



Legend

- Proposed Access Road
- Proposed Oil and Gas Location
- Proposed Working Pad Surface
- One Mile Buffer

Soil Type

- BaA, Baca silt loam, 0 to 3 percent slopes
- WC, Plughat-Villegreen complex, 1 to 4 percent slopes
- WeB, Wiley silt loam, 0 to 3 percent slopes

Source: NRCS July 2020

Date Saved: 1/9/2023 11:58 AM

0 0.25 0.5 Miles

PROJECT LOCATION

Pinon Canyon Military Reservation
Las Animas County
COLORADO
NEW MEXICO

BNL (Enterprise) Inc.
Jackson 27 SWSE 3054
Sec. 27 T30S R54W (SW/4 SE/4)
Las Animas County, Colorado
Surface: Fee
SOILS

Coordinate System: NAD 83 StatePlane
Colorado South FIPS 0503 Feet

Prepared By: REDHAWK GIS

Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties

BaA—Baca silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2rh1c
Elevation: 3,610 to 6,230 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Baca

Setting

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

Typical profile

A - 0 to 3 inches: silt loam
AB - 3 to 6 inches: silty clay loam
Bt1 - 6 to 13 inches: silty clay
Bt2 - 13 to 21 inches: silty clay
Btk - 21 to 27 inches: silty clay loam
Bk1 - 27 to 47 inches: silty clay loam
Bk2 - 47 to 79 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
*Capacity of the most limiting layer to transmit water
(Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (0.5 to 4.0
mmhos/cm)

Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: High (about 11.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: C
Ecological site: R067BY002CO - Loamy Plains
Forage suitability group: Clayey (G067BW001CO)
Other vegetative classification: Clayey (G067BW001CO), Loamy
Plains #2 (067XY002CO_2)
Hydric soil rating: No

Minor Components

Manzanst

Percent of map unit: 5 percent
Landform: Fan remnants, interfluves
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY042CO - Clayey Plains
Other vegetative classification: Clayey (G067BW001CO), Clayey
Plains #42 (067XY042CO_2)
Hydric soil rating: No

Wiley

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Other vegetative classification: Loamy (G067BW017CO), Loamy
Plains #2 (067XY002CO_2)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Las Animas County Area, Colorado, Parts of Huerfano and
Las Animas Counties
Survey Area Data: Version 25, Sep 7, 2022



Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties



| Map unit symbol and soil name | Ecological site | Total dry-weight production | | | Characteristic vegetation | Rangeland composition |
|---|---------------------------|-----------------------------|--------------|------------------|---------------------------|-----------------------|
| | | Favorable year | Normal year | Unfavorable year | | |
| | | <i>Lb/ac</i> | <i>Lb/ac</i> | <i>Lb/ac</i> | | <i>Pct</i> |
| BaA—Baca silt loam, 0 to 3 percent slopes | | | | | | |
| Baca | R067BY002CO: Loamy Plains | 1,800 | 1,300 | 600 | Blue grama | 30 |
| | | | | | Western wheatgrass | 25 |
| | | | | | Green needlegrass | 10 |
| | | | | | Buffalograss | 5 |
| | | | | | Winterfat | 5 |
| | | | | | American vetch | 3 |
| | | | | | Scarlet globemallow | 2 |
| | | | | | Purple prairieclover | 2 |
| | | | | | Sand dropseed | 2 |
| | | | | | Sun sedge | 2 |

Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties

WC—Plughat-Villegreen complex, 1 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2tqxn
Elevation: 4,900 to 5,800 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Plughat and similar soils: 43 percent
Villegreen and similar soils: 41 percent
Minor components: 16 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Plughat

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over residuum weathered from sandstone

Typical profile

A - 0 to 3 inches: silt loam
Bt1 - 3 to 6 inches: silty clay loam
Bt2 - 6 to 13 inches: silty clay loam
Btk - 13 to 27 inches: silty clay loam
Bk1 - 27 to 34 inches: silt loam
2Bk2 - 34 to 48 inches: loam
2R - 48 to 79 inches: bedrock

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: 43 to 51 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 2 percent

Maximum salinity: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)

Available water capacity: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: R067BY002CO - Loamy Plains

Hydric soil rating: No

Description of Villegreen

Setting

Landform: Interfluves

Landform position (two-dimensional): Shoulder, summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess over residuum weathered from sandstone

Typical profile

A - 0 to 6 inches: loam

BA - 6 to 9 inches: silty clay loam

Bt - 9 to 15 inches: silty clay loam

Btk - 15 to 24 inches: silty clay loam

2Bk - 24 to 32 inches: channery loam

2R - 32 to 79 inches: bedrock

Properties and qualities

Slope: 1 to 4 percent

Depth to restrictive feature: 30 to 33 inches to lithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Gypsum, maximum content: 2 percent

Maximum salinity: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)

Available water capacity: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: C

Ecological site: R067BY002CO - Loamy Plains

Hydric soil rating: No

Minor Components

Baca

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Wiley

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Boxcanyon

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Scarps
Down-slope shape: Linear
Across-slope shape: Linear

Data Source Information

Soil Survey Area: Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties

Survey Area Data: Version 23, Jun 5, 2020

Report — Rangeland Productivity and Plant Composition

| Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties | | | | | | |
|---|---------------------------|-----------------------------|--------------|------------------|---------------------------|-----------------------|
| Map unit symbol and soil name | Ecological site | Total dry-weight production | | | Characteristic vegetation | Rangeland composition |
| | | Favorable year | Normal year | Unfavorable year | | |
| | | <i>Lb/ac</i> | <i>Lb/ac</i> | <i>Lb/ac</i> | | <i>Pct</i> |
| WC—Plughat-Villegreen complex, 1 to 4 percent slopes | | | | | | |
| Plughat | R067BY002CO: Loamy Plains | 1,800 | 1,300 | 600 | Blue grama | 35 |
| | | | | | Western wheatgrass | 25 |
| | | | | | Green needlegrass | 7 |
| | | | | | Winterfat | 5 |
| | | | | | Buffalograss | 3 |
| | | | | | Sand dropseed | 3 |
| | | | | | Sun sedge | 2 |
| | | | | | American vetch | 2 |
| | | | | | Scarlet globemallow | 2 |
| | | | | | Purple prairieclover | 2 |
| Villegreen | R067BY002CO: Loamy Plains | 1,800 | 1,300 | 600 | Blue grama | 40 |
| | | | | | Western wheatgrass | 20 |
| | | | | | Green needlegrass | 5 |
| | | | | | Winterfat | 5 |
| | | | | | Sand dropseed | 3 |
| | | | | | Rubber rabbitbrush | 2 |
| | | | | | Bottlebrush squirreltail | 2 |
| | | | | | Broom snakeweed | 1 |
| | | | | | Red threeawn | 1 |

Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties

WeB—Wiley silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 3jqx
Elevation: 5,000 to 6,000 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 50 to 53 degrees F
Frost-free period: 130 to 155 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Wiley

Setting

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

Typical profile

A - 0 to 4 inches: silt loam
Bt1 - 4 to 9 inches: silty clay loam
Bt2 - 9 to 15 inches: silty clay loam
Btk - 15 to 26 inches: silty clay loam
Bk1 - 26 to 35 inches: silt loam
Bk2 - 35 to 44 inches: silt loam
Bk3 - 44 to 72 inches: silt 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: 30 percent
Gypsum, maximum content: 3 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum: 7.0
Available water capacity: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: C
Ecological site: R067BY002CO - Loamy Plains
Forage suitability group: Loamy (G067BW017CO)
Other vegetative classification: Loamy (G067BW017CO), Loamy
Plains #2 (067XY002CO_2)
Hydric soil rating: No

Minor Components

Plughat

Percent of map unit: 5 percent
Landform: Plains
Landform position (two-dimensional): Backslope, summit, footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Other vegetative classification: Loamy (G067BW017CO), Loamy
Plains #2 (067XY002CO_2)
Hydric soil rating: No

Baca

Percent of map unit: 5 percent
Landform: Plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Other vegetative classification: Clayey (G067BW001CO), Loamy
Plains #2 (067XY002CO_2)
Hydric soil rating: No

Villegreen

Percent of map unit: 5 percent
Landform: Plains
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Other vegetative classification: Loamy, Dry (G067BW019CO),
Loamy Plains #2 (067XY002CO_2)

Hydric soil rating: No

Data Source Information

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Las Animas Counties

Survey Area Data: Version 23, Jun 5, 2020

Report — Rangeland Productivity and Plant Composition



Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties



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| WeB—Wiley silt loam, 0 to 3 percent slopes | | | | | | |
| Wiley | R067BY002CO: Loamy Plains | 1,800 | 1,300 | 600 | Blue grama | 30 |
| | | | | | Western wheatgrass | 25 |
| | | | | | Green needlegrass | 10 |
| | | | | | Buffalograss | 5 |
| | | | | | Winterfat | 5 |
| | | | | | American vetch | 3 |
| | | | | | Sun sedge | 2 |
| | | | | | Sand dropseed | 2 |
| | | | | | Purple prairieclover | 2 |
| | | | | | Scarlet globemallow | 2 |