63

Submit To:
CHIEF ENGINEER
Division of Water Resources
Kansas Department of Agriculture 1320 Research Park Drive Manhattan, KS 66502-5000
http://agriculture.ks.gov/dwr

APPLICATION FOR PERMIT TO APPROPRIATE WATER FOR BENEFICIAL USE

State of Kansas

STATUTORY FILING FEE MUST ACCOMPANY THIS APPLICATION
Please refer to the Fee Schedule attached to this application form.

WATER RESOURCES RECEIVED
JAN 27 2025
KS DEPT OF AGRICULTURE
12:10 PM

File Number: 51408
This item to be completed by the Division of Water Resources staff.

1. Name of Applicant: ILS Land LLC
   Address: 551 SW 30 Rd
   City: Great Bend State: KS Zip Code: 67530-9730
   Phone: 620-792-6166 Email: water@ilsbeef.com

2. The source of water is: ☐ surface water in ---
   (stream)
   ☒ groundwater in Arkansas River
   (drainage basin)

3. The maximum annual quantity of water desired is 148.67 ☒ acre-feet ☐ gallons
   to be diverted at a maximum rate of 512 ☒ gpm ☐ c.f.s ☐ natural flows ☐ natural evaporation

   ☐ This project involves surface water storage and rediversion. The maximum annual quantity of water desired to be rediverted is --- ☐ acre-feet ☐ gallons, at a rate of --- ☐ gpm ☐ c.f.s.

Conversion Factors
1 acre-foot (AF) = 325,851 gallons
1 million gallons (mg) = 3.07 acre-feet (AF)
1 cubic foot per second (c.f.s.) = 448.8 gallons per minute (gpm)

IMPORTANT: Once your application has been assigned a priority date and file number, the requested maximum rate of diversion and maximum requested annual quantity of water under that priority number can **NOT** be increased. Please be certain your requested maximum rate of diversion and maximum annual quantity of water are appropriate and reasonable for your proposed project.

4. The water is intended to be appropriated for the following use(s):

☐ Artificial Recharge*	☒ Irrigation*	☐ Recreational*	☐ Water Power*
☐ Industrial*	☐ Municipal*	☐ Stockwatering*	☐ Sediment Control
☐ Domestic	☐ Dewatering	☐ Hydraulic Dredging	☐ Fire Protection
☐ Thermal Exchange	☐ Contamination Remediation		

*__IMPORTANT:__ You **must** submit a supplemental form providing information to substantiate your request for the quantity of water listed in Item No. 3 for the intended use(s) referenced above

FOR OFFICE USE ONLY
FO 2 GMD 5 DUA - Use IRR Source GW County PN By KJN Date 1/27/25
Code RE-2 Fee $ 300 TR # Receipt Date 1/27/2025 Check # 2520

DWR 1-100 (Revised 02/16/2023)

1/28/2025
KAnderson

File No. _____

5. The location(s) of the proposed diversion work(s) (well, pumpsite, etc.) are described below. Note that for the application to be accepted, the point of diversion location(s) **must** be described to at least a 10-acre tract, unless you specifically request a 60-day period of time in which to locate the site within a specifically described, minimal legal quarter section of land. You can specify a nickname for the point of diversion via the A.K.A. line to help you identify it.

If the source of supply is groundwater, a separate application shall be filed for each proposed well or battery of wells, except that a single application may include up to four wells within a circle with a quarter ($^1/_4$) mile radius in the same local source of supply which do not exceed a maximum diversion rate of 20 gallons per minute per well.

A battery of wells is defined as two or more wells connected to a common pump by a manifold; or not more than four wells in the same local source of supply within a 300-foot radius circle which are being operated by pumps not to exceed a total maximum diversion rate of 800gpm and which supply water to a common distribution system.

(A) One Near the Center of the Southwest quarter of Section 14, more particularly described as being near a point 1,308 feet North and 3,989 feet West of the Southeast corner of said section, in Township 23 South, Range 16 West, Pawnee County, KS. A.K.A: 63

(B) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____ West, _____ County, KS. A.K.A: _____

(C) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____ West, _____ County, KS. A.K.A: _____

(D) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____ West, _____ County, KS. A.K.A: _____

(E) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____ West, _____ County, KS. A.K.A: _____

6. The proposed project for diversion of water will consist of one well
(number of wells, pumps, dams, etc.)
and was/will be completed on or by the following date: Fall 2026
(date each was or will be completed)

7. The first actual application of water for the proposed beneficial use was or is estimated to be Fall 2026
(Date)

8. List any application, appropriation of water, water right, or vested right file number that covers the same point(s) of diversion or any of the same place of use described in this application. Also list any other recent modifications made to existing permits or water rights in conjunction with the filing of this application.

Place of Use: 51284 - If this new app is approvable, a change in place of use will be filed under File No. 51284 to create a complete place of use overlap. Point of Diversion: none This application is an offset under K.A.R. 5-25-22 from File Nos.21117 and 21776 in Zone B. File No. 21117 and 21776 are currently in a 25.97% response area. These files are also being used as offsets for proposed apps in the SW of 14-23-16W and the NE of 26-23-16W, Pawnee County. File Nos. 21117 and 21776 will be dismissed if all apps are approved.

File No. _____

9. Will pesticide, fertilizer, or other foreign substance be injected into the water pumped from the diversion works?

☐ Yes ☐ No If yes, a check valve shall be required. All chemigation safety requirements must be met including a chemigation permit and reporting requirements.

10. If you are planning to impound water, please contact DWR prior to submitting this application. Please attach a reservoir area capacity table and inform us of the total acres of surface drainage area above the reservoir.

Have you made an application for a permit for construction of this dam and reservoir with DWR? ☐ Yes ☒ No

If yes, write the Water Structures permit number here: ---

11. Furnish a detailed topographic or aerial map that depicts the following information:

The application **must** be supplemented by a topographic map, aerial photograph or a detailed plat showing the information described in A-D below.

(A) The center of the section, the section lines or the section corners, and labels showing the appropriate section, township and range numbers, as well as a north arrow and scale,

(B) The location of the proposed point(s) of diversion (wells, stream-bank installations, dams, or other diversion works) described in Item No. 5 of the application, showing the North-South distance and the East-West distance from a section line or southeast corner of section,

(C) The location of the proposed place of use identified by crosshatching,

(D) **For Groundwater Use,** the location of any existing water wells of any kind within 1/2 mile of the proposed well or wells and indicate for each well its type of use and the name and mailing address of the property owner or owners, (If there are no wells within 1/2 mile, please indicate that on the map.)

For Surface Water Use, the names and addresses of the landowner(s) 1/2 mile downstream and 1/2 mile upstream from your property lines, and

(E) The locations of proposed or existing dams, dikes, reservoirs, canals, pipelines, power houses, and any other structures for the purpose of storing, conveying, or using water.

12. For groundwater use, furnish copies of the driller's logs for all test holes or completed wells. Please ensure that the driller's logs provide depth to the static water level. If driller's logs cannot be obtained for an existing well, provide the following information:

Well location as shown in Item No. 5	(A)	(B)	(C)	(D)	(E)
Date drilled					
Total depth of well					
Depth to static water level					

12. The owner(s) of the point of diversion, if other than the applicant, is/are:

ILS Land LLC, 551 SW 30 Rd, Great Bend KS 67530-9730 (PersonID 59931-1)

(name, address, and phone)

(name, address, and phone)

File No. _____

14. The owner(s) of the property where the water is used, if other than the applicant, is/are:

ILS Land LLC, 551 SW 30 Rd, Great Bend KS 67530-9730 (PersonID 59931-1)
(name, address, and phone)

_____
(name, address, and phone)

15. The relationship of the applicant to the proposed place where the water will be used is that of:

☒ Owner ☐ Agent ☐ Tenant ☐ Other: _____

16. A water use correspondent (WUC) must be designated. The WUC will be mailed the annual water use report, which must be filed with the Division by March 1 of each year. Failure to timely file an accurate water use report will subject the owner(s) to a civil fine of up to $1,000 and potential suspension of the water appropriation or right. By signing this application, I verify that the owner(s) of the water right or permit have confirmed that the following person or agent should be designated as the WUC:

ILS Farms, WFY Holding Company Inc, 551 SW 30 Rd, Great Bend KS 67530-9730 (PersonID 61230 - 3)
(name, address, and phone)

17. I understand that if this application is approved, there could be times, as determined by the Division of Water Resources, when I would not be allowed to divert water. This could affect the economics of my decision to appropriate water. Situations where this might occur may include times when minimum desirable streamflow (MDS) requirements are not met, when Assurance District or Water Marketing releases are made from storage in federal reservoirs, when a Water Reservation Right upstream of a federal reservoir is administered, or when water rights administration becomes necessary to prevent impairment.

I declare, under penalty of perjury, that I have legal access to or control of, the point(s) of diversion described in this application from the landowner or the landowner's authorized representative.

By signing below, I verify that the information set forth above is true to the best of my knowledge, I agree with all statements made above, and that this application is submitted in good faith.

Garret W Smith — 01/24/2025
(Applicant Signature) (Date)

Garret Smith
(Applicant Name – Please Print)

Director of Farm Operations
(Applicant Title, if applicable – Please Print)

WATER RESOURCES
RECEIVED
JAN 27 2025
KS DEPT OF AGRICULTURE

Assisted By EKF
(office/title)

FEE SCHEDULE

Make checks payable to the Kansas Department of Agriculture.

1. The fee for an application for a permit to appropriate water for beneficial use, except for domestic, waterpower, dewatering, or sediment control use, shall be (see No. 2 below if requesting storage):

Million Gallons (mg)	Acre-Feet (AF)	Fee
≤ 32.585	≤ 100	$200.00
32.586 - 104.272	100.1 – 320.0	$300.00
> 104.272	> 320	$300.00 plus $20 for each additional 100AF (32.586mg) or any part thereof

2. The fee for an application in which **storage** of water is requested, except for domestic use, shall be:

Million Gallons (mg)	Acre-Feet (AF)	Fee
≤ 81.462	≤ 249.9	$200.00
≥ 81.463	≥ 250	$200.00 plus $20 for each additional 100AF (32.586mg) or any part thereof

Note: If an application requests both direct use *and* storage, the fee charged shall be as determined under No. 1 or No. 2 above, whichever is greater, but not both fees.

3. The fee for an application for **waterpower** or **dewatering** use shall be $100.00 plus $200.00 for each 44,880 gallons per minute (100 c.f.s.), or part thereof, of the diversion rate requested.

IMPORTANT NOTICE

If this application is approved, the applicant shall notify the Chief Engineer when the diversion works (well, pump, reservoir, pit, etc.) has/have been completed via the *Notice of Completion of Diversion Works* form (DWR 1-203.11) and along with the statutorily required field inspection fee of:

- $200.00 for sediment control use or groundwater pits for industrial use, or
- $400.00 for all other uses made of water

Failure to complete the diversion works by the deadline specified in the *Approval of Application and Permit to Proceed* (or any subsequent extension of time of said deadline) and/or failure to submit the proper notice and field inspection fee will result in the dismissal of the appropriation and forfeiture of any priority associated with it.

For assistance with this application, please contact the Division of Water Resources (DWR).

Manhattan HQ
1320 Research Park Dr.
Manhattan, KS 66502
785-564-6638

Topeka Field Office
1131 SW Winding Rd, Ste 400
Topeka, KS 66615
785-296-5733

Stafford Field Office
300 S. Main St
Stafford, KS 67578
620-234-5311

Stockton Field Office
820 S. Walnut
Stockton, KS 67669
785-425-6787

Garden City Field Office
4532 W. Jones Ave, Ste B
Garden City, KS 67846
620-276-2901

Helpful Sources of Information

DWR Water Appropriation Program https://agriculture.ks.gov/divisions-programs/dwr/water-appropriation
DWR Water Appropriation Forms https://agriculture.ks.gov/divisions-programs/dwr/water-appropriation/water-appropriation-forms
KGS Water Well Completion Records https://www.kgs.ku.edu/Magellan/WaterWell/index.html
DWR Structures Program https://agriculture.ks.gov/divisions-programs/dwr/dam-safety/permit-requirements

WATER RESOURCES
RECEIVED

JAN 27 2025

KS DEPT OF AGRICULTURE

IRRIGATION USE
SUPPLEMENTAL SHEET

File No. _____

Name of Applicant (Please Print): ILS Land LLC

1. Please supply the name and address of each landowner, the legal description of the lands to be irrigated, and designate the actual number of acres to be irrigated in each forty acre tract or fractional portion thereof:

Landowner of Record NAME: ILS Land LLC

ADDRESS: 551 SW 30 Rd, Great Bend KS 67530-9730 (PersonID 59931-1)

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
14	23S	16W									33.75	33.75	33.75	33.75					135
15	23S	16W													33.75	33.75	33.75	33.75	135

Landowner of Record NAME: _____

ADDRESS: _____

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

Landowner of Record NAME: _____

ADDRESS: _____

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

2. Please complete the following information for the description of the operation for the irrigation project. Attach supplemental sheets as needed.

   a. Indicate the soils in the field(s) and their intake rates:

Soil Name	Percent of field (%)	Intake Rate (in/hr)	Irrigation Design Group
See attached map			
Total:	100 %		

   b. Estimate the average land slope in the field(s): _____%

      Estimate the maximum land slope in the field(s): _____%

   c. Type of irrigation system you propose to use (check one):

      X Center pivot _____ Center pivot - LEPA _____ "Big gun" sprinkler

      _____ Gravity system (furrows) _____ Gravity system (borders) _____ Sideroll sprinkler

      Other, please describe: _____

   d. System design features:

      i. Describe how you will control tailwater:

      ii. For sprinkler systems:

         (1) Estimate the operating pressure at the distribution system: _____ psi

         (2) What is the sprinkler package design rate? _____ gpm

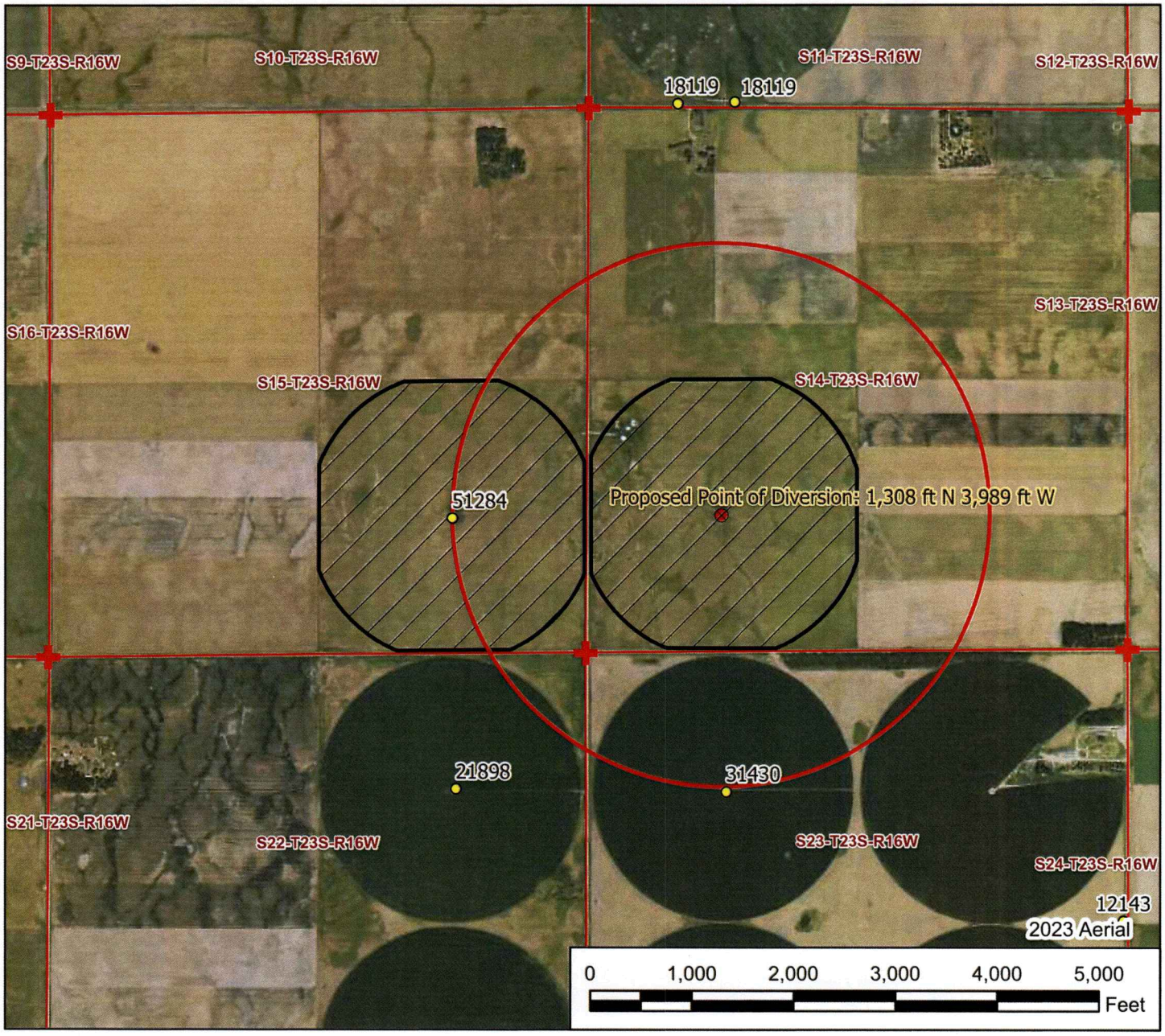
         (3) What is the wetted diameter (twice the distance the sprinkler throws water) of a sprinkler on the outer 100 feet of the system? _____ feet

         (4) Please include a copy of the sprinkler package design information.

   e. Crop(s) you intend to irrigate. Please note any planned crop rotations:

   f. Please describe how you will determine when to irrigate and how much water to apply (particularly important if you do not plan a full irrigation). These systems are proposed to be a part of the nutrient management plan for a proposed stock facility to be located in 23-23S-16W. Water from the lagoons at the facility will be applied to these acres to supplement the freshwater used from the proposed groundwater wells.

You may attach any additional information you believe will assist in informing the Division of the need for your request.



Legend

- Water Appropriation
- Proposed Point of Diversion
- Domestic Well
- Section Corner
- Section Line
- Half Mile Circle
- Proposed Place of Use

New Application, File No. _____

Permit to Proceed Application Map
14-23S-16W // Pawnee County

N

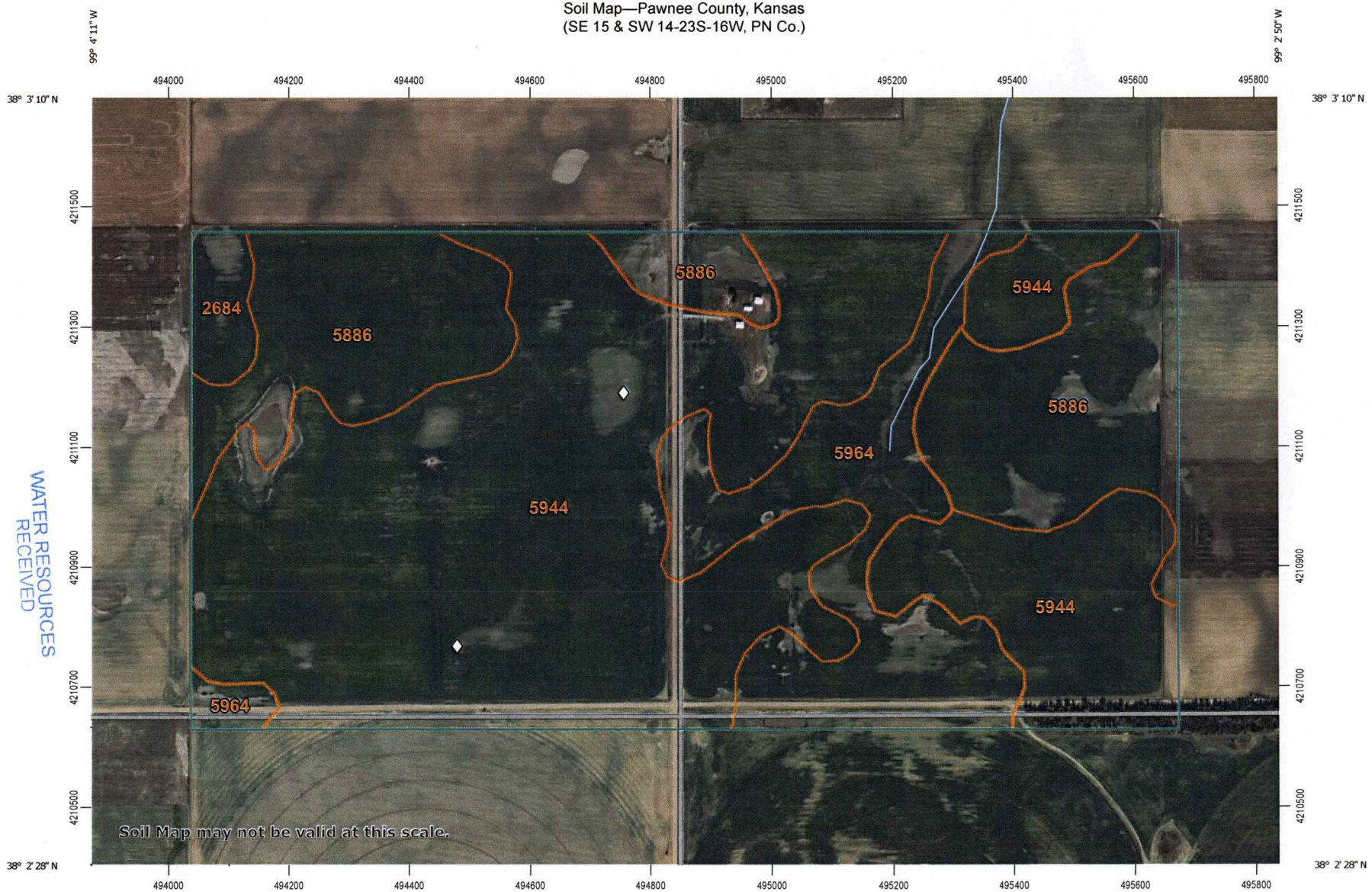
To the best of my knowledge, all groundwater wells within one-half mile of the proposed point of diversion have been shown and belong to the applicant.

Garrett W Smith 01/24/2025

Signature / Date

1/23/2025 EKF/SFFO 1:17,000 scale

Soil Map—Pawnee County, Kansas
(SE 15 & SW 14-23S-16W, PN Co.)



Map Scale: 1:9,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

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

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Pawnee County, Kansas
Survey Area Data: Version 23, Sep 5, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 29, 2021—Nov 15, 2021

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2684	Lubbock silt loam, 0 to 1 percent slopes	6.3	1.9%
5886	Farnum and Funmar loams, 0 to 1 percent slopes	77.8	23.1%
5944	Saltcreek and Naron fine sandy loams, 1 to 3 percent slopes	203.2	60.4%
5964	Tabler clay loam, 0 to 1 percent slopes	49.0	14.6%
Totals for Area of Interest		**336.3**	**100.0%**

Pawnee County, Kansas

5886—Farnum and Funmar loams, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tt7g
Elevation: 1,660 to 2,610 feet
Mean annual precipitation: 25 to 33 inches
Mean annual air temperature: 55 to 57 degrees F
Frost-free period: 180 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Farnum and similar soils: 41 percent
Funmar and similar soils: 39 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Farnum

Setting

Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium

Typical profile

Ap - 0 to 9 inches: loam
Bt1 - 9 to 25 inches: loam
Bt2 - 25 to 48 inches: sandy clay loam
Bt3 - 48 to 73 inches: clay loam
Btk - 73 to 79 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R079XY115KS - Loamy Plains
Hydric soil rating: No

Description of Funmar

Setting

Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy alluvium over clayey alluvium

Typical profile

Ap - 0 to 12 inches: loam
Bt1 - 12 to 26 inches: loam
Bt2 - 26 to 32 inches: loam
2Ab - 32 to 38 inches: silty clay loam
2Btb - 38 to 54 inches: silty clay loam
2Btkb - 54 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: C
Ecological site: R079XY115KS - Loamy Plains
Hydric soil rating: No

Minor Components

Naron

Percent of map unit: 10 percent
Landform: Dunes on paleoterraces
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R079XY122KS - Sandy Loam
Hydric soil rating: No

Nalim

Percent of map unit: 5 percent
Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R079XY115KS - Loamy Plains
Hydric soil rating: No

Taver

Percent of map unit: 4 percent
Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R079XY107KS - Clayey Plains
Hydric soil rating: No

Carbika

Percent of map unit: 1 percent
Landform: Depressions on interdunes on paleoterraces
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R079XY133KS - Wet Subirrigated
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Pawnee County, Kansas
Survey Area Data: Version 23, Sep 5, 2024

Pawnee County, Kansas

5944—Saltcreek and Naron fine sandy loams, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tt4z
Elevation: 1,660 to 2,610 feet
Mean annual precipitation: 25 to 33 inches
Mean annual air temperature: 55 to 57 degrees F
Frost-free period: 180 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Saltcreek and similar soils: 46 percent
Naron and similar soils: 44 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saltcreek

Setting

Landform: Dunes on paleoterraces
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits over alluvium

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bt1 - 8 to 15 inches: sandy clay loam
Bt2 - 15 to 26 inches: sandy clay loam
Bt3 - 26 to 39 inches: fine sandy loam
2Bt4 - 39 to 56 inches: silty clay
2Btk1 - 56 to 66 inches: silty clay loam
2Btk2 - 66 to 79 inches: silty clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R079XY122KS - Sandy Loam
Hydric soil rating: No

Description of Naron

Setting

Landform: Dunes on paleoterraces
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits

Typical profile

Ap - 0 to 12 inches: fine sandy loam
Bt1 - 12 to 34 inches: sandy clay loam
Bt2 - 34 to 51 inches: fine sandy loam
BC - 51 to 66 inches: fine sandy loam
C - 66 to 79 inches: fine sandy loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: R079XY122KS - Sandy Loam
Hydric soil rating: No

Minor Components

Hayes

Percent of map unit: 5 percent
Landform: Dunes on paleoterraces
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R079XY122KS - Sandy Loam

Hydric soil rating: No

Funmar

Percent of map unit: 3 percent
Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R079XY115KS - Loamy Plains
Hydric soil rating: No

Taver

Percent of map unit: 1 percent
Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R079XY107KS - Clayey Plains
Hydric soil rating: No

Carbika

Percent of map unit: 1 percent
Landform: Depressions on interdunes on paleoterraces
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R079XY133KS - Wet Subirrigated
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Pawnee County, Kansas
Survey Area Data: Version 23, Sep 5, 2024

Pawnee County, Kansas

5964—Tabler clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2ww0z
Elevation: 1,660 to 2,610 feet
Mean annual precipitation: 25 to 33 inches
Mean annual air temperature: 55 to 57 degrees F
Frost-free period: 180 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Tabler and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tabler

Setting

Landform: Paleoterraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 11 inches: clay loam
Btss - 11 to 28 inches: silty clay
Btkss - 28 to 42 inches: silty clay
Btk - 42 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: D
Ecological site: R079XY107KS - Clayey Plains

Hydric soil rating: No

Minor Components

Lubbock
Percent of map unit: 4 percent
Landform: Paleoterraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R079XY115KS - Loamy Plains
Hydric soil rating: No

Farnum
Percent of map unit: 3 percent
Landform: Paleoterraces
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R079XY115KS - Loamy Plains
Hydric soil rating: No

Naron
Percent of map unit: 2 percent
Landform: Dunes on paleoterraces
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Ecological site: R079XY122KS - Sandy Loam
Hydric soil rating: No

Carbika
Percent of map unit: 1 percent
Landform: Depressions on interdunes on paleoterraces
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: R079XY133KS - Wet Subirrigated
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Pawnee County, Kansas
Survey Area Data: Version 23, Sep 5, 2024