NOTICE

This scan only represents the application as filed. The information contained herein meets the requirements of K.A.R. 5-3-1 or K.A.R. 5-5-1, and has been found acceptable for filing in the office of the Chief Engineer. The application should not be considered to be a complete application as per K.A.R. 5-3-1b or K.A.R. 5-5-2a.

WATER RESOURCES
RECEIVED
SEP 13 2023
1254
KS DEPT OF AGRICULTURE

THE STATE OF KANSAS

KANSAS DEPARTMENT OF AGRICULTURE
Mike Beam, Secretary of Agriculture

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

File Number 51105
This item to be completed by the Division of Water Resources.

APPLICATION FOR PERMIT TO APPROPRIATE WATER FOR BENEFICIAL USE

Filing Fee Must Accompany the Application
(Please refer to Fee Schedule attached to this application form.)

To the Chief Engineer of the Division of Water Resources, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas 66502:

1. Name of Applicant (Please Print): Tyler J. Peterson
   Address: 1567 N 110th Rd
   City: Minneapolis, State KS Zip Code 67467
   Telephone Number: (785) 201-2561

2. The source of water is: ☐ surface water in _____ (stream)
   OR ☒ groundwater in Solomon River (drainage basin)

   Certain streams in Kansas have minimum target flows established by law or may be subject to administration when water is released from storage for use by water assurance district members. If your application is subject to these regulations on the date we receive your application, you will be sent the appropriate form to complete and return to the Division of Water Resources.

3. The maximum quantity of water desired is 270 acre-feet OR _____ gallons per calendar year, to be diverted at a maximum rate of 800 gallons per minute OR _____ cubic feet per second.

   Once your application has been assigned a priority, the requested maximum rate of diversion and maximum requested quantity of water under that priority number can **NOT** be increased. Please be certain your requested maximum rate of diversion and maximum quantity of water are appropriate and reasonable for your proposed project and are in agreement with the Division of Water Resources' requirements.

4. The water is intended to be appropriated for **(Check use intended):**

(a) ☐ Artificial Recharge	(b) ☒ Irrigation	(c) ☐ Recreational	(d) ☐ Water Power
(e) ☐ Industrial	(f) ☐ Municipal	(g) ☐ Stockwatering	(h) ☐ Sediment Control
(i) ☐ Domestic	(j) ☐ Dewatering	(k) ☐ Hydraulic Dredging	(l) ☐ Fire Protection
(m) ☐ Thermal Exchange	(n) ☐ Contamination Remediation		

YOU **MUST** COMPLETE AND ATTACH ADDITIONAL DIVISION OF WATER RESOURCES FORM(S) PROVIDING INFORMATION TO SUBSTANTIATE YOUR REQUEST FOR THE AMOUNT OF WATER FOR THE INTENDED USE REFERENCED ABOVE.

For Office Use Only:
F.O. 3 GMD _____ Meets K.A.R. 5-3-1 (YES / NO) Use IRR Source G / S County OT By ALB Date 9/13/23
Code RC2 Fee $ 300 TR # _____ Receipt Date 9/13/23 Check # 1724

DWR 1-100 (Revised 05/17/2019)

9/15/2023
KAnderson

File No. _____

5. The location of the proposed wells, pump sites or other works for diversion of water is:

Note: For the application to be accepted, the point of diversion location 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.

(A) One in the SE quarter of the SE quarter of the SW quarter of Section 12, more particularly described as being near a point 63 feet North and 2672 feet West of the Southeast corner of said section, in Township 10 South, Range 4 East (West) (circle one), Ottawa County, Kansas.

(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 _____ East/West (circle one), _____ County, Kansas.

(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 _____ East/West (circle one), _____ County, Kansas.

(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 _____ East/West (circle one), _____ County, Kansas.

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 (¼) 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 800 gallons per minute and which supply water to a common distribution system.

6. The owner of the point of diversion, if other than the applicant is (please print):
James Peterson Trust #1, 1335 Country Estates Dr. Salina, KS 67401 (785) 822-1962
(name, address and telephone number)

_____
(name, address and telephone number)

You must provide evidence of legal access to, or control of, the point of diversion from the landowner or the landowner's authorized representative. Provide a copy of a recorded deed, lease, easement or other document with this application. In lieu thereof, you may sign the following sworn statement:

> I have legal access to, or control of, the point of diversion described in this application from the landowner or the landowner's authorized representative. I declare under penalty of perjury that the foregoing is true and correct.
> Executed on September 10, 2023. Tyler Peterson
> Applicant's Signature

The applicant must provide the required information or signature irrespective of whether they are the landowner. Failure to complete this portion of the application will cause it to be unacceptable for filing and the application will be returned to the applicant.

7. The proposed project for diversion of water will consist of a battery of up to 4 wells
(number of wells, pumps or dams, etc.)
and (was)(will be) completed (by) 5/10/2025.
(Month/Day/Year - each was or will be completed)

8. The first actual application of water for the proposed beneficial use was or is estimated to be 10/10/2025.
(Mo/Day/Year)

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 the Division of Water Resources for assistance, prior to submitting the application. Please attach a reservoir area capacity table and inform us of the total acres of surface drainage area above the reservoir.

    Have you also made an application for a permit for construction of this dam and reservoir with the Division of Water Resources? ☐ Yes ☒ No

    - If yes, show the Water Structures permit number here n/a
    - If no, explain here why a Water Structures permit is not required n/a

11. The application must be supplemented by a U.S.G.S. topographic map, aerial photograph or a detailed plat showing the following information. On the topographic map, aerial photograph, or plat, identify the center of the section, the section lines or the section corners and show the appropriate section, township and range numbers. Also, please show the following information:

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

    (b) If the application is for groundwater, please show the location of any existing water wells of any kind within ½ mile of the proposed well or wells. Identify each existing well as to its use and furnish the name and mailing address of the property owner or owners. If there are no wells within ½ mile, please advise us.

    (c) If the application is for surface water, the names and addresses of the landowner(s) ½ mile downstream and ½ mile upstream from your property lines must be shown.

    (d) The location of the proposed place of use should be shown by crosshatching on the topographic map, aerial photograph or plat.

    (e) Show the location of the pipelines, canals, reservoirs or other facilities for conveying water from the point of diversion to the place of use.

    A 7.5 minute U.S.G.S. topographic map may be obtained by providing the section, township and range numbers to: Kansas Geological Survey, 1930 Constant, Campus West, University of Kansas, Lawrence, Kansas 66047.

12. List any application, appropriation of water, water right, or vested right file number that covers the same diversion points 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.

    Applicant requests 60 days to provide drillers test log for desired point of diversion in SW¼ of 12-10S-4W in Ottawa County, KS.

File No. _____

13. Furnish the following well information if the proposed appropriation is for the use of groundwater. If the well has not been completed, give information obtained from test holes, if available.

Information below is from: ☐ Test holes ☐ Well as completed ☐ Drillers log attached

Well location as shown in paragraph No.	(A)	(B)	(C)	(D)
Date Drilled				
Total depth of well				
Depth to water bearing formation				
Depth to static water level				
Depth to bottom of pump intake pipe				

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

_____.
(owner, tenant, agent or otherwise)

15. The owner(s) of the property where the water is used, if other than the applicant, is (please print):

James Peterson Trust #1, 133 S. Country Estates Dr. Salina, KS 67401 (785)822-1962
(name, address and telephone number)

Tandis Peterson Trust #1, 133 S. Country Estates Dr. Salina, KS 67401 (785)822-1961
(name, address and telephone number)

16. The undersigned states that the information set forth above is true to the best of his/her knowledge and that this application is submitted in good faith.

Dated at Minneapolis, Kansas, this 10th day of September (month), 2023 (year).

Tyler Peterson
(Applicant Signature)

By _____
(Agent or Officer Signature)

_____
(Agent or Officer - Please Print)

Assisted by _____ _____ Date: _____
(office/title)

FEE SCHEDULE

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

ACRE-FEET	FEE
0-100	$200.00
101-320	$300.00
More than 320	$300.00 plus $20.00 for each additional 100 acre-feet or any part thereof.

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

ACRE-FEET	FEE
0-250	$200.00
More than 250	$200.00 plus $20.00 for each additional 250 acre-feet of storage 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 a permit to appropriate water for water power or dewatering purposes shall be $100.00 plus $200.00 for each 100 cubic feet per second, or part thereof, of the diversion rate requested.

   Note: The applicant shall notify the Chief Engineer and pay the statutorily required field inspection fee of $400.00 when construction of the works for diversion has been completed, except that for applications filed on or after July 1, 2009, for works constructed for sediment control use and for evaporation from a groundwater pit for industrial use shall be accompanied by a field inspection fee of $200.00.

MAKE CHECKS PAYABLE TO THE KANSAS DEPARTMENT OF AGRICULTURE

ATTENTION

A Water Conservation Plan may be required per K.S.A. 82a-733. A statement that your application for permit to appropriate water may be subject to the minimum desirable streamflow requirements per K.S.A. 82a-703a, b, and c may also be required from you. After the Division of Water Resources has had the opportunity to review your application, you will be notified whether or not you will need to submit a Water Conservation Plan. You also may be required to install a water flow meter or water stage measuring device on your diversion works prior to diverting water. There may be other special conditions or Groundwater Management District regulations that you will need to comply with if this application is approved.

CONVERSION FACTORS

1 acre-foot equals 325,851 gallons

1 million gallons equal 3.07 acre-feet

- ½ Mile Radius From Proposed Point of Diversion
- Proposed place of use

No known wells within ½ mile of proposed point of diversion

All wells of any kind within ½ mile of the proposed point of diversion have been plotted

Signed Tyler J Peterson

Date 9/10/2023

IRRIGATION USE
SUPPLEMENTAL SHEET

File No. _____

Name of Applicant (Please Print): Tyler J. Peterson

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: James Peterson Trust #1

ADDRESS: 133 S. Country Estates Dr. Salina KS 67401

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
12	10S	4W					40	40	40	40	40	40	40	40					320
11	10S	4W													40	40	38	40	158

Landowner of Record NAME: Tandis Peterson Trust #1

ADDRESS: 133 S. Country Estates Dr. Salina, KS 67401

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	10S	4W													40	40	40	40	160

Landowner of Record NAME: Tyler Peterson

ADDRESS: 1567 N 110th Rd Minneapolis, KS 67467

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
11	10S	4W	40	40	40	40													160

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: *see attached Soil map packet*

Soil Name	Percent of field (%)	Intake Rate (in/hr)	Irrigation Design Group
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
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:

Wheat grain Sorghum
Soybean
Corn

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).

- soil moisture probes

- Crop water use using ET data

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

9/11/2023
(Date)

Kansas Department of Agriculture
Division of Water Resources
Earl D. Lewis, Jr., Chief Engineer
1320 Research Park Drive
Manhattan, Kansas 66502

Re: Application
File No. _____

Minimum Desirable Streamflow

I understand that a Minimum Desirable Streamflow requirement has been established by the legislature for the source of supply to which the above referenced application applies.

I understand that diversion of water pursuant to this application will be subject to regulation any time Minimum Desirable Streamflow requirements are not being met.

I also 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. I realize that this could affect the economics of my decision to appropriate water.

I am aware of the above factors, and with the knowledge thereof, request that the Division of Water Resources proceed with processing and approval, if possible, of the above referenced application.

Tyler J Peterson
Signature of Applicant

Tyler J Peterson
(Print Applicant's Name)

State of Kansas)
) ss
County of Saline)

I hereby certify that the foregoing instrument was signed in my presence and sworn to before me this 11 day of Sept, 2023.

Kathy J Hollis
Notary Public

My Commission Expires: June 01, 2025

Kathy J. Hollis
Notary Public
State of Kansas
My Appointment Expires June 1, 2025

DWR 1-100.171 (Revised 06/16/2014)

MINIMUM DESIRABLE STREAMFLOW FORM TO BE USED WHEN APPLICABLE WHEN FILING AN APPLICATION FOR PERMIT TO APPROPRIATE WATER FOR BENEFICIAL USE

The Kansas Legislature has established minimum desirable streamflows for the streams listed below. If your proposed diversion of water is going to be from one of these watercourses or adjacent alluvial aquifers, please complete the back side of this page and submit it along with your application for permit to appropriate water.

Arkansas River
Big Blue River
Chapman Creek
Chikaskia River
Cottonwood River
Delaware River
Little Arkansas River
Little Blue River
Marais des Cygnes River
Medicine Lodge River
Mill Creek (Wabaunsee Co. area)
Neosho River
Ninnescah River
North Fork Ninnescah River
Rattlesnake Creek
Republican River
Saline River
Smoky Hill River
Solomon River
South Fork Ninnescah
Spring River
Walnut River
Whitewater River

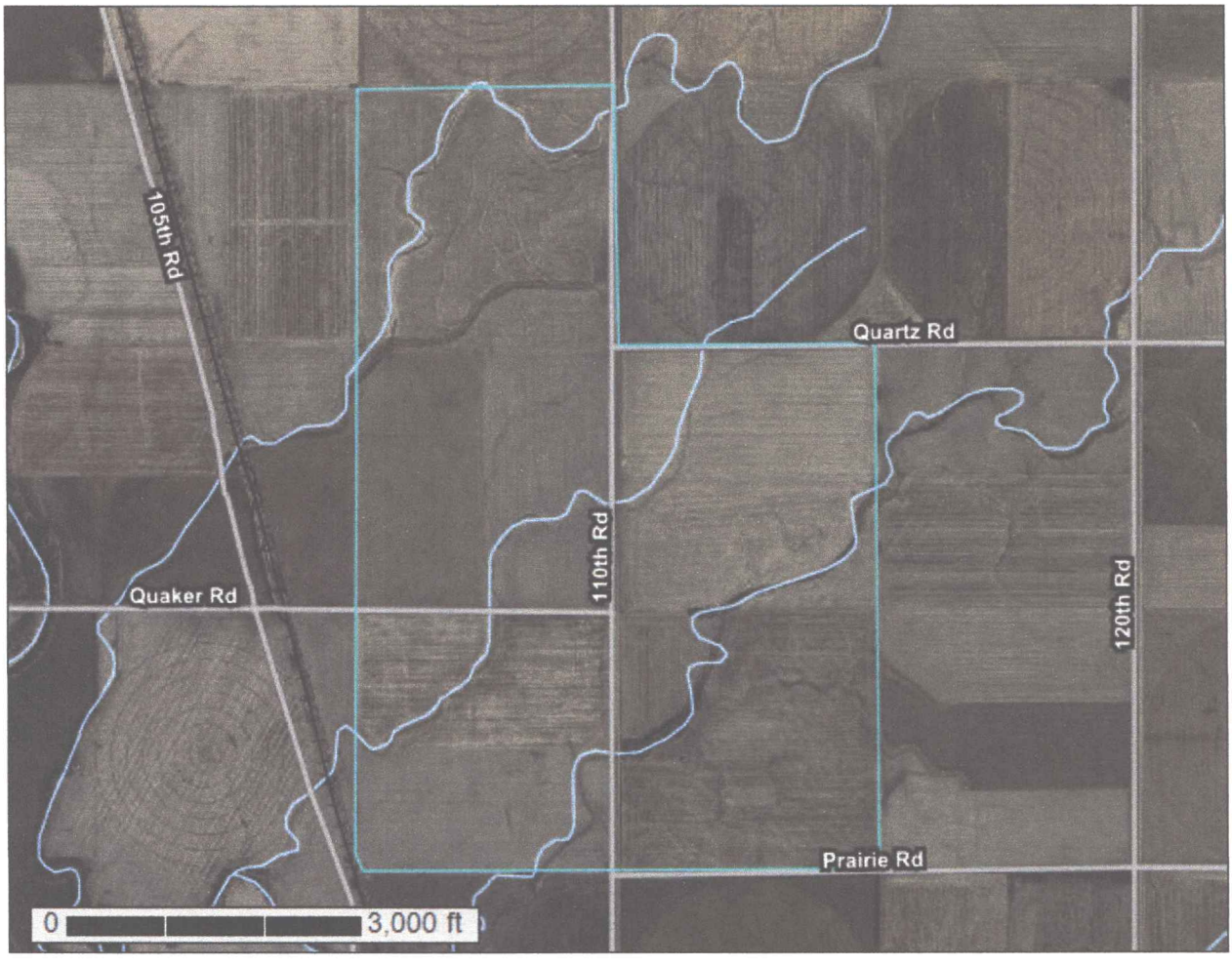
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Ottawa County, Kansas



September 10, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

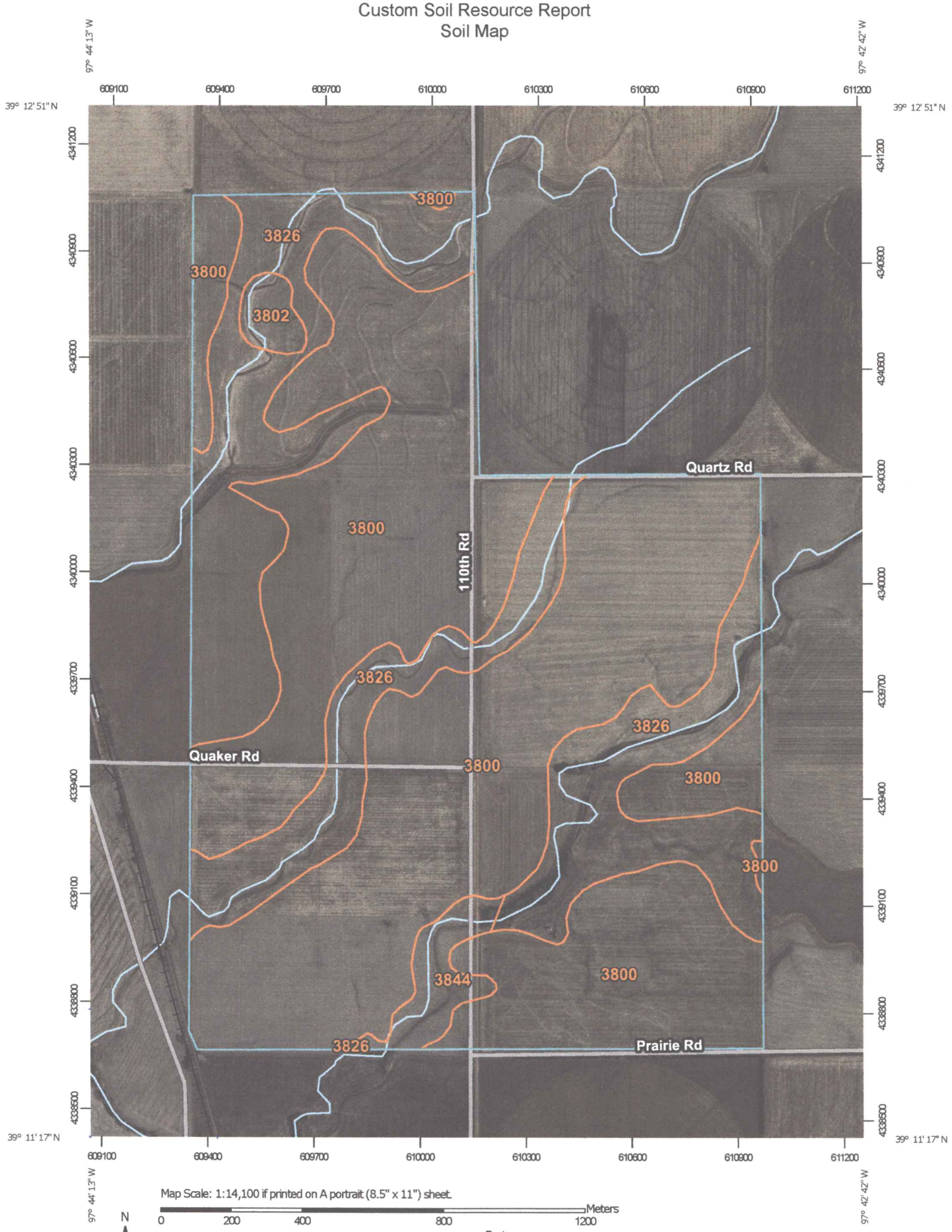
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:14,100 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 200, 400, 800, 1200

Feet: 0, 500, 1000, 2000, 3000

N

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.

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: Ottawa County, Kansas
Survey Area Data: Version 20, Sep 13, 2022

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

Date(s) aerial images were photographed: Mar 16, 2022—Mar 28, 2022

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
3800	Crete silt loam, 0 to 1 percent slopes, loess plains and breaks	538.4	67.2%
3802	Crete silty clay loam, 3 to 7 percent slopes, eroded, loess plains and breaks	8.1	1.0%
3826	Crete silt loam, 3 to 7 percent slopes	237.0	29.6%
3844	Geary silt loam, 3 to 7 percent slopes	17.1	2.1%
Totals for Area of Interest		**800.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Ottawa County, Kansas

3800—Crete silt loam, 0 to 1 percent slopes, loess plains and breaks

Map Unit Setting

National map unit symbol: 2r9c8
Elevation: 1,310 to 1,640 feet
Mean annual precipitation: 27 to 34 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 165 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Crete

Setting

Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 6 inches: silt loam
BA - 6 to 15 inches: silty clay loam
Bt1 - 15 to 25 inches: silty clay
Bt2 - 25 to 33 inches: silty clay
Bk - 33 to 40 inches: silty clay loam
C - 40 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 10.7 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: R074XY107KS - Clay Hills
Hydric soil rating: No

Minor Components

Hastings

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

Butler

Percent of map unit: 3 percent
Landform: Swales
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R074XY107KS - Clay Hills
Hydric soil rating: No

Geary

Percent of map unit: 1 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

Aquolls, occasionally ponded

Percent of map unit: 1 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R074XY132KS - Subirrigated
Hydric soil rating: Yes

3802—Crete silty clay loam, 3 to 7 percent slopes, eroded, loess plains and breaks

Map Unit Setting

National map unit symbol: 2r9cf
Elevation: 1,310 to 1,640 feet
Mean annual precipitation: 27 to 34 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 165 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Crete, Eroded

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 6 inches: silty clay loam
Bt1 - 6 to 15 inches: silty clay
Bt2 - 15 to 24 inches: silty clay
Bk - 24 to 30 inches: silty clay loam
C - 30 to 79 inches: silty clay loam

Properties and qualities

Slope: 3 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
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 10.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R074XY107KS - Clay Hills
Hydric soil rating: No

Minor Components

Geary

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

Hobbs, occasionally flooded

Percent of map unit: 3 percent
Landform: Drainageways
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R074XY113KS - Loamy Floodplain
Hydric soil rating: No

Hastings

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

Lancaster

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

Aquolls, occasionally ponded

Percent of map unit: 1 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R074XY132KS - Subirrigated
Hydric soil rating: Yes

3826—Crete silt loam, 3 to 7 percent slopes

Map Unit Setting

National map unit symbol: 2r9cl
Elevation: 1,310 to 1,640 feet
Mean annual precipitation: 27 to 34 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 165 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Crete

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 5 inches: silt loam
BA - 5 to 10 inches: silty clay loam
Bt1 - 10 to 21 inches: silty clay
Bt2 - 21 to 30 inches: silty clay
Bk - 30 to 38 inches: silty clay loam
C - 38 to 79 inches: silty clay loam

Properties and qualities

Slope: 3 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
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): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R074XY107KS - Clay Hills
Hydric soil rating: No

Minor Components

Geary

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

Hobbs, occasionally flooded

Percent of map unit: 3 percent
Landform: Drainageways
Down-slope shape: Concave
Across-slope shape: Linear

Ecological site: R074XY113KS - Loamy Floodplain
Hydric soil rating: No

Aquolls, occasionally ponded

Percent of map unit: 1 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R074XY132KS - Subirrigated
Hydric soil rating: Yes

Lancaster

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

Hastings

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

3844—Geary silt loam, 3 to 7 percent slopes

Map Unit Setting

National map unit symbol: 2r9ct
Elevation: 1,130 to 2,770 feet
Mean annual precipitation: 23 to 34 inches
Mean annual air temperature: 50 to 57 degrees F
Frost-free period: 150 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Geary and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Geary

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 8 inches: silt loam
BA - 8 to 14 inches: silty clay loam
Bt1 - 14 to 33 inches: silty clay loam
Bt2 - 33 to 46 inches: silty clay loam
BC - 46 to 54 inches: silty clay loam
C - 54 to 79 inches: silt loam

Properties and qualities

Slope: 3 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
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: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

Minor Components

Crete

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R074XY107KS - Clay Hills
Hydric soil rating: No

Hobbs, occasionally flooded

Percent of map unit: 4 percent
Landform: Drainageways
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R074XY113KS - Loamy Floodplain
Hydric soil rating: No

Hastings

Percent of map unit: 3 percent
Landform: Hillslopes

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

Kipson

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R076XY128KS - Shallow Hills
Hydric soil rating: No

Lancaster

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R074XY115KS - Loamy Hills
Hydric soil rating: No

Aquolls, occasionally ponded

Percent of map unit: 1 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R074XY132KS - Subirrigated
Hydric soil rating: Yes

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

DATA ENTRY SYSTEM ID NUMBER SHEET

FILE NUMBER 51105

APPLICANT PERSON ID & SEQ #		PDIV ID		BATTERY ID
66170		90552		

LANDOWNER PERSON ID & SEQ #		PUSE ID	
55409		71531	
68124		71532	
66170		71533	
		71534	

WATER USE CORRESPONDENT PERSON ID & SEQ #	
66170	

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Mike Beam, Secretary

Laura Kelly, Governor

September 15, 2023

TYLER J PETERSON
1567 N 110TH RD
MINNEAPOLIS KS 67467

RE: Application, File No(s). **51105**

Dear Sir or Madam:

The Division of Water Resources (Division) has received your application(s) for a permit to appropriate water for beneficial use. Your application(s) has been assigned the file number(s) referenced above. Please be aware that the Division may have a large number of pending applications on hand at times and makes every attempt to process them in the order in which they are received. You will be contacted if additional information is required.

Please note, this letter only acknowledges receipt of your application(s) and does not guarantee approval. In accordance with the provisions of the Kansas Water Appropriation Act, the use of water as proposed prior to approval of the application(s) is unlawful.

Additional information about the process may be found on our website at *agriculture.ks.gov/divisions-programs/dwr*. If you have any other questions, please contact our office at 785-564-6640 or your local Stockton Field Office at 785-425-6787. If you call, please reference the file number so we can help you more efficiently.

Sincerely,

Kris Neuhauser
New Applications Lead
Water Appropriation Program