

Map Unit Description

Moffat County Area, Colorado

23 Bulkley silty clay, 12 to 25 percent slopes

Setting

Elevation: 6200 to 7000 feet
Mean annual precipitation: 13 to 15 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 75 to 95 days

Composition

Bulkley and similar soils: 90 percent

Description of Bulkley

Setting

Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum derived from shale

Properties and Qualities

Slope: 12 to 25 percent
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low or moderately low (0.00 to 0.06 in/hr)
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate maximum: 10 percent
Gypsum maximum: 1 percent
Available water capacity: High (about 9.0 inches)

Interpretive Groups

Land capability (non irrigated): 6e
Ecological site: Clayey Foothills (R034XY289CO)

Typical Profile

0 to 4 inches: silty clay
4 to 36 inches: clay
36 to 60 inches: silty clay

Map Unit Description

Moffat County Area, Colorado

80 Forelle-Evanot complex, 12 to 25 percent slopes

Setting

Elevation: 6200 to 7200 feet
Mean annual precipitation: 13 to 15 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 75 to 95 days

Composition

Forelle and similar soils: 50 percent
Evanot and similar soils: 40 percent

Description of Forelle

Setting

Landform: Hillslopes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess

Properties and Qualities

Slope: 12 to 25 percent
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high or high (0.60 to 2.00 in/hr)
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate maximum: 15 percent
Gypsum maximum: 0 percent
Sodium adsorption ratio maximum: 5.0
Available water capacity: High (about 9.9 inches)

Interpretive Groups

Land capability (non irrigated): 6e
Ecological site: Rolling Loam (R048AY298CO)

Typical Profile

0 to 5 inches: loam
5 to 23 inches: clay loam
23 to 51 inches: loam
51 to 60 inches: sandy loam

Description of Evanot

Setting

Landform: Hillslopes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess

Properties and Qualities

Slope: 12 to 25 percent
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate maximum: 15 percent
Gypsum maximum: 0 percent
Sodium adsorption ratio maximum: 5.0
Available water capacity: High (about 9.9 inches)

Interpretive Groups

Land capability (non irrigated): 6e
Ecological site: Deep Loam (R048AY292CO)

Typical Profile

0 to 8 inches: loam
8 to 20 inches: clay loam

Map Unit Description

Moffat County Area, Colorado

20 to 33 inches: clay loam
33 to 60 inches: loam



Legend

-  Proposed Well
-  Wellpad
-  Proposed Access
-  Moffat County Soils



State 41-14-1
19 May 2011

LAT: 40.172404°

LONG: -107.577341°

SW/SW SEC. 14 T6N R91W

MOFFAT COUNTY, COLORADO N.M.P.M.



Soils Map



Bulkley Series

Map unit(s): 21, 22, 23, 24

Depth class: very deep

Drainage class: well drained

Slowest permeability: .001 to .06 in./hr. (very slow)

Landform: alluvial fans, hills, hillslopes

Position on landform: summits, backslopes, toeslopes

Parent material: alluvium and residuum derived from shale, alluvium derived from shale, colluvium derived from shale, residuum derived from shale

Elevation: 6,200 to 8,300 feet (1,890 to 2,530 meters)

Slope: 3 to 45 percent

Climatic data:

Mean annual precipitation: 13 to 17 inches (330 to 432 millimeters)

Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)

Frost-free period: 75 to 95 days

Taxonomic class: Fine, montmorillonitic, frigid Udorthentic Chromusterts

Typical Pedon

Map unit in which located: Bulkley silty clay, 12 to 25 percent slopes

Location in the survey area: about 2,600 feet south and 800 feet west of the northeast corner of sec. 15, T. 6 N., R. 90 W.

A—0 to 4 inches; light yellowish brown (2.5Y 6/4) silty clay, brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, firm, very sticky and very plastic; mildly alkaline; clear smooth boundary.

Bw—4 to 21 inches; brown (10YR 5/3) clay, yellowish brown (10YR 5/4) moist; strong coarse prismatic structure parting to moderate coarse subangular blocky; extremely hard, very firm, very sticky and very plastic; many slickensides; slightly effervescent; mildly alkaline; gradual wavy boundary.

Bk1—21 to 36 inches; brown (10YR 5/3) clay, yellowish brown (10YR 5/4) moist; moderate very coarse subangular blocky structure parting to moderate coarse subangular blocky; extremely hard, very firm, very sticky and very plastic; many slickensides; common coarse soft masses of calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk2—36 to 60 inches; brown (10YR 5/3) silty clay, light olive brown (2.5Y 5/4) moist; weak coarse subangular blocky structure parting to weak medium subangular blocky; very hard, very firm, very sticky and very plastic; common slickensides; common fine masses of calcium carbonate; strongly effervescent; moderately alkaline.

Range in Characteristics

Hue: 10YR or 2.5Y

Note: This soil commonly is effervescent at a depth of 0 to 15 inches; however, in the map unit #21 of Bulkley stony loam, 15 to 30 percent slopes, very stony, the depth to effervescent horizons ranges from 20 to 35 inches. When the soil dries, it develops cracks $\frac{1}{2}$ to $\frac{3}{4}$ inch wide to a depth of 20 inches or more.

A horizon:

Reaction: neutral through moderately alkaline

Bw horizon:

Reaction: neutral through moderately alkaline

Bk horizons:

Texture: silty clay or clay

Forelle Series

Map unit(s): 77, 78, 79, 80, 81, 82

Depth class: very deep

Drainage class: well drained

Slowest permeability: 0.6 to 2.0 in./hr. (moderate)

Landform: benches, hills, hillslopes

Position on landform: footslopes, toeslopes

Parent material: alluvium derived from shale and sandstone, loess, loess and in alluvium derived from shale and sandstone

Elevation: 6,200 to 7,200 feet (1,890 to 2,195 meters)

Slope: 1 to 25 percent

Climatic data:

Mean annual precipitation: 11 to 15 inches (279 to 381 millimeters)

Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)

Frost-free period: 75 to 95 days

Taxonomic class: Fine-loamy, mixed Borollic Haplargids

Typical Pedon

Map unit in which located: Forelle loam, 3 to 12 percent slopes

Location in the survey area: about 1,800 feet east and 1,800 feet north of the southwest corner of sec. 16, T. 4 N., R. 93 W.

A—0 to 5 inches; brown (7.5YR 5/4) loam, brown (10YR 4/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; mildly alkaline; clear smooth boundary.

Bt1—5 to 11 inches; brown (7.5YR 5/2) clay loam, dark brown (7.5YR 4/2) moist; weak medium subangular blocky structure; slightly hard, firm, sticky and plastic; very few faint clay films on faces of peds; mildly alkaline; clear wavy boundary.

Bt2—11 to 23 inches; brown (7.5YR 5/3) clay loam, brown (7.5YR 5/2) moist; moderate coarse subangular blocky structure parting to moderate medium subangular blocky; hard, firm, sticky and plastic; common faint clay films on faces on peds; mildly alkaline; clear wavy boundary.

Bk1—23 to 34 inches; light brownish gray (10YR 6/2) loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine concentrations of calcium carbonate; strongly

effervescent; moderately alkaline; gradual wavy boundary.

Bk2—34 to 42 inches; pale brown (10YR 6/3) loam, grayish brown (10YR 5/2) moist; weak coarse subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine concentrations of calcium carbonate; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk3—42 to 51 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine concentrations of calcium carbonate; strongly effervescent; moderately alkaline; abrupt wavy boundary.

Bk4—51 to 60 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine concentrations of calcium carbonate; slightly effervescent; moderately alkaline.

Range in Characteristics

Depth to argillic horizon: 18 to 25 inches

Depth to secondary calcium carbonate: 15 to 25 inches

Bt horizon:

Hue: 7.5YR or 10YR

Bk3 and Bk4 horizons:

Texture: loam, sandy loam, or sandy clay loam