Custom Soil Resource Report for
San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties
SLick Rock LT 12 - Part 1
Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the
individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.
### MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Units

**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**
- Gully
- Short Steep Slope
- Other

**Political Features**
- Cities

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

### MAP INFORMATION

Map Scale: 1:13,000 if printed on A size (8.5" × 11") sheet.

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 accurate map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

**Soil Survey Area:** San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties
**Survey Area Data:** Version 7, May 3, 2011
**Date(s) aerial images were photographed:** 8/28/2005

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 (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skiein loams, 3 to 20 percent slopes</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>8.9</td>
<td>1.4%</td>
</tr>
<tr>
<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
<td>131.6</td>
<td>20.0%</td>
</tr>
<tr>
<td>69</td>
<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
<td>220.8</td>
<td>33.5%</td>
</tr>
<tr>
<td>Totals for Area of Interest</td>
<td></td>
<td>658.1</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Map Unit Descriptions (Slick Rock LT 12)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils 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. Other minor components, however, have properties and behavioral 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. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one 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.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An undifferentiated group is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.
San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties

41—Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes

Map Unit Setting
   *Elevation:* 7,400 to 8,500 feet
   *Mean annual precipitation:* 17 to 19 inches
   *Mean annual air temperature:* 41 to 43 degrees F
   *Frost-free period:* 70 to 90 days

Map Unit Composition
   *Fivepine and similar soils:* 40 percent
   *Nortez and similar soils:* 30 percent
   *Rock outcrop:* 20 percent
   *Minor components:* 10 percent

Description of Fivepine

Setting
   *Landform:* Mesas
   *Down-slope shape:* Linear
   *Across-slope shape:* Linear
   *Parent material:* Residuum weathered from sandstone

Properties and qualities
   *Slope:* 12 to 30 percent
   *Depth to restrictive feature:* 10 to 20 inches to lithic bedrock
   *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
   *Available water capacity:* Very low (about 2.3 inches)

Interpretive groups
   *Land capability (nonirrigated):* 7e

Typical profile
   *0 to 5 inches:* Loam
   *5 to 9 inches:* Clay loam
   *9 to 15 inches:* Clay
   *15 to 19 inches:* Unweathered bedrock

Description of Nortez

Setting
   *Landform:* Mesas
   *Down-slope shape:* Linear
   *Across-slope shape:* Linear
   *Parent material:* Alluvium derived from sandstone and shale

Properties and qualities
   *Slope:* 12 to 20 percent
   *Depth to restrictive feature:* 20 to 40 inches to lithic bedrock
**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:** 10 percent

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

**Available water capacity:** Low (about 5.7 inches)

**Interpretive groups**

*Land capability (nonirrigated):* 7e

*Ecological site:* Pine Grasslands (R048AY255CO)

*Other vegetative classification:* PINE GRASSLANDS (048AY255CO_2)

**Typical profile**

- **0 to 8 inches:** Loam
- **8 to 24 inches:** Clay loam
- **24 to 32 inches:** Loam
- **32 to 36 inches:** Unweathered bedrock

**Description of Rock Outcrop**

**Setting**

- **Landform:** Mesas
- **Down-slope shape:** Linear
- **Across-slope shape:** Linear
- **Parent material:** Residuum weathered from sandstone

**Properties and qualities**

- **Slope:** 12 to 30 percent
- **Depth to restrictive feature:** 0 to 4 inches to lithic bedrock
- **Capacity of the most limiting layer to transmit water (Ksat):** Very low to low (0.00 to 0.00 in/hr)

**Interpretive groups**

*Land capability (nonirrigated):* 8s

**Typical profile**

- **0 to 60 inches:** Unweathered bedrock

**Minor Components**

**Acree**

*Percent of map unit:* 5 percent

**Borolls**

*Percent of map unit:* 5 percent
48—Gurley-Skein loams, 3 to 20 percent slopes

Map Unit Setting

- **Elevation**: 6,800 to 7,400 feet
- **Mean annual precipitation**: 15 to 17 inches
- **Mean annual air temperature**: 43 to 45 degrees F
- **Frost-free period**: 90 to 110 days

Map Unit Composition

- **Gurley and similar soils**: 50 percent
- **Skein and similar soils**: 40 percent
- **Minor components**: 10 percent

Description of Gurley

**Setting**

- **Landform**: Mesas, terraces
- **Landform position (three-dimensional)**: Tread, riser
- **Down-slope shape**: Linear
- **Across-slope shape**: Linear
- **Parent material**: Residuum weathered from interbedded sandstone and shale

**Properties and qualities**

- **Slope**: 3 to 20 percent
- **Depth to restrictive feature**: 20 to 40 inches to lithic bedrock
- **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**: 50 percent
- **Maximum salinity**: Nonsaline (0.0 to 2.0 mmhos/cm)
- **Available water capacity**: Moderate (about 6.6 inches)

**Interpretive groups**

- **Land capability (nonirrigated)**: 4e
- **Ecological site**: Loamy Foothills (R034XY284CO)

**Typical profile**

- 0 to 4 inches: Loam
- 4 to 21 inches: Clay loam
- 21 to 37 inches: Gravelly loam
- 37 to 41 inches: Unweathered bedrock
Description of Skein

Setting

Landform: Mesas, terraces
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from interbedded sandstone and shale

Properties and qualities

Slope: 3 to 20 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
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: 40 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 2.4 inches)

Interpretive groups

Land capability (nonirrigated): 6e

Typical profile

0 to 6 inches: Loam
6 to 13 inches: Loam
13 to 19 inches: Very gravelly loam
19 to 23 inches: Unweathered bedrock

Minor Components

Callan
Percent of map unit: 5 percent

Beje
Percent of map unit: 5 percent

66—Nortez loam, 1 to 6 percent slopes

Map Unit Setting

Elevation: 7,400 to 8,500 feet
Mean annual precipitation: 17 to 19 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 70 to 90 days

Map Unit Composition

Nortez and similar soils: 85 percent
Minor components: 15 percent
Description of Nortez

Setting

Landform: Structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone and shale

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
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: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability (nonirrigated): 4s
Ecological site: Pine Grasslands (R034XY255CO)

Typical profile

0 to 8 inches: Loam
8 to 24 inches: Clay loam
24 to 32 inches: Loam
32 to 36 inches: Unweathered bedrock

Minor Components

Acree
Percent of map unit: 5 percent

Fivepine
Percent of map unit: 5 percent

Borolls
Percent of map unit: 3 percent

Haplaquolls
Percent of map unit: 2 percent
Landform: Drainageways

67—Nortez loam, 6 to 12 percent slopes

Map Unit Setting

Elevation: 7,400 to 8,500 feet
Mean annual precipitation: 17 to 19 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 70 to 90 days

Map Unit Composition
Nortez and similar soils: 85 percent
Minor components: 15 percent

Description of Nortez

Setting
Landform: Structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone and shale

Properties and qualities
Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
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: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.7 inches)

Interpretive groups
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 4e
Ecological site: Pine Grasslands (R034XY255CO)

Typical profile
0 to 8 inches: Loam
8 to 24 inches: Clay loam
24 to 32 inches: Loam
32 to 36 inches: Unweathered bedrock

Minor Components

Acree
Percent of map unit: 5 percent

Fivepine
Percent of map unit: 5 percent

Borolls
Percent of map unit: 3 percent

Haplaquolls
Percent of map unit: 2 percent
Landform: Drainageways
68—Nortez-Acree loams, 1 to 12 percent slopes

Map Unit Setting
- **Elevation:** 7,400 to 8,500 feet
- **Mean annual precipitation:** 17 to 19 inches
- **Mean annual air temperature:** 41 to 43 degrees F
- **Frost-free period:** 70 to 90 days

Map Unit Composition
- **Nortez and similar soils:** 50 percent
- **Acree and similar soils:** 35 percent
- **Minor components:** 15 percent

Description of Nortez

Setting
- **Landform:** Mesas, structural benches
- **Down-slope shape:** Linear
- **Across-slope shape:** Linear
- **Parent material:** Alluvium derived from sandstone and shale

Properties and qualities
- **Slope:** 1 to 12 percent
- **Depth to restrictive feature:** 20 to 40 inches to lithic bedrock
- **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:** 10 percent
- **Maximum salinity:** Nonsaline (0.0 to 2.0 mmhos/cm)
- **Available water capacity:** Low (about 5.7 inches)

Interpretive groups
- **Land capability classification (irrigated):** 4e
- **Land capability (nonirrigated):** 4e
- **Ecological site:** Pine Grasslands (R034XY255CO)

Typical profile
- **0 to 8 inches:** Loam
- **8 to 24 inches:** Clay loam
- **24 to 32 inches:** Loam
- **32 to 36 inches:** Unweathered bedrock

Description of Acree

Setting
- **Landform:** Mesas, structural benches
- **Down-slope shape:** Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone and shale

Properties and qualities
Slope: 1 to 12 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
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 9.3 inches)

Interpretive groups
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 4e
Ecological site: Mountain Loam (R034XY228CO)

Typical profile
0 to 8 inches: Loam
8 to 30 inches: Clay
30 to 60 inches: Clay loam

Minor Components
Fivepine
Percent of map unit: 5 percent

Borolls
Percent of map unit: 5 percent

Zoltay
Percent of map unit: 3 percent
Landform: Swales

Haplaquolls
Percent of map unit: 2 percent
Landform: Swales

69—Nortez-Fivepine loams, 1 to 12 percent slopes

Map Unit Setting
Elevation: 7,400 to 8,500 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 70 to 90 days
Map Unit Composition

Nortez and similar soils: 45 percent
Fivepine and similar soils: 40 percent
Minor components: 15 percent

Description of Nortez

Setting
Landform: Mesas, structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone and shale

Properties and qualities
Slope: 1 to 12 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
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: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.7 inches)

Interpretive groups
Land capability classification (irrigated): 6e
Land capability (nonirrigated): 4e
Ecological site: Pine Grasslands (R034XY255CO)

Typical profile
0 to 8 inches: Loam
8 to 24 inches: Clay loam
24 to 32 inches: Loam
32 to 36 inches: Unweathered bedrock

Description of Fivepine

Setting
Landform: Mesas, structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from sandstone

Properties and qualities
Slope: 1 to 12 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
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
Available water capacity: Very low (about 2.3 inches)
Interpretive groups

Land capability classification (irrigated): 6e
Land capability (nonirrigated): 6s

Typical profile
0 to 5 inches: Loam
5 to 9 inches: Clay loam
9 to 15 inches: Clay
15 to 19 inches: Unweathered bedrock

Minor Components

Acree

Percent of map unit: 5 percent

Zoltay

Percent of map unit: 5 percent

Rock outcrop

Percent of map unit: 5 percent
Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Farmland Classification (Slick Rock LT 12)

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.
Custom Soil Resource Report
Map—Farmland Classification (Slick Rock LT 12)
### MAP LEGEND

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>✖️</td>
<td>Not prime farmland</td>
</tr>
<tr>
<td>🟢</td>
<td>All areas are prime farmland</td>
</tr>
<tr>
<td>🟪</td>
<td>Prime farmland if drained</td>
</tr>
<tr>
<td>🟩</td>
<td>Prime farmland if protected from flooding or not frequently flooded during the growing season</td>
</tr>
<tr>
<td>🟦</td>
<td>Prime farmland if irrigated</td>
</tr>
<tr>
<td>🟧</td>
<td>Prime farmland if irrigated and reclaimed of excess salts and sodium</td>
</tr>
<tr>
<td>🟨</td>
<td>Farmland of statewide importance</td>
</tr>
<tr>
<td>🟩</td>
<td>Farmland of local importance</td>
</tr>
<tr>
<td>🟩</td>
<td>Farmland of unique importance</td>
</tr>
<tr>
<td>🟩️</td>
<td>Not rated or not available</td>
</tr>
<tr>
<td>🏜</td>
<td>Major Roads</td>
</tr>
<tr>
<td>🚧</td>
<td>Local Roads</td>
</tr>
</tbody>
</table>

### MAP INFORMATION

- **Map Scale:** 1:13,000 if printed on A size (8.5" × 11") sheet.
- 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 accurate map measurements.

- **Source of Map:** Natural Resources Conservation Service
- **Coordinate System:** UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

- **Soil Survey Area:** San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties
- **Survey Area Data:** Version 7, May 3, 2011
- **Date(s) aerial images were photographed:** 8/28/2005

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.
Table—Farmland Classification (Slick Rock LT 12)

| Farmland Classification— Summary by Map Unit — San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties (CO675) |
|---|---|---|---|
| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
| 41 | Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes | Not prime farmland | 6.1 | 0.9% |
| 48 | Gurley-Skein loams, 3 to 20 percent slopes | Not prime farmland | 70.1 | 10.7% |
| 66 | Nortez loam, 1 to 6 percent slopes | Not prime farmland | 220.6 | 33.5% |
| 67 | Nortez loam, 6 to 12 percent slopes | Not prime farmland | 8.9 | 1.4% |
| 68 | Nortez-Acree loams, 1 to 12 percent slopes | Not prime farmland | 131.6 | 20.0% |
| 69 | Nortez-Fivepine loams, 1 to 12 percent slopes | Not prime farmland | 220.8 | 33.5% |
| Totals for Area of Interest | | | 658.1 | 100.0% |

Rating Options—Farmland Classification (Slick Rock LT 12)

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Hydric Rating by Map Unit (Slick Rock LT 12)

This rating indicates the proportion of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is designated as "all hydric," "partially hydric," "not hydric," or "unknown hydric," depending on the rating of its respective components.

"All hydric" means that all components listed for a given map unit are rated as being hydric, while "not hydric" means that all components are rated as not hydric. "Partially hydric" means that at least one component of the map unit is rated as hydric, and at least one component is rated as not hydric. "Unknown hydric" indicates that at least one component is not rated so a definitive rating for the map unit cannot be made.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or
inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:


Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

Soils

Soil Map Units

Soil Ratings

All Hydric

Partially Hydric

Not Hydric

Unknown Hydric

Not rated or not available

Political Features

Cities

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

MAP INFORMATION

Map Scale: 1:13,000 if printed on A size (8.5' × 11") sheet.

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 accurate map measurements.

Source of Map:  Natural Resources Conservation Service
Coordinate System:  UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area:  San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties
Survey Area Data:  Version 7, May 3, 2011
Date(s) aerial images were photographed:  8/28/2005

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.
Table—Hydric Rating by Map Unit (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>Not Hydric</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>Not Hydric</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>Partially Hydric</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>Partially Hydric</td>
<td>8.9</td>
<td>1.4%</td>
</tr>
<tr>
<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
<td>Partially Hydric</td>
<td>131.6</td>
<td>20.0%</td>
</tr>
<tr>
<td>69</td>
<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
<td>Not Hydric</td>
<td>220.8</td>
<td>33.5%</td>
</tr>
<tr>
<td></td>
<td>Totals for Area of Interest</td>
<td></td>
<td>658.1</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Rating Options—Hydric Rating by Map Unit (Slick Rock LT 12)

Aggregation Method: Absence/Presence

Tie-break Rule: Lower

Nonirrigated Capability Class (Slick Rock LT 12)

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations that show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels-capability class, subclass, and unit. Only class and subclass are included in this data set.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have few limitations that restrict their use.
Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.
Custom Soil Resource Report
Map—Nonirrigated Capability Class (Slick Rock LT 12)

Map Scale: 1:13,000 if printed on A size (8.5" x 11") sheet.
MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)
Soils
- Soil Map Units
Soil Ratings
- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available
Political Features
- Cities
Water Features
- Streams and Canals
Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:13,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: UTM Zone 12N NAD83

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Soil Survey Area: San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties
Survey Area Data: Version 7, May 3, 2011

Date(s) aerial images were photographed: 8/28/2005

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### Table—Nonirrigated Capability Class (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>7</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>4</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>4</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>4</td>
<td>8.9</td>
<td>1.4%</td>
</tr>
<tr>
<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
<td>4</td>
<td>131.6</td>
<td>20.0%</td>
</tr>
<tr>
<td>69</td>
<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
<td>4</td>
<td>220.8</td>
<td>33.5%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

### Rating Options—Nonirrigated Capability Class (Slick Rock LT 12)

**Aggregation Method:** Dominant Condition  
**Component Percent Cutoff:** None Specified  
**Tie-break Rule:** Higher

### Soil Taxonomy Classification (Slick Rock LT 12)

This rating presents the taxonomic classification based on Soil Taxonomy.

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2003). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. This table shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

**ORDER.** Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in sol. An example is Alfisols.

**SUBORDER.** Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalfs (Ud, meaning humid, plus alfs, from Alfisols).
GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (Hapl, meaning minimal horizonation, plus udalfs, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the group. The adjective Typic identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Hapludalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

References:


Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. (The soils in a given survey area may have been classified according to earlier editions of this publication.)
Custom Soil Resource Report

**MAP LEGEND**

- Area of Interest (AOI)
- Soils
- Soil Ratings
  - Clayey, montmorillonitic Lithic Argiborolls
  - Fine, mixed Aridic Argiborolls
  - Fine, montmorillonitic Typic Argiborolls
  - Not rated or not available
- Political Features
  - Cities
- Water Features
  - Streams and Canals
- Transportation
  - Rails
  - Interstate Highways
  - US Routes
  - Major Roads
  - Local Roads

**MAP INFORMATION**

Map Scale: 1:13,000 if printed on A size (8.5” × 11”) sheet.

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Source of Map: Natural Resources Conservation Service
Coordinate System: UTM Zone 12N NAD83

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Survey Area Data: Version 7, May 3, 2011

Date(s) aerial images were photographed: 8/28/2005

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### Table—Soil Taxonomy Classification (Slick Rock LT 12)

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<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>Clayey, montmorillonitic Lithic Argiborolls</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>Fine, mixed Aridic Argiborolls</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>Fine, montmorillonitic Typic Argiborolls</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>Fine, montmorillonitic Typic Argiborolls</td>
<td>8.9</td>
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<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
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<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
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<td>220.8</td>
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</tr>
</tbody>
</table>

**Totals for Area of Interest**

<table>
<thead>
<tr>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>658.1</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Rating Options—Soil Taxonomy Classification (Slick Rock LT 12)

*Aggregation Method:* Dominant Condition  
*Component Percent Cutoff:* None Specified  
*Tie-break Rule:* Lower
References


Custom Soil Resource Report for San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties
SLick Rock LT 12 - Part 2

January 10, 2012
Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the
individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.
Map Unit Legend (Slick Rock LT 12)

San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties (CO675)

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>8.9</td>
<td>1.4%</td>
</tr>
<tr>
<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
<td>131.6</td>
<td>20.0%</td>
</tr>
<tr>
<td>69</td>
<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
<td>220.8</td>
<td>33.5%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Map Unit Descriptions (Slick Rock LT 12)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils 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. Other minor components, however, have properties and behavioral 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. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one 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.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An undifferentiated group is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.
San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties

41—Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes

Map Unit Setting
- **Elevation:** 7,400 to 8,500 feet
- **Mean annual precipitation:** 17 to 19 inches
- **Mean annual air temperature:** 41 to 43 degrees F
- **Frost-free period:** 70 to 90 days

Map Unit Composition
- **Fivepine and similar soils:** 40 percent
- **Nortez and similar soils:** 30 percent
- **Rock outcrop:** 20 percent
- **Minor components:** 10 percent

Description of Fivepine

Setting
- **Landform:** Mesas
- **Down-slope shape:** Linear
- **Across-slope shape:** Linear
- **Parent material:** Residuum weathered from sandstone

Properties and qualities
- **Slope:** 12 to 30 percent
- **Depth to restrictive feature:** 10 to 20 inches to lithic bedrock
- **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
- **Available water capacity:** Very low (about 2.3 inches)

Interpretive groups
- **Land capability (nonirrigated):** 7e

Typical profile
- **0 to 5 inches:** Loam
- **5 to 9 inches:** Clay loam
- **9 to 15 inches:** Clay
- **15 to 19 inches:** Unweathered bedrock

Description of Nortez

Setting
- **Landform:** Mesas
- **Down-slope shape:** Linear
- **Across-slope shape:** Linear
- **Parent material:** Alluvium derived from sandstone and shale

Properties and qualities
- **Slope:** 12 to 20 percent
- **Depth to restrictive feature:** 20 to 40 inches to lithic bedrock
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: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.7 inches)

Interpretive groups
Land capability (nonirrigated): 7e
Ecological site: Pine Grasslands (R048AY255CO)
Other vegetative classification: PINE GRASSLANDS (048AY255CO_2)

Typical profile
0 to 8 inches: Loam
8 to 24 inches: Clay loam
24 to 32 inches: Loam
32 to 36 inches: Unweathered bedrock

Description of Rock Outcrop
Setting
Landform: Mesas
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from sandstone

Properties and qualities
Slope: 12 to 30 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.00 in/hr)

Interpretive groups
Land capability (nonirrigated): 8s

Typical profile
0 to 60 inches: Unweathered bedrock

Minor Components
Acree
Percent of map unit: 5 percent

Borolls
Percent of map unit: 5 percent
48—Gurley-Skein loams, 3 to 20 percent slopes

Map Unit Setting
- **Elevation:** 6,800 to 7,400 feet
- **Mean annual precipitation:** 15 to 17 inches
- **Mean annual air temperature:** 43 to 45 degrees F
- **Frost-free period:** 90 to 110 days

Map Unit Composition
- **Gurley and similar soils:** 50 percent
- **Skein and similar soils:** 40 percent
- **Minor components:** 10 percent

Description of Gurley

Setting
- **Landform:** Mesas, terraces
- **Landform position (three-dimensional):** Tread, riser
- **Down-slope shape:** Linear
- **Across-slope shape:** Linear
- **Parent material:** Residuum weathered from interbedded sandstone and shale

Properties and qualities
- **Slope:** 3 to 20 percent
- **Depth to restrictive feature:** 20 to 40 inches to lithic bedrock
- **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:** 50 percent
- **Maximum salinity:** Nonsaline (0.0 to 2.0 mmhos/cm)
- **Available water capacity:** Moderate (about 6.6 inches)

Interpretive groups
- **Land capability (nonirrigated):** 4e
- **Ecological site:** Loamy Foothills (R034XY284CO)

Typical profile
- **0 to 4 inches:** Loam
- **4 to 21 inches:** Clay loam
- **21 to 37 inches:** Gravelly loam
- **37 to 41 inches:** Unweathered bedrock
Description of Skein

Setting
- Landform: Mesas, terraces
- Landform position (three-dimensional): Tread, riser
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Residuum weathered from interbedded sandstone and shale

Properties and qualities
- Slope: 3 to 20 percent
- Depth to restrictive feature: 10 to 20 inches to lithic bedrock
- 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: 40 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Available water capacity: Very low (about 2.4 inches)

Interpretive groups
- Land capability (nonirrigated): 6e

Typical profile
- 0 to 6 inches: Loam
- 6 to 13 inches: Loam
- 13 to 19 inches: Very gravelly loam
- 19 to 23 inches: Unweathered bedrock

Minor Components

Callan
- Percent of map unit: 5 percent

Beje
- Percent of map unit: 5 percent

66—Nortez loam, 1 to 6 percent slopes

Map Unit Setting
- Elevation: 7,400 to 8,500 feet
- Mean annual precipitation: 17 to 19 inches
- Mean annual air temperature: 41 to 43 degrees F
- Frost-free period: 70 to 90 days

Map Unit Composition
- Nortez and similar soils: 85 percent
- Minor components: 15 percent
Description of Nortez

Setting
Landform: Structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone and shale

Properties and qualities
Slope: 1 to 6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
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: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.7 inches)

Interpretive groups
Land capability classification (irrigated): 4s
Land capability (nonirrigated): 4s
Ecological site: Pine Grasslands (R034XY255CO)

Typical profile
0 to 8 inches: Loam
8 to 24 inches: Clay loam
24 to 32 inches: Loam
32 to 36 inches: Unweathered bedrock

Minor Components
Acree
Percent of map unit: 5 percent

Fivepine
Percent of map unit: 5 percent

Borolls
Percent of map unit: 3 percent

Haplaquolls
Percent of map unit: 2 percent
Landform: Drainageways

67—Nortez loam, 6 to 12 percent slopes

Map Unit Setting
Elevation: 7,400 to 8,500 feet
Mean annual precipitation: 17 to 19 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 70 to 90 days

Map Unit Composition
Nortez and similar soils: 85 percent
Minor components: 15 percent

Description of Nortez

Setting
Landform: Structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone and shale

Properties and qualities
Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
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: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.7 inches)

Interpretive groups
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 4e
Ecological site: Pine Grasslands (R034XY255CO)

Typical profile
0 to 8 inches: Loam
8 to 24 inches: Clay loam
24 to 32 inches: Loam
32 to 36 inches: Unweathered bedrock

Minor Components

Acree
Percent of map unit: 5 percent

Fivepine
Percent of map unit: 5 percent

Borolls
Percent of map unit: 3 percent

Haplaquolls
Percent of map unit: 2 percent
Landform: Drainageways
68—Nortez-Acree loams, 1 to 12 percent slopes

Map Unit Setting
- **Elevation:** 7,400 to 8,500 feet
- **Mean annual precipitation:** 17 to 19 inches
- **Mean annual air temperature:** 41 to 43 degrees F
- **Frost-free period:** 70 to 90 days

Map Unit Composition
- *Nortez and similar soils:* 50 percent
- *Acree and similar soils:* 35 percent
- *Minor components:* 15 percent

Description of Nortez

Setting
- **Landform:** Mesas, structural benches
- **Down-slope shape:** Linear
- **Across-slope shape:** Linear
- **Parent material:** Alluvium derived from sandstone and shale

Properties and qualities
- **Slope:** 1 to 12 percent
- **Depth to restrictive feature:** 20 to 40 inches to lithic bedrock
- **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:** 10 percent
- **Maximum salinity:** Nonsaline (0.0 to 2.0 mmhos/cm)
- **Available water capacity:** Low (about 5.7 inches)

Interpretive groups
- **Land capability classification (irrigated):** 4e
- **Land capability (nonirrigated):** 4e
- **Ecological site:** Pine Grasslands (R03XY255CO)

Typical profile
- **0 to 8 inches:** Loam
- **8 to 24 inches:** Clay loam
- **24 to 32 inches:** Loam
- **32 to 36 inches:** Unweathered bedrock

Description of Acree

Setting
- **Landform:** Mesas, structural benches
- **Down-slope shape:** Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone and shale

Properties and qualities
Slope: 1 to 12 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
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 9.3 inches)

Interpretive groups
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 4e
Ecological site: Mountain Loam (R034XY228CO)

Typical profile
0 to 8 inches: Loam
8 to 30 inches: Clay
30 to 60 inches: Clay loam

Minor Components
Fivepine
Percent of map unit: 5 percent
Borolls
Percent of map unit: 5 percent
Zoltay
Percent of map unit: 3 percent
Landform: Swales
Haplaquolls
Percent of map unit: 2 percent
Landform: Swales

69—Nortez-Fivepine loams, 1 to 12 percent slopes

Map Unit Setting
Elevation: 7,400 to 8,500 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 70 to 90 days
Map Unit Composition

*Nortez and similar soils*: 45 percent
*Fivepine and similar soils*: 40 percent
*Minor components*: 15 percent

Description of Nortez

**Setting**
- *Landform*: Mesas, structural benches
- *Down-slope shape*: Linear
- *Across-slope shape*: Linear
- *Parent material*: Alluvium derived from sandstone and shale

**Properties and qualities**
- *Slope*: 1 to 12 percent
- *Depth to restrictive feature*: 20 to 40 inches to lithic bedrock
- *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*: 10 percent
- *Maximum salinity*: Nonsaline (0.0 to 2.0 mmhos/cm)
- *Available water capacity*: Low (about 5.7 inches)

**Interpretive groups**
- *Land capability classification (irrigated)*: 6e
- *Land capability (nonirrigated)*: 4e
- *Ecological site*: Pine Grasslands (R034XY255CO)

**Typical profile**
- 0 to 8 inches: Loam
- 8 to 24 inches: Clay loam
- 24 to 32 inches: Loam
- 32 to 36 inches: Unweathered bedrock

Description of Fivepine

**Setting**
- *Landform*: Mesas, structural benches
- *Down-slope shape*: Linear
- *Across-slope shape*: Linear
- *Parent material*: Residuum weathered from sandstone

**Properties and qualities**
- *Slope*: 1 to 12 percent
- *Depth to restrictive feature*: 10 to 20 inches to lithic bedrock
- *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
- *Available water capacity*: Very low (about 2.3 inches)
Interpretive groups
   Land capability classification (irrigated): 6e
   Land capability (nonirrigated): 6s

Typical profile
   0 to 5 inches: Loam
   5 to 9 inches: Clay loam
   9 to 15 inches: Clay
   15 to 19 inches: Unweathered bedrock

Minor Components
   Acree
       Percent of map unit: 5 percent
   Zoltay
       Percent of map unit: 5 percent
   Rock outcrop
       Percent of map unit: 5 percent
Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Whole Soil (Slick Rock LT 12)

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.
Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

Soils

Soil Ratings

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Political Features

Water Features

Transportation

Interstate Highways
US Routes
Major Roads
Local Roads

MAP INFORMATION

Map Scale: 1:13,000 if printed on A size (8.5” × 11”) sheet.

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 accurate map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties
Survey Area Data: Version 7, May 3, 2011

Date(s) aerial images were photographed: 8/28/2005

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.
Table—K Factor, Whole Soil (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>.32</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>.28</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>.32</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>.32</td>
<td>8.9</td>
<td>1.4%</td>
</tr>
<tr>
<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
<td>.32</td>
<td>131.6</td>
<td>20.0%</td>
</tr>
<tr>
<td>69</td>
<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
<td>.32</td>
<td>220.8</td>
<td>33.5%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

**Rating Options—K Factor, Whole Soil (Slick Rock LT 12)**

*Aggregation Method:* Dominant Condition  
*Component Percent Cutoff:* None Specified  
*Tie-break Rule:* Higher  
*Layer Options:* Surface Layer

**Wind Erodibility Group (Slick Rock LT 12)**

A wind erodibility group (WEG) consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.
Custom Soil Resource Report

**MAP LEGEND**

- **Area of Interest (AOI)**
- **Soils**
  - Soil Map Units
- **Soil Ratings**
  - 1
  - 2
  - 3
  - 4
  - 4L
  - 5
  - 6
  - 7
  - 8
  - Not rated or not available
- **Political Features**
  - Cities
- **Water Features**
  - Streams and Canals
- **Transportation**
  - Rails
  - Interstate Highways
  - US Routes
  - Major Roads
  - Local Roads

**MAP INFORMATION**

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<tr>
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<th>Rating</th>
<th>Acres in AOI</th>
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</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>6</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
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<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
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<td>70.1</td>
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<td></td>
<td>Totals for Area of Interest</td>
<td></td>
<td>658.1</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Rating Options—Wind Erodibility Group (Slick Rock LT 12)

*Aggregation Method:* Dominant Condition  
*Component Percent Cutoff:* None Specified  
*Tie-break Rule:* Lower

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Available Water Capacity (Slick Rock LT 12)

Available water capacity (AWC) refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in centimeters of water per centimeter of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure, with corrections for salinity and rock fragments. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. It is not an estimate of the quantity of water actually available to plants at any given time.
Available water supply (AWS) is computed as AWC times the thickness of the soil. For example, if AWC is 0.15 cm/cm, the available water supply for 25 centimeters of soil would be 0.15 x 25, or 3.75 centimeters of water.

For each soil layer, AWC is recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.
Custom Soil Resource Report
Map—Available Water Capacity (Slick Rock LT 12)

Map Scale: 1:13,000 if printed on A size (8.5" x 11") sheet.
Custom Soil Resource Report

**MAP LEGEND**

<table>
<thead>
<tr>
<th>Area of Interest (AOI)</th>
<th>Soil Map Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Soil Ratings**

- <= 0.16
- > 0.16 AND <= 0.18
- > 0.18 AND <= 0.19
- Not rated or not available

**Political Features**

- Cities

**Water Features**

- Streams and Canals

**Transportation**

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**MAP INFORMATION**

Map Scale: 1:13,000 if printed on A size (8.5" × 11") sheet.

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Warning: Soil Map may not be valid at this scale.

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Table—Available Water Capacity (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating (centimeters per centimeter)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>0.16</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>0.19</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>0.18</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>0.18</td>
<td>8.9</td>
<td>1.4%</td>
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<td>20.0%</td>
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<td>33.5%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Rating Options—Available Water Capacity (Slick Rock LT 12)

*Units of Measure:* centimeters per centimeter

*Aggregation Method:* Dominant Component

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

*Interpret Nulls as Zero:* No

*Layer Options:* Depth Range

*Top Depth:* 0

*Bottom Depth:* 12

*Units of Measure:* Inches

Organic Matter (Slick Rock LT 12)

Organic matter is the plant and animal residue in the soil at various stages of decomposition. The estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms. An irregular distribution of organic carbon with depth may indicate different episodes of soil deposition or soil formation. Soils that are very high in organic matter have poor engineering properties and subside upon drying.
For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.
Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)  
Soils  
Soil Ratings  
<= 1.54  
> 1.54 AND <= 1.83  
Not rated or not available  
Political Features  
Cities  
Water Features  
Streams and Canals  
Transportation  
Rails  
Interstate Highways  
US Routes  
Major Roads  
Local Roads

MAP INFORMATION

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Source of Map: Natural Resources Conservation Service
Coordinate System: UTM Zone 12N NAD83

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### Table—Organic Matter (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating (percent)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>1.54</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>1.83</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>1.83</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>1.83</td>
<td>8.9</td>
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<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
<td>1.83</td>
<td>131.6</td>
<td>20.0%</td>
</tr>
<tr>
<td>69</td>
<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
<td>1.83</td>
<td>220.8</td>
<td>33.5%</td>
</tr>
</tbody>
</table>

**Totals for Area of Interest**

<table>
<thead>
<tr>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>658.1</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Rating Options—Organic Matter (Slick Rock LT 12)

- **Units of Measure:** percent
- **Aggregation Method:** Dominant Component
- **Component Percent Cutoff:** None Specified
- **Tie-break Rule:** Higher
- **Interpret Nulls as Zero:** No
- **Layer Options:** Depth Range
  - **Top Depth:** 0
  - **Bottom Depth:** 12
- **Units of Measure:** Inches

### Saturated Hydraulic Conductivity (Ksat) (Slick Rock LT 12)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil.
component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.
MAP LEGEND

Area of Interest (AOI)

Soils

Soil Ratings

<= 3.67

> 3.67 AND <= 5.128

> 5.128 AND <= 7.0533

Not rated or not available

Political Features

Cities

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

MAP INFORMATION

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Table—Saturated Hydraulic Conductivity (Ksat) (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating (micrometers per second)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>5.1283</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>3.6700</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>7.0533</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>7.0533</td>
<td>8.9</td>
<td>1.4%</td>
</tr>
<tr>
<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
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<td></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Rating Options—Saturated Hydraulic Conductivity (Ksat) (Slick Rock LT 12)**

*Units of Measure:* micrometers per second  
*Aggregation Method:* Dominant Component  
*Component Percent Cutoff:* None Specified  
*Tie-break Rule:* Fastest  
*Interpret Nulls as Zero:* No  
*Layer Options:* Depth Range  
*Top Depth:* 0  
*Bottom Depth:* 12  
*Units of Measure:* Inches

**Surface Texture (Slick Rock LT 12)**

This displays the representative texture class and modifier of the surface horizon.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."
Custom Soil Resource Report
Map—Surface Texture (Slick Rock LT 12)

Map Scale: 1:13,000 if printed on A size (8.5" x 11") sheet.
Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

Soils

Soil Ratings

- loam

- Not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

- Rails

- Interstate Highways

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<tr>
<th>Map unit symbol</th>
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<td>0.9%</td>
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<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
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<td></td>
<td></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Rating Options—Surface Texture (Slick Rock LT 12)

*Aggregation Method:* Dominant Condition  
*Component Percent Cutoff:* None Specified  
*Tie-break Rule:* Lower  
*Layer Options:* Surface Layer

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Drainage Class (Slick Rock LT 12)

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized: excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and poorly drained.
drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."
Custom Soil Resource Report
Map—Drainage Class (Slick Rock LT 12)
MAP LEGEND

Area of Interest (AOI)

Soils

Soil Ratings

Excessively drained
Somewhat excessively drained
Well drained
Moderately well drained
Somewhat poorly drained
Poorly drained
Very poorly drained
Subaqueous
Not rated or not available

Political Features

Cities

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

MAP INFORMATION

Map Scale: 1:13,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties
Survey Area Data: Version 7, May 3, 2011

Date(s) aerial images were photographed: 8/28/2005

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### Table—Drainage Class (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>Well drained</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>Well drained</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>Well drained</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>Well drained</td>
<td>8.9</td>
<td>1.4%</td>
</tr>
<tr>
<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
<td>Well drained</td>
<td>131.6</td>
<td>20.0%</td>
</tr>
<tr>
<td>69</td>
<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
<td>Well drained</td>
<td>220.8</td>
<td>33.5%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

### Rating Options—Drainage Class (Slick Rock LT 12)

*Aggregation Method:* Dominant Condition  
*Component Percent Cutoff:* None Specified  
*Tie-break Rule:* Higher

### Hydrologic Soil Group (Slick Rock LT 12)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

**Group A.** Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

**Group B.** Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.
# MAP LEGEND

<table>
<thead>
<tr>
<th>Area of Interest (AOI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soils</th>
<th>Soil Map Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soil Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>A/D</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>B/D</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>C/D</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>D</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Cities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streams and Canals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rails</td>
</tr>
<tr>
<td>Interstate Highways</td>
</tr>
<tr>
<td>US Routes</td>
</tr>
<tr>
<td>Major Roads</td>
</tr>
<tr>
<td>Local Roads</td>
</tr>
</tbody>
</table>

# MAP INFORMATION

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Coordinate System: UTM Zone 12N NAD83

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Table—Hydrologic Soil Group (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>D</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>C</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>C</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>C</td>
<td>8.9</td>
<td>1.4%</td>
</tr>
<tr>
<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
<td>C</td>
<td>131.6</td>
<td>20.0%</td>
</tr>
<tr>
<td>69</td>
<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
<td>C</td>
<td>220.8</td>
<td>33.5%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Rating Options—Hydrologic Soil Group (Slick Rock LT 12)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Parent Material Name (Slick Rock LT 12)

Parent material name is a term for the general physical, chemical, and mineralogical composition of the unconsolidated material, mineral or organic, in which the soil forms. Mode of deposition and/or weathering may be implied by the name.

The soil surveyor uses parent material to develop a model used for soil mapping. Soil scientists and specialists in other disciplines use parent material to help interpret soil boundaries and project performance of the material below the soil. Many soil properties relate to parent material. Among these properties are proportions of sand, silt, and clay; chemical content; bulk density; structure; and the kinds and amounts of rock fragments. These properties affect interpretations and may be criteria used to separate soil series. Soil properties and landscape information may imply the kind of parent material.

For each soil in the database, one or more parent materials may be identified. One is marked as the representative or most commonly occurring. The representative parent material name is presented here.
Custom Soil Resource Report
Map—Parent Material Name (Slick Rock LT 12)

Map Scale: 1:13,000 if printed on A size (8.5" x 11") sheet.
MAP LEGEND

Area of Interest (AOI)

Soils

Soil Ratings

alluvium derived from sandstone and shale
residuum weathered from interbedded sandstone and shale
residuum weathered from sandstone
Not rated or not available

Political Features

Cities

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Custom Soil Resource Report

MAP INFORMATION

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Coordinate System:  UTM Zone 12N NAD83

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### Table—Parent Material Name (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>residuum weathered from sandstone</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>residuum weathered from interbedded sandstone and shale</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>alluvium derived from sandstone and shale</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>alluvium derived from sandstone and shale</td>
<td>8.9</td>
<td>1.4%</td>
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<td>69</td>
<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
<td>alluvium derived from sandstone and shale</td>
<td>220.8</td>
<td>33.5%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

### Rating Options—Parent Material Name (Slick Rock LT 12)

*Aggregation Method:* Dominant Condition  
*Component Percent Cutoff:* None Specified  
*Tie-break Rule:* Lower

### Water Features

Water Features include ponding frequency, flooding frequency, and depth to water table.

### Depth to Water Table (Slick Rock LT 12)

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.
Custom Soil Resource Report

**MAP LEGEND**

<table>
<thead>
<tr>
<th>Area of Interest (AOI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="AOI" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soils</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image2" alt="Soil Map Units" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soil Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="0 - 25" /></td>
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<tr>
<td><img src="image4" alt="25 - 50" /></td>
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<tr>
<td><img src="image5" alt="50 - 100" /></td>
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<tr>
<td><img src="image6" alt="100 - 150" /></td>
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<tr>
<td><img src="image7" alt="150 - 200" /></td>
</tr>
<tr>
<td><img src="image8" alt="&gt; 200" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Political Features</th>
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</thead>
<tbody>
<tr>
<td><img src="image9" alt="Cities" /></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Water Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image10" alt="Streams and Canals" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image11" alt="Rails" /></td>
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<tr>
<td><img src="image12" alt="Interstate Highways" /></td>
</tr>
<tr>
<td><img src="image13" alt="US Routes" /></td>
</tr>
<tr>
<td><img src="image14" alt="Major Roads" /></td>
</tr>
<tr>
<td><img src="image15" alt="Local Roads" /></td>
</tr>
</tbody>
</table>

**MAP INFORMATION**

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# Table—Depth to Water Table (Slick Rock LT 12)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating (centimeters)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>&gt;200</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>&gt;200</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>&gt;200</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>&gt;200</td>
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<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
Rating Options—Depth to Water Table (Slick Rock LT 12)

Units of Measure: centimeters
Aggregation Method: Dominant Component
Component Percent Cutoff: None Specified
Tie-break Rule: Lower
Interpret Nulls as Zero: No
Beginning Month: January
Ending Month: December

Flooding Frequency Class (Slick Rock LT 12)

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.
Custom Soil Resource Report

**MAP LEGEND**

- **Area of Interest (AOI)**
- **Soils**
  - Soil Map Units
- **Soil Ratings**
  - None
  - Very Rare
  - Rare
  - Occasional
  - Frequent
  - Very Frequent
- **Political Features**
  - Cities
- **Water Features**
  - Streams and Canals
- **Transportation**
  - Rails
  - Interstate Highways
  - US Routes
  - Major Roads
  - Local Roads

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### Table—Flooding Frequency Class (Slick Rock LT 12)

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<tr>
<th>Map unit symbol</th>
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<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
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</tr>
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<td>33.5%</td>
</tr>
<tr>
<td>Totals for Area of Interest</td>
<td></td>
<td></td>
<td>658.1</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Rating Options—Flooding Frequency Class (Slick Rock LT 12)

- **Aggregation Method:** Dominant Condition
- **Component Percent Cutoff:** None Specified
- **Tie-break Rule:** More Frequent
- **Beginning Month:** January
- **Ending Month:** December

### Ponding Frequency Class (Slick Rock LT 12)

Ponding is standing water in a closed depression. The water is removed only by deep percolation, transpiration, or evaporation or by a combination of these processes. Ponding frequency classes are based on the number of times that ponding occurs over a given period. Frequency is expressed as none, rare, occasional, and frequent.

"None" means that ponding is not probable. The chance of ponding is nearly 0 percent in any year.

"Rare" means that ponding is unlikely but possible under unusual weather conditions. The chance of ponding is nearly 0 percent to 5 percent in any year.

"Occasional" means that ponding occurs, on the average, once or less in 2 years. The chance of ponding is 5 to 50 percent in any year.
“Frequent” means that ponding occurs, on the average, more than once in 2 years. The chance of ponding is more than 50 percent in any year.
MAP LEGEND

Area of Interest (AOI)

Soils

Soil Ratings

None
Rare
Occasional
Frequent

Political Features

Cities

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Custom Soil Resource Report

MAP INFORMATION

Map Scale: 1:13,000 if printed on A size (8.5" × 11") sheet.

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 accurate map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties
Survey Area Data: Version 7, May 3, 2011

Date(s) aerial images were photographed: 8/28/2005

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.
### Table—Ponding Frequency Class (Slick Rock LT 12)

#### Ponding Frequency Class— Summary by Map Unit — San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties (CO675)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Fivepine-Nortez-Rock outcrop complex, 12 to 30 percent slopes</td>
<td>None</td>
<td>6.1</td>
<td>0.9%</td>
</tr>
<tr>
<td>48</td>
<td>Gurley-Skein loams, 3 to 20 percent slopes</td>
<td>None</td>
<td>70.1</td>
<td>10.7%</td>
</tr>
<tr>
<td>66</td>
<td>Nortez loam, 1 to 6 percent slopes</td>
<td>None</td>
<td>220.6</td>
<td>33.5%</td>
</tr>
<tr>
<td>67</td>
<td>Nortez loam, 6 to 12 percent slopes</td>
<td>None</td>
<td>8.9</td>
<td>1.4%</td>
</tr>
<tr>
<td>68</td>
<td>Nortez-Acree loams, 1 to 12 percent slopes</td>
<td>None</td>
<td>131.6</td>
<td>20.0%</td>
</tr>
<tr>
<td>69</td>
<td>Nortez-Fivepine loams, 1 to 12 percent slopes</td>
<td>None</td>
<td>220.8</td>
<td>33.5%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td><strong>658.1</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Rating Options—Ponding Frequency Class (Slick Rock LT 12)

Aggregation Method: Dominant Condition  
Component Percent Cutoff: None Specified  
Tie-break Rule: More Frequent  
Beginning Month: January  
Ending Month: December
References


