakota aquifer. There are six irrigation wells in the 2-mile circle. The Dakota is mapped as a confined aquifer where the proposed well and well 49,334 is located and the wells for File Nos. 49,331 and 49,333 are in an area mapped as unconfined Dakota aquifer. **Figure 1.**

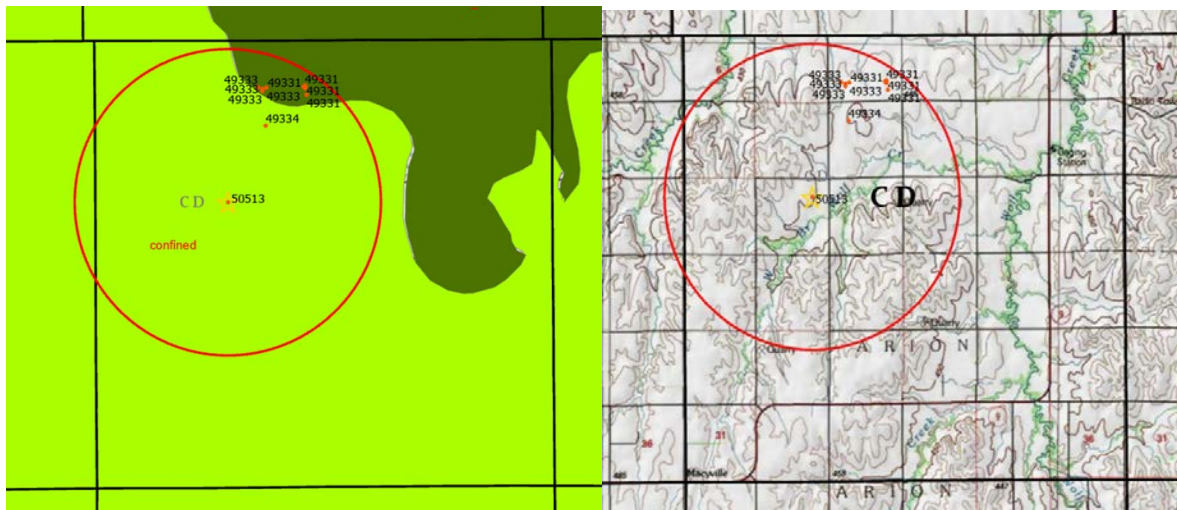


Figure 1. The 2-mile circle around File 50,513 with existing irrigation wells to the northeast. The proposed well and well 49334 are in the light green area mapped as confined Dakota aquifer and the other irrigation wells are in the dark green area mapped as unconfined Dakota aquifer.

This Technical Review uses an **aquifer transmissivity of $T = 5,162$ gpd/ft** and a **storage coefficient of $S = 0.0000936$** from a pumping test conducted using a test well and measuring water levels at well 49,331 in the area mapped as unconfined Dakota. The storage coefficient is what would be expected from a confined aquifer. The water levels shown in the well logs are all about same elevation, most are in confining clay, and all water levels are above the source aquifer. Drawdown is simulated at the proposed well by pumping 572 acre-feet from the existing wells in the 2-mile circle and by pumping a reduced quantity of 435 acre-feet to meet safe yield. Drawdown is also simulated at a location of four miles to compare if four-mile spacing were met. Assuming safe yield is met and the application can otherwise be approved, a location for an observation well is proposed for monitoring by DWR since the proposed well 50,513 does not meet four-mile well spacing for the confined Dakota aquifer.

Summary

- Well logs for existing wells in the 2-mile circle and the proposed well and a pumping test conducted in the 2-mile circle indicate a confined Dakota aquifer. Without reducing existing appropriations from 572 acre-feet to 435 acre-feet or reducing the proposed well quantity from 208 acre-feet to 71 acre-feet or some combination of both, the safe yield of 643 acre-feet for the confined Dakota aquifer is not met. Four-mile well spacing for the confined Dakota aquifer is also not met.
- A simulation of pumping 572 acre-feet appropriated in the 2-mile circle reduces the static water level at the proposed well to below the top of the sandstone. Reducing the amount pumped to 435 acre-feet to meet safe yield results in the water level remaining in the clay above the top of the sandstone.
- Safe yield can be met by reducing File No. 49,333 to the maximum reported use of 110 acre-feet, reducing File No. 49,334 to the maximum reported use of 172 acre-feet, and by reducing either File No. 49,331 or the proposed well by 3 acre-feet or some combination of the proposed well quantity and the existing wells not exceeding the safe yield of 643 acre-feet.
- If safe yield for the confined Dakota aquifer is met and application, File No. 50,513 can be otherwise approved, an observation well located in the in the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 17, Township 6 South, Range 4 West, in Cloud County drilled to the same depth and screened the same as the production well would be an adequate location for DWR monitoring. The measurement tube in the irrigation well would need to be straight and free of obstruction so a DWR pressure transducer could be installed to monitor the pumping water level at the irrigation well.
- Analysis of future water levels and pumping in areas where safe yield is at or near maximum or well spacing is not met is prudent for future appropriations of water and proper resource management.

Discussion

There are six irrigation wells presently located in the 2-mile circle. Both the north well and south well of File No. 49,331 are in the area mapped as unconfined Dakota and were tested pumping a total of 785 gpm. The west well, south well and east well of File No. 49,333 are also located in the area mapped as unconfined Dakota and tested a total of 515 gpm. The well for File No. 49,334 is in the area mapped as confined Dakota and it has been tested pumping 745 gpm. Well driller logs for the existing wells and the proposed well indicate the wells pump from a confined aquifer. A pumping test conducted for File No. 50,195 in the area mapped as unconfined Dakota resulted in aquifer parameters normally found in the confined Dakota aquifer. Safe yield analysis for the confined Dakota aquifer for the entire 2-mile circle indicates that only 71 acre-feet of the 208 acre-feet of water requested is available for appropriation. If the present appropriations of 572 acre-feet were reduced to 435 acre-feet, then the proposed well would meet safe yield. If some combination of the existing wells and the proposed well did not exceed 643 acre-feet, then safe yield would be met. Four-mile spacing required for wells in the confined Dakota aquifer is also not met as the nearest irrigation well 49,334 is located a little over one-mile northeast of the proposed well 50,513.

A. Lithologic logs showing wells in confined Dakota aquifer.

Lithologic logs plotted from well driller logs for the existing irrigation wells, the test well that was for File No. 50,195, and the proposed well for 50,513 all appear to have substantial clay layering from the land surface topsoil to overlaying the static water level. The water levels are all a few feet near elevation 1,400 feet and some are in confining clay. Some well water levels are in sandstone overlying the source sandstone that the well pumps from. The proposed well water level is in a clayey sand or a fine sand with clay. **Figure 2.**

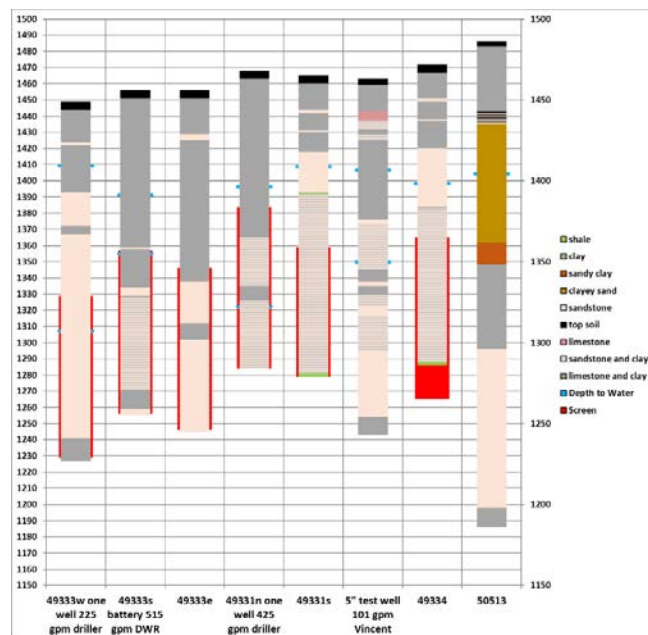


Figure 2. Lithologic logs from well driller logs in the 2-mile circle. The logs to the left are wells in the map area described as unconfined Dakota aquifer. Log 49334 and the proposed well 50513 to the right are in the map area described as confined Dakota aquifer.

B. Analysis of water level drawdown due to pumping existing wells.

Drawdown at the proposed well was simulated by using the Theis equation with an aquifer transmissivity of $T = 5,162 \text{ gpd/ft}$ and a storage coefficient of $S = 0.0000936$. The aquifer parameters were determined from a 24-hour pumping test measuring drawdown at the north irrigation well of File No. 49,331 located 2,273 feet from the test well for File No 50,195. The north well and south well of File No. 49,331 was tested pumping a total of 785 gpm. The west well, south well, and the east well of File No. 49,333 tested a total of 515 gpm. The well for File. No. 49,334 was tested pumping 745 gpm. Simulations of pumping the existing wells in the 2-mile circle at their tested rates and authorized quantities totaling 572 acre-feet shows drawdowns at the proposed location reaching 118 feet. If the proposed well was located four miles from the well for File No. 49,334 to meet the four-mile spacing the drawdown would only reach 40 feet. If the amount of water pumped by the existing wells was reduced to 435 acre-feet to meet safe yield, simulated drawdown at the proposed location reaches 106 feet and reaches 33 feet at four miles. Present appropriations totaling 572 acre-feet means only 71 acre-feet can be approved for File No. 50,513 to meet safe yield. If existing appropriations are reduced to 435 acre-feet, then 208 acre-feet quantity for File No. 50,513 would meet safe yield. **Table 1. and Figure 3.**

Simulated acre-feet pumped	Drawdown at proposed File No. 50,513	Drawdown at four miles to meet well spacing
572 acre-ft	118 feet	40 feet
435 acre-ft	106 feet	33 feet

Table 1. Summary of simulated drawdown at the proposed File No. 50,513 and drawdown at four miles due to pumping the presently authorized 572 acre-feet in the 2-mile circle and simulating pumping a reduced amount of 435 acre-feet to meet safe yield.

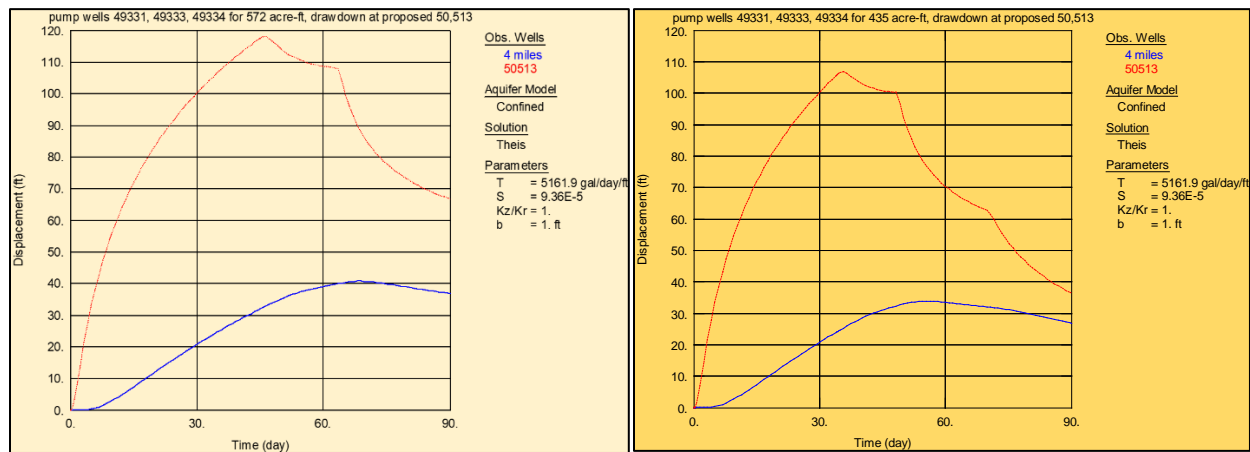


Figure 3. Simulated drawdown results at the proposed well for File No. 50,513 and at four miles pumping 572 acre-feet shown on the left and pumping 435 acre-feet on the right to meet safe yield.

Drawdown of 118 feet at the proposed well due to pumping the existing wells their authorized quantity of 572 acre-feet would reduce the static water level of 82 feet in the clayey sand to below the top of the sandstone that the well proposes to pump from. If existing wells pump 435 acre-feet to meet safe yield the drawdown of 106 feet would be in the clay above the top of the source sandstone. **Figure 4.**

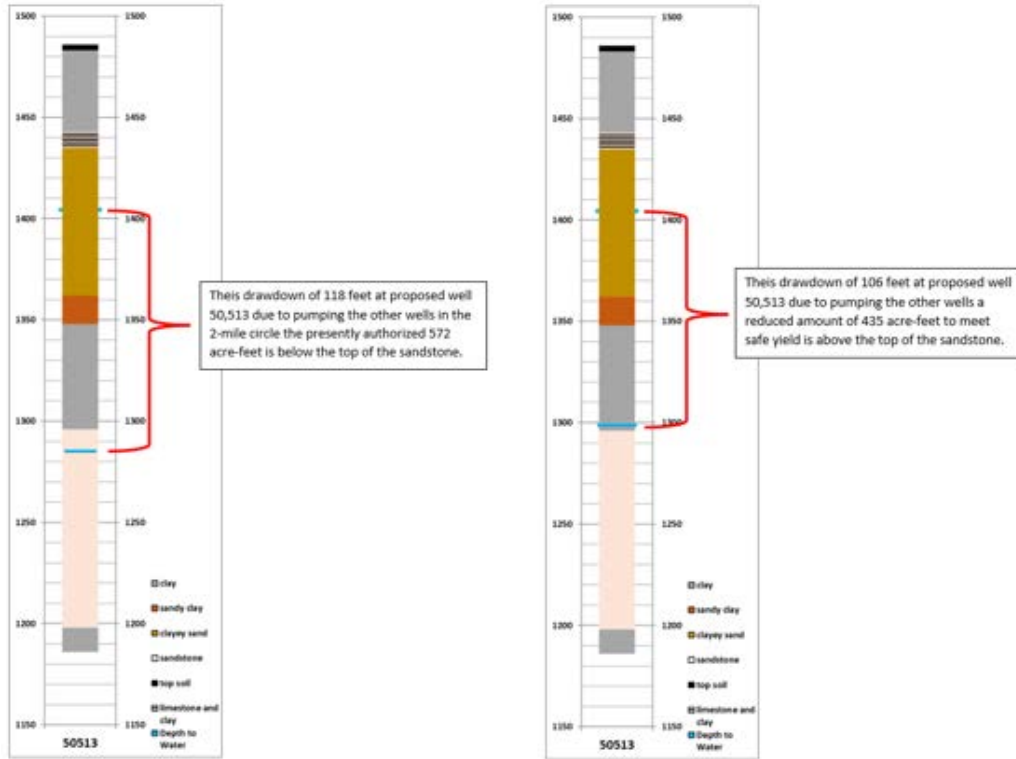


Figure 4. The lithologic log to the left shows This drawdown at the proposed well to below the top of the sandstone from pumping the existing wells the presently authorized 572 acre-feet. The lithologic log to the right shows This drawdown pumping a reduced amount of 435 acre-feet to meet safe yield and the water level is still in the clay above the sandstone.

C. Presently authorized quantities, actual use, and safe yield.

There are presently six irrigation wells in the Dakota aquifer authorized by File No. 49,331 for 156 acre-ft, File No. 49,333 for 208 acre-ft, and File No. 49,334 for 208 acre-ft, for a total of 572 acre-ft per year. File No. 49,331 reported using 24 acre-ft in 2018, 19 acre-ft in 2019 and 26 acre-ft in 2020. File No. 49,333 reported using 28 acre-ft in 2017, 110 acre-ft in 2018, 5 acre-ft in 2019 and 38 acre-ft in 2020. File No. 49,334 reported using 75 acre-ft, 172 acre-ft, 37 acre-ft, 23 acre-ft, and 39 acre-ft. The total pumped each year averages 18 percent of the total authorized 572 acre-ft. **Table 2 and Figure 5.**

File number Tested Rate	49,331 785 gpm	49,333 515 gpm	49,334 745 gpm	Reported total use	Percent of 572 acre-feet Authorized
Authorized	156 acre-ft	208 acre-ft	208 acre-ft	acre-ft	Average 18%
2016 used	0	0	75	75	13 %
2017 used	0	28	172	200	35 %
2018 used	24	110	37	171	30 %
2019 used	19	5	23	47	8 %
2020 used	26	38	39	103	18 %

Table 2. Summary of reported acre-feet used in the 2-mile circle and the percent used of the presently authorized quantity of 572 acre-feet.

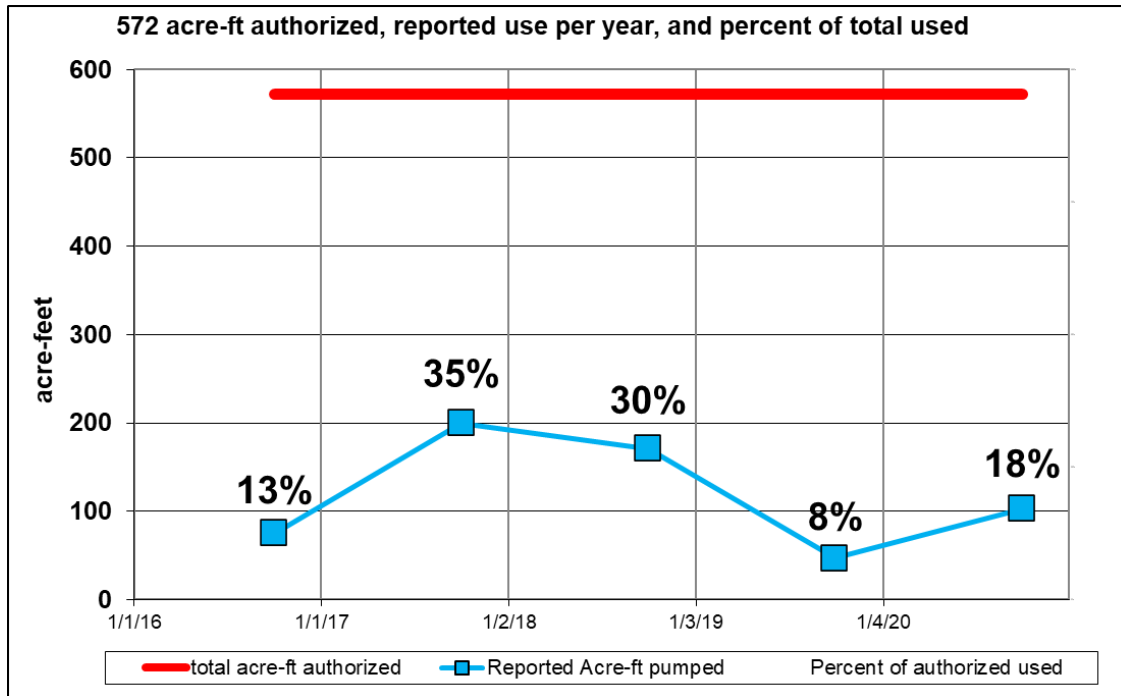


Figure 5. The reported total quantities in the 2-mile during a five-year period 2016, 2017, 2018, 2019, and 2020 and the percent of total quantity authorized of 572 acre-feet.

The presently authorized wells have only pumped an average of 18 percent of the total authorized quantity of 572 acre-feet over the past five years. To approve the proposed well for 208 acre-feet the appropriations in the 2-mile circle could not exceed 435 acre-feet. The maximum reported use for File No. 49,334 over the five-year period was 172 acre-feet in 2017. The maximum use reported for File No. 49,333 was 110 acre-feet in 2018. If File No. 49,334 is reduced or certified for 172 acre-feet and File No. 49,333 is reduced or certified for 110 acre-feet, then the total authorized in the 2-mile circle would be 438 acre-feet or only 3 acre-feet more than needed to meet safe yield of 435 acre-feet. If File No. 49,331 were reduced from 156 acre-feet to 153 acre-feet or the proposed File No. 50,513 were reduced from 208 acre-feet to 205 acre-feet, then safe yield would be met. **Table 3.**

Safe yield is 643 acre-feet	Scenario 1 below exceeds safe yield by 3 acre-feet	Scenario 2 meets Safe yield	Scenario 3 meets Safe yield
File No.	acre-ft	acre-ft	acre-ft
49,331	156 authorized	153 reduced	156 authorized
49,333	110 maximum reported use	110 reduced	110 reduced
49,334	172 maximum reported use	172 reduced	172 reduced
50,513	208 proposed	208 proposed	205 reduced
total	646 exceeds safe yield	643 meets safe yield	643 meets safe yield

Table 3. Three scenarios are shown of reducing the quantity for File No 49,333 to the maximum reported use of 110 acre-feet and reducing the quantity for File No. 49,334 to the maximum reported use of 172 acre-feet. Scenario 1 exceeds safe yield if File No. 49,331 is left as authorized and the proposed File No. 50,513 is left at 208 acre-feet. Scenarios 2 and 3 meet safe yield if either File No. 49,331 or the proposed File No. 50,513 is reduced by 3 acre-feet.

Simulated drawdown at an observation well ½ mile north of the proposed irrigation well reaches 120 feet if present wells pump 435 acre-ft to meet safe yield. A location of easy access would be near the road where water level data could be collected to access pumping in this area of maximum safe yield and where four-mile spacing is not met. **Figure 6.**

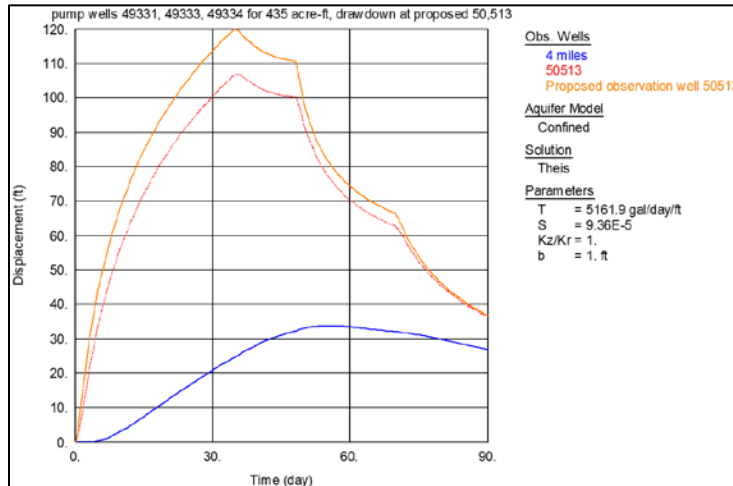


Figure 6. Result of drawdown at a proposed observation well ½ mile north of the proposed irrigation well in orange, at the proposed irrigation well, and at four miles from simulating pumping the presently existing wells 435 acre-feet reduced to meet safe yield.

Conclusion

The source of supply for the proposed well and the existing irrigation wells in the 2-mile circle appears to be the confined Dakota aquifer. Safe yield is not met without reducing the proposed well to 71 acre-feet or by reducing the existing appropriations from 572 acre-feet to 435 acre-feet or by reducing some combination of the proposed well quantity and the existing appropriations, so the total does not exceed 635 acre-feet. Four-mile spacing for irrigation wells in the confined Dakota aquifer is also not met.

If the quantity for the proposed well and existing wells are reduced so the total meets safe yield and the application can otherwise be approved, the following conditions should be part of the approval as analysis of future water levels and pumping in areas where safe yield is at or near maximum or well spacing is not met is prudent for future appropriations of water and proper resource management.

1. The applicant shall install and maintain an observation well located near the center of the north side of the Northeast Quarter of Section 17, more particularly described as being near a point 5,250 feet North and 1,340 feet West of the Southeast corner of said section in Township 6 South, Range 4 West, Cloud County, Kansas, drilled to the same depth and screened the same as the production well application, File No. 50,513.
2. The water level measurement tube completed at the production well application, File No. 50,513 shall be installed straight and free of obstruction so a DWR pressure transducer can be installed to monitor the pumping water level at the irrigation well.

Kansas Department of Agriculture
 Division of Water Resources
WAIVER REQUEST & WAIVER RULE WORKSHEET

File Number: **50,513**

FO: **3**

GMD:

WAIVER REQUEST:

UMW	Date Requested	Rule ID	Applies	Rule Type	Rule Subtype
IRR	1/28/2021	4	Statewide	Well Spacing Domestic	Confined Dakota
Rule Number	Date Granted	Date Denied	Justification: One domestic well falls within the allowable one-half mile radius of the proposed well under New Application, File No. 50,513. A technical report was prepared to determine any negative impact. Quantity reductions on File No. 50,513 and existing Appropriation, File Nos. 49,333 and 49,334 will be put in place upon approval.		
K.A.R. 5-4-4 (c)(2)(A)	8/2/2022				

WAIVER RULE (complete only if a new rule needs to be created):

Rule ID	Applicability	Type	Subtype	Rule Number	Date Active	Date Inactive
				K.A.R.		

COMMENTS: Will not be a new rule

Date Prepared **7/6/2022** By **KJN**

Date Entered **8/8/2022** By **LMoody**

Kansas Department of Agriculture
 Division of Water Resources
WAIVER REQUEST & WAIVER RULE WORKSHEET

File Number: **50,513**

FO: **3**

GMD:

WAIVER REQUEST:

UMW	Date Requested	Rule ID	Applies	Rule Type	Rule Subtype
IRR	1/28/2021	1	Statewide	Well Spacing Domestic	Confined Dakota
Rule Number	Date Granted	Date Denied	Justification: Multiple appropriations fall within the allowable four mile radius of the proposed well under New Application, File No. 50,513. A technical report was prepared to determine any negative impact. Quantity reductions on File No. 50,513 and existing Appropriation, File Nos. 49,333 and 49,334 will be put in place upon approval.		
K.A.R. 5-4-4 (c)(1)(A)	8/2/2022				

WAIVER RULE (complete only if a new rule needs to be created):

Rule ID	Applicability	Type	Subtype	Rule Number	Date Active	Date Inactive
				K.A.R.		

COMMENTS: Will not be a new rule

Date Prepared **7/6/2022** By **KJN**

Date Entered **8/8/2022** By **LMoody**

THE STATE OF KANSAS



KANSAS DEPARTMENT OF AGRICULTURE
Mike Beam, Secretary of Agriculture

DIVISION OF WATER RESOURCES
Earl D. Lewis Jr., Chief Engineer

WAIVER OF REGULATION
K.A.R. 5-4-4(c)(1)(A) Well Spacing


Date: August 2, 2022

RE: New Application, File No. 50,513

1. That K.A.R. 5-4-4 states in part, that the minimum well spacing shall be based on the source of supply for the well, which in this specific application is the confined Dakota Formation. The proposed point of diversion under the above referenced application does not meet spacing criteria as required by K.A.R. 5-4-4(c)(1)(A) because it is located less than four miles to multiple appropriations.
2. That John Munson (Hydrologic Analysis – Division of Water Resources Headquarters) reviewed and prepared a technical report for the application.
3. That the existing appropriations that do not meet spacing are all owned by the applicant.
4. That it was determined New Application, File No. 50,513 could be approved if the applicant was willing to reduce the proposed quantity, and quantities on existing Appropriation of Water, File Nos. 49,333 and 49,334.
5. That the applicant spoke directly with Kelly Stewart, Water Commissioner of the Stockton Field Office, and agreed to a combination of reductions.
6. That a waiver of K.A.R. 5-4-4(c)(2)(A) will not prejudicially or unreasonably affect the public interest and should not impair any existing water rights.

Comments:




Earl D. Lewis Jr., P.E.
Chief Engineer
Division of Water Resources
Kansas Department of Agriculture

THE STATE OF KANSAS



KANSAS DEPARTMENT OF AGRICULTURE
Mike Beam, Secretary of Agriculture

DIVISION OF WATER RESOURCES
Earl D. Lewis Jr., Chief Engineer

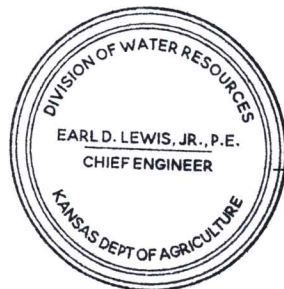
WAIVER OF REGULATION
K.A.R. 5-4-4(c)(2)(A) Well Spacing Domestic

Date: *August 2, 2022*

RE: New Application, File No. 50,513

1. That K.A.R. 5-4-4 states in part, that the minimum well spacing shall be based on the source of supply for the well, which in this specific application is the confined Dakota Formation. The proposed point of diversion under the above referenced application does not meet spacing criteria as required by K.A.R. 5-4-4(c)(2)(A) because it is located less than one-half mile to a domestic well.
2. That John Munson (Hydrologic Analysis – Division of Water Resources Headquarters) reviewed and prepared a technical report for the application.
3. That the domestic well in question may not currently be in use, but a nearby notification letter was still mailed to the owner Chad Burt. Mr. Burt responded via letter, but did not reference concern for this specific well, but rather the area as a whole.
4. That it was determined New Application, File No. 50,513 could be approved if the applicant was willing to reduce the proposed quantity, and quantities on existing Appropriation of Water, File Nos. 49,333 and 49,334.
5. That the applicant spoke directly with Kelly Stewart, Water Commissioner of the Stockton Field Office, and agreed to a combination of reductions.
6. That a waiver of K.A.R. 5-4-4(c)(2)(A) will not prejudicially or unreasonably affect the public interest and should not impair any existing water rights.

Comments:



Earl D. Lewis Jr.

Earl D. Lewis Jr., P.E.
Chief Engineer
Division of Water Resources
Kansas Department of Agriculture

THE STATE OF KANSAS



KANSAS DEPARTMENT OF AGRICULTURE
Mike Beam, Secretary of Agriculture

DIVISION OF WATER RESOURCES
Earl D. Lewis Jr., Chief Engineer

APPROVAL OF APPLICATION and PERMIT TO PROCEED

(This Is Not a Certificate of Appropriation)

This is to certify that I have examined Application, **File No. 50,513** of the applicant

**JUDITH REEDY TRUST
1907 N 200TH RD
CONCORDIA, KS 66901**

for a permit to appropriate water for beneficial use, together with the maps, plans and other submitted data, and that the application is hereby approved and the applicant is hereby authorized, subject to vested rights and prior appropriations, to proceed with the construction of the proposed diversion works (except those dams and stream obstructions regulated by K.S.A. 82a-301 through 305a, as amended), and to proceed with all steps necessary for the application of the water to the approved and proposed beneficial use and otherwise perfect the proposed appropriation subject to the following terms, conditions and limitations:

1. That the priority date assigned to such application is **January 28, 2021**.
2. That the water sought to be appropriated shall be used for irrigation use on land described in the application, as follows:

Sec.	Twp.	Range	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
3	6S	4W									40	40	40	40					160
4	6S	4W									40	40	40	40					160
9	6S	4W					40	40	40	40									160
17	6S	4W	40			40													80

3. That the authorized source from which the appropriation shall be made is groundwater, to be withdrawn by means of one (1) well, located in the Southwest Quarter of the Northeast Quarter of the Northeast Quarter (SW¼ NE¼ NE¼) of Section 17, more particularly described as being near a point 4,009 feet North and 1,313 feet West of the Southeast corner of said section, in Township 6 South, Range 4 West, Cloud County, Kansas, located substantially as shown on the topographic map accompanying the application.

4. That the appropriation sought shall be limited to a maximum diversion rate not in excess of **1,200 gallons per minute (2.67 c.f.s.)** and to a quantity not to exceed **183.68 acre-feet** of water for any calendar year.

5. That installation of works for diversion of water shall be completed on or before **December 31, 2023** or within any authorized extension thereof. The applicant shall notify the Chief Engineer and pay the statutorily required field inspection fee of \$400.00 when construction of the works has been completed. Failure to timely submit the notice and the fee will result in revocation of the permit. Any request for an extension of time shall be submitted prior to the expiration of the deadline and shall be accompanied by the required statutory fee of \$100.00.

6. That the proposed appropriation shall be perfected by the actual application of water to the proposed beneficial use on or before **December 31, 2027** or any authorized extension thereof. Any request for an extension of time shall be submitted prior to the expiration of the deadline and shall be accompanied by the required statutory fee of \$100.00.

7. That the applicant shall not be deemed to have acquired a water appropriation for a quantity in excess of the amount approved herein nor in excess of the amount found by the Chief Engineer to have been actually used for the approved purpose during one calendar year subsequent to approval of the application and within the time specified for perfection or any authorized extension thereof.

8. That the use of water herein authorized shall not be made so as to impair any use under existing water rights nor prejudicially and unreasonably affect the public interest.

9. That the right of the appropriator shall relate to a specific quantity of water and such right must allow for a reasonable raising or lowering of the static water level and for the reasonable increase or decrease of the streamflow at the appropriator's point of diversion.

10. That this permit does not constitute authority under K.S.A. 82a-301 through 305a to construct any dam or other obstruction; nor does it grant any right-of-way, or authorize entry upon or injury to, public or private property.

11. That all diversion works constructed under the authority of this permit into which any type of chemical or other foreign substance will be injected into the water pumped from the diversion works shall be equipped with an in-line, automatic quick-closing, check valve capable of preventing pollution of the source of the water supply. The type of valve installed shall meet specifications adopted by the Chief Engineer and shall be maintained in an operating condition satisfactory to the Chief Engineer.

12. That all wells with a diversion rate of 100 gallons per minute or more drilled under the authority of this permit shall have a tube or other device installed in a manner acceptable to, and in accordance with specifications adopted by, the Chief Engineer. This tube or device shall be suitable for making water level measurements and shall be maintained in a condition satisfactory to the Chief Engineer.

13. That an acceptable water flow meter shall be installed and maintained on the diversion works authorized by this permit in accordance with Kansas Administrative Regulations 5-1-4 through 5-1-12 adopted by the Chief Engineer. This water flow meter shall be used to provide an accurate quantity of water diverted as required for the annual water use report (including the meter reading at the beginning and end of the report year).

14. That the applicant shall maintain accurate and complete records from which the quantity of water diverted during each calendar year may be readily determined and the applicant shall file an annual water use report with the Chief Engineer by March 1 following the end of each calendar year. Failure to file the annual water use report by the due date shall cause the applicant to be subject to a civil penalty.

15. That no water user shall engage in nor allow the waste of any water diverted under the authority of this permit.

16. That failure without cause to comply with provisions of the permit and its terms, conditions and limitations will result in the forfeiture of the priority date, revocation of the permit and dismissal of the application.

17. That the right to appropriate water under authority of this permit is subject to any minimum desirable streamflow requirements identified and established pursuant to K.S.A. 82a-703c for the source of supply to which this water right applies.

Ordered this 2nd day of August, 2022, in Manhattan, Riley County, Kansas.



Earl D. Lewis Jr.

Earl D. Lewis Jr., P.E.
Chief Engineer
Division of Water Resources
Kansas Department of Agriculture

State of Kansas)
) SS
County of Riley)

The foregoing instrument was acknowledged before me this 2 day of August, 2022, by Earl D. Lewis Jr., P.E., Chief Engineer, Division of Water Resources, Kansas Department of Agriculture.

Ashlee Freeman

Notary Public



1320 Research Park Drive
Manhattan, KS 66502
785-564-6700
www. agriculture.ks.gov



900 SW Jackson, Room 456
Topeka, KS 66612
785-296-3556

Mike Beam, Secretary

Laura Kelly, Governor

JUDITH REEDY TRUST
JUDITH REEDY
1907 N 200TH RD
CONCORDIA, KS 66901

August 16, 2022

RE: Appropriation of Water, File No. 50,513

Dear Mrs. Reedy:

Enclosed is a permit authorizing you to proceed with construction of the proposed diversion works and to appropriate water for beneficial use as set forth in the permit. Your attention is directed to the enclosures and to the terms, conditions, limitations, and requirements specified in this permit.

Notice must be filed on the enclosed form once the diversion works have been completed. Failure to complete the diversion works within the time allowed, or within any authorized extension of time thereof, will result in dismissal of this permit. If you need an extension of time, you must request it before the deadline for completion set forth in the permit. Any request for an extension of time must be accompanied by the statutorily required fee, which is currently \$100.00.

An annual water use report must be filed with the Chief Engineer by March 1, following the end of each calendar year. If a complete annual water use report is not received by the deadline, then a fine may be assessed and all water use under such permit or right may be suspended. Reports submitted in paper form will be assessed a \$20 per file number paper filing fee. In order to avoid this filing fee, you may submit your report online at www.kswaterusereport.org.

The approval of your application constitutes a permit to appropriate water. It does not give authority to construct any dam or other stream obstruction regulated by K.S.A. 82a-301 through 305a. It does not give authority to access any right-of-way or authorize trespassing upon or injury to public or private property. It may also be necessary for you to comply with other local, state or federal requirements.

Enclosed is an informational sheet that sets forth the procedure to obtain a Certificate of Appropriation which will establish the extent of your perfected water right. Additional information and applicable forms may be found on our website at agriculture.ks.gov/divisions-programs/dwr. If you have any questions or need assistance with any of these requirements, please contact our office at 785-564-6640 or your local Stockton Field Office at 785-425-6787. If you call, please reference the file number so we can help you more efficiently.

Sincerely,

Kristen A. Baum
New Applications and Changes Supervisor
Division of Water Resources

KAB: kjn: li
Enclosure(s)

pc: Stockton Field Office
Joseph D. Reedy

RIGHT TO A HEARING AND TO ADMINISTRATIVE REVIEW

If you are aggrieved by this Order, then pursuant to K.S.A. 82a-1901, you may request an evidentiary hearing before the Chief Engineer, or request administrative review by the Secretary of Agriculture. Failure to request an evidentiary hearing before the Chief Engineer does not preclude your right to administrative review by the Secretary.

To obtain an evidentiary hearing before the Chief Engineer, a written request for hearing must be filed within 15 days after service of this Order as provided in K.S.A. 77-531 (i.e., **within a total of 18 days after this Order was mailed to you**), with: Kansas Department of Agriculture, Attn: Legal Division, 1320 Research Park Drive, Manhattan, Kansas 66502, FAX (785) 564-6777.

If you do not file a request for an evidentiary hearing before the Chief Engineer, you may petition for administrative review of the Order by the Secretary of Agriculture. A petition for review shall be in writing and state the basis for requesting administrative review. The request for review may be denied if the request fails to clearly establish factual or legal issues for review. See K.S.A. 77-527. The petition must be filed within 30 days after service of this Order as provided in K.S.A. 77-531 (i.e., **within a total of 33 days after this Order was mailed to you**), and be filed with: Secretary of Agriculture, Attn: Legal Division, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas 66502, FAX (785) 564-6777.

If neither a request for an evidentiary hearing nor a petition for administrative review is filed as set forth above, then this Order shall be effective and become a final agency action as defined in K.S.A. 77-607(b). Failure to timely request either an evidentiary hearing or administrative review may preclude further judicial review under the Kansas Judicial Review Act.

CERTIFICATE OF SERVICE

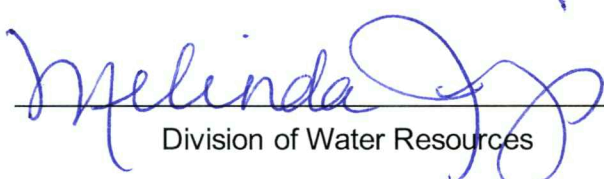
On this 16 day of August, 2022, I hereby certify that the foregoing Approval of Application and Permit to Proceed, File No. 50,513, dated 2 August 2022 was mailed postage prepaid, first class, US mail to the following:

JUDITH REEDY TRUST
1907 N 200TH RD
CONCORDIA, KS 66901

With photocopies to:

Stockton Field Office

JOSEPH D REEDY
1704 OAT RD
CONCORDIA, KS 66901



Division of Water Resources