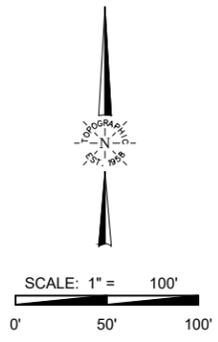


NCRS MAP UNIT DESCRIPTION
FAWN 2833/2734
VERDAD

- 73-VONA LOAMY SAND (3-5% SLOPE)  
HYDROLOGIC SOIL GROUP A
- 47-OLNEY FINE SANDY LOAD (1-3% SLOPE)  
HYDROLOGIC SOIL GROUP B
- 45-OLNEY LOAMY SAND (3-5% SLOPE)  
HYDROLOGIC SOIL GROUP B
- 79-WELD LOAM (1-3% SLOPE)  
HYDROLOGIC SOIL GROUP C
- 4-AQUOLLS AND AQUEPTS, FLOODED
- x SITE BOUNDARY

TOTAL ROAD SOIL DISTURBANCE ACREAGE	
OLNEY FINE SANDY LOAD (1-3% SLOPE) HYDROLOGIC SOIL GROUP B	0.06 ACRES
VONA LOAMY SAND (3-5% SLOPE) HYDROLOGIC SOIL GROUP A	0.13 ACRES
TOTAL OIL AND GAS DISTURBANCE ACREAGE	
OLNEY FINE SANDY LOAD (1-3% SLOPE) HYDROLOGIC SOIL GROUP B	0.21 ACRES
VONA LOAMY SAND (3-5% SLOPE) HYDROLOGIC SOIL GROUP A	8.87 ACRES
WELD LOAM (1-3% SLOPE) HYDROLOGIC SOIL GROUP C	0.92 ACRES



DATE:	02/01/22
DRAWN BY:	ARG
REVIEWED BY:	CCC
SCALE:	1" = 100'
SHEET:	1 OF 1
REVISION:	
	XXX XXX XXX
	XXXXXX XXX XXX
	XXXXXX XXX XXX

## Map Unit Description

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

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

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

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given 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.

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

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

## Weld County, Colorado, Southern Part

### 47—Olney fine sandy loam, 1 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 362v

*Elevation:* 4,600 to 5,200 feet

*Mean annual precipitation:* 11 to 15 inches

*Mean annual air temperature:* 46 to 54 degrees F

*Frost-free period:* 125 to 175 days

*Farmland classification:* Prime farmland if irrigated and the product of  
I (soil erodibility) x C (climate factor) does not exceed 60

### **Map Unit Composition**

*Olney and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of  
the mapunit.*

### **Description of Olney**

#### **Setting**

*Landform:* Plains

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Mixed deposit outwash

#### **Typical profile**

*H1 - 0 to 10 inches:* fine sandy loam

*H2 - 10 to 20 inches:* sandy clay loam

*H3 - 20 to 25 inches:* sandy clay loam

*H4 - 25 to 60 inches:* fine sandy loam

#### **Properties and qualities**

*Slope:* 1 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately high to high (0.57 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 15 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0  
mmhos/cm)

*Available water supply, 0 to 60 inches:* Moderate (about 7.0  
inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* 3e

*Land capability classification (nonirrigated):* 4c

*Hydrologic Soil Group:* B

*Ecological site:* R067BY024CO - Sandy Plains

*Hydric soil rating:* No

### **Minor Components**

#### **Zigweid**

*Percent of map unit:* 10 percent

*Hydric soil rating:* No

#### **Vona**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## **Data Source Information**

Soil Survey Area: Weld County, Colorado, Southern Part  
Survey Area Data: Version 19, Jun 5, 2020

## Map Unit Description

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## Weld County, Colorado, Southern Part

### 73—Vona loamy sand, 3 to 5 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2x0j8

*Elevation:* 4,100 to 5,200 feet

*Mean annual precipitation:* 12 to 17 inches

*Mean annual air temperature:* 46 to 52 degrees F

*Frost-free period:* 130 to 155 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Vona and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Vona**

#### **Setting**

*Landform:* Hills, hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Parent material:* Eolian sands

#### **Typical profile**

*A - 0 to 7 inches:* loamy sand

*Bt1 - 7 to 14 inches:* sandy loam

*Bt2 - 14 to 20 inches:* sandy loam

*Bk - 20 to 45 inches:* sandy loam

*C - 45 to 80 inches:* loamy sand

#### **Properties and qualities**

*Slope:* 3 to 5 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* High  
(2.00 to 6.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 10 percent

*Maximum salinity:* Nonsaline (0.1 to 1.0 mmhos/cm)

*Available water supply, 0 to 60 inches:* Moderate (about 6.4 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* 3e

*Land capability classification (nonirrigated):* 4s

*Hydrologic Soil Group:* A

*Ecological site:* R067BY015CO - Deep Sand

*Hydric soil rating:* No

### **Minor Components**

#### **Ascalon**

*Percent of map unit:* 5 percent

*Landform:* Interfluves

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Linear

*Across-slope shape:* Linear  
*Ecological site:* R067BY024CO - Sandy Plains  
*Hydric soil rating:* No

**Manter**

*Percent of map unit:* 5 percent  
*Landform:* Hills, interfluves  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope, interfluve  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Convex, linear  
*Ecological site:* R067BY024CO - Sandy Plains  
*Hydric soil rating:* No

**Olnest**

*Percent of map unit:* 3 percent  
*Landform:* Interfluves, hills  
*Landform position (two-dimensional):* Footslope, toeslope  
*Landform position (three-dimensional):* Interfluve, base slope  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Linear, concave  
*Ecological site:* R067BY024CO - Sandy Plains  
*Hydric soil rating:* No

**Valent**

*Percent of map unit:* 2 percent  
*Landform:* Dunes  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Crest, side slope, nose  
slope  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Ecological site:* R067BY015CO - Deep Sand  
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part  
Survey Area Data: Version 19, Jun 5, 2020

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## Weld County, Colorado, Southern Part

### 79—Weld loam, 1 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2x0hw

*Elevation:* 3,600 to 5,750 feet

*Mean annual precipitation:* 12 to 17 inches

*Mean annual air temperature:* 46 to 54 degrees F

*Frost-free period:* 115 to 155 days

*Farmland classification:* Prime farmland if irrigated

### **Map Unit Composition**

*Weld and similar soils:* 80 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Weld**

#### **Setting**

*Landform:* Interfluves

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Calcareous loess

#### **Typical profile**

*Ap - 0 to 8 inches:* loam

*Bt1 - 8 to 12 inches:* clay

*Bt2 - 12 to 15 inches:* clay loam

*Btk - 15 to 28 inches:* loam

*Bk - 28 to 60 inches:* silt loam

*C - 60 to 80 inches:* silt loam

#### **Properties and qualities**

*Slope:* 1 to 3 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 0.20 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 (0.1 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 5.0

*Available water supply, 0 to 60 inches:* High (about 11.3 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* 2e

*Land capability classification (nonirrigated):* 3c

*Hydrologic Soil Group:* C

*Ecological site:* R067BY002CO - Loamy Plains

*Hydric soil rating:* No

### **Minor Components**

#### **Adena**

*Percent of map unit:* 8 percent

*Landform:* Interfluves

*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* R067BY002CO - Loamy Plains  
*Hydric soil rating:* No

**Colby**

*Percent of map unit:* 7 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* R067BY002CO - Loamy Plains  
*Hydric soil rating:* No

**Keith**

*Percent of map unit:* 3 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  
*Hydric soil rating:* No

**Baca**

*Percent of map unit:* 2 percent  
*Landform:* Interfluves  
*Landform position (two-dimensional):* Shoulder, summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Ecological site:* R067BY002CO - Loamy Plains  
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part  
Survey Area Data: Version 19, Jun 5, 2020

## Weld County, Colorado, Southern Part

### 3—Aquolls and Aquepts, gravelly substratum

#### Map Unit Setting

*National map unit symbol:* 3627

*Elevation:* 4,000 to 7,200 feet

*Mean annual precipitation:* 12 to 18 inches

*Mean annual air temperature:* 45 to 55 degrees F

*Frost-free period:* 80 to 155 days

*Farmland classification:* Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

#### Map Unit Composition

*Aquolls and similar soils:* 55 percent

*Aquepts, gravelly substratum, and similar soils:* 30 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Aquolls

##### Setting

*Landform:* Swales, streams, flood plains

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Recent alluvium

##### Typical profile

*H1 - 0 to 48 inches:* loam

*H2 - 48 to 60 inches:* gravelly sand

##### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Poorly drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately high to high (0.20 to 2.00 in/hr)

*Depth to water table:* About 6 to 48 inches

*Frequency of flooding:* FrequentNone

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

*Available water supply, 0 to 60 inches:* Moderate (about 8.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6w

*Hydrologic Soil Group:* D

*Ecological site:* R067BY035CO - Salt Meadow  
*Hydric soil rating:* Yes

### **Description of Aquepts, Gravelly Substratum**

#### **Setting**

*Landform:* Stream terraces  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Recent alluvium

#### **Typical profile**

*H1 - 0 to 48 inches:* variable  
*H2 - 48 to 60 inches:* very gravelly sand

#### **Properties and qualities**

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water*  
*(Ksat):* Moderately high to very high (0.57 to 19.98 in/hr)  
*Depth to water table:* About 6 to 24 inches  
*Frequency of flooding:* FrequentNone  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 10 percent  
*Maximum salinity:* Nonsaline to moderately saline (0.0 to 8.0  
mmhos/cm)  
*Available water supply, 0 to 60 inches:* Moderate (about 6.6  
inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* 6w  
*Land capability classification (nonirrigated):* 6w  
*Hydrologic Soil Group:* D  
*Ecological site:* R067BY035CO - Salt Meadow  
*Hydric soil rating:* Yes

#### **Minor Components**

##### **Bankard**

*Percent of map unit:* 10 percent  
*Hydric soil rating:* No

##### **Ustic torrifluvents**

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

## **Data Source Information**

Soil Survey Area: Weld County, Colorado, Southern Part  
Survey Area Data: Version 20, Aug 31, 2021

## Weld County, Colorado, Southern Part

### 45—Olney loamy sand, 3 to 5 percent slopes

#### Map Unit Setting

*National map unit symbol:* 362s

*Elevation:* 4,600 to 5,200 feet

*Mean annual precipitation:* 11 to 15 inches

*Mean annual air temperature:* 46 to 54 degrees F

*Frost-free period:* 125 to 175 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Olney and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Olney

##### Setting

*Landform:* Plains

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Mixed deposit outwash

##### Typical profile

*H1 - 0 to 10 inches:* loamy sand

*H2 - 10 to 20 inches:* sandy clay loam

*H3 - 20 to 25 inches:* sandy clay loam

*H4 - 25 to 60 inches:* fine sandy loam

##### Properties and qualities

*Slope:* 3 to 5 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately high to high (0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 15 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water supply, 0 to 60 inches:* Moderate (about 6.5 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 3e

*Land capability classification (nonirrigated):* 4c

*Hydrologic Soil Group:* B

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

**Minor Components**

**Zigweid**

*Percent of map unit:* 8 percent  
*Hydric soil rating:* No

**Vona**

*Percent of map unit:* 7 percent  
*Hydric soil rating:* No

**Data Source Information**

Soil Survey Area: Weld County, Colorado, Southern Part  
Survey Area Data: Version 20, Aug 31, 2021