

# Major Land Resource Area 048A

## Southern Rocky Mountains

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### Ecological site keys

#### MLRA 48A Colorado

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- I. Precipitation 9-12 inches(ustic bordering on aridic moisture regime); frigid temperature regime; approximately 6,000-8,000 feet in elevation – Semidesert climate zone
  - A. No water table or run-in moisture; soil depth is 20-40 inches; family particle size is fine-loamy; soil surface is sandy loam ... R048AY270CO – Valley Bench
  - B. Site not as above - Not Applicable
- II. Precipitation is 12-16 inches (aridic bordering on ustic moisture regime); frigid temperature regime; approximately 7,000 -8,500 feet in elevation - Dry Mountain/foothills/ climate zone (Note: This climate zone is called Upland in Utah sites.)
  - A. Site receives extra water beyond normal precipitation through high water table, riparian area, or run-in water
    - 1 Site has water table 12-72 inches in depth; soil depth is greater than 60 inches; family particle size is fine loamy; soil surface texture is loam ... R048AY243CO – Swale Meadow
    - 2 Site is not as above
      - i. Site in landscape position and receives run-in water, no water table in 6 feet; family particle size is fine-loamy; soil surface texture is loam, sandy loam, clay loam or gravelly sandy clay loam ... R048AY285CO – Foothill Swale
      - ii. Site not as above - Not Applicable
  - B. Site receives no extra water beyond normal precipitation
    - 1 Site has bedrock within 20 inches of the soil surface (shallow soil)
      - i. Site is located in the Gunnison Basin
        - a. Parent material is granite, gneiss, family particle size is loamy; soil surface texture is very gravely loam, very gravelly sandy loam or gravelly loam ... R048AA235CO – Dry Exposure Gunnison Basin LRU
        - b. Site not as above - Not Applicable
      - ii. Site not as above
        - a. Family particle size is clayey
          - 1) Parent material sandstone and/or shale; surface texture is channery loam, very channery loam, flaggy clay loam, channery silty clay loam, sandy loam, or gravelly coarse sandy loam ... R048AY235CO – Dry Exposure
          - 2) Site not as above - Not Applicable
        - b. Site not as above
          - 1) Family particle size is loamy-skeletal
            - a) Parent material sandstone, and/or siltstone; surface texture is loam, sandy loam, channery loam, or very gravelly loam ... F048AY448CO – Mountain Pinyon
            - b) Parent material sandstone and/or shale; surface texture is channery loam, very channery loam, flaggy clay loam, channery silty clay loam, sandy loam, or gravelly coarse sandy loam ... R048AY235CO – Dry Exposure
            - c) Site not as above - Not Applicable

2) Site not as above

a) Family particle size is loamy

- (1) Parent material sandstone, and/or siltstone; surface texture is loam, sandy loam, channery loam, or very gravelly loam ... F048AY448CO – Mountain Pinyon
- (2) Parent material sandstone and/or shale; surface texture is channery loam, very channery loam, flaggy clay loam, channery silty clay loam, sandy loam, or gravelly coarse sandy loam ... R048AY235CO – Dry Exposure
- (3) Parent material limestone or sandstone; surface texture is sandy loam or gravelly sandy loam ... R048AY307CO – Shallow Slopes
- (4) Site not as above - Not Applicable

b) Site not as above - Not Applicable

2 Site not as above, site is greater than 20 inches to bedrock

i. Soils are skeletal soils (greater than 35% rock fragments)

a. Family particle size is loamy-skeletal

1) Site occurs as long narrow belts on fan terraces, alluvial fans and glacial outwash plains adjacent to the Arkansas River

- a) Parent material is outwash and alluvium; surface texture is stony sandy loam or very gravelly loamy sand ... R048AY282CO – Boulder Flats
- b) Site not as above - Not Applicable

2) Site not as above

- a) Parent material is basalt, sandstone, and/or shale; soil surface is stony sandy loam, gravelly sandy loam, very cobbly loam, or very stony sandy loam; slope is 3-30% ... R048AY287CO – Stony Foothills
- b) Parent material shale, sandstone, and/or basalt, surface texture is cobbly sandy loam, cobbly loam, very flaggy loam or channery loam; slope is 25-65% ... R048AY303CO – Loamy Slopes
- c) Site not as above - Not Applicable

b. Site is not loamy-skeletal family particle size

- 1) Family particle size is sandy-skeletal, soil surface texture is generally a gravelly sandy loam; site occurs on fan terraces and alluvial fans ... R048AY316CO – Dry Mountain Outwash
- 2) Site not as above - Not Applicable

ii. Site not as above, soils are non-skeletal (less than 35% rock fragments)

a. Family particle size is fine

- 1) Parent material is sandstone and shale; surface texture is a loam ... R048AY244CO – Mountain Shale
- 2) Site not as above - Not Applicable

b. Site not as above

1) Family particle size is coarse-loamy.

- a) Parent material is alluvium; surface textures is sandy loam, gravelly sandy loam, or gravelly loam ... R048AY272CO – Sandy Bench
- b) Site not as above - Not Applicable

2) Site not as above

a) Family particle size is fine-loamy

- (1) Located in the Gunnison Basin
  - (a) Parent material is rhyolite, sedimentary rock, or granite; soil surface textures is gravelly sandy loam or fine sandy loam ... R048AA231CO – Dry Mountain Loam Gunnison Basin LRU

(b) Site not as above - Not Applicable

(2) Site not as above

(a) Parent material is sedimentary rock, basalt or sandstone; soil surface texture is loam ... R048AY231CO – Dry Mountain Loam

(b) Parent material is sandstone and shale, or basalt; soil surface texture is loam, very channery loam, or sandy clay loam ... R048AY292CO – Deep Loam

(c) Parent material is sandstone and shale; soil surface texture is loam ... R048AY242CO – Dry Mountain Shale

(d) Site is located in the Wescliffe area, parent material is alluvium, colluvium and eolian materials; soil surface is sandy loam or gravelly sandy loam ... R048AY226CO – Mountain Loam 13-18 PZ Westcliffe Area

(e) Site not as above - Not Applicable

b) Site not as above - Not Applicable

III. Precipitation 16-20 inches (typic ustic moisture regime); frigid or cryic temperature regime; approximately 7,000-9,000 feet in elevation – Mountains climate zone

A. Site receives extra water beyond normal precipitation through high water table, riparian area, or run-in water

1 Site has perennial water table 0-24 inches in depth; soil depth is greater 40 inches; family particle size is fine-loamy or fine

i. Site located in the Gunnison Basin ... R048AA241CO – Mountain Meadow Gunnison Basin LRU

ii. Site not as above ... R048AY241CO – Mountain Meadow

2 Site not as above

i. Site located in the Gunnison Basin

a. Water table 60 inches or greater in depth and seasonally in early spring; family particle size is fine-loamy ... R048AA245CO – Mountain Swale Gunnison Basin LRU

b. Site not as above - Not Applicable

ii. Site not as above

a. Site in landscape position that receives run-in water; 60 inches or greater in depth; no water table present in 6 feet; family particle size – fine-loamy ... R048AY245CO – Mountain Swale

b. Site not as above - Not Applicable

B. Site receives no extra water beyond normal precipitation

1 Site has bedrock within 20 inches of the soil surface (shallow soil)

i. Family particle size is loamy

a. Parent material is tachylyte, volcanic breccia, igneous rock, tuff, granite, gneiss and/or sandstone; surface soil textures is gravelly sandy loam, channery loam, or fine sandy loam ... R048AY230CO – Shallow Loam

b. Parent material is sandstone, shale, siltstone, igneous rock and/or metamorphic rock; surface texture is loam, gravelly loam, cobbly loam, stony loam, channery sandy loam, gravelly fine sandy loam, sandy loam, or fine sandy loam ... R048AY255CO – Pine Grasslands

c. Site not as above - Not Applicable

ii. Site not as above

a. Site is loamy-skeletal

1) Parent material is granite, gneiss, phyllite, schist, sandstone and/or limestone; Soil surface texture is gravelly sandy loam, channery loam or fine sandy loam ... R048AY229CO – Rocky Loam

2) Parent material is tachylyte, volcanic breccia, igneous rock, tuff, granite, gneiss and/or sandstone; surface soil textures is gravelly sandy loam, channery loam, or fine sandy loam ... R048AY230CO – Shallow Loam

3) Parent material is monzonite, granite, gneiss and/or granodiorite; surface soil textures is very

gravelly sandy loam ... R048AY218CO – Dry Shallow Pine

4) Parent material is volcanic breccia, granite, gneiss, sandstone, and/or granodiorite; surface soil textures is very gravelly sandy loam, gravelly sandy loam, or very gravelly loam ... R048AY240CO – Shallow Pine

5) Parent material is sandstone, shale, siltstone, igneous rock and/or metamorphic rock; surface texture is loam, gravelly loam, cobbly loam, stony loam, channery sandy loam, gravelly fine sandy loam, sandy loam, or fine sandy loam ... R048AY255CO – Pine Grasslands

6) Site not as above - Not Applicable

b. Site not as above - Not Applicable

2 Site not as above, site is greater than 20 inches to bedrock

i. Soils are skeletal soils (greater than 35% rock fragments)

a. Family particle size is sandy-skeletal

1) Parent material is alluvium and outwash; surface texture is gravelly sandy loam or stony sandy loam ... R048AY311CO – Mountain Outwash

2) Site not as above - Not Applicable

b. Site not as above

1) Family particle size is clayey-skeletal

a) Parent material is sandstone and/or shale; surface texture is loam or clay loam ... R048AY238CO – Brushy Loam

b) Parent material is igneous, metamorphic and sedimentary rock; surface texture is very gravelly sandy clay loam, very stony loam or gravelly loam ... R048AY239CO – Brushy Mountain Loam

c) Site not as above - Not Applicable

2) Site not as above

a) Family particle size is loamy-skeletal

(1) Parent material is basalt, sandstone, till, outwash, schist, granite, gneiss, igneous and/or metamorphic rock; soil surface texture is stony loam, extremely stony loam, cobbly loam, very stony loam, cobbly sandy loam or very cobbly sandy loam ... R048AY237CO – Stony Loam

(2) Parent material is sandstone and/or shale; surface texture is loam or clay loam ... R048AY238CO – Brushy Loam

(3) Parent material is igneous, metamorphic and sedimentary rock; surface texture is very gravelly sandy clay loam, very stony loam or gravelly loam ... R048AY239CO – Brushy Mountain Loam

(4) Site not as above - Not Applicable

b) Site not as above - Not Applicable

ii. Site not as above, soils are non-skeletal (less than 35% rock fragments)

a. Family particle size is fine-silty

1) Parent material is sandstone, shale, siltstone, igneous rock and/or metamorphic rock; surface texture is loam, gravelly loam, cobbly loam, stony loam, channery sandy loam, gravelly fine sandy loam, sandy loam, or fine sandy loam ... R048AY255CO – Pine Grasslands

2) Site not as above - Not Applicable

b. Site not as above

1) Family particle size is fine-loamy

a) Located in the Gunnison Basin

(1) Parent material is rhyolite, granite volcanic rock, sedimentary rock, igneous and/or metamorphic rock; surface texture is loam or gravelly sandy loam ... R048AA228CO – Mountain Loam Gunnison Basin LRU

(2) Site not as above - Not Applicable

b) Site not as above

- (1) Parent material is sandstone, shale, igneous rock, metamorphic rock, schist, and/or granite. Surface texture is loam, sandy loam, gravelly sandy loam or silt loam; 0-30% slope ... R048AY228CO – Mountain Loam
- (2) Parent material is granite, gneiss, schist, sandstone, shale, igneous rock and/or metamorphic rock, surface texture is loam or sandy loam, slope 0-30% ... R048AY222CO – Loamy Park
- (3) Parent material is igneous, metamorphic and/or sedimentary rock; surface texture is very gravelly sandy clay loam, very stony loam or gravelly loam; 3-50% slope ... R048AY239CO – Brushy Mountain Loam
- (4) Parent material is sandstone, shale, siltstone, igneous rock and/or metamorphic rock; surface texture is loam, gravelly loam, cobbly loam, stony loam, channery sandy loam, gravelly fine sandy loam, sandy loam, or fine sandy loam; 0-30% slope ... R048AY255CO – Pine Grasslands
- (5) Parent material is sandstone; surface texture is cobbly fine sandy loam; slope is 25-75% ... R048AY379CO – Brushy Slopes
- (6) Site not as above - Not Applicable

2) Site not as above

a) Family particle size is fine

- (1) Located on the western slope in Colorado around the Grand Mesa to the North/West part of the San Juan Mountains and the Gunnison Basin (Shale Highlands LRU); parent material is Mancos/ Wasatch shale and/or siltstone; surface texture is clay loam, silty clay loam or loam ... R048AA247CO – Deep Clay Loam Shale Highlands LRU
- (2) Not located in Shale Highland LRU (Grand Mesa to the North/West part of the San Juan Mountains and the Gunnison Basin); Parent material is shale, igneous rock, metamorphic rock and/or sedimentary rock, surface texture is clay loam, loam, or silt loam ... R048AY247CO – Deep Clay Loam
- (3) Parent material sandstone and/or shale. Surface texture is loam, clay loam, very stony loam, cobbly loam, sandy loam, cobbly sandy loam, very bouldery sandy loam, or fine sandy loam ... F048AY925CO – Ponderosa Pine Forest
- (4) Parent material sandstone and shale; surface texture is loam, clay loam, or very cobbly loam ... R048AY234CO – Mountain Clay
- (5) Parent material is sandstone, shale, siltstone, igneous rock and/or metamorphic rock; surface texture is loam, gravelly loam, cobbly loam, stony loam, channery sandy loam, gravelly fine sandy loam, sandy loam, or fine sandy loam ... R048AY255CO – Pine Grasslands
- (6) Parent material is shale, sandstone and/or siltstone; surface texture is clay loam, loam, gravelly loam, or silty clay loam ... R048AY248CO – Mountain Clay Loam
- (7) Parent material is shale and/or sandstone; surface textures is clay loam or loam ... R048AY257CO – Clayey Valley
- (8) Site not as above - Not Applicable

b) Site not as above - Not Applicable

IV. Precipitation 20-40 inches (ustic udic and typic udic); cryic temperature regime; below tree-line; approximately 8,000 – 10,000 feet in elevation - Subalpine Climate zone

A. Site receives extra water beyond normal precipitation through high water table, riparian area, or run-in water

1 Site occurs on the Grand Mesa; precipitation is 37-45 inches; Site in landscape position and receives run-in water; 20 inches or greater in depth; no water table present in 6 feet; family particle size is fine-loamy, clayey-skeletal or loamy-skeletal; soil surface texture is loam or gravelly loam ... R048AY253CO – Wet Subalpine

2 Site not as above - Not Applicable

B. Site receives no extra water beyond normal precipitation

1 Site has bedrock within 20 inches of the soil surface

i. Family particle size is loamy

- a. Precipitation is 20-30 inches; Parent material is sandstone, shale; basalt, andesite, tuff breccia and/or rhyolite; surface texture – loam, channery loam, sandy loam, extremely stony loam, gravelly silt loam or gravelly loam ... R048AY251CO – Shallow Subalpine
- b. Site not as above - Not Applicable

ii. Site not as above

a. Family particle size is clayey-skeletal

- 1) Precipitation is 20-30 inches; parent material is shale and/or sandstone; surface texture is very gravelly loam, fine sandy loam or cobbly fine sandy loam ... F048AY912CO – Lodgepole Pine
- 2) Site not as above - Not Applicable

b. Site not as above

1) Family particle size is loamy-skeletal

- a) Precipitation is 20-30 inches; Parent material is sandstone, shale; basalt, andesite, tuff breccia and/or rhyolite; surface texture – loam, channery loam, sandy loam, extremely stony loam, gravelly silt loam or gravelly loam ... R048AY251CO – Shallow Subalpine
- b) Precipitation is 20-30 inches; parent material is shale and/or sandstone; surface texture is very gravelly loam, fine sandy loam or cobbly fine sandy loam ... F048AY912CO – Lodgepole Pine
- c) Site not as above - Not Applicable

2) Site not as above - Not Applicable

2 Not as above, site is greater than 20 inches in depth to bedrock

i. Rock fragments greater than 35%

a. Family particle size is clayey-skeletal

- 1) Precipitation is 20-30 inches; parent material is shale and/or sandstone; surface texture is very gravelly loam, fine sandy loam or cobbly fine sandy loam ... F048AY912CO – Lodgepole Pine
- 2) Precipitation is 20-30 inches; parent material is igneous, metamorphic rock, sedimentary rock; sandstone and shale, diorite and or rhyolite; surface texture is loam, stony loam, very stony loam, cobbly loam, gravelly loam or very cobbly loam ... F048AY449CO – Aspen Woodland
- 3) Precipitation is 20-40 inches; parent material is igneous rock, metamorphic rock, sedimentary rock, sandstone and shale and/or volcanic breccia; surface texture is very cobbly sandy loam, very gravelly sandy loam very stony sandy loam, very cobbly fine sandy loam, stony fine sandy loam, loam, cobbly loam or gravelly loam ... F048AY918CO – Spruce-Fir Woodland
- 4) Site not as above - Not Applicable

b. Site not as above

1) Family particle size is Loamy-skeletal

- a) Precipitation is 20 to 25 inches; parent material is sandstone and shale, andesite, or sedimentary rock; surface texture is very stony loam, loam, clay loam, stony sandy clay loam, or very stony sandy loam ... F048AY924CO – Douglas Fir/Gambel Oak
- b) Precipitation is 20-30 inches; parent material is igneous, metamorphic rock, sedimentary rock; sandstone and shale, diorite and or rhyolite; surface texture is loam, stony loam, very stony loam, cobbly loam, gravelly loam or very cobbly loam ... F048AY449CO – Aspen Woodland
- c) Precipitation is 20-30 inches; parent material is shale and/or sandstone; surface texture is very gravelly loam, fine sandy loam or cobbly fine sandy loam ... F048AY912CO – Lodgepole Pine
- d) Precipitation is 20-40 inches; parent material is granite, sandstone and shale, volcanic rock, gneiss, mica schist, or sandstone; surface textures is loam, very gravelly sandy loam,

very stony sandy loam, stony sandy loam, stony loam, very stony loam, very cobbly loam, or gravelly fine sandy loam ... F048AY908CO – Mixed Conifer

e) Precipitation is 20-40 inches; parent material is volcanic breccia; surface texture is cobbly ashy loam, cobbly ashy silt loam or cobbly loam ... F048AY915CO – Engelmann Spruce – Whortleberry– Jacob's-Ladder

f) Precipitation is 20-40 inches; parent material is volcanic breccia or sandstone; surface textures is stony loam, stony ashy loam, or cobbly ashy loam ... F048AY917CO – Abies lasiocarpa/Paxistima myrsinites/Erigeron eximius

g) Precipitation is 20-40 inches; parent material is volcanic breccia; surface textures is very stony ashy loam ... F048AY919CO – Subalpine Fir/Blueberry/Twinflower

h) Precipitation is 20-40 inches; parent material is volcanic breccia or tuff; surface textures is stony ashy loam or cobbly loam ... F048AY921CO – White Fir/Snowberry

i) Precipitation is 20-40 inches; parent material is igneous rock, metamorphic rock, sedimentary rock, sandstone and shale and/or volcanic breccia; surface texture is very cobbly sandy loam, very gravelly sandy loam very stony sandy loam, very cobbly fine sandy loam, stony fine sandy loam, loam, cobbly loam or gravelly loam ... F048AY918CO – Spruce-Fir Woodland

j) Site not as above - Not applicable

2) Site not as above - Not Applicable

ii. Site is not as above, rock fragments less than 35%

a. Family particle size is fine

1) Precipitation is 20-30 inches; parent material is igneous, metamorphic rock, sedimentary rock; sandstone and shale, diorite and or rhyolite; surface texture is loam, stony loam, very stony loam, cobbly loam, gravelly loam or very cobbly loam ... F048AY449CO – Aspen Woodland

2) Precipitation is 20-30 inches; parent material is sandstone and shale; or igneous, metamorphic and sedimentary rock; surface texture is loam, clay loam or silt loam ... R048AY252CO – Subalpine Clay

3) Site not as above - Not Applicable

b. Site not as above

1) Family particle size is fine-loamy

a) Precipitation is 20 to 25 inches; parent material is sandstone and shale, andesite, or sedimentary rock; surface texture is very stony loam, loam, clay loam, stony sandy clay loam, or very stony sandy loam ... F048AY924CO – Douglas Fir/Gambel Oak

b) Located in Gunnison Basin; precipitation is 20-30 inches; parent materials andesite, rhyolite or sandstone and shale; surface texture is loam ... R048AA250CO – Subalpine Loam Gunnison Basin LRU

c) Site not in the Gunnison Basin; parent material is sandstone, shale, volcanic rock, or igneous, metamorphic and sedimentary rock; surface texture is loam ... R048AY250CO – Subalpine Loam

d) Precipitation is 20-30 inches; parent material is igneous, metamorphic rock, sedimentary rock; sandstone and shale, diorite and or rhyolite; surface texture is loam, stony loam, very stony loam, cobbly loam, gravelly loam or very cobbly loam ... F048AY449CO – Aspen Woodland

e) Precipitation is 20-40 inches; parent material is granite, sandstone and shale, volcanic rock, gneiss, mica schist, or sandstone; surface textures is loam, very gravelly sandy loam, very stony sandy loam, stony sandy loam, stony loam, very stony loam, very cobbly loam, or gravelly fine sandy loam ... F048AY908CO – Mixed Conifer

f) Precipitation is 20-40 inches; parent material is igneous rock, metamorphic rock, sedimentary rock, sandstone and shale and/or volcanic breccia; surface texture is very cobbly sandy loam, very gravelly sandy loam very stony sandy loam, very cobbly fine sandy loam, stony fine sandy loam, loam, cobbly loam or gravelly loam ... F048AY918CO – Spruce-Fir

Woodland

g) Site not as above - Not applicable

2) Site not as above - Not Applicable

V. Precipitation is 30-50 inches (Typic Udic); cryic temperature regime; above tree-line; approximately 10,000-14,440 feet in elevation - Alpine Climate Zone

A. Site receives extra water beyond normal precipitation through high water table, riparian area, or run-in water

1 Site has perennial water table 0-12 inches in depth; soil depth is greater than 60 inches; soil surface texture is loam, cobbly loam or silt loam ... R048AY305CO – Alpine Meadow

2 Site not as above

i. Site occurs on the Grand Mesa; precipitation is 37-45 inches; Site in landscape position and receives run-in water; 20 inches or greater in depth; no water table present in 6 feet; family particle size is fine-loamy, clayey-skeletal or loamy-skeletal; soil surface texture is loam or gravelly loam ... R048AY253CO – Wet Subalpine

ii. Site not as above - Not Applicable

B. Site receives no extra water beyond normal precipitation

1 Site have bedrock within 20 inches of the soil surface

i. Family particle size is loamy or loamy-skeletal; Surface texture is very gravelly loam, very stony loam, very cobbly loam, very stony sandy loam, very cobbly sandy loam, loam or very cobbly silt loam ... R048AY308CO – Shallow Alpine

ii. Site not as above - Not Applicable

2 Not as above, Site is greater than 20 inches in depth to bedrock

i. Rock fragments greater than 35% and family particle size is loamy-skeletal

a. 0-30% slopes

1) Parent material is colluvium, till, basalt, rhyolite, tuff, volcanic breccia, and/or andesite; soil surface texture is very gravelly loam, cobbly loam, stony loam, or gravelly silt loam ... R048AY306CO – Shrubby Alpine

2) Parent material rhyolite, tuff, volcanic rock and/or sandstone; soil surface texture is very gravelly loam, loam, or very stony sandy loam; 10-60% slopes ... R048AY309CO – Warm Alpine

3) Site not as above - Not applicable

b. Slopes is 30-60%

1) Parent material rhyolite, tuff, volcanic rock and/or sandstone; soil surface texture is very gravelly loam, loam, or very stony sandy loam; 10-60% slopes ... R048AY309CO – Warm Alpine

2) Parent material is monzonite, diorite, conglomerate, rhyolite, volcanic rock sandstone, granite, gneiss, schist, andesite, tuffigneous rock and/or metamorphic rock; Surface texture is very gravelly loam, gravelly loam, extremely gravelly loam, very cobbly loam, extremely cobbly loam, very stony loam, or extremely stony sandy loam; 30-60% slopes ... R048AY304CO – Alpine Slopes

3) Site not as above - Not applicable

ii. Site not as above - Not applicable