



NRCS Soils and Geology Evaluation

Denova Project

Washington County, Colorado

February 2022, Revised November 2022

PRESENTED TO

**Denova Sequestration, LLC a wholly-owned
subsidiary of Carbon America**
5525 W 56th Ave. Suite 200
Arvada, CO 80002

PRESENTED BY

Tetra Tech, Inc.
1560 Broadway, Suite 1400
Denver, CO 80202



FIGURES

Carbon America
Denova Project

Figure 1
Site Location

SW4NW4 SEC 27; NE4, SE4NW4, NE4SW4,
NW4SE4 SEC 28; T1N R49W of the 6th PM,
Washington County, CO

Project Features

-  Pad Site
-  Access Road 15-foot Corridor

Transportation

-  US Highway
-  State Highway

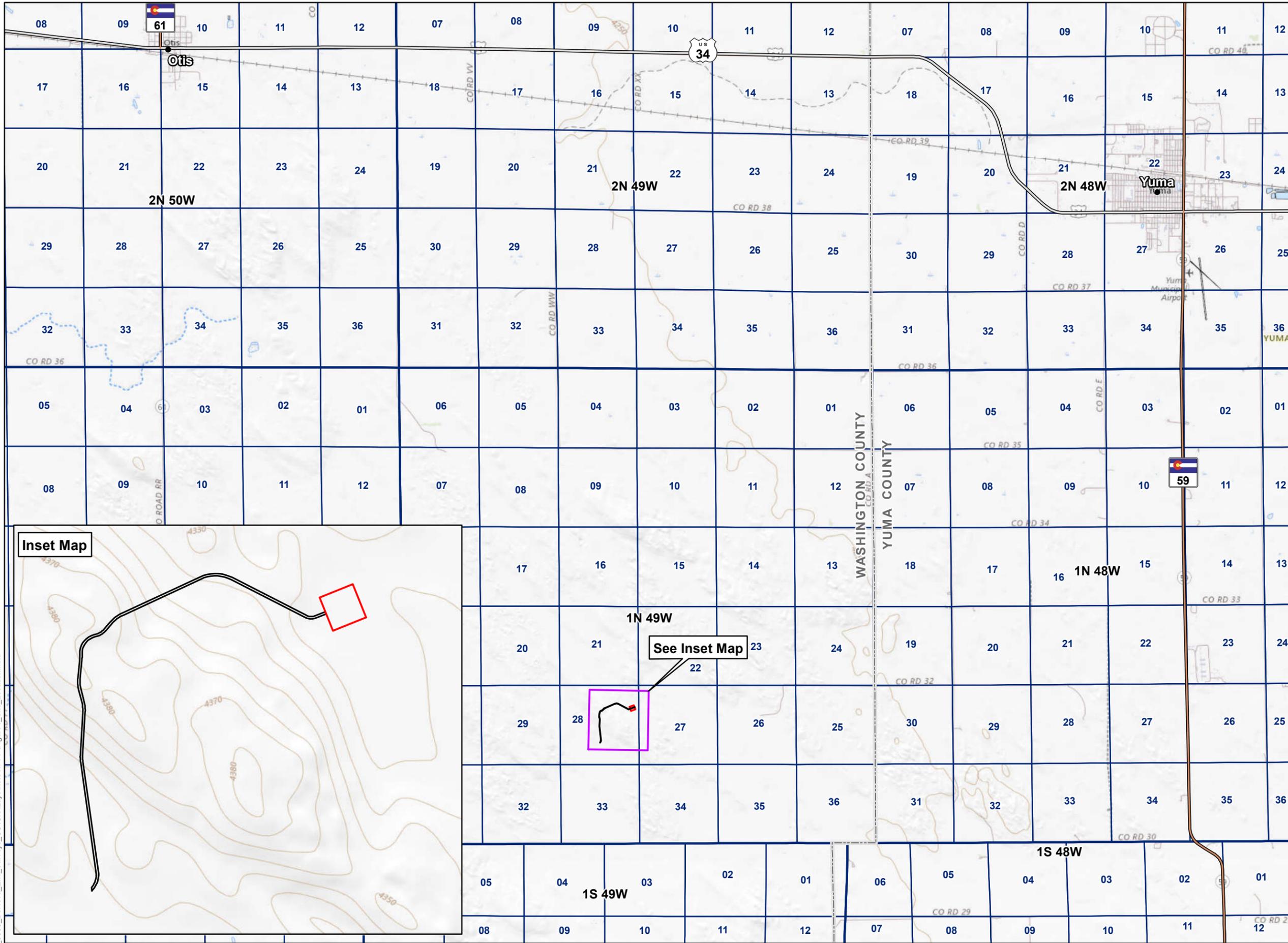
Boundaries

-  County Boundary
-  PLSS Township
-  PLSS Section



NOT FOR CONSTRUCTION

Reference Map



Inset Map

See Inset Map

1:75,000 NAD 1983 StatePlane Colorado North FIPS 0501 Feet



Source: ESRI, USGS US TOPO MAPS, BTS, US CENSUS, BLM PLSS

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**Carbon America
Denova Project**

**Figure 2
Site Plan**

SW4NW4 SEC 27; NE4, SE4NW4, NE4SW4,
NW4SE4 SEC 28; T1N R49W of the 6th PM,
Washington County, CO

Project Features

-  Pad Site
-  Access Road 15-foot Corridor

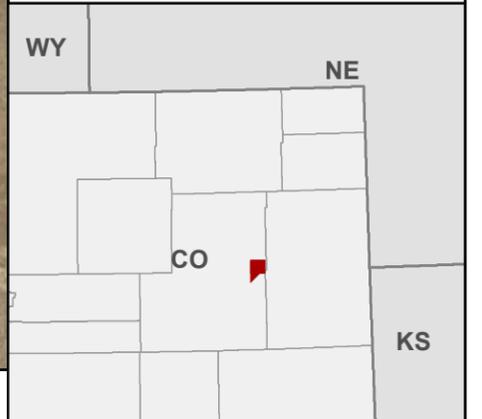
Transportation

-  Existing Two-Track Path



NOT FOR CONSTRUCTION

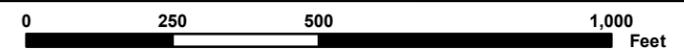
Reference Map



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1:3,750 NAD 1983 StatePlane Colorado North FIPS 0501 Feet



Source: ESRI, USDA NAIP, BTS, US CENSUS

**Carbon America
Denova Project**

**Figure 3
Natural Resources Conservation
Service (NRCS) Soils**

SW4NW4 SEC 27; NE4, SE4NW4, NE4SW4,
NW4SE4 SEC 28; T1N R49W of the 6th PM,
Washington County, CO

Project Features

-  Pad Site
-  Access Road 15-foot Corridor

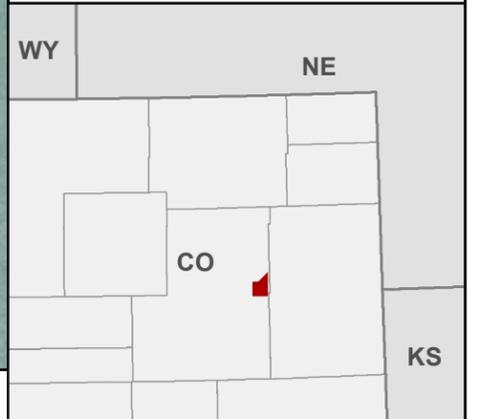
Soil Types

-  Valent sand, rolling
-  Valent sand, 3-9% slopes
-  Haxtun loamy sand, 0-3% slopes



NOT FOR CONSTRUCTION

Reference Map



1:4,000 NAD 1983 StatePlane Colorado North FIPS 0501 Feet



Source: ESRI, USDA NAIP, NRCS

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Attachment A: NRCS Web Soil Survey

Washington County, Colorado

27—Haxtun loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2s7wd
Elevation: 3,480 to 4,720 feet
Mean annual precipitation: 15 to 23 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Haxtun

Setting

Landform: Interdunes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits

Typical profile

Ap - 0 to 9 inches: loamy sand
Bt1 - 9 to 23 inches: sandy clay loam
2Bt2 - 23 to 39 inches: clay loam
2C - 39 to 79 inches: loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 14 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: C

Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Minor Components

Ascalon

Percent of map unit: 6 percent
Landform: Interdunes
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Vona

Percent of map unit: 4 percent
Landform: Dunes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Data Source Information

Soil Survey Area: Washington County, Colorado
Survey Area Data: Version 24, Sep 1, 2022

Washington County, Colorado

71—Valent sand, rolling

Map Unit Setting

National map unit symbol: 2tczg
Elevation: 2,500 to 4,650 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 135 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Valent, Rolling

Setting

Landform: Dunes, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Noncalcareous eolian sands

Typical profile

A - 0 to 4 inches: sand
C - 4 to 80 inches: sand

Properties and qualities

Slope: 9 to 24 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 39.96 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Ecological site: R067BY015CO - Deep Sand, R072XY109KS -
Rolling Sands
Hydric soil rating: No

Minor Components

Dailey

Percent of map unit: 10 percent
Landform: Interdunes
Landform position (two-dimensional): Foothlope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R067BY015CO - Deep Sand, R072XY111KS -
Sandy Plains
Hydric soil rating: No

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Percent of map unit: 3 percent
Landform: Dune slacks
Landform position (two-dimensional): Foothlope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R067BY029CO - Sandy Meadow, R072XY107KS -
Sandy Lowland
Hydric soil rating: No

Valent, eroded

Percent of map unit: 2 percent
Landform: Blowouts
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope,
side slope, crest
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R067BY015CO - Deep Sand, R072XY109KS -
Rolling Sands
Hydric soil rating: No

Data Source Information

Soil Survey Area: Washington County, Colorado
Survey Area Data: Version 24, Sep 1, 2022

Washington County, Colorado

70—Valent sand, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2tcf
Elevation: 3,050 to 5,150 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 48 to 55 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Valent and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Valent

Setting

Landform: Hills, dunes
Landform position (two-dimensional): Shoulder, backslope, footslope, summit
Landform position (three-dimensional): Head slope, nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Noncalcareous eolian sands

Typical profile

A - 0 to 5 inches: sand
AC - 5 to 12 inches: sand
C1 - 12 to 30 inches: sand
C2 - 30 to 80 inches: sand

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 39.96 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R067BY015CO - Deep Sand, R072XY109KS -
Rolling Sands
Hydric soil rating: No

Minor Components

Dailey

Percent of map unit: 10 percent
Landform: Interdunes
Landform position (two-dimensional): Foothlope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R067BY015CO - Deep Sand, R072XA021KS -
Sands (North) (PE 16-20)
Hydric soil rating: No

Vona

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, backslope,
footslope
Landform position (three-dimensional): Head slope, nose slope,
side slope, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains, R072XA022KS -
Sandy (North) Draft (April 2010) (PE 16-20)
Hydric soil rating: No

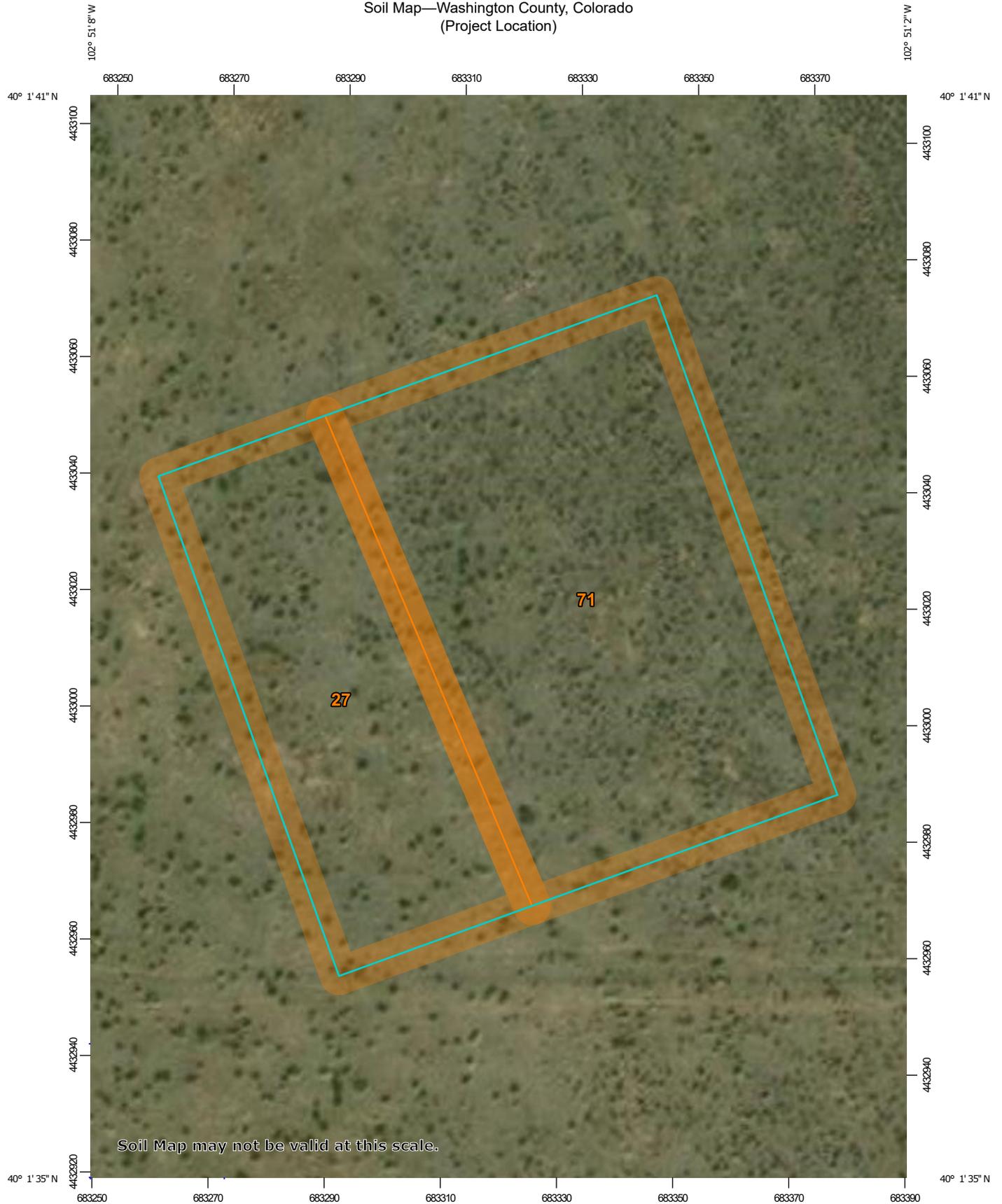
Haxtun

Percent of map unit: 5 percent
Landform: Interdunes
Landform position (two-dimensional): Foothlope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R067BY024CO - Sandy Plains, R072XY111KS -
Sandy Plains
Hydric soil rating: No

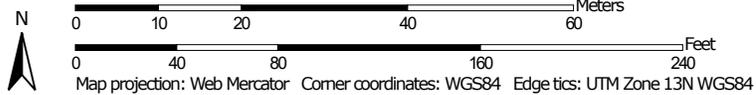
Data Source Information

Soil Survey Area: Washington County, Colorado
Survey Area Data: Version 24, Sep 1, 2022

Soil Map—Washington County, Colorado
(Project Location)



Map Scale: 1:906 if printed on A portrait (8.5" x 11") sheet.



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: Washington County, Colorado

Survey Area Data: Version 23, Aug 31, 2021

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

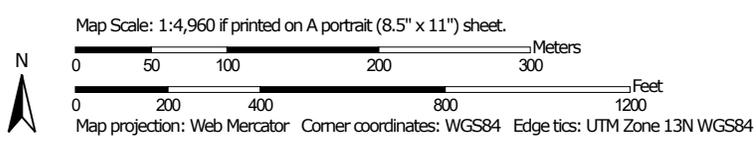
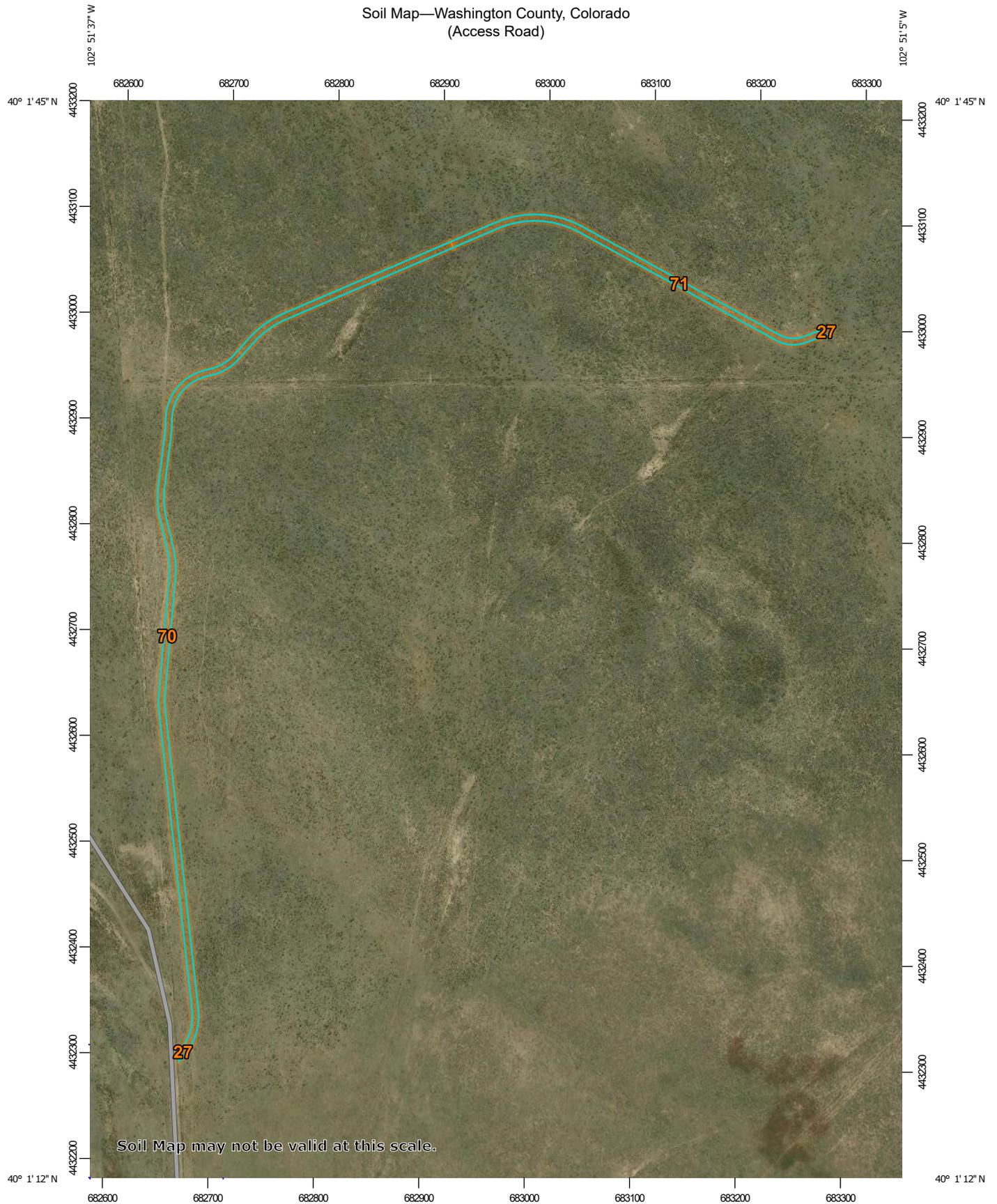
Date(s) aerial images were photographed: Oct 21, 2011—Oct 10, 2017

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
27	Haxtun loamy sand, 0 to 3 percent slopes	0.7	36.1%
71	Valent sand, rolling	1.3	63.9%
Totals for Area of Interest		2.1	100.0%

Soil Map—Washington County, Colorado
(Access Road)



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

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Map Unit Legend

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27	Haxtun loamy sand, 0 to 3 percent slopes	0.0	1.9%
70	Valent sand, 3 to 9 percent slopes	1.4	69.3%
71	Valent sand, rolling	0.6	28.8%
Totals for Area of Interest		2.0	100.0%