

File No. **44,425** 11. County: **RENO** Basin: **190** Stream: **ARKANSAS RIVER BASIN** Formation Code: Special Use:

12. Points of Diversion
 CHK
 MOD
 DEL PDIV
 ENT Qualifier S T R ID 'N 'W Comment (AKA Line) Rate gpm Quantity af Rate gpm Quantity af Overlap PD Files

NO CHANGE

13. Storage: Rate _____ NF Quantity _____ ac/ft Additional Rate _____ NF Additional Quantity _____ ac/ft

14. Limitation: _____ af/yr at _____ gpm (_____ cfs) when combined with file number(s) **NONE NO CHANGE**
 Limitation: _____ af/yr at _____ gpm (_____ cfs) when combined with file number(s) _____

15. 5YR Allocation: Allocation Type _____ Start Year _____ 5 YR Amount _____ Amount Unit _____ Base Acres _____ Comment _____

16. Place of Use CHK MOD DEL ENT	PUSE	S	T	R	ID	NE¼				NW¼				SW¼				SE¼				Total	Owner	Chg?	Overlap Files
						NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼				
CHK	53747	16	22	7W	2	24.6														24.6	7a	N	44,424 & 50,403		
MOD																									

Base Acres: **12** Year: **2011** Minimum Reasonable Quantity: **13.4"**
 Comments: **5/9/2022**

Received
 Stafford Field Office
 Division of Water Resources

KANSAS DEPARTMENT OF AGRICULTURE
Division of Water Resources

M E M O R A N D U M

5/9/2022

TO: Files

DATE: December 9, 2021

Received

FROM: Jessica Engelbrecht

RE: Application, File No. 50,403
Water Right File Nos 44,424 & 44,425

Stafford Field Office
Division of Water Resources

USD 309 Nickerson South Hutchinson has filed the referenced application to Appropriate Water for Beneficial Use as well as applications to Change the Place of Use for Water Appropriation File Nos. 44,424 & 44,425. The goal is to create a complete overlap in place of use among all files: File Nos. 44,424; 44,425; and 50403. All three files are a battery of two wells and overlap each other in Points of Diversion. The Points of Diversion are located in Section 16, Township 22 South, Range 7 West, in Reno County, Kansas. The Points of Diversion are in the Arkansas River Basin.

The current Place of Use for Appropriation File Nos. 44,424 and 44,425 is 12 acres in the Northeast Quarter of Section 16, Township 22 South, Range 2 West. File No. 44,424 has an authorized quantity of 13.38 acre-feet at a rate of 150 gallons per minute. File No. 44,425 has an authorized quantity of 13.86 acre-feet at a rate of 150 gallons per minute. Application File No. 50,403 is requesting 33 acre-feet at a rate of 200 gallons per minute. The proposed Place of Use will consist of 24.6 acres in Section 16, Township 22 South, Range 7 West, Reno County, Kansas. An overall limitation will be put into place on File No. 50,403, limiting the rate to 200 gallons per minute when combined with File Nos. 44,424 and 44,425. Each Change Application has been properly notarized and signed by Doctor Jeanne Stroh, representative for Nickerson USD 309.

Three domestic wells were identified within ½ mile of the three referenced file numbers. Nearby letters, referencing New Application, File No. 50,403 and two Change Applications, were mailed on July 21, 2020, by Doug Schemm, former Environmental Scientist from the Topeka Field Office. A public notice was printed in the local paper for three consecutive weeks with the first publication being published on August 20, 2020 and the last on September 3, 2020. No responses of any kind were received.

New Application File No. 50,403 and Change in Place of Use Applications File Nos. 44,424 and 44,425 lay within the boundaries of Groundwater Management District 2 (GMD2). A copy of Application File No. 50,403 and copies of Change in Place of Use Applications 44,424 and 44,425 were sent to Tim Boese, manager at GMD 2, on September 16, 2020 for review and recommendation by Doug Schemm, former Environmental Scientist from the Topeka Field Office.

A recommendation for denial was received on May 28, 2021 for Application File No. 50,403. Tim Boese cited in the recommendation letter the following reasons for denial; Application File No. 50403 does not comply with K.A.R. 5-22-1(n) Battery of Wells definition, K.A.R.5-22-2(b) Well Spacing, and K.A.R. 5-22-14(a)(1) Maximum Reasonable Quantity for Beneficial Use.

The applicant appealed the GMD 2 recommendation for denial in a letter received by the GMD on June 25, 2021. The applicant was able to supply justification for waivers. The wells are 663 ft apart which does not comply with the "battery of wells" definition 5-22-1(n). However, GMD 2 granted an exemption to the senior files on June 13, 2001. The proposed Point of Diversion does not meet spacing to several wells. The domestic wells appear to be used for lawn irrigation and are not used for typical household use and drinking water. Furthermore, a public notice was published in the local paper and no comments or concerns were received from domestic well owners. The applicant was able to obtain signed spacing consent forms from nearby Water Rights.

5/9/2022

Page 2

Received

Stafford Field Office
Division of Water Resources

Application, File No. 50,403
Water Right File Nos 44,424 & 44,425

Approval of the application would exceed the Maximum Reasonable Quantity when in combination with Water Appropriation Files 44,424 and 44,425. Water Right Nos. 44,424 and 44,425 and Application for Appropriation File No. 50,403 have a combined quantity of 60.24 acre-feet on 24.6 acres which equals 2.45 acre-feet per acre, exceeding the Maximum Reasonable Quantity. The application is for irrigation of turf grass which GMD 2 has granted exceptions for when previously reviewing similar applications.

In a letter dated September 2, 2021, GMD 2 recommended approval of Application File No. 50,403 with exceptions for K.A.R. 5-22-1(n), K.A.R.5-22-2(b) and K.A.R. 5-22-14(a)(1). Noted in the information provided by GMD 2, the application meets safe yield, saturated thickness in the area is approximately 50-75 feet and groundwater level in the area has been stable. Waivers for spacing and Maximum Reasonable Quantity will be needed to approve the application. In a letter dated September 2, 2021, GMD 2 recommended approval of Application to Change the Place of Use for File Nos. 44,424 and 44,425.

In an e-mail dated February 24, 2022, Jeff Lanterman, Water Commissioner of the Stafford Field Office, recommended approval of the referenced application. Based on the above discussion, waivers, 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.

5/9/2022

Received

Engelbrecht, Jessica [KDA]

Stafford Field Office
Division of Water Resources

From: Lanterman, Jeff [KDA]
Sent: Thursday, February 24, 2022 10:29 AM
To: Engelbrecht, Jessica [KDA]
Subject: RE: Change Apps 44424 & 44425 & New App 50403

Follow Up Flag: Follow up
Flag Status: Flagged

Jessica I recommend approval of this package of applications with the appropriate waivers on 50403

From: Engelbrecht, Jessica [KDA] <Jessica.Engelbrecht@ks.gov>
Sent: Wednesday, February 23, 2022 2:51 PM
To: Lanterman, Jeff [KDA] <Jeff.Lanterman@ks.gov>
Subject: FW: Change Apps 44424 & 44425 & New App 50403
Importance: High

From: Engelbrecht, Jessica [KDA]
Sent: Tuesday, February 8, 2022 9:11 AM
To: Lanterman, Jeff [KDA] <Jeff.Lanterman@ks.gov>
Subject: FW: Change Apps 44424 & 44425 & New App 50403
Importance: High

Apparently I lost track of this one.

From: Engelbrecht, Jessica [KDA]
Sent: Monday, December 13, 2021 10:14 AM
To: Lanterman, Jeff [KDA] <Jeff.Lanterman@ks.gov>
Subject: Change Apps 44424 & 44425 & New App 50403

Jeff –
Attached are the documents for change Apps 44424 & 44425 as well as New App 50403.
Nickerson schools applied for additional quantity of 33 AF from a battery of two wells, and also applied to change the place of use on the two senior files to create a place of use overlap.
50403 will have a limited quantity of 200 GPM when combined with 44424 and 44425.
Application File No. 50403 will require waivers.

Jessica Engelbrecht, Environmental Scientist
KDA Division of Water Resources
Stafford Field Office
(620) 234-5311 Office
(620) 234-6900 Fax
Jessica.engelbrecht@ks.gov
www.agriculture.ks.gov

Topeka Field Office
1131 SW Winding Rd, Suite 400
Topeka, KS 66615



Phone: 785-296-5733
www.agriculture.gov

Mike Beam, Secretary

Laura Kelly, Governor

September 16, 2020

GROUNDWATER MANAGEMENT DISTRICT NO 2
% TIM BOESE
313 SPRUCE ST
HALSTEAD KS 67056-1925

Re: Pending Application, File No. 50,403

Dear Mr. Boese:

We are enclosing a copy of the application referred to above which appears to be in proper form. Application, File No. 50,403 is requesting 33 acre-feet of additional groundwater at a diversion rate of 200 gallons per minute from an existing well battery currently authorized under File Nos. 44,424 and 44,425.

Notification letters were sent out to nearby well owners on July 31, 2020. A telephone call was received from Bob Mummey who owns the groundwater pit to the south permitted under File No. 47,931. Mr. Mummey was concerned that approval of the application would lower the water level in his groundwater pit. We discussed the seniority of his water right, and that the relatively low pumping rate and quantity of water requested under this pending application, is unlikely to cause drawdown at his pit. No written responses of any kind were received. In addition, the applicant published a Public Notice in "THE STERLING KANSAS BULLETIN" on August 20; August 27; and September 3, 2020. The final day to comment is September 18, 2020. No comments of any kind have been received in response to the public notice. The applicant has provided an Affidavit of Publication from the newspaper's publisher.

We are delaying any further action for a period of **30 days** from the date of this letter to allow you time to submit your recommendation concerning this application. Please submit your recommendation within the allotted time, or any authorized extension of time thereof.

If you have any questions, please contact me at (785) 296-3495. If you wish to discuss a specific file, please have the file number ready so that I may help you more efficiently.

Sincerely,

A handwritten signature in blue ink that reads "Douglas W. Schemm".

Douglas W. Schemm
Environmental Scientist
Topeka Field Office

Enclosures

5/9/2022

Received

Stafford Field Office
Division of Water Resources

JEFF WINTER, PRESIDENT
VIN KISSICK, VICE PRESIDENT
DAVID BOGNER, SECRETARY
MIKE MCGINN, TREASURER
TIM BOESE, MANAGER
THOMAS A. ADRIAN, ATTORNEY



DIRECTORS:
JOE BERGKAMP
ALAN BURGHART
DALE SCHMIDT
BOB SEILER
DAVID STROBERG

EQUUS BEDS GROUNDWATER MANAGEMENT DISTRICT NO. 2

313 SPRUCE STREET • HALSTEAD, KANSAS 67056-1925 • PHONE (316) 835-2224 • FAX (316) 835-2225 • equusbeds@gmd2.org • www.gmd2.org

May 28, 2021

Chief Engineer, Division of Water Resources
Attn: Douglas W. Schemm, Topeka Field Office
1131 SW Winding Road, Suite 400
Topeka, KS 66615

Re: Appropriation Application No. 50403 – Nickerson USD 309 – South Hutchinson

Dear Mr. Schemm:

The Equus Beds Groundwater Management District reviewed the referenced application on May 28, 2021, using the District's Revised Management Program (effective May 1, 1995) and Rules and Regulations K.A.R. 5-22-1 through 5-22-17.

The District's review found that the application does not comply with the following:

1. "Battery of wells" definition K.A.R. 5-22-1(n), as the individual wells of the proposed well battery are located more than 300 feet from the proposed geographic center of the well battery.
2. Well Spacing Regulation K.A.R. 5-22-2(b), as the proposed well battery geographic center is located less than 960 feet to multiple domestic wells; less than 1,620 feet to the groundwater pit authorized by Water Right No. 47931; and possibly less than 1,620 feet to the municipal well authorized by Water Rights No. RN-005, 2764, and 31246.
3. Maximum Reasonable Quantity for Beneficial Use Regulation K.A.R. 5-22-14(a)(1), as the proposed water to land ratio exceeds the maximum of 1.4 acre-feet per acre for Reno County.

Additionally, the District's review found that the proposed place of use appears to form a partial place of use overlap with Water Right Nos. 44424 and 44425, and that the proposed well battery geographic center north footage measurement may be in error.

Based upon the review findings, the application is recommended for denial by the Equus Beds Groundwater Management District.

A District decision may be appealed to the District Board of Directors by submitting a written petition to the District office within 30 days from the date of this notification, pursuant to K.A.R. 5-22-12. An appeal petition must state the basis for the appeal and must include information/documentation supporting the appeal.

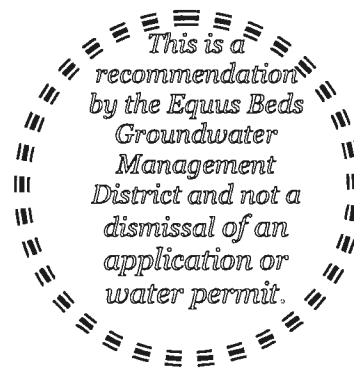
Please contact the District should you have any questions regarding the review or recommendation.

Sincerely,
EQUUS BEDS GROUNDWATER
MANAGEMENT DISTRICT NO. 2

Tim Boese
Manager
TDB/db

Enclosures

pc: Nickerson USD 309 – South Hutchinson, Applicant, with copy of K.A.R. 5-22-12
Bob Mummey, Water Right No. 47931 groundwater pit owner
Jeff Lanterman, Division of Water Resources - Stafford



5/9/2022

Received

Stafford Field Office
Division of Water Resources

H:\MSOFFICE\LETTERS\APP\NewApp\Recommendation\Deny\#50403_Nickerson_USD309.docx



EQUUS BEDS GROUNDWATER MANAGEMENT DISTRICT NO. 2 FINAL APPLICATION REVIEW CHECKLIST

1) Application No. 50403 Date filed: 6/23/20
 2) Applicant: Nickerson USD 309 - South Hutchinson County: Reno
 3) Proposed maximum quantity: 33 acre-feet/year Rate: 200 GPM
 4) Proposed Use: Irrigation
 5) P/D location: SE NE NE 16-22S-7W Geo Center: North 4365 (4356?) ft, West 511 ft
 6) Number and type of points of diversion listed on the application 1 battery of 2 wells

7) Meter required K.A.R. 5-22-4a or K.A.R. 5-22-8? Yes No, Why _____

8) Meets Safe Yield K.A.R. 5-22-7? Yes No N/A

(a) Total allowable appropriations: 4021.00 af/yr
 (b) Total existing appropriations: 2063.64 af/yr
 (c) Total small user exemptions: 0.00 af/yr
 (d) Total non-consumptive use: 0.00 af/yr
 (e) Total consumptive use: 2063.64 af/yr
 (Total existing appropriations) – (Total non-consumptive use)
 (f) exempt from regulation? Yes No,
 Cite exemption: _____

9) Meets Well Spacing K.A.R. 5-22-2? Yes No N/A

(a) POD in enhanced well spacing area? Yes No
 (b) Domestic well spacing interval: <960 ft
 (c) Non-Domestic well spacing interval: <1620 ft

10) Meets Max Reasonable Quantity K.A.R. 5-22-14? Yes No N/A

(a) Irrigation max quantity: 2.45 acre-feet / acre
 application paragraph 3 value (acre-feet) / proposed acres = Q
 (b) Stockwater max quantity: _____ GPD _____ unit
 (c) Industry max quantity: _____ Acre
 Industry standard: _____
 (d) Municipal max quantity: _____ GCD

$$1.10 * (X - Y) * 365 d * (z + t)$$

X - Average of last three years usage in Gallons per Capita per Day (GCD)
 Y - water usage for industries that use over 200,000 gal/yr (GCD)
 Z - Projected population in 20 years
 T - Reasonable projected water use for industries that use over 200,000 gallons per year (GCD)

5/9/2022

Received

Stafford Field Office
 Division of Water Resources

(e) Pond max quantity is _____
 (Net evap + seepage)/12 x pond area + any initial fill

(f) Groundwater pit max Q: _____
 Net evap * pit area/12

11) Reasonable rate for intended use? Yes No N/A

12) Depth to water: 8.95 bls at observation well: EB266A

13) Date reviewed: May 28, 2021

14) Reviewed by: T. Boese

Title: Manager

15) District recommendation:

Approve Deny

Other, see comment

16) Comments and Calculations:

Review completed for a new application submitted by Nickerson USD 309- South Hutchinson for irrigation in Reno County. Existing Water Right Nos. 44424 & 44425 authorize the same PD and partial PU overlap. No. 44424 authorizes 13.38 AF on 12 acres; No.44425 authorizes 13.86 on 12 acres (may be same 12 acres authorized by 44424?), for a total of 27.24 AF on 12 acres (2.27 AF/A). Nos. 44424 & 44425 were originally approved for a total of 27.24 AF on 19.46 acres (1.4 AF/A). DWR issued certificates for both in 2014, and appeared to allow 2.27 AF/A total if same 12 acres are authorized by both. No. 50403 proposes an additional

33 AF on 24.6 acres (12 acres of which are already apparently authorized by Nos. 44424 & 44425). No change in PU applications filed on Nos. 44424 and 44425.

Proposed geo-center footage measurements may be slightly off. Based on individual well footage measurements, the geo-center should be 4356' N & 511' W.

Item 9: Proposed well battery is within 960 feet of multiple domestic wells. No spacing consent forms received. Spacing consent forms were submitted for Nos. 44424 and 44425 when they were applied for in 2000/2001. Proposed well battery geo-center is also within 1620 feet of non-domestic groundwater pit authorized by No. 47931 (Nickerson USD 309 gave written consent in 2011 for No. 47931 groundwater pit to be located closer than 1320 feet) Proposed geo-center may be within 1620 feet of the municipal well authorized by Nos. RN-005, 2764, 31246 (authorized footage measurements indicate municipal well is located 1653 feet from proposed well battery, but spacing evaluation map indicated municipal well is less than 1,620 feet to proposed well battery).

Item 10: Proposed quantity of 33 AF + 27.24 AF authorized by Nos. 44424 & 44425 = 60.24 AF / 24.6 acres = 2.45 AF/A. Proposed water to land ratio may actually be higher if less than 24.6 acres will be irrigated. It appears the proposed PU includes some buildings, sidewalks, track, etc, and also non-athletic fields grass areas that may not be irrigated. If only the 12 acres authorized by Nos. 44424 and 44425 will be irrigated, then the proposed water to land ratio is 60.24 AF / 12 acres = 5.02 AF/A.

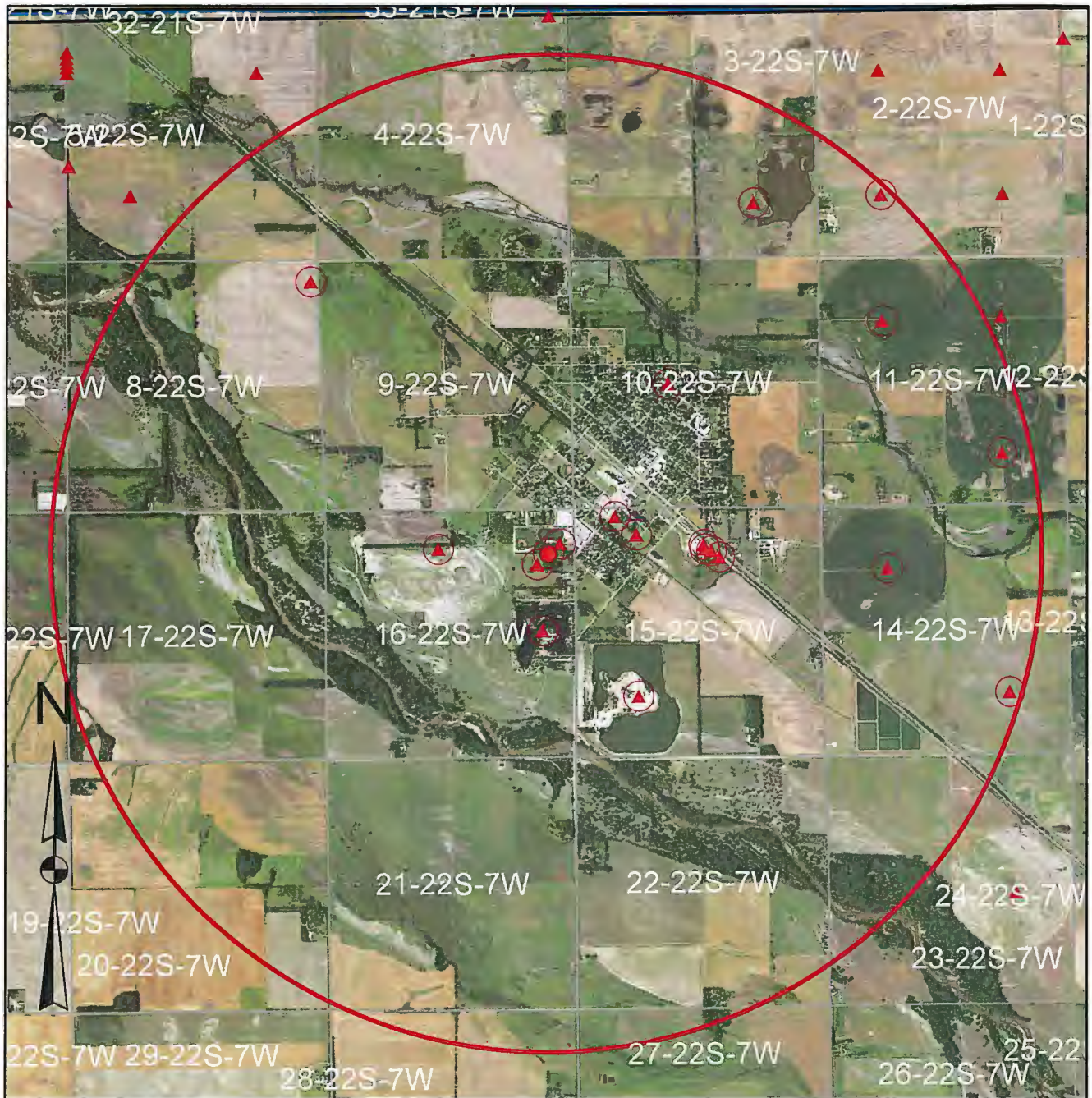
Proposed battery of two wells does not comply with well battery definition, as the wells are located more than 300 feet from the geo-center. Based on the individual wells' footage measurements and the corrected geo-center footage measurements (4356' N & 511' W), the wells are each located ~329 feet from the geo-center. Nos. 44424 and 44425 were granted exceptions to the battery of wells definition by GMD2 Board in 2001, subject to any future change in PD applications complying with the battery of wells definition..

Recommend denial, does not comply with Well Spacing Regulation K.A.R. 5-22-2(b), Maximum Use Regulation K.A.R. 5-22-14(a)(2), and "Battery of wells" definition K.A.R. 5-22-1(n)

5/9/2022

Received

Equus Beds Groundwater Management District No. 2
 Safe Yield Evaluation #50403 - Nickerson USD 309
 SENENE (4356'N & 511'W) 16-22S-07W, Reno County
 Prepared By: T. Boese Date: 5/20/2021



● Proposed Point of Diversion	Map Legend	
⌞ Area of Consideration Boundary	— Major Highway	
● Monitoring Wells	— Other Roadway	5/9/2022
▲ Points of Diversion	— Major Stream	Received
□ District Boundary	— Other Water Feature	Stafford Field Office
	□ County Boundary	Division of Water Resources
	■ City Boundary	

0.45 0.225 0 0.45 Miles

Equus Beds Groundwater Management District No. 2
 313 Spruce Street, Halstead, KS 67056
 316-835-2224, equusbeds@gmd2.org

SAFETYIELD EVALUATION - NO. 50403 - NICKERSON USD 309
LOCATION: SENENE (4356'N & 511'W) 16-22S-07W, Reno County
SPECIAL USE AREA: None
EVALUATION DATE:- 5/20/2021

Total Areas: 8,042 acres; Area in 3 inch discharge zone: 0 acres; Area in 6 inch discharge zone: 8,042 acres

FILE_ID	WELL_ID	TOWNSHIP	RANGE	SECTION	QUALIFIER	USE	AUTHQUANTITY
A00276400	1257	22S	07W	15	47283988	MUN	12.43
A00276400	1256	22S	07W	15	50904440	MUN	12.43
A01332200	1304	22S	07W	2	13203960	IRR	232.5
A03047000	1192	22S	07W	14	39603960	IRR	195
A03124600	1324	22S	07W	15	51354402	MUN	15.39
A03124600	1325	22S	07W	15	47283988	MUN	15.39
A03300100	1090	22S	07W	10	26243243	MUN	138
A03685600	1695	22S	07W	11	39103960	IRR	141
A03745700	1843	22S	07W	8	48450269	IRR	195
A04134300	2195	22S	07W	15	13203960	IND	285
A04199500	2247	22S	07W	3	11511372	IRR	99
A04442400	2894	22S	07W	16	43650511	IRR	13.38
A04442400	2814	22S	07W	16	41340754	IRR	0
A04442400	2892	22S	07W	16	45770267	IRR	0
A04442500	2893	22S	07W	16	41340754	IRR	0
A04442500	2895	22S	07W	16	43650511	IRR	13.86
A04442500	2815	22S	07W	16	45770267	IRR	0
A04477500	2887	22S	07W	11	10991379	IRR	175
A04578700	3139	22S	07W	8	48450269	IRR	0
A04696400	3481	22S	07W	15	43702385	IND	50
A04696400	3482	22S	07W	15	45092541	IND	0
A04696400	3879	22S	07W	15	42352215	IND	0
A04696400	3890	22S	07W	15	44142532	IND	0
A04769800	3746	22S	07W	16	44842845	IRR	127.4
A04793100	3819	22S	07W	16	27320649	REC	45
A04823600	3994	22S	07W	14	13201320	IRR	182
A05040300P	5277	22S	07W	16	41340754	IRR	0
A05040300P	5278	22S	07W	16	45770267	IRR	0
A05040300P	5279	22S	07W	16	43560511	IRR	33
VRN000500	1548	22S	07W	15	50904440	MUN	41.43
VRN000500	1549	22S	07W	15	47504070	MUN	41.43
Allowable Appropriations		4,021.00			Total Existing Appropriation		2,063.64
Small User Quantity		0			Non Consumptive Appropriations		0
Remaining SUQ		45			Consumptive Appropriations		2,063.64
Note- Values are in acre-feet					Available Appropriations		1,957.36


5/9/2022

Received

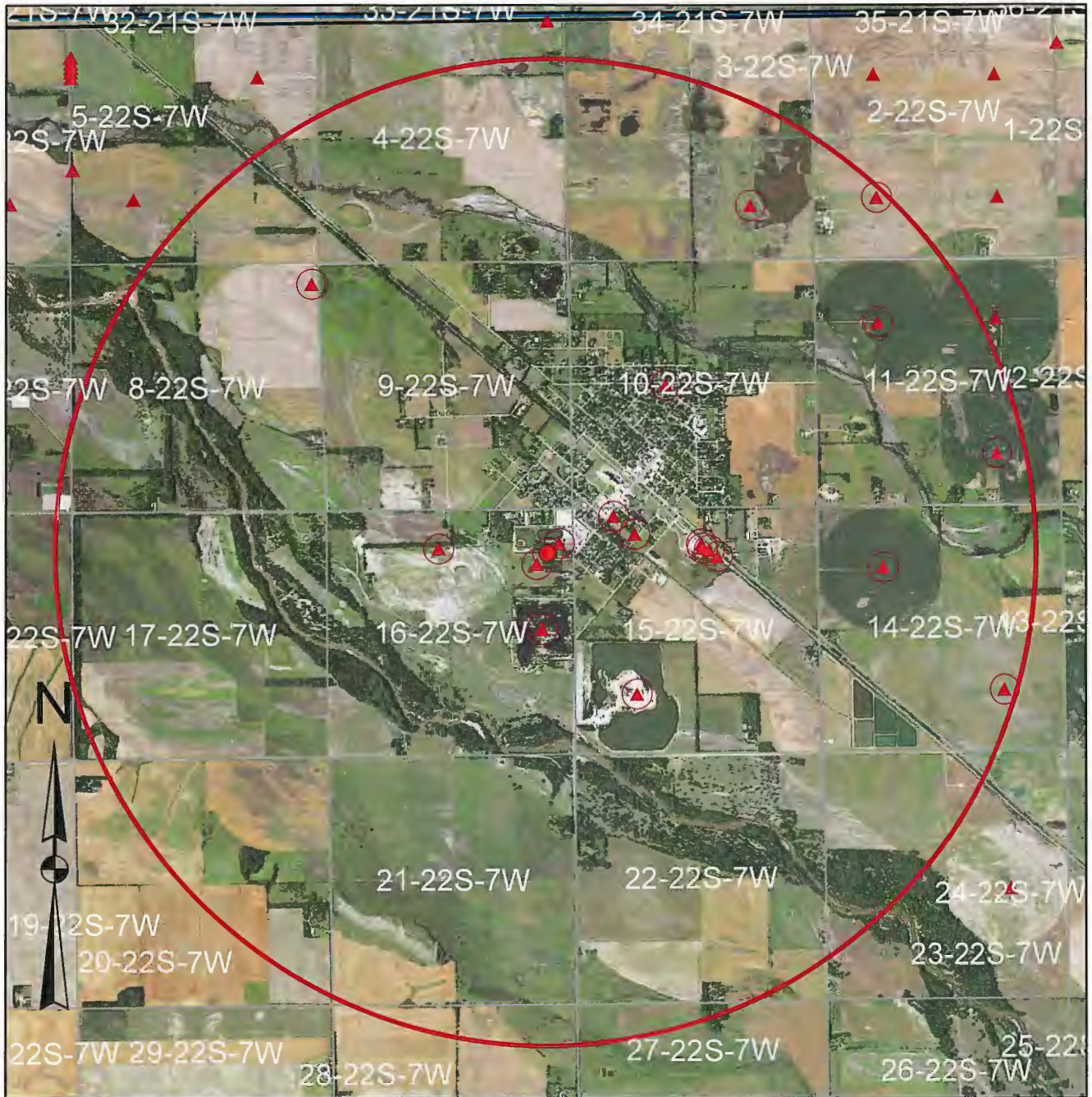
Stafford Field Office
Division of Water Resources

Equus Beds Groundwater Management District No. 2
 Spacing Evaluation #50403 - Nickerson USD 309
 SENENE (4356'N & 511'W) 16-22S-07W, Reno County
 Prepared By: T. Boese Date:5/20/2021



● Proposed Point of Diversion	Map Legend	
∩ Area of Consideration Boundary	▬ Major Highway	
● Monitoring Wells	— Other Roadway	5/9/2022
▲ Points of Diversion	▬ Major Stream	Received
▭ District Boundary	▬ Other Water Feature	Stafford Field Office
	▭ County Boundary	Division of Water Resources
0.075 0.0375 0 0.075 Miles	▭ City Boundary	
		 Equus Beds Groundwater Management District No. 2 313 Spruce Street, Halstead, KS 67056 316-835-2224, equusbeds@gmd2.org

Equus Beds Groundwater Management District No. 2
 Safe Yield Evaluation #50403 - Nickerson USD 309
 SENENE (4365'N & 511'W) 16-22S-07W, Reno County
 Prepared By: T. Boese Date: 5/20/2021



● Proposed Point of Diversion	Map Legend	
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0.45 0.225 0 0.45 Miles		313 Spruce Street, Halstead, KS 67056
		316-835-2224, equusbeds@gmd2.org

SAFETYIELD EVALUATION - NO. 50403 - NICKERSON USD 309
LOCATION: SENENE (4365'N & 511'W) 16-22S-07W, Reno County
SPECIAL USE AREA: None
EVALUATION DATE:- 5/20/2021

Total Areas: 8,042 acres; Area in 3 inch discharge zone: 0 acres; Area in 6 inch discharge zone: 8,042 acres

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A00276400	1256	22S	07W	15	50904440	MUN	12.43
A01332200	1304	22S	07W	2	13203960	IRR	232.5
A03047000	1192	22S	07W	14	39603960	IRR	195
A03124600	1324	22S	07W	15	51354402	MUN	15.39
A03124600	1325	22S	07W	15	47283988	MUN	15.39
A03300100	1090	22S	07W	10	26243243	MUN	138
A03685600	1695	22S	07W	11	39103960	IRR	141
A03745700	1843	22S	07W	8	48450269	IRR	195
A04134300	2195	22S	07W	15	13203960	IND	285
A04199500	2247	22S	07W	3	11511372	IRR	99
A04442400	2894	22S	07W	16	43650511	IRR	13.38
A04442400	2814	22S	07W	16	41340754	IRR	0
A04442400	2892	22S	07W	16	45770267	IRR	0
A04442500	2893	22S	07W	16	41340754	IRR	0
A04442500	2895	22S	07W	16	43650511	IRR	13.86
A04442500	2815	22S	07W	16	45770267	IRR	0
A04477500	2887	22S	07W	11	10991379	IRR	175
A04578700	3139	22S	07W	8	48450269	IRR	0
A04696400	3481	22S	07W	15	43702385	IND	50
A04696400	3482	22S	07W	15	45092541	IND	0
A04696400	3879	22S	07W	15	42352215	IND	0
A04696400	3890	22S	07W	15	44142532	IND	0
A04769800	3746	22S	07W	16	44842845	IRR	127.4
A04793100	3819	22S	07W	16	27320649	REC	45
A04823600	3994	22S	07W	14	13201320	IRR	182
A05040300P	5277	22S	07W	16	41340754	IRR	0
A05040300P	5278	22S	07W	16	45770267	IRR	0
A05040300P	5279	22S	07W	16	43650511	IRR	33
VRN000500	1548	22S	07W	15	50904440	MUN	41.43
VRN000500	1549	22S	07W	15	47504070	MUN	41.43
Allowable Appropriations		4,021.00			Total Existing Appropriation		2,063.64
Small User Quantity		0			Non Consumptive Appropriations		0
Remaining SUQ		45			Consumptive Appropriations		2,063.64
Note- Values are in acre-feet					Available Appropriations		1,957.36












5/9/2022

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Stafford Field Office
Division of Water Resources

Equus Beds Groundwater Management District No. 2
 Spacing Evaluation #50403 - Nickerson USD 309
 SENENE (4365'N & 511'W) 16-22S-07W, Reno County
 Prepared By: T. Boese Date:5/20/2021




	Proposed Point of Diversion	Map Legend	
	Area of Consideration Boundary		Major Highway
	Monitoring Wells		Other Roadway
	Points of Diversion		Major Stream
	District Boundary		Other Water Feature
			County Boundary
			City Boundary

0.075 0.0375 0 0.075 Miles

5/9/2022

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Stafford Field Office
 Division of Water Resources

 Equus Beds Groundwater Management District No. 2
 313 Spruce Street, Halstead, KS 67056
 316-835-2224, equusbeds@gmd2.org



EQUUS BEDS GROUNDWATER MANAGEMENT DISTRICT NO. 2

313 SPRUCE STREET • HALSTEAD, KANSAS 67056-1925 • PHONE (316) 835-2224 • FAX (316) 835-2225 • equusbeds@gmd2.org • www.gmd2.org

September 2, 2021

Chief Engineer, Division of Water Resources
Attn: Jessica Engelbrecht
300 S. Main Street
Stafford, KS 67578

Re: Appropriation Application No. 50403 – Nickerson – South Hutchinson USD 309

Dear Ms. Engelbrecht:

The referenced application was reviewed by the Equus Beds Groundwater Management District No. 2 Board of Directors at the August 18, 2021, meeting. District staff, the applicant, and the applicant's consultant presented information regarding the application. Upon review of information presented and discussed at the meeting, and based on findings that:

1. Application No. 50403 proposes 33.00 AF at 200 GPM for irrigation of 24.60 acres from an existing battery of two wells with a geographic center located in the Southeast quarter of the Northeast quarter of the Northeast quarter (4356'N & 511'W), Section 16, Township 22 South, Range 7 West, Reno County.
2. Application No. 50403 proposed point of diversion forms an identical overlap with Water Rights Nos. 44424 and 44425 authorized point of diversion.
3. Application No. 50403 proposed place of use partially overlaps the place of use authorized by Water Right Nos. 44424 and 44425. Change in place of use applications have been filed on Nos. 44424 and 44425 to create an identical place of use overlap with No. 50403.
4. The application does not comply with the "battery of wells" definition K.A.R. 5-22-1(n)(2)(B), as the individual wells are each located approximately 329 feet from the well battery geographic center, which exceeds the maximum allowable distance of 300 feet by 29 feet (9.7%).
5. Exceptions to the well battery definition were recommended by the District Board of Directors in 2001 for Nos. 44424 and 44425 and the applications were approved, subject to any change in point of diversion application(s) filed on Nos. 44424 and 44425 would comply with the battery of wells definition.
6. The application does not comply with the Well Spacing Rule and Regulation K.A.R. 5-22-2(b), as the proposed point of diversion (battery of two wells) does not meet the minimum spacing requirements of 960 feet to several domestic wells and 1,620 feet to the groundwater pit authorized by Water Right No. 47931, and possibly to the municipal well authorized by Nos. RN-005, 2764, & 31246.
7. There are multiple possible domestic wells located within 960 feet of the proposed well battery geographic center. The applicant advised that USD 309 staff went door-to-door to try to obtain signed spacing consent forms from owners that did have a domestic well. The applicant advised that some did not have a domestic well and the applicant provided four signed consent forms from those they were able to talk to that had a domestic well.
8. A review of Nos. 44424 and 44425 found that it appears that 12 signed spacing consent forms were submitted from domestic wells owners with domestic wells within 660 feet of the individual wells proposed by Nos. 44424 and 44425. Therefore, it does not appear that all of the domestic wells owners within 960 feet of No. 50403 submitted spacing consent forms.
9. The domestic wells appear to be used for lawn irrigation and are not used for typical household use and drinking water.
10. A public notice was published in the local newspaper (Sterling Kansas Bulletin) and no comments from domestic well owners were received by DWR.
11. The proposed well battery geo-graphic center is located closer than 1,620 feet to the edge of the groundwater pit authorized by Water Right No. 47931. The proposed well battery geographic center is located approximately 1,050 feet from the nearest edge of the groundwater pit.

5/9/2022

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Division of Water Resources

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12. No. 47931 was an existing unpermitted groundwater pit that was approved in 2014. No. 47931 did not meet the minimum 1,320 feet spacing requirement to the USD 309 wells authorized by Nos. 44424 and 44425 and USD 309 signed a spacing consent form in 2011 to allow the pit to be located closer than 1,320 feet to the wells authorized by Nos. 44424 and 44425.
13. Although the groundwater pit owner cannot simply grant consent to allow No. 50403 to be located less than 1,620 feet to the groundwater pit by signing a spacing consent form, Lakeside Recreation LLC, the owner of No. 47931, did sign a spacing consent form thereby indicating that they have no objection to the proposed well battery being located less than 1,620 feet to the groundwater pit.
14. The proposed well battery may be located closer than 1,620 feet to the City of Nickerson municipal well authorized by Water Right Nos. RN-005, 2764, and 31246. Based on the authorized footage measurements, the municipal well is located 1,652 feet from the No. 50403 proposed well battery geocenter. However, the spacing evaluation map indicates the municipal well appears to be located less than 1,620 feet away. The City of Nickerson submitted a letter dated June 21, 2021, indicating the City had no objection to No. 50403.
15. The application does not comply with the District's Maximum Reasonable Quantity for Beneficial Use Regulation K.A.R. 5-22-14(a)(1). Water Right Nos. 44424 and 44425 authorize a total of 27.24 AF on 12 acres, which is proposed to be changed to 24.6 acres. No. 50403 requests an additional 33 AF on 24.60 acres, resulting in a total of 60.24 AF on 24.6 acres. This equals a water to land ratio of 2.45 acre-feet per acre, which exceeds the maximum allowable for Reno County of 1.4 acre-feet per acre.
16. The applicant's turf grass consultant provided information (Exhibit B) showing the difference in irrigation needs between corn and turf grass using 2012 and the Sterling weather station as an example. The information showed corn required 14.77 inches (1.23 feet) of irrigation from June 1, 2012 through August 31, 2012, while turf grass required 34.17 inches (2.85 feet) from March 15, 2012 to November 30, 2012. The information also advised that sports turf grass requires more water and irrigation than home lawns and needs irrigation starting in March for seed establishment for repairs and continues until October or November for athlete safety.
17. The application complies with the Safe Yield Rule and Regulation K.A.R. 5-22-7(a).
18. Hydrologic data indicates that saturated thickness in the application area is approximately 50-75 feet and that the groundwater level in the area has been stable and has not shown a declining trend.
19. Drawdown caused by the pumping of the well battery's proposed and existing authorized total quantity would be minimal and impairment of nearby points of diversion is not anticipated.
20. The Board of Directors has previously reviewed similar applications that did not meet either the "Battery of wells" definition K.A.R. definition K.A.R. 5-22-1(n); the Well Spacing Regulation K.A.R. 5-22-2(b); and/or the Maximum Reasonable Quantity for Beneficial Use Rule and Regulation K.A.R. 5-22-14(a)(1), and recommended exception(s) and the application(s) for approval.

It was the decision of the Board of Directors to recommend that the application be granted exceptions to the "Battery of wells" definition K.A.R. 5-22-1(n); the Well Spacing Regulation K.A.R. 5-22-2(b); and the Maximum Reasonable Quantity for Beneficial Use Rule and Regulation K.A.R. 5-22-14(a)(1), subject to any application to change the point of diversion authorized by No. 50403 shall comply with the definition of a battery of wells as set forth in K.A.R. 5-22-1, and the maximum rate of diversion is further limited to 200 GPM when combined with Nos. 44424 and 44425.

A District Board of Director's decision may be requested for reconsideration by the Board by submitting a written request to the District office within 15 days from the date of this notification, pursuant to K.A.R. 5-22-12.

Please contact the District if you have any questions regarding the District's findings or recommendation.

Sincerely,
EQUUS BEDS GROUNDWATER
MANAGEMENT DISTRICT NO. 2



Tim Boese
Manager

TDB/db

Enclosure

pc: Nickerson - South Hutchinson USD 309, Applicant
Brett Wiens, Turf Solutions, Inc.
Kristen Baum, Division of Water Resources, Manhattan

5/9/2022

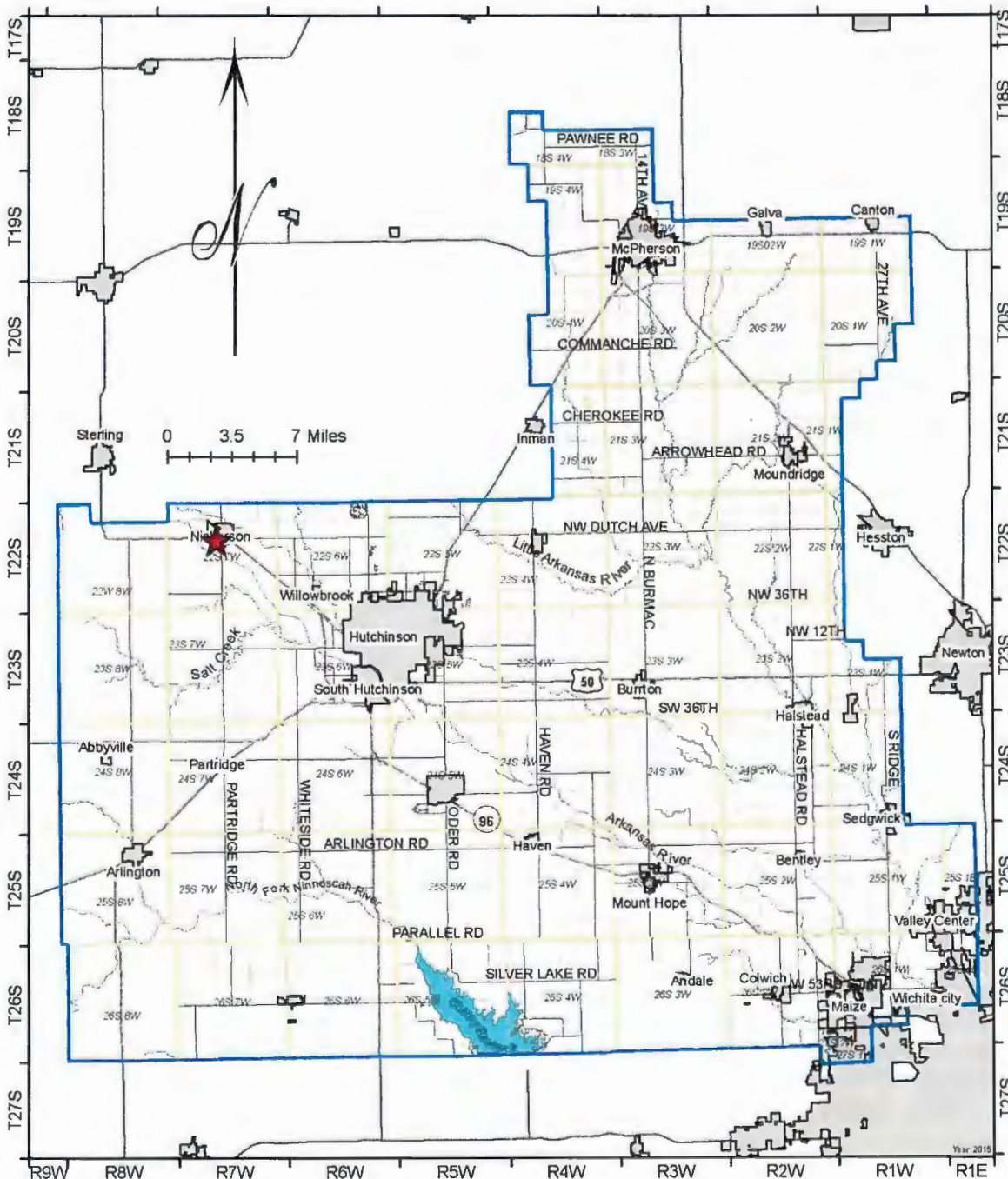
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Stafford Field Office
Division of Water Resources

APPLICATION REVIEW INFORMATION

NAME Nickerson – S. Hutch USD 309
ADDRESS 4501 W. 4th Ave.
Hutchinson, Kansas 67501-9131

APPLICATION NO. 50403
NEW APPL. X
COUNTY Reno TRACT SE-NE-NE
WELL LOCATION S 16 T 22S R 7W
CHG. P/U _____
CHG. P/D _____
CHG. USE _____
QUANT 33.00 AF/Y RATE 200 GPM
WELL SPACING D<960', ND<1620'



5/9/2022

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Division of Water Resources

Figure 1. General location of application within the District indicated by the star.

ISSUE:

The new application does not comply with: The "Battery of wells" definition K.A.R. 5-22-1(n); the Well Spacing Regulation K.A.R. 5-22-2(b); and the Maximum Reasonable Quantity for Beneficial Use Rule and Regulation K.A.R. 5-22-14(a)(1). Additionally, there is partial place of use overlap with two existing water rights owned by the applicant.

BACKGROUND INFORMATION:

JUN 23, 2020 – The applicant filed a new permit application for 33.00 AF at 200 GPM for irrigation of 24.60 acres from an existing battery of two wells with a geographic center located in the Southeast quarter of the Northeast quarter of the Northeast quarter (4356'N & 511'W), Section 16, Township 22 South, Range 7 West, Reno County (Figures 1-3).

MAY 28, 2021 – In response to a request from the Division of Water Resources (DWR), District Staff reviewed the application using the adopted management program, and rules and regulations. The review found that the application did not comply with the "Battery of wells" definition K.A.R. 5-22-1(n); the Well Spacing Regulation K.A.R. 5-22-2(b); the Maximum Reasonable Quantity for Beneficial Use Rule and Regulation K.A.R. 5-22-14(a)(1); and appears to have a partial place of use overlap with two existing rights. Based on the District's review, the application was recommended for denial.

JUN 25, 2021 – The applicant filed an appeal petition dated January 22 2021, with the District, pursuant to K.A.R. 5-22-12 (Exhibit A). The appeal petition advised that additional information would be submitted to support the appeal.

JUL 30, 2021 – The applicant submitted additional information (Exhibit B) to the District.

AUG 11, 2021 – The applicant and the applicant's turf grass consultant were notified by letter that the appeal was scheduled for hearing by the Board of Directors at the August 18, 2021, meeting.

FINDINGS:

The application was reviewed using the District's Aquifer Management Program and Rules and Regulations, K.A.R. 5-22-1 through K.A.R. 5-22-17.

Application No. 50403 proposes 33.00 AF at 200 GPM for irrigation of 24.60 acres from an existing battery of two wells with a geographic center located in the Southeast quarter of the Northeast quarter of the Northeast quarter (4356'N & 511'W), Section 16, Township 22 South, Range 7 West, Reno County (Figures 1-3).

The proposed point of diversion is the existing battery of two wells authorized by Water Right No. 44424 and 44425. Water Right No. 44424 authorizes 13.38 AF at 150 GPM for irrigation of 12 acres. Water Right No. 44425 authorizes 13.86 AF at 150 GPM (limited to 150 GPM with No. 44424) for irrigation of the same 12 acres. No. 50403 proposed place of use of 24.6 acres appears to overlap the 12 acres authorized by No. 44424 and 44425, creating a partial place of use overlap. DWR advised on August 13, 2021, that Change in Place of Use applications were filed on Nos. 44424 and 44425 to create an identical place of use overlap with No. 50403.

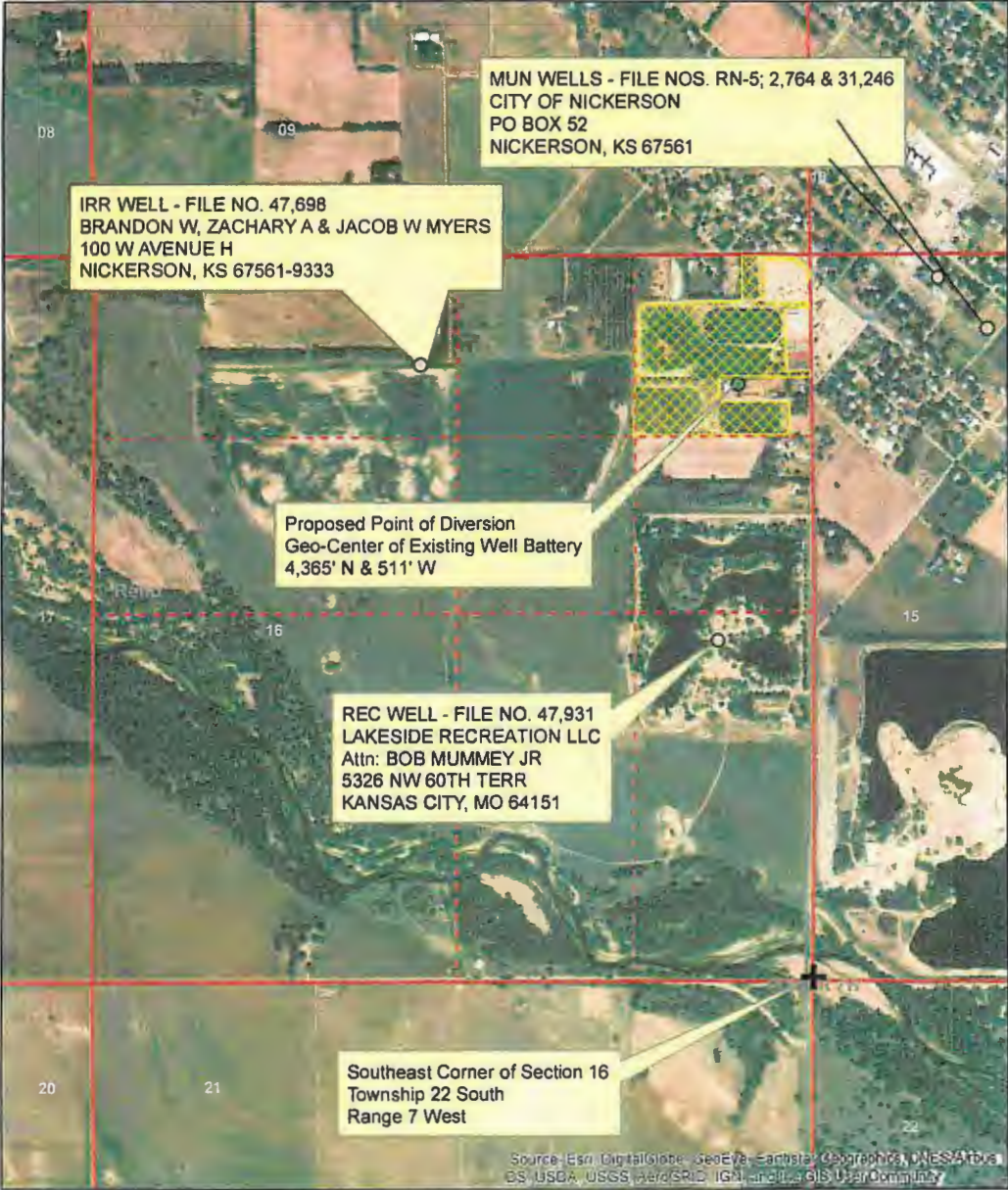
5/9/2022


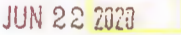
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Stafford Field Office
Division of Water Resources

NICKERSON USD 309 - SOUTH HUTCHINSON
NEW APPLICATION - SITE MAP
Sec. 16, T22S, R7W
RENO COUNTY

1:12,000



Water Resources Received
 Proposed Point of Diversion
 Proposed Place of Use
 JUN 22 2023

All known wells of any kind within 1/2 mile of the proposed point of diversion, have been identified on this map.

KS Dept Of Agriculture

5/9/2022

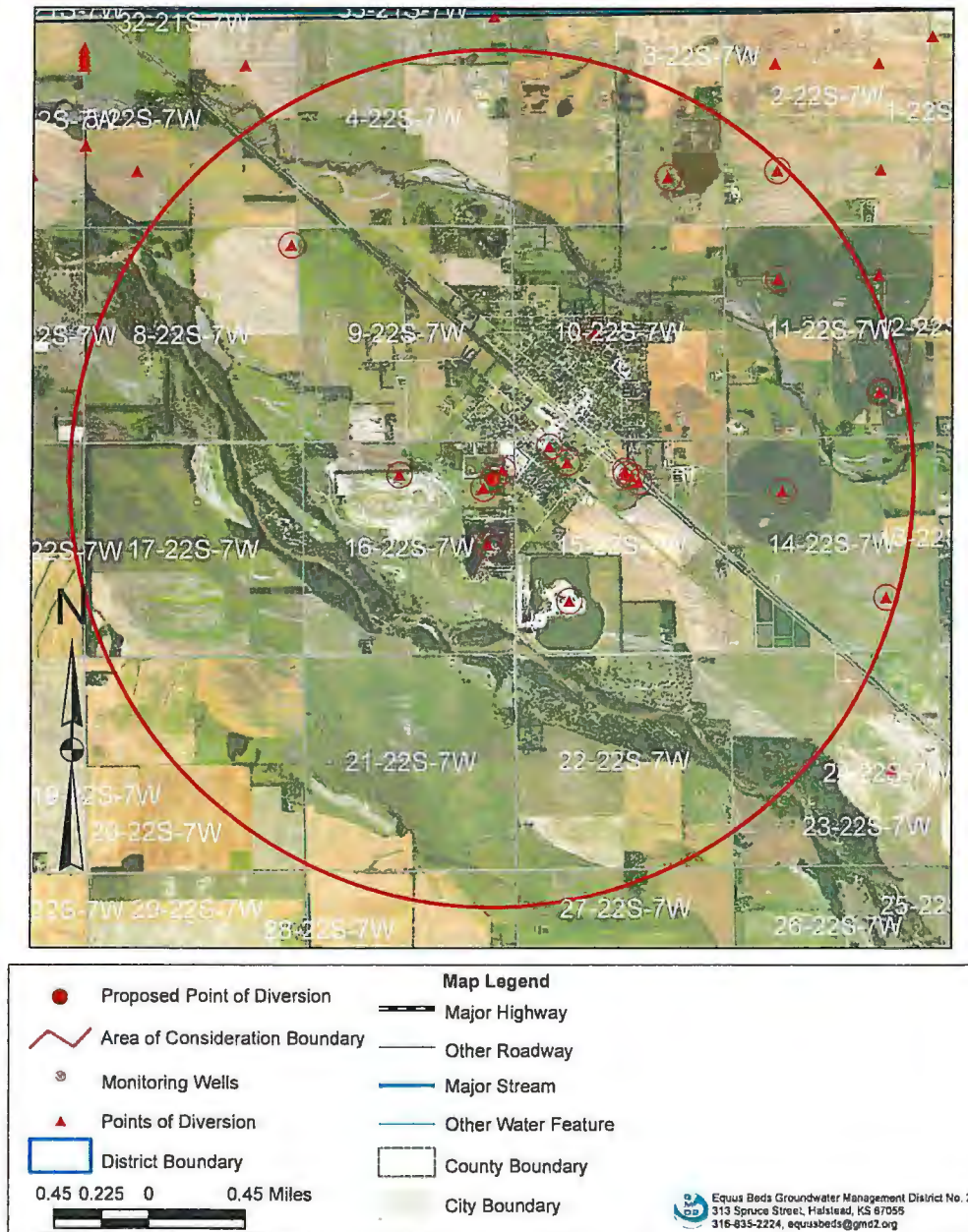
Figure 2. No. 50403 Application map

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Division of Water Resources

The application complies with Safe-Yield Rule and Regulation K.A.R. 5-22-7. Total consumptive appropriations including the proposed application totaled 2,063.64 acre-feet, which is 1,957.36 acre-feet below the maximum allowable quantity of 4,021 acre-feet for the area of consideration (2 mile circle) (Figure 3 & 4).

Equus Beds Groundwater Management District No. 2
 Safe Yield Evaluation #50403 - Nickerson USD 309
 SENENE (4356'N & 511'W) 16-22S-07W, Reno County
 Prepared By: T. Boese Date:5/20/2021



5/9/2022

Figure 3. Safe yield evaluation map.

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 Division of Water Resources

SAFEYIELD EVALUATION - NO. 50403 - NICKERSON USD 309							
LOCATION: SENENE (4356'N & 511'W) 16-22S-07W, Reno County							
SPECIAL USE AREA: None							
EVALUATION DATE:- 5/20/2021							
Total Areas: 8,042 acres; Area in 3 inch discharge zone: 0 acres; Area in 6 inch discharge zone: 8,042 acres							
FILE_ID	WELL_ID	TOWNSHIP	RANGE	SECTION	QUALIFIER	USE	AUTHQUANTITY
A00276400	1257	22S	07W	15	47283988	MUN	12.43
A00276400	1256	22S	07W	15	50904440	MUN	12.43
A01332200	1304	22S	07W	2	13203960	IRR	232.5
A03047000	1192	22S	07W	14	39603960	IRR	195
A03124600	1324	22S	07W	15	51354402	MUN	15.39
A03124600	1325	22S	07W	15	47283988	MUN	15.39
A03300100	1090	22S	07W	10	26243243	MUN	138
A03685600	1695	22S	07W	11	39103960	IRR	141
A03745700	1843	22S	07W	8	48450269	IRR	195
A04134300	2195	22S	07W	15	13203960	IND	285
A04199500	2247	22S	07W	3	11511372	IRR	99
A04442400	2894	22S	07W	16	43650511	IRR	13.38
A04442400	2814	22S	07W	16	41340754	IRR	0
A04442400	2892	22S	07W	16	45770267	IRR	0
A04442500	2893	22S	07W	16	41340754	IRR	0
A04442500	2895	22S	07W	16	43650511	IRR	13.86
A04442500	2815	22S	07W	16	45770267	IRR	0
A04477500	2887	22S	07W	11	10991379	IRR	175
A04578700	3139	22S	07W	8	48450269	IRR	0
A04696400	3481	22S	07W	15	43702385	IND	50
A04696400	3482	22S	07W	15	45092541	IND	0
A04696400	3879	22S	07W	15	42352215	IND	0
A04696400	3890	22S	07W	15	44142532	IND	0
A04769800	3746	22S	07W	16	44842845	IRR	127.4
A04793100	3819	22S	07W	16	27320649	REC	45
A04823600	3994	22S	07W	14	13201320	IRR	182
A05040300P	5277	22S	07W	16	41340754	IRR	0
A05040300P	5278	22S	07W	16	45770267	IRR	0
A05040300P	5279	22S	07W	16	43560511	IRR	33
VRN000500	1548	22S	07W	15	50904440	MUN	41.43
VRN000500	1549	22S	07W	15	47504070	MUN	41.43
Allowable Appropriations		4,021.00			Total Existing Appropriation		2,063.64
Small User Quantity		0			Non Consumptive Appropriations		0
Remaining SUQ		45			Consumptive Appropriations		2,063.64
Note- Values are in acre-feet					Available Appropriations		1,957.36

5/9/2022

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Stafford Field Office
Division of Water Resources

Figure 4. Safe yield evaluation spreadsheet.

The application does not comply with the "battery of wells" definition K.A.R. 5-22-1(n)(2)(B), which requires the individual wells of the battery to be located within 300 feet of the well battery geographic center. Based on the footage measurements as determined by DWR for Water Right Nos. 44424 and 44425, the individual wells are each located approximately 329 feet from the well battery geographic center, which exceeds the maximum allowable distance of 300 feet by 29 feet (9.7%). Exceptions to the well battery definition were recommended by the District Board of Directors in 2001 for Nos. 44424 and 44425 and the applications were approved, subject to any change in point of diversion application(s) filed on Nos. 44424 and 44425 would comply with the battery of wells definition. The Board's recommendation of exceptions to the well battery definition were based upon the facts that the proposed point of diversion consisted of existing wells, the 300 foot requirement was exceeded by only about 10%, and the Board's previous exception recommendation on a similar application.

The application does not comply with the Well Spacing Rule and Regulation K.A.R. 5-22-2(b), as the proposed point of diversion (battery of two wells) does not meet the minimum spacing requirements of 960 feet to several domestic wells and 1,620 feet to the groundwater pit authorized by Water Right No. 47931, and possibly to the municipal well authorized by Nos. RN-005, 2764, and 31246 (Figure 5).

There are multiple possible domestic wells located within 960 feet of the proposed well battery geographic center. No spacing consent forms were submitted with the original application. At the request of the applicant's turf grass consultant, the District compiled and provided the consultant on June 25, 2021 with a map and list of the 25 potential domestic wells owners within 960 feet. The applicant advised that USD 309 staff went door-to-door to try to obtain signed spacing consent forms from owners that did have a domestic well. The applicant advised that some did not have a domestic well and the applicant provided four signed consent forms from those they were able to talk to that had a domestic well. A review of Nos. 44424 and 44425 found that it appears that 12 signed spacing consent forms were submitted from domestic wells owners with domestic wells within 660 feet of the individual wells proposed by Nos. 44424 and 44425. Therefore, it does not appear that all of the domestic wells owners within 960 feet of No. 50403 submitted spacing consent forms. The domestic wells appear to be used for lawn irrigation and are not used for typical household use and drinking water. Additionally, a public notice was published in the local newspaper (Sterling Kansas Bulletin) and no comments from domestic well owners were received by DWR.

The proposed well battery geo-graphic center is located closer than 1,620 feet to the edge of the groundwater pit authorized by Water Right No. 47931. The proposed well battery geographic center is located approximately 1,050 feet from the nearest edge of the groundwater pit (Figure 5). No. 47931 was an existing unpermitted groundwater pit that was approved in 2014. No. 47931 did not meet the minimum 1,320 feet spacing requirement to the USD 309 wells authorized by Nos. 44424 and 44425. However, USD 309 signed a spacing consent form in 2011 to allow the pit to be located closer than 1,320 feet to the wells authorized by Nos. 44424 and 44425. Although the owner cannot reciprocate and simply grant consent to allow No. 50403 to be located less than 1,620 feet to the groundwater pit, Lakeside Recreation LLC, the owner of No. 47931, did sign a spacing consent form thereby indicating that they have no objection to the proposed well battery being located less than 1,620 feet to the groundwater pit.

The proposed well battery may be located closer than 1,620 feet to the City of Nickerson municipal well authorized by Water Right Nos. RN-005, 2764, and 31246. Based on the authorized footage measurements, the municipal well is located 1,652 feet from the No. 50403 proposed well battery geo-center. However, the spacing evaluation map indicates the municipal well appears to be located less than 1,620 feet away (Figure 5). The City of Nickerson submitted a letter dated June 21, 2021, indicating the City had no objection to No. 50403.

5/9/2022

Received

Equus Beds Groundwater Management District No. 2
 Spacing Evaluation #50403 - Nickerson USD 309
 SENENE (4356'N & 511'W) 16-22S-07W, Reno County
 Prepared By: T. Boese Date: 5/20/2021



Figure 5. Spacing evaluation map.

5/9/2022

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Stafford Field Office
 Division of Water Resources

The application does not comply with the District's Maximum Reasonable Quantity for Beneficial Use Regulation K.A.R. 5-22-14(a)(1). Water Right Nos. 44424 and 44425 authorize a total of 27.24 AF on 12 acres, which is proposed to be changed to 24.6 acres. No. 50403 requests an additional 33 AF on 24.60 acres, resulting in a total of 60.24 AF on 24.6 acres. This equals a water to land ratio of 2.45 acre-feet per acre, which exceeds the maximum allowable for Reno County of 1.4 acre-feet per acre.

The applicant' turf grass consultant provided information (Exhibit B) showing the difference in irrigation needs between corn and turf grass using 2012 and the Sterling weather station as an example. The information showed corn required 14.77 inches (1.23 feet) of irrigation from June 1, 2012 through August 31, 2012, while turf grass required 34.17 inches (2.85 feet) from March 15, 2012 to November 30, 2012. The information also advised that sports turf grass requires more water and irrigation than home lawns and needs irrigation starting in March for seed establishment for repairs and irrigation continues until October or November for athlete safety.

A review of the historical water use as reported to DWR for Nos. 44424 and 44425 combined is shown below.

YEAR	REPORTED WATER USE	REPORTED ACRES	WATER TO LAND RATIO
2001	21.891 AF	12	1.82 AF/A
2002	27.723 AF	12	2.31 AF/A
2003	31.649 AF	12	2.64 AF/A
2004	24.647 AF	12	2.05 AF/A
2005	14.388 AF	12	1.20 AF/A
2006	23.370 AF	12	1.95 AF/A
2007	16.566 AF	12	1.38 AF/A
2008	11.143 AF	12	0.93 AF/A
2009	19.331 AF	12	1.61 AF/A
2010	15.862 AF	12	1.32 AF/A
2011	53.752 AF	12	4.48 AF/A
2012	45.432 AF	12	3.79 AF/A
2013	20.684 AF	12	1.72 AF/A
2014	11.070 AF	12	0.92 AF/A
2015	24.677 AF	12	2.06 AF/A
2016	9.486 AF (meter issue?)	12	0.79 AF/A
2017	23.557 AF	12	1.96 AF/A
2018	22.841 AF	12	1.90 AF/A
2019	20.713 AF	12	1.73 AF/A
2020	19.095 AF	14	1.36 AF/A
AVG			1.9 AF/A

The average water use from 2001-2020 was approximately 1.9 AF/A. The Reno County net irrigation requirement for corn in a 50% chance rainfall year is 0.95 feet.

The DWR "Maximum reasonable annual quantity..." Regulation K.A.R. 5-3-20 allows for an exception and higher water to land ratio for specialty crops in K.A.R. 5-3-20(c). The District's Maximum Reasonable Quantity for Beneficial Use Regulation K.A.R. 5-22-14 does not contain an exception for specialty crops.

The Board has previously reviewed similar applications requesting greater water to land ratio than allowed by K.A.R. 5-22-14. The Board granted exceptions and allowed a greater quantity for lawn/turf grasses, including in 2016 for Application Nos. 49284 and 49285, which were approved for 3.1 acre-feet per acre for turf grass at a housing development in Sedgwick County.

5/9/2022

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Drawdown calculations using the Theis Equation and pumping the total authorized and proposed quantity of 60.24 AF at 200 GPM continuously for 68 days indicates that drawdown at the nearby domestic and non-domestic points of diversion would be less than 0.30 feet based on continuous pumping until the entire quantity has been pumped, as shown below.

Nearby PD	Distance	Drawdown
Closest Domestic Well	~500 feet	0.28 feet
No. 47931 GW Pit	~1,050 feet	0.21 feet
No. RN-005, 2764, 31246 Municipal Well	~1,600 feet	0.16 feet

*Drawdown based on the following parameters:

Q = 200 gpm
 S = 0.15
 T = 60000 ft²/d
 Time = 68 days

Hydrologic data indicates that depth to bedrock is approximately 60-80 feet bls. Depth to static water level at the site is approximately 5-10 feet below land surface and the saturated thickness was calculated at approximately 50-75 feet.

Water level data from Groundwater Monitoring Site EB 265C, located approximately 1.2 miles north of Application No. 50403, recorded water level changes for the period from January 24, 1997, to July 21, 2021 (figure 6). Water levels typically range from approximately 3 to 7 feet below land surface and the water level has been stable and has not shown a declining trend.

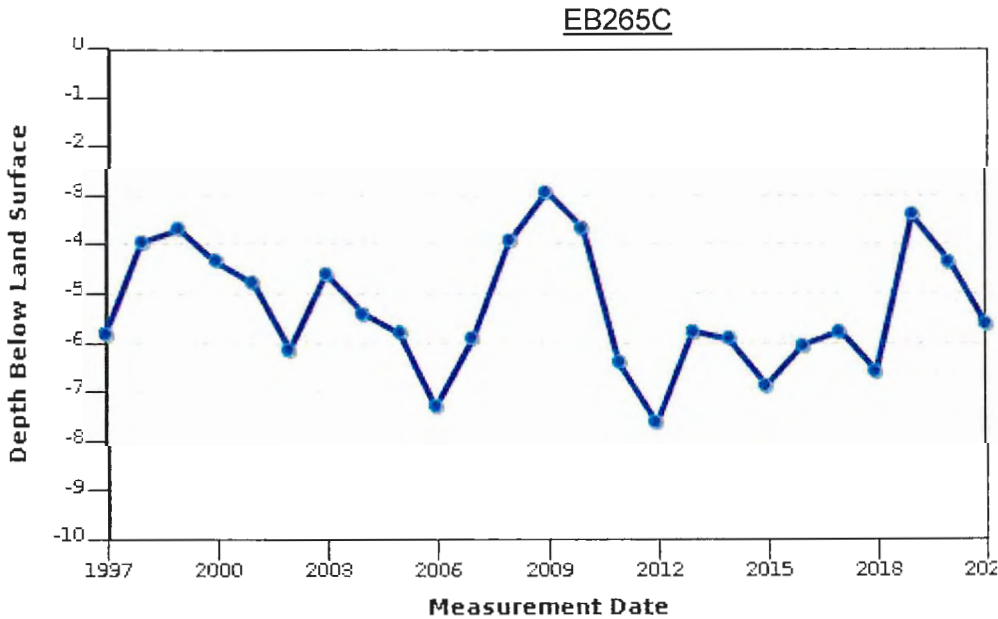


Figure 6 - A hydrograph of the average annual water level measurements taken at EB265C
 Location: SE-SE-SE - SEC. 4, T22S, R7W, Reno County

5/9/2022

Received

Stafford Field Office
 Division of Water Resources

STAFF RECOMMENDATION:

Based on District findings and information provided by the applicant that:

1. Application No. 50403 proposes 33.00 AF at 200 GPM for irrigation of 24.60 acres from an existing battery of two wells with a geographic center located in the Southeast quarter of the Northeast quarter of the Northeast quarter (4356'N & 511'W), Section 16, Township 22 South, Range 7 West, Reno County.
2. Application No. 50403 proposed point of diversion forms an identical overlap with Water Rights Nos. 44424 and 44425 authorized point of diversion.
3. Application No. 50403 proposed place of use partially overlaps the place of use authorized by Water Right Nos. 44424 and 44425. Change in place of use applications have been filed on Nos. 44424 and 44425 to create an identical place of use overlap with No. 50403.
4. The application does not comply with the "battery of wells" definition K.A.R. 5-22-1(n)(2)(B), as the individual wells are each located approximately 329 feet from the well battery geographic center, which exceeds the maximum allowable distance of 300 feet by 29 feet (9.7%).
5. Exceptions to the well battery definition were recommended by the District Board of Directors in 2001 for Nos. 44424 and 44425 and the applications were approved, subject to any change in point of diversion application(s) filed on Nos. 44424 and 44425 would comply with the battery of wells definition.
6. The application does not comply with the Well Spacing Rule and Regulation K.A.R. 5-22-2(b), as the proposed point of diversion (battery of two wells) does not meet the minimum spacing requirements of 960 feet to several domestic wells and 1,620 feet to the groundwater pit authorized by Water Right No. 47931, and possibly to the municipal well authorized by Nos. RN-005, 2764, and 31246.
7. There are multiple possible domestic wells located within 960 feet of the proposed well battery geographic center. The applicant advised that USD 309 staff went door-to-door to try to obtain signed spacing consent forms from owners that did have a domestic well. The applicant advised that some did not have a domestic well and the applicant provided four signed consent forms from those they were able to talk to that had a domestic well.
8. A review of Nos. 44424 and 44425 found that it appears that 12 signed spacing consent forms were submitted from domestic wells owners with domestic wells within 660 feet of the individual wells proposed by Nos. 44424 and 44425. Therefore, it does not appear that all of the domestic wells owners within 960 feet of No. 50403 submitted spacing consent forms.
9. The domestic wells appear to be used for lawn irrigation and are not used for typical household use and drinking water.
10. A public notice was published in the local newspaper (Sterling Kansas Bulletin) and no comments from domestic well owners were received by DWR.
11. The proposed well battery geo-graphic center is located closer than 1,620 feet to the edge of the groundwater pit authorized by Water Right No. 47931. The proposed well battery geographic center is located approximately 1,050 feet from the nearest edge of the groundwater pit.
12. No. 47931 was an existing unpermitted groundwater pit that was approved in 2014. No. 47931 did not meet the minimum 1,320 feet spacing requirement to the USD 309

5/9/2022

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wells authorized by Nos. 44424 and 44425 and USD 309 signed a spacing consent form in 2011 to allow the pit to be located closer than 1,320 feet to the wells authorized by Nos. 44424 and 44425.

13. Although the groundwater pit owner cannot simply grant consent to allow No. 50403 to be located less than 1,620 feet to the groundwater pit by signing a spacing consent form, Lakeside Recreation LLC, the owner of No. 47931, did sign a spacing consent form thereby indicating that they have no objection to the proposed well battery being located less than 1,620 feet to the groundwater pit.
14. The proposed well battery may be located closer than 1,620 feet to the City of Nickerson municipal well authorized by Water Right Nos. RN-005, 2764, and 31246. Based on the authorized footage measurements, the municipal well is located 1,652 feet from the No. 50403 proposed well battery geo-center. However, the spacing evaluation map indicates the municipal well appears to be located less than 1,620 feet away. The City of Nickerson submitted a letter dated June 21, 2021, indicating the City had no objection to No. 50403.
15. The application does not comply with the District's Maximum Reasonable Quantity for Beneficial Use Regulation K.A.R. 5-22-14(a)(1). Water Right Nos. 44424 and 44425 authorize a total of 27.24 AF on 12 acres, which is proposed to be changed to 24.6 acres. No. 50403 requests an additional 33 AF on 24.60 acres, resulting in a total of 60.24 AF on 24.6 acres. This equals a water to land ratio of 2.45 acre-feet per acre, which exceeds the maximum allowable for Reno County of 1.4 acre-feet per acre.
16. The applicant' turf grass consultant provided information (Exhibit B) showing the difference in irrigation needs between corn and turf grass using 2012 and the Sterling weather station as an example. The information showed corn required 14.77 inches (1.23 feet) of irrigation from June 1, 2012 through August 31, 2012, while turf grass required 34.17 inches (2.85 feet) from March 15, 2012 to November 30, 2012. The information also advised that sports turf grass requires more water and irrigation than home lawns and needs irrigation starting in March for seed establishment for repairs and continues until October or November for athlete safety.
17. The application complies with the Safe Yield Rule and Regulation K.A.R. 5-22-7(a).
18. Hydrologic data indicates that saturated thickness in the application area is approximately 50-75 feet and that the groundwater level in the area has been stable and has not shown a declining trend.
19. Drawdown caused by the pumping of the well battery's proposed and existing authorized total quantity would be minimal and impairment of nearby points of diversion is not anticipated.
20. The Board of Directors has previously reviewed similar applications that did not meet either the "Battery of wells" definition K.A.R. definition K.A.R. 5-22-1(n); the Well Spacing Regulation K.A.R. 5-22-2(b); and/or the Maximum Reasonable Quantity for Beneficial Use Rule and Regulation K.A.R. 5-22-14(a)(1), and recommended exception(s) and the application(s) for approval.

Staff Recommends:

The application be granted exceptions to the "Battery of wells" definition K.A.R. 5-22-1(n); the Well Spacing Regulation K.A.R. 5-22-2(b); and the Maximum Reasonable Quantity for Beneficial Use Rule and Regulation K.A.R. 5-22-14(a)(1), subject to any application to change the point of diversion authorized by No. 50403 shall comply with the definition of a battery of wells as set forth in K.A.R. 5-22-1, and the maximum rate of diversion is further limited to 200 GPM when combined with Nos. 44424 and 44425.

5/9/2022

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H:\MSOFFICE\LETTERS\APP\BoardAppeal\#50403_Nickerson_USD309.docx

4501 W 4th Ave
Hutchinson KS 67501

July 29, 2021

Mr. Tim Boese, Manager GMD2:

This letter accompanies documentation in support of the appeal filed by USD 309 of the recommendation of denial for Appropriation Application No. 50403.

- USD 309 requests for a waiver to the definition of “Battery of Wells”. The wells have been in existence for quite some time, are only approximately 30’ past the 300’ definition and well within the margin of error for well placement. Additionally, File No. 44424 and 44425 were permitted under a waiver of the battery of well rules.
- USD 309 requests an exemption to the spacing requirement to the groundwater pit south of the battery of wells (Water Right 47931). A letter of support from the owner of the groundwater pit for the application is included. Ironically, USD 309 signed a letter of consent when Water Right 47931 was applied for, but now that water right is a barrier to the school’s request for water.
- USD 309 staff has gone door-to-door, talking with potential owners of domestic wells within 960’ of the geographic center of its own battery of wells. Multiple letters of consent are included from owners who were available to speak and also own a well. Most property owners did not own a well. Additionally, as required by the Kansas Dept of Agriculture in lieu of going door-to-door, a public notice has been run in the local newspaper, and the Affidavit of Publication is included.
- The Maximum Reasonable Quantity for Beneficial Use used within GMD2 was based upon agricultural operations that have a much smaller window of time annually for which irrigation is required and are a much lower value crop on a per acre basis. Outside of the District, K.A.R. 5-3-20(C) could be applied, which would allow for higher quantity of water per acre, as turfgrass is considered a “specialty crop”. Documentation from Kansas State University is included showing the dramatic difference in quantity needed to adequately irrigate turfgrass when compared to corn or soybeans.
- A letter of support for the application from the City of Nickerson is included. The denial letter states the City’s well (Water Rights RN-005, 2764, and 31246) is “possibly”, according to the denial letter, less than 1,620’ from the geographic center of USD 309 battery of wells.

Thank you for being willing to consider this additional information.

Sincerely,



Mike Howell
Director of Facilities, USD 309

5/9/2022

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Stafford Field Office
Division of Water Resources

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JUL 30 2021

EQUUS BEDS GMD #2

N City of Nickerson

P.O. Box 52, Nickerson, KS 67561

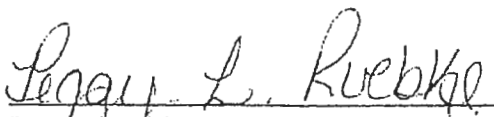
June 21, 2021

USD 309 Nickerson/South Hutchinson,

The Nickerson City Council under the advisement of our Kansas Rural Water Association Technical Assistant, Jon Steele, and our Certified Water Operator, Casey Hartman, finds no objections to the USD 309 School District's request of additional water rights at the High School campus located at 305 South Nickerson Street, Nickerson, KS.

A copy of the meeting minutes has been provided for your records.

Sincerely,


Peggy Ruebke, Mayor


April Beshears, City Clerk

5/9/2022

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Stafford Field Office
Division of Water Resources

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JUN 25 2021

EQUUS BEDS GMD #2 City Superintendent

4501 W 4th Ave
Hutchinson KS 67501

July 29, 2021

Mr. Tim Boese, Manager GMD2:

This letter accompanies documentation in support of the appeal filed by USD 309 of the recommendation of denial for Appropriation Application No. 50403.

- USD 309 requests for a waiver to the definition of "Battery of Wells". The wells have been in existence for quite some time, are only approximately 30' past the 300' definition and well within the margin of error for well placement. Additionally, File No. 44424 and 44425 were permitted under a waiver of the battery of well rules.
- USD 309 requests an exemption to the spacing requirement to the groundwater pit south of the battery of wells (Water Right 47931). A letter of support from the owner of the groundwater pit for the application is included. Ironically, USD 309 signed a letter of consent when Water Right 47931 was applied for, but now that water right is a barrier to the school's request for water.
- USD 309 staff has gone door-to-door, talking with potential owners of domestic wells within 960' of the geographic center of its own battery of wells. Multiple letters of consent are included from owners who were available to speak and also own a well. Most property owners did not own a well. Additionally, as required by the Kansas Dept of Agriculture in lieu of going door-to-door, a public notice has been run in the local newspaper, and the Affidavit of Publication is included.
- The Maximum Reasonable Quantity for Beneficial Use used within GMD2 was based upon agricultural operations that have a much smaller window of time annually for which irrigation is required and are a much lower value crop on a per acre basis. Outside of the District, K.A.R. 5-3-20(C) could be applied, which would allow for higher quantity of water per acre, as turfgrass is considered a "specialty crop". Documentation from Kansas State University is included showing the dramatic difference in quantity needed to adequately irrigate turfgrass when compared to corn or soybeans.
- A letter of support for the application from the City of Nickerson is included. The denial letter states the City's well (Water Rights RN-005, 2764, and 31246) is "possibly", according to the denial letter, less than 1,620' from the geographic center of USD 309 battery of wells.

Thank you for being willing to consider this additional information.

Sincerely,



Mike Howell
Director of Facilities, USD 309

5/9/2022

Received

Stafford Field Office
Division of Water Resources EQUUS BEDS GMD #2

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JUL 30 2021

AFFIDAVIT OF PUBLICATION

STATE OF KANSAS, RICE COUNTY, ss:

Frank W. Mercer being first duly sworn, deposes and says:
That he is publisher of

THE STERLING KANSAS BULLETIN

A weekly newspaper printed in the State of Kansas, and published in and of general circulation in Rice County, Kansas, with a general paid circulation on a weekly basis in Rice County, Kansas, and that said newspaper is not a trade, religious or fraternal publication.

Said newspaper is a weekly, published at least weekly 50 times a year; has been so published continuously and uninterruptedly in said county and state for a period of more than five years prior to the first publication of said notice; and has been admitted at the post office of Sterling, Kansas, in said County as second class matter.

That the attached notice is a true copy thereof and was published in the regular and entire issue of said newspaper for three consecutive weeks, the first being made as aforesaid on the 20th day of

August, 2020

August 27, 2020

September 30, 2020

W. W. Mercer

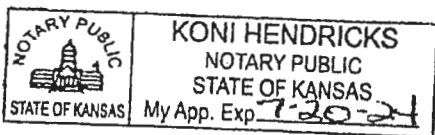
Publisher

Subscribed and sworn to before me this

September 4, 2020

Koni Hendricks

Notary Public



My commission expires

July 20, 2024

Public Notice File No. 50,403

Nickerson USD 309 – South Hutchinson has filed a new application for permit to appropriate water for beneficial use, identified as File No. 50,403, with the Division of Water Resources, Kansas Department of Agriculture. The application proposes the appropriation of 33 acre-feet of groundwater to be diverted at the rate of 200 gallons per minute from an existing battery of two wells. The geographic center of the well battery is located in the Southeast Quarter of the Northeast Quarter of the Northeast Quarter of Section 16, in Township 22 South, Range 7 West, in Reno County, Kansas.

Anyone owning wells within one-half mile of this battery of wells, is invited to submit written comments regarding Application, File No. 50,403. Persons submitting comments should specifically indicate their interest in the proposed appropriation of water. Comments regarding the application will be accepted through September 18, 2020.

Written comments or questions regarding this application may be directed to the Office of the Chief Engineer, Division of Water Resources, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas 66502. If you wish more information concerning this application, you may also contact Doug Schemm, Environmental Scientist, in the Topeka Field Office of the Water Appropriation Program at (785) 296-3495.

(Published in the Sterling Kansas Bulletin, Sterling, Rice County, Kansas, on August 20, 2020; August 27, 2020 and September 3, 2020). 550

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Stafford Field Office
Division of Water Resources

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JUL 30 2021

EQUUS BEDS GMD #2

(Open WATER Pit)
Rec

**DOMESTIC WATER WELL OWNER
WATER WELL SPACING CONSENT FORM**
K.A.R. 5-22-2(e)(4)

I, LAKESIDE Rec. LLC., own a domestic well at _____,
Name Domestic Water Well Owner Address
NICKERSON, KS, 67561, _____,
City State Postal Code Telephone

to supply water for domestic needs and use. That said water well was drilled and constructed
on — / — / —. ? old
MM DD YY

I understand and acknowledge that Nickerson USD 309 – S. Hutch either filed a change in
Applicant Name
point of diversion application on existing water permit # _____ or new application
50403 for a water permit to withdraw or appropriate groundwater for non-domestic
beneficial use.

That the application described the location of a proposed non-domestic water well or water well
battery in the SE 1/4 NE 1/4 NE 1/4 of Section 16, Township 22 South,
Range 7 West, Reno County, and will allow the withdrawal of 33
acre-feet per year at 200 gallons per minute for irrigation use.

The applicant has informed me that the proposed non-domestic water well or water well battery
is within the minimum required spacing interval of 660 or 960 feet, respectively, of my domestic
well.

Having full knowledge of the above and without waiving any right to file an impairment
complaint with the Chief Engineer, Division of Water Resources, I grant my permission to locate
said well or well battery less than the minimum required spacing interval from my domestic well.

Dated at Nickerson, Kansas, this 26 day of July 20 21.
Signed by: Dean Fish (Board member)
Domestic Well Owner
5/9/2022

Witnessed by: _____
Address: _____

Telephone: _____

Received
Stafford Field Office
Division of Water Resources

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JUL 30 2021
EQUUS BEDS GMD #2

22

DOMESTIC WATER WELL OWNER
WATER WELL SPACING CONSENT FORM
K.A.R. 5-22-2(e)(4)

I, David B. Green, own a domestic well at 305 W AVE. H,
Name Domestic Water Well Owner Address
Nickerson, KS, KS, 67561,
City State Postal Code Telephone

to supply water for domestic needs and use. That said water well was drilled and constructed
on / / unknown?
MM DD YY

I understand and acknowledge that Nickerson USD 309 - S. Hutch either filed a change in
Applicant Name
point of diversion application on existing water permit # or new application
50403 for a water permit to withdraw or appropriate groundwater for non-domestic
beneficial use.

That the application described the location of a proposed non-domestic water well or water well
battery in the SE 1/4 NE 1/4 NE 1/4 of Section 16, Township 22 South,
Range 7 West, Reno County, and will allow the withdrawal of 33
acre-feet per year at 200 gallons per minute for irrigation use.

The applicant has informed me that the proposed non-domestic water well or water well battery
is within the minimum required spacing interval of 660 or 960 feet, respectively, of my domestic
well.

Having full knowledge of the above and without waiving any right to file an impairment
complaint with the Chief Engineer, Division of Water Resources, I grant my permission to locate
said well or well battery less than the minimum required spacing interval from my domestic well.

Dated at Nickerson, Kansas, this 23 day of July, 2021.
Signed by: David B. Green
Domestic Well Owner

Witnessed by: _____

Address: _____

Telephone: _____
5/9/2022

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JUL 30 2021

EQUUS BEDS GMD #2

Stafford Field Office
Division of Water Resources

29

DOMESTIC WATER WELL OWNER
WATER WELL SPACING CONSENT FORM
K.A.R. 5-22-2(e)(4)

I, David R. Green, own a domestic well at 507 S. Morgan St. #A
Name Domestic Water Well Owner Address
Nickerson, KS, 67561, _____
City State Postal Code Telephone

to supply water for domestic needs and use. That said water well was drilled and constructed on MM DD YY: unknown?

I understand and acknowledge that Nickerson USD 309 - S. Hutch either filed a change in Applicant Name point of diversion application on existing water permit # _____ or new application # 50403 for a water permit to withdraw or appropriate groundwater for non-domestic beneficial use.

That the application described the location of a proposed non-domestic water well or water well battery in the SE 1/4 NE 1/4 NE 1/4 of Section 16, Township 22 South, Range 7 West, Reno County, and will allow the withdrawal of 33 acre-feet per year at 200 gallons per minute for irrigation use.

The applicant has informed me that the proposed non-domestic water well or water well battery is within the minimum required spacing interval of 660 or 960 feet, respectively, of my domestic well.

Having full knowledge of the above and without waiving any right to file an impairment complaint with the Chief Engineer, Division of Water Resources, I grant my permission to locate said well or well battery less than the minimum required spacing interval from my domestic well.

Dated at Nickerson, Kansas, this July day of 23 2021.
Signed by: David R. Green
Domestic Well Owner

Witnessed by: _____
Address: _____

Telephone: _____

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EQUUS BEDS GMD #2

5/9/2022

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Stafford Field Office
Division of Water Resources

10

DOMESTIC WATER WELL OWNER
WATER WELL SPACING CONSENT FORM
K.A.R. 5-22-2(e)(4)

I, ~~Bob~~ Beet Baridge own a domestic well at P.O. Box 25
Name Domestic Water Well Owner Address
Nickerson, KS, 67561
City State Postal Code Telephone

to supply water for domestic needs and use. That said water well was drilled and constructed on / / ?
MM DD YY

I understand and acknowledge that Nickerson USD 309 - S. Hutch either filed a change in
Applicant Name
point of diversion application on existing water permit # or new application
50403 for a water permit to withdraw or appropriate groundwater for non-domestic
beneficial use.

That the application described the location of a proposed non-domestic water well or water well battery in the SE 1/4 NE 1/4 NE 1/4 of Section 16, Township 22 South, Range 7 West, Reno County, and will allow the withdrawal of 33 acre-feet per year at 200 gallons per minute for irrigation use.

The applicant has informed me that the proposed non-domestic water well or water well battery is within the minimum required spacing interval of 660 or 960 feet, respectively, of my domestic well.

Having full knowledge of the above and without waiving any right to file an impairment complaint with the Chief Engineer, Division of Water Resources, I grant my permission to locate said well or well battery less than the minimum required spacing interval from my domestic well.

Dated at Nickerson, Kansas, this 23 day of July 2021.

Signed by: Beet Baridge
Domestic Well Owner

Witnessed by: _____

Address: _____

5/9/2022

Telephone: _____

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JUL 30 2021

Stafford Field Office
Division of Water Resources EQUUS BEDS GMD #2

**DOMESTIC WATER WELL OWNER
WATER WELL SPACING CONSENT FORM**
K.A.R. 5-22-2(e)(4)

I, GARY GRABER, own a domestic well at 400 South Nickerson St.
Name Domestic Water Well Owner Address
NICKERSON, K5, 67561, 620-432-3331
City State Postal Code Telephone

to supply water for domestic needs and use. That said water well was drilled and constructed on 06 / 15 / 1975
MM DD YY

I understand and acknowledge that Nickerson USD 309 - S. Hutch either filed a change in
Applicant Name
point of diversion application on existing water permit # _____ or new application
50403 for a water permit to withdraw or appropriate groundwater for non-domestic
beneficial use.

That the application described the location of a proposed non-domestic water well or water well
battery in the SE 1/4 NE 1/4 NE 1/4 of Section 16, Township 22 South,
Range 7 West, Reno County, and will allow the withdrawal of 33
acre-feet per year at 200 gallons per minute for irrigation use.

The applicant has informed me that the proposed non-domestic water well or water well battery
is within the minimum required spacing interval of 660 or 960 feet, respectively, of my domestic
well.

Having full knowledge of the above and without waiving any right to file an impairment
complaint with the Chief Engineer, Division of Water Resources, I grant my permission to locate
said well or well battery less than the minimum required spacing interval from my domestic well.

Dated at 07-27-2021, Kansas, this 27 day of 07 (July) 2021.

Signed by: Gary D. Graber
Domestic Well Owner

Witnessed by: [Signature]
Address: _____

Telephone: _____

5/9/2022

Received

Stafford Field Office
Division of Water Resources

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JUL 30 2021

EQUUS BEDS GMD #2

AFFIDAVIT OF PUBLICATION

STATE OF KANSAS, RICE COUNTY, ss:

Frank W. Mercer being first duly sworn, deposes and says:
That he is publisher of

THE STERLING KANSAS BULLETIN

A weekly newspaper printed in the State of Kansas, and published in and of general circulation in Rice County, Kansas, with a general paid circulation on a weekly basis in Rice County, Kansas, and that said newspaper is not a trade, religious or fraternal publication.

Said newspaper is a weekly, published at least weekly 50 times a year; has been so published continuously and uninterruptedly in said county and state for a period of more than five years prior to the first publication of said notice; and has been admitted at the post office of Sterling, Kansas, in said County as second class matter.

That the attached notice is a true copy thereof and was published in the regular and entire issue of said newspaper for three consecutive weeks, the first being made as aforesaid on the 20th day of

August, 20 20

August 27, 20 20

September 3, 20 20

[Handwritten Signature]

Publisher

Subscribed and sworn to before me this

September 4, 2020

[Handwritten Signature]

Notary Public



My commission expires July 20, 2024

5/9/2022

Received

Stafford Field Office
Division of Water Resources

Public Notice File No. 50,403

Nickerson USD 309 – South Hutchinson has filed a new application for permit to appropriate water for beneficial use, identified as File No. 50,403, with the Division of Water Resources, Kansas Department of Agriculture. The application proposes the appropriation of 33 acre-feet of groundwater to be diverted at the rate of 200 gallons per minute from an existing battery of two wells. The geographic center of the well battery is located in the Southeast Quarter of the Northeast Quarter of the Northeast Quarter of Section 16, in Township 22 South, Range 7 West, in Reno County, Kansas.

Anyone owning wells within one-half mile of this battery of wells, is invited to submit written comments regarding Application, File No. 50,403. Persons submitting comments should specifically indicate their interest in the proposed appropriation of water. Comments regarding the application will be accepted through September 18, 2020.

Written comments or questions regarding this application may be directed to the Office of the Chief Engineer, Division of Water Resources, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas 66502. If you wish more information concerning this application, you may also contact Doug Schemm, Environmental Scientist, in the Topeka Field Office of the Water Appropriation Program at (785) 296-3495.

(Published in the Sterling Kansas Bulletin, Sterling, Rice County, Kansas, on August 20, 2020; August 27, 2020 and September 3, 2020). 5.50

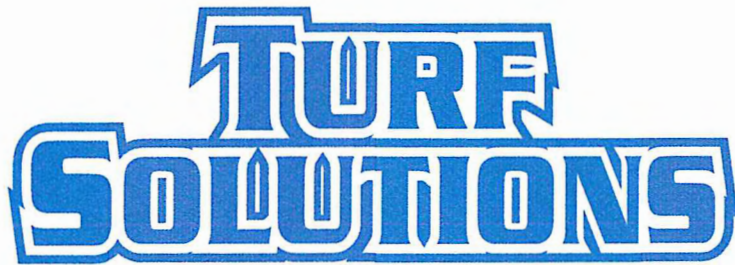
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EQUUS BEDS GMD #2

Irrigation Needs of Turfgrass Compared to Corn

Compiled by



5/9/2022

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Stafford Field Office
Division of Water Resources

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JUL 30 2021

EQUUS BEDS GMD #2

Included here are two reports from the year 2012 that compare the water requirements of corn and soybeans with that of turfgrass. The reports are daily weather observations from the K-State Mesonet station in Sterling KS. The "Summary" line is a running total at the end of each page. The "Summary" line on the last page is the total of the requested time period.

The most relevant numbers to the water requirements for growing corn or turfgrass are the "Precip" and "ETo" columns. "Precip" is measured precipitation in inches and "ETo" is evapotranspiration, or the amount of water lost to evaporation and plant consumption (transpiration) combined. If rainfall and irrigation were both 100% efficient, ETo - Precip would equal total inches of water needed to grow a crop. In reality, neither irrigation nor rainfall is 100% efficient. Irrigation varies greatly in efficiency based upon type of system, system design, and weather. Rainfall varies mostly based upon soil moisture level and precipitation rate. If rain falls on previously saturated soil, the water runs off and is 0% efficient. If rain falls more quickly than the soil can absorb it, the difference between precipitation rate and infiltration rate runs off. Either way, rarely is rainfall 100% usable by a plant. Since the efficiency of either irrigation or rainfall would be difficult to ascertain for certain, one can assume that ETo - Precip is a place to start, and the actual total irrigation needs will be higher.

If corn is used as the basis for Maximum Reasonable Quantity for Beneficial Use, and June 1 through August 31 is used for a possible irrigation window per year, during that time period in 2012 ETo was 23.86" and Precip was 9.09". This leaves a deficit of 14.77", or 1.23 acre-feet. Factoring in any efficiency factor at all would result in Reno County's maximum allowable usage of 1.4 acre feet would be inadequate. Most farmers came up far short in 2012.

When corn is compared to turfgrass, and in particular, sports turf, the needs are dramatically different. Water use typically begins in mid-March instead of June. When dealing with established home lawns, rainfall usually outpaces ET by significant margins through much of March and April. Sports turf is significantly different. Due to the unique demands of sports turf, irrigation often begins in March to provide adequate soil moisture to allow for aeration and seed establishment that is needed to repair the turf from the previous year's usage. Irrigation also must occur much later into the fall when irrigating turfgrass. While corn's irrigation needs stop around the end of August, turfgrass health and athlete safety requires water through October and into November, if possible. Using the same Mesonet station, but extending the irrigation season from March 15 to November 30, ETo - Precip equals 34.17", or 2.85' per acre. This number does not take into account additional needs for seed establishment or any efficiency factor. The request made for 2.45' per acre is a very conservative request that will require diligent management on the part of the school. Typically outside the District, when Turf Solutions assists with an application, we apply for, and receive, 3' per acre by applying K.A.R. 5-3-20(C) since turfgrass is considered a "Specialty Crop".

Nickerson USD 309 requests that the GMD2 board waive the Maximum Reasonable Quantity for Beneficial Use, based upon a different crop, and grant 2.45' per acre.

5/9/2022

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Stafford Field Office
Division of Water Resources

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EQUUS BEDS GMD #2

Detailed Report of Corn Water Consumption

5/9/2022

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Stafford Field Office
Division of Water Resources

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JUL 30 2021

EQUUS BEDS GMD #2

Historical Weather

RECEIVED

JUL 30 2021

Mesonet Data Policy

5/9/2022

EQUUS BEDS GMD #2

Sterling

Received

2012-06-01 — 2012-08-31

Stafford Field Office
Division of Water Resources

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Grass inches
06-01	61.2	44.9	0.02	4.0	13.9	257.8	0.06
06-02	84.1	47.8	0	3.7	14.2		
06-03	88.1	65.5	0	6.9	20.1	608.4	0.23
06-04	93.9	63.5	0	4.4	19.4	707.4	0.27
06-05	88.7	61.7	0	5.9	19.2	727.9	0.28
06-06	84.1	60.3	0	7.1	23.4	649.6	0.25
06-07	83.4	59.7	0	6.3	20.9	676.4	0.25
06-08	85.0	57.9	0	6.7	20.1	723.9	0.28
06-09	89.7	62.6	0	13.2	30.0	699.0	0.31
06-10	95.6	71.6	0	13.1	30.5	684.5	0.31
06-11	88.2	58.5	0	8.9	23.9	744.4	0.33
06-12	83.8	58.0	0	6.5	20.9	612.4	0.25
06-13	89.7	60.3	0	10.8	27.1	709.3	0.32
06-14	94.5	62.8	1.24	12.8	37.2	657.8	0.30
06-15	83.1	63.2	0.59	5.1	21.8	682.6	0.22
06-16	88.6	61.9	0.59	6.2	39.4	602.1	0.20
06-17	92.6	67.6	0	8.9	27.6	696.9	0.30
06-18	93.4	69.6	0	14.1	28.1	713.4	0.32
06-19	90.2	71.7	0	16.2	32.8	707.4	0.32
06-20	88.8	65.6	0	15.3	33.2	334.1	0.19
06-21	82.4	61.5	0.62	6.7	23.3	701.2	0.23
06-22	85.7	60.8	0	5.8	17.6	719.6	0.26
06-23	97.9	67.3	0	12.4	29.1	692.8	0.37
06-24	102.0	72.8	0	10.3	21.3	713.4	0.37
06-25	103.7	67.2	0	3.5	10.9	703.1	0.28
06-26	105.1	70.3	0	7.3	21.1	707.4	0.34
06-27	107.6	76.8	0	12.8	27.0	719.6	0.44
06-28	104.1	71.2	0	9.0	20.6	707.4	0.37
06-29	101.7	73.8	0	10.7	24.9	604.3	0.36
06-30	100.4	73.0	0	8.1	20.6	567.1	0.30
summary	92.9	65.9	9.09	7.1	39.4	606.0	23.86

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Grass inches
07-01	96.8	73.3	0	7.4	20.2	534.1	0.27
07-02	96.3	69.3	0	8.5	25.8	651.6	0.30
07-03	98.1	72.6	0	9.8	25.6	661.8	0.34
07-04	99.0	76.6	0	11.7	27.6	690.7	0.38
07-05	98.4	73.3	0	7.3	26.8	672.3	0.32
07-06	100.9	75.3	0	7.2	22.6	672.3	0.33
07-07	103.0	73.2	0.66	5.6	25.8	606.2	0.28
07-08	89.4	69.8	0.02	7.3	19.4	595.9	0.23
07-09	80.5	70.2	0	7.0	18.7	334.1	0.13
07-10	87.9	68.9	0	6.5	15.4	647.5	0.25
07-11	92.2	57.7	0	3.9	15.7	713.4	0.26
07-12	95.9	62.8	0	3.3	13.2	676.4	0.26
07-13	99.0	68.9	0	6.1	20.2	682.6	0.30
07-14	98.5	70.1	0	4.6	13.9	690.7	0.28
07-15	96.0	70.6	0	6.4	17.7	682.6	0.30
07-16	94.2	68.3	0	7.3	19.6	641.3	0.28
07-17	99.7	70.6	0	9.2	22.9	688.8	0.35
07-18	103.2	77.6	0	9.3	26.0	668.0	0.37
07-19	104.7	70.3	0	4.2	21.1	554.7	0.25
07-20	99.2	68.5	0	5.1	13.9	688.8	0.30
07-21	97.8	64.8	0	4.4	13.4	661.8	0.28
07-22	100.3	68.3	0	5.1	24.3	686.6	0.30
07-23	98.6	71.2	0	6.1	20.2	670.2	0.31
07-24	101.8	75.2	0	10.3	24.9	676.4	0.38
07-25	104.3	72.2	0.25	11.7	28.8	643.4	0.39
07-26	93.6	69.4	0.17	3.5	13.5	674.2	0.23
07-27	100.7	70.0	0	3.2	11.4	684.5	0.26
07-28	102.9	71.6	0	8.1	24.9	651.6	0.35
07-29	104.0	74.4	0.35	6.9	20.9	628.9	0.31
07-30	96.9	74.9	0	5.7	19.1	548.4	0.25
07-31	99.9	73.2	0	5.4	15.9	495.0	0.22
08-01	101.0	70.7	0	6.6	25.3	591.9	0.27
08-02	94.0	71.3	0	6.9	30.7	488.8	0.22
08-03	100.6	71.6	0	5.4	27.0	575.4	0.23
08-04	90.1	66.9	0	9.0	27.0	402.1	0.19
08-05	92.6	55.2	0	4.2	17.1	668.0	0.25
08-06	99.3	60.8	0	5.6	18.6	616.5	0.28
summary	92.9	65.9	9.09	7.1	39.4	606.0	23.86

5/9/2022

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summary

Stafford Field Office
Division of Water Resources

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JUL 30 2021

EQUUS BEDS GMD #2

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Grass inches
08-07	87.9	69.5	1.29	6.7	37.7	129.8	0.12
08-08	98.7	64.9	0	5.1	18.9	637.2	0.26
08-09	85.6	65.1	0	8.2	20.2	655.8	0.25
08-10	87.2	58.6	0	4.2	14.9	595.9	0.21
08-11	90.0	57.4	0	5.7	16.2	536.0	0.23
08-12	90.3	64.8	0.01	7.7	24.1	641.3	0.28
08-13	85.4	57.7	0	6.2	17.7	637.2	0.22
08-14	75.6	62.2	0.36	5.7	19.4	431.0	0.12
08-15	93.4	58.7	0	7.1	20.8	585.7	0.23
08-16	79.7	63.2	0	9.5	23.3	511.5	0.20
08-17	81.1	52.8	0	3.2	11.7	486.6	0.16
08-18	86.9	61.2	0	3.8	14.2	451.6	0.16
08-19	79.8	52.9	0	6.1	16.1	624.8	0.21
08-20	88.4	49.7	0	2.9	13.2	600.0	0.21
08-21	92.2	56.4	0	3.5	20.1	600.0	0.23
08-22	90.3	62.2	0	9.3	25.5	608.4	0.29
08-23	91.6	69.6	0	11.1	27.3	455.6	0.26
08-24	81.0	65.4	0.88	9.8	21.4	363.0	0.13
08-25	78.3	65.3	2.04	5.4	25.3	175.2	0.06
08-26	86.3	66.5	0	4.0	13.4	515.5	0.16
08-27	91.2	62.3	0	2.8	11.7	548.4	0.19
08-28	91.7	63.6	0	3.6	17.1	540.3	0.20
08-29	94.1	64.6	0	5.1	17.6	525.8	0.22
08-30	97.3	65.6	0	3.2	14.5	563.0	0.22
08-31	91.0	61.9	0	4.8	21.6	579.5	0.23
summary	92.9	65.9	9.09	7.1	39.4	606.0	23.86

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Division of Water Resources

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Detailed Report of Turfgrass Water Consumption

5/9/2022

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Stafford Field Office
Division of Water Resources

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EQUUS BEDS GMD #2

Historical Weather

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JUL 30 2021

EQUUS BEDS GMD #2

Sterling

2012-03-15 — 2012-11-30

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Grass inches
03-15	77.9	59.5	0	9.4	22.1	451.6	0.15
03-16	77.0	51.2	0	11.5	28.1	426.7	0.14
03-17	78.5	61.0	0	17.6	32.7	406.2	0.16
03-18	72.1	60.3	0	19.3	33.2	202.1	0.09
03-19	67.5	51.4	0.37	14.6	43.4	119.6	0.04
03-20	54.3	48.2	0.27	7.4	21.9	121.7	0.03
03-21	53.8	45.3	0.68	6.9	23.3	86.6	0.02
03-22	52.2	42.3	0.06	8.0	18.6	224.8	0.04
03-23	63.6	44.2	0	6.3	15.0	348.4	0.08
03-24	73.9	42.2	0	4.3	12.5	544.4	0.16
03-25	75.9	42.0	0	7.3	22.4	527.9	0.17
03-26	77.7	52.7	0	13.1	30.8	507.2	0.18
03-27	77.8	55.9	0	8.3	33.7	525.8	0.18
03-28	73.2	54.9	0	6.2	15.9	313.4	0.09
03-29	82.0	58.1	0	11.8	26.8	552.7	0.18
03-30	79.1	48.3	0	4.6	16.7	560.9	0.17
03-31	82.7	51.7	0	7.2	18.1	554.7	0.20
04-01	86.2	59.6	0	11.6	24.8	476.4	0.19
04-02	81.7	54.9	0	14.2	29.5	544.4	0.21
04-03	61.8	48.1	0.17	9.7	28.6	187.6	0.05
04-04	58.5	50.6	0.53	8.2	17.6	216.5	0.05
04-05	54.4	50.3	0	8.1	15.0	101.0	0.03
04-06	56.8	43.9	0	7.3	17.1	191.9	0.04
04-07	63.8	47.0	0	11.1	29.6	554.7	0.16
04-08	66.1	33.0	0	5.9	16.4	600.0	0.17
04-09	67.6	41.2	0	4.9	18.7	364.9	0.11
04-10	65.8	45.2	0	10.6	22.6	571.1	0.19
04-11	58.2	49.4	0	12.0	21.1	315.5	0.13
04-12	63.0	50.0	0.05	14.7	28.3	134.1	0.06
04-13	74.7	56.1	0	9.2	32.7	550.6	0.17
04-14	73.7	57.8	0	16.0	55.3	158.7	0.07
summary	80.3	53.9	14.40	8.4	56.3	454.0	48.57

5/9/2022

Received

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Grass inches
04-15	70.9	44.6	0	19.3	44.4	480.4	0.18
04-16	65.6	39.2	0	6.1	17.2	604.3	0.16
04-17	72.2	44.9	0	9.6	23.1	627.0	0.20
04-18	79.8	52.5	0	11.8	32.3	631.0	0.23
04-19	71.8	50.6	0	12.6	26.1	453.7	0.16
04-20	62.9	43.4	0	11.2	26.1	523.9	0.14
04-21	75.4	36.8	0	6.9	22.6	620.8	0.19
04-22	65.0	43.3	0	9.6	24.3	639.1	0.19
04-23	71.9	34.2	0	5.4	16.6	661.8	0.20
04-24	97.1	44.4	0	9.1	33.5	661.8	0.31
04-25	90.5	53.5	0	6.8	18.2	635.1	0.26
04-26	82.9	57.1	0	7.7	25.6	431.0	0.20
04-27	83.6	57.8	0	17.3	34.2	393.8	0.20
04-28	70.3	44.4	0	8.9	21.6	598.1	0.18
04-29	68.9	52.9	0.03	7.4	19.7		
04-30	75.5	53.5	0.06	8.3	28.5	278.3	0.09
05-01	84.2	58.0	0	13.5	31.2	564.9	0.20
05-02	86.5	64.6	0.01	12.7	25.1	632.9	0.24
05-03	85.9	67.0	0	8.4	26.6	529.8	0.19
05-04	92.3	67.9	0	10.8	30.3	664.0	0.28
05-05	87.5	63.9	0	11.7	26.8	674.2	0.26
05-06	77.7	60.0	0	14.0	31.0	313.4	0.14
05-07	67.6	44.9	0	13.5	28.3	408.4	0.19
05-08	76.6	42.1	0	5.8	22.3		
05-09	77.5	43.4	0	5.2	13.9	705.3	0.23
05-10	86.0	50.1	0	10.0	24.9	705.3	0.30
05-11	75.9	50.7	0.05	4.5	19.4	344.4	0.12
05-12	67.9	48.6	0	9.2	19.9	587.6	0.17
05-13	75.7	44.4	0	4.8	14.4	591.9	0.19
05-14	83.3	49.0	0	4.5	15.9	552.7	0.20
05-15	90.8	50.7	0	3.9	20.9	707.4	0.26
05-16	87.5	56.0	0	8.5	22.1	703.1	0.31
05-17	91.2	56.0	0	11.9	29.1	686.6	0.35
05-18	90.0	67.3	0	16.1	35.7	661.8	0.38
05-19	89.6	58.9	0.03	14.1	31.8	517.7	0.26
05-20	78.5	53.1	0	8.3	21.6	686.6	0.25
05-21	81.2	49.1	0	5.4	13.5	717.7	0.25
05-22	84.6	55.1	0	12.3	29.1	670.2	0.29
summary	80.3	53.9	14.40	8.4	56.3	454.0	48.57

5/9/2022

Received
summary

RECEIVED
JUL 30 2021

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Grass inches
05-23	93.4	66.2	0	18.7	40.7	666.1	0.38
05-24	88.1	62.3	0	9.9	27.3	670.2	0.28
05-25	88.9	65.3	0.01	13.6	27.8	400.0	0.21
05-26	96.2	75.2	0	16.4	30.0	563.0	0.32
05-27	91.8	69.8	0	17.8	35.0	635.1	0.33
05-28	90.4	62.9	0	8.6	25.1	748.4	0.33
05-29	89.2	54.8	0	8.1	22.4	723.9	0.32
05-30	88.5	60.6	0.45	8.4	31.0	529.8	0.23
05-31	70.4	51.7	0	11.7	28.5		
06-01	61.2	44.9	0.02	4.0	13.9	257.8	0.06
06-02	84.1	47.8	0	3.7	14.2		
06-03	88.1	65.5	0	6.9	20.1	608.4	0.23
06-04	93.9	63.5	0	4.4	19.4	707.4	0.27
06-05	88.7	61.7	0	5.9	19.2	727.9	0.28
06-06	84.1	60.3	0	7.1	23.4	649.6	0.25
06-07	83.4	59.7	0	6.3	20.9	676.4	0.25
06-08	85.0	57.9	0	6.7	20.1	723.9	0.28
06-09	89.7	62.6	0	13.2	30.0	699.0	0.31
06-10	95.6	71.6	0	13.1	30.5	684.5	0.31
06-11	88.2	58.5	0	8.9	23.9	744.4	0.33
06-12	83.8	58.0	0	6.5	20.9	612.4	0.25
06-13	89.7	60.3	0	10.8	27.1	709.3	0.32
06-14	94.5	62.8	1.24	12.8	37.2	657.8	0.30
06-15	83.1	63.2	0.59	5.1	21.8	682.6	0.22
06-16	88.6	61.9	0.59	6.2	39.4	602.1	0.20
06-17	92.6	67.6	0	8.9	27.6	696.9	0.30
06-18	93.4	69.6	0	14.1	28.1	713.4	0.32
06-19	90.2	71.7	0	16.2	32.8	707.4	0.32
06-20	88.8	65.6	0	15.3	33.2	334.1	0.19
06-21	82.4	61.5	0.62	6.7	23.3	701.2	0.23
06-22	85.7	60.8	0	5.8	17.6	719.6	0.26
06-23	97.9	67.3	0	12.4	29.1	692.8	0.37
06-24	102.0	72.8	0	10.3	21.3	713.4	0.37
06-25	103.7	67.2	0	3.5	10.9	703.1	0.28
06-26	105.1	70.3	0	7.3	21.1	707.4	0.34
06-27	107.6	76.8	0	12.8	27.0	719.6	0.44
06-28	104.1	71.2	0	9.0	20.6	707.4	0.37
06-29	101.7	73.8	0	10.7	24.9	604.3	0.36
summary	80.3	53.9	14.40	8.4	56.3	454.0	48.57

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Received
summary

RECEIVED
JUL 30 2021

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Gross inches
06-30	100.4	73.0	0	8.1	20.6	567.1	0.30
07-01	96.8	73.3	0	7.4	20.2	534.1	0.27
07-02	96.3	69.3	0	8.5	25.8	651.6	0.30
07-03	98.1	72.6	0	9.8	25.6	661.8	0.34
07-04	99.0	76.6	0	11.7	27.6	690.7	0.38
07-05	98.4	73.3	0	7.3	26.8	672.3	0.32
07-06	100.9	75.3	0	7.2	22.6	672.3	0.33
07-07	103.0	73.2	0.66	5.6	25.8	606.2	0.28
07-08	89.4	69.8	0.02	7.3	19.4	595.9	0.23
07-09	80.5	70.2	0	7.0	18.7	334.1	0.13
07-10	87.9	68.9	0	6.5	15.4	647.5	0.25
07-11	92.2	57.7	0	3.9	15.7	713.4	0.26
07-12	95.9	62.8	0	3.3	13.2	676.4	0.26
07-13	99.0	68.9	0	6.1	20.2	682.6	0.30
07-14	98.5	70.1	0	4.6	13.9	690.7	0.28
07-15	96.0	70.6	0	6.4	17.7	682.6	0.30
07-16	94.2	68.3	0	7.3	19.6	641.3	0.28
07-17	99.7	70.6	0	9.2	22.9	688.8	0.35
07-18	103.2	77.6	0	9.3	26.0	668.0	0.37
07-19	104.7	70.3	0	4.2	21.1	554.7	0.25
07-20	99.2	68.5	0	5.1	13.9	688.8	0.30
07-21	97.8	64.8	0	4.4	13.4	661.8	0.28
07-22	100.3	68.3	0	5.1	24.3	686.6	0.30
07-23	98.6	71.2	0	6.1	20.2	670.2	0.31
07-24	101.8	75.2	0	10.3	24.9	676.4	0.38
07-25	104.3	72.2	0.25	11.7	28.8	643.4	0.39
07-26	93.6	69.4	0.17	3.5	13.5	674.2	0.23
07-27	100.7	70.0	0	3.2	11.4	684.5	0.26
07-28	102.9	71.6	0	8.1	24.9	651.6	0.35
07-29	104.0	74.4	0.35	6.9	20.9	628.9	0.31
07-30	96.9	74.9	0	5.7	19.1	548.4	0.25
07-31	99.9	73.2	0	5.4	15.9	495.0	0.22
08-01	101.0	70.7	0	6.6	25.3	591.9	0.27
08-02	94.0	71.3	0	6.9	30.7	488.8	0.22
08-03	100.6	71.6	0	5.4	27.0	575.4	0.23
08-04	90.1	66.9	0	9.0	27.0	402.1	0.19
08-05	92.6	55.2	0	4.2	17.1	668.0	0.25
08-06	99.3	60.8	0	5.6	18.6	616.5	0.28
summary	80.3	53.9	14.40	8.4	56.3	454.0	48.57

5/9/2022

Received
summary

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JUL 30 2021
EQUUS BEDS GMD #2

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Grass inches
08-07	87.9	69.5	1.29	6.7	37.7	129.8	0.12
08-08	98.7	64.9	0	5.1	18.9	637.2	0.26
08-09	85.6	65.1	0	8.2	20.2	655.8	0.25
08-10	87.2	58.6	0	4.2	14.9	595.9	0.21
08-11	90.0	57.4	0	5.7	16.2	536.0	0.23
08-12	90.3	64.8	0.01	7.7	24.1	641.3	0.28
08-13	85.4	57.7	0	6.2	17.7	637.2	0.22
08-14	75.6	62.2	0.36	5.7	19.4	431.0	0.12
08-15	93.4	58.7	0	7.1	20.8	585.7	0.23
08-16	79.7	63.2	0	9.5	23.3	511.5	0.20
08-17	81.1	52.8	0	3.2	11.7	486.6	0.16
08-18	86.9	61.2	0	3.8	14.2	451.6	0.16
08-19	79.8	52.9	0	6.1	16.1	624.8	0.21
08-20	88.4	49.7	0	2.9	13.2	600.0	0.21
08-21	92.2	56.4	0	3.5	20.1	600.0	0.23
08-22	90.3	62.2	0	9.3	25.5	608.4	0.29
08-23	91.6	69.6	0	11.1	27.3	455.6	0.26
08-24	81.0	65.4	0.88	9.8	21.4	363.0	0.13
08-25	78.3	65.3	2.04	5.4	25.3	175.2	0.06
08-26	86.3	66.5	0	4.0	13.4	515.5	0.16
08-27	91.2	62.3	0	2.8	11.7	548.4	0.19
08-28	91.7	63.6	0	3.6	17.1	540.3	0.20
08-29	94.1	64.6	0	5.1	17.6	525.8	0.22
08-30	97.3	65.6	0	3.2	14.5	563.0	0.22
08-31	91.0	61.9	0	4.8	21.6	579.5	0.23
09-01	93.4	63.7	0	3.6	9.5	544.4	0.20
09-02	102.2	67.3	0	6.2	18.4	558.7	0.25
09-03	102.9	70.3	0	7.6	19.7	529.8	0.29
09-04	97.7	68.9	0.09	6.0	24.9	424.8	0.19
09-05	88.7	63.7	0	6.2	18.1	536.0	0.21
09-06	95.2	62.8	0	7.2	27.5	536.0	0.24
09-07	79.8	55.6	0.30	10.5	33.3	200.0	0.11
09-08	79.7	49.1	0	5.0	16.2	587.6	0.20
09-09	78.8	53.9	0	6.0	16.9	581.4	0.20
09-10	90.3	52.5	0	9.0	24.6	571.1	0.26
09-11	94.1	61.0	0	13.7	31.7	538.2	0.35
09-12	93.7	56.3	0	13.6	50.8	391.9	0.25
09-13	57.3	52.0	0.46	11.6	24.3	96.9	0.03
summary	80.3	53.9	14.40	8.4	56.3	454.0	48.57

5/9/2022

Received
summary

RECEIVED
JUL 30 2021

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Gross inches
09-14	72.5	45.8	0	6.7	18.4	542.2	0.18
09-15	72.9	48.3	0	4.3	13.9	327.9	0.10
09-16	78.3	59.8	0	5.0	12.7	412.4	0.13
09-17	68.4	52.3	0	8.2	23.3	282.6	0.08
09-18	78.0	43.2	0	6.8	20.4	501.2	0.17
09-19	91.9	52.0	0	9.2	22.9	495.0	0.24
09-20	83.2	48.8	0	6.5	15.2	428.9	0.20
09-21	85.8	53.5	0	6.7	19.2	435.1	0.20
09-22	73.2	50.6	0	8.0	20.6	445.3	0.19
09-23	73.6	46.3	0.02	6.8	18.1	455.6	0.17
09-24	88.9	46.6	0	6.6	18.7	309.3	0.14
09-25	82.0	55.0	0	5.8	16.7	296.9	0.12
09-26	74.9	59.3	0.41	7.6	16.9	208.4	0.07
09-27	73.7	56.5	0	5.0	13.5	193.8	0.06
09-28	71.8	57.4	0.02	5.0	12.7	148.4	0.04
09-29	72.8	54.9	0	4.7	17.7	245.3	0.09
09-30	78.8	49.3	0	3.6	11.4	379.5	0.12
10-01	70.7	44.8	0.01	9.6	30.0	266.1	0.10
10-02	74.9	39.0	0	4.6	13.7	416.5	0.13
10-03	82.4	44.3	0	10.4	29.3	400.0	0.21
10-04	66.8	48.0	0	12.0	25.1	150.6	0.10
10-05	54.5	38.7	0	10.6	25.8	280.4	0.10
10-06	44.0	34.1	0	6.2	21.6	94.7	0.03
10-07	52.4	25.0	0	5.2	18.4	340.3	0.08
10-08	70.6	34.1	0	10.5	27.0	404.1	0.16
10-09	64.2	40.1	0	10.0	29.1	424.8	0.14
10-10	66.7	30.8	0	5.4	17.4	367.1	0.12
10-11	82.7	45.9	0	10.4	28.0	379.5	0.17
10-12	55.6	43.9	0.02	8.4	25.3	72.1	0.04
10-13	79.5	53.3	0.59	9.2	23.1	179.5	0.06
10-14	75.0	50.1	0.01	11.2	32.3	338.2	0.15
10-15	86.0	44.8	0	6.4	17.9	364.9	0.15
10-16	81.8	50.8	0	5.9	16.7	313.4	0.13
10-17	69.5	46.9	0	11.8	33.5	160.9	0.14
10-18	62.8	42.1	0	17.8	43.2	51.6	0.17
10-19	66.7	41.1	0	11.7	29.0	113.4	0.13
10-20	86.0	43.1	0	5.5	17.7	259.9	0.13
10-21	86.9	51.1	0	6.8	20.8	204.1	0.10
summary	80.3	53.9	14.40	8.4	56.3	454.0	48.57

5/9/2022

Received

summary

Stafford Field Office
Division of Water Resources

RECEIVED
JUL 30 2021

EQUUS BEDS GMD #2

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Grass inches
10-22	73.6	50.7	0	5.7	20.9	82.6	0.04
10-23	85.5	53.4	0	10.8	23.6	303.1	0.16
10-24	73.8	59.2	0	10.4	22.9	210.3	0.09
10-25	61.5	32.4	0.02	17.5	34.0	55.6	0.05
10-26	44.1	29.7	0	10.8	23.6	92.8	0.05
10-27	47.8	24.0	0	4.5	13.7	255.6	0.06
10-28	55.8	28.5	0	7.0	17.7	208.4	0.07
10-29	67.7	35.0	0	10.6	26.3	123.6	0.11
10-30	70.6	43.0	0	6.1	16.9	257.8	0.11
10-31	73.0	32.7	0	4.7	13.4	280.4	0.09
11-01	77.6	38.5	0	3.9	11.5	257.8	0.09
11-02	69.8	45.3	0	9.9	24.3	142.2	0.09
11-03	61.8	35.7	0	7.7	18.6	146.3	0.06
11-04	68.9	32.9	0	7.3	25.8	150.6	0.10
11-05	56.1	36.9	0	10.1	28.8	117.4	0.06
11-06	65.3	32.7	0	8.8	27.5	136.0	0.10
11-07	62.8	30.0	0	6.9	17.2	125.8	0.08
11-08	73.1	46.1	0	10.0	25.5	129.8	0.11
11-09	80.1	41.6	0	9.8	32.3	156.8	0.10
11-10	73.7	49.9	0.59	22.0	56.3	183.5	0.13
11-11	49.9	24.4	0	14.6	30.5	270.2	0.05
11-12	50.0	21.8	0	8.0	22.4	317.7	0.07
11-13	54.4	28.4	0	7.8	22.4	123.6	0.06
11-14	53.4	29.7	0	5.2	15.4	68.0	0.04
11-15	55.9	34.0	0	4.5	13.2	111.5	0.04
11-16	60.0	28.6	0	5.8	17.4	103.1	0.05
11-17	61.6	38.2	0	13.5	33.3	76.4	0.10
11-18	61.4	40.2	0	14.2	30.5	84.5	0.10
11-19	71.0	35.0	0	4.7	15.4	210.3	0.06
11-20	69.8	34.1	0	4.6	8.7	146.3	0.06
11-21	72.7	40.2	0	12.2	32.3	175.2	0.11
11-22	71.3	39.1	0	12.5	28.5	125.8	0.10
11-23	42.2	26.9	0	8.8	26.8	164.9	0.05
11-24	61.9	24.7	0	10.7	28.8	152.5	0.09
11-25	56.8	28.5	0	9.4	21.4	163.0	0.08
11-26	42.5	23.4	0	14.5	32.0	189.7	0.05
11-27	45.4	14.0	0	7.8	23.8	237.2	0.05
11-28	55.7	21.2	0	5.5	17.4	107.2	0.04
summary	80.3	53.9	14.40	8.4	56.3	454.0	48.57

5/9/2022

Received
summary

RECEIVED
JUL 30 2021

	Air Temperature		Precip	Wind Speed		Solar Radiation	ETo
	Max °F	Min °F	Total inches	Avg mph	Max mph	Total ly	Grass inches
11-29	61.1	30.1	0	5.0	14.5	134.1	0.04
11-30	62.9	25.5	0	5.3	16.7	119.6	0.04
summary	80.3	53.9	14.40	8.4	56.3	454.0	48.57

5/9/2022

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Received

JUL 30 2021

Stafford Field Office EQUUS BEDS GMD #2
Division of Water Resources

4/19/2016 8:53 PM

N City of Nickerson

P.O. Box 52, Nickerson, KS 67561

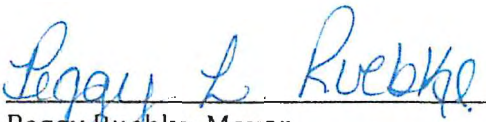
June 21, 2021

USD 309 Nickerson/South Hutchinson,

The Nickerson City Council under the advisement of our Kansas Rural Water Association Technical Assistant, Jon Steele, and our Certified Water Operator, Casey Hartman, finds no objections to the USD 309 School District's request of additional water rights at the High School campus located at 305 South Nickerson Street, Nickerson, KS.

A copy of the meeting minutes has been provided for your records.

Sincerely,


Peggy Ruebke, Mayor


April Beshears, City Clerk

RECEIVED

JUL 30 2021

5/9/2022

Received

EQUUS BEDS GMD #2

City Clerk / Court Clerk
(620) 422-5981 / Fax (620) 422-5252

Stafford Field Office
Division of Water Resources

City Superintendent
(620) 422-5121

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 FOR CHANGE IN PLACE OF USE APPROPRIATION OF WATER FILE NO. 44,425

The Chief Engineer, Division of Water Resources, Kansas Department of Agriculture, after due consideration of the written application of Nickerson USD 309 – South Hutchinson, 4501 W 4th Ave, Kansas 67501-9131, in this office on June 22, 2020, for approval of a change in the location of the place of use under the Approval of Application, File No. 44,424 for permit to appropriate water for beneficial use, finds that the change is reasonable and will not impair existing rights, and that the application should be and is hereby approved.

The effective date of the change shall be the date this order is executed by the Chief Engineer, after which the authorized location of the irrigation place of use shall be:

Sec.	Twp.	Range	NE $\frac{1}{4}$				NW $\frac{1}{4}$				SW $\frac{1}{4}$				SE $\frac{1}{4}$				TOTAL
			NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	
16	22S	7W	24.6																24.6

a total of 24.6 acres in Township 22 South, Range 7 West, Reno County, Kansas,

located substantially as shown on the map accompanying the application to change the place of use.

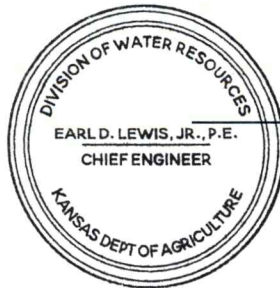
All diversion works shall be equipped with an in-line, automatic, quick-closing check valve capable of preventing pollution of the source of the water supply. The type of valve installed shall meet specifications adopted by the Chief Engineer and shall be maintained in an operating condition satisfactory to the Chief Engineer.

The water right owner shall properly install an acceptable water meter on the diversion works authorized under this water right, prior to the use of water, in strict accordance with the Kansas Administrative Regulations 5-1-4 through 5-1-12 adopted by the Chief Engineer. The water right owner shall notify the Chief Engineer when installation of the water meter has been completed.

The water right owner shall maintain the water meter in an operating condition satisfactory to the Chief Engineer, at all times during diversion of water and shall maintain records from which the total quantity of water diverted may be determined. The water right owner shall also report the reading of said water meter and the total quantity of water diverted annually to the Chief Engineer. Such records shall be furnished to the Chief Engineer by March 1 following the end of each calendar year.

In all other respects, the Approval of Application, File No. 44,425, for permit to appropriate water for beneficial use, is as stated and set forth in the approval dated September 19, 2001.

Ordered this 21st day of April, 2022, in Manhattan, Riley County, Kansas.



Earl D. Lewis Jr.

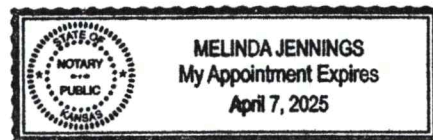
Earl D. Lewis Jr., P.E.
Chief Engineer
Water Appropriation Program
Division of Water Resources
Kansas Department of Agriculture

State of Kansas)
) SS
County of Riley)

The foregoing instrument was acknowledged before me this 21 day of April, 2022, by Earl D. Lewis Jr., P.E. Chief Engineer, Water Appropriation Program, Division of Water Resources, Kansas Department of Agriculture.

Melinda Jennings

Notary Public



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:

- 1) request an evidentiary hearing before the Chief Engineer, or
- 2) 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 the Kansas Department of Agriculture, Attn: Legal Section, 1320 Research Park Drive, Manhattan, Kansas 66502, or by 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 the Secretary of Agriculture, Attn: Legal Division, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas 66502, or by 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. Any request for hearing or petition for administrative review shall be in writing and shall be submitted to the attention of: Chief Legal Counsel, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas 66502, Fax: (785) 564-6777.

CERTIFICATE OF SERVICE

On this _____ day of _____, 2022, I hereby certify that the attached Approval of Application for the Change in Place of Use, File No. 44,425, dated _____, 2022, was mailed postage prepaid, first class, US mail to the following:

USD 309 NICKERSON SOUTH HUTCHINSON
4501 W 4TH AVE
HUTCHINSON, KS 67501-9131

With photocopies to:

Stafford Field Office
Groundwater Management District No. 2

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

May 4, 2022

NICKERSON USD 309 – SOUTH HUTCHINSON
4501 W 4TH AVE
HUTCHINSON KS 67501-9131

RE: Water Right, File No. 44,425

Dear Mr. Schmitt:

Enclosed is the order executed by the Chief Engineer, Division of Water Resources, Kansas Department of Agriculture, approving the application for change under the referenced file.

Your attention is directed to the enclosures and to the terms, conditions, and limitations specified in the approval for change. A condition of the approval is that a water flowmeter meeting K.A.R. 5-1-4 through 5-1-12, must be installed on the diversion works. Please return the required *Notification of Completion of the Diversion Works and/or Installation of the Required Flowmeter*, as soon as these actions are completed. The Notice of Completion form may be found online at www.agriculture.ks.gov, Water Appropriation Forms, there is no fee for the required completion notification.

Any abandoned water wells must be plugged in accordance with the requirements of Article 30 of the Rules and Regulations as adopted by the Kansas Department of Health and Environment.

Since this order modifies the original document referred to above, it should be recorded with the Register of Deeds as other instruments affecting real estate.

If you have any questions, please contact our staff at the Stafford Field Office, 620-234-5311. If you wish to discuss a specific file, please have the file number ready so that we may help you more efficiently.

Sincerely,

A handwritten signature in black ink that reads "Kristen A. Baum". The signature is written in a cursive style.

Kristen A. Baum
New Application and Change Unit Supervisor
Water Appropriation Program

KAB:jne

Enclosure

pc: Stafford Field Office
Groundwater Management District No. 2

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:

- 1) request an evidentiary hearing before the Chief Engineer, or
- 2) 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 the Kansas Department of Agriculture, Attn: Legal Section, 1320 Research Park Drive, Manhattan, Kansas 66502, or by 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 the Secretary of Agriculture, Attn: Legal Division, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas 66502, or by 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. Any request for hearing or petition for administrative review shall be in writing and shall be submitted to the attention of: Chief Legal Counsel, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas 66502, Fax: (785) 564-6777.

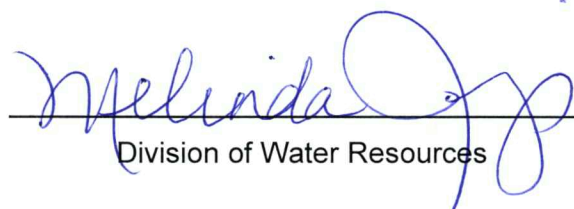
CERTIFICATE OF SERVICE

On this 4 day of May, 2022, I hereby certify that the attached Approval of Application for the Change in Place of Use, File No. 44,425, dated, 21 April, 2022, was mailed postage prepaid, first class, US mail to the following:

USD 309 NICKERSON SOUTH HUTCHINSON
4501 W 4TH AVE
HUTCHINSON, KS 67501-9131

With photocopies to:

Stafford Field Office
Groundwater Management District No. 2


Division of Water Resources