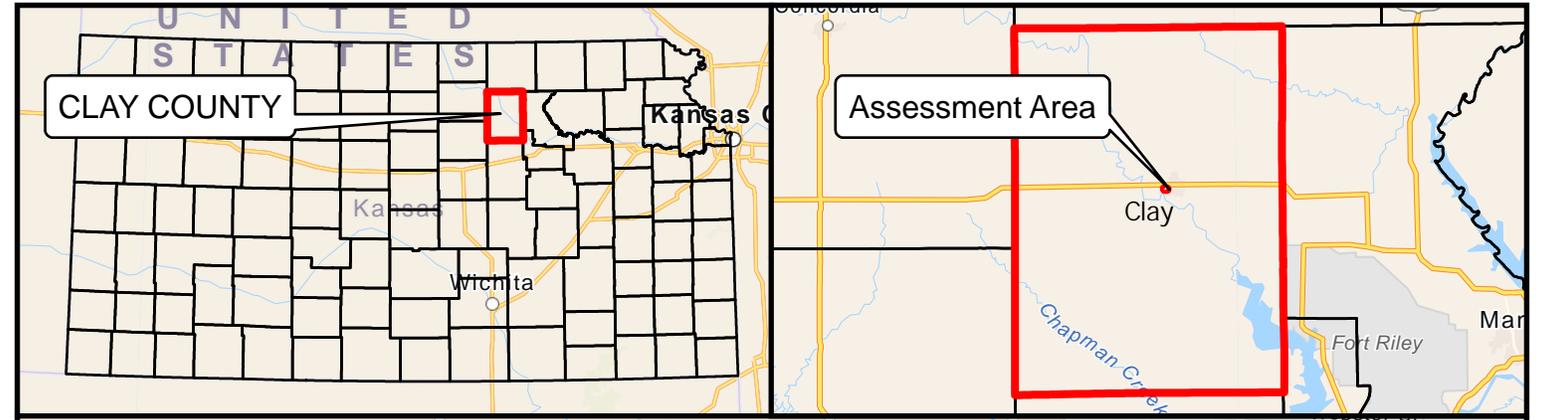


APPENDIX A

EXHIBITS A1 - A7



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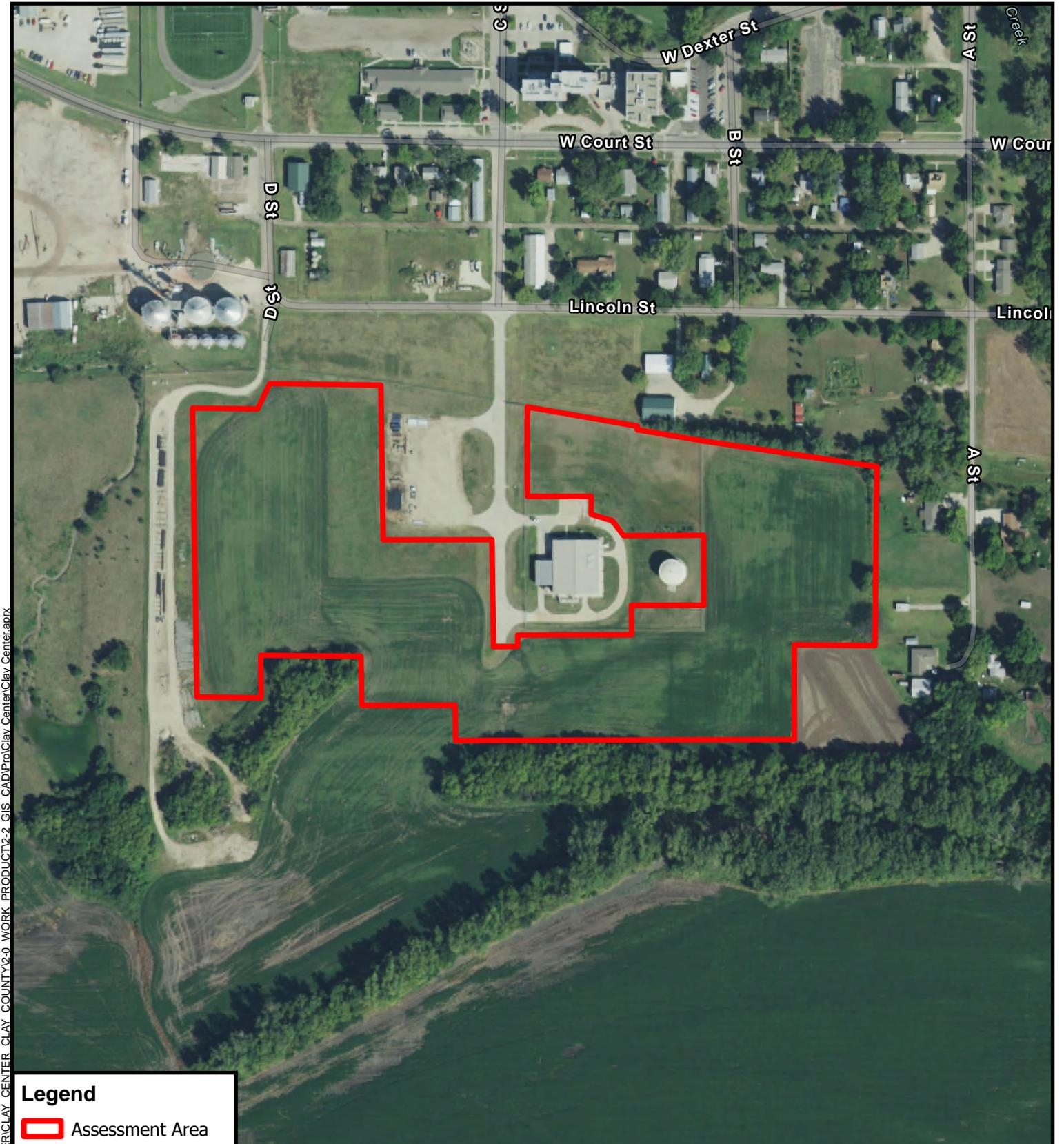
EXHIBIT 1 OF 7

0 600 1,200 Feet

EXHIBIT A-1
GENERAL LOCATION MAP
18.44-ACRE ASSESSMENT AREA
CLAY CENTER KANSAS SOLAR SITE
CLAY COUNTY, KANSAS
KPP ENERGY

481 WINSOTT ROAD
SUITE 200
BENBROOK, TEXAS 76126
PHONE: (817) 744-7512
FAX: (817) 744-7554

DATE: 11/13/2024



Path: S:\ENVIRONMENTAL\PRIORITY_POWER\CLAY_CENTER\CLAY_COUNTY2.0_WORK_PRODUCT\2.2_GIS_CAD\ProClay_Center\Clay_Center.aprx

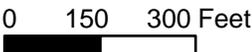
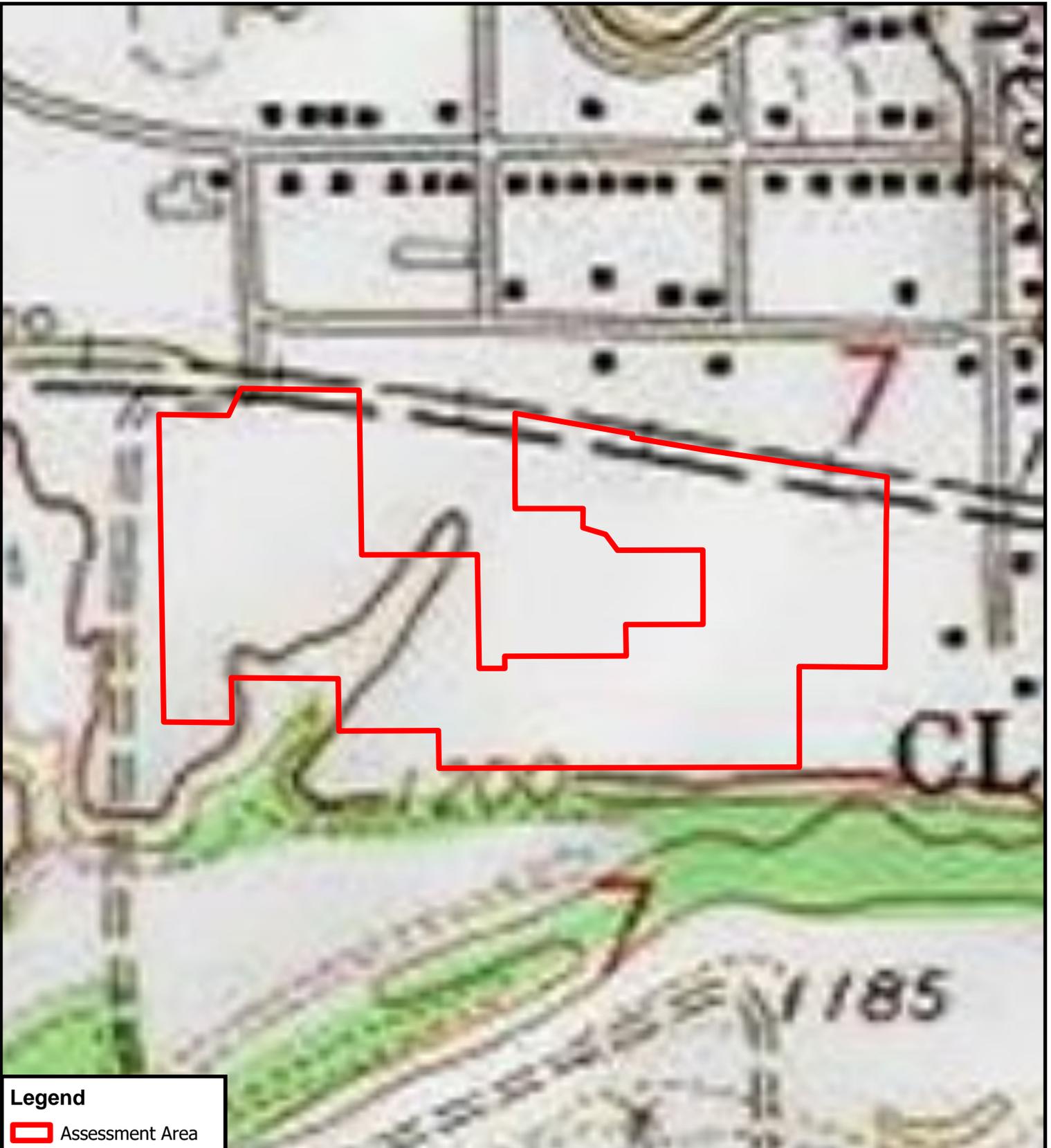
| | |
|---|-----------------|
| Legend | |
|  | Assessment Area |
|  | |
| EXHIBIT 2 OF 7 | |
|  | |

EXHIBIT A-2
2021 AERIAL PHOTOGRAPH MAP
18.44-ACRE ASSESSMENT AREA
CLAY CENTER KANSAS SOLAR SITE
CLAY COUNTY, KANSAS
KPP ENERGY

| |
|--|
|  TOPOGRAPHIC <small>LOYALTY INNOVATION LEGACY</small> |
| 481 WINSOTT ROAD SUITE 200 BENBROOK, TEXAS 76126 PHONE: (817) 744-7512 FAX: (817) 744-7554 |
| DATE: 11/13/2024 |

Path: S:\ENVIRONMENTAL\PRIORITY_POWER\CLAY_CENTER\CLAY_COUNTY2.0_WORK\PRODUCT2-2_GIS_CAD\ProClay_Center\Clay_Center.aprx



Legend

 Assessment Area

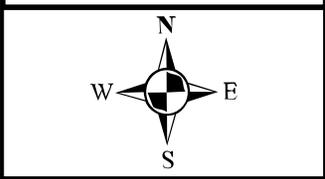


EXHIBIT 3 OF 7

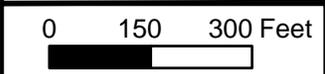
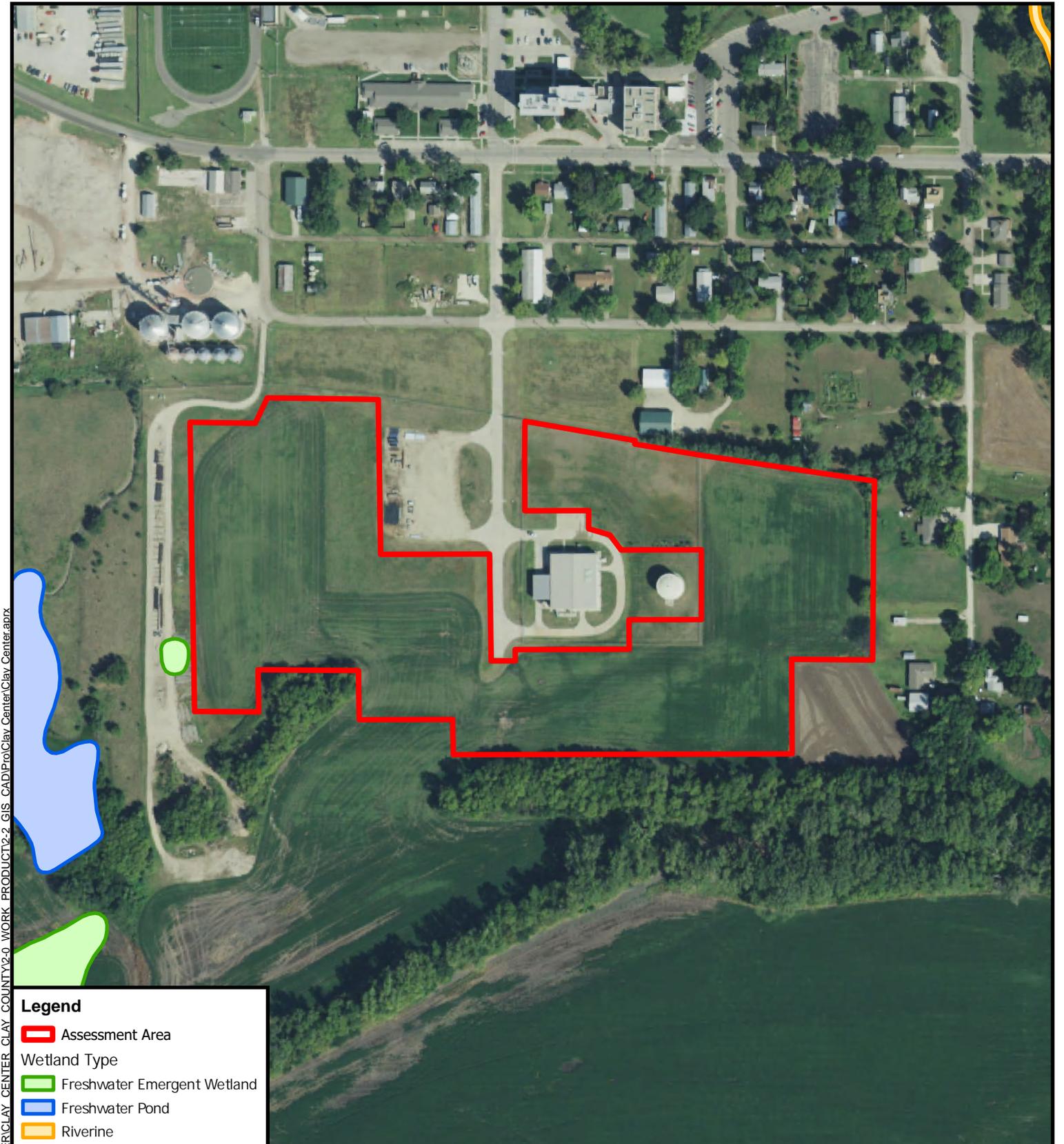


EXHIBIT A-3
USGS TOPOGRAPHIC MAP
CLAY CENTER NW AND SW, KS QUADRANGLES
18.44-ACRE ASSESSMENT AREA
CLAY CENTER KANSAS SOLAR SITE
CLAY COUNTY, KANSAS
KPP ENERGY

 **TOPOGRAPHIC**
LOYALTY INNOVATION LEGACY

481 WINSOTT ROAD
 SUITE 200
 BENBROOK, TEXAS 76126
 PHONE: (817) 744-7512
 FAX: (817) 744-7554

DATE: 11/13/2024



Path: S:\ENVIRONMENTAL\PRIORITY_POWER\CLAY_CENTER\CLAY_COUNTY\2.0_WORK_PRODUCT\2.2_GIS_CAD\ProClay_Center\Clay_Center.aprx

Legend

- Assessment Area
- Wetland Type
- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine

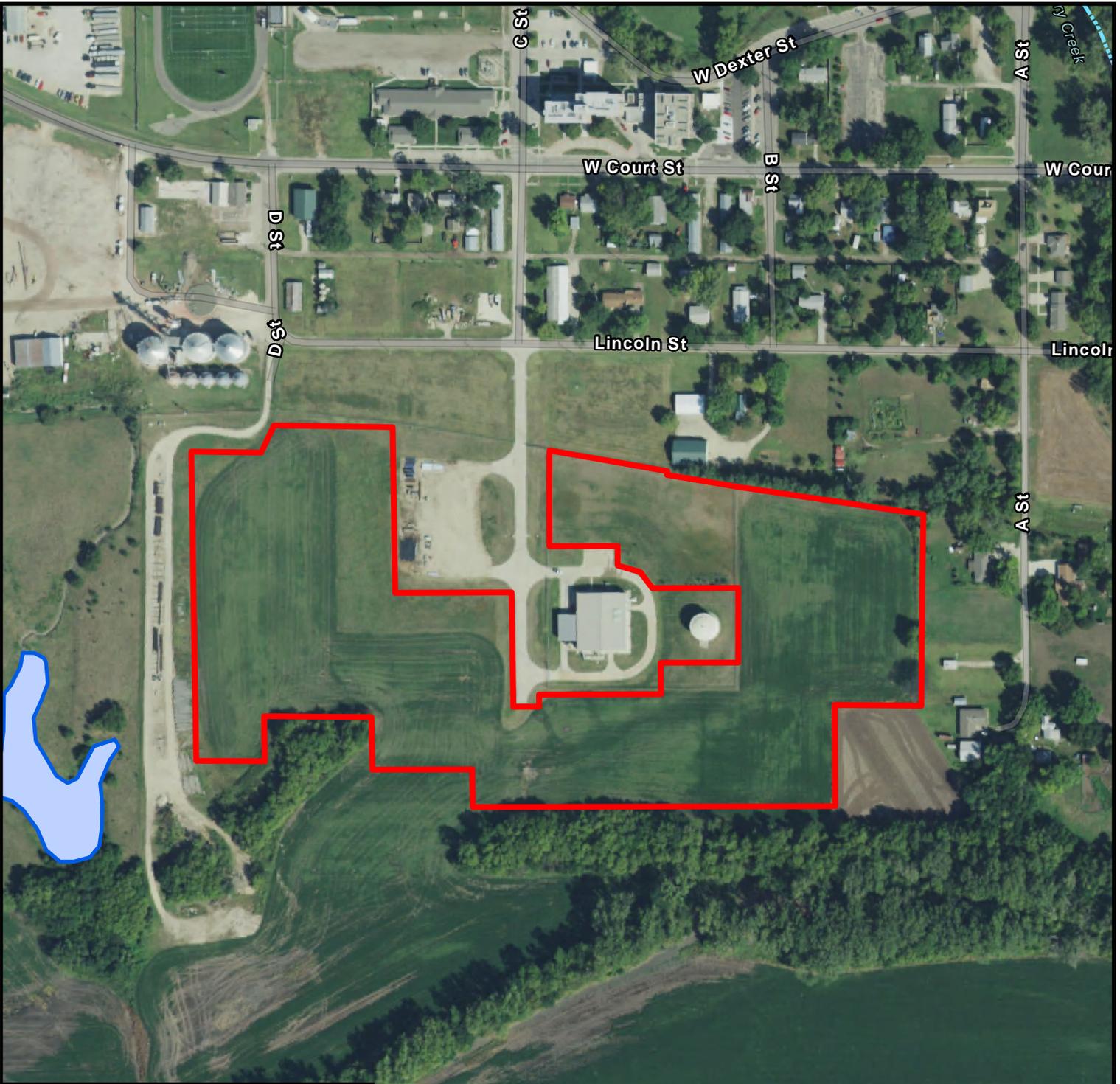
EXHIBIT 4 OF 7

**EXHIBIT A-4
NATIONAL WETLAND INVENTORY MAP
18.44-ACRE ASSESSMENT AREA
CLAY CENTER KANSAS SOLAR SITE
CLAY COUNTY, KANSAS
KPP ENERGY**

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

**481 WINSOTT ROAD
SUITE 200
BENBROOK, TEXAS 76126
PHONE: (817) 744-7512
FAX: (817) 744-7554**

DATE: 11/13/2024



Legend

- Assessment Area
- NHD Waterbody
- NHD Flowline
- Lake/Pond
- Stream/River

W N E S

EXHIBIT 5 OF 7

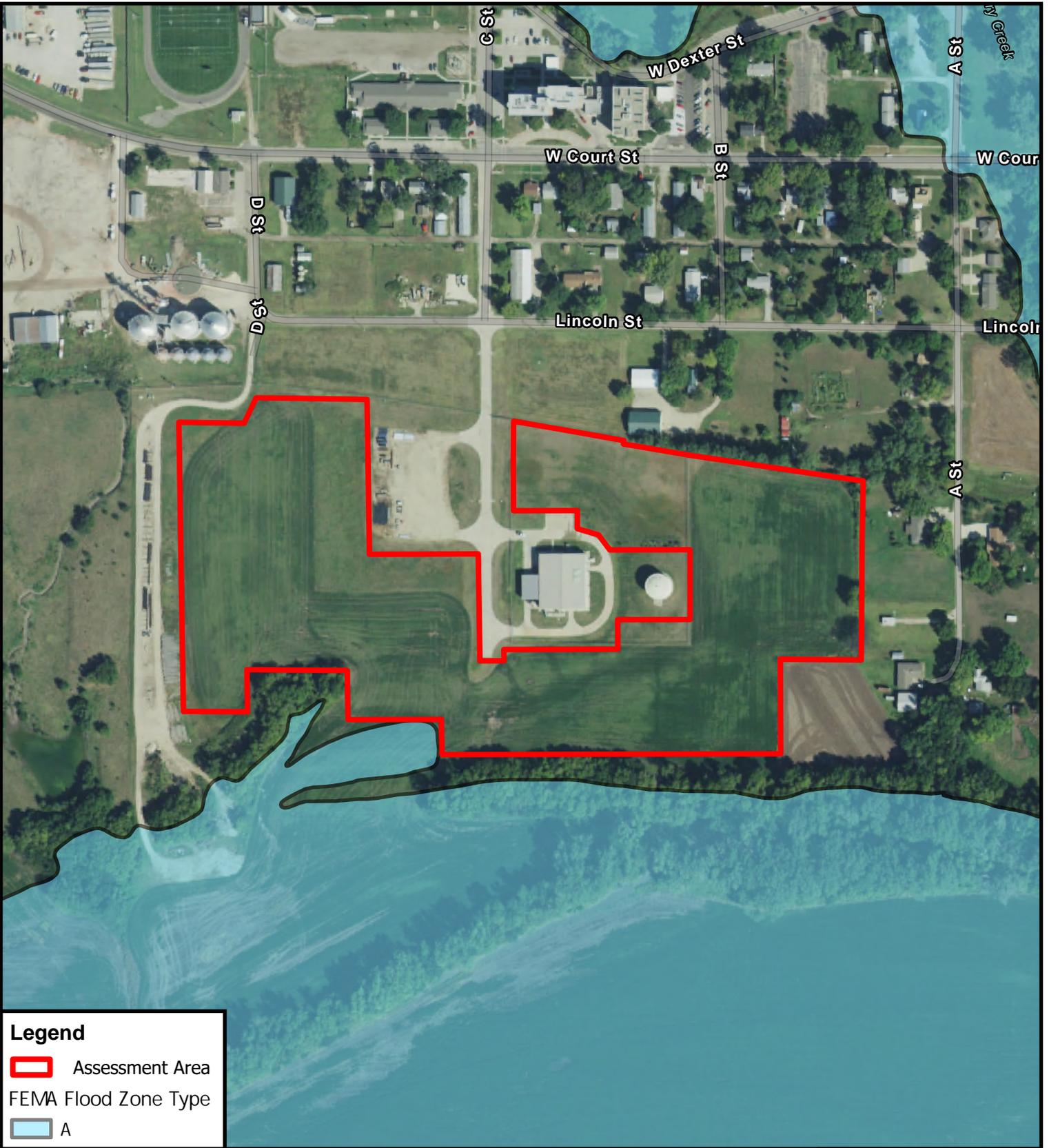
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EXHIBIT A-5
NATIONAL HYDROGRAPHY DATASET
18.44-ACRE ASSESSMENT AREA
CLAY CENTER KANSAS SOLAR SITE
CLAY COUNTY, KANSAS
KPP ENERGY

TOPOGRAPHIC
 LOYALTY INNOVATION LEGACY

481 WINSOTT ROAD
 SUITE 200
 BENBROOK, TEXAS 76126
 PHONE: (817) 744-7512
 FAX: (817) 744-7554

DATE: 11/13/2024



Legend

 Assessment Area

FEMA Flood Zone Type

 A

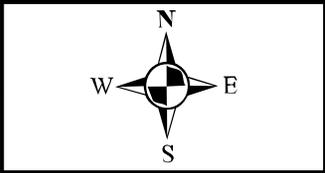


EXHIBIT 6 OF 7

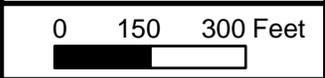
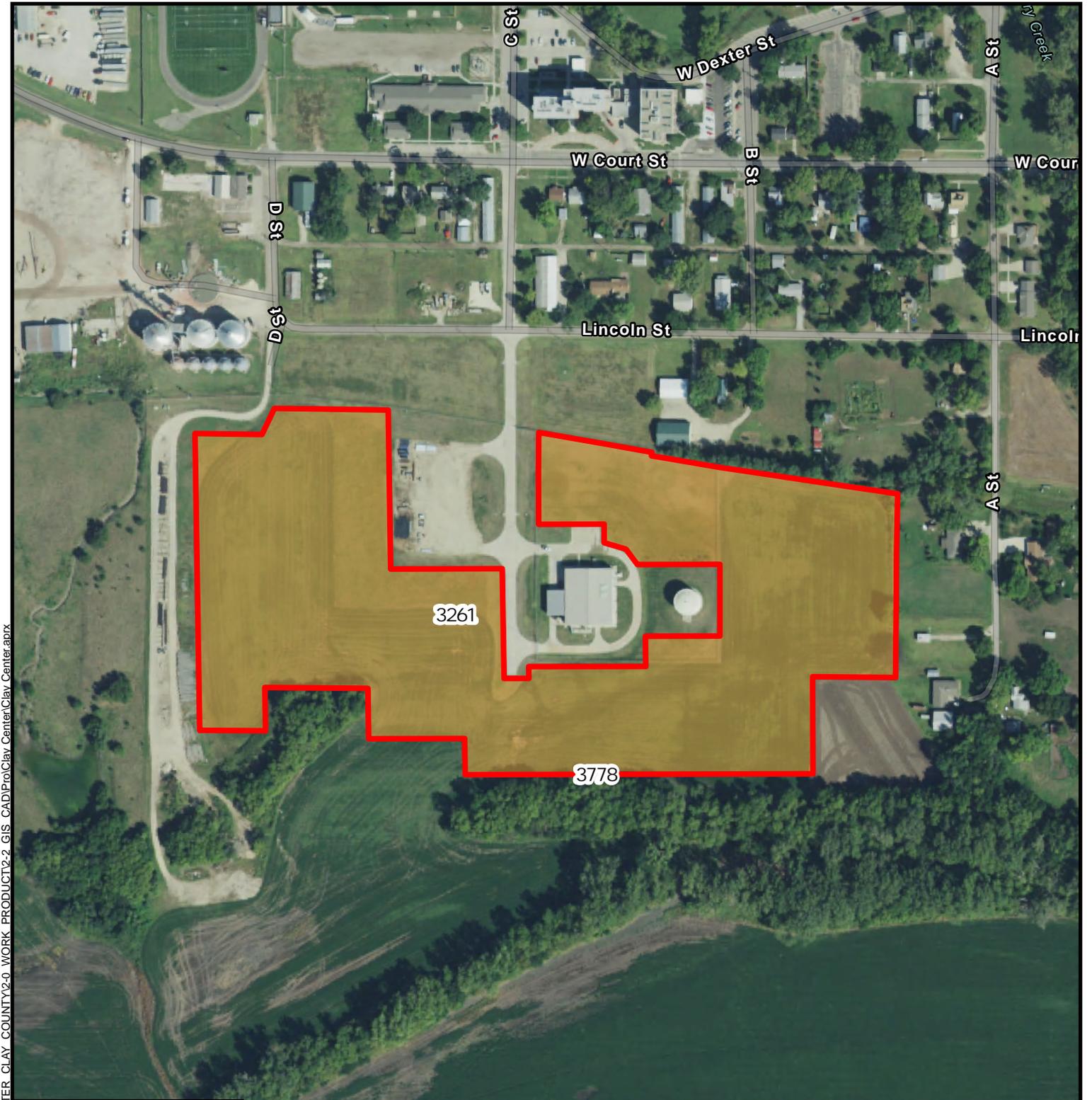


EXHIBIT A-6
FEDERAL EMERGENCY MANAGEMENT AGENCY
FLOOD INSURANCE RATE MAP REVIEW
18.44-ACRE ASSESSMENT AREA
CLAY CENTER KANSAS SOLAR SITE
CLAY COUNTY, KANSAS
KPP ENERGY

 **TOPOGRAPHIC**
LOYALTY INNOVATION LEGACY
481 WINSOTT ROAD
SUITE 200
BENBROOK, TEXAS 76126
PHONE: (817) 744-7512
FAX: (817) 744-7554

DATE: 11/13/2024



Path: S:\ENVIRONMENTAL\PRIORITY_POWER\CLAY_CENTER\CLAY_COUNTY\2.0_WORK_PRODUCT\2-2_GIS_CAD\ProClay_Center\Clay_Center.aprx

Legend
 Assessment Area

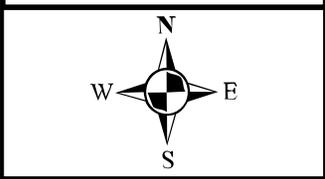


EXHIBIT 7 OF 7

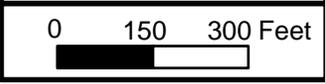


EXHIBIT A-7
NATURAL RESOURCE CONSERVATION SERVICE
MAPPED SOIL UNITS
18.44-ACRE ASSESSMENT AREA
CLAY CENTER KANSAS SOLAR SITE
CLAY COUNTY, KANSAS
KPP ENERGY

 **TOPOGRAPHIC**
LOYALTY INNOVATION LEGACY
481 WINSOTT ROAD
SUITE 200
BENBROOK, TEXAS 76126
PHONE: (817) 744-7512
FAX: (817) 744-7554

DATE: 11/13/2024

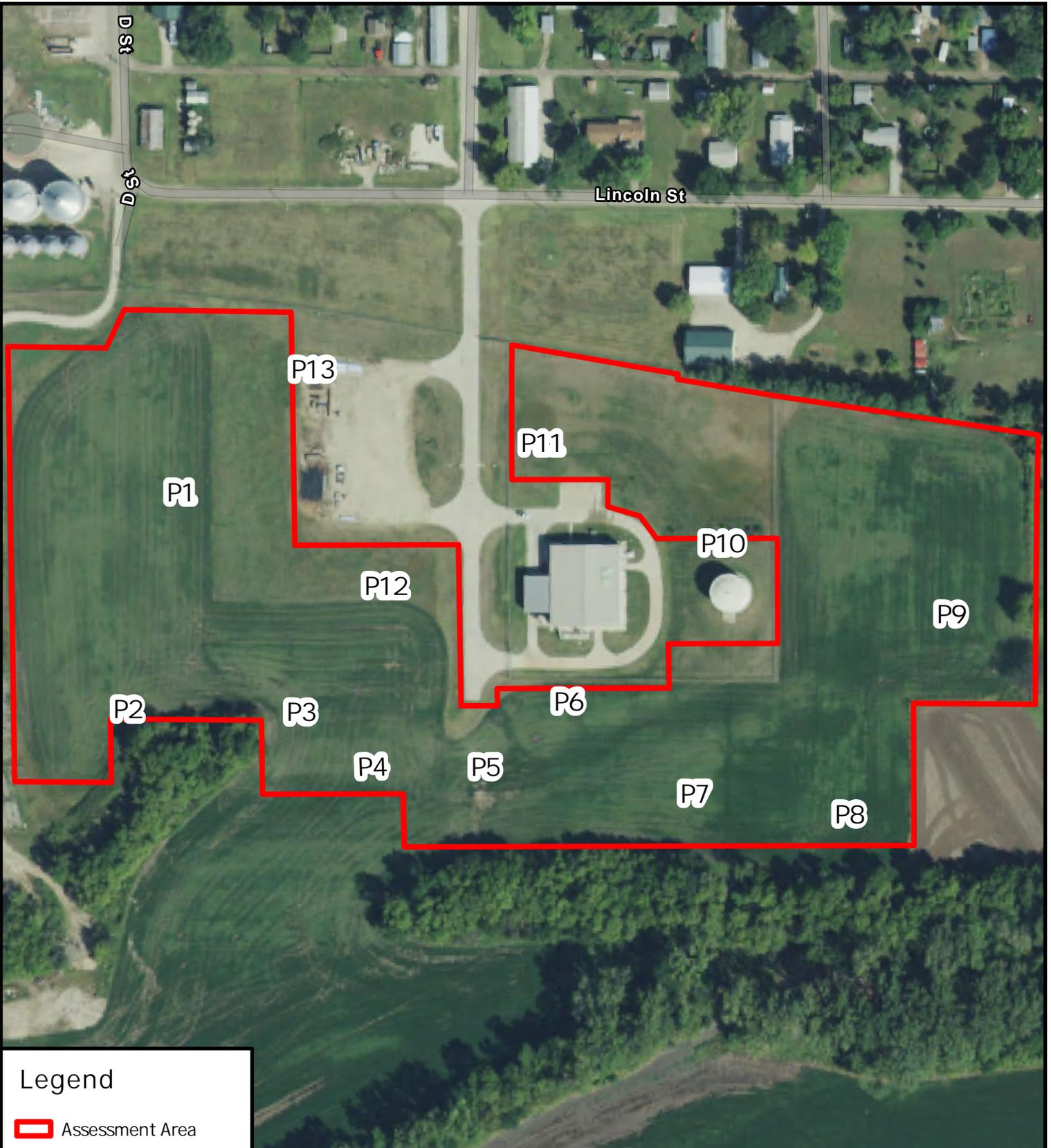
APPENDIX B

REPRESENTATIVE PHOTOGRAPHS

EXHIBIT B-1

PHOTOGRAPH LOCATION MAP

Path: S:\ENVIRONMENTAL\PRIORITY_POWER\CLAY_CENTER\CLAY_COUNTY2-0_WORK_PRODUCT2-2_GIS_CAD\Pro\Clay_Center\Clay_Center.aprx



Legend

 Assessment Area

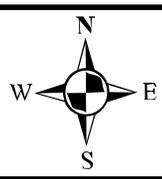
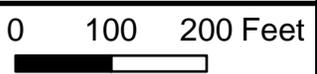


EXHIBIT 1 OF 1



**EXHIBIT B-1
REPRESENTATIVE PHOTOGRAPH LOCATIONS
18.44-ACRE ASSESSMENT AREA
CLAY CENTER KANSAS SOLAR SITE
CLAY COUNTY, KANSAS
KPP ENERGY**



481 WINSOTT ROAD
SUITE 200
BENBROOK, TEXAS 76126
PHONE: (817) 744-7512
FAX: (817) 744-7554

DATE: 11/13/2024

PHOTOGRAPHS RECORDED DURING THE ON-SITE INVESTIGATION



P1 – View of Assessment Area from northwest portion, facing north showing agricultural cropland and grain silos. The grain silos are located outside the northwest boundary of the Assessment Area.



P2 – View of Assessment Area along the southwest boundary, facing northeast showing agricultural cropland.

PHOTOGRAPHS RECORDED DURING THE ON-SITE INVESTIGATION



P3 – View of Assessment Area from southwest portion, facing northeast showing culvert used for drainage.



P4 – View of Assessment Area from southern boundary, facing southwest showing agricultural cropland.

PHOTOGRAPHS RECORDED DURING THE ON-SITE INVESTIGATION



P5 – View of Assessment Area from center, facing north showing agricultural cropland.



P6 – View of Assessment Area from center, facing northeast showing drainpipe used to collect surface water and drain southwardly.

PHOTOGRAPHS RECORDED DURING THE ON-SITE INVESTIGATION



P7 – View of Assessment Area from center, facing north showing a water treatment facility and adjacent water tank.



P8 – View of Assessment Area from southeast boundary, facing east showing agricultural cropland and wooded edge.

PHOTOGRAPHS RECORDED DURING THE ON-SITE INVESTIGATION



P9 – View of Assessment Area from southeast boundary, facing southeast showing underground culvert used for drainage.



P10 – View of Assessment Area from southeast corner, facing west showing agricultural cropland and wooded edge.

PHOTOGRAPHS RECORDED DURING THE ON-SITE INVESTIGATION



P11 – View of Assessment Area from eastern portion, facing west showing agricultural cropland.



P12 – View of Assessment Area from northern portion, facing northwest showing maintained grassland and landscaping feature.

PHOTOGRAPHS RECORDED DURING THE ON-SITE INVESTIGATION



P13 – View of Assessment Area from northern boundary, facing east showing maintained grassland area.



P14 – View of Assessment Area from western portion, facing south showing maintained grassland areas, agricultural cropland and wooded edge.

PHOTOGRAPHS RECORDED DURING THE ON-SITE INVESTIGATION



P15 – View of Assessment Area from northwest boundary, facing west showing maintained grassland area.

APPENDIX C

LAND OWNERSHIP AND LAND USE

EXHIBIT C-1

**COUNTY ASSESSORS
PROPERTY SUMMARY**

Property Details for PID: 0141030700000001000

| | |
|--|---|
| Shareable link to Property Information : | https://www.kansasgis.org/orka/permalinkprop.cfm?parcelid=0141030700000001000 |
|--|---|

| | |
|------------------------|---|
| Shareable link to Map: | https://www.kansasgis.org/orka/permalink.cfm?parcelId=0141030700000001000 |
|------------------------|---|

| | |
|---------------|-------|
| QuickRef ID : | R3462 |
|---------------|-------|

| | |
|--------------|-----------------------------------|
| Owner Name : | CLAY CENTER CITY - PUBLIC UTILITY |
|--------------|-----------------------------------|

| | |
|-----------|-------------------------------------|
| Location: | 610 C STREET, Clay Center, KS 67432 |
|-----------|-------------------------------------|

| | |
|-----------------------------------|--|
| Abbreviated Boundary Description: | S07, T08, R03E, ACRES 39.9, TR BEG INT W LI E2 NW4 & S RR ROW ELY ALG RR ROW 1630 S 380 W 170 S 220 W 170 S TO N BANK OLD REP RIVER CHAN WLY ALG |
|-----------------------------------|--|

Owner Information:

| | |
|-------|-----------------------------------|
| Owner | CLAY CENTER CITY - PUBLIC UTILITY |
|-------|-----------------------------------|

| | |
|-----------------|---------------------------------------|
| Mailing Address | PO BOX 117 CLAY CENTER, KS 67432-0117 |
|-----------------|---------------------------------------|

Property Information:

| | |
|------|------------------|
| Type | Agricultural Use |
|------|------------------|

| | |
|--------|--------|
| Status | Active |
|--------|--------|

| | |
|-------------|-------------------|
| Taxing Unit | Clay Center - 001 |
|-------------|-------------------|

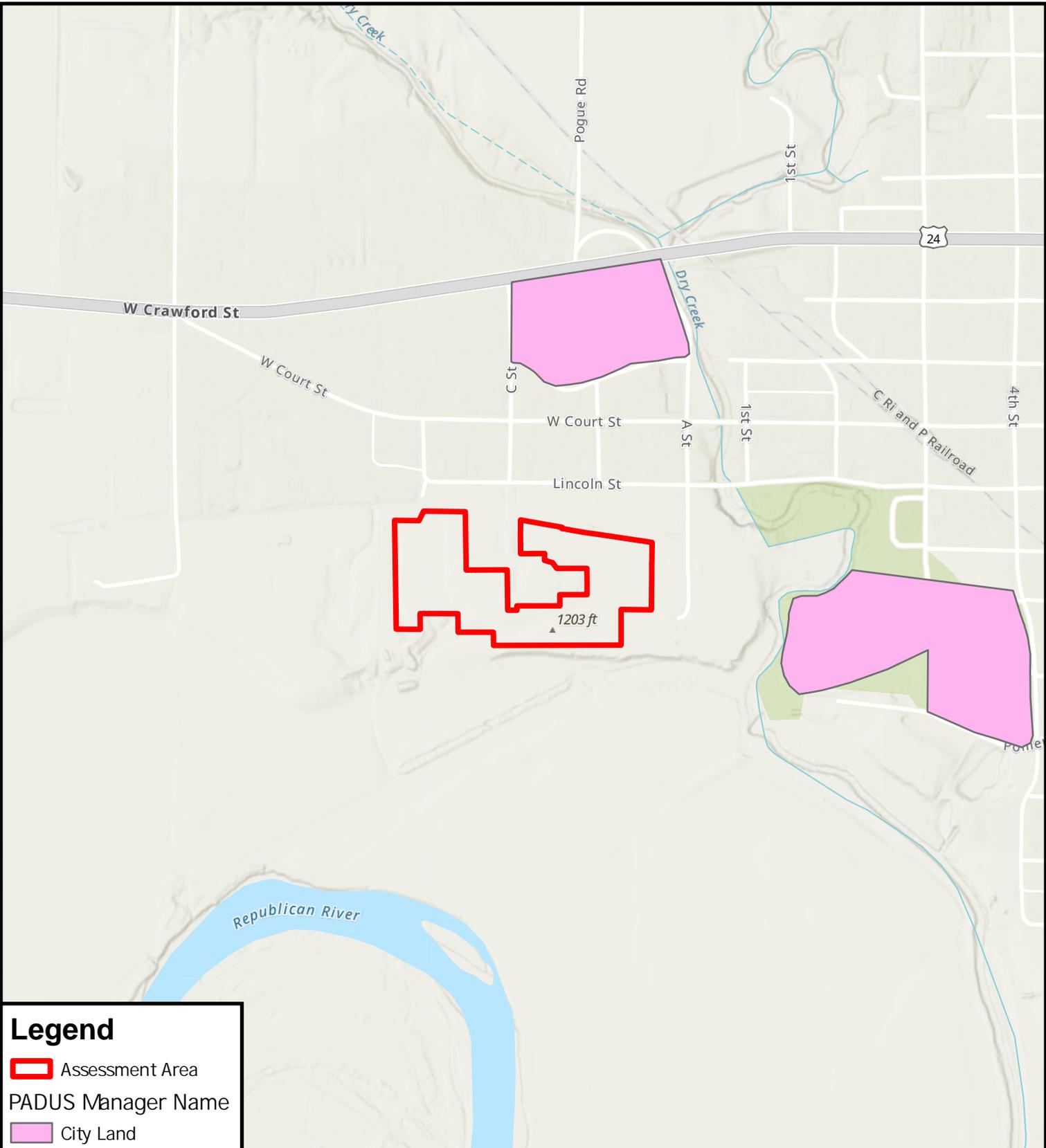
| | |
|-------------------|-----|
| Neighborhood Code | 900 |
|-------------------|-----|

No Secondary Address Details found

Market Land Details:

EXHIBIT C-2

USGS PADUS MAP



Legend

- Assessment Area
- PADUS Manager Name
- City Land

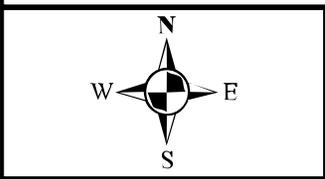


EXHIBIT 1 OF 1

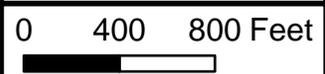


EXHIBIT C-2
USGS PROTECTED AREAS DATABASE OF THE U.S.
18.44-ACRE ASSESSMENT AREA
CLAY CENTER KANSAS SOLAR SITE
CLAY COUNTY, KANSAS
KPP ENERGY

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
 481 WINSOTT ROAD
 SUITE 200
 BENBROOK, TEXAS 76126
 PHONE: (817) 744-7512
 FAX: (817) 744-7554

DATE: 11/13/2024

EXHIBIT C-3

INTERCONNECTION AGREEMENT



Interconnection Agreement

January 17, 2024

TO WHOM IT MAY CONCERN:

The nine solar projects do not necessitate an interconnection agreement between the city and KPP Energy. The energy generated by these arrays is categorized as "behind the meter" at each site and is not distributed onto the grid.

Sincerely,

A handwritten signature in blue ink, appearing to read "Colin Hansen", written over a faint blue circular stamp or watermark.

Colin Hansen, CEO & General Manager
KPP Energy, A Municipal Energy Agency
100 North Broadway, Ste. L110
Wichita, KS 67202
316-264-3434
chansen@kpp.agency

EXHIBIT C-4

ELECTRIC GENERATION UTILITY EASEMENT

[FORM OF ELECTRIC GENERATION UTILITY EASEMENT]

After recording return to:

KPP ENERGY
Attn: Colin Hansen
100 N. Broadway, Suite L110
Wichita, Kansas 67202
Telephone: (316) 264-3166

ELECTRIC GENERATION UTILITY EASEMENT

THIS ELECTRIC GENERATION EASEMENT is made as of the 26th day of March, 2024, by the Clay Center Public Utilities Commission (“Grantor”) in favor of KPP Energy, a Municipal Energy Agency (“Grantee”).

WHEREAS, Grantor is the owner of the real property described on Exhibit A hereto (the “Easement Area”);

WHEREAS, Grantor desires to declare certain easements in favor of Grantee for access to, and the constructing, maintaining, repairing and replacing of utilities and improvements upon, the Easement Area, as set forth herein.

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) and other valuable consideration, the receipt of which is hereby acknowledged, Grantor hereby declares as follows:

1. Declaration of Easements. Grantor does hereby grant and convey unto Grantee and Grantee’s employees, agents, invitees, contractors and representatives, for the benefit of the public, an exclusive, perpetual right-of-way and easement under, upon, over, across and through the Easement Area, together with a right of ingress and egress to and from said Easement Area for the purposes of laying, constructing, installing, maintaining, altering, inspecting, protecting, relocating, operating, repairing and replacing any and all electric generation facilities and transmission and utility improvements (including, without limitation, solar panels, transmission lines, meters, and appurtenant improvements and equipment) and any and all meters, drops, service taps, distribution facilities, regulators, transformers and other equipment incidental or appurtenant to such improvements, as from time-to-time required by the Grantee.

2. Access. Grantor, for itself, its successors and assigns, and the successor owners of the Easement Area covenant and agree that Grantee will have unimpeded access to, through and under the Easement Area. Grantee, itself and at its sole expense, may erect necessary barricades or other dividers upon the Easement Area for safety purposes. Nothing herein shall prevent Grantor's use of the Easement Area for purposes which do not interfere with Grantee's use, provided Grantor acknowledges that Grantee's use will effectively limit most other surface, subsurface and above-ground uses of the Easement Area.

3. Conflicting Use. Grantee may remove or relocate any existing improvements or public utilities and any structures, and trees located under, upon, or over the Easement Area, which interfere with the construction, maintenance, or operation thereof, in Grantee's sole and absolute discretion.

4. Obsolescence. Upon obsolescence or retirement from use of Grantee's equipment located upon the Easement Area, Grantee agrees to remove its equipment and installations and shall have one hundred eighty (180) days to return the Easement Area to bare ground. Further, Grantee covenants in good faith to release its easement or portions thereof when no longer necessary or in use by the Grantor for the purposes contemplated hereunder.

5. Insurance. Grantee shall obtain reasonable broad-form liability insurance for its use and operations over the Easement Area in amounts at least equal to the lessor of (i) \$1,000,000, or (ii) Grantor's then maximum liability under the Kansas Tort Claims Act. Grantee shall list Grantor as an additional insured on such coverage. Grantee shall hold Grantor harmless for any loss or liability arising out of Grantee's use of the Easement Area.

6. Covenants Running With the Land. The easements and rights granted herein shall be covenants running with the land and shall be binding upon Grantor and Grantor's successors and assigns.

[Remainder of Page Intentionally Left Blank]

This easement, and each and every right and privilege granted herein to Grantee, is hereby accepted by the governing body of KPP Energy, a Municipal Energy Agency, without any duty or obligation of the Grantee, with respect thereto, whether such duty be by implication or otherwise, this 18th day of April, 2024.



KPP ENERGY
A MUNICIPAL ENERGY AGENCY

By [Signature]
Name (Printed) Jason Newberry
Title Board President

ATTEST:

By [Signature]
Name (Printed) CHRIS KOMAREK
Title Board Secretary

“GRANTEE”

ACKNOWLEDGEMENT

STATE OF KANSAS)
)
) ss:
COUNTY OF SEDGWICK)

The foregoing instrument was acknowledged before me, a Notary Public in and for the County and State aforesaid, on this 18th day of April, 2024, by Jason Newberry and Chris Komarek, the duly authorized Board President and Board Secretary, respectively, of the Board of Directors of KPP Energy, a Municipal Energy Agency, who are personally known to me to be such officers, and who executed, as such officers, the within instrument on behalf of KPP Energy.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year last above written.

[Signature]
NOTARY PUBLIC

My Commission Expires:
10.4.2026

LESLIE ATHERTON
Notary Public - State of Kansas
My Appt. Expires 10.4.2026

EXHIBIT A

LEGAL DESCRIPTION

AS-SURVEYED DESCRIPTION

BEING A 38.84-ACRE TRACT OF LAND OUT OF SECTION 7, TOWNSHIP 8 SOUTH, RANGE 3 EAST, OF THE 6TH PRINCIPAL MERIDIAN, CONVEYED TO THE CITY OF CLAY CENTER, AS DESCRIBED IN BOOK CR103, PAGE 337 OF THE OFFICIAL PUBLIC RECORDS OF CLAY COUNTY, KANSAS (O.P.R.C.R.) BEING ALL OF BLOCKS 20 AND 28, PARTS OF LOTS 12 THROUGH 20 OF BLOCK 21, PARTS OF LOTS 6, 7, 11 THROUGH 19 OF BLOCK 22, PARTS OF LOTS 1 THROUGH 3 OF BLOCK 23, PARTS OF LOTS 1 THROUGH 6 OF BLOCK 25, PARTS OF 1 THROUGH 20 OF BLOCK 26, PARTS OF LOTS 1 THROUGH 9 AND LOTS 17 THROUGH 20 OF BLOCK 27, PARTS OF LOT 5 OF BLOCK 33, PARTS OF LOTS 1 THROUGH 3 OF BLOCK 34, PARTS OF LOTS 1 AND 2 OF BLOCK 35, PARTS OF BLOCK 39. ALL LOTS AND BLOCKS HEREIN REFERRED TO THE INTERVIEW ADDITION TO THE CITY OF CLAY CENTER, AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS, WITH THE BASIS OF BEARING BEING THE WEST LINE, EAST HALF OF NORTHWEST QUARTER OF SECTION 7 MEASURED AS SOUTH 00°53'30" EAST; GRID NORTH, KANSAS NORTH ZONE, NAD-83, US FEET; THIS DESCRIPTION WAS PREPARED ON JANUARY 22, 2023 BY STAN W. LLOYD, KANSAS LICENSED PROFESSIONAL SURVEYOR NUMBER 027;

COMMENCING (P.O.C.) AT A 1/2-INCH IRON BAR WITH CAP CLS #20 FOUND ON THE WEST LINE OF THE EAST HALF OF THE NORTHEAST QUARTER; THENCE SOUTH 00°53'30" EAST, ALONG SAID WEST LINE, A DISTANCE OF 92.20 FEET TO A POINT; THENCE NORTH 89°09'30" EAST, A DISTANCE OF 107.09 FEET TO A 3/2 X 24-INCH IRON ROD SET WITH CAP STAMPED "TOPOGRAPHIC" SET, ALSO BEING THE POINT OF BEGINNING (P.O.B.) OF HEREIN DESCRIBED TRACT;

THENCE SOUTH 00°53'30" EAST, A DISTANCE OF 858.71 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET FOR THE SOUTHWEST CORNER OF HEREIN DESCRIBED TRACT;

THENCE SOUTH 89°29'15" EAST, A DISTANCE OF 146.19 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE NORTH 00°53'30" WEST, A DISTANCE OF 98.28 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 89°28'13" EAST, A DISTANCE OF 228.74 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 00°53'30" EAST, A DISTANCE OF 192.28 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE NORTH 89°30'43" EAST, A DISTANCE OF 988.34 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE NORTH 00°09'39" WEST, A DISTANCE OF 213.47 FEET TO A 1/2-INCH IRON ROD WITH CAP STAMPED "CLS #10" FOUND;

THENCE SOUTH 89°28'15" EAST, A DISTANCE OF 383.97 FEET TO A 1/2-INCH IRON ROD WITH CAP STAMPED "CLS #20" FOUND;

THENCE NORTH 00°27'00" EAST, A DISTANCE OF 407.98 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE NORTH 81°32'42" WEST, A DISTANCE OF 358.90 FEET TO A FENCE CORNER FOUND;

THENCE NORTH 88°22'18" WEST, A DISTANCE OF 292.44 FEET TO A FENCE CORNER FOUND;

THENCE NORTH 00°52'32" EAST, A DISTANCE OF 7.99 FEET TO A FENCE CORNER FOUND;

THENCE NORTH 80°02'29" WEST, A DISTANCE OF 234.80 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 00°03'38" WEST, A DISTANCE OF 704.09 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE NORTH 89°29'20" EAST, A DISTANCE OF 349.50 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 00°22'07" WEST, A DISTANCE OF 41.03 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 73°32'45" EAST, A DISTANCE OF 50.04 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 36°38'38" EAST, A DISTANCE OF 47.45 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE NORTH 89°50'41" EAST, A DISTANCE OF 382.08 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 80°08'25" EAST, A DISTANCE OF 359.20 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 89°50'41" WEST, A DISTANCE OF 300.35 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 00°53'30" EAST, A DISTANCE OF 67.07 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 89°30'43" WEST, A DISTANCE OF 239.95 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 00°53'30" EAST, A DISTANCE OF 25.90 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 89°30'41" EAST, A DISTANCE OF 53.20 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE NORTH 80°31'30" WEST, A DISTANCE OF 343.81 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 89°30'41" WEST, A DISTANCE OF 247.58 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE NORTH 00°53'30" WEST, A DISTANCE OF 332.77 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE NORTH 89°08'20" WEST, A DISTANCE OF 252.59 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE SOUTH 23°20'52" WEST, A DISTANCE OF 64.21 FEET TO A 1/2 X 24-INCH IRON ROD WITH CAP STAMPED "TOPOGRAPHIC" SET;

THENCE NORTH 89°28'20" WEST, A DISTANCE OF 148.34 FEET TO THE POINT OF BEGINNING (P.O.B.) AND CONTAINING 38.84 ACRES OF LAND MORE OR LESS.

APPENDIX D

ENVIRONMENTAL JUSTICE

EXHIBIT D-1

**ENVIRONMENTAL
JUSTICE SCREEN
COMMUNITY REPORT**



EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Clay Center, KS

1 mile Ring Centered at 39.374879,-97.139404

Population: 1,328

Area in square miles: 3.14

A3 Landscape

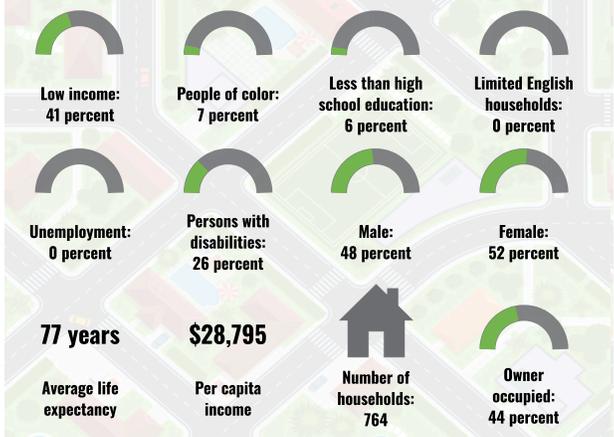


March 11, 2024
 Clay Center Kansas Solar Site
 aa_clay_center
 1:36,112
 0 0.35 0.7 1.4 mi
 0 0.5 1 2 km
 Esri, HERE, Garmin, Mapbox

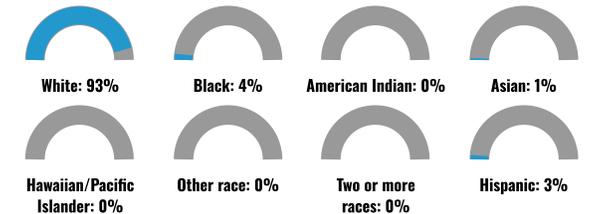
LANGUAGES SPOKEN AT HOME

| LANGUAGE | PERCENT |
|----------|---------|
| English | 100% |

COMMUNITY INFORMATION



BREAKDOWN BY RACE



BREAKDOWN BY AGE



LIMITED ENGLISH SPEAKING BREAKDOWN



Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, American Community Survey (ACS) 2017-2021. Life expectancy data comes from the Centers for Disease Control.

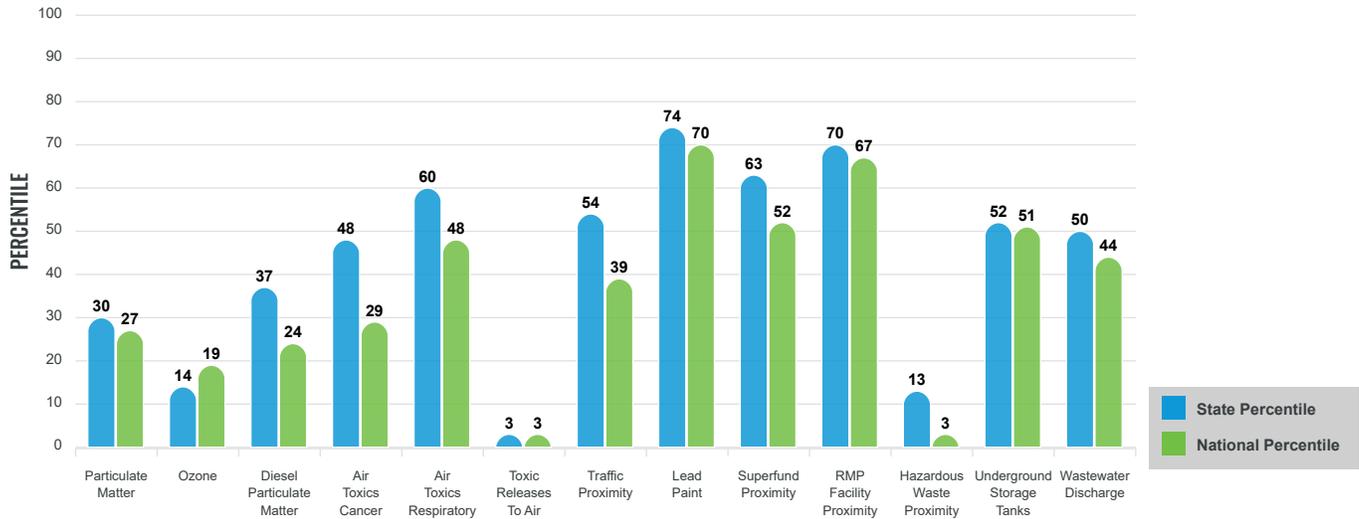
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

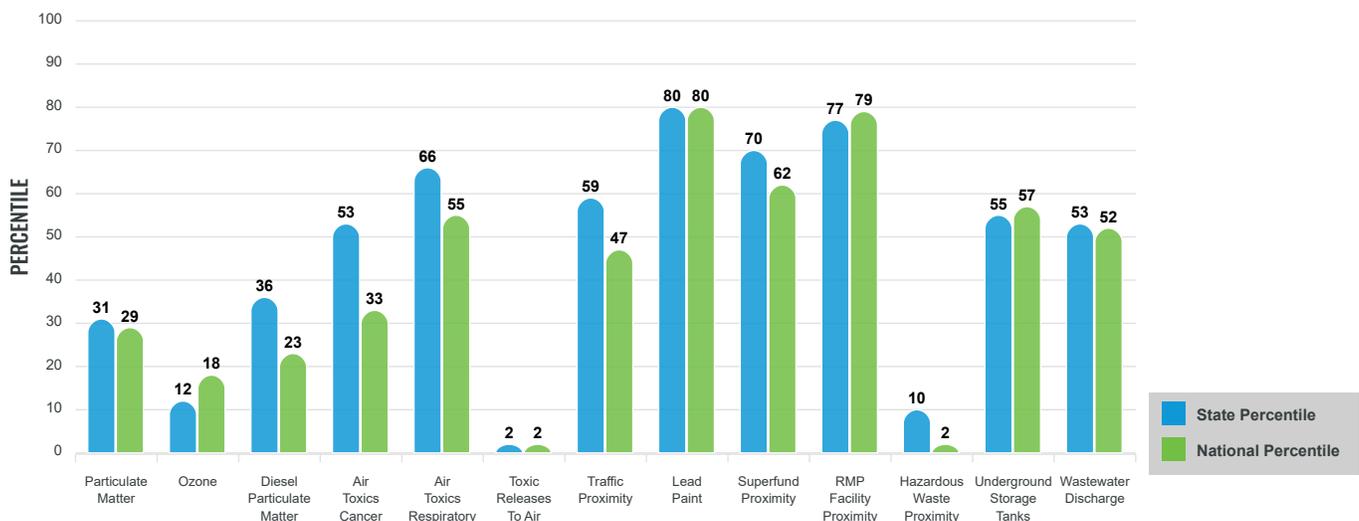
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for 1 mile Ring Centered at 39.374879,-97.139404

EJScreen Environmental and Socioeconomic Indicators Data

| SELECTED VARIABLES | VALUE | STATE AVERAGE | PERCENTILE IN STATE | USA AVERAGE | PERCENTILE IN USA |
|---|---------|---------------|---------------------|-------------|-------------------|
| POLLUTION AND SOURCES | | | | | |
| Particulate Matter ($\mu\text{g}/\text{m}^3$) | 7.07 | 7.5 | 19 | 8.08 | 21 |
| Ozone (ppb) | 56.4 | 58.9 | 8 | 61.6 | 14 |
| Diesel Particulate Matter ($\mu\text{g}/\text{m}^3$) | 0.102 | 0.196 | 24 | 0.261 | 17 |
| Air Toxics Cancer Risk* (lifetime risk per million) | 20 | 22 | 4 | 25 | 5 |
| Air Toxics Respiratory HI* | 0.3 | 0.28 | 28 | 0.31 | 31 |
| Toxic Releases to Air | 0.026 | 13,000 | 1 | 4,600 | 2 |
| Traffic Proximity (daily traffic count/distance to road) | 41 | 79 | 48 | 210 | 36 |
| Lead Paint (% Pre-1960 Housing) | 0.72 | 0.37 | 84 | 0.3 | 87 |
| Superfund Proximity (site count/km distance) | 0.061 | 0.081 | 55 | 0.13 | 50 |
| RMP Facility Proximity (facility count/km distance) | 1.1 | 0.63 | 80 | 0.43 | 89 |
| Hazardous Waste Proximity (facility count/km distance) | 0.022 | 1.3 | 8 | 1.9 | 2 |
| Underground Storage Tanks (count/km ²) | 0.97 | 3.5 | 44 | 3.9 | 47 |
| Wastewater Discharge (toxicity-weighted concentration/m distance) | 0.00046 | 1.4 | 39 | 22 | 42 |
| SOCIOECONOMIC INDICATORS | | | | | |
| Demographic Index | 24% | 28% | 52 | 35% | 41 |
| Supplemental Demographic Index | 14% | 13% | 60 | 14% | 55 |
| People of Color | 7% | 25% | 21 | 39% | 17 |
| Low Income | 41% | 30% | 72 | 31% | 71 |
| Unemployment Rate | 0% | 4% | 0 | 6% | 0 |
| Limited English Speaking Households | 0% | 2% | 0 | 5% | 0 |
| Less Than High School Education | 6% | 9% | 51 | 12% | 41 |
| Under Age 5 | 4% | 6% | 36 | 6% | 42 |
| Over Age 64 | 23% | 16% | 77 | 17% | 75 |
| Low Life Expectancy | 21% | 20% | 68 | 20% | 69 |

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

Sites reporting to EPA within defined area:

| | |
|--|----|
| Superfund | 0 |
| Hazardous Waste, Treatment, Storage, and Disposal Facilities | 0 |
| Water Dischargers | 9 |
| Air Pollution | 12 |
| Brownfields | 2 |
| Toxic Release Inventory | 2 |

Other community features within defined area:

| | |
|-------------------------|---|
| Schools | 1 |
| Hospitals | 0 |
| Places of Worship | 5 |

Other environmental data:

| | |
|--------------------------|-----|
| Air Non-attainment | No |
| Impaired Waters | Yes |

| | |
|--|----|
| Selected location contains American Indian Reservation Lands* | No |
| Selected location contains a "Justice40 (CEJST)" disadvantaged community | No |
| Selected location contains an EPA IRA disadvantaged community | No |

Report for 1 mile Ring Centered at 39.374879,-97.139404

EJScreen Environmental and Socioeconomic Indicators Data

| HEALTH INDICATORS | | | | | |
|---------------------------|-------|---------------|------------------|------------|---------------|
| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
| Low Life Expectancy | 21% | 20% | 68 | 20% | 69 |
| Heart Disease | 8.2 | 6.2 | 89 | 6.1 | 86 |
| Asthma | 9 | 9.6 | 22 | 10 | 25 |
| Cancer | 8.8 | 6.3 | 94 | 6.1 | 95 |
| Persons with Disabilities | 22.1% | 13.8% | 92 | 13.4% | 91 |

| CLIMATE INDICATORS | | | | | |
|--------------------|-------|---------------|------------------|------------|---------------|
| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
| Flood Risk | 10% | 8% | 73 | 12% | 66 |
| Wildfire Risk | 0% | 18% | 0 | 14% | 0 |

| CRITICAL SERVICE GAPS | | | | | |
|--------------------------|-------|---------------|------------------|------------|---------------|
| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
| Broadband Internet | 45% | 14% | 98 | 14% | 97 |
| Lack of Health Insurance | 4% | 9% | 21 | 9% | 30 |
| Housing Burden | No | N/A | N/A | N/A | N/A |
| Transportation Access | Yes | N/A | N/A | N/A | N/A |
| Food Desert | No | N/A | N/A | N/A | N/A |

Report for 1 mile Ring Centered at 39.374879,-97.139404

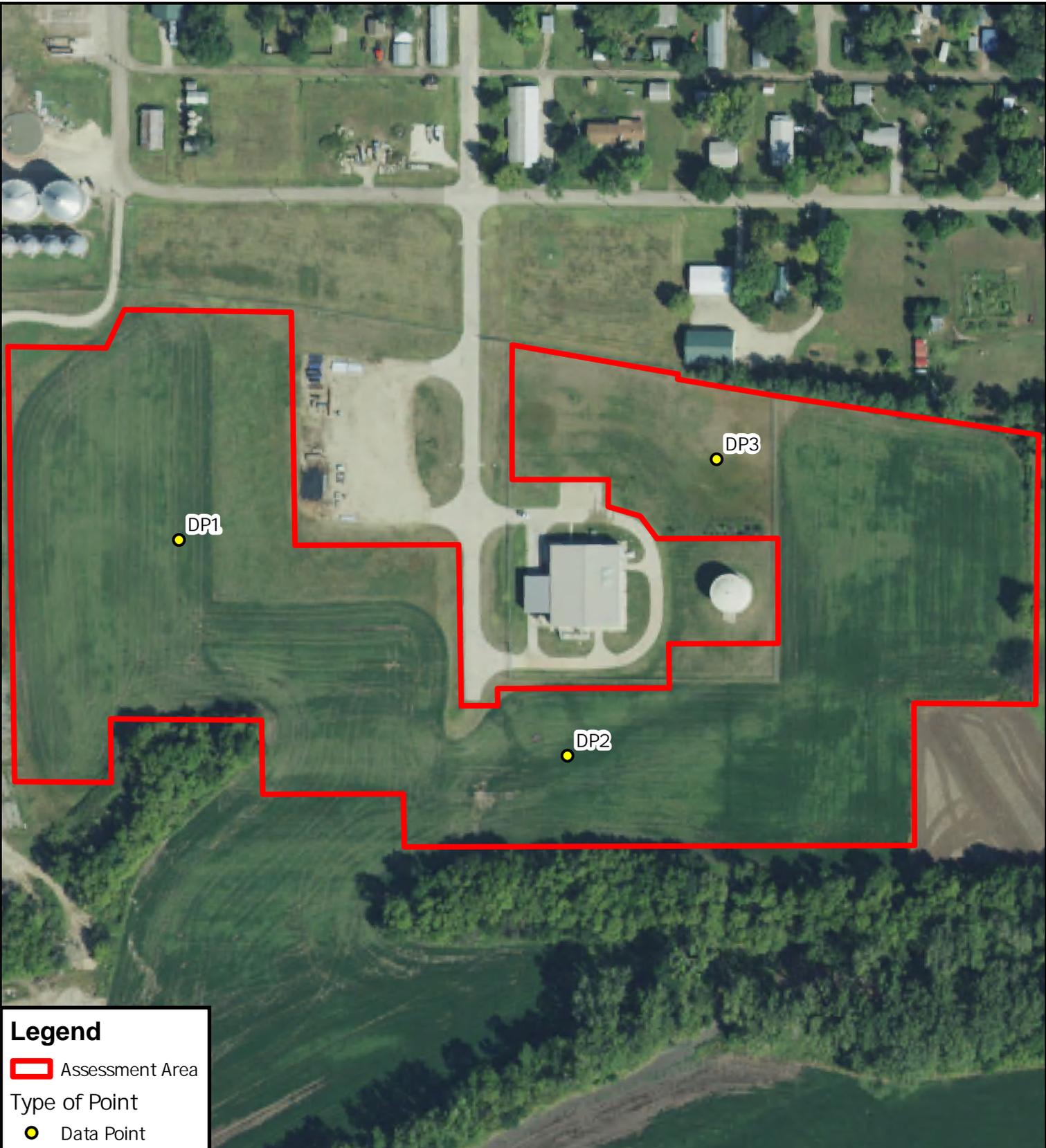
APPENDIX E

WETLAND

DELINEATION RESULTS

EXHIBIT E-1

**WETLAND DETERMINATION
DATA FORM LOCATION MAP**



Legend

 Assessment Area

Type of Point

 Data Point

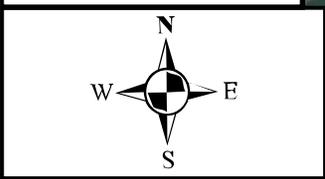


EXHIBIT 1 OF 1

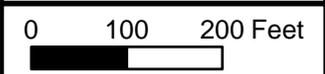


EXHIBIT E-1
WETLAND DETERMINATION DATA FORM LOCATION
MAP
18.44-ACRE ASSESSMENT AREA
CLAY CENTER KANSAS SOLAR SITE
CLAY COUNTY, KANSAS
KPP ENERGY

 **TOPOGRAPHIC**
LOYALTY INNOVATION LEGACY

481 WINSOTT ROAD
 SUITE 200
 BENBROOK, TEXAS 76126
 PHONE: (817) 744-7512
 FAX: (817) 744-7554

DATE: 11/13/2024

EXHIBIT E-2

WETLAND

DETERMINATION

DATA FORMS

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Clay Center Kansas Solar Site County: Clay County Sampling Date: January 31, 2024
 Applicant/Owner: KPP Energy, A Municipal Energy Agency State: Kansas Sampling Point: DP1
 Investigator(s): Alliah Hardin and Kadin McBee Section, Township, Range: Section 8, Township 8S, Range 3E, 6th P.M., Book CR103, Page 337
 Landform (hillslope, terrace, etc.): Agricultural Cropland Local relief (concave, convex, none): None Slope (%): 0 to 2
 Subregion (LRR): LRR H / MLRA 74 Lat: 39.37500 Long: -97.14056 Datum: NAD 83
 Soil Map Unit Name: 3261 NWI Classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (if no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks: This point was determined not to be within a wetland due to the lack of all three wetland criteria. | |

VEGETATION - Use scientific names of plants.

| | Absolute % cover | Dominant Species? | Indicator Status | |
|---|------------------|-------------------|------------------|---|
| Tree Stratum (Plot size: <u>30 ft.</u>) | | | | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
| 1. <u>None Observed</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| _____ = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>) | | | | Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>95</u> x 4 = <u>380</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>95</u> (A) <u>380</u> (B) Prevalence Index = B/A = <u>4.00</u> |
| 1. <u>None Observed</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5 ft.</u>) | | | | |
| 1. <u>Sorghum bicolor</u> | 90 | Yes | FACU | |
| 2. <u>Amaranthus palmeri</u> | 5 | No | FACU | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| 95 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>30 ft.</u>) | | | | |
| 1. <u>None Observed</u> | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| % Bare Ground in Herb Stratum <u>5</u> | | | | |
| Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤ 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Explain) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

Remarks:
 No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FACU or drier).

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Clay Center Kansas Solar Site County: Clay County Sampling Date: January 31, 2024
 Applicant/Owner: KPP Energy, A Municipal Energy Agency State: Kansas Sampling Point: DP2
 Investigator(s): Alliah Hardin and Kadin McBee Section, Township, Range: Section 8, Township 8S, Range 3E, 6th P.M., Book CR103, Page 337
 Landform (hillslope, terrace, etc.): Agricultural Cropland Local relief (concave, convex, none): None Slope (%): 0 to 2
 Subregion (LRR): LRR H / MLRA 74 Lat: 39.37389 Long: -97.13861 Datum: NAD 83
 Soil Map Unit Name: 3261 NWI Classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Remarks: This point was determined not to be within a wetland due to the lack of all three wetland criteria. | |

VEGETATION - Use scientific names of plants.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-------------------|-------------------|------------------|-------------------------|--|--|--|----------|--|--|--|----------|--|--|--|----------|--|--|--|---------------------|--|--|--|--|--|--|--|-------------------------|--|--|--|----------|--|--|--|----------|--|--|--|----------|--|--|--|----------|--|--|--|---------------------|--|--|--|--|--|--|--|---------------------------|-----------|------------|-------------|----------|--|--|--|----------|--|--|--|----------|--|--|--|----------|--|--|--|----------|--|--|--|----------|--|--|--|----------|--|--|--|----------|--|--|--|-----------|--|--|--|-------------------------|--|--|--|---|--|--|--|-------------------------|--|--|--|----------|--|--|--|---------------------|--|--|--|--|--|--|--|--|----------------------------------|--|--|--------------|---|--------------|---|----------------|------------------------------------|--|-------------------|--------------|----------------------|-------------------------|-----------------------|-------------------------|----------------------|-------------------------|------------------------|----------------------------|----------------------|-------------------------|----------------|------------------------------|--------------------------|-------------|---|--|---|--|--|--|--|--|--|--|---|--|--|--|--|-------------------------------|
| <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"><u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)</td> <td style="width:15%;">Absolute % cover</td> <td style="width:15%;">Dominant Species?</td> <td style="width:10%;">Indicator Status</td> </tr> <tr> <td>1. <u>None Observed</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4" style="text-align: right;">_____ = Total Cover</td> </tr> <tr> <td><u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1. <u>None Observed</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4" style="text-align: right;">_____ = Total Cover</td> </tr> <tr> <td><u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1. <u>Sorghum bicolor</u></td> <td align="center"><u>95</u></td> <td align="center"><u>Yes</u></td> <td align="center"><u>FACU</u></td> </tr> <tr> <td>2. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>6. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>7. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>8. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>9. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>10. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4" style="text-align: right;"><u>95</u> = Total Cover</td> </tr> <tr> <td><u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1. <u>None Observed</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4" style="text-align: right;">_____ = Total Cover</td> </tr> <tr> <td colspan="4"> % Bare Ground in Herb Stratum <u>5</u> </td> </tr> </table> | <u>Tree Stratum</u> (Plot size: <u>30 ft.</u>) | Absolute % cover | Dominant Species? | Indicator Status | 1. <u>None Observed</u> | | | | 2. _____ | | | | 3. _____ | | | | 4. _____ | | | | _____ = Total Cover | | | | <u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>) | | | | 1. <u>None Observed</u> | | | | 2. _____ | | | | 3. _____ | | | | 4. _____ | | | | 5. _____ | | | | _____ = Total Cover | | | | <u>Herb Stratum</u> (Plot size: <u>5 ft.</u>) | | | | 1. <u>Sorghum bicolor</u> | <u>95</u> | <u>Yes</u> | <u>FACU</u> | 2. _____ | | | | 3. _____ | | | | 4. _____ | | | | 5. _____ | | | | 6. _____ | | | | 7. _____ | | | | 8. _____ | | | | 9. _____ | | | | 10. _____ | | | | <u>95</u> = Total Cover | | | | <u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>) | | | | 1. <u>None Observed</u> | | | | 2. _____ | | | | _____ = Total Cover | | | | % Bare Ground in Herb Stratum <u>5</u> | | | | <table style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">Dominance Test worksheet:</td> </tr> <tr> <td>Number of Dominant Species That Are OBL, FACW, or FAC:</td> <td align="right"><u>0</u> (A)</td> </tr> <tr> <td>Total Number of Dominant Species Across All Strata:</td> <td align="right"><u>1</u> (B)</td> </tr> <tr> <td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td> <td align="right"><u>0</u> (A/B)</td> </tr> <tr> <td colspan="2">Prevalence Index Worksheet:</td> </tr> <tr> <td align="center">Total % Cover of:</td> <td align="center">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td align="right"><u>0</u> x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td align="right"><u>0</u> x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td align="right"><u>0</u> x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>95</u></td> <td align="right"><u>95</u> x 4 = <u>380</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td align="right"><u>0</u> x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td align="right"><u>95</u> (A) <u>380</u> (B)</td> </tr> <tr> <td>Prevalence Index = B/A =</td> <td align="right"><u>4.00</u></td> </tr> <tr> <td colspan="2">Hydrophytic Vegetation Indicators:</td> </tr> <tr> <td colspan="2"><u> </u> 1 - Rapid Test for Hydrophytic Vegetation</td> </tr> <tr> <td colspan="2"><u> </u> 2 - Dominance Test is >50%</td> </tr> <tr> <td colspan="2"><u> </u> 3 - Prevalence Index is ≤ 3.0¹</td> </tr> <tr> <td colspan="2"><u> </u> 4 - Morphological Adaptations¹ (Explain)</td> </tr> <tr> <td colspan="2"><u> </u> Problematic Hydrophytic Vegetation¹ (Explain)</td> </tr> <tr> <td colspan="2">¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</td> </tr> <tr> <td>Hydrophytic Vegetation Present?</td> <td align="right">Yes <u> </u> No <u>X</u></td> </tr> </table> | Dominance Test worksheet: | | Number of Dominant Species That Are OBL, FACW, or FAC: | <u>0</u> (A) | Total Number of Dominant Species Across All Strata: | <u>1</u> (B) | Percent of Dominant Species That Are OBL, FACW, or FAC: | <u>0</u> (A/B) | Prevalence Index Worksheet: | | Total % Cover of: | Multiply by: | OBL species <u>0</u> | <u>0</u> x 1 = <u>0</u> | FACW species <u>0</u> | <u>0</u> x 2 = <u>0</u> | FAC species <u>0</u> | <u>0</u> x 3 = <u>0</u> | FACU species <u>95</u> | <u>95</u> x 4 = <u>380</u> | UPL species <u>0</u> | <u>0</u> x 5 = <u>0</u> | Column Totals: | <u>95</u> (A) <u>380</u> (B) | Prevalence Index = B/A = | <u>4.00</u> | Hydrophytic Vegetation Indicators: | | <u> </u> 1 - Rapid Test for Hydrophytic Vegetation | | <u> </u> 2 - Dominance Test is >50% | | <u> </u> 3 - Prevalence Index is ≤ 3.0 ¹ | | <u> </u> 4 - Morphological Adaptations ¹ (Explain) | | <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | Hydrophytic Vegetation Present? | Yes <u> </u> No <u>X</u> |
| <u>Tree Stratum</u> (Plot size: <u>30 ft.</u>) | Absolute % cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>None Observed</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| _____ = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>None Observed</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| _____ = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Herb Stratum</u> (Plot size: <u>5 ft.</u>) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Sorghum bicolor</u> | <u>95</u> | <u>Yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 6. _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 9. _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <u>95</u> = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>None Observed</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>5</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dominance Test worksheet: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of Dominant Species That Are OBL, FACW, or FAC: | <u>0</u> (A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Number of Dominant Species Across All Strata: | <u>1</u> (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Percent of Dominant Species That Are OBL, FACW, or FAC: | <u>0</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index Worksheet: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | <u>0</u> x 1 = <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species <u>0</u> | <u>0</u> x 2 = <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | <u>0</u> x 3 = <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species <u>95</u> | <u>95</u> x 4 = <u>380</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | <u>0</u> x 5 = <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | <u>95</u> (A) <u>380</u> (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A = | <u>4.00</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Indicators: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u> </u> 1 - Rapid Test for Hydrophytic Vegetation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u> </u> 2 - Dominance Test is >50% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u> </u> 3 - Prevalence Index is ≤ 3.0 ¹ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u> </u> 4 - Morphological Adaptations ¹ (Explain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Present? | Yes <u> </u> No <u>X</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FACU or drier). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: DP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------|--|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 4/2 | 100 | None | | | | Silt Loam | |
| 6-12 | 10YR 4/2 | 90 | 10YR 3/1 | 10 | D | M | Silt Loam | Dark mottles in matrix have sheen on surface |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | | |
|---|--|---|
| Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.) | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) | |

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|---|

Remarks:
No positive indication of hydric soils was observed.

HYDROLOGY

| | |
|--|---|
| Wetland hydrology Indicators: | |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | <u>Secondary Indicators (minimum of two required)</u> |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| | <input type="checkbox"/> Drainage Patterns (B10) |
| | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| | (where tilled) |
| | <input type="checkbox"/> Crayfish Burrows (C8) |
| | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| | <input type="checkbox"/> Geomorphic Position (D2) |
| | <input type="checkbox"/> FAC-Neutral Test (D5) |
| | <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

| | |
|--|---|
| Field Observations: | Wetland Hydrology Present? Yes _____ No <u>X</u> |
| Surface Water Present? Yes _____ No <u>X</u> Depth (inches): <u>N/A</u> | |
| Water Table Present? Yes _____ No <u>X</u> Depth (inches): <u>>20</u> | |
| Saturation Present? Yes _____ No <u>X</u> Depth (inches): <u>>20</u> (includes capillary fringe) | |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Clay Center Kansas Solar Site County: Clay County Sampling Date: January 31, 2024
 Applicant/Owner: KPP Energy, A Municipal Energy Agency State: Kansas Sampling Point: DP3
 Investigator(s): Alliah Hardin and Kadin McBee Section, Township, Range: Section 8, Township 8S, Range 3E, 6th P.M., Book CR103, Page 337
 Landform (hillslope, terrace, etc.): Agricultural Cropland Local relief (concave, convex, none): None Slope (%): 0 to 2
 Subregion (LRR): LRR H / MLRA 74 Lat: 39.37528 Long: -97.13778 Datum: NAD 83
 Soil Map Unit Name: 3261 NWI Classification: Upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Remarks: This point was determined not to be within a wetland due to the lack of all three wetland criteria. | |

VEGETATION - Use scientific names of plants.

| | Absolute % cover | Dominant Species? | Indicator Status | |
|--|------------------|-------------------|------------------|---|
| <u>Tree Stratum</u> (Plot size: <u>30 ft.</u>) | | | | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
| 1. <u>None Observed</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>95</u> x 4 = <u>380</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>100</u> (A) <u>405</u> (B) Prevalence Index = B/A = <u>4.05</u> |
| <u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>) | | | | |
| 1. <u>None Observed</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | |
| <u>Herb Stratum</u> (Plot size: <u>5 ft.</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤ 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Explain) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Cynodon dactylon</u> | 95 | Yes | FACU | |
| 2. <u>Setaria viridis</u> | 5 | No | UPL | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| 100 = Total Cover | | | | |
| <u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>) | | | | Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> |
| 1. <u>None Observed</u> | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| % Bare Ground in Herb Stratum <u>0</u> | | | | |

Remarks:
 No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FACU or drier).

APPENDIX F

HISTORIC PRESERVATION

EXHIBIT F-1

**TRIBAL DIRECTORY
ASSESSMENT TOOL**



Tribal Directory Assessment Information



Contact Information for Tribes with Interests in Clay County, Kansas

| | Tribal Name | County Name |
|---|---|-------------|
| + | Cheyenne and Arapaho Tribes, Oklahoma | Clay |
| + | Kaw Nation, Oklahoma | Clay |
| + | Osage Nation | Clay |
| + | Pawnee Nation of Oklahoma | Clay |
| + | Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma | Clay |

1 - 5 of 5 results

« < 1 > » 10 ▾

APPENDIX G

PRELIMINARY

DESKTOP REVIEW

EXHIBIT G-1

USFWS IPaC OFFICIAL SPECIES LIST



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Kansas Ecological Services Field Office
2609 Anderson Avenue
Manhattan, KS 66502-2801
Phone: (785) 539-3474 Fax: (785) 539-8567

In Reply Refer To:

09/19/2024 15:21:53 UTC

Project Code: 2024-0093411

Project Name: Clay Center Kansas Solar Site

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Kansas Ecological Services Field Office

2609 Anderson Avenue

Manhattan, KS 66502-2801

(785) 539-3474

PROJECT SUMMARY

Project Code: 2024-0093411

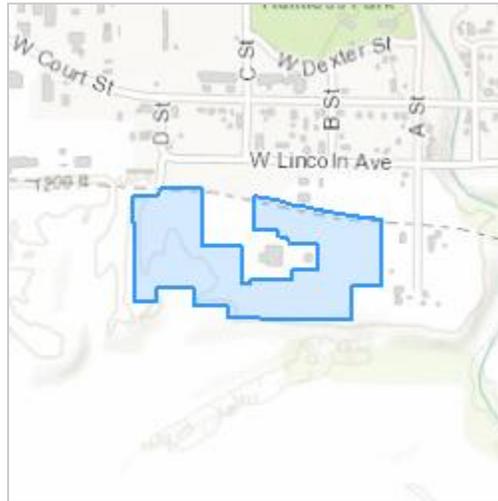
Project Name: Clay Center Kansas Solar Site

Project Type: New Constr - Above Ground

Project Description: An approximately 18.44-acre Assessment Area located in Clay County, Kansas.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.374879250000006,-97.14050106037274,14z>



Counties: Clay County, Kansas

ENDANGERED SPECIES ACT SPECIES

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

INSECTS

| NAME | STATUS |
|--|-----------|
| Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743 | Candidate |

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Topographic, Co.
Name: Alliah Hardin
Address: 1900 NW Expressway
Address Line 2: Ste. 1500
City: Oklahoma City
State: OK
Zip: 73118
Email: alliah.hardin@gmail.com
Phone: 6826838115

EXHIBIT G-2

**USFWS
CONSISTENCY
LETTER**



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Kansas Ecological Services Field Office
2609 Anderson Avenue
Manhattan, KS 66502-2801
Phone: (785) 539-3474 Fax: (785) 539-8567

In Reply Refer To:
Project code: 2024-0093411
Project Name: Clay Center Kansas Solar Site

05/21/2024 15:39:04 UTC

Federal Nexus: yes
Federal Action Agency (if applicable):

Subject: Record of project representative's no effect determination for 'Clay Center Kansas Solar Site'

Dear Alliah Hardin:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on May 21, 2024, for 'Clay Center Kansas Solar Site' (here forward, Project). This project has been assigned Project Code 2024-0093411 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project has reached the determination of "No Effect" on the northern long-eared bat. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed

action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

Based upon your IPaC submission, your project has reached the determination of “No Effect” on the northern long-eared bat. If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the Kansas Ecological Services Field Office and reference Project Code 2024-0093411 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

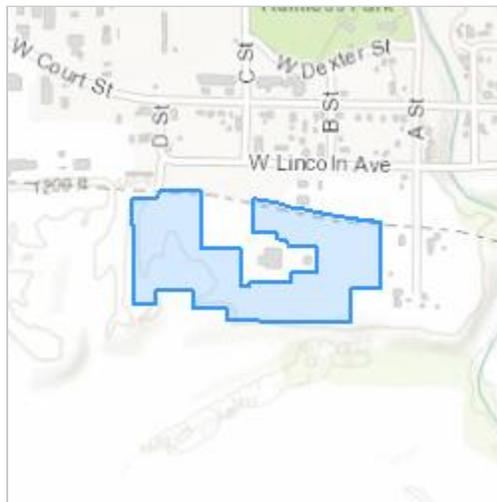
Clay Center Kansas Solar Site

2. Description

The following description was provided for the project 'Clay Center Kansas Solar Site':

An approximately 18.44-acre Assessment Area located in Clay County, Kansas.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.374879250000006,-97.14050106037274,14z>



DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the Endangered northern long-eared bat (*Myotis septentrionalis*). Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

No

3. Does any component of the action involve construction or operation of wind turbines?

Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

No

6. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

No

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

No

8. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

No

9. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the [effects of any activities](#) that would not occur but for the proposed action.

If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of [Effects of the Action](#) can be found here: <https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions>

Yes

PROJECT QUESTIONNAIRE

Will all project activities be completed by November 30, 2024?

No

IPAC USER CONTACT INFORMATION

Agency: Topographic, Co.
Name: Alliah Hardin
Address: 1900 NW Expressway
Address Line 2: Ste. 1500
City: Oklahoma City
State: OK
Zip: 73118
Email: alliah.hardin@gmail.com
Phone: 6826838115

EXHIBIT G-3

CUSTOM SOIL
RESOURCE REPORT

Custom Soil Resource Report for Clay County, Kansas



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.

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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

Custom Soil Resource Report

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

Custom Soil Resource Report

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

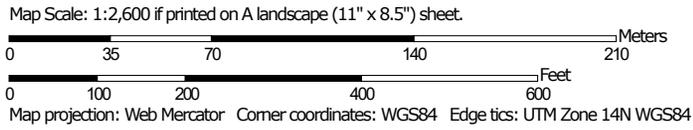
Soil Map

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



Soil Map may not be valid at this scale.



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: Clay County, Kansas
 Survey Area Data: Version 22, Sep 12, 2023

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 |
|------------------------------------|--|--------------|----------------|
| 3261 | Muir silt loam, very rarely flooded | 18.4 | 99.8% |
| 3778 | Sherdahl loam, 3 to 7 percent slopes, eroded | 0.0 | 0.2% |
| Totals for Area of Interest | | 18.4 | 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,

Custom Soil Resource Report

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.

Clay County, Kansas

3261—Muir silt loam, very rarely flooded

Map Unit Setting

National map unit symbol: 2tpxv
Elevation: 1,310 to 1,640 feet
Mean annual precipitation: 27 to 34 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 150 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Muir, Very Rarely Flooded

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: silt loam
A - 7 to 18 inches: silt loam
Bw1 - 18 to 36 inches: silty clay loam
Bw2 - 36 to 48 inches: silt loam
C - 48 to 79 inches: silt loam

Properties and qualities

Slope: 0 to 2 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: Very rare
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: Very high (about 12.7 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Ecological site: R074XY114KS - Loamy Terrace
Hydric soil rating: No

Minor Components

Detroit, very rarely flooded

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R074XY114KS - Loamy Terrace
Hydric soil rating: No

Sherdahl, very rarely flooded

Percent of map unit: 4 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R074XY114KS - Loamy Terrace
Hydric soil rating: No

Aquolls, occasionally ponded

Percent of map unit: 1 percent
Landform: Depressions on flood plains
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: R074XY132KS - Subirrigated
Hydric soil rating: Yes

3778—Sherdahl loam, 3 to 7 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2zt6g
Elevation: 1,310 to 1,640 feet
Mean annual precipitation: 27 to 34 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 165 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sherdahl, very rarely flooded, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sherdahl, Very Rarely Flooded

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

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Parent material: Coarse-silty alluvium over fine-silty alluvium

Typical profile

Ap - 0 to 7 inches: loam
C - 7 to 40 inches: silt loam
2Ab - 40 to 44 inches: silt loam
2Bkb1 - 44 to 59 inches: silt loam
2Bkb2 - 59 to 79 inches: silty clay 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 low to moderately high (0.06 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: 8 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R074XY114KS - Loamy Terrace
Hydric soil rating: No

Minor Components

Muir, very rarely flooded

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R074XY114KS - Loamy Terrace
Hydric soil rating: No

References

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- 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>

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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

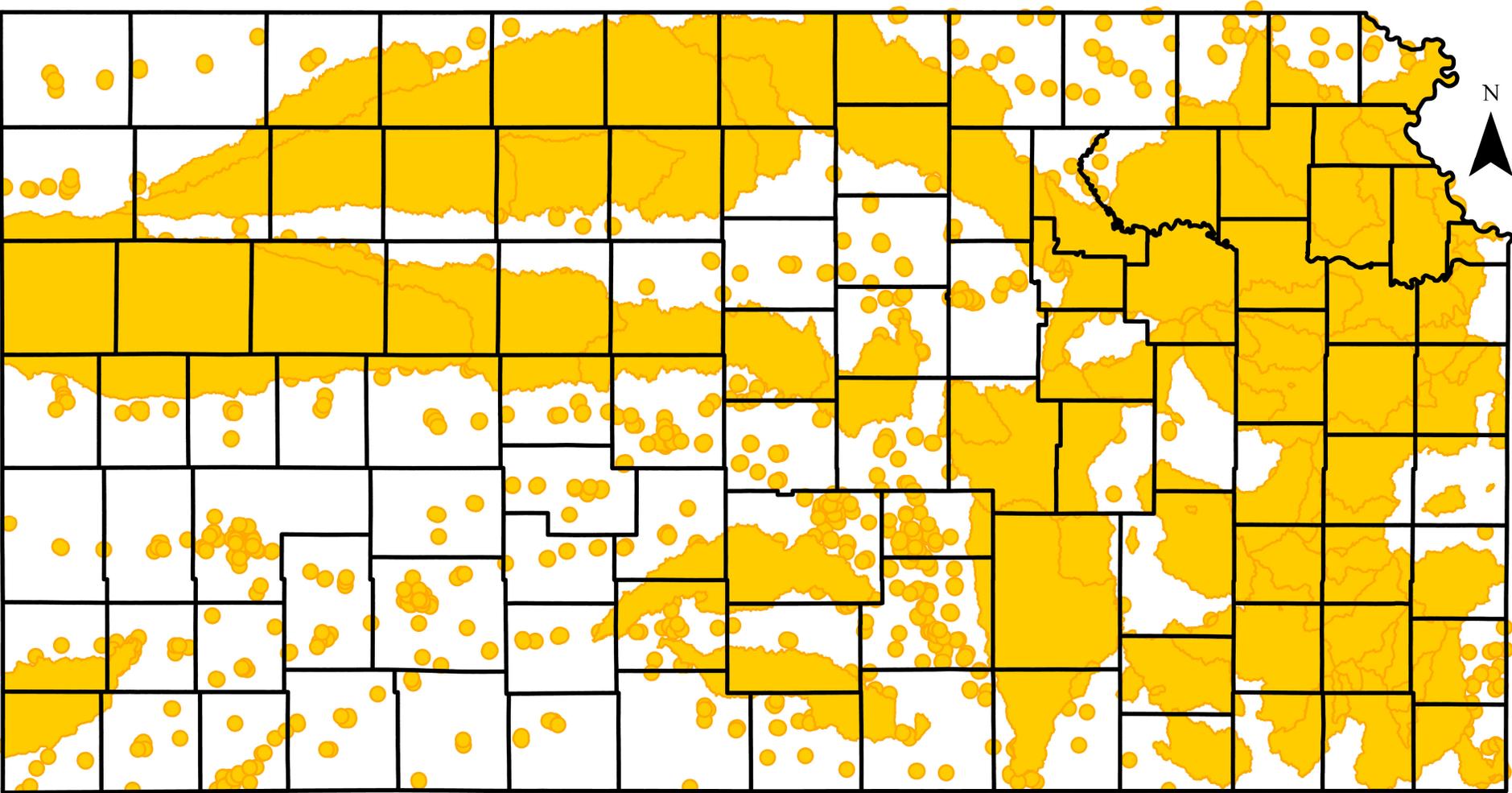
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EXHIBIT G-4

**WELL HEAD PROTECTION
AREA LOCATION MAP**

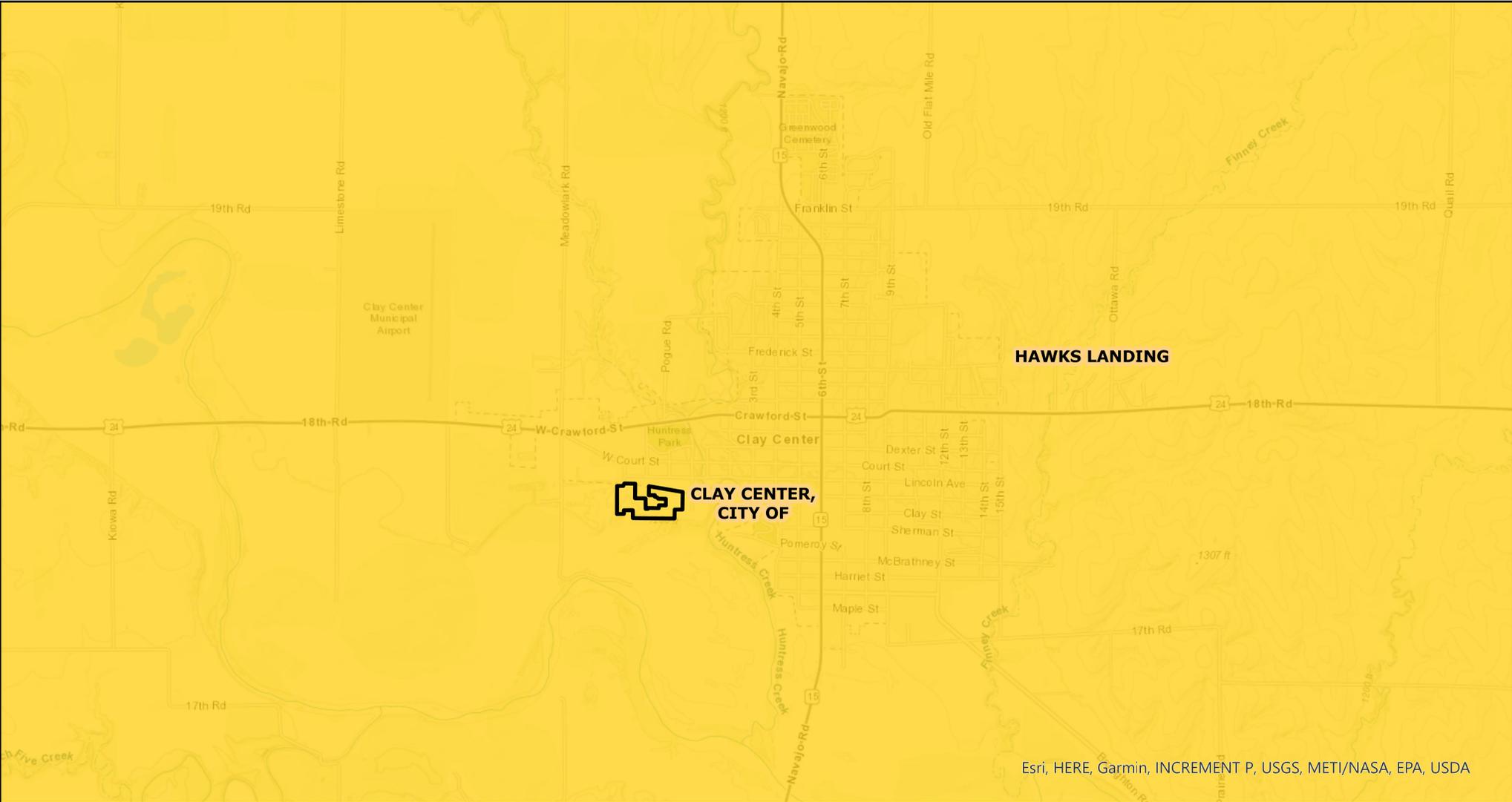
Wellhead Protection Areas in Kansas



0 30 60 120 Miles

Wellhead
Protection
Areas

Clay Center



Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

EXHIBIT G-5

**KDHE CHAIN OF
COMMUNICATION**

Alliah Hardin

From: Kadin McBee
Sent: Tuesday, March 5, 2024 2:11 PM
To: Chris Seiden; Alliah Hardin; Austin Lindsay
Subject: FW: KDHE KORA request
Attachments: KORA Request Wellhead Protection Areas Map.pdf



Kadin McBee | Environmental Specialist
Topographic | Environmental Division
481 Winscott Road, Ste. 200
Benbrook, TX 76126
o: 817.744.7512 | c: 817.709.0374 | f: 817.744.7554
[Firm Registration and Disclaimer](#)



From: Adrienne Miller [KDHE] <Adrienne.Miller@ks.gov>
Sent: Tuesday, March 5, 2024 2:07 PM
To: Kadin McBee <Kadin.McBee@topographic.com>
Cc: Glenda Newquist [KDHE] <Glenda.Newquist@ks.gov>
Subject: RE: KDHE KORA request

Hi Kadin,

Attached is the wellhead protection areas physical map. You do not need to submit an invoice as you do not owe anything.

Thanks,
Adrienne Miller (she/her/hers)
Environmental Specialist Supervisor
Office: 785-296-7165
Cell: 785-480-0467



From: Kadin McBee <Kadin.McBee@topographic.com>
Sent: Monday, March 4, 2024 1:51 PM
To: Adrienne Miller [KDHE] <Adrienne.Miller@ks.gov>
Subject: RE: KDHE KORA request

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

Hello Adrienne,

I appreciate you helping us out. If you could provide us with a physical mapping copy, we would really appreciate it. Also, I was told to follow up with what amount we would owe and was told to request a W-9 as well. Thank you.

Kadin McBee | Environmental Specialist
Topographic | Environmental Division
481 Winscott Road, Ste. 200
Benbrook, TX 76126
o: 817.744.7512 | c: 817.709.0374 | f: 817.744.7554

[Firm Registration and Disclaimer](#)



From: Adrienne Miller [KDHE] <Adrienne.Miller@ks.gov>
Sent: Friday, March 1, 2024 11:37 AM
To: Kadin McBee <Kadin.McBee@topographic.com>
Cc: Erich Glave [KDHE] <Erich.Glave@ks.gov>; Glenda Newquist [KDHE] <Glenda.Newquist@ks.gov>
Subject: RE: KDHE KORA request

Hi Kadin,

After looking at our maps, the following information was gathered.

Greensburg- YES
Kingman- NO
Ellinwood- YES
Hillsboro- YES
Marion-YES
Wellington-NO
Winfield-YES
Mulvane-YES
Clay Center-YES

If you still need a physical mapping copy, just let me know and we can get that to you.

Thanks,
Adrienne Miller (she/her/hers)
Environmental Specialist Supervisor
Office: 785-296-7165
Cell: 785-480-0467



From: Kadin McBee <Kadin.McBee@topographic.com>
Sent: Thursday, February 29, 2024 2:14 PM
To: Adrienne Miller [KDHE] <Adrienne.Miller@ks.gov>
Subject: RE: KDHE KORA request

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

I understand completely. I have attached a KMZ file with all our project locations. If you could take a look at them and let me know if we are within any Well Head Protection Areas I would appreciate it. Thank you.

Kadin McBee | Environmental Specialist
Topographic | Environmental Division
481 Winscott Road, Ste. 200
Benbrook, TX 76126
o: 817.744.7512 | c: 817.709.0374 | f: 817.744.7554

[Firm Registration and Disclaimer](#)



From: Adrienne Miller [KDHE] <Adrienne.Miller@ks.gov>
Sent: Thursday, February 29, 2024 11:36 AM
To: Kadin McBee <Kadin.McBee@topographic.com>
Cc: Erich Glave [KDHE] <Erich.Glave@ks.gov>; Glenda Newquist [KDHE] <Glenda.Newquist@ks.gov>
Subject: KDHE KORA request

Hi Kadin,

We received your KORA request. Due to homeland security, we cannot give you tiff files, shapefiles or KML's. If you have a specific region you are wanting maps from, please let us know and we can try to use our GIS mapper to get some information.

Thanks,
Adrienne Miller (she/her/hers)
Environmental Specialist Supervisor
Office: 785-296-7165
Cell: 785-480-0467



APPENDIX H

OTHER RESOURCES

EXHIBIT H-1

EPA GREEN BOOK REPORT

Green Book

You are here: [EPA Home](#) > [Green Book](#) > >[National Area and County-Level Multi-Pollutant Information](#) > Kansas Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

Kansas Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

Data is current as of December 31, 2023

Listed by County, NAAQS, Area. The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

* The 1997 Primary Annual PM-2.5 NAAQS (level of 15 µg/m³) is revoked in attainment and maintenance areas for that NAAQS. For additional information see the PM-2.5 NAAQS SIP Requirements Final Rule, effective October 24, 2016. ([81 FR 58009](#))

Change the State:

Download National Dataset: [dbf](#) | [xls](#) | [Data dictionary \(PDF\)](#)

[Important Notes](#)

| County | NAAQS | Area Name | Nonattainment in Year | Redesignation to Maintenance | Classification | Whole or Part County | Population (2010) | State/County FIPS Codes |
|------------------|-----------------------------------|--------------------|---|------------------------------|----------------|----------------------|-------------------|-------------------------|
| KANSAS | | | | | | | | |
| Johnson County | 1-Hour Ozone (1979)-NAAQS revoked | Kansas City, MO-KS | <input type="text"/> | 07/23/1992 | Other | Whole | 544,179 | 20/091 |
| Saline County | Lead (2008) | Saline County, KS | <input type="text"/> 11 <input type="text"/> 12 <input type="text"/> 13 <input type="text"/> 14 <input type="text"/> 15 <input type="text"/> 16 <input type="text"/> 17 <input type="text"/> 18 <input type="text"/> 19 <input type="text"/> 20 <input type="text"/> 21 <input type="text"/> 22 <input type="text"/> 23 | // | | Part | 9 | 20/169 |
| Wyandotte County | 1-Hour Ozone (1979)-NAAQS revoked | Kansas City, MO-KS | <input type="text"/> | 07/23/1992 | Other | Whole | 157,505 | 20/209 |