United States Department of Agriculture

Natural Resources Conservation Service

United States Department of Interior, National Park Service

In cooperation with Colorado State University; the Colorado Agricultural Experiment Station; Utah State University; the Utah Agricultural Experiment Station; and the U.S. Department of Interior, National Park Service

Soil Survey of Dinosaur National Monument, Colorado and Utah

How To Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

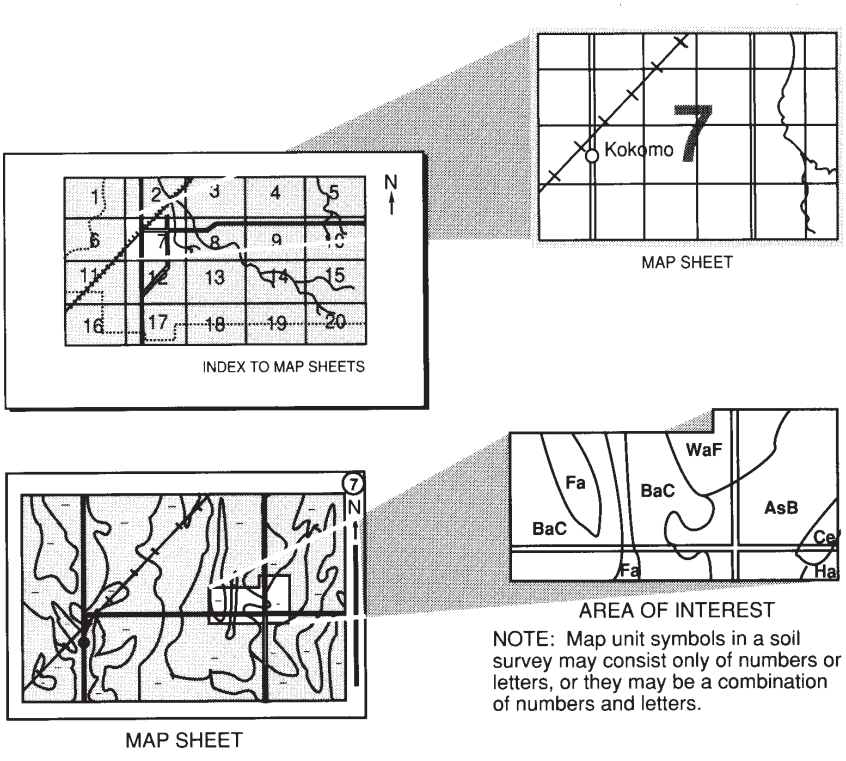
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

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

Major fieldwork for this soil survey was completed in 1994. Soil names and descriptions were approved in 1998. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1994. This survey was made cooperatively by the Natural Resources Conservation Service, the Colorado Agricultural Experiment Station, the Utah Agricultural Experiment Station, and their respective Cooperative Extension Services. The survey is part of the technical assistance furnished to the Colorado First and Uintah Soil Conservation Districts. The National Park Service provided financial assistance for this survey.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Cover: Dinosaur National Monument offers visitors spectacular views of canyons, rivers, diverse wildlife, plants, geology, and soils as represented by this scene at Harper's Corner looking west down the Green River.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

How To Reference A Soil Survey

To properly cite the Soil Survey of Dinosaur National Monument, Colorado and Utah as a reference work:

If the reference is taken from a manuscript on the NCSS Web Soil Survey:

United States Department of Agriculture, Natural Resources Conservation Service. 2007. Soil Survey of Dinosaur National Monument, Colorado and Utah. http://websoilsurvey.nrcs.usda.gov/app/ [cited *XXX date*].

From the Soil Data Mart Database:

United States Department of Agriculture, Natural Resources Conservation Service. Soil Datamart. http://soildatamart.nrcs.usda.gov/Survey.aspx?State=CO and http://soildatamart.nrcs.usda.gov/Survey.aspx?State=UT [cited *XXX date*].

From the Web Soil Survey Database:

United States Department of Agriculture, Natural Resources Conservation Service. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/ [cited *XXX date*].

From a soil survey report on CD:

Soil Survey Staff. 2007. Soil Survey of Dinosaur National Monument, Colorado and Utah [CD-ROM]. United States Department of Agriculture, Natural Resources Conservation Service.

From a published soil survey report:

United States Department of Agriculture, Natural Resources Conservation Service. 2007. Soil Survey of Dinosaur National Monument, Colorado and Utah. Soil Survey Staff.

Contents

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are 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.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. 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.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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State Conservationist
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Soil Survey of Dinosaur National Monument, Colorado and Utah

Fieldwork by Dennis Moore, David Dearstyne, Garth Leishman, Randy Lewis, Sterling Moss, and Jim Brown, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service

In cooperation with Colorado State University, the Colorado Agricultural Experiment Station, Utah State University, the Utah Agricultural Experiment Station, and the National Park Service, United States Department of Interior.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which 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. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are 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 or segment of the landscape. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landscape, soil scientists develop a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientists to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Individual soils on the landscape commonly merge into one another as their characteristics gradually change. To construct an accurate 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 soilvegetation-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 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.

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 rangeland productivity under defined levels of management are assembled from farm and ranch 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.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas (USDA-SCS, 1993).

General Nature of the Survey Area

The Dinosaur National Monument Natural Resources Staff assisted in writing the following sections.

This section provides information on the survey area. It discusses physiography, recreation, drainage, geology, archeological resources, paleontological resources, history, and climate. Dinosaur National Monument is located (fig. 1) in northwestern Colorado and northeastern Utah at the northeastern edge of the Colorado Plateau. Elevations range from 4,800 to 9,000 feet.

The survey area is about 211,683 acres, or about 331 square miles in size; 155,900 acres are located in Colorado and 57,783 acres are located in Utah. The Utah portion of the Monument comprises 26 percent of the total acreage; the remaining 74 percent is within Colorado. The Monument is divided into two management districts. The western section of the Monument falls within the Green River District; the eastern section is within the Yampa River District. The Green River approximately divides the two Districts.

The area mainly is used for recreation and wildlife habitat. Small areas are used for livestock grazing.

Dinosaur National Monument was originally established in 1915 by Presidential Proclamation 1313 (39 Stat. 1752) as an 80-acre preserve to protect extraordinary fossil deposits. The Monument was expanded in 1938 by Presidential Proclamation

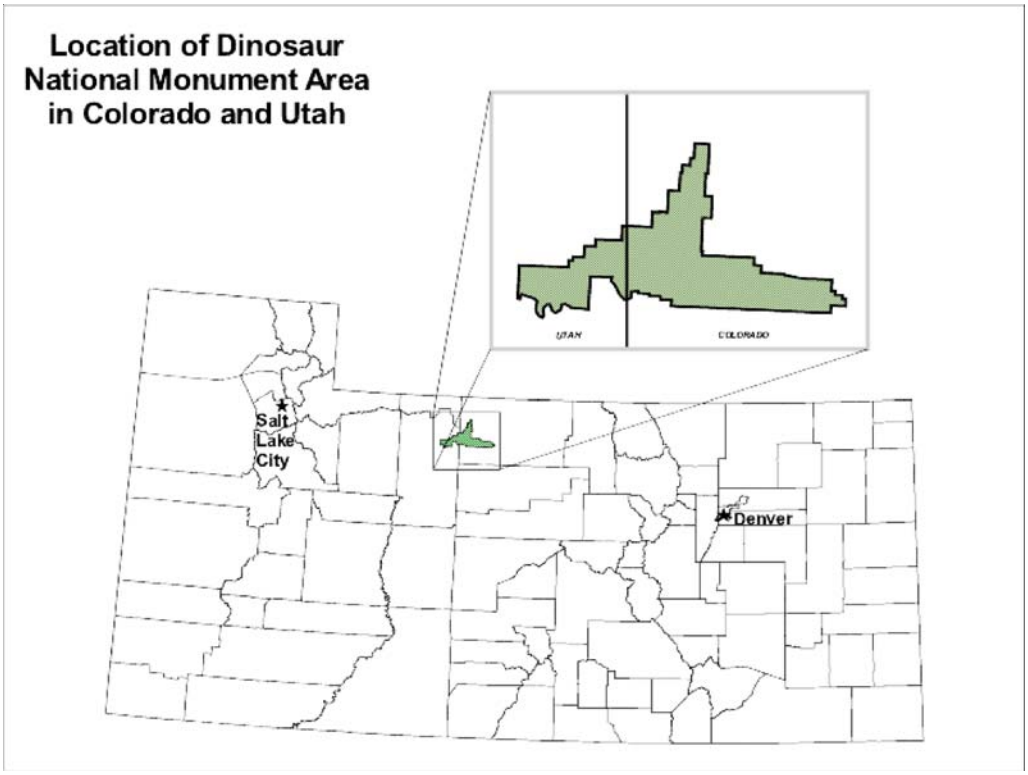

Figure 1.-Location of Dinosaur National Monument, Colorado and Utah.

2290 (53 Stat. 2454) to include the river canyons of the Yampa and the Green Rivers. In 1960, an Act of Congress (P.L. 86-729; 74 Stat.857) made minor boundary revisions and established a process by which domestic livestock grazing would be terminated. Under the 1916 National Park Service (NPS) Organic Act, the Service is charged with management of the parks to "...conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Therefore the goal of NPS in managing the Monument is to balance visitor use with protection of the natural and cultural values for which the Monument was created. In addition to legislative directions, key documents for guiding monument management are National Park Service Management Policies, various National Park Service Guidelines, the General Management Plan, the Statement for Management, and the Resource Management Plan.

The canyons of the Yampa and Green Rivers, their associated tributary canyons, and the surrounding benches and mountains are significant for their scenic, natural and cultural resource values. Ambient sound monitoring outside the river corridors has shown the Dinosaur National Monument backcountry to be among the quietest areas on the Colorado Plateau. Recent floral and faunal inventories of the Monument have revealed a highly diverse biota that contributes significantly to regional biological diversity (Naumann, 1990).

History

In historic times, Shoshone Indians occupied the northern portion of the Monument and Utes occupied the southern portion. Native American habitation of the area changed as European exploration and settlement occurred.

Europeans entered the region in 1776, when Franciscan friars Silvestre Veley de Escanlante and Francisco Anatasio Dominquez led an expedition through the area. Although their goal of establishing a route from New Mexico to the California missions was not achieved, they left valuable maps and records of western lands previously unknown to European settlers.

Westward expansion in the 19th century brought trappers, explorers, cattlemen, and outlaws to the area. John Wesley Powell's exploration of the Green and Colorado rivers in 1869 is probably the best known adventure involving the Monument. In addition, the scattered remnants of homesteads, ranches, and trails provide tangible evidence of European settlers. The Chew ranch and the Baker cabin on the Yampa Bench are example remnants from settlement history. Descendants of some of these pioneers are still living and ranching in the area today (Mehls, 1985).

Recreation

One of the major uses of the Dinosaur National Monument is recreation. The Dinosaur Quarry provides one of the world's foremost exhibits of dinosaur resources. The present Quarry displays in-situ fossils in high relief, thus enabling visitors to see the natural location and juxtaposition of fossil remains (Chure, 1994).

Camping areas are situated in several locations. Deer Lodge Park and Echo Park campgrounds are located on the Yampa River. The Green River and Split Mountain campgrounds are located on the Green River. Sightseeing is also a popular recreational activity.

The spectacular scenery offered by the river canyons and surrounding dissected mountains and plateaus can be viewed throughout much of the Monument. Several marked trails offer hiking opportunities for those who enjoy getting out and walking. Some trails are relatively easy to navigate. The Monument also offers exciting white water rafting opportunities. Both the Yampa and Green Rivers offer rafting through outfitters or self-guided trips. These rafting trips often last several days.

Physiography

Dinosaur National Monument is rich in natural resources. The highly dissected river canyons provide spectacular scenery as they rise nearly vertically, topping out thousands of feet above the river below. These rivers and their surrounding canyons provide habitat for threatened and endangered species. Above the river canyons are the rolling hills and mountains, valleys, and plateaus. Rapid elevation differences over short linear distances often result in widely varying climatic conditions and vegetation in close proximity to one another.

Drainage

The Green and Yampa Rivers form the core of Dinosaur National Monument. The Green River enters the Monument from the north at the Gates of Lodore; the Yampa River enters the Monument from the east at Deer Lodge Park. The confluence of the Yampa and Green Rivers is at Echo Park. Major perennial streams that are tributaries to these rivers include Rippling Brook, Pool Creek, Alcove Brook, Hog Canyon Creek, Cub Creek, and Jones Hole Creek. Flash flooding can be expected from early spring through fall. Riparian communities occur in the tributary canyons of the Green and Yampa Rivers and in association with perennial seeps and springs.

The Green River is significantly altered by the presence of Flaming Gorge Dam. The timing and magnitude of flows, the characteristics of water quality, and riverine habitats have been markedly altered by operations of the dam. The Yampa River is essentially free-flowing, encumbered only by a few small headwaters impoundments.

The Yampa ameliorates the effects of Flaming Gorge Dam and provides relatively natural conditions below its confluence with the Green River.

Geology

There are extensive rock exposures throughout the Monument, covering some 1.2 billion years of earth history. With twenty-nine formations identified, the rock record of the Monument is more complete than that of any other NPS unit. The geological history of the Monument is well understood in broad terms. With the exception of a small volcanic dike, all of the rocks of the Monument are sedimentary. The formations in and around the canyons of the Green and Yampa Rivers are Paleozoic marine deposits. These rocks are too old to contain dinosaur remains, but do contain abundant marine invertebrate fossils.

Mesozoic rocks are most extensively exposed around the nose of the Split Mountain anticline in the west end of the Monument. Smaller exposures of rocks of this age occur along part of the Echo Park road and in the Deerlodge area. Mesozoic exposures are both marine and terrestrial. The Mesozoic rock record contains the most significant fossil vertebrate material in the Monument.

Cenozoic deposits are almost non-existent within the Monument, with the exception of Quaternary soils. Several caves have been discovered and mapped in the Jones Hole Creek Canyon. It is likely that additional caves are present in the Monument, especially in carbonate rock units.

The Monument has complete coverage through thirteen USGS Geological Quadrangle Maps, including a single sheet for the entire Monument. Each map summarizes the structural and geological history for the quadrangle (Hansen, 1969).

Archeological Resources

Dinosaur National Monument is rich in archeological resources. Over 400 prehistoric sites are recorded for the Monument. Seventy of these sites are rock art locations, dating most frequently to the Fremont Period. Archeological research was first conducted in the Monument in the 1930's and continues to the present time. The primary research emphasis over the past sixty years was the excavation of archeological sites and the documentation of rock art locations.

Only about two percent of the Monument has been surveyed for archeological resources. The data available does indicate that prehistoric humans utilized the Monument. The earliest remains suggest occupation about 9,000 years before present. Remains of peoples from the Paleo-Indian culture are not extensive. Further research may reveal a broader occupation than is currently observed in the archeological record.

The Archaic period from 6,000 years ago to approximately 1,900 years ago is well represented in the Monument. The Desert Archaic tradition appears to be most directly related to Archaic peoples of the Great Basin. There is evidence, however, indicating that even at this early period there were cultural influences from the Wyoming Basin, Western Plains, and the Four Corners region.

The Archaic period is followed by the Fremont period. The Fremont occupation of the Monument is the best documented and most extensive occupation. Work in the Cub Creek drainage located numerous small pit house villages. Evident at these villages was a culture with a subsistence system that not only made effective use of native plants and animals, but also included corn and other cultigens. The many storage structures containing the remains of corn found throughout the Monument also indicate that corn was important to the Fremont subsistence strategy. The Fremont apparently were involved in a broad exchange network. This trade system not only brought items of material culture into the area but also influenced Fremont

non-material behavior. It appears that contact with other regions, initiated during the Archaic period, was not only continued but strengthened during the Fremont occupation of the area.

The Numic expansion out of the Great Basin reached the Monument around 700 years ago. These people were the ancestors of the present day Utes and Shoshone. Little evidence for proto-historic Ute or Shoshone utilization of the Monument is available at present. A systematic survey of the Monument, however, may change our present view (USNPS, 1990).

Paleontological Resources

Dinosaur National Monument was established to protect the dinosaur fossils in and around the Carnegie Quarry north of Jensen, Utah. Discovered in 1909 and excavated through 1924, this quarry has proven to be one of the most important windows into the world of the dinosaurs. Part of that quarry is now preserved within the Quarry Visitor Center and has some 1,500 dinosaur bones exposed permanently in-situ, as they were deposited in the thalweg of a low sinuosity permanent river some 145 million years ago (USNPS, 1990).

The Late Jurassic Morrison Formation, which contains the Carnegie Quarry, preserves one of the most spectacular large terrestrial vertebrate faunas in the history of life: the huge, herbivorous sauropod dinosaurs with an average adult body size of 20 tons. The record at the quarry itself consists mostly of large dinosaurs. The carcasses of smaller animals were probably destroyed in the fast flowing river before they could be buried in the channel sands.

Excavations in the Morrison Formation elsewhere in the Monument have unearthed abundant fossils of dinosaurian contemporaries, such as salamanders, frogs, turtles, lizards, sphenodonts, crocodilians, pterosaurs, and mammals. All of these groups are from the Morrison. Several new genera and species are included in these discoveries, as well as important specimens of incompletely known taxa. Even dinosaurs eggshells and a dinosaur embryo have been found. Plant fossils include both macro specimens (such as leaves and logs) and palynomorphs (pollen and spores) (Chure, 1994).

Although emphasis in research and resource management has been placed on the Morrison, significant paleontological resources have been found in a number of other formations. Dinosaurs are known from the Cedar Mountain Formation, and some very rare footprint taxa have been discovered and studied in the Popo Agie (Chinle) and Glen Canyon formations.

The Paleozoic marine formations of the river canyons contain abundant fossilized remains of diverse shallow water marine faunas, including sponges, brachiopods, gastropods, bivalves, corals, and the like. These faunas have been studied very little.

Quaternary fossil resources have received a preliminary survey and do not appear to be abundant. Preserved feces of the extinct giant mountain goat were found in one alcove. Examination of other caves and alcoves within the Monument may produce additional significant material.

Climate

Prepared by the Natural Resources Conservation Service Water and Climate Center, Portland, Oregon.

Climate tables are created from climate stations at Dinosaur National Monument, Colorado and Jensen, Utah.

Thunderstorm days, relative humidity, percentage of sunshine, and wind information are estimated from First Order station at Grand Junction, Colorado.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Dinosaur National Monument and Jensen, Utah climate stations in the

period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In the winter months, the average temperature is 22.9 degrees F at Dinosaur National Monument and 19.0 degrees F at Jensen. The average daily minimum temperature in winter is 11.0 degrees F at Dinosaur National Monument and 5.3 degrees F at Jensen. The lowest temperatures on record were -29 degrees F at the Monument on December 22, 1990; and -40 degrees F at Jensen on February 7, 1989. In the summer months, the average temperature is 69.9 degrees F at Dinosaur National Monument and 68.8 degrees F at Jensen. The average daily maximum temperatures are 87.1 degrees F and 88.0 degrees F at the Monument and Jensen, respectively. The highest temperatures during the periods of record were 103 degrees F at Dinosaur National Monument on July 7, 1989; and 106 degrees F at Jensen on June 25, 1994.

Growing degree days are shown in Table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is about 11.76 inches at Dinosaur National Monument and 8.12 inches at Jensen. Of this, about 4.22 inches at Dinosaur National Monument and 2.78 inches at Jensen, or 28 and 34 percent, respectively, usually falls from June through September. The growing season for most crops falls within this period. The heaviest 1-day rainfalls during the period of record was 1.98 inches at Dinosaur National Monument on August 2, 1968; and 1.60 inches at Jensen on October 20, 1979. Thunderstorms occur on about 35 days each year, and most occur in July and August.

The average seasonal snowfall is 51.2 inches at Dinosaur National Monument and 27.1 inches at Jensen. The greatest snow depths at any one time during the period of record were 23 inches at Dinosaur National Monument, recorded on February 9, 1985; and 24 inches at Jensen on March 12, 1952. On an average, 76 days per year have at least 1 inch of snow on the ground at Dinosaur National Monument, while just 20 days have snow cover, on average, at Jensen. The heaviest 1-day snowfalls on record were both 14.0 inches, recorded on November 21, 1983 at Dinosaur National Monument; and recorded at Jensen on the very early date of September 17, 1965.

The average relative humidity in mid-afternoon is about 36 percent. Humidity is higher at night, and the average at dawn is about 60 percent. The sun shines 78 percent of the time in summer and 60 percent in winter. The prevailing wind is from the west. Average wind speed is highest, around 10 miles per hour, from April to July.

Formation of the Soils

Soil forms through weathering and other processes. Usually, soil formation initiates with the accumulation of parent material through several means. Parent material may be in the forms of residuum, colluvium, alluvium, or eolian materials. The original parent material undergoes weathering, influenced by a combination of the five soil-forming factors. Horizonation occurs as a result.

A variety of processes occur within the soil profile. Organic matter may accumulate in surface horizons. Clay particles may be leached from one layer and deposited in another layer. Soluble salts, bases, gypsum, and carbonates may also be transported from one layer to another. These soil components usually are transported downward into the soil profile; however, in soils where drainage is restricted, salts, gypsum, and calcium carbonates may move upward in the soil profile. These substances may then accumulate at or near the soil surface.

Soils that have undergone the soil-forming processes longer tend to exhibit greater horizonation and identifying characteristics; however, even slight variations in any of the other soil-forming factors can result in a greater difference in soil development over time. Soils belonging to the *Entisols* order usually are younger and exhibit little soil development. In contrast, soils that are in the *Alfisols* order are older and show more significant soil development than most *Entisols*.

The five soil-forming factors are *type of parent material, climate, topography, living organisms,* and *time*. The many different kinds of soils, with their multiple unique characteristics, interpretations, and limitations, are a result of the varied interaction of these factors. In the soil survey area, these soil-forming factors often vary greatly within short distances. Even in relatively uniform areas small differences, called microclimate, can result in small areas of contrasting soils within larger areas of similar soils. These small areas of contrasting soils, called *inclusions* in the mapping unit description, may be as small as a square meter in size.

An example of how variations of these soil-forming factors can significantly change the kinds of soils that form can be found in comparing the mountains of the survey area with the lower-lying areas. The Emlin soil is an example of a deeper mountain soil. The area where Emlin is found has significant moisture with a cool climate. As a result, a fairly dense stand of grasses and sagebrush tends to grow on areas of Emlin soil and the annual plant production is fairly high. The Emlin soil typically has a dark surface layer high in organic matter. Emlin also has horizons containing translocated clay and calcium carbonate, moved into these horizons by water. In contrast, the Yarts soil is located in the lower-lying areas of the Monument. These areas receive less annual precipitation and the annual air temperature is several degrees warmer. Consequently, the vegetation on this soil is less dense and annual plant production is lower than on areas of Emlin soil. The surface layer of Yarts lacks significant accumulation of organic matter. The Yarts soil also lacks translocated clay and calcium carbonate.

The five soil-forming factors are described in more detail in the following paragraphs.

Climate

Climate has a strong influence on the formation of soils: it influences the kind and amount of vegetation that grows on different soils; and climate also influences the level of biological activity in soils and, in part, the physical and chemical weathering of parent material. Precipitation, temperature, humidity, and wind are the major climatic forces involved in soil formation.

The climate of the survey area ranges from semidesert to cool mediterranean. The average annual precipitation ranges from 5 to 20 inches. The average annual air temperature ranges from 37 to 49 degrees, with wide seasonal fluctuations. Summers usually are warm and dry. Winters are cold. The length of the frost-free season averages 50 to 140 days. Precipitation generally increases as elevation increases. The climate in higher elevations usually is cool and moderately moist. Soils that form in these areas often have surfaces that are high in organic matter. This is in part a result of more plant growth, a lower rate of oxidation, and lower levels of microbial activity. Deeper soils in these higher areas often exhibit translocated clays and deeper translocated carbonates caused by increased precipitation that transports these soil components down into the soil profile. Salts tend to leach out and usually are not present in quantities that limit plant species.

In contrast, the climate in lower elevations usually is warmer and dry. Lower precipitation combined with higher temperatures, a greater potential of evapotranspiration, and lower humidity limit plant growth and production. Deeper soils in these lower-lying areas have surfaces that usually are low in organic matter. The lower annual precipitation reduces translocation of clay. Translocated carbonates, where present, tend to be shallower in the soil profile than at higher elevations. Some soils may also be high in salts, which may limit certain plant species from growing on these soils.

Wind may remove soil particles in exposed areas. These particles are then transported to other areas, from a few feet to hundreds of miles downwind. These soil particles are then deposited in less exposed areas as wind speeds diminish. Soil particles may be driven against exposed bedrock, causing the rock to weather. Some of the interesting sandstone rock formations in the survey area are largely a result of wind erosion.

Living Organisms

Plants, macroorganisms, and microorganisms that live above, on, or in the soil also contribute to soil formation.

Plants affect soil formation in several ways. The presence of plants on a soil provides stability to the soil, reducing the potential of erosion from water or wind. The roots help to hold soil aggregates together, while the canopy of some species provides protection from wind and reduces the impact of rain, hail, and sleet which can dislodge soil particles and make these particles susceptible to erosion. Plant roots penetrate the soil, loosening compacted layers. Roots also provide pathways for the translocation of soil particles and minerals such as clay and carbonates.

When roots die, they provide organic matter within the soil, sometimes to great depths. In areas of bedrock, roots often invade cracks in the rock, applying pressure to the rock as the roots grow, cracking and dislodging pieces of rock. The canopy cover of trees and larger shrubs shade the soil, creating a microclimate that reduces soil temperature and increases humidity. Some plants trap wind-blown snow, increasing the amount of moisture available in the vicinity. When leaves are shed or the plant dies, decomposition enhances soil organic matter and fertility.

Macroorganisms such as prairie dogs, worms, beetles, and other insects impact soil formation in several ways. Prairie dogs burrow into the soil, mixing the soil in the process. Earthworms also mix the soil and facilitate the breakdown of organic matter. Many types of insects also are involved in the process of breaking down organic matter and mixing it in the soil. Other macroorganisms such as cattle, deer, elk, rabbits, and others also affect soil formation. They may selectively graze certain plant species or overgraze an area, affecting species composition, plant density, and canopy cover in that area. Their movements can transport plant seeds as well as organic materials and nutrients to other locations.

Microorganisms such as protozoa, cyanobacteria, bacteria, fungi, and molds have substantial impacts on soil formation. These microorganisms may form a microbiotic crust; cyanobacteria are the dominant group of organisms forming the crust. Microbiotic crusts join soil particles together as the crust grows and expands over the soil surface, increasing resistance to wind and water soil erosion (Belnap and Gardner, 1993). Microbiotic crusts also intercept rainfall and water runoff. When the crusts are moistened they can absorb up to ten times their volume of water, thus increasing water infiltration into the soil. Microbiotic crust and other microorganisms break down rocks and organic matter, releasing essential nutrients that increase soil fertility (Belnap, 1994).

Topography

Within the limits of the survey area, *topography* often has a strong impact on soil formation. Macrorelief mainly is influenced by the geology of the area. The types and hardness of the rocks, the many faults, the uplifting that occurs in much of the area, and the subsequent down-cutting of the major rivers and their tributaries contribute greatly to soil formation in the area. Dominant types of rocks are sandstone and limestone with lesser amounts of siltstone, shale, and conglomerate. The dominant soil types in the area reflect the character of their parent materials; they often are coarse-textured and calcareous.

Geologic characteristics also are reflected in the *slope* and the *aspect*. In areas with steep slopes, soils often are shallow and are subject to a high potential of water erosion. In steeply sloping areas water tends to run off, carrying with it the topsoil and reducing the amount of water that enters the soil. This surface removal of water creates a droughtier situation which limits plant growth. With less water entering the soil, less translocation of clay and carbonates occurs. In contrast, areas where slopes decrease, such as toeslopes and fans, run-in of surface water often occurs. Plant production is enhanced. The potential for translocation of clay and carbonates increases, enhancing soil development.

Aspect often plays as great an influence as slope on soil formation. The soils on north-facing sides of hills or mountains often vary significantly in comparison with soils on south-facing sides of the same hill or mountain. South-facing exposures, with a more direct angle to the sun, usually are warmer and drier due to a higher potential for evapotranspiration. This often results in a vegetative community that differs greatly from north-facing areas. North-facing exposures, with a cooler climate and more effective precipitation, often have soils that are deeper, have more organic matter in the surface horizon, and exhibit greater soil development. Exposures of west and east aspects can sometimes influence soil formation. This is especially true in areas that are exposed to high winds. Dominant wind patterns are generally westerly. This can affect soil formation in two main ways: on western exposures with limited vegetation, soil and snow can be removed and transported by the wind; on eastern exposures, wind velocities often are less, allowing for deposition of soil and snow. Increased snow increases soil moisture, which raises the potential for increased plant growth. As plant growth increases it enhances the area's ability to capture and hold blowing snow and soil. This results in the potential for increased soil development.

Western faces also tend to be slightly warmer than eastern exposures because daytime temperatures usually are highest during afternoon hours, when western exposures are in more direct sunlight. As a result of the impact of topography in the forms of slope and aspect, a wide variety of soils and vegetative communities often are present on the same type of parent material in the same area.

Soils in close proximity to drainageways, streams, rivers, and wetland depressions often show the influence of elevated water tables. Fluctuating water tables may cause nutrients or salts to be deposited in the soil profile, and may limit root growth in some plants. Soils that flood are subject to possible channelization, truncation, or deposition by water that flows or ponds on the soil surface.

Parent Material

The geology and geomorphology of the area help to explain the types and distribution of *parent material*. This parent material can then be examined to provide some general ideas and parameters as to some basic characteristics of many of the soils that are derived from that type of parent material.

Within the Monument are many and varied types of parent material. The type of parent material can provide important indicators about the soils in a given area. Sandstone parent material tends to result in soils that are sandy or coarse-loamy in texture. Limestone-derived soils commonly are calcareous and usually are loamy in texture. Soils derived from shale in the area commonly are fine in texture and are calcareous. Soils derived from alluvium usually are deep and reflect the texture and reaction of the source material. The following is a general breakdown of the survey area by types of parent material and some of the basic soil characteristics these soils usually exhibit.

Most of the parent material in that portion of the Monument that runs parallel to the Yampa River is sandstone and limestone (Weber sandstone and Morgan formation). There also is a fairly large area near the southern Monument boundary of Madison limestone. There also are fairly large pockets of landslide deposits adjacent to some of the steeper areas. Mixed in are smaller areas of older alluvium with a few pockets of eolian sands. This area extends to Deer Lodge Park on the east and to the Hells Canyon area west and north, along the east side of the Green River to the vicinity of the same latitude as Hells Half Mile rapids. As a result, soils in this area are dominantly sandy to fine-loamy in texture and are high in calcium carbonates. In the areas of eolian sand, soils are sandy in texture and range from noncalcareous to calcareous. In the mixed alluvial areas soils mainly are very deep. In the rest of the area soil depths range from very shallow to very deep.

The Deer Lodge Park area is a geologic contrast to the area to the west described in the previous paragraphs. Broad alluvial flats and fans with very deep calcareous soils dominate, with a small area of claystone and siltstone, and the resultant fine-textured calcareous soils finger in from the south. The area north of Hells Half Mile rapids on the Green River is dominated by a large area of noncalcareous sandstone. Soils located there are dominantly shallow or moderately deep. There are several pockets of talus and undifferentiated colluvium in some of the valleys and toeslopes. Soils there tend to be moderately deep to very deep. This area continues north to the Gates of Lodore.

North of the Gates of Lodore to the Monument's boundary is dominated by Browns Park sandstone with pockets of alluvium. Soils in this area tend to be very deep and calcareous.

From Hells Canyon west to Mitten Park monocline (Harpers Corner), on the Yampa Bench, are east-west bands of sandstone and limestone formations. Soils in this area range from very shallow to very deep, coarse-loamy to fine-loamy, and calcareous.

West of Harpers Corner and extending over most of Split Mountain are large areas of Weber sandstone mixed with limestone and conglomerate. Soils in this area are mostly calcareous and are of various depths and textures.

North and west of the Island Park fault, predominantly north of the Green River, are areas of Glen Canyon sandstone with inclusions of siltstone, shale, and claystone. A broad area of alluvium occurs in the Island Park area. In these alluvial areas soils are generally very deep and calcareous. Soils in the rest of this area are highly variable in depth and texture.

In the extreme southwest portion of the Monument, between Split Mountain on the north and the Green River on the south, is a broad area of alluvium with several pockets of Mancos shale. Soils in the alluvial area usually are very deep, with textures ranging from sandy to fine. Some of these soils also are high in salts. The Mancos shale areas have soils that range from shallow to very deep, are calcareous, and are fine in texture.

Time

Similar to living organisms, soils also change and age with *time*. However, the development and aging of soils often takes tens of thousands of years before changes are evident. This process can continue for millions of years.

Soils within the survey area range from young to moderately old. Most factors that influence soil formation take a long time to significantly change the makeup of soils. However, some influences such as flash floods or major wind storms can remove or deposit several inches to several feet of soil material in a matter of hours or days.

The other four factors, *parent material, climate, living organisms*, and *topography*, usually require *time* to shape and modify the soil. The degrees of influence of these other factors in soil formation vary widely and often change with the passage of time and the development of the soil.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (USDA, 1998 and 1999). 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. Table 4 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 Alfisol.

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 Ustalf (*Ust*, meaning dry climate, usually hot summers, plus *alf*, from Alfisol).

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 Haplustalfs (*Hapl*, meaning minimal horizonation, plus *ustalf*, the suborder of the Alfisols that has a ustic 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 great group. The adjective *Calcidic* identifies the subgroup that is drier than is typical for this great group and has a calcic horizon. An example is Calcidic Haplustalfs.

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, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, superactive, frigid Calcidic Haplustalfs.

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. The Mantlemine series has a classification of fine-loamy, mixed, superactive, mesic Calcidic Haplustalfs.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each

series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (USDA, 1993) and “Field Book for Describing and Sampling Soils” (Schoeneberger, 1998). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (USDA, 1999) and in “Keys to Soil Taxonomy” (USDA, 1998). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Abracon Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium and colluvium
Landform: fan remnants, hills, and mesas
Slope: 3 to 25 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 5,300 to 6,300 feet

Taxonomic class: coarse-loamy, mixed, superactive, mesic Ustic Haplocalcids

Typical Pedon

Abracon loam, 3 to 8 percent slopes, in the Uintah Area soil survey, about 1,300 feet north and 100 feet east of the southwest corner of section 15, T. 5 S., R. 19 E., SLBM latitude 40 degrees, 22 minutes, 44 seconds N. and longitude 109 degrees, 44 minutes, 48 seconds W. The surface is covered with limestone and sandstone rock fragments, consisting of 10 percent gravel.

A—0 to 4 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak thin platy structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine, common medium roots; many very fine and fine, common medium, few coarse vesicular pores; slightly effervescent; 5 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; abrupt smooth boundary.

Bw—4 to 10 inches; reddish yellow (7.5YR 6/6) loam, brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine, common medium roots; common very fine and fine tubular pores; slightly effervescent; 7 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bk1—10 to 21 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 5/4) moist; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine, few medium roots; common very fine and fine, few medium tubular pores; 10 percent gravel; strongly effervescent; 16 percent calcium carbonate equivalent; calcium carbonate is disseminated and in common irregular fine and medium soft masses; moderately alkaline; clear wavy boundary.

Bk2—21 to 35 inches; pinkish white (7.5YR 8/2) loam, pink (7.5YR 7/4) moist; weak very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine, few medium tubular pores; strongly effervescent; 47 percent calcium carbonate equivalent; calcium carbonate is disseminated and in common irregular medium and coarse soft masses and nodules; moderately alkaline; clear wavy boundary.

Bk3—35 to 51 inches; pinkish white (7.5YR 8/2) loam, pink (7.5YR 7/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine, few medium tubular pores; 5 percent gravel; strongly effervescent; 17 percent calcium carbonate equivalent; calcium carbonate is disseminated and in common irregular medium soft masses and nodules; moderately alkaline; gradual wavy boundary.

C—51 to 60 inches; reddish yellow (7.5YR 6/6) loam, strong brown (7.5YR 5/6) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and medium, few fine tubular pores; 5 percent gravel and 5 percent cobbles; slightly effervescent; 17 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline.

Range in Characteristics

Depth to calcic horizon: 7 to 24 inches
Calcium carbonate equivalent in the control section: 15 to 40 percent
Content of silicate clay in the control section: 13 to 18 percent
Content of total clay in the control section: 18 to 35 percent
Content of rock fragments in the control section: 0 to 15 percent

A horizon:
Hue—5YR to 10YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—2 to 6 dry, 2 to 4 moist
Texture—loam or gravelly sandy loam
Reaction—moderately alkaline or strongly alkaline

Bw horizon:
Hue—5YR to 10YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—3 to 6
Texture—sandy loam or loam
Reaction—moderately alkaline or strongly alkaline

Bk horizon:
Hue—5YR to 10YR
Value—5 to 8 dry, 4 to 8 moist
Chroma—2 to 6
Texture—sandy loam, loam, or clay loam
Reaction—moderately alkaline or strongly alkaline

C horizon:
Hue—5YR to 10YR
Value—6 to 8 dry, 4 to 7 moist
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, or loam
Reaction—moderately alkaline or strongly alkaline

Anasazi Series

Setting

Depth class: moderately deep
Drainage class: well drained

Parent material: alluvium and colluvium over residuum derived from sandstone and limestone
Landform: cuestas
Slope: 3 to 25 percent
Average annual precipitation: 10 to 12 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,400 to 6,400 feet

Taxonomic class: coarse-loamy, mixed, superactive, mesic Ustic Haplocalcids

Typical Pedon

Anasazi fine sandy loam in an area of Windcomb-Rizno-Anasazi complex, 3 to 25 percent slopes, extremely flaggy, about 900 feet east and 1,800 feet north of the southwest corner, section 2, T. 6 N., R. 103 W., NMPM latitude 40 degrees, 29 minutes, 55 seconds N. and longitude 108 degrees, 56 minutes, 38 seconds W. The surface is covered with limestone rock fragments, consisting of 3 percent gravel and 1 percent cobbles.

A—0 to 3 inches; brown (7.5YR 5/3) fine sandy loam, dark brown (7.5YR 3/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine roots; common fine vesicular and tubular pores; 10 percent gravel and 3 percent cobbles; calcium carbonate is disseminated; strongly effervescent; 11 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Bw—3 to 10 inches; brown (7.5YR 5/4) cobbly fine sandy loam, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine roots; common fine vesicular and tubular pores; 10 percent gravel and 10 percent cobbles; calcium carbonate is disseminated; violently effervescent; 27 percent calcium carbonate equivalent; moderately alkaline; clear wavy boundary.

Bk—10 to 19 inches; light brown (7.5YR 6/4) gravelly fine sandy loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine roots; common fine vesicular and tubular pores; 20 percent gravel and 7 percent cobbles; common distinct calcium carbonate coatings on rock fragments; common fine and medium irregular calcium carbonate concretions; violently effervescent; 40 percent calcium carbonate equivalent; moderately alkaline; clear wavy boundary.

BCk—19 to 24 inches; light brown (7.5YR 6/4) very gravelly loamy sand, brown (7.5YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine vesicular and tubular pores; 35 percent gravel and 5 percent cobbles; few distinct calcium carbonate coatings on rock fragments; common fine and medium irregular calcium carbonate concretions; violently effervescent; 28 percent calcium carbonate equivalent; moderately alkaline; abrupt wavy boundary.

R—24 inches; hard limestone.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Depth to calcic horizon: 5 to 10 inches
Calcium carbonate equivalent: 15 to 40 percent
Content of rock fragments in the control section: 15 to 35 percent
Content of clay in the control section: 5 to 18 percent

A horizon:
Hue—5YR or 7.5YR
Value—5 or 6 dry, 3 to 5 moist
Chroma—3 to 6
Texture—fine sandy loam, loam, or silt loam
Reaction—slightly alkaline or moderately alkaline

Bw horizon:
Hue—5YR or 7.5YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—3 to 6
Texture—fine sandy loam, loam, or silt loam modified by 0 to 35 percent gravel or cobbles
Reaction—moderately alkaline or strongly alkaline

Bk horizon:
Hue—2.5YR to 7.5YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—4 to 6
Texture— fine sandy loam, loam, or silt loam modified by 15 to 35 percent gravel or cobbles
Reaction—moderately alkaline or strongly alkaline

BCk horizon (if present):
Hue—2.5YR to 7.5YR
Value—5 to 8 dry, 4 to 7 moist
Chroma—2 to 6
Texture—loamy sand, loamy fine sand, fine sandy loam, loam, or silt loam modified by 15 to 40
percent gravel or cobbles
Reaction—moderately alkaline or strongly alkaline

C horizon (if present)
Hue—2.5YR to 7.5YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—3 to 6
Texture—loamy sand, loamy fine sand, fine sandy loam, loam, or silt loam modified by 15 to 60
percent gravel or cobbles
Reaction—moderately alkaline or strongly alkaline

Arches Series

Setting

Depth class: very shallow and shallow
Drainage class: excessively drained
Parent material: eolian material overlying sandstone
Landform: hills
Slope: 5 to 40 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 5,100 to 6,000 feet

Taxonomic class: mixed, mesic Lithic Torripsamments

Typical Pedon

Arches loamy fine sand in an area of Arches-Mespun-Rock outcrop complex, 4 to 40 percent slopes, about 1,200 feet east and 800 feet south of the northwest corner of section 28, T. 3 S., R. 25 E., SLBM latitude 40 degrees, 32 minutes,5 seconds N. and longitude 109 degrees, 7 minutes, 18 seconds W.

A—0 to 2 inches; brown (7.5YR 5/4) loamy fine sand; brown (7.5YR 4/4) moist; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine, few medium and coarse roots; many very fine, few fine and medium tubular and interstitial pores; calcium carbonate is disseminated; very slightly effervescent; moderately alkaline; clear wavy boundary.

C1—2 to 5 inches; brown (7.5YR 5/4) loamy fine sand; brown (7.5YR 4/4) moist; single grained; loose, nonsticky and nonplastic; many very fine and fine, few medium and coarse roots; many very fine, few fine and medium tubular and interstitial pores; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; clear wavy boundary.

C2—5 to 9 inches; light brown (7.5YR 6/4) fine sand; brown (7.5YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; few very fine and fine tubular pores; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; gradual wavy boundary.

R—9 inches; unweathered sandstone.

Range in Characteristics

Thickness of the ochric epipedon: 2 to 4 inches
Depth to bedrock: 5 to 20 inches

A horizon:
Hue—5YR or 7.5YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—4 to 6
Effervescence—noneffervescent to very slightly effervescent
Reaction—slightly alkaline or moderately alkaline

C horizon:
Hue—5YR or 7.5YR
Value—5 or 6 dry, 3 or 4 moist
Chroma—4 to 6
Texture—loamy fine sand, fine sand, or loamy sand
Effervescence—noneffervescent to very slightly effervescent
Reaction—slightly alkaline or moderately alkaline

Avalon Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium derived from sandstone and shale
Landform: hills
Slope: 5 to 12 percent
Average annual precipitation: 9 to 11 inches

Average annual air temperature: 45 to 48 degrees F
Elevation: 5,500 to 6,100 feet

Taxonomic class: fine-loamy, mixed, superactive, mesic Typic Haplocalcids

Typical Pedon

Avalon loam in an area of Deaver-Avalon complex, 5 to 45 percent slopes, in the Moffat County soil survey area, about 1,700 feet east and 1,700 feet north of the southwest corner, section 29, T. 4 N., R. 99 W., NMPM latitude 40 degrees, 17 minutes, 7 seconds N. and longitude 108 degrees, 31 minutes, 52 seconds W.

A—0 to 3 inches; yellowish brown (10YR 5/4) loam, brown (10YR 4/3) moist; weak medium platy structure parting to moderate fine granular; soft, very friable, sticky and plastic; common very fine and fine roots; few very fine vesicular pores; 10 percent gravel; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; abrupt smooth boundary.

Bw—3 to 12 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, friable, sticky and plastic; common fine roots; few very fine tubular pores; 5 percent gravel; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk1—12 to 22 inches; very pale brown (10YR 8/3) clay loam, very pale brown (10YR 7/4) moist; weak medium subangular blocky structure; hard, friable, sticky and plastic; few fine roots; few very fine tubular pores; calcium carbonate is disseminated; violently effervescent; 25 percent calcium carbonate equivalent; moderately alkaline; gradual smooth boundary.

Bk2—22 to 42 inches; very pale brown (10YR 7/3) clay loam, very pale brown (10YR 7/4) moist; massive; hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; calcium carbonate is disseminated; violently effervescent; 20 percent calcium carbonate equivalent; moderately alkaline; gradual smooth boundary.

Bk3—42 to 55 inches; very pale brown (10YR 7/4) clay loam, brownish yellow (10YR 6/6) moist; massive; hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; 5 percent gravel and 5 percent cobbles; calcium carbonate is disseminated; violently effervescent; 17 percent calcium carbonate equivalent; moderately alkaline; gradual smooth boundary.

Bk4—55 to 62 inches; very pale brown (10YR 7/4) clay loam, brownish yellow (10YR 6/6) moist; massive; hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; calcium carbonate is disseminated; 15 percent calcium carbonate equivalent; violently effervescent; moderately alkaline.

Range in Characteristics

Depth to calcic horizon: 10 to 25 inches
Calcium carbonate equivalent in the control section: 15 to 30 percent
Content of rock fragments in the control section: 0 to 10 percent
Content of clay in the control section: 28 to 34 percent

A horizon:
Hue—7.5YR or 10YR
Reaction—slightly alkaline or moderately alkaline

Bw horizon:
Hue—7.5YR or 10YR

Bk1 and Bk2 horizons:
Reaction—moderately alkaline or strongly alkaline

Bk3 and Bk4 horizons:
Texture—clay loam modified by 5 to 25 percent gravel
Reaction—moderately alkaline or strongly alkaline

2Bk horizon (if present):
Texture—very fine sandy loam

Bankard Family

Setting

Depth class: very deep
Drainage class: excessively drained
Parent material: alluvium derived from various sources
Landform: flood plains
Slope: 0 to 8 percent
Average annual precipitation: 10 to 14 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,000 to 6,000 feet

Taxonomic class: sandy, mixed, mesic Ustic Torrifluvents

Typical Pedon

Bankard sand in an area of Tsetaa Family-Bankard Family-Fluvaquents complex, 0 to 45 percent slopes, very stony, about 5,750 feet west and 200 feet south of the northeast corner, section 13, T. 8 N., R. 103 W., NMPM (site located in a non-sectioned area) latitude 40 degrees, 38 minutes, 51 seconds N. and longitude 108 degrees, 55 minutes, 53 seconds W.

A—0 to 2 inches; brown (10YR 5/3) sand, brown (10YR 4/3) moist; single grained; loose, nonsticky and nonplastic; common very fine and fine roots; few fine interstitial pores; calcium carbonate is disseminated; slightly effervescent; slightly alkaline; clear smooth boundary.

C1—2 to 23 inches; brown (10YR 5/3) sand, brown (10YR 4/3) moist; single grained; loose, nonsticky and nonplastic; few fine roots; few fine interstitial pores; calcium carbonate is disseminated; slightly effervescent; slightly alkaline; clear wavy boundary.

C2—23 to 28 inches; brown (7.5YR 5/4) loamy sand, brown (7.5YR 4/3) moist; single grained; loose, nonsticky and nonplastic; very few fine roots; few fine interstitial pores; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; clear wavy boundary.

C3—28 to 34 inches; brown (10YR 5/3) sand, brown (10YR 4/3) moist; single grained; loose, nonsticky and nonplastic; very few fine roots; few fine interstitial pores; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; clear wavy boundary.

C4—34 to 60 inches; yellowish brown (10YR 5/4) sand, dark yellowish brown (10YR 4/4) moist; single grained; loose, nonsticky and nonplastic; very few fine roots; few fine interstitial pores; calcium carbonate is disseminated; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of rock fragments in the control section: 0 to 15 percent

A horizon:
Hue—7.5YR or 10YR
Value—4 to 6 dry, 3 to 5 moist

Chroma—2 to 6
Texture—sand, fine sand, or loamy fine sand
Reaction—neutral to moderately alkaline

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—2 to 6
Texture—sand, fine sand, loamy sand, or loamy fine sand
Reaction—slightly alkaline or moderately alkaline

Begay Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: eolian deposits over alluvium
Landform: fan remnants and hillslopes
Slope: 2 to 15 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 4,800 to 6,000 feet

Taxonomic class: coarse-loamy, mixed, superactive, mesic Ustic Haplocambids

Typical Pedon

Begay sandy loam, 2 to 15 percent slopes, in an area of Solirec-Abracon-Begay complex, 2 to 15 percent slopes, in the Uintah Area soil survey, about 600 feet north and 2,100 feet east of the southwest corner of section 36, T. 7 S., R. 25 E., SLBM latitude 40 degrees, 9 minutes, 38 seconds N. and longitude 109 degrees, 3 minutes, 0 seconds W.

A—0 to 4 inches; yellowish brown (10YR 5/4) sandy loam, brown (10YR 4/3) moist; weak very fine and fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine tubular pores; moderately alkaline; abrupt smooth boundary.

Bw—4 to 12 inches; brown (7.5YR 5/4) sandy loam, brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine and fine, few coarse roots; common very fine and fine tubular pores; calcium carbonate is disseminated; very slightly effervescent; 2 percent calcium carbonate equivalent; moderately alkaline; abrupt smooth boundary.

Bk1—12 to 24 inches; light brown (7.5YR 6/4) sandy loam, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; few very fine and fine, common medium and coarse roots; common very fine and fine interstitial pores; calcium carbonate is disseminated and in few fine veins; slightly effervescent; 3 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Bk2—24 to 37 inches; pink (7.5YR 7/4) sandy loam, brown (7.5YR 5/4) moist, weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; few very fine, fine, and medium roots; common very fine and fine interstitial pores; calcium carbonate is disseminated and in few fine masses; slightly effervescent; 4 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

C—37 to 60 inches; pink (7.5YR 7/4) sandy loam, brown (7.5YR 5/4) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; few fine and medium roots; few very fine and fine interstitial pores; calcium carbonate is disseminated; slightly effervescent; 4 percent calcium carbonate equivalent; strongly alkaline.

Range in Characteristics

Depth to carbonates: 12 to 22 inches
Content of clay in the control section: 10 to 15 percent

A horizon:
Hue—7.5YR or 10YR
Value—5 or 6 dry
Chroma—3 or 4

Bw horizon:
Hue—5YR or 7.5YR
Value—5 or 6 dry
Chroma—4 or 5

Bk horizon:
Value—6 or 7 dry, 4 or 5 moist
Chroma—4 or 5
Calcium carbonate equivalent—1 to 5 percent

C horizon:
Value—6 or 7 dry, 4 or 5 moist
Chroma—4 or 5
Reaction—moderately alkaline or strongly alkaline

Berlake Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium derived from sandstone
Landform: plateaus
Slope: 1 to 15 percent
Average annual precipitation: 13 to 15 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 7,300 to 8,000 feet

Taxonomic class: fine-loamy, mixed, superactive Aridic Argiborolls

Typical Pedon

Berlake coarse sandy loam in an area of Berlake-Taffom-Gretdivid complex, 10 to 20 percent slopes, in the Moffat County soil survey area, about 800 feet west and 1,700 feet north of the southeast corner, section 26, T. 9 N., R. 92 W., NMPM latitude 40 degrees, 42 minutes, 27 seconds N. and longitude 107 degrees, 40 minutes, 49 seconds W.

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; few very fine interstitial pores; 10 percent gravel; neutral; abrupt smooth boundary.

A2—3 to 14 inches; dark grayish brown (10YR 4/2) coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; few very fine interstitial and tubular pores; 10 percent gravel; neutral; clear smooth boundary.

BA—14 to 18 inches; yellowish brown (10YR 5/4) sandy clay loam, brown (10YR 4/3) moist; weak coarse subangular blocky structure parting to weak medium subangular blocky; hard, friable, slightly sticky and slightly plastic; common fine roots; few fine tubular pores; 10 percent gravel; neutral; clear smooth boundary.

Bt1—18 to 27 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak coarse subangular blocky structure parting to moderate medium subangular blocky; hard, friable, sticky and slightly plastic; few very fine and fine roots; common fine tubular pores; few faint clay films on faces of peds; 10 percent gravel; neutral; gradual smooth boundary.

Bt2—27 to 39 inches; light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/4) moist; moderate coarse subangular blocky structure parting to moderate medium subangular blocky; hard, friable, sticky and plastic; few very fine and fine roots; common fine tubular pores; few faint clay films on faces of peds; 10 percent gravel; neutral; gradual smooth boundary.

Bt3—39 to 49 inches; light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few fine tubular pores; few faint clay films on faces of peds; 10 percent gravel; neutral; gradual smooth boundary.

BC—49 to 57 inches; very pale brown (10YR 7/4) sandy clay loam, light yellowish brown (10YR 6/4) moist; weak coarse subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few fine tubular pores; 10 percent gravel; neutral; gradual smooth boundary.

C—57 to 60 inches; very pale brown (10YR 7/4) sandy loam, light yellowish brown (10YR 6/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few fine tubular pores; 10 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 14 inches
Depth to carbonates: 40 to greater than 60 inches
Depth to base of argillic horizon: 25 to 60 inches
Content of rock fragments in the control section: 0 to 10 percent
Content of clay in the control section: 20 to 32 percent

A horizon:
Hue—5YR to 10YR
Value—3 to 5 dry, 2 or 3 moist
Chroma—2 or 3

Bt horizon:
Hue—5YR to 10YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—3 to 6
Reaction—neutral or slightly alkaline

C horizon:
Hue—5YR to 10YR
Texture—sandy loam, loamy sand, or loamy coarse sand
Reaction—neutral or slightly alkaline

Bodry Series

Setting

Depth class: moderately deep
Drainage class: well drained
Parent material: colluvium and alluvium over residuum derived from weathered shale
Landform: hillslopes
Slope: 10 to 40 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 5,000 to 5,500 feet

Taxonomic class: fine, smectitic, calcareous, mesic Ustertic Torriorthents

Typical Pedon

Bodry silty clay loam, 10 to 40 percent slopes, about 2,100 feet west, and 2,000 feet north of the southeast corner of section 2, T. 4 S., R. 24 E., SLBM latitude 40 degrees, 30 minutes, 1 second N. and longitude 109 degrees, 10 minutes, 49 seconds W.

The surface is covered with 10 percent gravel and channers.

A—0 to 8 inches; light yellowish brown (2.5Y 6/3) silty clay loam, light olive brown (2.5Y 5/3) moist; weak fine and medium subangular blocky structure; slightly hard, firm, sticky and plastic; few very fine and fine roots; many very fine, few fine tubular pores; calcium carbonate is disseminated; very slightly effervescent; moderately alkaline; clear smooth boundary.

CBy1—8 to 15 inches; light olive brown (2.5Y 5/3) silty clay, grayish brown (2.5Y 5/2) moist; weak fine and medium subangular blocky rock structure; hard, firm, very sticky and very plastic; common very fine, few fine and medium roots; many very fine, few fine tubular pores; common fine and medium irregular shaped soft masses of gypsum; calcium carbonate is disseminated; very slightly effervescent; moderately alkaline; gradual smooth boundary.

CBy2—15 to 28 inches; light olive brown (2.5Y 5/3) silty clay, grayish brown (2.5Y 5/2) moist; moderate fine and medium angular blocky rock structure; very hard, very firm, very sticky and very plastic; common very fine and fine roots; many very fine, common fine tubular and interstitial pores; common fine and medium irregular shaped soft masses of gypsum; calcium carbonate is disseminated; very slightly effervescent; moderately alkaline; gradual wavy boundary.

CBy3—28 to 38 inches; light yellowish brown (2.5Y 6/3) silty clay loam, light olive brown (2.5Y 5/3) moist; strong fine and medium angular blocky rock structure; very hard, very firm, very sticky and very plastic; few very fine roots; many very fine, common fine tubular and interstitial pores; common fine and medium irregular shaped soft masses of gypsum; calcium carbonate is disseminated; very slightly effervescent; moderately alkaline; gradual wavy boundary.

Cr—38 to 50 inches; weathered shale.

R—50 inches; unweathered shale.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Note: Cracks are 5 to 10 mm. wide and greater than 30 cm. thick.

A horizon:
Hue—10YR or 2.5Y
Value—5 or 6 dry, 4 or 5 moist
Chroma—2 or 3
Content of gypsum—1 to 3 percent

CBy horizon:
Hue—10YR or 2.5Y
Value—5 or 6 dry, 4 to 6 moist
Chroma—2 or 3
Texture—silty clay or silty clay loam

Note: Visible secondary carbonates are present in some pedons.

Bondman Series

Setting

Depth class: very shallow or shallow
Drainage class: well drained
Parent material: residuum derived from sandstone
Landform: mountains
Slope: 5 to 40 percent
Average annual precipitation: 10 to 12 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,500 to 6,200 feet

Taxonomic class: loamy, mixed, superactive, mesic Lithic Ustic Haplargids

Typical Pedon

Bondman sandy loam in an area of Bondman-Rock outcrop complex, 5 to 40 percent slopes, about 3,200 feet east and 1,900 feet south of the northwest corner, section 29, T. 9 N., R. 102 W., NMPM latitude 40 degrees, 42 minutes, 45 seconds N. and longitude 108 degrees, 53 minutes, 2 seconds W. The surface is covered with sandstone rock fragments, consisting of 5 percent gravel and 5 percent cobbles.

A—0 to 2 inches; reddish brown (2.5YR 4/3) sandy loam, dark reddish brown (2.5YR 3/3) moist; weak thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; many fine and medium vesicular pores; neutral; clear smooth boundary.

Bt—2 to 8 inches; reddish brown (2.5YR 4/4) sandy clay loam, dark reddish brown (2.5YR 3/4) moist; weak fine and medium subangular blocky structure; hard, friable, sticky and plastic; few fine and medium, common coarse and very coarse roots; few very fine tubular pores; few faint clay films on faces of peds; neutral; abrupt smooth boundary.

R—8 inches; hard sandstone.

Range in Characteristics

Depth to bedrock: 7 to 20 inches
Content of rock fragments in the control section: 0 to 20 percent
Content of clay in the control section: 20 to 35 percent

A horizon:
Hue—2.5YR to 7.5YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—3 to 5
Reaction—neutral or slightly alkaline

Bt horizon:
Hue—2.5YR to 7.5YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—2 or 3
Texture—loam or sandy clay loam
Reaction—neutral or slightly alkaline

Borolls

Setting

Depth class: moderately deep or very deep
Drainage class: well drained
Parent material: residuum and colluvium derived from sedimentary rocks
Landform: mountains
Slope: 25 to 75 percent
Average annual precipitation: 14 to 20 inches
Average annual air temperature: 37 to 45 degrees F
Elevation: 6,500 to 8,500 feet

Typical Pedon

Borolls soil in an area of Ustorthents-Borolls complex, 25 to 75 percent slopes, in the Moffat County soil survey area, about 300 feet west and 200 feet north of the southeast corner of section 7, T. 4 N., R. 90 W., NMPM latitude 40 degrees, 19 minutes, 21 seconds N. and longitude 107 degrees, 32 minutes, 22 seconds W.

A1—0 to 10 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine interstitial pores; neutral; clear smooth boundary.
A2—10 to 19 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure parting to weak fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few very fine tubular pores; neutral; clear smooth boundary.
Bw—19 to 30 inches; grayish brown (10YR 5/2) cobbly sandy clay loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; slightly hard, friable, sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; 10 percent gravel and 20 percent cobbles; neutral; abrupt wavy boundary.
R—30 inches; hard sandstone.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 30 inches
Depth to bedrock: 20 to 60 or more inches
Depth to carbonates: 0 to 40 or more inches
Content of rock fragments in the control section: Ranges from 0 to more than 60 percent
Content of clay in the control section: 10 to 30 percent

A horizon:
Hue—2.5YR to 10YR
Value—3 or 4 dry, 2 or 3 moist
Chroma—1 to 3
Texture—extremely stony loamy sand, sandy loam, loam, or channery loam
Reaction—slightly acid to moderately alkaline

B horizon (if present):
Hue—2.5YR to 10YR
Value—4 to 7 dry, 3 to 6 moist
Chroma—2 to 6
Texture—loamy sand, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam modified by 0 to 70 percent gravel, cobbles, channers, stones, or flagstones
Reaction—neutral to strongly alkaline

C horizon (if present):
Hue—2.5YR to 10YR
Value—4 to 7 dry, 3 to 6 moist
Chroma—2 to 6
Texture—sand, fine sand, loamy sand, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam modified by 0 to 70 percent gravel, cobbles, channers, stones, or flagstones
Reaction—neutral to strongly alkaline

Cameo Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium derived from various sources
Landform: flood plains
Slope: 0 to 8 percent
Average annual precipitation: 10 to 13 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,000 to 6,300 feet

Taxonomic class: coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents

Typical Pedon

Cameo loamy fine sand in an area of Bankard Family-Cameo complex, 0 to 5 percent slopes, about 2,500 feet west and 700 feet south of the northeast corner, section 28, T. 6 N., R. 99 W., NMPM latitude 40 degrees, 26 minutes, 51 seconds N. and longitude 108 degrees, 31 minutes, 14 seconds W.

A—0 to 2 inches; yellowish brown (10YR 5/4) loamy fine sand, brown (10YR 4/3) moist; weak thick platy structure; slightly hard, friable, nonsticky and nonplastic; common fine roots; common fine vesicular and tubular pores; calcium carbonate is disseminated; strongly effervescent; strongly alkaline; clear smooth boundary.
AC—2 to 7 inches; light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak very coarse subangular blocky structure; hard, friable, nonsticky and nonplastic; common fine roots; common fine vesicular and tubular pores; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; clear smooth boundary.

C1—7 to 22 inches; light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium and coarse blocky structure; hard, friable, slightly sticky and slightly plastic; common fine roots; common fine vesicular and tubular pores; calcium carbonate is disseminated; violently effervescent; moderately alkaline; clear smooth boundary.
C2—22 to 34 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak medium and coarse blocky structure; hard, friable, slightly sticky and slightly plastic; few fine roots; common fine vesicular and tubular pores; calcium carbonate is disseminated; violently effervescent; strongly alkaline; gradual smooth boundary.
C3—34 to 60 inches; brown (10YR 5/3) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak medium and coarse blocky structure; hard, friable, slightly sticky and slightly plastic; few fine roots; few fine vesicular and tubular pores; calcium carbonate is disseminated; violently effervescent; strongly alkaline.

Range in Characteristics

Content of clay in the control section: 9 to 18 percent

A horizon:
Value—5 or 6 dry, 4 or 5 moist
Chroma—2 to 4
Texture—loamy fine sand or sandy clay loam
Reaction—moderately alkaline or strongly alkaline

C horizon:
Value—5 or 6 dry, 4 or 5 moist
Chroma—2 to 4
Texture—sand, loamy fine sand, fine sandy loam, loam, sandy clay loam, silt loam, or stratified layers of these textures
Reaction—moderately alkaline or strongly alkaline

Note: In some areas colors may range to 5YR. Map unit 11 is outside the range of characteristics for Cameo because it contains more than 18 percent clay in the control section.

Chew Series

Setting

Depth class: moderately deep
Drainage class: well drained
Parent material: reworked eolian material and residuum derived from limestone
Landform: hillslopes, shoulders
Slope: 10 to 50 percent
Average annual precipitation: 10 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 5,000 to 6,800 feet

Taxonomic class: fine-loamy, carbonatic, mesic Ustic Haplocalcids

Typical Pedon

Chew very channery loam, in an area of Splimo-Chew-Rock outcrop complex, 10 to 50 percent slopes, extremely flaggy, about 1,400 feet west and 11,400 feet north of the northeast corner of section 27, T. 4 S., R. 23 E., SLBM (site is in a non-sectioned area) latitude 40 degrees, 26 minutes, 55 seconds N. and longitude 109

degrees, 18 minutes, 15 seconds W. The surface is covered with limestone rock fragments, consisting of 25 percent channers and 5 percent flagstones.

A—0 to 3 inches; yellowish brown (10YR 5/4) very channery loam, dark brown (10YR 3/3) moist; weak thin platy structure parting to moderate very fine subangular blocky; soft, very friable, nonsticky and nonplastic; many very fine, common fine, few medium and coarse roots; many very fine, common fine, few medium tubular pores; 35 percent channers and 5 percent flagstones; very slightly effervescent; 8 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; abrupt smooth boundary.

Bw—3 to 9 inches; light yellowish brown (10YR 6/4) very channery loam, dark yellowish brown (10YR 4/4) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine, few medium roots; many very fine, common fine, few medium tubular pores; 40 percent channers and 5 percent flagstones; slightly effervescent; 15 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; clear wavy boundary.

Bk1—9 to 17 inches; pink (7.5YR 7/3) channery loam, light brown (7.5YR 6/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and slightly plastic; few very fine, fine, and medium roots; common very fine and fine, few medium tubular pores; 15 percent channers and 5 percent flagstones; violently effervescence; 47 percent calcium carbonate equivalent; calcium carbonate is disseminated, in many medium through very coarse irregular shaped soft masses, and in coatings around rock fragments; moderately alkaline; gradual smooth boundary.

Bk2—17 to 27 inches; pink (7.5YR 7/3) channery clay loam, light brown (7.5YR 6/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few very fine, fine, and medium roots; common very fine and fine, few medium tubular pores; 20 percent channers and 5 percent flagstones; violently effervescence; 47 percent calcium carbonate equivalent; calcium carbonate is disseminated, in many medium through very coarse irregular shaped soft masses, and in coatings around rock fragments; strongly alkaline; clear irregular boundary.

BCky—27 to 38 inches; pink (7.5YR 7/4) channery loam, strong brown (7.5YR 5/6) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine, fine, and medium tubular and interstitial pores; 30 percent channers and 4 percent flagstones; common irregular coarse and very coarse soft gypsum masses and coatings around rock fragments; violently effervescence; 40 percent calcium carbonate equivalent; calcium carbonate is disseminated and in coatings around rock fragments; moderately alkaline; abrupt wavy boundary.

R—38 to 42 inches; Unweathered limestone.

Range in Characteristics

Depth to bedrock: 20 to 40 inches

Depth to carbonate layer: 5 to 15 inches

Calcium carbonate equivalent in the control section: greater than 40 percent in the fraction that is less than 20 mm.

Content of rock fragments in the control section: 20 to 35 percent

A horizon:
Hue—7.5YR or 10YR
Value—4 to 6 dry, 3 or 4 moist
Chroma—2 to 4
Texture—loam or silt loam modified by 15 to 80 percent stones, flagstones, or channers

Bw horizon:
Hue—7.5YR or 10YR
Value—5 or 6 dry, 3 or 4 moist
Chroma—3 or 4
Texture—loam or silt loam modified by 10 to 40 percent channers

Bk horizon:
Hue—7.5YR or 10YR
Value—6 to 8 dry, 4 to 7 moist
Chroma—2 to 4
Texture—loam, clay loam, or silt loam modified by 10 to 35 percent channers
Reaction—moderately alkaline or strongly alkaline

BCky horizon:
Hue—7.5YR or 10YR
Value—7 or 8 dry, 5 or 6 moist
Chroma—3 to 6
Texture—loam or sandy loam modified by 15 to 35 percent channers

Chipeta Series

Setting

Depth class: shallow
Drainage class: well drained
Parent material: residuum derived from shale
Landform: hills
Slope: 3 to 35 percent
Average annual precipitation: 9 to 11 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,400 to 6,100 feet

Taxonomic class: clayey, mixed, active, calcareous, mesic shallow Typic Torriorthents

Typical Pedon

Chipeta silty clay loam in an area of Deaver-Chipeta complex, 3 to 35 percent slopes, in the Moffat County soil survey area, about 1,975 feet east and 1,325 feet south of the northwest corner, section 31, T. 4 N., R. 99 W., NMPM latitude 40 degrees, 16 minutes, 37 seconds N. and longitude 108 degrees, 32 minutes, 53 seconds W.

A—0 to 1 inch; pale yellow (2.5Y 7/4) silty clay loam, light yellowish brown (2.5Y 6/4) moist; moderate thin platy structure parting to moderate fine granular; soft, very friable, very sticky and very plastic; common very fine roots; few very fine interstitial pores; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; abrupt smooth boundary.
AC—1 inch to 12 inches; light yellowish brown (2.5Y 6/4) silty clay, light olive brown (2.5Y 5/4) moist; moderate fine subangular blocky structure; hard, friable, very

sticky and very plastic; few very fine and fine roots; few very fine tubular pores; 50 percent 1.0 mm. to 0.5 mm. shale fragments; common gypsum masses; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; clear smooth boundary.

C—12 to 17 inches; light yellowish brown (2.5Y 6/4) silty clay, light olive brown (2.5Y 5/4) moist; medium platy rock structure; hard, firm, very sticky and very plastic; few very fine roots; few very fine tubular pores; 90 percent 2 mm. to 25 mm. soft shale fragments; calcium carbonate is disseminated; strongly effervescent; strongly alkaline; clear wavy boundary.

Cr—17 to 20 inches; consolidated soft shale bedrock.

Range in Characteristics

Content of clay in the control section: 40 to 50 percent
Depth to bedrock: 28 10 to 20 inches

A horizon:
Hue—10YR to 5Y
Reaction—moderately alkaline or strongly alkaline

C horizon:
Hue—10YR to 5Y
Reaction—moderately alkaline or strongly alkaline

Clapper Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: colluvium
Landform: hillslopes
Slope: 25 to 50 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 5,500 to 6,300 feet

Taxonomic class: loamy-skeletal, mixed, superactive, mesic Ustic Haplocalcids

Typical Pedon

Clapper gravelly loam, 2 to 25 percent slopes, in the Uintah Area soil survey, about 400 feet south and 2,200 feet west of the northeast corner of section 25, T. 4 S., R. 20 E., SLBM latitude 40 degrees, 28 minutes, 22 seconds N. and longitude 109 degrees, 37 minutes, 16 seconds W. The surface is covered with limestone, sandstone, and quartzite rock fragments consisting of 25 percent gravel and 15 percent cobbles.

A—0 to 3 inches; strong brown (7.5YR 5/6) gravelly loam, brown (7.5YR 4/4) moist; weak thick platy structure parting to weak fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; few fine and very fine tubular pores; 15 percent gravel and 5 percent cobbles; slightly effervescent; calcium carbonate is disseminated; 5 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

Bw—3 to 7 inches; brown (7.5YR 5/4) gravelly loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure parting to moderate fine and very fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few very fine, medium, and coarse roots; few fine, common very fine tubular pores; 15

percent gravel and 5 percent cobbles; strongly effervescent; calcium carbonate is disseminated; 16 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

Bk1—7 to 13 inches; pink (7.5YR 8/4) gravelly loam, light brown (7.5YR 6/4) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium and fine roots; few fine, common very fine tubular pores; 15 percent gravel and 5 percent cobbles; strongly effervescent; calcium carbonate is disseminated and segregated in few cylindrical fine masses and less than 1 mm. thick coatings on underside of rocks; 35 percent calcium carbonate equivalent; strongly alkaline; clear wavy boundary.

Bk2—13 to 21 inches; pink (7.5YR 8/4) very cobbly loam, light brown (7.5YR 6/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine, common very fine roots; few fine, common very fine tubular pores; 25 percent gravel, 10 percent cobbles, and 5 percent stones; violently effervescent; calcium carbonate is disseminated and segregated in 1 to 3 mm. thick coatings on undersides of rocks; 38 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

Bk3—21 to 36 inches; pink (7.5YR 8/4) very cobbly loam, light brown (7.5YR 6/4) moist; massive; very hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; few fine, many very fine tubular pores; 20 percent gravel, 10 percent cobbles, and 5 percent stones; strongly effervescent; calcium carbonate is disseminated and segregated in many irregular coarse masses; 31 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

Bk4—36 to 49 inches; pink (7.5YR 7/4) very cobbly loam, brown (7.5YR 5/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; common fine and very fine tubular pores; 35 percent gravel and 20 percent cobbles; slightly effervescent; 21 percent calcium carbonate equivalent; calcium carbonate is disseminated and segregated in few cylindrical fine masses; strongly alkaline; clear wavy boundary.

Bk5—49 to 60 inches; pink (7.5YR 7/4) very cobbly sandy clay loam, brown (7.5YR 5/4) moist; massive; very hard, friable, sticky and plastic; few very fine roots; common fine, many very fine tubular pores; 25 percent gravel and 35 percent cobbles; slightly effervescent; calcium carbonate is disseminated and in few cylindrical medium and coarse masses; 19 percent calcium carbonate equivalent; strongly alkaline.

Range in Characteristics

Depth to calcic horizon: 6 to 19 inches
Calcium carbonate equivalent in the control section: 15 to 40 percent
Content of rock fragments in the control section: 35 to 60 percent
Content of clay in the control section: 18 to 27 percent

A horizon:
Hue—7.5YR or 10YR
Value—5 or 6 dry, 3 to 5 moist
Chroma—2 to 6
Texture—gravelly loam or very cobbly loam
Content of ock fragments—15 to 50 percent
Reaction—moderately alkaline or strongly alkaline

Bw horizon:
Hue—7.5YR or 10YR
Value—5 to 7 dry, 4 or 5 moist
Chroma—3 to 5

Texture—loam modified by 15 to 60 percent gravel or cobbles
Reaction—moderately alkaline or strongly alkaline

Bk1 horizon:
Hue—7.5YR or 10YR
Value—5 to 7 dry, 4 or 5 moist
Chroma—2 to 5
Texture—sandy clay loam or loam modified by 15 to 70 percent gravel or cobbles
Reaction—moderately alkaline or strongly alkaline

Bk2, Bk3, Bk4, and Bk5 horizons:
Hue—7.5YR or 10YR
Value—6 to 8 dry, 4 to 7 moist
Chroma—1 to 6
Texture—sandy loam, loam, or sandy clay loam, modified by 15 to 70 percent gravel or cobbles
Reaction—moderately alkaline or strongly alkaline

Clyl Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: colluvium
Landform: mountain slopes
Slope: 15 to 65 percent
Average annual precipitation: 16 to 18 inches
Average annual air temperature: 40 to 43 degrees F
Elevation: 7,000 to 8,000 feet

Taxonomic class: loamy-skeletal, carbonatic, Typic Calciborolls

Typical Pedon

Clyl-Pinerid association, 8 to 40 percent slopes, in the Uintah soil survey area, about 1,700 feet west and 2,400 feet north of the southeast corner of section 3, T. 2 S., R. 24 E., SLBM latitude 40 degrees, 40 minutes, 30 seconds N. and longitude 109 degrees, 12 minutes, 26 seconds W. The surface is covered with 35 percent flagstones and channers.

A1—0 to 2 inches; dark brown (7.5YR 3/2) channery silt loam, black (5YR 2.5/1) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; common medium, many fine and very fine roots; many fine and very fine tubular pores; 15 percent channers; very slightly effervescent; 2 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.
A2—2 to 9 inches; brown (7.5YR 4/2) channery silt loam, very dark gray (5YR 3/1) moist; weak medium and fine subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; few coarse, common medium, many fine and very fine roots; many fine and very fine tubular pores; 5 percent gravel and 25 percent channers; slightly effervescent; 2 percent calcium carbonate equivalent; calcium carbonate is disseminated and segregated as common fine nodules; moderately alkaline; clear wavy boundary.
Bk1—9 to 19 inches; reddish brown (5YR 5/3) very channery silt loam, reddish brown (5YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable,

slightly sticky and slightly plastic; common coarse and medium, many fine, and few very fine roots; common medium, fine, and very fine tubular pores; 20 percent gravel and 30 percent channers; strongly effervescent; 34 percent calcium carbonate equivalent; calcium carbonate is disseminated and segregated as 1 to 3 mm. thick coatings on underside of rock fragments; moderately alkaline; gradual wavy boundary.

Bk2—19 to 29 inches; pinkish gray (5YR 7/2) very channery loam, reddish brown (5YR 5/3) moist; massive; hard, firm, slightly sticky and slightly plastic; common medium, many fine and very fine roots; few fine and very fine tubular pores; 10 percent gravel and 40 percent channers; strongly effervescent; 46 percent calcium carbonate equivalent; calcium carbonate is disseminated and segregated as 1 to 3 mm. thick coatings on underside of rock fragments; moderately alkaline; clear wavy boundary.

Bk3—29 to 60 inches; pinkish gray (7.5YR 7/2) extremely flaggy loam, light brown (7.5YR 6/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; few very fine tubular pores; 25 percent channers, 35 percent flagstones, and 20 percent stones; strongly effervescent; 47 percent calcium carbonate equivalent; calcium carbonate is disseminated and segregated as 1 to 3 mm. thick coatings on undersides of rock fragments; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 15 inches
Depth to calcic horizon: 9 to 20 inches
Calcium carbonate equivalent in the control section: 40 to 60 percent
Content of rock fragments in the control section: 50 to 80 percent
Content of clay in the control section: 18 to 27 percent

A horizon:
Value—2 or 3 moist
Chroma—1 to 3
Texture—channery silt loam
Effervescence—it is noneffervescent in the upper part and slightly effervescent in the lower part
Reaction—slightly alkaline or moderately alkaline

Bk horizon:
Chroma—2 to 4
Texture—silt loam or loam modified by 50 to 80 percent channers or flagstones

Cortyzack Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: eolian deposits and slope alluvium derived from sandstone
Landform: hills
Slope: 3 to 25 percent
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 40 to 45 degrees F
Elevation: 6,800 to 8,200 feet

Taxonomic class: fine-loamy, mixed, superactive Typic Argiborolls

Typical Pedon

Cortyzack loam in an area of Cortyzack-Duffymont complex, 3 to 25 percent slopes, rubbly, in the Uintah Area soil survey, about 2,300 feet east and 2,400 feet south of the northwest corner of section 1, T. 5 S., R. 25 E., SLBM latitude 40 degrees, 24 minutes, 55 seconds N. and longitude 109 degrees, 3 minutes, 1 second W.

A—0 to 3 inches; brown (7.5YR 4/3) loam, dark brown (7.5YR 3/2) moist; moderate very fine granular structure; soft, friable, slightly sticky and slightly plastic; many very fine, common fine, few medium and coarse roots; many very fine and fine, few medium tubular pores; neutral; abrupt smooth boundary.

Bt1—3 to 8 inches; brown (7.5YR 5/3) clay loam, dark brown (7.5YR 3/2) moist; weak medium prismatic structure parting to moderate fine granular; slightly hard, firm, sticky and plastic; many very fine, common fine, few medium and coarse roots; many very fine, common fine, few medium tubular pores; few faint clay films on faces of peds; slightly alkaline; abrupt smooth boundary.

Bt2—8 to 12 inches; brown (7.5YR 5/3) clay loam, dark brown (7.5YR 3/3) moist; moderate medium prismatic structure parting to moderate fine and very fine subangular blocky; hard, firm, sticky and plastic; common very fine, few fine and medium roots; common very fine, few fine tubular pores; common distinct clay films on faces of peds; slightly alkaline; clear smooth boundary.

Bt3—12 to 23 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and very fine subangular blocky; hard, firm, sticky and plastic; few very fine and fine roots; common very fine, few fine tubular pores; common prominent clay films on faces of peds; moderately alkaline; abrupt smooth boundary.

Bk1—23 to 39 inches; pink (7.5YR 7/3) clay loam, brown (7.5YR 5/3) moist; moderate medium and fine subangular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; common very fine and fine tubular pores; 5 percent gravel; calcium carbonate is disseminated in common coarse irregular shaped soft masses and in coatings on rock fragments; violently effervescent; 18 percent calcium carbonate equivalent; moderately alkaline; clear irregular boundary.

Bk2—39 to 48 inches; pink (7.5YR 8/3) clay loam, light brown (7.5YR 6/3) moist; weak thin platy structure parting to weak medium subangular blocky; slightly hard, firm, sticky and plastic; few very fine and fine roots; common very fine and fine tubular pores; 5 percent gravel; calcium carbonate is disseminated in many medium through very coarse irregular shaped soft masses and in coatings on rock fragments; violently effervescent; 15 percent calcium carbonate equivalent; moderately alkaline; clear wavy boundary.

Bk3—48 to 72 inches; pink (7.5YR 8/3) loam, light brown (7.5YR 6/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; calcium carbonate is disseminated and in common vertical veins in cracks; violently effervescent; 13 percent calcium carbonate equivalent; moderately alkaline; gradual smooth boundary.

C—72 to 76 inches; pink (7.5YR 8/3) loam, light brown (7.5YR 6/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; calcium carbonate is disseminated; violently effervescent; 6 percent calcium carbonate equivalent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 8 to 14 inches
Depth to calcic horizon: 20 to 30 inches
Calcium carbonate equivalent in the calcic horizon: 15 to 30 percent

A horizon:
Hue—5YR to 10YR
Value—3 to 5 dry, 2 to 4 moist
Chroma—1 to 3
Reaction—neutral to moderately alkaline

Bt horizon:
Hue—5YR or 7.5YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—1 to 4
Texture—clay loam or sandy clay loam
Reaction—slightly alkaline or moderately alkaline

Bk horizon:
Hue—2.5YR to 7.5YR
Value—5 to 8 dry, 4 to 7 moist
Chroma—2 to 4
Texture—fine sandy loam, sandy clay loam, clay loam, or loam

C horizon:
Hue—2.5YR to 7.5YR
Value—5 to 8 dry, 4 to 6 moist
Chroma—3 or 4
Texture—sandy loam, sandy clay loam, clay loam, or loam

Cragnot Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: residuum, colluvium, and alluvium derived from limestone
Landform: hills and valleys
Slope: 6 to 75 percent
Average annual precipitation: 12 to 14 inches
Average annual air temperature: 43 to 45 degrees F
Elevation: 6,300 to 8,500 feet

Taxonomic class: loamy-skeletal, carbonatic, frigid Haplocalcidic Ustochrepts

Typical Pedon

Cragnot very channery loam in an area of Cragnot-Pensore-Grapit association, 6 to 75 percent slopes, very stony, about 50 feet east and 1,250 feet north of the southwest corner, section 28, T. 6 N., R. 100 W., NMPM latitude 40 degrees, 26 minutes, 20 seconds N. and longitude 108 degrees, 38 minutes, 39 seconds W. The surface is covered with limestone rock fragments, consisting of 15 percent cobbles and 3 percent stones.

A—0 to 3 inches; dark brown (7.5YR 3/3) very channery loam, dark brown (7.5YR 3/3) moist; weak medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; very few fine vesicular and tubular pores; 10

percent gravel, 30 percent channers, and 10 percent flagstones; calcium carbonate is disseminated; slightly effervescent; slightly alkaline; clear smooth boundary.

Bk1—3 to 12 inches; light brown (7.5YR 6/4) very channery silt loam, brown (7.5YR 5/4) moist; weak fine subangular blocky structure; hard, friable, sticky and plastic; common fine and few medium roots; common fine vesicular and tubular pores; 10 percent gravel, 35 percent channers, and 10 percent flagstones; many distinct calcium carbonate coatings; violently effervescent; 32 percent calcium carbonate equivalent; strongly alkaline; clear wavy boundary.

Bk2—12 to 30 inches; light brown (7.5YR 6/4) extremely channery silt loam, brown (7.5YR 5/4) moist; moderate fine subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine vesicular and tubular pores; 15 percent gravel, 40 percent channers, and 15 percent flagstones; many distinct calcium carbonate coatings; violently effervescent; 40 percent calcium carbonate equivalent; strongly alkaline; clear wavy boundary.

Bk3—30 to 38 inches; brown (7.5YR 5/4) extremely channery silt loam, brown (7.5YR 5/4) moist; weak fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common fine vesicular and tubular pores; 15 percent gravel, 40 percent channers, and 15 percent flagstones; many distinct calcium carbonate coatings; violently effervescent; 44 percent calcium carbonate equivalent; strongly alkaline; clear wavy boundary.

BCk—38 to 60 inches; strong brown (7.5YR 5/6) very channery silt loam, brown (7.5YR 4/4) moist; massive; hard, firm, sticky and plastic; very few fine roots; few fine vesicular and tubular pores; 10 percent gravel, 20 percent channers, and 7 percent flagstones; few faint calcium carbonate coatings; violently effervescent; 40 percent calcium carbonate equivalent; strongly alkaline.

Range in Characteristics

Calcium carbonate equivalent in the control section: 40 to 60 percent
Content of rock fragments in the control section: 35 to 70 percent
Content of clay in the control section: 12 to 30 percent

A horizon:
- Value—3 to 5 dry, 3 or 4 moist
- Chroma—2 to 4
- Reaction—slightly alkaline or moderately alkaline

Bk horizon:
- Value—5 to 8 dry, 4 to 7 moist
- Chroma—2 to 6
- Texture—loam, silt loam, clay loam, or sandy clay loam modified by 35 to 70 percent gravel, cobbles, or channers
- Reaction—moderately alkaline or strongly alkaline

BCk horizon (if present):
- Value—5 to 7 dry, 4 to 6 moist
- Chroma—3 to 6
- Texture—sandy loam, silt loam, loam, sandy clay loam, or clay loam modified by 35 to 80
  percent gravel, cobbles, channers, stones, or flagstones
- Reaction—moderately alkaline or strongly alkaline

Crustown Series

Setting

Depth class: shallow
Drainage class: excessively drained
Parent material: residuum derived from calcareous sandstone
Landform: hillslopes
Slope: 10 to 40 percent
Average annual precipitation: 10 to 12 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,500 to 5,750 feet

Taxonomic class: mixed, mesic shallow Typic Torripsamments

Typical Pedon

Crustown loamy fine sand in an area of Tipper-Crustown loamy fine sands, 10 to 40 percent slopes, about 3,050 feet west and 1,850 feet south of the northeast corner, section 16, T. 9 N., R. 102 W., NMPM latitude 40 degrees, 44 minutes, 30 seconds N. and longitude 108 degrees, 52 minutes, 6 seconds W. The surface is covered with sandstone rock fragments, consisting of 10 percent gravel.

A—0 to 3 inches; light brown (7.5YR 6/3) loamy fine sand, brown (7.5YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine interstitial pores; calcium carbonate is disseminated; strongly effervescent; slightly alkaline; abrupt smooth boundary.
C—3 to 13 inches; pinkish gray (7.5YR 6/2) fine sand, brown (7.5YR 4/2) moist; massive; loose; common very fine, fine, and medium roots; common very fine interstitial pores; calcium carbonate is disseminated; strongly effervescent; slightly alkaline; abrupt smooth boundary.
Cr—13 inches; soft sandstone.

Range in Characteristics

Depth to bedrock: 10 to 20 inches

Note: The Crustown soils in this survey area are taxadjuncts to the series because they have an ustic-aridic moisture regime and have 7.5YR hues outside the range of characteristics. This difference, however, does not significantly affect the use or management of the soils.

Cryochrepts

Setting

Depth class: deep and very deep
Drainage class: well drained
Parent material: colluvium derived from sedimentary rocks
Landform: mountains
Slope: 50 to 90 percent
Average annual precipitation: 12 to 16 inches
Average annual air temperature: 42 to 44 degrees F
Elevation: 6,000 to 7,400 feet

Taxonomic class: Cryochrepts

Typical Pedon

No profile of Cryochrepts is typical, but one commonly observed is in an area of Rock outcrop-Ustochrepts-Cryochrepts complex, 50 to 90 percent slopes, extremely stony. In Dinosaur National Monument, about 1 mile north of snow ranch; in an area without a Cadastral Survey, about 3,500 feet north and 3,600 feet west of the northeast corner of section 36, T. 3 S., R. 25 E., SLBM latitude 40 degrees, 31 minutes, 57 seconds N. and longitude 109 degrees, 3 minutes, 42 seconds W. The surface is covered with limestone and sandstone rock fragments, consisting of 10 percent gravel, 15 percent cobbles, and 10 percent stones.

A—0 to 5 inches; brown (10YR 4/3) extremely cobbly loam, dark brown (10YR 3/3) moist; weak moderate subangular blocky structure parting to weak fine and very fine subangular blocky; slightly hard, firm, slightly sticky and slightly plastic; many very fine, common fine, few medium roots; many very fine, few fine and medium tubular pores; 25 percent gravel and 40 percent cobbles; calcium carbonate is disseminated in few fine irregular shaped masses and in 1 mm. thick coatings on undersides of rocks; slightly effervescent; 9 percent calcium carbonate equivalent; moderately alkaline; clear irregular boundary.

Bk1—5 to 11 inches; grayish brown (10YR 5/2) very cobbly loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure parting to weak fine and very fine subangular blocky; hard, firm, slightly sticky and slightly plastic; many very fine, common fine and medium, few coarse roots; many very fine, common fine, few medium tubular pores; 20 percent gravel and 20 percent cobbles; calcium carbonate is disseminated in many fine and medium irregular shaped masses and in 1 mm. to 3 mm. thick coatings on the undersides of rocks; strongly effervescent; 25 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

Bk2—11 to 18 inches; grayish brown (10YR 5/2) very cobbly loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure parting to weak fine and very fine subangular blocky; hard, firm, slightly sticky and slightly plastic; many very fine and fine, common medium, few coarse roots; many very fine, common fine, few medium tubular pores; 20 percent gravel and 20 percent cobbles; calcium carbonate is disseminated in many fine and medium irregular shaped masses and in 1 mm. to 3 mm. thick coatings around rocks; strongly effervescent; 27 percent calcium carbonate equivalent; moderately alkaline; clear wavy boundary.

Bk3—18 to 33 inches; light brownish gray (10YR 6/2) extremely cobbly loam, grayish brown (10YR 5/2) moist; weak fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; 15 percent gravel, 45 percent cobbles, and 5 percent stones; calcium carbonate is disseminated in many fine and medium irregular shaped masses and in 1 mm. to 3 mm. thick coatings around rocks; violently effervescent; 32 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

Bk4—33 to 60 inches; light gray (10YR 7/2) extremely cobbly loam, pale brown (10YR 6/3) moist; weak fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; 15 percent gravel, 45 percent cobbles, and 5 percent stones; calcium carbonate is disseminated in many fine and medium irregular shaped masses and in 1 mm. to 3 mm. thick coatings around rocks; violently effervescent; 42 percent calcium carbonate equivalent; moderately alkaline.

Range in Characteristics

Depth to bedrock: 40 inches or more
Calcium carbonate equivalent in the control section: 25 to 40 percent
Content of rock fragments in the control section: 35 to 90 percent

A horizon:
Hue—7.5YR or 10YR
Value—4 to 7 dry, 3 to 5 moist
Chroma—2 to 4

Bk horizon:
Hue—7.5YR or 10YR
Value—5 to 7 dry, 4 to 6 moist
Chroma—2 or 3
Texture—predominantly loam and fine sandy loam
with small areas of sandy loam modified by 35 to 90 percent gravel, cobbles, channers, stones, or flagstones

Davtone Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium and colluvium derived from sandstone
Landform: mountains
Slope: 12 to 35 percent
Average annual precipitation: 16 to 18 inches
Average annual air temperature: 37 to 40 degrees F
Elevation: 7,000 to 9,000 feet

Taxonomic class: fine-loamy, mixed, superactive Argic Pachic Cryoborolls

Typical Pedon

Davtone loam in an area of Davtone-Forsey complex, 12 to 35 percent slopes, very stony, in the Moffat County soil survey area, about 2,200 feet east and 1,000 feet north of the southwest corner, section 24, T. 12 N., R. 104 W., NMPM latitude 40 degrees, 58 minutes, 50 seconds N. and longitude 109 degrees, 2 minutes, 27 seconds W.

A1—0 to 2 inches; dark brown (7.5YR 3/2) loam, very dark brown (7.5YR 2.5/2) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine interstitial pores; neutral; abrupt smooth boundary.

A2—2 to 6 inches; brown (7.5YR 4/2) loam, dark brown (7.5YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine interstitial pores; neutral; abrupt smooth boundary.

Bt1—6 to 17 inches; reddish brown (5YR 5/3) clay loam, dark reddish brown (5YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; common distinct clay films on faces of peds; neutral; clear wavy boundary.

Bt2—17 to 30 inches; reddish brown (5YR 5/4) clay loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, firm, sticky and plastic; common very fine roots; common very fine tubular pores; common distinct clay films on faces of peds; 10 percent gravel; neutral; gradual smooth boundary.

BC—30 to 60 inches; reddish brown (5YR 5/4) cobbly loam, reddish brown (5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; 10 percent gravel and 10 percent cobbles; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 16 to 20 inches
Depth to an argillic horizon: 6 to 20 inches
Content of rock fragments in the control section: 0 to 35 percent
Content of clay in the control section: 27 to 35 percent

A horizon:
Hue—7.5YR or 10YR
Value—3 or 4 dry, 2 or 3 moist
Chroma—2 or 3
Reaction—neutral or slightly alkaline

Bt horizon:
Value—3 to 5 dry, 3 or 4 moist
Chroma—2 to 4
Reaction—neutral or slightly alkaline

BC horizon:
Value—3 to 6 dry, 3 to 5 moist
Chroma—3 or 4
Texture—sandy loam, loam, or sandy clay loam
Reaction—neutral or slightly alkaline

Dearjosh Series

Setting

Depth class: very deep
Drainage class: excessively drained
Parent material: residuum and alluvium derived from sandstone
Landform: cuestas and mesas
Slope: 3 to 15 percent
Average annual precipitation: 12 to 14 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,200 to 6,800 feet

Taxonomic class: mixed, frigid Aridic Ustipsamments

Typical Pedon

Dearjosh loamy sand in an area of Dearjosh-Lakebench complex, 3 to 15 percent slopes, about 2,150 feet west and 800 feet south of the northeast corner, section 20, T. 6 N., R. 103 W., NMPM latitude 40 degrees, 27 minutes, 45 seconds N. and longitude 108 degrees, 59 minutes, 35 seconds W.

A—0 to 5 inches; brown (7.5YR 4/3) loamy sand, dark brown (7.5YR 3/2) moist; single grained; loose; many fine roots; very few fine vesicular and tubular pores; slightly alkaline; clear wavy boundary.
AC—5 to 21 inches; brown (7.5YR 4/4) loamy sand, dark brown (7.5YR 3/4) moist; single grained; loose; common fine roots; very few fine vesicular and tubular pores; slightly alkaline; gradual wavy boundary.
C1—21 to 48 inches; strong brown (7.5YR 5/6) loamy sand, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few fine roots; very few fine vesicular and tubular pores; slightly alkaline; gradual wavy boundary.
C2—48 to 54 inches; strong brown (7.5YR 4/6) loamy sand, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few fine roots; very few fine vesicular and tubular pores; slightly alkaline; clear wavy boundary.
C3—54 to 60 inches; strong brown (7.5YR 4/6) loamy sand, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; very few fine vesicular and tubular pores; slightly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 1 to 9 percent

A horizon:
Value—3 to 5 dry, 2 or 3 moist
Chroma—2 or 3
Texture—loamy sand or loamy fine sand
Reaction—neutral or slightly alkaline

AC horizon (if present):
Value—3 to 5 dry or moist
Chroma—4 or 6
Texture—loamy sand or loamy fine sand
Reaction—neutral or slightly alkaline

C horizon:
Value—3 to 7 dry or moist
Chroma—3 to 6
Texture—sand, fine sand, loamy sand or loamy fine sand
Reaction—neutral to moderately alkaline

Deaver Series

Setting

Depth class: moderately deep
Drainage class: well drained
Parent material: residuum derived from shale
Landform: hills
Slope: 3 to 45 percent
Average annual precipitation: 9 to 11 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,400 to 6,100 feet

Taxonomic class: fine, smectitic, calcareous, mesic Typic Torriorthents

Typical Pedon

Deaver silty clay loam in an area of Deaver-Chipeta complex, 3 to 35 percent slopes, in the Moffat County soil survey area, about 2,000 feet east and 1,300 feet south of the northwest corner, section 31, T. 4 N., R. 99 W., NMPM latitude 40 degrees, 16 minutes, 38 seconds N. and longitude 108 degrees, 32 minutes, 54 seconds W.

A—0 to 2 inches; pale yellow (2.5Y 7/4) silty clay loam, light yellowish brown (2.5Y 6/4) moist; moderate thin platy structure parting to moderate fine granular; soft, very friable, very sticky and very plastic; common fine roots; few fine vesicular pores; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; abrupt smooth boundary.

AC—2 to 8 inches; light yellowish brown (2.5Y 6/4) silty clay, light olive brown (2.5Y 5/4) moist; weak fine subangular blocky structure; hard, firm, very sticky and very plastic; few fine roots; few fine tubular pores; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; clear smooth boundary.

Cy1—8 to 18 inches; light yellowish brown (2.5Y 6/4) silty clay, light olive brown (2.5Y 5/4) moist; weak coarse subangular blocky structure; hard, firm, very sticky and very plastic; few very fine roots; few very fine tubular pores; common fine masses of gypsum crystals; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; clear smooth boundary.

Cy2—18 to 35 inches; light yellowish brown (2.5Y 6/4) silty clay, light olive brown (2.5Y 5/4) moist; 70 percent massive and 30 percent platy rock structure; hard, firm, very sticky and very plastic; few very fine roots; few very fine tubular pores; 10 percent shale fragments; common fine masses of gypsum crystals; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; gradual smooth boundary.

Cr—35 inches; weakly consolidated shale bedrock.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Depth to carbonates: 0 to 1 inch

A horizon:
Chroma—2 to 4
Texture—gravelly silty clay loam or silty clay loam

C horizon:
Value—5 or 6 dry or moist
Chroma—2 to 4
Texture—clay or silty clay

Note: The Deaver soils in this area are outside the series because the precipitation is greater than 9 inches. This difference, however, does not significantly affect the use or management of the soils.

Detra Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: slope alluvium derived from sandstone

Landform: hills
Slope: 1 to 12 percent
Average annual precipitation: 15 to 17 inches
Average annual air temperature: 40 to 45 degrees F
Elevation: 6,800 to 7,800 feet

Taxonomic class: fine-loamy, mixed, superactive Pachic Argiborolls

Typical Pedon

Detra fine sandy loam in an area of Detra-Cortyzack complex, 1 to 12 percent slopes, in the Moffat County soil survey area, about 1,450 feet east and 2,600 feet south of the northwest corner, section 4, T. 7 N., R. 101 W., NMPM latitude 40 degrees, 35 minutes, 15 seconds N. and longitude 108 degrees, 38 minutes, 22 seconds W.

A1—0 to 8 inches; reddish brown (5YR 4/3) fine sandy loam, dark reddish brown (5YR 3/3) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine interstitial pores; neutral; abrupt smooth boundary.

A2—8 to 19 inches; reddish brown (5YR 4/3) fine sandy loam, dark reddish brown (5YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few very fine and fine tubular pores; neutral; clear smooth boundary.

Bt1—19 to 27 inches; reddish brown (5YR 4/4) sandy clay loam, dark reddish brown (5YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common very fine roots; common very fine tubular pores; common distinct clay films on faces of peds; neutral; clear smooth boundary.

Bt2—27 to 38 inches; reddish brown (5YR 4/4) sandy clay loam, dark reddish brown (5YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; few very fine roots; common very fine tubular pores; common distinct clay films on faces of peds; neutral; clear smooth boundary.

Bt3—38 to 50 inches; reddish brown (5YR 5/4) sandy clay loam, reddish brown (5YR 4/4) moist, moderate medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; few very fine roots; few very fine tubular pores; common distinct clay films on faces of peds; neutral; clear smooth boundary.

Bk—50 to 60 inches; pink (5YR 7/3) sandy clay loam, reddish brown (5YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; calcium carbonate is disseminated; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 16 to 27 inches
Depth to carbonates: 40 or more inches
Depth to base of argillic horizon: 40 to 50 inches

A horizon:
Hue—5YR or 7.5YR
Value—3 to 5 dry, 2 or 3 moist
Chroma—1 to 3
Reaction—neutral or slightly alkaline

Bt horizon:
Hue—5YR or 7.5YR
Value—4 to 6 dry, 3 to 5 moist

Chroma—2 to 6
Texture—sandy clay loam or clay loam
Reaction—neutral to moderately alkaline

Bk horizon:
Hue—5YR or 7.5YR
Value—5 to 7 dry, 4 or 5 moist
Chroma—3 or 4
Texture—sandy loam, sandy clay loam, or clay loam
Reaction—slightly alkaline or moderately alkaline

Detra Family

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium derived from sandstone
Landform: mountains
Slope: 3 to 10 percent
Average annual precipitation: 15 to 17 inches
Average annual air temperature: 40 to 45 degrees F
Elevation: 7,000 to 8,200 feet

Taxonomic class: fine-loamy, mixed, superactive Pachic Argiborolls

Typical Pedon

Detra Family loam in an area of Holter-Detra Family complex, 3 to 25 percent slopes, extremely stony, in the Moffat County soil survey area, about 1,300 feet west and 1,400 feet south of the northeast corner, section 9, T. 5 N., R. 103 W., NMPM latitude 40 degrees, 24 minutes, 10 seconds N. and longitude 108 degrees, 58 minutes, 2 seconds W.

A1—0 to 6 inches; brown (7.5YR 4/3) loam, dark brown (7.5YR 3/3) moist; weak medium granular structure; soft, very friable, sticky and plastic; common very fine and fine roots; few very fine interstitial pores; neutral; clear smooth boundary.
A2—6 to 15 inches; brown (7.5YR 4/3) loam, dark brown (7.5YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, sticky and plastic; common very fine and fine roots; few very fine and fine tubular pores; neutral; clear smooth boundary.
Bt—15 to 25 inches; brown (7.5YR 4/3) clay loam, dark brown (7.5YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine roots; common very fine tubular pores; common distinct clay films on faces of peds; neutral; clear smooth boundary.
Btk—25 to 36 inches; reddish brown (5YR 4/4) clay loam, dark reddish brown (5YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; few very fine roots; common very fine tubular pores; common distinct clay films on faces of peds; few fine calcium carbonate threads; very slightly effervescent; neutral; clear smooth boundary.
Bk—36 to 60 inches; light reddish brown (5YR 6/4) very gravelly sandy clay loam, brown (7.5YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 30 percent pebbles and 10 percent cobbles; soft masses of calcium carbonate throughout; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 16 to 27 inches
Depth to carbonates: 30 or more inches
Depth to base of argillic horizon: 35 to 45 inches

A horizon:
Hue—5YR or 7.5YR
Value—3 to 5 dry, 2 or 3 moist
Chroma—1 to 3
Texture—fine sandy loam or loam
Reaction—neutral or slightly alkaline

Bt horizon:
Hue—5YR or 7.5YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—2 to 6
Texture—sandy clay loam or clay loam
Reaction—neutral to moderately alkaline

Bk horizon:
Hue—5YR or 7.5YR
Value—5 to 7 dry, 4 or 5 moist
Chroma—3 or 4
Texture—sandy loam, sandy clay loam, or clay loam, modified by 35 to 60 percent pebbles or cobbles
Reaction—slightly alkaline or moderately alkaline

Duffymont Series

Setting

Depth class: very shallow or shallow
Drainage class: well drained
Parent material: slopes alluvium and colluvium derived from sandstone
Landform: mountain slopes and hills
Slope: 3 to 25 percent
Average annual precipitation: 14 to 20 inches
Average annual air temperature: 40 to 45 degrees F
Elevation: 7,000 to 8,500 feet

Taxonomic class: loamy-skeletal, mixed, superactive Lithic Haploborolls

Typical Pedon

Duffymont extremely flaggy fine sandy loam in an area of Cortyzack-Duffymont complex, 3 to 25 percent slopes, rubbly, in the Uintah Area soil survey, about 1,800 feet north and 400 feet east of the southwest corner of section 12, T. 5 S., R. 25 E., SLBM latitude 40 degrees, 23 minutes, 49 seconds N. and longitude 109 degrees, 3 minutes, 24 seconds W. The surface is covered with sandstone rock fragments, consisting of 10 percent channers, 5 percent stones, and 20 percent flagstones.

A1—0 to 3 inches; brown (7.5YR 4/3) extremely flaggy fine sandy loam, dark brown (7.5YR 3/2) moist; weak medium subangular blocky structure parting to weak very fine granular; soft, very friable, slightly sticky and slightly plastic; common very fine and fine, few medium and coarse roots; common very fine and fine tubular pores; 25 percent channers and 40 percent flagstones; neutral; clear smooth boundary.

A2—3 to 13 inches; brown (7.5YR 4/4) extremely flaggy fine sandy loam, dark brown (7.5YR 3/3) moist; moderate medium and coarse subangular blocky structure parting to weak medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine, few medium and coarse roots; common very fine and fine tubular pores; 25 percent channers and 40 percent flagstones; neutral; clear wavy boundary.

C—13 to 17 inches; brown (7.5YR 5/4) extremely flaggy sandy loam, brown (7.5YR 4/4) moist; weak very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine, few medium roots; common very fine and fine tubular pores; 35 percent channers and 30 percent flagstones; slightly alkaline; abrupt smooth boundary.

R—17 inches; hard sandstone.

Range in Characteristics

Depth to bedrock: 4 to 20 inches
Content of rock fragments in the control section: 50 to 75 percent
Content of clay in the control section: 10 to 18 percent

A horizon:
Hue—7.5YR or 10YR
Value—4 or 5 dry, 3 moist
Chroma—2 or 3

C horizon (if present):
Value—5 or 6 dry, 4 or 5 moist
Chroma—3 or 4
Texture—sandy loam, fine sandy loam, or loam modified by 50 to 75 percent gravel, cobbles, channers, stones, or flagstones
Reaction—neutral or slightly alkaline

Eghelm Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium
Landform: flood plains
Slope: 1 to 3 percent
Average annual precipitation: 5 to 8 inches
Average annual air temperature: 45 to 47 degrees F
Elevation: 4,700 to 4,800 feet

Taxonomic class: coarse-loamy, mixed, superactive, calcareous, mesic Typic Torrifluvents

Typical Pedon

Eghelm silt loam in an area of Jenrid-Eghelm complex, 0 to 3 percent slopes, in the Uintah Area soil survey, about 800 feet west and 800 feet north of the southeast corner of section 11, T. 9 S., R. 22 E., SLBM latitude 40 degrees, 2 minutes, 44 seconds N. and longitude 109 degrees, 24 minutes, 0 seconds W.

A—0 to 4 inches; yellowish brown (10YR 5/6) silt loam, brown (10YR 4/3) moist; weak thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine, few coarse roots; many fine, few medium vesicular pores; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; clear smooth boundary.
C1—4 to 18 inches; light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; many fine, few coarse roots; many fine, few coarse tubular pores; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; clear smooth boundary.
C2—18 to 26 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak thick platy structure; slightly hard, friable, slightly sticky and slightly plastic; few fine, medium, and coarse roots; few fine and coarse tubular pores; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; clear smooth boundary.
C3—26 to 41 inches; very pale brown (10YR 7/4) sand, yellowish brown (10YR 5/4) moist; massive; hard, friable, nonsticky and nonplastic; few fine roots; calcium carbonate is disseminated; very slightly effervescent; moderately alkaline; clear smooth boundary.
C4—41 to 60 inches; light yellowish brown (10YR 6/4) sand, pale brown (10YR 6/3) moist; single grained; loose, nonsticky and nonplastic; few fine roots; calcium carbonate is disseminated; very slightly effervescent; moderately alkaline.

Range in Characteristics

Content of rock fragments in the C horizon: 0 to 5 percent

A horizon:
Value—5 or 6 dry
Chroma—3 to 6

Emlin Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium derived from sandstone and limestone
Landform: structural benches and mountains
Slope: 1 to 12 percent
Average annual precipitation: 13 to 16 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,600 to 8,100 feet

Taxonomic class: fine-loamy, mixed, superactive Aridic Argiborolls

Typical Pedon

Emlin loam, 1 to 12 percent slopes, in the Moffat County soil survey area, about 2,200 feet west and 25 feet north of the southeast corner, section 22, T. 5 N., R. 102 W., NMPM latitude 40 degrees, 21 minutes, 48 seconds N. and longitude 108 degrees, 50 minutes, 29 seconds W.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few fine vesicular pores; 5 percent gravel; neutral; abrupt smooth boundary.

A2—2 to 5 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak very coarse subangular blocky structure parting to weak fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine tubular pores; neutral; clear wavy boundary.

AB—5 to 11 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; few very fine tubular pores; neutral; clear wavy boundary.

Bt1—11 to 14 inches; yellowish brown (10YR 5/4) clay loam, brown (10YR 4/3) moist; strong coarse angular blocky structure parting to strong fine angular blocky; slightly hard, friable, slightly sticky and plastic; common fine roots; few fine tubular pores; few faint dark grayish brown clay films on faces of peds; strongly effervescent; moderately alkaline; clear wavy boundary.

Bt2—14 to 19 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; strong medium angular blocky structure; hard, firm, slightly sticky and plastic; few fine roots; common very fine tubular pores; few faint clay films on faces of peds; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk1—19 to 30 inches; very pale brown (10YR 7/3) silty clay loam, pale brown (10YR 6/3) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and plastic; few fine roots; few very fine tubular pores; violently effervescent; 20 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

Bk2—30 to 41 inches; pink (7.5YR 7/3) silty clay loam, light brown (7.5YR 6/4) moist; massive; hard, firm, slightly sticky and plastic; few fine roots; few very fine tubular pores; 5 percent gravel; violently effervescent; 35 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

Bk3—41 to 60 inches; very pale brown (10YR 7/3) silty clay loam, light yellowish brown (10YR 6/4) moist; massive; hard, firm, slightly sticky and plastic; few very fine roots; few very fine tubular pores; 5 percent gravel; violently effervescent; 30 percent calcium carbonate equivalent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 13 inches
Depth to calcic horizon: 10 to 30 inches
Calcium carbonate equivalent: 20 to 30 percent in the calcic horizon
Content of rock fragments in the control section: 0 to 10 percent
Content of clay in the argillic horizon: 25 to 35 percent

A horizon:
Hue—7.5YR or 10YR
Value—3 to 5 dry, 2 or 3 moist
Chroma—1 or 2
Reaction—neutral or slightly alkaline

Bt horizon:
Hue—7.5YR or 10YR
Value—5 to 7 dry, 4 to 6 moist
Chroma—2 to 4
Texture—clay loam or loam
Reaction—slightly alkaline or moderately alkaline

Bk horizon:
Hue—7.5YR or 10YR
Value—6 to 8 dry, 5 to 7 moist
Chroma—1 to 4
Texture—loam, silty clay loam, or clay loam
Calcium carbonate equivalent—20 to 40 percent
Reaction—moderately alkaline or strongly alkaline

Fluvaquents

Setting

Depth class: very deep
Drainage class: very poorly drained
Parent material: alluvium derived from various sources
Landform: flood plains and oxbows
Slope: 0 to 1 percent
Average annual precipitation: 5 to 14 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 4,700 to 6,000 feet

Taxonomic class: Fluvaquents

Typical Pedon

No profile of Fluvaquents is typical, but one commonly observed is in an area of Tsetaa Family-Bankard Family-Fluvaquents complex, 0 to 45 percent slopes, very stony, about 3,400 feet east and 2,000 feet south of the northeast corner, section 11, T. 8 N., R. 103 W., NMPM (site is in a non-sectioned area) latitude 40 degrees, 39 minutes, 41 seconds N. and longitude 108 degrees, 55 minutes, 0 seconds W.

A—0 to 5 inches; light yellowish brown (10YR 6/4) fine sand, brown (10YR 4/3) moist; single grained; loose; many fine, medium, and coarse roots; few very fine interstitial pores; calcium carbonate is disseminated; strongly effervescent; slightly alkaline; gradual wavy boundary.

C1—5 to 22 inches; light yellowish brown (10YR 6/4) loamy fine sand, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine, few fine, medium, and coarse roots; few very fine interstitial pores; calcium carbonate is disseminated; common medium faint brownish yellow (10YR 6/6) and dark yellowish brown (10YR 4/6) redoximorphic concentrations; strongly effervescent; moderately alkaline; clear wavy boundary.

C2—22 to 30 inches; light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few very fine interstitial pores; calcium carbonate is disseminated; slightly effervescent; many medium prominent yellowish red (5YR 4/6) redoximorphic concentrations; slightly alkaline; abrupt wavy boundary.

C3—30 to 36 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; massive; soft, friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; few very fine interstitial pores; calcium carbonate is disseminated; slightly effervescent; many medium prominent yellowish red (5YR 4/6) and few fine faint dark grayish brown (10YR 4/2) redoximorphic concentrations; moderately alkaline; abrupt wavy boundary.

C4—36 to 43 inches; brown (10YR 4/3) fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; few very fine interstitial pores; calcium carbonate is disseminated; slightly effervescent; many medium prominent yellowish red (5YR 4/6) and few fine faint dark grayish brown (10YR 4/2) redoximorphic concentrations; moderately alkaline; clear wavy boundary.
C5—43 to 50 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; massive; soft, friable, slightly sticky and slightly plastic; common very fine and few fine roots; few very fine interstitial pores; calcium carbonate is disseminated; slightly effervescent; many medium prominent yellowish red (5YR 4/6) and few fine faint dark grayish brown (10YR 4/2) redoximorphic concentrations; slightly alkaline; abrupt wavy boundary.
C6—50 to 60 inches; brown (10YR 5/3) sand, brown (10YR 4/3) moist; single grained; loose; few very fine roots; few very fine interstitial pores; calcium carbonate is disseminated; slightly effervescent; common medium prominent yellowish red (5YR 4/6) redoximorphic concentrations; slightly alkaline.

Range in Characteristics

Content of rock fragments in the control section: 0 to 65 percent
Content of clay in the control section: 0 to 27 percent
Depth to a seasonal high water table: 0 to 18 inches
Ponding depth above the surface: 0 to 12 inches

A horizon:
Hue—5YR to 10YR
Value—3 to 6 dry, 2 to 5 moist
Chroma—1 to 4
Reaction—neutral to moderately alkaline

C horizon:
Hue—5YR to 10YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—1 to 4
Texture—sand, fine sand, loamy fine sand, fine sandy loam, loam, or silt loam modified by 0 to 65 percent gravel or cobbles
Reaction—neutral to moderately alkaline

Forsey Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium or colluvium derived from sandstone
Landform: mountain slopes
Slope: 12 to 35 percent
Average annual precipitation: 16 to 18 inches
Average annual air temperature: 37 to 40 degrees F
Elevation: 7,000 to 9,000 feet

Taxonomic class: loamy-skeletal, mixed, superactive Argic Cryoborolls

Typical Pedon

Forsey cobbly sandy loam in an area of Forsey-Libeg complex, 3 to 25 percent slopes, very stony, in the Moffat County soil survey area, about 2,100 feet east and

2,000 feet north of the southwest corner, section 5, T. 11 N., R. 102 W., NMPM latitude 40 degrees, 56 minutes, 28 seconds N. and longitude 108 degrees, 53 minutes, 20 seconds W.

A—0 to 2 inches; brown (10YR 5/3) cobbly sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; few fine interstitial pores; 10 percent gravel, 10 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.

AB—2 to 8 inches; brown (7.5YR 5/3) cobbly sandy loam, dark brown (7.5YR 3/2) moist; weak coarse subangular blocky structure parting to moderate medium granular; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots; few very fine pores; 15 percent gravel, 10 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.

Bt1—8 to 18 inches; brown (7.5YR 5/4) very cobbly sandy clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; common fine tubular pores; few faint clay films on faces of peds; 20 percent gravel, 20 percent cobbles, and 10 percent stones; neutral; clear wavy boundary.

Bt2—18 to 24 inches; brown (7.5YR 5/4) very cobbly sandy loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few fine roots; common fine tubular pores; few faint clay films bridging sand grains; 25 percent gravel, 20 percent cobbles, and 10 percent stones; neutral; clear wavy boundary.

Bk—24 to 60 inches; light brown (7.5YR 6/4) very cobbly sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; 25 percent gravel, 25 percent cobbles, and 10 percent stones; carbonate coatings on rock fragments; calcium carbonate is disseminated; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 10 inches
Depth to carbonates: 20 to 30 inches
Depth to an argillic horizon: 6 to 11 inches
Content of rock fragments in the control section: 35 to 60 percent
Content of clay in the control section: 18 to 27 percent

A horizon:
Hue—7.5YR or 10YR
Value—4 or 5 dry, 2 or 3 moist
Chroma—2 or 3
Reaction—neutral or slightly alkaline

Bt horizon:
Hue—7.5YR or 10YR
Value—5 or 6 dry, 3 or 4 moist
Chroma—2 to 4
Texture—very cobbly sandy loam or very cobbly sandy clay loam
Reaction—neutral or slightly alkaline

Bk horizon:
Hue—7.5YR to 10YR
Value—4 to 6
Chroma—2 to 4
Texture—very cobbly sandy loam or very cobbly sandy clay loam

Note: The Forsey soils in this area are outside the series because the precipitation is outside the xeric moisture regime. This difference, however, does not significantly affect the use or management of the soils.

Grapit Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: slope alluvium and colluvium derived from limestone
Landform: hills and valleys
Slope: 12 to 75 percent
Average annual precipitation: 12 to 14 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,300 to 8,500 feet

Taxonomic class: loamy-skeletal, carbonatic Aridic Calciborolls

Typical Pedon

Grapit gravelly loam in an area of Cragnot-Pensore-Grapit association, 6 to 75 percent slopes, very stony, about 275 feet west and 1,300 feet north of the southeast corner, section 29, T. 6 N., R. 100 W., NMPM latitude 40 degrees, 26 minutes, 19 seconds N. and longitude 108 degrees, 38 minutes, 41 seconds W. The surface is covered with limestone rock fragments, consisting of 15 percent gravel and 20 percent cobbles.

A—0 to 5 inches; brown (7.5YR 5/2) gravelly loam, dark brown (7.5YR 3/2) moist; moderate medium granular structure; soft; very friable, slightly sticky and slightly plastic; common fine roots; 20 percent gravel and 5 percent cobbles; slightly alkaline; clear smooth boundary.

AB—5 to 14 inches; brown (7.5YR 5/3) very gravelly loam, dark brown (7.5YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common fine and medium, few coarse roots; 30 percent gravel and 10 percent cobbles; very few fine irregular calcium carbonate threads; strongly effervescent; 28 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

Bk1—14 to 30 inches; light brown (7.5YR 6/3) extremely gravelly loam, brown (7.5YR 5/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common fine and medium roots; common very fine and fine tubular pores; 45 percent gravel and 20 percent cobbles; common fine and medium irregular soft masses of calcium carbonate; violently effervescent; 49 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

Bk2—30 to 54 inches; pink (7.5YR 7/3) extremely cobbly loam, light brown (7.5YR 6/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; few very fine tubular pores; 20 percent gravel and 50 percent cobbles; many medium and coarse irregular soft masses of calcium carbonate; violently effervescent; 42 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

C—54 to 60 inches; light brown (7.5YR 6/3) very cobbly loam, brown (7.5YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few very fine tubular pores; 15 percent gravel and 30 percent cobbles; few fine irregular soft masses of calcium carbonate; strongly effervescent; 21 percent calcium carbonate equivalent; strongly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 15 inches
Depth to calcic horizon: 7 to 15 inches
Calcium carbonate equivalent in the control section: 40 to 50 percent
Content of rock fragments in the control section: 35 to 80 percent
Content of clay in the control section: 18 to 27 percent

A horizon:
Value—2 or 3 moist
Chroma—2 or 3 dry, 1 to 3 moist
Reaction—slightly alkaline or moderately alkaline

Bk horizon:
Value—5 to 7 dry, 5 or 6 moist
Chroma—2 to 6
Texture—loam or silt loam modified by 35 to 80 percent gravel, cobbles, or channers
Reaction—moderately alkaline or strongly alkaline

C horizon (if present):
Value—6 or 7 dry, 5 or 6 moist
Chroma—3 to 6
Texture—sandy loam or loam modified by 35 to 70 64 percent gravel, cobbles, channers, stones, or flagstones
Reaction—moderately alkaline or strongly alkaline

Green River Series

Setting

Depth class: very deep
Drainage class: moderately well drained
Parent material: alluvium
Landform: flood plains
Slope: 0 to 2 percent
Average annual precipitation: 5 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 4,700 to 5,800 feet

Taxonomic class: coarse-loamy, mixed, superactive, calcareous, mesic Oxyaquic Torrifluvents

Typical Pedon

Green River-Fluvaquents complex, 0 to 2 percent slopes, about 600 feet west and 2,300 feet north of the southeast corner of section 32, T. 3 S., R. 25 E., SLBM latitude 40 degrees, 30 minutes, 54 seconds N. and longitude 109 degrees, 7 minutes, 40 seconds W.

A—0 to 5 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, few medium roots; common very fine and fine, few medium tubular pores; calcium carbonate is disseminated; very slightly effervescent; few fine distinct brownish yellow (10YR 6/6) redoximorphic concentrations; moderately alkaline; clear smooth boundary.

C1—5 to 13 inches; pale brown (10YR 6/3) loamy very fine sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, few fine and medium roots; common very fine and fine tubular pores; calcium carbonate is disseminated; slightly effervescent; few fine distinct brownish yellow (10YR 6/6) redoximorphic concentrations; strongly alkaline; abrupt wavy boundary.

C2—13 to 19 inches; pale brown (10YR 6/3) loamy fine sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, few fine and medium roots; common very fine, few fine tubular pores; calcium carbonate is disseminated; very slightly effervescent; few fine distinct brownish yellow (10YR 6/6) redoximorphic concentrations; moderately alkaline; clear wavy boundary.

C3—19 to 30 inches; light olive brown (2.5Y 5/3) very fine sandy loam, olive brown (2.5Y 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; few very fine, fine, and medium roots; few very fine and fine tubular pores; calcium carbonate is disseminated; slightly effervescent; common fine prominent brownish yellow (10YR 6/6) redoximorphic concentrations; strongly alkaline; clear wavy boundary.

C4—30 to 41 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few very fine and fine tubular pores; calcium carbonate is disseminated; very slightly effervescent; common fine distinct brownish yellow (10YR 6/6) redoximorphic concentrations; moderately alkaline; abrupt irregular boundary.

C5—41 to 57 inches; light yellowish brown (10YR 6/4) stratified loamy fine sand to sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; common very fine, few fine interstitial and tubular pores; calcium carbonate is disseminated; very slightly effervescent; few fine distinct dark yellowish brown (10YR 4/6) redoximorphic concentrations; moderately alkaline; abrupt wavy boundary.

C6—57 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine, common fine, few medium tubular pores; calcium carbonate is disseminated; slightly effervescent; few fine distinct dark yellowish brown (10YR 4/6) redoximorphic concentrations; moderately alkaline.

Range in Characteristics

Depth to a water table: 20 to 60 inches
Content of clay in the control section: 5 to 18 percent

A horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6 dry, 3 to 5 moist
Chroma—2 or 3
Texture—loam or fine sandy loam
Salinity—2 to 16 millimhos per centimeters
Reaction—moderately alkaline or strongly alkaline

C horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7 dry, 3 to 5 moist
Chroma—2 to 6

Texture—stratified layers of loam to loamy fine sand (some pedons have thin layers of sand to silt modified by 0 to 40 percent gravel or cobbles below 40 inches)
Salinity—4 to 16 millimhos per centimeter
Reaction—moderately alkaline or strongly alkaline

Hackling Series

Setting

Depth class: shallow
Drainage class: well drained
Parent material: residuum and colluvium derived from interbedded calcareous sandstone and limestone
Landform: mountains, fan remnants, and structural benches
Slope: 5 to 45 percent
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 5,800 to 8,400 feet

Taxonomic class: loamy-skeletal, mixed, superactive, frigid Aridic Lithic Ustochrepts

Typical Pedon

Hackling gravelly sandy loam in an area of Rock outcrop-Hackling complex, 10 to 45 percent slopes, very stony, about 1,800 feet west and 500 feet south of the northeast corner of section 32, T. 9 N., R. 102 W., NMPM latitude 40 degrees, 42 minutes, 7 seconds N. and longitude 108 degrees, 52 minutes, 59 seconds W. The surface is covered with limestone and sandstone rock fragments, consisting of 30 percent gravel, 15 percent cobbles, and 2 percent stones.

A—0 to 1 inch; dark reddish brown (2.5YR 4/3) gravelly sandy loam, dark reddish brown (2.5YR 3/3) moist, weak medium platy structure; soft, very friable, nonsticky and nonplastic; many very fine roots; few very fine vesicular pores; 20 percent gravel; calcium carbonate is disseminated; strongly effervescent; slightly alkaline; clear smooth boundary.
Bk1—1 inch to 4 inches; reddish brown (2.5YR 4/4) very gravelly sandy loam, dark reddish brown (2.5YR 3/4) moist, weak very fine subangular structure; slightly hard, friable, nonsticky and nonplastic; many fine and medium roots; few very fine vesicular pores; 35 percent gravel and 5 percent cobbles; calcium carbonate is disseminated; 3 percent calcium carbonate equivalent; strongly effervescent; slightly alkaline; clear smooth boundary.
Bk2—4 to 15 inches; reddish brown (2.5YR 5/3) extremely cobbly sandy loam, reddish brown (2.5YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and 66 slightly plastic; many fine and medium, common coarse roots; few very fine vesicular pores; 40 percent gravel and 25 percent cobbles; 50 percent calcium carbonate coatings on rock fragments; calcium carbonate is disseminated; 16 percent calcium carbonate equivalent; violently effervescent; moderately alkaline; abrupt smooth boundary.
R—15 inches; Hard fractured calcareous sandstone.

Range in Characteristics

Depth to bedrock: 10 to 20 inches
Content of rock fragments in the control section: 35 to 70 percent
Content of clay in the control section: 10 to 18 percent

A horizon:
Hue—2.5YR or 5YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—2 to 4

Bk horizon:
Hue—2.5YR or 5YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—3 to 6
Texture—loam or sandy loam modified by 35 to 70 percent gravel or cobbles

Hanksville Series

Setting

Depth class: moderately deep
Drainage class: well drained
Parent material: colluvium over residuum
Landform: hillslopes
Slope: 25 to 50 percent
Average annual precipitation: 5 to 8 inches
Average annual air temperature: 45 to 47 degrees F
Elevation: 4,800 to 5,100 feet

Taxonomic class: fine, mixed, active, calcareous, mesic Typic Torriorthents

Typical Pedon

Hanksville silty clay loam, 2 to 25 percent slopes, in the Uintah Area soil survey, about 800 feet south and 550 feet east of the northwest corner of section 22, T. 4 S., R. 22 E., SLBM latitude 40 degrees, 27 minutes, 42 seconds N. and longitude 109 degrees, 26 minutes, 24 seconds W.

A—0 to 3 inches; very pale brown (10YR 7/4) silty clay loam, light olive brown (2.5Y 5/4) moist; weak thin platy structure parting to moderate very fine subangular blocky; soft, very friable, sticky and plastic; few medium, fine, and very fine roots; many very fine interstitial pores; calcium carbonate is disseminated; strongly effervescent; strongly alkaline; clear smooth boundary.

Cy—3 to 13 inches; very pale brown (10YR 7/3) silty clay, light olive brown (2.5Y 5/4) moist; weak coarse prismatic structure parting to weak medium and fine subangular blocky; hard, firm, sticky and plastic; few fine, common very fine roots; few fine, common very fine tubular pores; common medium gypsum crystals and veins; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; gradual smooth boundary.

C—13 to 33 inches; pale brown (10YR 6/3) silty clay, olive brown (2.5Y 4/4) moist; weak coarse prismatic structure parting to medium and coarse subangular blocky; very hard, very firm, very sticky and very plastic; few fine and very fine roots; few fine, common very fine tubular pores; many coarse gypsum crystals; calcium carbonate is disseminated; strongly effervescent; strongly alkaline; clear wavy boundary.

Cr—33 inches; highly fractured soft shale.

Range in Characteristics

Depth to paralithic contact: 20 to 40 inches

A horizon:
Hue—10YR to 5Y
Value—6 or 7 dry, 4 or 5 moist
Chroma—2 to 4
Reaction—strongly alkaline or very strongly alkaline

Cy horizon:
Hue—10YR to 5Y
Value—6 or 7 dry, 4 or 5 moist
Chroma—2 to 4
Texture—clay, silty clay, or silty clay loam
Pararock fragments—20 to 90 percent
Reaction—strongly alkaline or very strongly alkaline

C horizon:
Hue—10YR to 5Y
Value—5 to 7 dry, 3 to 5 moist
Chroma—2 to 4
Texture—clay, silty clay, or silty clay loam
Reaction—strongly alkaline or very strongly alkaline

Haploborolls

Setting

Depth class: very shallow to moderately deep
Drainage class: well drained
Parent material: colluvium and residuum derived from sandstone
Landform: mountains
Slope: 10 to 40 percent
Average annual precipitation: 12 to 18 inches
Average annual air temperature: 40 to 45 degrees F
Elevation: 6,400 to 8,000 feet

Taxonomic class: Haploborolls

Typical Pedon

Haploborolls in an area of Rock outcrop-Haploborolls complex, 10 to 40 percent slopes, about 1,700 feet west and 700 feet south of the northeast corner, section 26, T. 6 N., R. 101 W., NMPM latitude 40 degrees, 26 minutes, 54 seconds N. and longitude 108 degrees, 42 minutes, 25 seconds W.

Oi—0 to 3 inches; slightly decomposed plant material; abrupt smooth boundary.
A—3 to 7 inches; dark brown (7.5YR 3/3) stony loamy fine sand, dark brown (7.5YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few fine and medium roots; few very fine interstitial pores; 10 percent gravel, 10 percent cobbles, and 10 percent stones; neutral; clear wavy boundary.
C—7 to 10 inches; brown (7.5YR 4/3) cobbly loamy fine sand, brown (7.5YR 4/3) moist; single grained; loose; few fine and medium roots; few very fine interstitial pores; 10 percent gravel, 10 percent cobbles, and 4 percent stones; neutral; abrupt irregular boundary.
R—10 inches; hard sandstone.

Range in Characteristics

Thickness of the mollic epipedon: 4 to 15 inches
Depth to bedrock: 4 to 30 inches
Content of rock fragments in the control section: 0 to 60 percent

A horizon:
Hue—2.5YR to 7.5YR
Value—3 or 4 dry, 2 or 3 moist
Chroma—2 or 3
Reaction—slightly acid to slightly alkaline

Bw and C horizons:
Hue—2.5YR to 7.5YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—3 to 6
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or sandy clay loam modified by 0 to 60 percent gravel, cobbles, channers, stones, or flagstones
Reaction—neutral or slightly alkaline

Holter Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium or colluvium derived from limestone and sandstone
Landform: mountains
Slope: 10 to 25 percent
Average annual precipitation: 15 to 17 inches
Average annual air temperature: 40 to 45 degrees F
Elevation: 7,000 to 8,200 feet

Taxonomic class: loamy-skeletal, mixed, superactive Typic Argiborolls

Typical Pedon

Holter very stony fine sandy loam in an area of Holter-Detra complex, 3 to 25 percent slopes, extremely stony, in the Moffat County soil survey area, about 800 feet east and 1,800 feet south of the northwest corner, section 6, T. 5 N., R. 101 W., NMPM latitude 40 degrees, 24 minutes, 59 seconds N. and longitude 108 degrees, 47 minutes, 35 seconds W.

A—0 to 3 inches; brown (7.5YR 4/2) very stony fine sandy loam, dark brown (7.5YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few fine interstitial pores; 10 percent gravel, 10 percent cobbles, and 15 percent stones; neutral; clear smooth boundary.

AB—3 to 10 inches; brown (7.5YR 4/3) very stony fine sandy loam, dark brown (7.5YR 3/2) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; few fine interstitial pores; 15 percent gravel, 10 percent cobbles, and 10 percent stones; slightly alkaline; clear smooth boundary.

Bt1—10 to 16 inches; reddish brown (5YR 4/4) very cobbly clay loam, dark reddish brown (5YR 3/4) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; slightly hard, friable, sticky and plastic; common fine and medium roots; common fine tubular pores; very few faint clay films on faces of peds; 15 percent gravel, 15 percent cobbles, and 10 percent stones; slightly alkaline; gradual wavy boundary.

Bt2—16 to 23 inches; yellowish red (5YR 4/6) extremely cobbly clay loam, yellowish red (5YR 4/6) moist; weak medium subangular blocky structure parting to moderate fine subangular blocky; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; very few faint clay films on faces of peds; 25 percent gravel, 30 percent cobbles, and 15 percent stones; slightly alkaline; clear smooth boundary.

Btk—23 to 29 inches; yellowish red (5YR 5/6) extremely cobbly sandy clay loam, yellowish red (5YR 4/6) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; slightly hard, firm, sticky and plastic; few fine roots; few fine tubular pores; very few faint clay films on faces of peds; 25 percent gravel, 30 percent cobbles, and 15 percent stones; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk1—29 to 36 inches; reddish yellowish (5YR 6/6) extremely cobbly sandy clay loam, yellowish red (5YR 5/6) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; slightly hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; 25 percent gravel, 40 percent cobbles, and 10 percent stones; calcium carbonate is disseminated; violently effervescent; moderately alkaline; gradual smooth boundary.

Bk2—36 to 45 inches; reddish yellowish (5YR 6/6) extremely cobbly loam, yellowish red (5YR 5/6) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 25 percent gravel, 40 percent cobbles, and 10 percent stones; calcium carbonate is disseminated; violently effervescent; moderately alkaline; gradual smooth boundary.

Bk3—45 to 60 inches; reddish yellowish (5YR 6/6) extremely cobbly loam, reddish yellowish (5YR 6/6) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 25 percent gravel, 40 percent cobbles, and 10 percent stones; calcium carbonate is disseminated; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 15 inches
Depth to carbonates: 20 to 35 inches
Content of rock fragments in the control section: 60 to 70 percent
Content of clay in the control section: 27 to 35 percent

A horizon:
- Hue—7.5YR or 10YR
- Value—4 or 5 dry, 2 or 3 moist
- Chroma—2 or 3
- Reaction—neutral or slightly alkaline

Bt horizon:
- Hue—5YR or 7.5YR
- Value—4 to 6 dry, 3 to 5 moist
- Chroma—3 or 4
- Texture—sandy clay loam or clay loam modified by 60 to 70 percent cobbles, channers, or stones
- Reaction—neutral or slightly alkaline

Bk horizon:
Hue—5YR or 7.5YR
Value—5 to 7 dry, 4 to 6 moist
Chroma—4 to 6
Texture—loam or sandy clay loam modified by 60 to 70 percent cobbles, channers, or stones
Reaction—moderately alkaline or strongly alkaline

Iogoon Series

Setting

Depth class: very deep
Drainage class: moderately well drained
Parent material: alluvium derived from sedimentary rocks
Landform: flood plains
Slope: 2 to 5 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 44 to 49 degrees F
Elevation: 5,000 to 5,600 feet

Taxonomic class: loamy-skeletal, mixed, superactive, calcareous, mesic Oxyaquic Torrifluvents

Typical Pedon

Iogoon fine sandy loam in an area of Notlic-Iogoon-Labyrinth complex, 2 to 5 percent slopes, extremely stony, about 1,700 feet north and 1,800 feet west of the southeast corner of section 13, T. 3 S., R. 25 E., SLBM latitude 40 degrees, 33 minutes, 21 seconds N. and longitude 109 degrees, 3 minutes, 27 seconds W. The surface is covered with limestone and sandstone rock fragments, consisting of 5 percent gravel and 5 percent cobbles.

A—0 to 5 inches; brown (7.5YR 5/2) fine sandy loam, dark brown (7.5YR 3/2) moist; weak medium subangular blocky structure parting to weak fine and very fine subangular blocky; soft, very friable, nonsticky and nonplastic; common very fine, few fine and medium roots; many very fine, few fine tubular pores; 5 percent gravel; slightly effervescent; 3 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; clear wavy boundary.

C1—5 to 11 inches; brown (7.5YR 5/3) gravelly fine sandy loam, brown (7.5YR 4/3) moist; weak medium subangular blocky structure parting to weak fine and very fine subangular blocky; soft, very friable, nonsticky and nonplastic; many very fine, few fine and medium roots; many very fine, few fine tubular pores; 20 percent gravel and 5 percent cobbles; slightly effervescent; 6 percent calcium carbonate equivalent; calcium carbonate is disseminated; strongly alkaline; clear wavy boundary.

C2—11 to 32 inches; brown (7.5YR 5/3) extremely cobbly fine sandy loam, brown (7.5YR 4/3) moist; weak medium subangular blocky structure parting to weak fine and very fine subangular blocky; soft, very friable, nonsticky and nonplastic; many very fine, few fine and medium roots; many very fine, common fine, few medium tubular and interstitial pores; 40 percent gravel, 20 percent cobbles, and 5 percent stones; slightly effervescent; 8 percent calcium carbonate equivalent; calcium carbonate is disseminated; strongly alkaline; abrupt wavy boundary.

C3—32 to 47 inches; brown (7.5YR 5/3) fine sandy loam with stratified thin lenses of sandy loam to loam, brown (7.5YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; common very fine, few fine tubular pores; 5 percent gravel; slightly effervescent; 5 percent calcium carbonate equivalent; calcium carbonate is disseminated; common fine and medium prominent reddish yellow (7.5YR 6/8) redoximorphic concentrations; strongly alkaline; gradual wavy boundary.
C4—47 to 60 inches; brown (7.5YR 5/3) gravelly fine sandy loam, brown (7.5YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; common very fine, few fine tubular pores; 15 percent gravel and 5 percent cobbles; slightly effervescent; 5 percent calcium carbonate equivalent; calcium carbonate is disseminated; few fine prominent strong brown (7.5YR 5/8) redoximorphic concentrations; strongly alkaline.

Range in Characteristics

Depth to a seasonal high water table: 40 to 60 inches
Content of clay in the control section: 5 to 13 percent
Content of rock fragments in the control section: 35 to 80 percent

A horizon:
Hue—7.5YR or 10YR
Value—5 or 6 dry, 3 to 5 moist
Chroma—2 or 4
Reaction—moderately alkaline or strongly alkaline

C horizon:
Hue—7.5YR or 10YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—3 or 4
Texture—fine sandy loam, loamy fine sand, or sandy loam modified by 35 to 80 percent gravel or cobbles. Some pedons have stratified thin lenses of loam, silt loam, or silty clay loam.
Reaction—moderately alkaline or strongly alkaline

Ironco Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: colluvium derived from sandstone
Landform: mountains
Slope: 25 to 50 percent
Average annual precipitation: 16 to 18 inches
Average annual air temperature: 40 to 43 degrees F
Elevation: 7,000 to 8,000 feet

Taxonomic class: loamy-skeletal, mixed, superactive Aridic Argiborolls

Typical Pedon

Ironco very bouldery loam in an area of Ironco-Mulgon, dry complex, 25 to 50 percent slopes, extremely bouldery, in the Moffat County soil survey area, about 1,000 feet east and 1,900 feet north of the southwest corner, section 30, T. 9 N., R. 103 W., NMPM latitude 40 degrees, 42 minutes, 31 seconds N. and longitude 109 degrees, 1 minute 32 seconds W.

A1—0 to 4 inches; brown (7.5YR 4/2) very bouldery loam, dark brown (7.5YR 3/2) moist; weak medium subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine tubular pores; 15 percent gravel, 15 percent cobbles, 10 percent stones, and 10 percent boulders; neutral; clear smooth boundary.

A2—4 to 10 inches; dark reddish gray (5YR 4/2) very bouldery loam, dark reddish brown (5YR 3/2) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine tubular pores; 15 percent gravel, 15 percent cobbles, 10 percent stones, and 10 percent boulders; neutral; abrupt smooth boundary.

Bt1—10 to 31 inches; red (2.5YR 5/6) very stony clay loam, red (2.5YR 4/6) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, firm, sticky and plastic; common very fine and fine roots; common very fine tubular pores; very few faint clay films on faces of peds and bridging sand grains; 15 percent gravel, 15 percent cobbles, 15 percent stones, and 5 percent boulders; neutral; gradual smooth boundary.

Bt2—31 to 60 inches; light red (2.5YR 6/6) very stony clay loam, red (2.5YR 5/6) moist; moderate coarse subangular blocky structure parting to moderate medium subangular blocky; hard, firm, sticky and plastic; few very fine and fine roots; few very fine tubular pores; very few faint clay films on faces of peds and bridging sand grains; 15 percent gravel, 15 percent cobbles, 15 percent stones, and 5 percent boulders; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 14 inches
Content of rock fragments in the control section: 35 to 50 percent
Content of clay in the control section: 27 to 35 percent

A horizon:
Hue—5YR to 10YR
Value—4 or 5 dry, 2 or 3 moist
Chroma—1 to 3
Reaction—neutral or slightly alkaline

Bt horizon:
Hue—2.5YR or 5YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—3 to 6
Texture—very stony sandy clay loam or very stony clay loam
Reaction—slightly acid or neutral

Note: This Ironco soil is a taxadjunct to the Ironco series because this soil has precipitation and vegetation that is more typical of Typic Ustic rather than of Aridic Ustic.

Labyrinth Series

Setting

Depth class: very deep
Drainage class: moderately well drained
Parent material: alluvium derived from sandstone
Landform: flood plains
Slope: 2 to 5 percent

Average annual precipitation: 8 to 12 inches
Average annual air temperature: 44 to 49 degrees F
Elevation: 5,000 to 5,600 feet

Taxonomic class: sandy, mixed, mesic Oxyaquic Torrifluvents

Typical Pedon

Labyrinth fine sandy loam in an area of Notlic-Iogoon-Labyrinth complex, 2 to 15 percent slopes, extremely stony, about 800 feet south and 700 feet east of the northwest corner of section 13, T. 3 S., R. 25 E., SLBM latitude 40 degrees, 33 minutes, 49seconds N. and longitude 109 degrees, 3 minutes, 57 seconds W.

A—0 to 6 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak thin platy structure parting to weak fine and very fine subangular blocky; soft, very friable, nonsticky and nonplastic; many very fine and fine, few medium and coarse roots; many very fine, common fine, few medium tubular pores; slightly effervescent; 3 percent calcium carbonate equivalent; calcium carbonate is disseminated; strongly alkaline; clear wavy boundary.

C1—6 to 16 inches; yellowish brown (10YR 5/4) loamy very fine sand, brown (10YR 4/3) moist; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, few medium and coarse roots; many very fine, few fine and medium tubular pores; slightly effervescent; 2 percent calcium carbonate equivalent; calcium carbonate is disseminated; strongly alkaline; gradual wavy boundary.

C2—16 to 35 inches; light yellowish brown (10YR 6/4) loamy fine sand, brown (10YR 5/3) moist; weak fine and very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, few fine, medium, and coarse roots; common very fine, few fine tubular pores; 5 percent gravel; slightly effervescent; 2 percent calcium carbonate equivalent; calcium carbonate is disseminated; strongly alkaline; gradual wavy boundary.

C3—35 to 60 inches; brown (10YR 5/3) loamy fine sand with thin lenses of gravelly sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; common very fine, few fine tubular pores; 5 percent gravel and 5 percent soft weathered gravel-sized concretions; slightly effervescent; 4 percent calcium carbonate equivalent; calcium carbonate is disseminated and in few fine concentrations from parent material; few fine prominent strong brown (7.5YR 5/8) redoximorphic concentrations; moderately alkaline.

Range in Characteristics

Depth to a seasonal high water table: 40 to 60 inches
Content of clay in the control section: 0 to 10 percent
Content of rock fragments in the control section: 0 to 35 percent

A horizon:
Hue—7.5YR or 10YR
Value—4 to 7 dry, 3 to 5 moist
Chroma—2 or 3
Reaction—moderately alkaline or strongly alkaline

C horizon:
Hue—7.5YR or 10YR
Value—5 to 7 dry, 4 or 5 moist
Chroma—3 or 4

Texture—loamy fine sand, fine sand, or loamy very fine sand modified by 0 to 35 percent gravel or cobbles. Some pedons have stratified thin lenses of very fine sandy loam or fine sandy loam.
Reaction—moderately alkaline or strongly alkaline

Lakebench Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium and residuum derived from mixed sources
Landform: alluvial fans, cuestas, mesas, fan remnants, and structural benches
Slope: 3 to 30 percent
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,000 to 7,000 feet

Taxonomic class: coarse-loamy, mixed, superactive, frigid Haplocalcidic Ustochrepts

Typical Pedon

Lakebench silt loam in an area of Lakebench-Yampa complex, 5 to 30 percent slopes, very stony, about 100 feet east and 1,350 feet south of the northwest corner of section 24, T. 6 N., R. 100 W., NMPM latitude 40 degrees, 26 minutes, 45 seconds N. and longitude 108 degrees, 34 minutes, 45 seconds W. The surface is covered with limestone rock fragments, consisting of 5 percent gravel.

A—0 to 3 inches; brown (7.5YR 4/4) silt loam, dark brown (7.5YR 3/3) moist; moderate fine and medium granular structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine tubular pores; 5 percent gravel; strongly effervescent; 6 percent calcium carbonate equivalent; calcium carbonate is disseminated; slightly alkaline; clear smooth boundary.
Bk1—3 to 9 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine, common coarse roots; few very fine tubular pores; common fine irregular calcium carbonate threads throughout; violently effervescent; 21 percent calcium carbonate equivalent; slightly alkaline; abrupt smooth boundary.
Bk2—9 to 25 inches; pinkish white (7.5YR 8/2) loam, pink (7.5YR 7/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; many coarse and very coarse irregular soft calcium carbonate masses throughout; violently effervescent; 40 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.
Bk3—25 to 35 inches; pink (7.5YR 7/3) loam, light reddish brown (5YR 6/4) moist; weak fine and medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; few very fine tubular pores; many fine and medium irregular soft calcium carbonate masses throughout; violently effervescent; 24 percent calcium carbonate equivalent; moderately alkaline; gradual smooth boundary.

Bk4—35 to 45 inches; light reddish brown (5YR 6/3) loam, reddish brown (5YR 5/4) moist; weak fine and medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; few very fine tubular pores; many fine and medium irregular soft calcium carbonate masses throughout; violently effervescent; 24 percent calcium carbonate equivalent; moderately alkaline; gradual smooth boundary.
Bk5—45 to 50 inches; reddish brown (5YR 5/3) gravelly loam, reddish brown (5YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; few very fine tubular pores; 20 percent gravel; many fine irregular soft calcium carbonate masses throughout; violently effervescent; 21 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.
Bk6—50 to 60 inches; light reddish brown (5YR 6/4) loam, reddish brown (5YR 5/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; few fine and medium roots; few very fine tubular pores; many fine irregular soft calcium carbonate masses throughout; violently effervescent; 21 percent calcium carbonate equivalent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 60 or more inches

Depth to calcic horizon: 3 to 30 inches
Calcium carbonate equivalent in the control section: 15 to 40 percent
Content of rock fragments in the control section: 0 to 20 percent
Content of clay in the control section: 15 to 30 percent total clay with 10 to 18 percent as noncarbonate clay

A horizon:
Hue—5YR or 7.5YR
Value—3 to 5 dry, 2 to 4 moist
Chroma—3 to 5
Texture—loamy fine sand, fine sandy loam, or silt loam
Reaction—neutral or slightly alkaline

Bw horizon (if present):
Hue—5YR or 7.5YR
Value—3 to 6
Chroma—4 to 6
Texture—fine sandy loam or loam
Reaction—neutral to moderately alkaline

Bk horizons:
Hue—5YR or 7.5YR
Value—4 to 8 dry, 4 to 7 moist
Chroma—2 to 6
Texture—fine sandy loam, silt loam, loam, gravelly loam, or clay loam
Reaction—slightly alkaline to strongly alkaline

Layoint Series

Setting

Depth class: moderately deep
Drainage class: somewhat excessively drained
Parent material: eolian deposits over residuum derived from sandstone
Landform: plateaus

Slope: 1 to 8 percent
Average annual precipitation: 13 to 15 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 7,300 to 8,000 feet

Taxonomic class: sandy, mixed Aridic Haploborolls

Typical Pedon

Layoint loamy fine sand in an area of Layoint-Moosed-Berlake complex, 1 to 20 percent slopes, in the Moffat county soil survey area, about 1,100 feet east and 2,000 feet north of the southwest corner, section 27, T. 5 N., R. 102 W., NMPM latitude 40 degrees, 21 minutes, 13 seconds N. and longitude 108 degrees, 50 minutes, 53 seconds W.

A1—0 to 1 inch; reddish brown (5YR 5/3) loamy fine sand, dark reddish brown (5YR 3/2) moist; single grained; loose, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; neutral; abrupt smooth boundary.
A2—1 inch to 4 inches; reddish gray (5YR 5/2) loamy fine sand, dark reddish brown (5YR 3/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; neutral; abrupt smooth boundary.
A3—4 to 8 inches; reddish gray (5YR 5/2) loamy fine sand, dark reddish brown (5YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; neutral; clear wavy boundary.
AB—8 to 14 inches; reddish gray (5YR 5/2) loamy fine sand, dark reddish brown (5YR 3/3) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; slightly alkaline; gradual wavy boundary.
Bw1—14 to 24 inches; reddish brown (5YR 5/3) loamy fine sand, reddish brown (5YR 4/3) moist; weak medium prismatic structure parting to weak medium subangular blocky; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; slightly alkaline; clear wavy boundary.
Bw2—24 to 32 inches; light reddish brown (5YR 6/4) loamy fine sand, yellowish red (5YR 4/6) moist; weak medium prismatic structure parting to weak medium subangular blocky; slightly hard, friable, slightly sticky and nonplastic; few very fine and fine roots; few very fine interstitial pores; 10 percent gravel; slightly alkaline; abrupt wavy boundary.
R—32 inches; reddish yellow hard sandstone.

Range in Characteristics

Thickness of the mollic epipedon: 8 to 15 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments in the control section: 0 to 10 percent. A thin horizon with 15 to 60 percent rock fragments is present in some pedons immediately above the bedrock.

A horizon:
Hue—5YR or 7.5YR
Value—4 or 5 dry, 2 or 3 moist
Chroma—2 or 3
Reaction—neutral or slightly alkaline

Bw horizon:
Hue—5YR or 7.5YR
Value—5 to 7 dry, 4 or 5 moist
Chroma—3 to 6
Texture—loamy fine sand or loamy sand
Reaction—neutral or slightly alkaline

Lodore Series

Setting

Depth class: moderately deep
Drainage class: well drained
Parent material: residuum and alluvium derived from sandstone
Landform: mesas, cuestas, and hills
Slope: 3 to 45 percent
Average annual precipitation: 12 to 14 inches 76
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,200 to 7,400 feet

Taxonomic class: coarse-loamy, mixed, superactive, calcareous, frigid Aridic Ustorthents

Typical Pedon

Lodore gravelly loam in an area of Pensore-Lodore-Rock outcrop complex, 3 to 45 percent slopes, very stony, about 4,200 feet west and 4,100 feet south of the southwest corner, section 12, T. 7 N., R. 103 W., NMPM (non-sectioned area) latitude 40 degrees, 33 minutes, 19 seconds N. and long. 108 degrees, 56 minutes, 42 seconds W. The surface is covered with limestone rock fragments, consisting of 10 percent gravel, 30 percent cobbles, and 3 percent stones.

A—0 to 2 inches; reddish brown (5YR 4/4) gravelly loam, dark reddish brown (5YR 3/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine roots; few fine vesicular and tubular pores; 11 percent gravel and 5 percent cobbles; calcium carbonate is disseminated; strongly effervescent; slightly alkaline; clear wavy boundary.
C1—2 to 13 inches; reddish brown (5YR 4/4) loam, reddish brown (5YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; few fine vesicular and tubular pores; 5 percent gravel and 5 percent cobbles; few fine soft masses of calcium carbonate; violently effervescent; moderately alkaline; gradual wavy boundary.
C2—13 to 35 inches; reddish brown (5YR 5/4) loam, reddish brown (5YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; few fine vesicular and tubular pores; 5 percent gravel and 5 percent cobbles; few fine soft masses of calcium carbonate; violently effervescent; moderately alkaline.
R—35 inches; hard sandstone.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Content of rock fragments in the control section: 0 to 30 percent
Content of clay in the control section: 8 to 18 percent

A horizon:
Hue—5YR or 7.5YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—3 or 4
Reaction—slightly alkaline or moderately alkaline

C horizon:
Hue—5YR or 7.5YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—3 to 6
Texture—loam, sandy loam, or fine sandy loam modified by 0 to 30 percent gravel or cobbles
Reaction—moderately alkaline or strongly alkaline

Mantlemine Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium and residuum derived from interbedded limestone and sandstone
Landform: structural benches, alluvial fans, and fan remnants
Slope: 1 to 25 percent
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 42 to 46 degrees F
Elevation: 5,800 to 7,800 feet

Taxonomic class: fine-loamy, mixed, superactive, frigid Calcidic Haplustalfs

Typical Pedon

Mantlemine loam in an area of Mantlemine loam, 1 to 8 percent slopes, about 2,000 feet west and 3,900 feet north of the southeast corner, section 13, T. 6 N., R. 106 W., NMPM latitude 40 degrees, 20 minutes, 30 seconds N. and longitude 108 degrees, 1 minute 49 seconds W. The surface is covered with sandstone rock fragments consisting of 5 percent gravel.

A1—0 to 2 inches; brown (7.5YR 5/4) loam, dark brown (7.5YR 3/4) moist; moderate thin and medium platy structure parting to weak very fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine tubular pores; neutral; abrupt smooth boundary.

A2—2 to 5 inches; brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; moderate medium angular blocky structure parting to weak thick platy; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular pores; neutral; abrupt smooth boundary.

Bt—5 to 20 inches; brown (7.5YR 4/4) clay loam, dark brown (7.5YR 3/4) moist; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; common fine roots; common very fine tubular pores; few distinct clay films on faces of peds; slightly alkaline; abrupt smooth boundary.

Btk—20 to 25 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; very hard, firm, sticky and plastic; few fine roots; common very fine tubular pores; very few faint clay films on faces of peds; calcium carbonate is disseminated; strongly effervescent; 9 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Bk1—25 to 45 inches; light brown (7.5YR 6/3) clay loam, brown (7.5YR 5/3) moist; moderate fine and medium subangular blocky structure; very hard, firm, sticky and plastic; few fine roots; few very fine tubular pores; common fine irregular soft masses of calcium carbonate throughout; violently effervescent; 19 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.
Bk2—45 to 60 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; massive; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; calcium carbonate is disseminated; strongly effervescent; 11 percent calcium carbonate equivalent; moderately alkaline.

Range in Characteristics

Depth to calcic horizon: 15 to 30 inches
Depth to carbonates: 8 to 25 inches
Calcium carbonate equivalent in the calcic horizon: 15 to 25 percent
Depth to base of argillic horizon: 10 to 30 inches
Content of clay in the control section: 18 to 35 percent

A horizon:
Value—4 to 6 dry, 3 or 4 moist
Chroma—2 to 4
Texture—loam or fine sandy loam
Reaction—neutral or slightly alkaline

Bt horizon:
Value—4 to 6 dry, 3 or 4 moist
Chroma—2 to 4
Texture—clay loam, silt loam, or loam
Reaction—neutral or slightly alkaline

Btk horizon:
Value—5 to 7 dry, 4 to 6 moist
Chroma—2 to 4
Texture—clay loam, silt loam, or loam
Reaction—slightly alkaline or moderately alkaline

Bk horizon:
Value—5 to 7 dry, 4 to 6 moist
Chroma—2 to 6
Texture—clay loam, silt loam, or loam
Reaction—slightly alkaline or moderately alkaline

Marthaspeak Series

Setting

Depth class: moderately deep
Drainage class: somewhat excessively drained
Parent material: residuum derived from sandstone
Landform: mesas and cuestas
Slope: 1 to 45 percent
Average annual precipitation: 12 to 14 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,200 to 7,000 feet

Taxonomic class: Mixed, frigid Aridic Ustipsamments

Typical Pedon

Marthaspeak loamy fine sand in an area of Strell-Marthaspeak-Rock outcrop complex, 1 to 25 percent slopes, about 1,000 feet west and 2,600 feet south of the northeast corner, section 22, T. 6 N., R. 101 W., NMPM latitude 40 degrees, 28 minutes, 28 seconds N. and longitude 108 degrees, 43 minutes, 26 seconds W.

A—0 to 3 inches; brown (7.5YR 4/3) loamy fine sand, dark brown (7.5YR 3/3) moist, weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; very few fine vesicular and tubular pores; neutral; gradual wavy boundary.

C1—3 to 25 inches; brown (7.5YR 5/4) loamy fine sand, brown (7.5YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; very few fine vesicular and tubular pores; neutral; gradual wavy boundary.

C2—25 to 33 inches; brown (7.5YR 5/4) loamy fine sand, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; very few fine vesicular and tubular pores; neutral; abrupt smooth boundary.

R—33 inches; hard sandstone.

Range in Characteristics

Depth to bedrock: 20 to 40 inches

A horizon:
- Hue—7.5YR or 10YR
- Value—4 or 5 dry, 3 or 4 moist
- Chroma—3 or 4
- Reaction—neutral or slightly alkaline

C horizon:
- Hue—7.5YR or 10YR
- Value—4 to 6 dry or moist
- Chroma—3 to 6
- Texture—fine sand, loamy fine sand, or loamy sand
- Reaction—neutral or slightly alkaline

Massadona Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium derived from shale
Landform: hills
Slope: 2 to 8 percent
Average annual precipitation: 5 to 8 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 4,700 to 4,900 feet

Taxonomic class: fine, smectitic, mesic Typic Haplocambids

Typical Pedon

Masadona silty clay loam, 2 to 8 percent slopes, about 1,500 feet south and 500 feet east of the northwest corner of section 31, T. 4 S., R. 24 E., SLBM latitude 40 degrees, 25 minutes, 54 seconds N. and longitude 109 degrees, 16 minutes, 4 seconds W.

A—0 to 2 inches; light brownish gray (2.5Y 6/2) silty clay loam, dark grayish brown (2.5Y 4/2) moist; moderate thick platy structure parting to moderate fine and medium subangular blocky; very hard, firm, sticky and plastic; few fine and common very fine roots; few fine and common very fine vesicular pores; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; abrupt smooth boundary.

Bw—2 to 11 inches; light yellowish brown (2.5Y 6/3) silty clay, olive brown (2.5Y 4/3) moist; strong fine and medium subangular blocky structure; hard, very firm, very sticky and very plastic; few fine and common very fine roots; few fine and common very fine tubular pores; calcium carbonate is disseminated; strongly effervescent, moderately alkaline; clear wavy boundary.

Bk—11 to 20 inches; light yellowish brown (2.5Y 6/3) silty clay, olive brown (2.5Y 4/3) moist; weak medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine and very fine roots; few fine, common very fine tubular pores; calcium carbonate is disseminated as thin coatings on the undersides of pebbles; strongly effervescent; strongly alkaline; gradual wavy boundary.

C1—20 to 34 inches; light yellowish brown (2.5Y 6/3) silty clay, olive brown (2.5Y 4/3) moist; massive; very hard, very firm, very sticky and very plastic; few fine and very fine roots; few fine and very fine tubular pores; calcium carbonate is disseminated; strongly effervescent; strongly alkaline; gradual wavy boundary.

C2y—34 to 41 inches; light yellowish brown (2.5Y 6/3) silty clay, olive brown (2.5Y 4/3) moist; massive; extremely hard, very firm, very sticky and very plastic; few fine and very fine tubular pores; common irregular soft masses of gypsum; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; gradual wavy boundary.

C3y—41 to 60 inches; light yellowish brown (2.5Y 6/3) silty clay, olive brown (2.5Y 4/3) moist; massive; very hard, firm, sticky and plastic; many irregular soft masses of gypsum; calcium carbonate is disseminated; strongly effervescent; moderately alkaline.

Range in Characteristics

A horizon:

Hue—10YR or 2.5Y
Chroma—2 or 3
Reaction—moderately alkaline or strongly alkaline

Bw horizon:

Hue—10YR or 2.5Y
Texture—silty clay or silty clay loam
Reaction—moderately alkaline or strongly alkaline

Bk horizon:

Hue—10YR or 2.5Y
Texture—silty clay or silty clay loam

C horizon:
Hue—10YR or 2.5Y
Texture—silty clay or silty clay loam

Mellenthin Series

Setting

Depth class: very shallow or shallow
Drainage class: well drained
Parent material: colluvium over residuum derived from limestone and sandstone
Landform: fans remnants and structural benches
Slope: 3 to 45 percent
Average annual precipitation: 10 to 12 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,500 to 6,500 feet

Taxonomic class: loamy-skeletal, mixed, superactive, mesic Lithic Ustic Haplocalcids

Typical Pedon

Mellenthin very stony sandy loam in an area of Strych-Mellenthin complex, 3 to 45 percent slopes, very bouldery, about 3,200 feet east and 3,100 feet north of the northeast corner, section 16, T. 6 N., R. 101 W., NMPM (site is in a non-sectioned area) latitude 40 degrees, 29 minutes, 15 seconds N, and longitude 108 degrees, 43 minutes, 36 seconds W. The surface is covered with limestone and sandstone rock fragments, consisting of 10 percent gravel, 10 percent cobbles, 8 percent stones, and 2 percent boulders.

A—0 to 2 inches; brown (7.5YR 5/4) very stony sandy loam, brown (7.5YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; 10 percent gravel, 15 percent cobbles, and 10 percent stones; many fine and medium roots; few fine tubular pores; calcium carbonate is disseminated; 20 percent calcium carbonate equivalent; strongly effervescent; slightly alkaline; clear wavy boundary.
Bk—2 to 12 inches; brown (7.5YR 5/4) very stony sandy loam, brown (7.5YR 4/4) moist; weak fine subangular blocky structure parting to weak fine granular; many fine and medium roots; few fine tubular pores; 15 percent gravel, 15 percent cobbles, and 10 percent stones; few fine calcium carbonate threads; strongly effervescent; 28 percent calcium carbonate equivalent; moderately alkaline; abrupt irregular boundary.
R—12 inches; hard sandstone.

Range in Characteristics

Depth to bedrock: 8 to 20 inches
Content of rock fragments in the control section: 35 to 70 percent

A horizon:
Hue—5YR or 7.5YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—3 to 5
Reaction—slightly alkaline or moderately alkaline

Bk horizon:
Hue—5YR or 7.5YR
Value—5 to 7 dry, 4 to 6 moist
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, or loam modified by 35 to 70 percent gravel, cobbles, or stones
Reaction—moderately alkaline or strongly alkaline

Mespun Series

Setting

Depth class: very deep
Drainage class: excessively drained
Parent material: eolian deposits
Landform: hillslopes and fan remnants
Slope: 4 to 25 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 4,800 to 6,000 feet

Taxonomic class: siliceous, mesic Ustic Torripsamments

Typical Pedon

Mespun fine sand in an area of Arches-Mespun-Rock outcrop complex, 4 to 40 percent slopes, about 1,900 feet west and 600 feet north of the northeast corner of section 28, T. 4 S., R. 23 E., SLBM (site is in a non-sectioned area) latitude 40 degrees, 27 minutes, 8 seconds N. and longitude 109 degrees, 21 minutes, 36 seconds W.

A—0 to 3 inches; light brown (7.5YR 6/4) fine sand, brown (7.5YR 5/4) moist; weak thin platy structure; soft, loose, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; few very fine and fine tubular pores; slightly alkaline; abrupt smooth boundary.

C1—3 to 8 inches; light brown (7.5YR 6/4) fine sand, brown (7.5YR 5/4) moist; massive; soft, loose, nonsticky and nonplastic; few very fine, fine, and medium roots; many very fine, common fine, and few medium tubular pores; slightly alkaline; clear wavy boundary.

C2—8 to 19 inches; 8 to 19 inches; light brown (7.5YR 6/4) fine sand, brown (7.5YR 5/4) moist; massive; soft, loose, nonsticky and nonplastic; many very fine, common fine, and few medium roots; very fine, common fine, and few medium tubular pores; slightly alkaline; abrupt smooth boundary.

C3—19 to 21 inches; light brown (7.5YR 6/4) fine sand, brown (7.5YR 4/4) moist; massive; soft, loose, nonsticky and nonplastic; many very fine, common fine, and few medium roots; many very fine, common fine, and few medium tubular pores; moderately alkaline; abrupt smooth boundary.

C4—21 to 37 inches; light brown (7.5YR 6/4) fine sand, brown (7.5YR 5/4) moist; massive; soft, loose, nonsticky and nonplastic; few very fine, fine, and medium roots; common very fine, few fine tubular pores; moderately alkaline; clear smooth boundary.

C5—37 to 49 inches; light brown (7.5YR 6/4) fine sand, brown (7.5YR 5/4) moist; massive; soft, loose, nonsticky and nonplastic; few very fine and fine roots; common very fine, few fine tubular pores; moderately alkaline; gradual smooth boundary.

C6—49 to 60 inches; light brown (7.5YR 6/4) fine sand, brown (7.5YR 5/4) moist; massive; soft, loose, nonsticky and nonplastic; few very fine and fine roots; common very fine, few fine tubular pores; moderately alkaline.

Range in Characteristics

A horizon:
Value—5 or 6 dry, 3 to 5 moist
Chroma—3 to 6
Reaction—neutral to moderately alkaline

C horizon:
Hue—5YR or 7.5YR
Value—4 to 7 dry, 3 to 5 moist
Chroma—4 to 8
Texture—loamy fine sand or fine sand
Reaction—neutral to moderately alkaline

Mido Series

Setting

Depth class: very deep
Drainage class: excessively drained
Parent material: alluvium
Landform: hills
Slope: 3 to 12 percent
Average annual precipitation: 10 to 12 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,350 to 5,950 feet

Taxonomic class: mixed, mesic Ustic Torripsamments

Typical Pedon

Mido loamy fine sand, 3 to 12 percent slopes, about 3,350 feet west and 1,675 feet north of the southeast corner, section 16, T. 9 N., R. 102 W., NMPM latitude 40 degrees, 44 minutes, 12 seconds N. and longitude 108 degrees, 57 minutes, 8 seconds W.

A—0 to 8 inches; light brown (7.5YR 6/3) loamy fine sand, brown (7.5YR 5/3) moist; single grained; loose; many very fine roots; few very fine interstitial pores; calcium carbonate is disseminated; strongly effervescent; slightly alkaline; gradual smooth boundary.
C—8 to 60 inches; light brown (7.5YR 6/3) loamy fine sand, light brown (7.5YR 6/3) moist; massive; loose; few very fine roots; few very fine tubular pores; calcium carbonate is disseminated; strongly effervescent; slightly alkaline.

Range in Characteristics

A horizon:
Value—5 or 6 dry, 4 or 5 moist
Chroma—2 to 4

C horizon:
Value—5 or 6 dry, 4 or 5 moist
Chroma—2 to 4

Mikim Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium
Landform: alluvial fans and alluvial flats
Slope: 1 to 4 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 5,000 to 5,400 feet

Taxonomic class: fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

Typical Pedon

Mikim loam, in an area of Mikim loam, 3 to 15 percent slopes, in the Uintah Area soil survey, about 700 feet north and 1,800 feet east of the southwest corner of section 13, T. 4 S., R. 20 E., SLBM latitude 40 degrees, 27 minutes, 50 seconds N. and longitude 109 degrees, 37 minutes, 32 seconds W.

A1—0 to 2 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; strong medium and thin platy structure parting to moderate very fine subangular blocky; slightly hard, friable, slightly sticky and plastic; few coarse, medium, fine, and very fine roots; few fine, common very fine tubular pores; calcium carbonate is disseminated; slightly effervescent; 5 percent calcium carbonate equivalent; strongly alkaline; abrupt smooth boundary.

A2—2 to 6 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak thick platy structure parting to weak fine and very fine subangular blocky; hard, firm, sticky and plastic; few coarse, medium, fine, and very fine roots; few medium and fine, common very fine tubular pores; calcium carbonate is disseminated; slightly effervescent; 6 percent calcium carbonate equivalent; strongly alkaline; abrupt smooth boundary.

Bk1—6 to 12 inches; light yellowish brown (2.5Y 6/4) clay loam, light olive brown (2.5Y 5/4) moist; weak medium prismatic structure parting to moderate medium and fine subangular blocky; slightly hard, firm, sticky and plastic; few medium, fine, and very fine roots; few medium, common fine and very fine tubular pores; calcium carbonate is disseminated as few fine filaments; slightly effervescent; 7 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

Bk2—12 to 25 inches; light yellowish brown (10YR 6/4) loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; hard, firm, sticky and plastic; few fine and very fine roots; few medium and fine, common very fine tubular pores; calcium carbonate is disseminated as few medium veins and masses; slightly effervescent; 10 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

Bk3—25 to 43 inches; light yellowish brown (10YR 6/4) loam, brown (10YR 5/3) moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; very hard, firm, sticky and plastic; few fine and very fine roots; few medium, common fine and very fine tubular pores; calcium carbonate is disseminated as few fine filaments and veins; slightly effervescent; 8 percent calcium carbonate equivalent; strongly alkaline; gradual smooth boundary.

Bk4—43 to 60 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; weak coarse and medium subangular blocky structure parting to moderate fine subangular blocky; hard, firm, sticky and plastic; few fine and very fine roots; few medium, common fine and very fine tubular pores; calcium carbonate is disseminated as very fine masses; slightly effervescent; 10 percent calcium carbonate equivalent; strongly alkaline.

Range in Characteristics

Content of clay in the control section: 18 to 35 percent
Salinity: nonsaline or slightly saline
Reaction: moderately alkaline or strongly alkaline

A horizon:
Hue—10YR or 2.5Y
Value—5 to 7 dry, 4 to 6 moist
Chroma—2 to 4
Texture—loam or silt loam

Bk horizon:
Hue—10YR or 2.5Y
Value—5 to 7 dry, 4 to 6 moist
Chroma—2 to 4
Texture—loam, clay loam, sandy loam, silty clay loam, or silt loam

Milok Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: eolian material over alluvium and colluvium
Landform: fan remnants and hillslopes
Slope: 3 to 65 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 4,800 to 6,400 feet

Taxonomic class: coarse-loamy, mixed, superactive, mesic Ustic Haplocalcids

Typical Pedon

Milok fine sandy loam in an area of Milok-Strych complex, 3 to 25 percent slopes, very stony, about 1,900 feet south and 500 feet west of the northeast corner of section 32, T. 3 S., R. 25 E., SLBM latitude 40 degrees, 31 minutes, 3 seconds N. and longitude 109 degrees, 7 minutes, 39 seconds W.

A—0 to 6 inches; brown (7.5YR 5/4) fine sandy loam; brown (7.5YR 4/4) moist; weak medium and fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, few medium and coarse roots; many very fine, common fine, few medium tubular and interstitial pores; calcium carbonate is disseminated; very slightly effervescent; 1 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Bw—6 to 12 inches; light brown (7.5YR 6/4) loam; brown (7.5YR 4/4) moist; moderate medium subangular blocky structure parting to moderate fine and very fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; many very fine, few fine tubular pores; calcium carbonate is disseminated and in few fine irregular soft masses; slightly effervescent; 10 percent calcium carbonate equivalent; strongly alkaline; clear wavy boundary.

Bk1—12 to 24 inches; light brown (7.5YR 6/4) loam; brown (7.5YR 4/4) moist; moderate medium subangular blocky structure parting to moderate fine and very fine subangular blocky; few very fine and fine roots; common very fine tubular pores; few 1/4 - to 1/2-inch krotovinas; calcium carbonate is disseminated in many medium and fine irregular soft masses; strongly effervescent; 13 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

Bk2—24 to 37 inches; pink (7.5YR 7/4) loam; brown (7.5YR 4/4) moist; weak medium subangular blocky structure parting to weak fine and very fine subangular blocky; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine, few fine tubular pores; few 1/4 - to 1/2-inch krotovinas; calcium carbonate is disseminated and in common fine irregular soft masses; strongly effervescent; 16 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

C1—37 to 44 inches; light brown (7.5YR 6/4) silt loam; brown (7.5YR 4/4) moist; weak medium and fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine, few fine tubular pores; few fine irregular soft masses of gypsum; calcium carbonate is disseminated and in few fine irregular soft masses; strongly effervescent; 9 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

C2—44 to 60 inches; brown (7.5YR 5/4) loam; brown (7.5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; few fine irregular soft masses of gypsum; calcium carbonates disseminated; strongly effervescent; 7 percent calcium carbonate equivalent; strongly alkaline.

Range in Characteristics

Depth to calcic horizon: 12 to 20 inches
Calcium carbonate equivalent in the control section: 5 to 20 percent

A horizon:
Hue—5YR or 7.5YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—3 to 6

Bw horizon:
Hue—5YR or 7.5YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—4 to 6
Texture—fine sandy loam or loam
Reaction—moderately alkaline or strongly alkaline

Bk horizon:
Hue—5YR or 7.5YR
Value—5 to 8 dry, 4 or 5 moist
Chroma—4 or 6
Texture—sandy loam, fine sandy loam, or loam
Reaction—moderately alkaline or strongly alkaline

C horizon:
Hue—5YR or 7.5YR
Value—5 to 7 dry, 4 or 5 moist
Chroma—4 to 7
Texture—sandy loam, fine sandy loam, silt loam, or loam
Reaction—moderately alkaline or strongly alkaline

Moosed Series

Setting

Depth class: very shallow or shallow
Drainage class: excessively drained
Parent material: residuum derived from sandstone
Landform: plateaus
Slope: 1 to 20 percent
Average annual precipitation: 13 to 15 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 7,300 to 8,000 feet

Taxonomic class: sandy, mixed Lithic Haploborolls

Typical Pedon

Moosed loamy fine sand in an area of Layoint-Moosed-Berlake complex, 1 to 20 percent slopes, in the Moffat County soil survey area, about 200 feet east and 1,000 feet north of the southwest corner, section 27, T. 5 N., R. 102 W., NMPM latitude 40 degrees, 21 minutes, 5 seconds N. and long. 108 degrees, 51 minutes, 5 seconds W.

A1—0 to 2 inches; brown (7.5YR 4/2) loamy fine sand, dark brown (7.5YR 3/2) moist; single grained; loose, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; neutral; abrupt smooth boundary.
A2—2 to 7 inches; reddish brown (5YR 4/3) loamy fine sand, dark reddish brown (5YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; neutral; clear wavy boundary.
Bw1—7 to 11 inches; reddish brown (5YR 4/4) loamy fine sand, dark reddish brown (5YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; slightly alkaline; clear wavy boundary.
Bw2—11 to 15 inches; reddish brown (5YR 4/4) loamy fine sand, dark reddish brown (5YR 3/4) moist; weak medium and coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; slightly alkaline; clear wavy boundary.
C—15 to 18 inches; reddish brown (5YR 5/4) channery sand, reddish brown (5YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; 15 percent channers and 5 percent flagstones; slightly alkaline; abrupt smooth boundary.
R—18 inches; reddish brown hard sandstone.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 14 inches
Depth to bedrock: 7 to 20 inches
Content of rock fragments in the control section: 0 to 35 percent

A horizon:
Hue—5YR to 10YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—2 or 3
Reaction—neutral or slightly alkaline

Bw horizon (if present):
Hue—5YR or 7.5YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—3 or 4
Texture—loamy sand or loamy fine sand
Reaction—neutral or slightly alkaline

C horizon (if present):
Hue—5YR or 7.5YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—3 or 4
Texture—sand, fine sand, or loamy fine sand modified by 15 to 35 percent gravel, channers, or flagstones
Reaction—neutral or slightly alkaline

Mulgon Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: colluvium derived from sandstone
Landform: mountains
Slope: 25 to 50 percent
Average annual precipitation: 16 to 18 inches
Average annual air temperature: 40 to 43 degrees F
Elevation: 7,000 to 9,000 feet

Taxonomic class: loamy-skeletal, mixed, superactive Glossic Cryoboralfs

Typical Pedon

Mulgon in an area of Ironco-Mulgon, dry complex, 25 to 50 percent slopes, extremely bouldery, in the Moffat soil survey area, about 1,550 feet east and 600 feet south of the southwest corner section 36, T. 9 N., R. 104 W., NMPM (site is in a non-sectioned area) latitude 40 degrees, 46 minutes, 27 seconds N. and longitude 109 degrees, 2 minutes, 34 seconds W.

Oi—0 to 1 inch; slightly decomposed plant material

A—1 inch to 8 inches; reddish gray (5YR 5/2) very stony sandy loam, dark reddish brown (5YR 3/2) moist; weak medium granular structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine interstitial pores; 15 percent gravel, 20 percent cobbles, 15 percent stones, and 5 percent boulders; slightly acid; abrupt smooth boundary.

E—8 to 16 inches; pink (5YR 7/3) very stony sandy loam, reddish brown (5YR 4/3) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; few very fine tubular pores; 10 percent gravel, 20 percent cobbles, 10 percent stones, and 10 percent boulders; slightly acid; gradual smooth boundary.

E/B—16 to 23 inches; 70 percent pink (5YR 7/3) and 30 percent light reddish brown (2.5YR 6/4) very stony sandy clay loam, light reddish brown (5YR 6/3) and reddish brown (2.5YR 5/4) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, friable, slightly sticky and slightly plastic; common fine and medium roots; few fine tubular pores; 20 percent gravel, 20 percent cobbles, 10 percent stones, and 5 percent boulders; slightly acid; clear smooth boundary.

Bt1—23 to 32 inches; light reddish brown (2.5YR 6/4) very stony sandy clay loam, reddish brown (2.5YR 4/4) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, friable, sticky and slightly plastic; few fine, medium, and coarse roots; common fine tubular pores; few faint clay films on faces of peds and bridging sand grains; 20 percent gravel, 20 percent cobbles, 10 percent stones, and 5 percent boulders; moderately acid; gradual smooth boundary.

Bt2—32 to 60 inches; red (2.5YR 5/6) very stony sandy clay loam, red (2.5YR 4/6) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, friable, sticky and slightly plastic; few fine roots; few fine tubular pores; few faint clay films on faces of peds and bridging sand grains; 20 percent gravel, 20 percent cobbles, 10 percent stones, and 5 percent boulders; moderately acid.

Range in Characteristics

Thickness of the ochric epipedon: 3 to 7 inches
Content of rock fragments in the control section: 40 to 60 percent
Content of clay in the control section: 18 to 35 percent

A horizon:
Hue—5YR to 10YR
Value—4 or 5 dry, 2 or 3 moist
Chroma—1 to 3
Reaction—moderately acid or slightly acid

E horizon:
Hue—2.5YR or 5YR
Value—5 to 7 dry, 4 to 6 moist
Chroma—3 to 6
Texture—very stony sandy loam or very stony loam
Reaction—moderately acid or slightly acid

Bt horizon:
Hue—2.5YR or 5YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—2 to 6
Texture—very stony clay loam, very stony sandy clay loam, or very stony loam
Reaction—moderately acid or slightly acid

Note: The Mulgon soils in this area are outside the series because the base of the argillic horizon is 60 or more inches deep. This difference, however, does not significantly affect the use or management of the soils.

Notlic Series

Setting

Depth class: very deep
Drainage class: well drained

Parent material: alluvium derived from sedimentary rocks
Landform: alluvial fans
Slope: 5 to 15 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 5,000 to 5,800 feet

Taxonomic class: loamy-skeletal, mixed superactive, calcareous, mesic Ustic Torriorthents

Typical Pedon

Notlic very cobbly loam in an area of Notlic-Iogoon-Labyrinth complex, 5 to 15 percent slopes, extremely stony, about 700 feet south and 1,500 feet west of the northeast corner of section 12, T. 3 S., R. 25 E., SLBM latitude 40 degrees, 34 minutes, 41 seconds N. and longitude 109 degrees, 3 minutes, 12 seconds W. The surface is covered with limestone and sandstone rock fragments, consisting of 10 percent gravel, 10 percent cobbles, 10 percent channers, and 5 percent stones.

A—0 to 4 inches; brown (7.5YR 5/3) very cobbly loam, brown (7.5YR 4/3) moist; weak thin platy structure parting to weak fine and very fine subangular blocky; soft, friable, slightly sticky and slightly plastic; many very fine, common fine, few medium roots; many very fine, few fine and medium tubular pores; 20 percent gravel, 10 percent cobbles, 10 percent channers, and 5 percent stones; very slightly effervescent; calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

C1—4 to 13 inches; brown (7.5YR 5/4) extremely gravelly fine sandy loam, brown (7.5YR 4/4) moist; weak fine and very fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, common fine, few medium roots; many very fine, common fine, few medium tubular and interstitial pores; 40 percent gravel, 10 percent cobbles, 10 percent channers, and 5 percent stones; slightly effervescent; calcium carbonate is disseminated; moderately alkaline; gradual wavy boundary.

C2—13 to 29 inches; brown (7.5YR 5/3) extremely gravelly loam, brown (7.5YR 4/3) moist; weak fine and very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, few fine roots; many very fine, common fine, few medium tubular and interstitial pores; 30 percent gravel, 10 percent cobbles, 10 percent channers, and 15 percent stones; slightly effervescent; calcium carbonate is disseminated; strongly alkaline; gradual wavy boundary.

C3—29 to 48 inches; brown (7.5YR 5/4) extremely gravelly sandy clay loam, brown (7.5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine, few fine roots; many very fine, few fine and medium tubular and interstitial pores; 45 percent gravel, 10 percent cobbles, and 10 percent channers; slightly effervescent; calcium carbonate is disseminated; strongly alkaline; gradual wavy boundary.

C4—48 to 60 inches; brown (7.5YR 5/4) extremely cobbly sandy clay loam, brown (7.5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine, few fine tubular pores; 35 percent gravel, 20 percent cobbles, 10 percent channers, and 10 percent stones; slightly effervescent; calcium carbonate is disseminated; strongly alkaline.

Range in Characteristics

Thickness of the ochric epipedon: 2 to 5 inches
Content of rock fragments in the control section: 50 to 80 percent subrounded (predominantly gravel, some cobbles of sedimentary origin)

Content of clay in the control section: 18 to 27 percent
Calcium carbonate equivalent: 5 to 15 percent

A horizon:
Reaction—moderately alkaline or strongly alkaline

C horizon:
Value—5 or 6 dry, 4 or 5 moist
Chroma—3 or 4
Texture—fine sandy loam, loam, or sandy clay loam, modified by 45 to 80 percent gravel, cobbles, stones, or channers
Reaction—moderately alkaline or strongly alkaline

Paradox Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium
Landform: alluvial fans and alluvial flats
Slope: 3 to 8 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 6,000 to 6,700 feet

Taxonomic class: fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

Typical Pedon

Paradox loam, 8 to 25 percent slopes, in the Uintah Area soil survey, about 30 feet west and 1,700 feet south of the northeast corner of section 33, T. 2 S., R. 22 E., SLBM latitude 40 degrees, 36 minutes, 12 seconds N. and longitude 109 degrees, 26 minutes, 32 seconds W.

A—0 to 2 inches; strong brown (7.5YR 5/6) loam, brown (7.5YR 4/4) moist; weak moderately thick platy structure parting to weak medium and fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; many very fine tubular, few medium and fine vesicular pores; calcium carbonate is disseminated; slightly effervescent; strongly alkaline; clear smooth boundary.

Cy1—2 to 11 inches; reddish yellow (5YR 6/6) loam, reddish brown (5YR 4/4) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; common very fine, few fine tubular pores; common fine gypsum filaments; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; abrupt smooth boundary.

Cy2—11 to 26 inches; yellowish red (5YR 5/6) loam, yellowish red (5YR 4/6) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; common very fine, few fine tubular pores; common fine gypsum filaments; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; clear wavy boundary.

Cy3—26 to 48 inches; yellowish red (5YR 5/6) loam, yellowish red (5YR 4/6) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; common very fine, few fine tubular pores; common fine gypsum filaments; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; clear wavy boundary.

C—48 to 60 inches; yellowish red (5YR 5/6) loam, yellowish red (5YR 4/6) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine, few fine tubular pores; calcium carbonate is disseminated; slightly effervescent; moderately alkaline.

Range in Characteristics

Content of rock fragments in the control section: 0 to 15 percent
Content of clay in the control section: 18 to 27 percent
Content of gypsum in the control section: Most pedons have few or common fine filaments of soft powdery gypsum
Content of calcium carbonate in the control section: 1 to 15 percent

A horizon:
Hue—5YR or 7.5YR
Value—5 or 6 dry
Chroma—3 to 6
Texture—loam or silty clay
Reaction—moderately alkaline to very strongly alkaline

C horizon:
Value—3 or 4 moist
Chroma—4 to 6
Texture—loam, fine sandy loam, sandy clay loam, or stratified layers of fine sandy loam to clay loam
Reaction—moderately alkaline to very strongly alkaline

Pensore Series

Setting

Depth class: shallow
Drainage class: well drained
Parent material: limestone residuum
Landform: hills, valleys, and mesas
Slope: 3 to 75 percent
Average annual precipitation: 12 to 14 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,300 to 8,500 feet

Taxonomic class: loamy-skeletal, carbonatic, frigid Aridic Lithic Ustochrepts

Typical Pedon

Pensore gravelly loam in an area of Cragnot-Pensore-Grapit association, 6 to 75 percent slopes, very stony, about 500 feet west and 300 feet north of the southeast corner, section 29, T. 6 N., R. 100 W., NMPM latitude 40 degrees, 26 minutes, 10 seconds N. and longitude 108 degrees, 38 minutes, 46 seconds W. The surface is covered with 20 percent gravel, 30 percent cobbles, and 3 percent stones.

A—0 to 3 inches; brown (7.5YR 4/3) gravelly loam, dark brown (7.5YR 3/2) moist; moderate very fine and fine subangular blocky structure parting to weak very fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; few very fine interstitial pores; 20 percent gravel and 5 percent cobbles; calcium carbonate is disseminated; slightly effervescent; 8 percent calcium carbonate equivalent; slightly alkaline; clear smooth boundary.

BA—3 to 10 inches; brown (7.5YR 4/4) extremely cobbly loam, dark brown (7.5YR 3/4) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine, medium, and coarse roots; few very fine interstitial pores; 20 percent gravel and 45 percent cobbles; calcium carbonate is disseminated as many prominent coatings on rocks; strongly effervescent; 30 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Bk—10 to 16 inches; light brown (7.5YR 6/3) extremely channery loam, brown (7.5YR 5/2) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine interstitial pores; 15 percent gravel and 65 percent channers; calcium carbonate is disseminated as many prominent coatings on rocks; violently effervescent; 41 percent calcium carbonate equivalent; moderately alkaline; abrupt smooth boundary.

R—16 inches; hard limestone.

Range in Characteristics

Depth to bedrock: 10 to 20 inches
Depth to calcic horizon: 3 to 7 inches
Calcium carbonate equivalent in the control section: 40 to 60 percent
Content of rock fragments in the control section: 35 to 80 percent
Content of clay in the control section: 10 to 27 percent

A horizon:
- Hue—7.5YR or 10YR
- Value—4 or 5 dry, 3 or 4 moist
- Chroma—2 to 4
- Texture—gravelly loam or cobbly loam
- Reaction—slightly alkaline or moderately alkaline

Bk horizon:
- Hue—7.5YR or 10YR
- Value—6 to 8 dry, 5 to 7 moist
- Chroma—3 to 6
- Texture—loam, fine sandy loam, or sandy loam modified by 35 to 80 percent gravel, cobbles, or channers
- Reaction—moderately alkaline or strongly alkaline

Polychrome Series

Setting

Depth class: moderately deep
Drainage class: well drained
Parent material: colluvium over residuum derived from sedimentary rocks
Landform: hillslopes
Slope: 25 to 75 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 44 to 49 degrees F
Elevation: 5,000 to 6,800 feet

Taxonomic class: loamy-skeletal, mixed, superactive, calcareous, mesic Ustic Torriorthents

Typical Pedon

Polychrome very channery loam in an area of Polychrome-Milok complex, 8 to 50 percent slopes, in the Uintah Area soil survey, about 1,700 feet south and 1,800 feet west of the northeast corner of section 16, T. 3 S., R. 25 E., latitude 40 degrees, 33 minutes, 42 seconds N. and longitude 109 degrees, 6 minutes, 48 seconds W. The surface is covered by 30 percent channers, 5 percent flagstones, and 5 percent stones.

A—0 to 3 inches; yellowish red (5YR 5/6) very channery loam, reddish brown (5YR 4/4) moist; weak medium subangular blocky structure parting to weak very fine and fine subangular blocky; hard, friable, slightly sticky and nonplastic; few very fine, fine, medium, and coarse roots; many very fine and fine, common medium tubular pores; 10 percent gravel and 25 percent channers; slightly effervescent; 3 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; abrupt wavy boundary.

Cy1—3 to 16 inches; reddish yellow (5YR 6/6) very channery loam, yellowish red (5YR 4/6) moist; weak very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few very fine, fine, medium, and coarse roots; few very fine tubular pores; 30 percent channers, 5 percent flagstones, and 10 percent stones; few fine irregular soft masses of gypsum; very slightly effervescent; 2 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; gradual wavy boundary.

Cy2—16 to 23 inches; light red (2.5YR 6/6) extremely channery loam, red (2.5YR 4/6) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine, common fine, few medium roots; few very fine tubular pores; 40 percent channers, 20 percent flagstones, and 10 percent stones; many very fine irregular soft masses of gypsum; very slightly effervescent; 1 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; gradual irregular boundary.

Cy3—23 to 38 inches; light red (2.5YR 6/6) very stony loam, dark red (2.5YR 3/6) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; few very fine tubular pores; 10 percent channers, 10 95 percent flagstones, and 20 percent stones; many fine and medium irregular soft masses of gypsum; slightly effervescent; 1 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; abrupt smooth boundary.

Cr—38 inches; weathered fine grained sandstone with irregular fractures about 6 inches apart; material will break out in gravel to flagstones size fragments with a Mohs scale hardness of about 2, and will soften and slake when soaked in water; roots are limited to fractured areas; excavation difficulty is high.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Content of rock fragments in the control section: 35 to 75 percent
Content of clay in the control section: 18 to 27 percent
Reaction: moderately alkaline or strongly alkaline

A horizon:
Hue—5YR to 10YR
Value—5 to 7 dry, 4 or 5 moist
Chroma—3 to 6
Texture—very channery loam or very gravelly fine sandy loam

Content of rock fragments—35 to 60 percent gravel, channers, flagstones, and stones
Salinity—2 to 4 millimhos per centimeter
Calcium carbonate equivalent—1 to 15 percent
Content of gypsum—1 to 3 percent

C horizon:
Hue—2.5YR to 5YR
Value—5 to 8 dry, 3 to 7 moist
Chroma—2 to 6
Texture—loam, silt loam, or sandy loam modified by 35 to 75 percent gravel, channers, stones, or flagstones
Salinity—2 to 16 millimhos per centimeter
Calcium carbonate equivalent—1 to 15 percent
Content of gypsum—1 to 10 percent

Redrock Family

Setting

Depth class: very deep
Drainage class: well drained
Parent material: slope alluvium
Landform: cuestas and mesas
Slope: 3 to 15 percent
Average annual precipitation: 12 to 14 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,350 to 6,800 feet

Taxonomic class: fine-loamy, mixed, superactive, frigid Haplocalcidic Ustochrepts

Typical Pedon

Redrock Family loam in an area of Redrock Family-Roto complex, 3 to 15 percent slopes, very stony, about 2,000 feet west and 2,800 feet north of the southeast corner section 13, T. 6 N., R. 104 W., NMPM latitude 40 degrees, 28 minutes, 20 seconds N. and longitude 109 degrees, 1 minute 47 seconds W. The surface is covered with 10 percent limestone gravel.

A—0 to 3 inches; brown (7.5YR 4/4) loam, dark brown (7.5YR 3/3) moist; weak thin and medium platy structure parting to weak very fine granular: soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine vesicular pores; slightly alkaline; abrupt smooth boundary.

Bw1—3 to 10 inches; reddish brown (5YR 4/4) loam, dark reddish brown (5YR 3/4) moist; moderate very thick platy structure parting to moderate fine and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular pores; slightly alkaline; abrupt smooth boundary.

Bw2—10 to 17 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; strong fine and medium subangular blocky structure; very hard, very firm, sticky and plastic; common very fine and fine roots; common very fine tubular pores; common fine and medium irregular soft masses of calcium carbonate throughout; violently effervescent; 18 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

Bk1—17 to 28 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 4/4) moist; strong fine and medium subangular blocky structure; very hard, very firm, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; common fine and medium irregular soft masses of calcium carbonate throughout; violently effervescent; 18 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

Bk2—28 to 35 inches; pink (5YR 7/3) loam, reddish brown (5YR 5/4) moist; massive; hard, firm, sticky and plastic; few very fine roots; common very fine tubular pores; 5 percent gravel; many fine and medium irregular soft masses of calcium carbonate throughout; violently effervescent; 41 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

Bk3—35 to 43 inches; light reddish brown (5YR 6/3) gravelly loam, reddish brown (5YR 5/4) moist; massive; hard, firm, sticky and plastic; few very fine roots; common very fine tubular pores; 15 percent gravel and 1 percent cobbles; many fine and medium irregular soft masses of calcium carbonate throughout; violently effervescent; 37 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

2Bk4—43 to 54 inches; pink (5YR 7/3) very cobbly loam, light reddish brown (5YR 6/4) moist; massive; very hard, firm, slightly sticky and plastic; few very fine tubular pores; 20 percent gravel and 25 percent cobbles; many fine and medium irregular soft masses of calcium carbonate throughout; violently effervescent; 32 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

2Bk5—54 to 60 inches; pink (5YR 7/4) cobbly loam, light reddish brown (5YR 6/4) moist; hard, firm, sticky and plastic; 10 percent gravel and 15 percent cobbles; many fine and medium irregular soft masses of calcium carbonate throughout; violently effervescent; 28 percent calcium carbonate equivalent; strongly alkaline.

Range in Characteristics

Depth to calcic horizon: 8 to 20 inches
Calcium carbonate equivalent in the control section: 15 to 45 percent
Content of rock fragments in the control section: 0 to 20 percent
Content of clay in the control section: 18 to 27 percent

A horizon:
Hue—5YR or 7.5YR

Bw horizon:
Hue—5YR or 7.5YR
Texture—loam or clay loam
Reaction—moderately alkaline or strongly alkaline

Bk horizon:
Hue—5YR or 7.5YR
Value—6 or 7 dry, 5 or 6 moist
Texture—clay loam, gravelly loam, or cobbly loam

2Bk horizon (if present):
Value—7 or 8 dry, 6 or 7 moist
Chroma—3 or 4
Texture—very cobbly loam, extremely cobbly loam, extremely cobbly sandy loam, or cobbly loam

Rizno Series

Setting

Depth class: shallow and very shallow
Drainage class: well drained
Parent material: slope alluvium and colluvium over residuum derived from sandstone and limestone
Landform: cuestas
Slope: 3 to 25 percent
Average annual precipitation: 10 to 12 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,400 to 6,400 feet

Taxonomic class: loamy, mixed, superactive, calcareous, mesic Lithic Ustic Torriorthents

Typical Pedon

Rizno cobbly fine sandy loam in an area of Windcomb-Rizno-Anasazi complex, 3 to 25 percent slopes, extremely flaggy, about 1,700 feet east and 2,500 feet south of the northwest corner, section 2, T. 6 N., R. 103 W., NMPM latitude 40 degrees, 30 minutes, 5 seconds N. and longitude 108 degrees, 56 minutes, 28 seconds W. The surface is covered with sandstone rock fragments, consisting of 5 percent gravel, 1 percent cobbles, and 1 percent stones.

A—0 to 5 inches; reddish brown (5YR 5/4) cobbly fine sandy loam, reddish brown (5YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; 5 percent gravel, 10 percent cobbles, and 4 percent stones; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; clear wavy boundary.
C—5 to 15 inches; light reddish brown (5YR 6/4) cobbly fine sandy loam, reddish brown (5YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few fine tubular pores; 10 percent gravel, 15 percent cobbles, and 7 percent stones; calcium carbonate is disseminated; strongly effervescent; moderately alkaline; abrupt irregular boundary.
R—15 inches; hard calcareous sandstone.

Range in Characteristics

Depth to bedrock: 4 to 20 inches
Content of rock fragments in the control section: 0 to 35 percent
Content of clay in the control section: 10 to 18 percent

A horizon:
Value—5 or 6 dry, 4 or 5 moist
Chroma—3 to 6
Reaction—slightly alkaline or moderately alkaline

C horizon:
Hue—2.5YR or 5YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—4 to 6
Texture—fine sandy loam or loam modified by 0 to 35 percent gravel or cobbles
Reaction—moderately alkaline or strongly alkaline

Roto Series

Setting

Depth class: moderately deep
Drainage class: well drained
Parent material: slope alluvium and colluvium over residuum derived from limestone and sandstone
Landform: hills, mesas, and cuestas
Slope: 3 to 45 percent
Average annual precipitation: 12 to 14 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,350 to 7,500 feet

Taxonomic class: loamy-skeletal, carbonatic, frigid Haplocalcidic Ustochrepts

Typical Pedon

Roto very gravelly loam in an area of Pensore-Roto complex, 3 to 45 percent slopes, very stony, about 500 feet west and 1,350 feet south of the northeast corner of section 12, T. 6 N., R. 101 W., NMPM latitude 40 degrees, 29 minutes, 24 seconds N. and longitude 108 degrees, 41 minutes, 1 second W. The surface is covered with 25 percent gravel, 10 percent cobbles, and 2 percent stones.

A—0 to 2 inches; brown (7.5YR 4/3) very gravelly loam, dark brown (7.5YR 3/3) moist; weak fine and medium platy structure parting to weak very fine granular; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine, common medium roots; few very fine vesicular pores; 30 percent gravel and 5 percent cobbles; calcium carbonate is disseminated; slightly effervescent; 5 percent calcium carbonate equivalent; slightly alkaline; clear smooth boundary.
Bk1—2 to 9 inches; pinkish gray (7.5YR 6/2) very gravelly loam, brown (7.5YR 5/3) moist; weak fine and medium subangular blocky structure; hard, firm, slightly sticky and plastic; common fine and medium roots; few very fine tubular pores; 30 percent gravel and 5 percent cobbles; calcium carbonate is disseminated; strongly effervescent; 20 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.
Bk2—9 to 22 inches; pink (7.5YR 7/3) extremely gravelly sandy clay loam, light brown (7.5YR 6/4) moist; weak fine subangular blocky structure; hard, firm, slightly sticky and plastic; few fine and medium roots; few very fine tubular pores; 55 percent gravel and 10 percent cobbles; many medium and coarse rounded calcium carbonate concretions; violently effervescent; 41 percent calcium carbonate equivalent; strongly alkaline; abrupt smooth boundary.
R—22 inches; hard limestone.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Depth to calcic horizon: 2 to 5 inches
Calcium carbonate equivalent in the control section: 40 to 60 percent
Content of rock fragments in the control section: 35 to 65 percent
Content of clay in the control section: 10 to 27 percent

A horizon:
Hue—7.5YR or 10YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—2 or 3
Reaction—slightly alkaline or moderately alkaline

Bk horizon:
Hue—7.5YR or 10YR
Value—5 to 8 dry, 4 to 7 moist
Chroma—3 to 6
Texture—fine sandy loam, loam, or sandy clay loam modified by 35 to 65 percent gravel, cobbles, or stones
Reaction—moderately alkaline or strongly alkaline

Schoonover Series

Setting

Depth class: shallow
Drainage class: well drained
Parent material: residuum derived from limestone
Landform: mountains
Slope: 3 to 25 percent
Average annual precipitation: 12 to 16 inches
Average annual air temperature: 42 to 45 degrees, F
Elevation: 7,000 to 8,500 feet

Taxonomic class: loamy-skeletal, mixed, superactive, frigid Aridic Lithic Ustochrepts

Typical Pedon

Schoonover very gravelly loam in an area of Schoonover-Duffymont complex, 3 to 25 percent slopes, rubbly, about 400 feet east and 2,400 feet north of the southwest corner, section 32, T. 8 N., R. 103 W., NMPM latitude 40 degrees, 36 minutes, 8 seconds N. and longitude 109 degrees, 0 minutes, 14 seconds W. The surface is covered with limestone rock fragments, consisting of 30 percent gravel and 20 percent channers.

A—0 to 3 inches; brown (7.5YR 4/4) very gravelly loam, brown (7.5YR 4/3) moist; weak medium and coarse subangular blocky structure parting to weak medium granular; soft, very friable, slightly sticky and slightly plastic; common fine roots; few fine vesicular and tubular pores; 20 percent gravel, 12 percent channers and 5 percent stones; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk1—3 to 8 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/4) moist; weak fine subangular blocky structure parting to weak medium granular; soft, very friable, slightly sticky and slightly plastic; common very fine roots; few fine vesicular and tubular pores; 20 percent gravel, 12 percent channers, and 5 percent stones; calcium carbonate is disseminated and in few rounded soft masses; violently effervescent; 15 percent calcium carbonate equivalent; moderately alkaline; abrupt wavy boundary.

Bk2—8 to 11 inches; light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; few fine roots; few fine vesicular and tubular pores; 25 percent gravel, 10 percent channers, and 5 percent stones; common distinct calcium carbonate coatings on rock fragments and common rounded soft masses of calcium carbonate throughout; violently effervescent; 25 percent calcium carbonate equivalent; strongly alkaline; abrupt irregular boundary.

R—11 inches; hard limestone.

Range in Characteristics

Depth to bedrock: 10 to 20 inches
Calcium carbonate equivalent in the control section: 15 to 40 percent
Content of rock fragments in the control section: 35 to 75 percent
Content of clay in the control section: 18 to 27 percent

A horizon:
Hue—7.5YR or 10YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—2 to 4
Reaction—slightly alkaline or moderately alkaline

Bk horizon:
Hue—7.5YR or 10YR
Value—4 to 7 dry, 3 to 5 moist
Chroma—2 to 4
Texture—very gravelly loam, extremely channery loam, or extremely flaggy loam
Reaction—moderately alkaline or strongly alkaline

Sheecal Series

Setting

Depth class: moderately deep
Drainage class: well drained
Parent material: colluvium over residuum
Landform: hillslopes
Slope: 10 to 80 percent
Average annual precipitation: 12 to 16 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,500 to 7,800 feet

Taxonomic class: loamy-skeletal, mixed, superactive, calcareous, frigid Aridic Ustorthents

Typical Pedon

Sheecal channery loam, 10 to 40 percent slopes, about 2,600 feet west and 1,300 feet south of the northeast corner, section 14, T. 4 S., R. 25 E., SLBM latitude 40 degrees, 28 minutes, 33 seconds N. and longitude 109 degrees, 4 minutes, 5 seconds W.

A1—0 to 2 inches; reddish brown (2.5YR 4/4) channery loam, dark reddish brown (2.5YR 3/4) moist; moderate fine and medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine and few fine tubular pores; 15 percent channers; very slightly effervescent; 5 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.
A2—2 to 5 inches; reddish brown (2.5YR 4/4) channery loam, dark reddish brown (2.5YR 3/4) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine, few medium and coarse roots; common very fine and few fine tubular pores; 30 percent channers; very slightly effervescent; 4 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

C1—5 to 15 inches; reddish brown (5YR 5/4) very flaggy loam, reddish brown (5YR 4/4) moist; moderate fine and medium angular blocky rock structure; hard, friable, slightly sticky and slightly plastic; few very fine, medium, and coarse, common fine roots; common very fine and fine tubular pores; 30 percent channers and 20 percent flagstones; slightly effervescent; 11 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.
C2—15 to 29 inches; yellowish red (5YR 4/6) extremely flaggy loam, dark reddish brown (5YR 3/4) moist; weak fine and medium platy rock structure; hard, friable, slightly sticky and slightly plastic; few very fine, medium, and coarse, common fine roots; few fine, medium, and coarse tubular pores; 30 percent channers and 35 percent flagstones; slightly effervescent; 9 percent calcium carbonate equivalent; calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.
R—29 inches; hard fractured fine-grained sandstone.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Content of clay in the control section: 18 to 27 percent
Content of rock fragments in the control section: 35 to 75 percent

A horizon:
Hue—2.5YR to 7.5YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—4 to 6
Calcium carbonate equivalent—1 to 15 percent
Content of rock fragments—15 to 35 percent
Reaction—moderately alkaline or strongly alkaline

C horizon:
Hue—2.5YR or 5YR
Value—4 to 6 dry, 3 or 4 moist
Chroma—4 to 6
Texture—loam, silty clay loam, or sandy loam modified by 35 to 75 percent channers or flagstones
Calcium carbonate equivalent—1 to 15 percent
Content of gypsum—0 to 2 percent
Reaction—moderately alkaline or strongly alkaline

Shotnick Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium
Landform: terraces, hill toeslopes, and alluvial flats
Slope: 2 to 4 percent
Average annual precipitation: 5 to 8 inches
Average annual air temperature: 45 to 47 degrees F
Elevation: 4,700 to 4,900 feet

Taxonomic class: coarse-loamy, mixed, superactive, calcareous, mesic Typic Torriorthents

Typical Pedon

Shotnick sandy loam, 2 to 4 percent slopes, in the Uintah Area soil survey, about 1,150 feet north and 2,200 feet west of the southeast corner of section 7, T. 4 S., R. 21 E., SLBM latitude 40 degrees, 28 minutes, 50 seconds N. and longitude 109 degrees, 36 minutes, 11 seconds W.

A—0 to 8 inches; light brown (7.5YR 6/4) sandy loam, brown (7.5YR 4/4) moist; weak coarse platy structure; slightly hard, friable, nonsticky and nonplastic; few medium common fine and very fine roots; few medium, common fine and very fine tubular pores; very slightly effervescent; calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

C1—8 to 16 inches; light brown (7.5YR 6/4) sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few fine and very fine roots; few medium, common fine, and many very fine tubular pores; strongly effervescent; calcium carbonate is disseminated; moderately alkaline; gradual wavy boundary.

C2—16 to 30 inches; light brown (7.5YR 6/4) sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine and very fine roots; few medium, common fine, and many very fine tubular pores; strongly effervescent; calcium carbonate is disseminated; moderately alkaline; gradual wavy boundary.

C3—30 to 60 inches; light brown (7.5YR 6/4) sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine and very fine roots; few fine and very fine tubular pores; strongly effervescent; calcium carbonate is disseminated; moderately alkaline.

Range in Characteristics

Content of rock fragments in the control section: 0 to 15 percent
Content of clay in the control section: 5 to 18 percent

A horizon:
Hue—7.5YR or 10YR
Value—5 to 7 dry, 4 to 6 moist
Chroma—2 to 4
Texture—loamy sand, fine sandy loam, or sandy loam
Reaction—moderately alkaline or strongly alkaline

C horizon:
Hue—7.5YR or 10YR
Value—5 to 7 dry, 4 to 6 moist
Chroma—2 to 4
Texture—sandy loam or fine sandy loam
Reaction—moderately alkaline or strongly alkaline

Solirec Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: eolian deposits over alluvium or colluvium derived from sandstone and shale

Figure 2.—A profile of Solirec soil in map unit 38, Milok-Solirec-Strych complex, 10 to 65 percent slopes, very stony.

Landform: fan remnants, hillslopes, and mesas
Slope: 3 to 40 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 5,300 to 6,400 feet

Taxonomic class: fine-loamy, mixed, superactive, mesic Ustic Calciargids

Typical Pedon

Solirec fine sandy loam in an area of Abracon-Solirec complex, 3 to 8 percent slopes, about 1,600 feet west and 1,500 feet south of the northeast corner of section

25, T. 3 S., R. 24 E., SLBM latitude 40 degrees, 31 minutes, 59 seconds N. and longitude 109 degrees, 10 minutes, 9 seconds W.

A—0 to 4 inches; brown (7.5YR 5/4) fine sandy loam, dark brown (7.5YR 4/3) moist; moderate thin platy structure parting to weak very fine and fine subangular blocky; soft, friable, slightly sticky and slightly plastic; many very fine, few fine, medium, and coarse roots; many very fine, few fine tubular pores; slightly alkaline; clear smooth boundary.

Bt—4 to 12 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; moderate coarse prismatic structure parting to moderate medium and fine subangular blocky; hard, friable, slightly sticky and slightly plastic; common very fine, few fine medium, and coarse roots; many very fine, few fine, and medium tubular pores; common distinct clay films on faces of peds; slightly alkaline; abrupt smooth boundary.

Bk1—12 to 19 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 5/4) moist; moderate medium subangular blocky structure parting to moderate very fine and fine subangular blocky; hard, firm, sticky and plastic; common very fine, few fine and medium roots; many very fine, few fine tubular pores; strongly effervescent; 15 percent calcium carbonate equivalent; calcium carbonate is disseminated and in common fine irregular soft masses; moderately alkaline; clear wavy boundary.

Bk2—19 to 37 inches; pink (7.5YR 7/4) clay loam, brown (7.5YR 5/4) moist, moderate fine and medium subangular blocky structure; very hard, firm, sticky and plastic; few very fine and fine roots; common very fine, few fine tubular pores; 5 percent gravel; strongly effervescent; 16 percent calcium carbonate equivalent; calcium carbonate is disseminated and in common medium irregular soft masses; moderately alkaline; clear wavy boundary.

Bk3—37 to 53 inches; pink (7.5YR 8/3) clay loam, pink (7.5YR 8/4) moist; weak fine and medium subangular blocky structure; very hard, firm, sticky and plastic; few very fine and fine roots; common very fine, few fine tubular pores; 5 percent gravel; violently effervescent; 32 percent calcium carbonate equivalent; calcium carbonate is disseminated and in many extremely coarse irregular soft masses; moderately alkaline; clear wavy boundary.

Bk4—53 to 75 inches; pink (7.5YR 7/4) clay loam, light brown (7.5YR 6/4) moist; weak fine and medium subangular blocky structure; hard, firm, sticky and plastic; few very fine roots; common very fine, few fine tubular pores; 5 percent gravel; strongly effervescent; 21 percent calcium carbonate equivalent; calcium carbonate is disseminated and in common fine irregular soft masses; moderately alkaline.

Range in Characteristics

Depth to calcic horizon: 10 to 20 inches
Content of clay in the control section: 18 to 35 percent
Content of rock fragments in the control section: 0 to 15 percent

A horizon:
Hue—7.5YR or 10YR
Value—5 or 6 dry, 3 or 4 moist
Chroma—3 or 4
Texture—loam or fine sandy loam
Reaction—slightly alkaline or moderately alkaline

Bt horizon:
Hue—5YR or 7.5YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—4 to 6
Texture—loam, sandy clay loam, or clay loam
Reaction—slightly alkaline or moderately alkaline

Bk horizon:
Hue—5YR or 7.5YR
Value—5 to 8 dry, 4 to 6 moist
Chroma—2 to 6
Texture—loam, sandy clay loam, or clay loam
Calcium carbonate equivalent—15 to 40 percent
Reaction—moderately alkaline or strongly alkaline

C horizon (if present):
Hue—5YR or 7.5YR
Value—5 to 7 dry, 4 to 6 moist
Chroma—4
Texture—fine sandy loam, sandy loam, or loam
Reaction—moderately alkaline or strongly alkaline

Splimo Series

Setting

Depth class: shallow and very shallow
Drainage class: well drained
Parent material: colluvium over residuum
Landform: hillslopes
Slope: 8 to 50 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F.
Elevation: 5,000 to 6,800 feet

Taxonomic class: loamy-skeletal, carbonatic, mesic Lithic Ustic Haplocalcids

Typical Pedon

Splimo very gravelly loam, 8 to 25 percent slopes, extremely flaggy in the Uintah Area soil survey, about 1,300 feet south and 300 feet east of the northwest corner of section 14, T. 3 S., R. 25 E., SLBM latitude 40 degrees, 33 minutes, 43 seconds N. and longitude 109 degrees, 5 minutes, 14 seconds W. The surface is covered with limestone rock fragments, consisting of 20 percent gravel, 10 percent channers, and 5 percent flagstones.

A—0 to 3 inches; brown (10YR 5/3) very gravelly loam, brown (10YR 4/3) moist; moderate medium and fine subangular blocky structure parting to moderate fine subangular blocky; soft, friable, slightly sticky and slightly plastic; many very fine, common fine, few medium roots; many very fine, common fine, few medium tubular and interstitial pores; 20 percent gravel and gravel-sized calcium carbonate concretions, 15 percent channers, and 5 percent flagstones; calcium carbonate is disseminated and in coatings on rock fragments that are less than 1 mm. thick; strongly effervescent; 30 percent calcium carbonate equivalent in the fraction that is less than 20 mm.; moderately alkaline; clear smooth boundary.

Bk1—3 to 7 inches; brown (10YR 5/3) extremely flaggy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure parting to moderate fine and very fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; many very fine, common fine tubular pores; 15 percent gravel and gravel-sized calcium carbonate concretions, 10 percent channers, 15 percent stones, and 20 percent flagstones; calcium carbonate is disseminated, in common fine irregular masses, and in 1 to 3 mm. thick coatings on rock fragments; strongly effervescent; 42 percent calcium carbonate equivalent in the fraction that is less than 20 mm.; moderately alkaline; gradual wavy boundary.

Bk2—7 to 11 inches; light brown (10YR 6/3) extremely flaggy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure parting to moderate fine and very fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine, few fine roots; many very fine, common fine tubular pores; 25 percent gravel and gravel-sized calcium carbonate concretions, 15 percent stones, 15 percent channers, and 15 percent flagstones; calcium carbonate is disseminated, in common fine irregular masses, and 3 to 5 mm. thick coatings on rock fragments; violently effervescent; 45 percent calcium carbonate equivalent in the fraction that is less than 20 mm.; strongly alkaline; gradual wavy boundary.

R—11 inches; hard fractured limestone with prominent coatings of fractured calcium carbonate.

Range in Characteristics

Depth to bedrock: 8 to 20 inches
Content of rock fragments in the control section: 40 to 70 percent
Calcium carbonate equivalent in the control section: 40 to 60 percent

A horizon:
- Hue—7.5YR or 10YR
- Value—5 or 6 dry, 3 or 4 moist
- Chroma—2 to 5
- Texture—very gravelly loam, very flaggy loam, very cobbly loam, or extremely channery loam
- Reaction—moderately alkaline or strongly alkaline

Bk horizon:
- Hue—7.5YR or 10YR
- Value—6 to 8 dry, 4 to 6 moist
- Chroma—3 to 6
- Texture—loam or sandy loam modified by 35 to 70 percent gravel, channers, or flagstones
- Reaction—moderately alkaline or strongly alkaline

Stout Series

Setting

Depth class: very shallow and shallow
Drainage class: somewhat excessively drained
Parent material: residuum derived from sandstone
Landform: mountains
Slope: 5 to 35 percent
Average annual precipitation: 16 to 18 inches

Average annual air temperature: 42 to 45 degrees F
Elevation: 6,800 to 7,800 feet

Taxonomic class: loamy, mixed, superactive, nonacid, frigid Lithic Ustorthents

Typical Pedon

Stout sandy loam in an area of Stout-Rock outcrop complex, 5 to 35 percent slopes, very stony, about 1,700 feet east and 1,300 feet south of the northwest corner of section 20, T. 8 N., R. 102 W., NMPM latitude 40 degrees, 38 minutes, 5 seconds N. and longitude 108 degrees, 53 minutes, 11 seconds W. The surface is covered with sandstone rock fragments, consisting of 20 percent gravel, 10 percent cobbles, and 2 percent stones.

A—0 to 2 inches; reddish brown (5YR 4/3) sandy loam, dark reddish brown (5YR 3/3) moist; moderate thick platy structure parting to moderate fine granular; soft, very friable, nonsticky and slightly plastic; common very fine and fine roots; few very fine vesicular pores; 5 percent gravel; neutral; abrupt smooth boundary.
AC—2 to 11 inches; dark reddish brown (5YR 3/3) sandy loam, dark reddish brown (5YR 3/3) moist; massive; soft, very friable, nonsticky and slightly plastic; few very fine roots; few very fine tubular pores; neutral; abrupt smooth boundary.
R—11 inches; hard sandstone.

Range in Characteristics

Depth to bedrock: 7 to 20 inches
Content of rock fragments in the control section: 5 to 15 percent
Content of clay in the control section: 5 to 15 percent
Note: Dark colors are lithochromic in origin.

A horizon:
Value—3 or 4 moist
Chroma—3 or 4 dry

C horizon (if present):
Value—4 dry or moist
Chroma—4 dry, 3 moist

Note: Mollic colors in these soils are lithochromic.

Strell Series

Setting

Depth class: shallow and very shallow
Drainage class: somewhat excessively drained
Parent material: eolian deposits overlying sandstone
Landform: hillslopes, mesas, and cuestas
Slope: 1 to 45 percent
Average annual precipitation: 12 to 14 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,200 to 7,000 feet

Taxonomic class: Frigid, coated Lithic Quartzipsamments

Typical Pedon

Strell in an area of Rock outcrop-Strell-Moonshine association, 4 to 40 percent slopes, in the Uintah Area soil survey, about 2,400 feet north and 200 feet west of the

southeast corner, section 4, T. 3 S., R. 21 E., SLBM latitude 40 degrees, 35 minutes, 10 seconds N. and longitude 109 degrees, 33 minutes, 26 seconds W.

A—0 to 3 inches; brown (7.5YR 5/4) sand, dark brown (10YR 3/3) moist; weak thin platy structure parting to moderate very fine granular; loose, nonsticky and nonplastic; common medium, coarse, fine, and very fine roots; many fine interstitial pores; slightly alkaline; clear smooth boundary.
C1—3 to 13 inches; brown (7.5YR 5/4) sand, brown (7.5YR 4/3) moist; massive; soft, loose, nonsticky and nonplastic; common medium and fine and many very fine roots; many fine interstitial pores; slightly alkaline; abrupt smooth boundary.
C2—13 to 14 inches; brown (7.5YR 5/4) sand, dark brown (7.5YR 3/2) moist; massive; soft, very friable, nonsticky and nonplastic; common medium and fine and many very fine roots; many fine interstitial pores; slightly alkaline; abrupt smooth boundary.
R—14 to 18 inches; hard sandstone bedrock.

Range in Characteristics

Depth to bedrock: 5 to 20 inches

A horizon:
Hue—7.5YR or 10YR
Value—4 to 7 dry, 3 to 5 moist
Chroma—2 to 4
Texture—sand or loamy fine sand
Reaction—neutral or slightly alkaline

C horizon:
Hue—7.5YR or 10YR
Value—5 to 7 dry, 3 to 6 moist
Chroma—2 to 6
Texture—fine sand, loamy fine sand, sand, coarse sand, or loamy sand
Reaction—neutral to moderately alkaline

Note: The Strell soil in map unit 27, Lakebench-Strell complex, 5 to 30 percent slopes, and map unit 30, Lodore-Mantlemine-Strell complex, 3 to 15 percent slopes, very stony, are outside the range of the Strell series because the Strell components are calcareous.

Strych Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium and colluvium derived from sandstone and limestone
Landform: fan remnants, hillslopes, and structural benches
Slope: 3 to 65 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 5,000 to 6,500 feet

Taxonomic class: loamy-skeletal, mixed, superactive, mesic Ustic Haplocalcids

Typical Pedon

Strych cobbly loam in an area of Milok-Solirec-Strych complex, 10 to 65 percent slopes, very stony, about 50 feet west and 2,000 feet south of the northeast corner,

section 21, T. 6 N., R. 102 W., NMPM latitude 40 degrees, 27 minutes, 33 seconds N. and longitude 108 degrees, 51 minutes, 12 seconds W. The surface is covered with limestone and sandstone rock fragments, consisting of 2 percent stones.

Figure 3.—A profile of Strych soil in map unit 38, Milok-Solirec-Strych complex, 10 to 65 percent slopes, very stony.

A—0 to 5 inches; reddish brown (5YR 4/3) cobbly loam, dark reddish brown (5YR 3/3) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and medium roots; common fine vesicular and tubular pores; 10 percent gravel, 15 percent cobbles, and 5 percent stones; calcium carbonate is disseminated; strongly effervescent; 14 percent calcium carbonate equivalent; slightly alkaline; clear wavy boundary.

Bk1—5 to 10 inches; reddish brown (5YR 5/4) cobbly loam, reddish brown (5YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine and medium roots; common fine vesicular and tubular pores; 10 percent gravel, 15 percent cobbles, and 5 percent stones; common fine irregular calcium carbonate concretions; strongly effervescent; 28 percent calcium carbonate equivalent; slightly alkaline; gradual wavy boundary.

Bk2—10 to 34 inches; light reddish brown (5YR 6/3) very stony loam, reddish brown (5YR 4/4) moist; weak fine subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine vesicular and tubular pores; 20 percent gravel, 20 percent cobbles, and 15 percent stones; calcium carbonate coatings on rock fragments and in many medium and coarse threads; violently effervescent; 34 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

BCk—34 to 50 inches; reddish yellowish (5YR 6/6) very cobbly loam, yellowish red (5YR 5/6) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine vesicular and tubular pores; 10 percent gravel, 17 percent cobbles, and 10 percent stones; calcium carbonate coatings on rock fragments and in many medium and coarse threads; violently effervescent; 42 percent calcium carbonate equivalent; moderately alkaline; abrupt wavy boundary.

2C—50 to 60 inches; dark reddish brown (2.5YR 3/4) loam, dark reddish brown (2.5YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, sticky and plastic; few fine roots; few fine vesicular and tubular pores; 10 percent gravel; calcium carbonate is disseminated; strongly effervescent; 11 percent calcium carbonate equivalent; moderately alkaline.

Range in Characteristics

Depth to calcic horizon: 4 to 10 inches
Calcium carbonate equivalent in the control section: 15 to 40 percent
Content of clay in the control section: 8 to 18 percent
Content of rock fragments in the control section: 35 to 65 percent

A horizon:
Hue—5YR or 7.5YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—3 to 6
Texture—very cobbly fine sandy loam or cobbly loam
Reaction—slightly alkaline or moderately alkaline

Note: Mollic horizons are less than 7 inches thick.

Bk horizon:
Hue—5YR or 7.5YR
Value—6 to 8 dry, 4 to 7 moist
Chroma—2 to 6
Texture—sandy loam or loam modified by 35 to 65 percent gravel, cobbles, or stones
Reaction—slightly alkaline to strongly alkaline

2C or C horizons (if they occur):
Hue—2.5YR to 7.5YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—4 to 6
Texture—loamy fine sand, fine sandy loam, loamy sand, or loam modified by 0 to 80 percent gravel, cobbles, or stones
Reaction—slightly alkaline to strongly alkaline

Tipper Series

Setting

Depth class: moderately deep
Drainage class: excessively drained
Parent material: colluvium over residuum derived from calcareous sandstone
Landform: hillslopes
Slope: 10 to 40 percent
Average annual precipitation: 10 to 12 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,500 to 5,750 feet

Taxonomic class: mixed, mesic Typic Torripsamments

Typical Pedon

Tipper loamy fine sand in an area of Tipper-Crustown loamy fine sands, 10 to 40 percent slopes, about 3,000 feet west and 1,900 feet south of the northeast corner, section 16, T. 9 N., R. 102 W., NMPM latitude 40 degrees, 44 minutes, 29 seconds N. and longitude 108 degrees, 52 minutes, 4 seconds W. The surface is covered with sandstone rock fragments, consisting of 20 percent gravel and 1 percent cobbles.

A—0 to 5 inches; brown (7.5YR 5/3) loamy fine sand, dark brown (7.5YR 3/4) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine vesicular pores; 10 percent gravel; calcium carbonate is disseminated; strongly effervescent; slightly alkaline; clear smooth boundary.
C—5 to 25 inches; pinkish gray (7.5YR 6/2) loamy fine sand, brown (7.5YR 4/3) moist; massive; loose; many medium and coarse, common very fine and fine roots; few very fine interstitial pores; 5 percent gravel; calcium carbonate is disseminated; strongly effervescent; slightly alkaline; abrupt smooth boundary.
Cr—25 inches; soft sandstone.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Depth to carbonates: 0 to 5 inches
Content of rock fragments in the control section: 0 to 10 percent

Note: This soil is outside the range of the Tipper series because this soil classifies as an Ustic Torripsamments.

Torriorthents

Setting

Depth class: very shallow to moderately deep
Drainage class: well drained
Parent material: colluvium and residuum derived from limestone and sandstone

Landform: hillslopes, canyons, and mountains
Slope: 12 to 75 percent
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 42 to 48 degrees F
Elevation: 5,000 to 8,000 feet

Taxonomic class: Torriorthents

Typical Pedon

No profile of Torriorthents is typical, but one commonly observed is in an area of Rock outcrop, Torriorthents, and Ustorthents soils, 25 to 75 percent slopes, rubbly about 2,550 feet north and 350 feet west of the southeast corner, section 25, T. 6 N., R. 101 W., NMPM latitude 40 degrees, 26 minutes, 34 seconds N. and longitude 108 degrees, 41 minutes, 0 seconds W. The surface is covered with sandstone rock fragments, consisting of 50 percent gravel, 5 percent cobbles, and 2 percent stones.

A—0 to 4 inches; brown (7.5YR 4/3) very gravelly loam, dark brown (7.5YR 3/3) moist; weak fine and medium granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; few very fine interstitial pores; 40 percent gravel, 10 percent cobbles, and 2 percent stones; calcium carbonate is disseminated; slightly effervescent; slightly alkaline; gradual wavy boundary.
C—4 to 18 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; few very fine tubular pores; 40 percent gravel, 10 percent cobbles, and 2 percent stones; calcium carbonate is disseminated; strongly effervescent; slightly alkaline; abrupt irregular boundary.
R—18 inches; hard limestone.

Range in Characteristics

Depth to bedrock: 4 to 30 inches
Depth to carbonates: 0 to 10 inches
Content of rock fragments in the control section: 5 to 75 percent

A horizon:
Hue—5YR to 10YR
Reaction—neutral to moderately alkaline

C horizon:
Hue—5YR to 10YR
Texture—sandy loam, loam, sandy clay loam, clay loam, clay, or silty clay loam modified by 5 to 75 percent gravel, cobbles, channers, stones, or flagstones
Reaction—slightly alkaline to strongly alkaline

Torripsamments

Setting

Depth class: moderately deep and deep
Drainage class: excessively drained
Parent material: alluvium and colluvium over residuum derived from sandstone
Landform: hillslopes
Slope: 12 to 40 percent
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 5,500 to 6,000 feet

Taxonomic class: Torripsamments

Typical Pedon

No profile of Torripsamments is typical, but one commonly observed is in an area of Torriorthents-Torripsamments complex, 12 to 40 percent slopes, in the Moffat County soil survey area, about 1,500 feet east and 1,500 feet north of the southwest corner, section 14, T. 9 N., R. 96 W., NMPM latitude 40 degrees, 44 minutes, 10 seconds N. and longitude 108 degrees, 8 minutes, 51 seconds W.

A—0 to 4 inches; light yellowish brown (2.5Y 6/4) sand, light olive brown (2.5Y 5/4) moist; single grained; loose; common very fine and fine roots; few very fine interstitial pores; slightly alkaline; clear wavy boundary.
AC—4 to 16 inches; light yellowish brown (2.5Y 6/4) sand, light olive brown (2.5Y 5/4) moist; single grained; loose; few fine roots; few very fine interstitial pores; slightly alkaline, clear wavy boundary.
C—16 to 26 inches; yellow (2.5Y 8/6) sand, yellow (2.5Y 7/6) moist; weak medium platy rock structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine interstitial pores; calcium carbonate is disseminated; slightly effervescent; slightly alkaline; abrupt wavy boundary.
R—26 inches; weakly calcareous hard sandstone bedrock.

Range in Characteristics

Depth to carbonates: 0 to 60 inches
Content of rock fragments in the control section: 0 to 25 percent

A horizon:
Hue—2.5Y to 5YR
Reaction—neutral or slightly alkaline

AC and C horizons:
Hue—2.5Y to 5YR
Texture—loamy sand, sand, or gravelly sand
Reaction—slightly alkaline or moderately alkaline

Tsetaa Family

Setting

Depth class: very deep
Drainage class: excessively drained
Parent material: colluvium and alluvium derived from sandstone
Landform: mountain slopes
Slope: 3 to 45 percent
Average annual precipitation: 10 to 13 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,400 to 6,000 feet

Taxonomic class: sandy-skeletal, mixed, mesic Ustic Torriorthents

Typical Pedon

Tsetaa Family very stony sandy loam in an area of Tsetaa Family-Bankard Family-Fluvaquents complex, 0 to 45 percent slopes, very stony about 2,200 feet west and 5,700 feet north of the southeast corner, section 7, T. 8 N., R. 102 W., NMPM (site located in a nonsectioned area) latitude 40 degrees, 40 minutes, 9

seconds N. and longitude 108 degrees, 54 minutes, 1 second W. The surface is covered with sandstone rock fragments, consisting of 5 percent gravel, 5 percent cobbles, and 2 percent stones.

A1—0 to 2 inches; reddish brown (5YR 4/4) very stony sandy loam, reddish brown (5YR 4/3) moist; weak thin platy structure parting to weak fine granular; soft, very friable, slightly sticky and nonplastic; many fine roots; 15 percent gravel, 15 percent cobbles, and 15 percent stones; neutral; abrupt wavy boundary.

A2—2 to 6 inches; reddish brown (2.5YR 4/3) very cobbly sandy loam, dark reddish brown (2.5YR 3/3) moist; weak medium and coarse subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and nonplastic; many fine roots; 30 percent gravel, 20 percent cobbles, and 8 percent stones; neutral; clear wavy boundary.

C1—6 to 15 inches; reddish brown (2.5YR 4/3) extremely cobbly sand, dark reddish brown (2.5YR 3/3) moist; single grained; loose; many fine roots; 35 percent gravel, 30 percent cobbles, and 10 percent stones; neutral; gradual wavy boundary.

C2—15 to 60 inches; reddish brown (2.5YR 4/3) extremely cobbly sand, dark reddish brown (2.5YR 3/3) moist; single grained; loose; few fine roots; 30 percent gravel, 22 percent cobbles, and 10 percent stones; neutral.

Range in Characteristics

Content of rock fragments in the control section: 35 to 80 percent

Note: Dark colors are lithochromic in origin.

A horizon:
- Hue—2.5YR to 7.5YR
- Value—4 to 6 dry, 3 to 5 moist
- Chroma—3 to 6
- Reaction— neutral to moderately alkaline

C horizon:
- Hue—2.5YR to 7.5YR
- Value—4 to 6 dry, 3 to 5 moist
- Chroma—3 to 6
- Texture—sand, loamy sand, or loamy fine sand modified by 35 to 80 percent cobbles and stones
- Reaction—neutral to moderately alkaline

Note: Areas of Tsetaa Family soil in the 65 map unit, Tsetaa Family-Bankard Family-Fluvaquents complex, 3 to 45 percent slopes, very stony, are outside the range of Tsetaa Family because they are not effervescent and have colors redder than 7.5YR. This difference, however, does not significantly affect the use or management of the soils.

Turzo Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium
Landform: alluvial flats
Slope: 0 to 4 percent
Average annual precipitation: 5 to 8 inches

Average annual air temperature: 45 to 48 degrees F
Elevation: 4,600 to 4,700 feet

Taxonomic class: fine-loamy, mixed, superactive, calcareous, mesic Typic Torriorthents

Typical Pedon

Turzo clay loam, 2 to 4 percent slopes, in the Uintah Area soil survey, about 1,500 feet west and 400 feet north of the southeast corner of section 29, T. 4 S., R. 21 E., SLBM latitude 40 degrees, 26 minutes, 1 second N. and longitude 109 degrees, 35 minutes, 6 seconds W.

Ap1—0 to 6 inches; light yellowish brown (10YR 6/4) clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; very hard, friable, slightly sticky and slightly plastic; few medium and fine, common very fine roots; few medium and fine, common very fine tubular pores; common medium and coarse krotovinas; slightly effervescent; calcium carbonate is disseminated; moderately alkaline; abrupt smooth boundary.

Ap2—6 to 11 inches; very pale brown (10YR 7/4) clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure parting to weak fine and very fine subangular blocky; very hard, friable, slightly sticky and slightly plastic; few medium and fine, common very fine roots; few coarse, medium, and fine, common very fine tubular pores; common medium and coarse krotovinas; slightly effervescent; calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

C1—11 to 32 inches; pink (7.5YR 7/4) clay loam, brown (7.5YR 4/4) moist; massive; very hard, firm, sticky and plastic; few medium, fine, and very fine roots; few coarse and medium, common fine and very fine tubular pores; common coarse and medium krotovinas; slightly effervescent; calcium carbonate is disseminated; moderately alkaline; clear wavy boundary.

C2—32 to 49 inches; light brown (7.5YR 6/3) loam, brown (7.5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; common fine, many very fine tubular pores; common medium and coarse krotovinas; slightly effervescent; calcium carbonate is disseminated; moderately alkaline; abrupt smooth boundary.

C3—49 to 57 inches; light brown (7.5YR 6/3) loam, brown (7.5YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine and very fine roots; common fine and very fine tubular pores; common medium and coarse krotovinas; slightly effervescent; calcium carbonate is disseminated; strongly alkaline; clear wavy boundary.

C4—57 to 60 inches; pink (7.5YR 7/3) loam, brown (7.5YR 5/3) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; common fine and very fine tubular pores; slightly effervescent; calcium carbonate is disseminated; strongly alkaline.

Range in Characteristics

Content of clay in the control section: 18 to 35 percent
Content of rock fragments in the control section: 0 to 15 percent

A or Ap horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7 dry, 4 to 7 moist
Chroma—2 to 4 120
Texture—clay loam or loam Salinty—0 to 8 millimhos per centimeter
Reaction—moderately alkaline or strongly alkaline

C horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7 dry, 3 to 6 moist
Chroma—2 to 6
Texture—clay loam, sandy clay loam, loam, or silty clay loam
Content of gypsum—0 to 3 percent
Salinty—0 to 16 millimhos per centimeter
Reaction—moderately alkaline to very strongly alkaline

Uffens Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium
Landform: terraces
Slope: 0 to 3 percent
Average annual precipitation: 5 to 8 inches
Average annual air temperature: 45 to 47 degrees F
Elevation: 4,700 to 4,900 feet

Taxonomic class: fine-loamy, mixed, superactive, mesic Typic Natrargids

Typical Pedon

Uffens loam, 0 to 3 percent slopes, in the Uintah Area soil survey, about 1,000 feet west and 2,500 feet north of the southeast corner of section 23, T. 4 S., R. 2 E., USBM latitude 40 degrees, 7 minutes, 10 seconds N. and longitude 109 degrees, 43 minutes, 42 seconds W.

E—0 to 1 inch; light brown (7.5YR 6/3) loam, brown (7.5YR 4/2) moist; moderate thick platy structure; hard, friable, sticky and plastic; few medium, fine, and very fine roots; many fine and very fine vesicular pores; calcium carbonate is disseminated; slightly effervescent; strongly alkaline; abrupt smooth boundary.

Btn—1 inch to 15 inches; pinkish gray (7.5YR 6/2) clay loam, brown (7.5YR 5/2) moist; strong coarse prismatic structure parting to moderate medium subangular blocky; very hard, firm, sticky and plastic; few fine and very fine roots; few medium, common fine and very fine tubular pores; common distinct clay films on faces of peds; calcium carbonate is disseminated and in very few irregular fine masses; slightly effervescent; very strongly alkaline; clear wavy boundary.

BCy—15 to 27 inches; pinkish gray (7.5YR 6/2) clay loam, brown (7.5YR 4/2) moist; weak coarse and medium subangular blocky structure; hard, firm, sticky and plastic; few fine and very fine roots; few fine, common very fine tubular pores; common cylindrical fine soft masses of gypsum; calcium carbonate is disseminated; slightly effervescent; very strongly alkaline; clear smooth boundary.

C—27 to 47 inches; pinkish gray (7.5YR 6/2) loam, brown (7.4YR 4/2) moist; weak coarse subangular blocky structure; hard, firm, sticky and plastic; few very fine roots; few fine, common very fine tubular pores; few cylindrical fine soft masses of gypsum; calcium carbonate is disseminated; slightly effervescent; strongly alkaline; abrupt wavy boundary.

Btnyb—47 to 52 inches; pinkish gray (7.5YR 6/2) clay loam, brown (7.5YR 5/3) moist; moderate fine and very fine subangular blocky structure; hard, firm, sticky and plastic; few fine roots; common fine and very fine tubular pores; few faint clay films on faces of peds; few irregular fine soft masses of gypsum; calcium carbonate is disseminated and in few fine irregular fine masses; slightly effervescent; strongly

alkaline; clear wavy boundary. Cyb—52 to 65 inches; pinkish gray (7.5YR 6/2) clay loam, brown (7.5YR 4/2) moist; weak medium and fine subangular blocky structure; hard, firm, sticky and plastic; common fine and very fine tubular pores; common irregular fine soft masses of gypsum; calcium carbonate is disseminated; slightly effervescent; strongly alkaline.

Range in Characteristics

Depth to the natric horizon: 1 to 6 inches
Content of clay in the control section: 20 to 35 percent
Electrical conductivity in the first foot of the surface layer: 8 to 16 mmhos
Electrical conductivity at 1 foot to 5 feet in depth: 4 to 32 mmhos

E horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7 dry, 4 or 5 moist
Chroma—2 to 4
Texture—sandy loam, loam or extremely gravelly loam
Reaction—strongly alkaline or very strongly alkaline

Btn and Btynb horizons (if present):
Hue—7.5YR or 10YR
Value—5 to 7 dry, 4 or 5 moist
Chroma—2 to 4
Texture—sandy clay loam or clay loam
Sodium adsorption ratio—15 to 50
Content of gypsum (in Btnyb horizon)—1 to 3 percent
Reaction—strongly alkaline or very strongly alkaline

BCy and BCyb horizons (if present):
Hue—7.5YR to 2.5Y
Value—5 to 7 dry, 4 or 5 moist
Chroma—2 to 6
Texture—clay loam, sandy clay loam, loam, or sand
Content of gypsum—1 to 5 percent
Reaction—strongly alkaline or very strongly alkaline

Ustic Torrifluvents

Setting

Depth class: very deep
Drainage class: excessively drained
Parent material: alluvium
Landform: flood plains and fan remnants
Slope: 2 to 8 percent
Average annual precipitation: 10 to 12 inches
Average annual air temperature: 45 to 48 degrees F
Elevation: 5,200 to 5,600 feet

Taxonomic class: Ustic Torrifluvents

Typical Pedon

No profile of Ustic Torrifluvents is typical, but one commonly observed is in an area of Ustic Torrifluvents complex, 2 to 8 percent slopes, about 800 feet east and 1,800 feet south of the northwest corner, section 20, T. 6 N., R. 104 W., NMPM latitude 40

Figure 4.—Shown here is map unit 67, Ustic Torrifluvents complex, 2 to 8 percent slopes.

degrees, 27 minutes, 35 seconds N. and longitude 108 degrees, 53 minutes, 16 seconds W.

A—0 to 5 inches; brown (7.5YR 4/3) fine sandy loam, dark brown (7.5YR 3/3) moist; weak medium angular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; few very fine interstitial pores; calcium carbonate is disseminated; strongly effervescent; slightly alkaline; abrupt wavy boundary.

C—5 to 60 inches; brown (7.5YR 5/3) stratified extremely stony coarse sand, extremely stony sand, and extremely stony loamy sand, brown (7.5YR 4/4) moist; massive; loose; few fine, medium, and coarse roots; few very fine interstitial pores; 45 percent gravel, 20 percent cobbles, and 20 percent stones; calcium carbonate is disseminated; strongly effervescent; slightly alkaline.

Range in Characteristics

Content of rock fragments in the control section: 35 to 70 percent
Content of clay in the control section: 5 to 15 percent

A horizon:
Hue—10YR or 7.5YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—2 to 4

C horizon:
Hue—10YR or 7.5YR
Value—5 or 6 dry, 4 or 5 moist
Chroma—2 to 4
Texture—coarse sand to very fine sandy loam modified by 10 to 70 percent gravel, cobbles, or stones

Ustochrepts

Setting

Depth class: deep or very deep
Drainage class: well drained
Parent material: colluvium
Landform: mountains
Slope: 50 to 90 percent
Average annual precipitation: 12 to 16 inches
Average annual air temperature: 42 to 44 degrees F
Elevation: 5,000 to 7,400 feet

Taxonomic class: Ustochrepts

Typical Pedon

No profile of Ustochrepts is typical, but one commonly observed is in an area of Rock outcrop-Ustochrepts-Cryochrepts complex, 50 to 90 percent slopes, extremely stony, about 1,950 feet west and 4,600 feet north of the northwest corner of section 36, T. 3 S., R. 25 E., SLBM (in a nonsectioned area) latitude 40 degrees, 32 minutes, 7 seconds N. and longitude 109 degrees, 4 minutes, 30 seconds W. The surface is covered with limestone and sandstone rock fragments, consisting of 35 percent gravel, 30 percent cobbles, and 10 percent stones.

A—0 to 6 inches; brown (7.5YR 5/4) extremely cobbly fine sandy loam, dark brown (7.5YR 4/3) moist; weak fine and very fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine, few fine and medium roots; many very fine, few fine tubular pores; 20 percent gravel and 45 percent cobbles; calcium carbonate is disseminated; very slightly effervescent; 2 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Bk1—6 to 11 inches; brown (7.5YR 5/3) very gravelly loam, brown (7.5YR 4/3) moist; weak medium subangular blocky structure parting to weak fine and very fine subangular blocky; hard, very friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; many very fine, few fine tubular pores; 30 percent gravel and 10 percent cobbles; calcium carbonate is disseminated and in common fine irregular soft masses; strongly effervescent; 10 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

Bk2—11 to 19 inches; light brown (7.5YR 6/3) very gravelly loam, brown (7.5YR 5/3) moist; weak medium and fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; many very fine tubular pores; 30 percent gravel and 10 percent cobbles; calcium carbonate is disseminated in many fine irregular shaped soft masses, and in 1 to 3 millimeter thick coatings on undersides of rocks; violently effervescent; 22 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

Bk3—19 to 60 inches; pink (7.5YR 7/3) very cobbly loam, light brown (7.5YR 6/3) moist; massive; very hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; 25 percent gravel and 15 percent cobbles; calcium carbonate is disseminated in many fine irregular shaped soft masses; violently effervescent; 34 percent calcium carbonate equivalent; strongly alkaline.

Range in Characteristics

Depth to bedrock: 40 to 60 inches or more
Calcium carbonate equivalent in the control section: 15 to 40 percent
Content of rock fragments in the control section: 35 percent or more

A horizon:
Hue—10YR or 7.5YR
Value—4 or 5 dry, 3 or 4 moist
Chroma—3 or 4
Reaction—moderately alkaline or strongly alkaline

Bk horizon:
Hue—10YR or 7.5YR
Value—5 to 7 dry, 4 to 6 moist
Chroma—2 or 3
Texture—loam, sandy loam, fine sandy loam, or clay loam modified by 35 to 80 percent gravel, cobbles, channers, stones, or flagstones
Reaction—moderately alkaline or strongly alkaline

Ustorthents

Setting

Depth class: shallow and moderately deep
Drainage class: well drained
Parent material: colluvium and residuum derived from sedimentary rocks
Landform: mountains and canyons
Slope: 25 to 75 percent
Average annual precipitation: 14 to 20 inches
Average annual air temperature: 37 to 45 degrees F
Elevation: 6,500 to 8,500 feet

Taxonomic class: Ustorthents

Typical Pedon

Ustorthents in an area of Ustorthents, frigid-Borolls complex, 25 to 75 percent slopes, rubbly about 975 feet east and 1,300 feet south of the northwest corner section 36, T. 8 N., R. 103 W., NMPM latitude 40 degrees, 36 minutes, 21 seconds N. and longitude 108 degrees, 55 minutes, 34 seconds W. The surface is covered with sandstone rock fragments, consisting of 5 percent gravel, 5 percent cobbles, 10 percent stones, and 20 percent boulders.

A—0 to 6 inches; dusky red (2.5YR 3/2) cobbly loam, very dusky red (2.5YR 2.5/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common very fine and fine, many medium and coarse roots; few very fine tubular pores; 15 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.
C—6 to 33 inches; reddish brown (5YR 5/3) cobbly sandy clay loam, reddish brown (5YR 4/3) moist; massive; soft, friable, slightly sticky and slightly plastic; common fine and medium roots; few very fine tubular pores; 15 percent gravel and 10 percent cobbles; neutral; abrupt smooth boundary.
R—33 inches; hard sandstone.

Range in Characteristics

Depth to bedrock: 10 to 40 inches
Depth to carbonates: 5 or more inches
Content of rock fragments in the control section: 5 to 65 percent

A horizon:
Hue—2.5YR to 10YR
Value—4 or 5 dry, 2.5 to 4 moist
Chroma—2 to 4
Reaction—neutral to moderately alkaline

C and 2C horizons:
Hue—2.5YR to 10YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—3 to 6
Texture—loamy fine sand, loamy sand, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam modified by 5 to 65 percent gravel, cobbles, channers, stones, or flagstones
Reaction—neutral to strongly alkaline

Utaline Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium and colluvium
Landform: fan remnants
Slope: 8 to 25 percent
Average annual precipitation: 5 to 8 inches
Average annual air temperature: 45 to 47 degrees F
Elevation: 4,700 to 5,100 feet

Taxonomic class: loamy-skeletal, mixed, superactive, mesic Typic Haplocalcids

Typical Pedon

Utaline very gravelly sandy loam, 8 to 25 percent slopes, in the Uintah Area soil survey, about 1,500 feet west and 1,500 feet north of the southeast corner of section 4, T. 6 S., R. 22 E., SLBM latitude 40 degrees, 19 minutes, 29 seconds N. and longitude 109 degrees, 26 minutes, 34 seconds W. The surface is covered with limestone rock fragments, consisting of 30 percent gravel and 5 percent cobbles.

A—0 to 3 inches; yellowish brown (10YR 5/4) very gravelly sandy loam, brown (10YR 4/3) moist; weak thin platy structure parting to weak fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few fine, common very fine roots; few fine, common very fine tubular pores; 35 percent gravel and 5 percent cobbles; calcium carbonate is disseminated; very slightly effervescent; 10 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Bw—3 to 7 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/4) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine, common very fine roots; few fine, common very fine tubular pores; 40 percent gravel; calcium carbonate is disseminated; slightly effervescent; 9 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

Bk1—7 to 23 inches; pink (7.5YR 8/4) very gravelly loam, pink (7.5YR 7/4) moist; weak medium and fine subangular blocky structure; very hard, firm, slightly sticky and slightly plastic; few fine and very fine roots; few fine and very fine tubular pores; 40 percent gravel; calcium carbonate is disseminated and segregated in

many irregular soft masses, and as coatings on rock fragments; violently effervescent; 31 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

Bk2—23 to 46 inches; pink (7.5YR 8/4) very gravelly loam, pink (7.5YR 7/4) moist; massive; extremely hard, very firm, slightly sticky and slightly plastic; few fine and very fine roots; few very fine tubular pores; 40 percent gravel and 5 percent cobbles; 10 percent gravel-sized calcium carbonate nodules; calcium carbonate is disseminated and segregated in many irregular masses, and as coatings on rock fragments; violently effervescent; 34 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

Bk3—46 to 60 inches; pink (7.5YR 8/4) very gravelly loam, reddish yellow (7.5YR 7/6) moist; massive; extremely hard, very firm, slightly sticky and slightly plastic, few very fine roots; few very fine tubular pores; 40 percent gravel and 5 percent cobbles; 10 percent gravel-sized calcium carbonate nodules; calcium carbonate is disseminated and segregated in many irregular masses, and as coatings on rock fragments; 35 percent calcium carbonate equivalent; strongly effervescent; strongly alkaline.

Range in Characteristics

Depth to calcic horizon: 5 to 9 inches
Calcium carbonate equivalent in the control section: 15 to 40 percent
Content of clay in the control section: 18 to 27 percent
Content of rock fragments in the control section: 40 to 65 percent gravel and cobbles

A horizon:
- Hue—7.5YR or 10YR
- Value—5 or 6 dry, 3 to 5 moist
- Chroma—2 to 4
- Reaction—moderately alkaline or strongly alkaline

Bw horizon:
- Value—5 or 6 dry, 4 or 5 moist
- Texture—loam, clay loam, or sandy loam modified by 40 to 60 percent gravelly or cobbles
- Reaction—moderately alkaline or strongly alkaline

Bk horizon:
- Hue—7.5YR or 10YR
- Value—7 or 8 dry, 6 or 7 moist
- Chroma—4 to 6
- Texture—loam, clay loam, or sandy clay loam modified by 40 to 60 percent gravelly or cobbles

Windcomb Series

Setting

Depth class: shallow or very shallow
Drainage class: well drained
Parent material: slope alluvium and colluvium over residuum derived from siltstone, limestone, and sandstone
Landform: cuestas and hillslopes
Slope: 3 to 25 percent
Average annual precipitation: 8 to 12 inches
Average annual air temperature: 45 to 49 degrees F
Elevation: 5,000 to 6,400 feet

Content of rock fragments in the control section: 10 percent gravel, 5 percent channers, and 5 percent flagstones from shale and fine-grained sandstone

Taxonomic class: Loamy-skeletal, mixed, superactive, calcareous, mesic Lithic Ustic Torriorthents

Typical Pedon

Windcomb very channery silt loam in an area of Windcomb-Badland-Rock outcrop complex, 8 to 25 percent slopes, extremely flaggy, about 1,200 feet north and 1,500 feet east of the southwest corner of section 22, T. 3 S., R. 25 E., SLBM latitude 40 degrees, 32 minutes, 9 seconds N. and longitude 109 degrees, 6 minutes, 4 seconds W.

A—0 to 4 inches; reddish brown (2.5YR 5/4) very channery silt loam, reddish brown (2.5YR 4/4) moist; weak thin platy structure parting to weak very fine and fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; many very fine, common fine, few medium tubular and interstitial pores; 10 percent gravel and 30 percent channers; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; gradual wavy boundary.

C1—4 to 9 inches; reddish brown (5YR 5/4) very channery loam, reddish brown (5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine, few fine, medium, and coarse roots; many very fine, few fine tubular pores; 15 percent gravel and 30 percent channers; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; gradual wavy boundary.

C2—9 to 17 inches; reddish brown (5YR 5/4) very channery loam, reddish brown (5YR 4/4) moist; massive; hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium, few coarse roots; many very fine, few fine tubular pores; 10 percent gravel and 30 percent channers; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; abrupt wavy boundary.

R—17 inches; unweathered siltstone.

Range in Characteristics

Thickness of the ochric epipedon: 3 to 4 inches
Depth to bedrock: 6 to 20 inches
Content of clay in the control section: 10 to 18 percent
Content of rock fragments in the control section: 35 to 80 percent

A horizon:
Hue—2.5YR or 5YR
Chroma—4 or 6
Texture— very channery silt loam

C horizon:
Hue—2.5YR or 5YR
Chroma—4 or 6
Texture—extremely channery fine sandy loam, extremely channery very fine sandy loam, very channery loam, or extremely channery loam.

Yampa Series

Setting

Depth class: very deep
Drainage class: well drained

Parent material: alluvium and colluvium derived from mixed calcareous sources
Landform: mountains, alluvial fans, fan remnants, and structural benches
Slope: 3 to 65 percent
Average annual precipitation: 12 to 16 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 6,000 to 8,000 feet

Taxonomic class: loamy-skeletal, mixed, superactive, frigid Haplocalcidic Ustochrepts

Typical Pedon

Yampa very cobbly loam in an area of Lakebench-Yampa complex, 5 to 30 percent slopes, very stony, about 1,300 feet west and 800 feet south of the northeast corner of section 30, T. 6 N., R. 100 W., NMPM latitude 40 degrees, 26 minutes, 48 seconds N. and longitude 108 degrees, 40 minutes, 4 seconds W.The surface is covered with limestone rock fragments consisting of 15 percent gravel, 10 percent cobbles, and 1 percent stones.

A—0 to 7 inches; brown (7.5YR 4/3) very cobbly loam, dark brown (7.5YR 3/4) moist; weak fine subangular blocky structure parting to moderate fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine, common medium roots; few very fine tubular pores; 25 percent gravel and 20 percent cobbles; common fine irregular soft masses of calcium carbonate throughout; strongly effervescent; 19 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Bk1—7 to 13 inches; pinkish gray (7.5YR 7/2) extremely gravelly loam, light brown (7.5YR 6/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine, many medium and coarse roots; few very fine tubular pores; 50 percent gravel and 15 percent cobbles; many medium and coarse irregular soft masses of calcium carbonate throughout; violently effervescent; 33 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

Bk2—13 to 31 inches; pinkish white (7.5YR 8/2) very cobbly loam, pink (7.5YR 7/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; few fine and medium roots; common very fine tubular pores; 25 percent gravel and 20 percent cobbles; many medium and coarse irregular soft masses of calcium carbonate throughout; violently effervescent; 39 percent calcium carbonate equivalent; strongly alkaline; gradual smooth boundary.

Bk3—31 to 60 inches; light reddish brown (5YR 6/3) extremely cobbly sandy loam, reddish brown (5YR 5/4) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few fine roots; few very fine tubular pores; 45 percent gravel, 30 percent cobbles, and 5 percent stones; many fine and medium irregular soft masses of calcium carbonate throughout; violently effervescent; 24 percent calcium carbonate equivalent; strongly alkaline.

Range in Characteristics

Depth to secondary carbonates: 0 to 10 inches
Depth to calcic horizon: 4 to 7 inches
Calcium carbonate equivalent in the control section: 15 to 40 percent
Content of rock fragments in the control section: 35 to 80 percent
Content of clay in the control section: 5 to 35 percent

A horizon:
Hue—5YR or 7.5YR
Value—4 or 5 dry, 2 or 3 moist

Chroma—2 to 4
Texture—gravelly loam or very cobbly loam
Reaction—slightly alkaline or moderately alkaline

Bk horizons:
Hue—5YR or 7.5YR
Value—5 to 8 dry, 5 to 7 moist
Chroma—2 to 6
Texture—loam or clay loam in the upper part and loamy sand or sandy loam in the lower part,
modified by 35 to 80 percent gravel or cobbles
Reaction—moderately alkaline or strongly alkaline

Yarts Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: alluvium
Landform: alluvial flats
Slope: 2 to 8 percent
Average annual precipitation: 8 to 12 inches 130
Average annual air temperature: 45 to 49 degrees F
Elevation: 4,900 to 5,600 feet

Taxonomic class: coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

Typical Pedon

Yarts fine sandy loam, 4 to 8 percent slopes, about 2,600 feet east and 1,700 feet north of the southwest corner of section 30, T. 3 S., R. 24 E., SLBM latitude 40 degrees, 31 minutes, 38 seconds N. and longitude 109 degrees, 9 minutes, 15 seconds W.

A—0 to 4 inches; brown (10YR 5/3) fine sandy loam; dark brown (10YR 3/3) moist; weak very fine and fine subangular blocky structure parting to weak thin platy; soft, very friable, slightly sticky and slightly plastic; many very fine and fine, few medium and coarse roots; many very fine, few fine tubular and interstitial pores; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; clear smooth boundary.

C1—4 to 10 inches; brown (7.5YR 5/4) loam; brown (7.5YR 4/3) moist; weak medium subangular blocky structure parting to weak very fine and fine subangular blocky; soft, friable, slightly sticky and slightly plastic; many very fine, common fine, few medium and coarse roots; common very fine, few fine tubular pores; calcium carbonate is disseminated; slightly effervescent; moderately alkaline; clear smooth boundary.

C2—10 to 17 inches; brown (7.5YR 5/4) sandy loam with stratified thin lenses of gravelly sandy loam to sandy clay loam; brown (7.5YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, common fine, few medium and coarse roots; common very fine, few fine tubular and interstitial pores; calcium carbonate is disseminated; slightly effervescent; strongly alkaline; gradual smooth boundary.

C3—17 to 37 inches; light brown (7.5YR 6/4) sandy loam with stratified thin lenses of sandy loam to sandy clay loam; brown (7.5YR 5/4) moist; massive; hard, very

friable, slightly sticky and nonplastic; common very fine, few fine, medium, and coarse roots; few very fine and fine tubular pores; calcium carbonate is disseminated; slightly effervescent; strongly alkaline; gradual smooth boundary.

C4—37 to 65 inches; light brown (7.5YR 6/4) fine sandy loam with stratified thin lenses of sand to fine sandy loam; brown (7.5YR 4/4) moist; massive; hard, very friable, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; few very fine and fine tubular pores; calcium carbonate is disseminated; slightly effervescent; strongly alkaline.

Range in Characteristics

Content of clay in the control section: 5 to 18 percent
Content of rock fragments in the control section: 0 to 10 percent

A horizon:
Hue—5YR to 10YR
Value—5 or 6 dry, 3 or 4 moist
Chroma—3 to 6
Reaction—moderately alkaline or strongly alkaline

C horizon:
Hue—5YR or 7.5YR
Value—4 to 6 dry, 3 to 5 moist
Chroma—3 to 6
Texture—fine sandy loam, loam, sandy loam, or loamy fine sand. Some pedons have thin stratified layers of very fine sandy loam, sandy clay loam, or silt loam.
Reaction—moderately alkaline or strongly alkaline

Zillion Series

Setting

Depth class: very deep
Drainage class: well drained
Parent material: colluvium derived from limestone and sandstone
Landform: mountains
Slope: 25 to 65 percent
Average annual precipitation: 14 to 16 inches
Average annual air temperature: 42 to 45 degrees F
Elevation: 7,000 to 8,000 feet

Taxonomic class: loamy-skeletal, mixed, superactive Pachic Argiborolls

Typical Pedon

Zillion loam in an area of Zillion-Barkelew-Grapit complex, 25 to 65 percent slopes, extremely stony, in the Moffat County soil survey area, about 300 feet east and 1,000 feet north of the southwest corner, section 2, T. 7 N., R. 102 W., NMPM latitude 40 degrees, 35 minutes, 1 second N. and longitude 108 degrees, 50 minutes, 3 seconds W.

A—0 to 7 inches; dark brown (10YR 3/3) loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; few very fine tubular pores; 5 percent gravel; slightly alkaline; clear smooth boundary.

AB—7 to 18 inches; brown (10YR 4/3) cobbly loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly

sticky and slightly plastic; common fine roots; few very fine tubular pores; 15 percent gravel and 10 percent cobbles; slightly alkaline; clear smooth boundary.

Bt—18 to 26 inches; yellowish brown (10YR 5/4) very cobbly loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; common faint clay films on faces of peds; 20 percent gravel and 15 percent cobbles; slightly alkaline; clear wavy boundary.

Btk—26 to 34 inches; light brown (7.5YR 6/4) very cobbly sandy clay loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; common faint clay films on faces of peds; 30 percent gravel and 20 percent cobbles; calcium carbonate is disseminated; strongly effervescent; 15 percent calcium carbonate equivalent; slightly alkaline; clear wavy boundary.

Bk1—34 to 45 inches; pink (7.5YR 7/4) extremely cobbly sandy clay loam, light brown (7.5YR 6/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; 30 percent gravel, 25 percent cobbles, and 10 percent stones; calcium carbonate is disseminated; violently effervescent; 35 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

Bk2—45 to 60 inches; white (7.5YR 8/1) extremely cobbly sandy clay loam, pink (7.5YR 7/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 35 percent gravel, 25 percent cobbles, and 15 percent stones; calcium carbonate is disseminated; violently effervescent; 40 percent calcium carbonate equivalent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 16 to 30 inches
Depth to calcic horizon: 20 to 32 inches
Calcium carbonate equivalent in the control section: 15 to 40 percent
Depth to base of argillic horizon: 16 to 35 inches
Content of rock fragments in the control section: 35 to 75 percent
Content of clay in the control section: 20 to 32 percent

A horizon:
Hue—7.5YR or 10YR

Bt horizon:
Hue—7.5YR or 10YR
Texture—very cobbly loam or very cobbly sandy clay loam

Bk horizon:
Hue—7.5YR or 10YR
Texture—extremely cobbly sandy clay loam or very cobbly sandy clay loam

General Soil Map Units

The general soil map included with this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern. The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified. Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Soil Descriptions

Desert Ecotype

This group consists of one map unit. It makes up about 3 percent of the park. The soils of this group are nearly level to steep. The vegetation consists mainly of shrubs and grasses.

The soils of this group are dominantly very deep, but include moderately deep, and well drained. They formed in alluvium and/colluvium and/or residuum.

1. Shotnick-Uffens-Hanksville (Desert Ecotype)

Setting

Slope range: 0 to 50 percent
Elevation: 4,700 to 5,100 feet
Annual air temperature: 45 to 47 degrees F
Annual precipitation: 5 to 8 inches
Frost-free period: 110 to 125 days

Composition*:*

Shotnick soils: 25 percent of unit
Uffens soils: 22 percent of unit
Hanksville soils: 20 percent of unit
Minor components: 33 percent of unit

Other soils of minor extent*:*

Utaline soils on fan remnants
Yarts soils on alluvial flats
Massadona soils on hills
Mikim soils on alluvial flats, alluvial fans

Characteristics of the Shotnick soil

Geomorphic setting: Hills, alluvial flats
Geomorphic position: Toeslopes
Slope range: 2 to 4 percent
Parent material: Alluvium
Depth class: Very deep
Drainage class: Well drained
Ecological site name: Alkali Flat (Black Greasewood)
Native plant community: greasewood, alkali sacaton, bottlebrush squirreltail, shadscale saltbush, Indian rice grass, galleta, seepweed
Surface layer: Fine sandy loam
Underlying material: Fine sandy loam, sandy loam

Characteristics of the Uffens soil

Geomorphic setting: Terraces
Slope range: 1 to 3 percent
Parent materials: Alluvium
Depth class: Very deep
Drainage class: Well drained
Ecological site name: Alkali Flat (Black Greasewood)
Native plant community: greasewood, alkali sacaton, bottlebrush squirreltail, shadscale saltbush, Indian rice grass, galleta, seepweed
Surface layer: Sandy loam
Subsoil: Sandy clay loam, loam, sand

Characteristics of the Hanksville soil

Geomorphic setting: Hillslopes
Slope range: 25 to 50 percent
Parent materials: Colluvium and/or residuum
Depth class: Moderately deep
Drainage class: Well drained
Ecological site name: Desert Shallow Clay (Mat Saltbush)
Native plant community: Mat saltbush, galleta, Native American pipeweed, bud sagebrush
Surface layer: Silty clay loam
Underlying material: Silty clay

Semi Desert Ecotype

This group consists of one map unit. It makes up about 19 percent of the park. The soils of this group are nearly level to steep. The vegetation is mainly pinyon, juniper, shrubs, and grasses.

The soils of this group are very shallow, shallow, and very deep, and excessively and well drained. They formed in eolian deposits derived from sandstone, alluvium and/or colluvium derived from limestone and sandstone, and colluvium over residuum.

2. Arches-Strych-Splimo (Semi Desert Ecotype)

Setting

Slope range: 3 to 50 percent
Annual air temperature: 45 to 49 degrees F
Annual precipitation: 8 to 12 inches
Frost-free period: 90 to 149 days

***Composition**:*
Arches soils: 30 percent of unit
Strych soils: 25 percent of unit
Splimo soils: 20 percent of unit
Minor components: 25 percent of unit

***Other soils of minor extent**:*
Windcomb soils on cuestas, hillslopes
Mespun soils on fan remnants, hillslopes
Chew soils on hillslopes
Rock outcrop on ridges, cliffs, hillslopes
Mellenthin soils on fan remnants, structural benches
Milok soils on hillslopes, fan remnants

Characteristics of the Arches soil
Geomorphic setting: Hills
Geomorphic position: Footslopes, toeslopes
Slope range: 5 to 40 percent
Elevation: 5,100 to 6.000 feet
Parent material: Eolian deposits derived from sandstone
Depth class: Very shallow and shallow
Drainage class: Excessively drained
Ecological site name: Pinyon-Juniper
Native plant community: Utah juniper, twoneedle pinyon, black sagebrush, saline wildrye, Mormon tea, bluebunch wheatgrass, galleta
Surface layer: Loamy fine sand
Underlying material: Loamy fine sand, fine sand

Characteristics of the Strych soil
Geomorphic setting: Fan remnants, structural benches
Geomorphic position: Footslopes, backslopes
Slope range: 3 to 45 percent
Elevation: 5,500 to 6,500
Parent materials: alluvium and/or colluvium derived from limestone and sandstone
Depth class: very deep
Drainage class: Well drained
Ecological site name: Pinyon-Juniper
Native plant community: Utah juniper, twoneedle pinyon, Indian ricegrass, galleta, Mormon tea, Nevada bluegrass, Wyoming big sagebrush, black sagebrush, bluebunch wheatgrass, needleandthread, true mountain mahogany, winterfat
Surface layer: Cobbly loam
Subsoil: Cobbly loam, very stony loam, very cobbly loam, loam

Characteristics of the Splimo soil
Geomorphic setting: Hillslopes
Geomorphic position: backslopes
Slope range: 25 to 50 percent
Elevation: 5,000 to 6,800 feet
Parent materials: Colluvium over residuum
Depth class: Shallow
Drainage class: Well drained
Ecological site name: Pinyon-Juniper
Native plant community: Utah juniper, twoneedle pinyon, black sagebrush, saline wildrye, Mormon tea, bluebunch wheatgrass, galleta

Surface layer: Extremely channery loam
Subsoil: Extremely channery loam

Upland Ecotype

This group consists of one map unit. It makes up about 25 percent of the park. The soils of this group are gently sloping to very steep. The vegetation is mainly pinyon, juniper, shrubs, and grasses.

The soils of this group are very deep and shallow, and well drained. They formed in residuum derived from limestone and/or colluvium and/or alluvium.

3. Cragnot-Pensore-Rock outcrop (Upland Ecotype)

Setting

Slope range: 6 to 99 percent
Annual air temperature: 43 to 45 degrees F
Annual precipitation: 12 to 14 inches
Frost-free period: 75 to 95 days

Composition*:*

Cragnot soils: 25 percent of unit
Pensore soils: 20 percent of unit
Rock outcrop: 15 percent of unit
Minor components: 40 percent of unit

Other soils of minor extent*:*

Grapit soils on valleys, hills
Lakebench soils on structural benches, fan remnants
Yampa soils on structural benches, fan remnants
Mantlemine soils on structural benches
Strell soils on cuestas, mesas
Marthaspeak soils on cuestas, mesas

Characteristics of the Gragnot soil

Geomorphic setting: Hills, valleys
Geomorphic position: Backslopoes, footslopes
Slope range: 6 to 75 percent
Elevation: 6,300 to 8,500 feet
Parent material: Residuum weathered from limestone and/or colluvium and/or alluvium
Depth class: Very deep
Drainage class: Well drained
Ecological site name: Pinyon-Juniper
Native plant community: Utah juniper, twoneedle pinyon, Indian ricegrass, bluebunch wheatgrass, Nevada bluegrass, Wyoming big sagebrush, black sagebrush, needleandthread, Stemless goldenweed, true mountain mahogany, antelope bitterbrush, Mormon tea
Surface layer: Very channery loam
Subsoil: Very channery silt loam, extremely channery silt loam, very channery silt loam

Characteristics of the Pensore soil

Geomorphic setting: Valleys, hills
Geomorphic position: Backslope, footslopes
Slope range: 6 to 75 percent

Elevation: 6,300 to 8,500 feet
Parent material: Residuum weathered from limestone
Depth class: Shallow
Drainage class: Well drained
Ecological site name: Pinyon-Juniper
Native plant community: Utah juniper, twoneedle pinyon, Indian ricegrass, blue bunch wheatgrass, Nevada bluegrass, Wyoming big sagebrush, black sagebrush, needleandthread, prairie Junegrass, stemless goldenweed, true mountain mahogany, antelope bitterbrush, Mormon tea
Surface layer: Gravelly loam
Subsoil: Extremely cobbly loam, extremely channery loam

Chacteristics of the Rock outcrop
Geomorphic stting: Mountains, ridge, cliffs
Slope range: 75 to 99 percent
Elevation: 5,800 to 8,400 feet
Parent material: Exposed hard sandstone or limestone bedrock
Ecological site name: Pinyon-Juniper

Mountain Ecotype

This group consists of one map unit. It makes up about 50 percent of the park. The soils of this group are steep to very steep. The vegetation is mainly pinyon, juniper, shrubs and grasses.

The soils of this group are very shallow, shallow to moderately deep and well drained. They formed in colluvium and/or residuum derived from limestone, sandstone, and sedimentary rock.

4. Rock outcrop-Torriorthents-Ustorthents (Mountain Ecotype)

Setting
Annual precipitation: 9 to 16 inches
Frost-free period: 75 to 105 days

Composition*:*
Rock outcrop: 42 percent of unit
Torriorthents soils: 12 percent of unit
Ustorthents soils: 11 percent of unit
Minor components: 35 percent of unit

Other soils of minor extent*:*
Ustochrepts soils on mountains
Cryochepts soils on mountains
Cortyzack soils on hills
Duffymont soils on hills
Ustorthents, frigid soils on mountains
Borolls soils on mountains

Characteristics of the Rock outcrop
Geomorphic setting: Cliffs, canyons, and mountains
Slope range: 25 to 99 percent
Elevation: 5,000 to 8,000 feet
Parent materials: Exposed hard bedrock limestone and sandstone

Characteristics of the Torriorthents soil

Geomorphic setting: Canyons, mountains
Geomorphic position: backslopes, footslopes
Slope range: 25 to 75 percent
Elevation: 5,000 to 8,000 feet
Parent materials: Colluvium and/or residuum weathered from limestone and sandstone
Depth class: Very shallow to moderately deep
Drainage class: Well drained
Native plant community: Indian ricegrass, Mormon tea, Utah juniper, bluebunch wheatgrass, Wyoming big sagebrush, antelope bitterbrush, needleandthread, true mountain mahogany, twoneedle pinyon, western wheatgrass
Surface layer: Very gravelly loam
Underlying material: Very gravelly loam

Characteristics of the Ustorthents soil

Geomorphic setting: Canyons, mountains
Geomorphic position: footslopes, backslopes
Slope range: 25 to 75 percent
Elevation: 5,000 to 8,000 feet
Parent materials: Colluvium and/or residuum weathered from sedimentary rock
Depth class: Shallow to moderately deep
Drainage class: Well drained
Native plant community: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, Nevada bluegrass, Utah serviceberry, Wyoming big sagebrush, mountain snowberry, neeedleandthread, prairie Junegrass, true mountain mahogany
Surface layer: Cobbly loam
Underlying material: Cobbly sandy clay loam

Riparian Life Zone

This group consists of one map unit. It makes up about 3 percent of the park. The soils of this group are level to gently sloping. The vegetation is mainly grasses and shrubs.

The soils of this group are very deep and moderately well and well drained. They formed in alluvium.

5. Green River-Riverwash-Ustic Torrifluvents (Riparian Life Zone)

Setting

Slope range: 0 to 8 percent
Annual air temperature: 45 to 49 degrees F
Annual precipitation: 5 to 14 inches
Frost-free period: 90 to 140 days

Composition:

Green River soils: 50 percent of unit
Riverwash: 15 percent of unit
Ustic Torrifluvents soils: 10 percent of unit
Minor components: 25 percent of unit

Other soils of minor extent:

Cameo soils on flood plains
Eghelm soils on flood plains
Fluvaquents soils on flood plains and lower oxbows
logoon soils on flood plains
Labyrinth soils on flood plains

Characteristics of the Green River soils

Geomorphic setting: Upper flood plains
Annual air temperature: 45 to 49 degrees F
Annual precipitation: 5 to 12 inches
Frost-free period: 110 to 140 days
Slope range: 0 to 2 percent
Elevation: 4,700 to 5,800 feet
Parent materials: Alluvium
Depth class: Very deep
Drainage class: moderately well drained Flooding hazard: Rare
Ecological site name: River Flood plain (Fremont cottonwood)
Native plant community: Bluegrass, sandbar willow, wheatgrass, basin big sagebrush, rubber rabbitbrush, Fremont's cottonwood, alkali sacaton, inland saltgrass
Surface layer: Fine sandy loam
Underlying material: Stratified coarse sand to loam

Characteristics of the Riverwash

Geomorphic setting: Lower flood plains
Annual precipitation: 8 to 14 inches
Frost-free period: 90 to 140 days
Slope range: 0 to 4 percent
Elevation: 5,000 to 5,650 feet
Parent materials: Alluvium
Flooding hazard: Frequent
Native plant community: Little or no permanent vegetation

Characteristics of the Ustic Torrifluvents soils

Geomorphic setting: Flood plains and fan remnants
Annual air temperature: 45 to 48 degrees F
Annual precipitation: 10 to 12 inches
Frost-free period: 90 to 105 days
Slope range: 2 to 8 percent
Elevation: 5,200 to 5,600 feet
Parent materials: Alluvium
Depth class: Very deep
Drainage class: Excessively drained
Flooding hazard: None and rare
Ecological site name: Not specified
Native plant community: Basin wildrye, Indian ricegrass, basin big sagebrush, bluebunch wheatgrass, needleandthread, western wheatgrass, Utah juniper, twoneedle pinyon
Surface layer: Fine sandy loam
Underlying material: Stratified extremely stony coarse sand to extremely stony loamy sand

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

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. The contrasting components are mentioned in the map unit descriptions. 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 the principal hazards and limitations to be considered in planning for specific uses.

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, Cameo sandy clay loam, 1 to 8 percent slopes, is a phase of the Cameo 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. Dearjosh-Lakebench complex, 3 to 15 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. Cragnot-Pensore-Grapit association, 6 to 75 percent slopes, very stony, is an example.

This survey includes miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The *Glossary* defines many of the terms used in describing the soils or miscellaneous areas.

1—Abracon-Solirec complex, 3 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,300 to 6,300 feet (1,615 to 1,920 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Abracon and similar soils: 45 percent
Solirec and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Abracon soils
Landform: Mesas, hills, fan remnants
Position on landform: Footslopes, toeslopes, treads
Parent material: Strongly calcareous loamy alluvium
Slope: 3 to 8 percent
Aspect: East to southeast
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent

Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)
Potential native vegetation: Indian ricegrass, Wyoming big sagebrush, squirreltail, galleta, needleandthread, globemallow, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; loam
Bw—4 to 10 inches; loam
Bk1—10 to 21 inches; loam
Bk2—21 to 35 inches; loam
Bk3—35 to 51 inches; loam
C—51 to 60 inches; loam

Solirec soils
Landform: Fan remnants, hillslopes, mesas
Position on landform: Footslopes, toeslopes, treads
Parent material: Eolian deposits over alluvium and/or colluvium derived from limestone and sandstone
Slope: 3 to 8 percent
Aspect: East to southeast
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 9.7 inches (high)
Shrink-swell potential: About 4.1 percent (moderate)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)
Potential native vegetation: Indian ricegrass, Wyoming big sagebrush, squirreltail, galleta, needleandthread, globemallow, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; fine sandy loam
Bt—4 to 12 inches; sandy clay loam
Bk1—12 to 19 inches; loam
Bk2—19 to 37 inches; clay loam
Bk3—37 to 53 inches; clay loam
Bk4—53 to 75 inches; clay loam

Minor Components
Clapper and similar soils
Composition: About 10 percent
Landform: Hillslopes
Position on landform: Backslopes
Slope: 25 to 50 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Yarts and similar soils
Composition: About 5 percent
Landform: Alluvial flats
Slope: 4 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush)

Figure 5.—In the foreground is map unit 1, Abracon-Solirec complex, 3 to 8 percent slopes. Map unit 2, Arches-Mespun-Rock outcrop complex, 4 to 40 percent slopes, is shown in the background.

2—Arches-Mespun-Rock outcrop complex, 4 to 40 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,100 to 6,000 feet (1,554 to 1,829 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Arches and similar soils: 45 percent
Mespun and similar soils: 20 percent
Rock outcrop: 20 percent
Minor components: 15 percent

Component Descriptions

Arches soils
Landform: Hills
Position on landform: Footslopes, toeslopes, head slopes, nose slopes, side slopes, base slopes
Parent material: Eolian deposits derived from sandstone
Slope: 5 to 40 percent
Aspect: East to west
Shape (down/across): Convex, linear/convex, linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 5 to 20 inches to bedrock, lithic
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 0.7 inch (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: black sagebrush, saline wildrye, Mormon tea, bluebunch wheatgrass, galleta
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 2 inches; loamy fine sand
C1—2 to 5 inches; loamy fine sand
C2—5 to 9 inches; fine sand
R—9 to 13 inches; unweathered bedrock

Mespun soils
Landform: Fan remnants, hillslopes
Position on landform: Toeslopes, footslopes, treads
Parent material: Eolian deposits
Slope: 4 to 25 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Sand (Fourwing Saltbush)
Potential native vegetation: Indian ricegrass, fourwing saltbush, needleandthread, sand sagebrush, crispleaf buckwheat, galleta, scarlet globemallow
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; fine sand
C1—3 to 8 inches; fine sand
C2—8 to 19 inches; fine sand
C3—19 to 21 inches; fine sand
C4—21 to 37 inches; fine sand
C5—37 to 49 inches; fine sand
C6—49 to 60 inches; fine sand

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Hillslopes
Position on landform: Side slopes
Parent material: Exposed hard bedrock sandstone
Slope: 4 to 99 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Available water capacity: About 0.0 inches (very low)
Runoff class: Very high
Land capability subclass (nonirrigated): 8

Minor Components
Yarts and similar soils
Composition: About 5 percent
Slope: 4 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Four-wing Saltbush)

Clapper and similar soils
Composition: About 5 percent
Landform: Hillslopes
Position on landform: Backslopes
Slope: 25 to 50 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Begay and similar soils
Composition: About 5 percent
Slope: 2 to 15 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Four-wing Saltbush)

3—Badland-Polychrome-Rock outcrop complex, 50 to 75 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 6,800 feet (1,524 to 2,073 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 44 to 49 degrees F.
Frost-free period: 110 to 140 days

Map Unit Composition

Badland: 40 percent
Polychrome and similar soils: 30 percent
Rock outcrop: 20 percent
Minor components: 10 percent

Component Descriptions

Badland

Description: Badland usually consists of little or no soil over sedimentary rock with little or no vegetation. These areas usually have been strongly dissected by erosion.
Landform: Hillslopes
Position on landform: Backslopes
Parent material: Sedimentary rock
Slope: 50 to 75 percent
Aspect: Northeast to southwest
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 to 4 inches to bedrock, paralithic
Available water capacity: About 0.0 inches (very low)
Runoff class: Very high
Salinity maximum: About 0 mmhos/cm (nonsaline)
Land capability subclass (nonirrigated): 8e

Polychrome soils

Landform: Hillslopes
Position on landform: Backslopes, side slopes
Parent material: Colluvium over residuum
Slope: 50 to 75 percent
Aspect: Northeast to southwest
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic; 43 to 51 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 3.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: black sagebrush, saline wildrye, Mormon tea, bluebunch wheatgrass, galleta
Land capability subclass (nonirrigated): 8e

Typical Profile:
A—0 to 6 inches; very gravelly fine sandy loam
Cy1—6 to 13 inches; gravelly loam
Cy2—13 to 18 inches; very channery loam
Cy3—18 to 32 inches; extremely channery silt loam

Cr—32 to 49 inches; weathered bedrock
R—49 to 53 inches; unweathered bedrock

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Cliffs, hillslopes, ridges
Parent material: Exposed hard limestone and sandstone
Slope: 50 to 99 percent
Aspect: Northeast to southwest
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Runoff class: Very high
Land capability subclass (nonirrigated): 8s

Minor Components
Milok and similar soils
Composition: About 5 percent
Slope: 10 to 65 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Windcomb and similar soils
Composition: About 5 percent
Slope: 8 to 25 percent
Depth to restrictive feature: 6 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

4—Badland-Rock outcrop complex

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 7,000 feet (1,524 to 2,134 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F.
Frost-free period: 110 to 140 days

Map Unit Composition

Badland: 50 percent
Rock outcrop: 35 percent
Minor components: 15 percent

Component Descriptions

Badland
Description: Badland usually consists of little or no soil over sedimentary rock with little or no vegetation. These areas usually have been strongly dissected by erosion.
Landform: Hillslopes
Position on landform: Footslopes, backslopes
Parent material: Semiconsolidated sedimentary rock
Slope: 1 to 99 percent
Aspect: East to west
Shape (down/across): Convex/convex
Depth to restrictive feature: 0 to 4 inches to bedrock, paralithic

Figure 6.—Shown here is an example of map unit 4, Badland-Rock outcrop complex.

Available water capacity: About 0.0 inches (very low)
Runoff class: Very high
Salinity maximum: About 0 mmhos/cm (nonsaline)
Land capability subclass (nonirrigated): 8e

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Ridges, cliffs, hillslopes
Parent material: Exposed hard limestone and sandstone
Slope: 1 to 99 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Runoff class: Very high
Land capability subclass (nonirrigated): 8s

Minor Components
Windcomb and similar soils
Composition: About 5 percent
Slope: 8 to 25 percent
Depth to restrictive feature: 6 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Polychrome and similar soils
Composition: About 5 percent
Slope: 50 to 75 percent

Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Milok and similar soils
Composition: About 5 percent
Slope: 10 to 65 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

5—Bankard Family-Cameo complex, 0 to 5 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 6,000 feet (1,524 to 1,829 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Bankard Family and similar soils: 55 percent
Cameo and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Bankard Family soils
Landform: Upper flood plains
Position on landform: Dips, talfs, rises
Parent material: Alluvium from various sources
Slope: 0 to 5 percent
Aspect: Northeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Runoff class: Very low
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Bottom (Basin Big Sagebrush)
Potential native vegetation: basin big sagebrush, basin wildrye, Indian ricegrass, alkali sacaton, needleandthread, western wheatgrass
Land capability subclass (nonirrigated): 4c

Typical Profile:
A—0 to 2 inches; sand
C1—2 to 23 inches; sand
C2—23 to 28 inches; loamy sand

C3—28 to 34 inches; sand
C4—34 to 60 inches; sand

Cameo soils
Landform: Upper flood plains
Position on landform: Dips, talfs, rises
Parent material: Alluvium from various sources
Slope: 0 to 5 percent
Aspect: Northeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 9.3 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Runoff class: Very low
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Bottom (Basin Big Sagebrush)
Potential native vegetation: basin big sagebrush, basin wildrye, Indian ricegrass, alkali sacaton, needleandthread, fourwing saltbush, galleta
Land capability subclass (nonirrigated): 4c

Typical Profile:
A—0 to 2 inches; loamy fine sand
AC—2 to 7 inches; fine sandy loam
C1—7 to 22 inches; fine sandy loam
C2—22 to 34 inches; fine sandy loam
C3—34 to 60 inches; fine sandy loam

Minor Components
Mido and similar soils
Composition: About 5 percent
Landform: Hills
Position on landform: Toeslopes
Slope: 3 to 12 percent
Drainage class: Excessively drained
Ecological site: Semidesert Sandy Loam

Fluvaquents and similar soils
Composition: About 3 percent
Landform: Flood plains
Slope: 0 to 1 percent
Drainage class: Poorly drained
Flooding hazard: Frequent

Solirec and similar soils
Composition: About 2 percent
Landform: Hillslopes
Position on landform: Backslopes, footslopes
Slope: 10 to 40 percent

Drainage class: Well drained
Ecological site: Semidesert Sandy Loam

6—Begay sandy loam, 2 to 15 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,200 to 6,000 feet (1,585 to 1,829 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Begay and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Begay soils
Landform: Fan remnants
Position on landform: Treads
Parent material: Eolian deposits over alluvium
Slope: 2 to 15 percent
Aspect: East to west
Shape (down/across): Convex/convex
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 7.1 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush)
Potential native vegetation: Indian ricegrass, needleandthread, fourwing saltbush, galleta
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; sandy loam
Bw—4 to 12 inches; sandy loam
Bk1—12 to 24 inches; sandy loam
Bk2—24 to 37 inches; sandy loam
C—37 to 60 inches; sandy loam

Minor Components
Abracon and similar soils
Composition: About 5 percent
Landform: Mesas, hills, fan remnants
Position on landform: Footslopes, toeslopes
Slope: 3 to 8 percent

Drainage class: Well drained
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)

Splimo and similar soils
Composition: About 5 percent
Landform: Hillslopes
Position on landform: Toeslopes, footslopes
Slope: 8 to 25 percent
Depth to restrictive feature: 8 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

7—Begay-Mespun complex, 2 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,800 to 6,000 feet (1,463 to 1,829 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Begay and similar soils: 55 percent
Mespun and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Begay soils
Landform: Hillslopes
Position on landform: Toeslopes, side slopes
Parent material: Eolian deposits over alluvium
Slope: 2 to 15 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 7.1 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush)
Potential native vegetation: Indian ricegrass, needleandthread, fourwing saltbush, galleta
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; sandy loam
Bw—4 to 12 inches; sandy loam
Bk1—12 to 24 inches; sandy loam
Bk2—24 to 37 inches; sandy loam
Bk3—37 to 60 inches; sandy loam

Mespun soils
Landform: Hillslopes
Position on landform: Toeslopes, side slopes
Parent material: Eolian deposits
Slope: 4 to 25 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Sand (Fourwing Saltbush)
Potential native vegetation: Indian ricegrass, fourwing saltbush, needleandthread, sand sagebrush, crispleaf buckwheat, galleta, scarlet globemallow
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; fine sand
C1—3 to 8 inches; fine sand
C2—8 to 19 inches; fine sand
C3—19 to 21 inches; fine sand
C4—21 to 37 inches; fine sand
C5—37 to 49 inches; fine sand
C6—49 to 60 inches; fine sand

Minor Components
Clapper and similar soils
Composition: About 10 percent
Landform: Hillslopes
Position on landform: Backslopes
Slope: 25 to 50 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

8—Bodry silty clay loam, 10 to 40 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 5,500 feet (1,524 to 1,676 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)

Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Bodry and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Bodry soils
Landform: Hillslopes
Position on landform: Toeslopes, footslopes, side slopes
Parent material: Alluvium and/or colluvium over residuum weathered from shale
Slope: 10 to 40 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic; 43 to 51 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: .06 to 0.2 in./hr. (slow)
Available water capacity: About 6.8 inches (moderate)
Shrink-swell potential: About 6.3 percent (high)
Runoff class: Very high
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Semidesert Clay Loam
Potential native vegetation: Wyoming big sagebrush, Sandberg bluegrass, bluebunch wheatgrass, western wheatgrass, squirreltail, shadscale saltbush
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 8 inches; silty clay loam
CBy1—8 to 15 inches; silty clay
CBy2—15 to 28 inches; silty clay
CBy3—28 to 38 inches; silty clay loam
Cr—38 to 50 inches; weathered bedrock
R—50 to 54 inches; unweathered bedrock

Minor Components
Badland
Composition: About 10 percent
Slope: 50 to 75 percent
Depth to restrictive feature: 0 to 3 inches to bedrock, paralithic

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

9—Bondman-Rock outcrop complex, 5 to 40 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,500 to 6,200 feet (1,676 to 1,890 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Bondman and similar soils: 50 percent
Rock outcrop: 35 percent
Minor components: 15 percent

Component Descriptions

Bondman soils
Landform: Mountains
Position on landform: Mountaintops, mountainflanks, mountainbases
Parent material: Residuum weathered from sandstone
Slope: 5 to 40 percent
Aspect: Northeast to south
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 7 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 1.2 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, galleta, black sagebrush, bluebunch wheatgrass, needleandthread, plains pricklypear, scarlet globemallow, twoneedle pinyon, broom snakeweed
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 2 inches; sandy loam
Bt—2 to 8 inches; sandy clay loam
R—8 to 12 inches; unweathered bedrock

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Mountains, ridges, cliffs
Parent material: Exposed hard bedrock sandstone
Slope: 5 to 40 percent
Aspect: Northeast to south
Shape (down/across): Linear/linear

Depth to restrictive feature: 0 inches to bedrock, lithic
Available water capacity: About 0.0 inches (very low)
Runoff class: Very high
Land capability subclass (nonirrigated): 8

Minor Components
Anasazi and similar soils
Composition: About 5 percent
Landform: Cuestas
Slope: 3 to 25 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Mido and similar soils
Composition: About 5 percent
Landform: Hills
Position on landform: Toeslopes
Slope: 3 to 12 percent
Drainage class: Excessively drained
Ecological site: Semidesert Sandy Loam

Strych and similar soils
Composition: About 5 percent
Landform: Hillslopes
Position on landform: Backslopes, footslopes
Slope: 10 to 65 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

10—Cameo loamy fine sand, 0 to 5 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 6,000 feet (1,524 to 1,829 meters)
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Cameo and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Cameo soils
Landform: Upper flood plains
Position on landform: Dips, talfs, rises
Parent material: Alluvium from various sources
Slope: 0 to 5 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)

Available water capacity: About 9.3 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Runoff class: Very low
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Bottom (Basin Big Sagebrush)
Potential native vegetation: basin big sagebrush, basin wildrye, Indian ricegrass, alkali sacaton, needleandthread, fourwing saltbush, galleta
Land capability subclass (nonirrigated): 4c

Typical Profile:
A—0 to 2 inches; loamy fine sand
AC—2 to 7 inches; fine sandy loam
C1—7 to 22 inches; fine sandy loam
C2—22 to 34 inches; fine sandy loam
C3—34 to 60 inches; fine sandy loam

Minor Components
Fluvaquents and similar soils
Composition: About 10 percent
Landform: Flood plains
Slope: 0 to 1 percent
Drainage class: Poorly drained
Flooding hazard: Frequent

Yarts and similar soils
Composition: About 5 percent
Landform: Alluvial flats
Slope: 4 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush)

11—Cameo sandy clay loam, 1 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,300 to 6,300 feet (1,615 to 1,920 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Cameo and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Cameo soils
Landform: Flood plains
Position on landform: Dips, talfs, rises
Parent material: Alluvium from various sources

Slope: 1 to 8 percent
Aspect: East to west
Shape (down/across): Concave/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Bottom (Basin Big Sagebrush)
Potential native vegetation: basin wildrye, basin big sagebrush, muttongrass, western wheatgrass, Indian ricegrass, fourwing saltbush, needleandthread
Land capability subclass (nonirrigated): 4c

Typical Profile:
A—0 to 5 inches; sandy clay loam
C1—5 to 9 inches; sandy clay loam
C2—9 to 60 inches; silt loam

Minor Components

Fluvaquents and similar soils
Composition: About 5 percent
Landform: Flood plains
Slope: 0 to 1 percent
Drainage class: Poorly drained
Flooding hazard: Frequent

Bankard Family and similar soils
Composition: About 5 percent
Landform: Flood plains
Slope: 1 to 8 percent
Drainage class: Excessively drained
Flooding hazard: Rare
Ecological site: River Floodplain (Fremont Cottonwood)

Milok and similar soils
Composition: About 5 percent
Landform: Fan remnants
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush)

12—Clapper-Abracon complex, 8 to 50 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,500 to 6,300 feet (1,676 to 1,920 meters)

Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Clapper and similar soils: 65 percent
Abracon and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Clapper soils
Landform: Hillslopes
Position on landform: Backslopes, side slopes
Parent material: Colluvium
Slope: 25 to 50 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 5.9 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Mormon tea, black sagebrush, galleta, needleandthread, alderleaf mountain mahogany, Indian ricegrass, bluebunch wheatgrass, squirreltail, saline wildrye
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; gravelly loam
Bw—3 to 7 inches; gravelly loam
Bk1—7 to 13 inches; gravelly loam
Bk2—13 to 21 inches; very cobbly loam
Bk3—21 to 36 inches; very cobbly loam
Bk4—36 to 49 inches; very cobbly loam
Bk5—49 to 60 inches; very cobbly sandy clay loam

Abracon soils
Landform: Hills
Position on landform: Toeslopes, side slopes, head slopes, nose slopes, base slopes
Parent material: Alluvium and/or colluvium
Slope: 8 to 25 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 1.5 percent (low)

Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)
Potential native vegetation: Indian ricegrass, Wyoming big sagebrush, squirreltail, galleta, needleandthread, globemallow, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
H1—0 to 5 inches; loam
H2—5 to 56 inches; loam
H3—56 to 60 inches; loam

Minor Components
Badland
Composition: About 10 percent
Slope: 8 to 25 percent
Depth to restrictive feature: 0 to 3 inches to bedrock, paralithic

Arches and similar soils
Composition: About 5 percent
Landform: Hills
Slope: 5 to 40 percent
Depth to restrictive feature: 5 to 20 inches to bedrock, lithic
Drainage class: Excessively drained
Ecological site: Pinyon-Juniper

13—Cortyzack-Duffymont complex, 3 to 25 percent slopes, rubbly

Map Unit Setting

Major Land Resource Area: 47
Elevation: 7,400 to 8,200 feet (2,256 to 2,499 meters)
Mean annual precipitation: 16 to 20 inches (406 to 508 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 70 to 90 days

Map Unit Composition

Cortyzack and similar soils: 55 percent
Duffymont and similar soils: 30 percent
Minor components: 15 percent

Component Descriptions

Cortyzack soils
Landform: Hills
Position on landform: Shoulders, summits, head slopes, base slopes, side slopes, nose slopes
Parent material: Eolian deposits and/or slope alluvium derived from sandstone
Slope: 3 to 25 percent
Aspect: East to northwest
Shape (down/across): Linear/linear

Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 9.9 inches (high)
Shrink-swell potential: About 3.9 percent (moderate)
Runoff class: Medium
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Loam (Mountain Big Sagebrush)
Potential native vegetation: Columbia needlegrass, mountain big sagebrush, western wheatgrass, bluegrass, alderleaf mountain mahogany, Indian ricegrass, Utah serviceberry, arrowleaf balsamroot, mountain snowberry, needleandthread, prairie Junegrass, sedge, tapertip hawksbeard
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; loam
Bt1—3 to 8 inches; clay loam
Bt2—8 to 12 inches; clay loam
Bt3—12 to 23 inches; clay loam
Bk1—23 to 39 inches; clay loam
Bk2—39 to 48 inches; clay loam
Bk3—48 to 72 inches; loam
C—72 to 76 inches; loam

Duffymont soils
Landform: Hills
Position on landform: Shoulders, summits, side slopes, nose slopes, head slopes, base slopes
Parent material: Slope alluvium and/or colluvium derived from sandstone
Slope: 3 to 25 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 4 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 1.0 inch (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush)
Potential native vegetation: bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, needleandthread, Indian ricegrass, Sandberg bluegrass, Utah serviceberry, arrowleaf balsamroot, sheep fescue
Land capability subclass (nonirrigated): 7s

Typical Profile:
A1—0 to 3 inches; extremely flaggy fine sandy loam
A2—3 to 13 inches; extremely flaggy fine sandy loam

C—13 to 17 inches; extremely flaggy sandy loam
R—17 to 21 inches; unweathered bedrock

Minor Components

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Sheecal and similar soils
Composition: About 5 percent
Slope: 10 to 40 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Stout and similar soils
Composition: About 5 percent
Slope: 5 to 35 percent
Depth to restrictive feature: 7 to 20 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Ecological site: Pinyon-Juniper

14—Cragnot-Pensore-Grapit association, 6 to 75 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 47
Elevation: 6,300 to 8,500 feet (1,920 to 2,591 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 43 to 45 degrees F. (6.1 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Cragnot and similar soils: 35 percent
Pensore and similar soils: 35 percent
Grapit and similar soils: 15 percent
Minor components: 15 percent

Component Descriptions

Cragnot soils

Landform: Valleys, hills
Position on landform: Backslopes, footslopes, base slopes, head slopes, nose slopes, side slopes
Parent material: Residuum weathered from limestone and/or colluvium and/or alluvium
Slope: 6 to 75 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 4.1 inches (low)

Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 60 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: twoneedle pinyon, Indian ricegrass, Utah juniper, bluebunch wheatgrass, Sandberg bluegrass, Wyoming big sagebrush, black sagebrush, needleandthread, stemless mock goldenweed, alderleaf mountain mahogany, antelope bitterbrush, Mormon tea
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very channery loam
Bk1—3 to 12 inches; very channery silt loam
Bk2—12 to 30 inches; extremely channery silt loam
Bk3—30 to 38 inches; extremely channery silt loam
BCk—38 to 60 inches; very channery silt loam

Pensore soils
Landform: Valleys, hills
Position on landform: Backslopes, footslopes, head slopes, nose slopes, base slopes, side slopes
Parent material: Residuum weathered from limestone

Figure 7.—This photo shows map unit 14, Cragnot-Pensore-Grapit association, 6 to 75 percent slopes, very stony.

Slope: 6 to 75 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 1.0 inch (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: About 60 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: twoneedle pinyon, Indian ricegrass, Utah juniper, bluebunch wheatgrass, Sandberg bluegrass, Wyoming big sagebrush, black sagebrush, needleandthread, prairie Junegrass, stemless mock goldenweed, alderleaf mountain mahogany, antelope bitterbrush, Mormon tea
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; gravelly loam
BA—3 to 10 inches; extremely cobbly loam
Bk—10 to 16 inches; extremely channery loam
R—16 to 20 inches; unweathered bedrock

Grapit soils
Landform: Valleys, hills
Position on landform: Backslopes, footslopes, base slopes, side slopes, nose slopes, head slopes
Parent material: Slope alluvium and/or colluvium derived from limestone
Slope: 12 to 75 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 3.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 50 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: twoneedle pinyon, Wyoming big sagebrush, bluebunch wheatgrass, Indian ricegrass, western wheatgrass, Sandberg bluegrass, prairie Junegrass, alderleaf mountain mahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 5 inches; gravelly loam
AB—5 to 14 inches; very gravelly loam
Bk1—14 to 30 inches; extremely gravelly loam
Bk2—30 to 54 inches; extremely cobbly loam
C—54 to 60 inches; very cobbly loam

Minor Components
Lakebench and similar soils
Composition: About 10 percent
Landform: Structural benches, fan remnants
Slope: 5 to 30 percent
Drainage class: Well drained
Ecological site: Rolling Loam

Rock outcrop
Composition: About 5 percent
Landform: Cliffs, canyons, mountains
Slope: 1 to 99 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

15—Davtone-Forsey complex, 12 to 35 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 47
Elevation: 7,000 to 9,000 feet (2,134 to 2,743 meters)
Mean annual precipitation: 16 to 18 inches (406 to 457 millimeters)
Mean annual air temperature: 37 to 40 degrees F. (2.8 to 4.4 degrees C.)
Frost-free period: 50 to 75 days

Map Unit Composition

Davtone and similar soils: 50 percent
Forsey and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Davtone soils
Landform: Mountains
Position on landform: Mountaintops, mountainbases, mountainflanks
Parent material: Alluvium and/or colluvium derived from sandstone
Slope: 12 to 35 percent
Aspect: North to southwest
Shape (down/across): Concave/concave
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 8.7 inches (moderate)
Shrink-swell potential: About 2.8 percent (low)
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)

Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Loam (Mountain Big Sagebrush)
Potential native vegetation: mountain big sagebrush, Letterman's needlegrass, bluebunch wheatgrass, elk sedge, slender wheatgrass, Columbia needlegrass, Utah serviceberry, arrowleaf balsamroot, mountain brome, mountain snowberry, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A1—0 to 2 inches; loam
A2—2 to 6 inches; loam
Bt1—6 to 17 inches; clay loam
Bt2—17 to 30 inches; clay loam
BC—30 to 60 inches; cobbly loam

Forsey soils
Landform: Mountain slopes
Position on landform: Mountainflanks
Parent material: Alluvium and/or colluvium derived from sandstone
Slope: 12 to 35 percent
Aspect: North to southwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 3.9 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Windswept Ridge (Black Sagebrush)
Potential native vegetation: bluebunch wheatgrass, Indian ricegrass, black sagebrush, muttongrass, prairie Junegrass, squirreltail, needleandthread, western wheatgrass
Land capability subclass (nonirrigated): 6e
Typical Profile:
A—0 to 2 inches; cobbly sandy loam
AB—2 to 8 inches; cobbly sandy loam
Bt1—8 to 18 inches; very cobbly sandy clay loam
Bt2—18 to 24 inches; very cobbly sandy loam
Bk—24 to 60 inches; very cobbly sandy loam

Minor Components
Mulgon and similar soils
Composition: About 10 percent
Landform: Mountains
Position on landform: Footslopes, backslopes
Slope: 25 to 50 percent
Drainage class: Well drained
Ecological site: Douglas fir

Mantlemine and similar soils
Composition: About 5 percent
Landform: Structural benches, fan remnants
Position on landform: Toeslopes, footslopes
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Rolling Loam

16—Dearjosh-Lakebench complex, 3 to 15 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,200 to 6,800 feet (1,890 to 2,073 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Dearjosh and similar soils: 50 percent
Lakebench and similar soils: 40 percent
Minor components: 10 percent

Component Descriptions

Dearjosh soils
Landform: Mesas, cuestas
Parent material: Alluvium and/or residuum
Slope: 3 to 15 percent
Aspect: Northeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 4.8 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Sandy Land
Potential native vegetation: Indian ricegrass, Wyoming big sagebrush, needleandthread, western wheatgrass, antelope bitterbrush, rabbitbrush, sand dropseed
Land capability subclass (nonirrigated): 4e

Typical Profile:
A—0 to 5 inches; loamy sand
AC—5 to 21 inches; loamy sand
C1—21 to 48 inches; loamy sand
C2—48 to 54 inches; loamy sand
C3—54 to 60 inches; loamy sand

Lakebench soils
Landform: Cuestas, mesas
Parent material: Mixed source alluvium and/or residuum
Slope: 3 to 15 percent
Aspect: Northeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 9.3 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, Indian ricegrass, squirreltail, rabbitbrush, scarlet globemallow
Land capability subclass (nonirrigated): 4e

Typical Profile:
A—0 to 6 inches; fine sandy loam
C1—6 to 22 inches; fine sandy loam
C2—22 to 60 inches; fine sandy loam

Minor Components
Marthaspeak and similar soils
Composition: About 10 percent
Slope: 1 to 25 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Ecological site: Sandy Land

17—Deaver-Avalon complex, 5 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,500 to 6,100 feet (1,676 to 1,859 meters)
Mean annual precipitation: 9 to 11 inches (229 to 279 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Deaver and similar soils: 50 percent
Avalon and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Deaver soils
Landform: Hills
Position on landform: Footslopes, backslopes, head slopes, nose slopes, side slopes, base slopes

Parent material: Residuum weathered from shale
Slope: 12 to 45 percent
Aspect: Southeast to southwest
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: .06 to 0.2 in./hr. (slow)
Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Clayey Slopes
Potential native vegetation: western wheatgrass, saline wildrye, shadscale saltbush, Indian ricegrass, Sandberg bluegrass, squirreltail, prairie Junegrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 2 inches; gravelly silty clay loam
AC—2 to 8 inches; silty clay
Cy1—8 to 18 inches; silty clay
Cy2—18 to 35 inches; silty clay
Cr—35 to 39 inches; unweathered bedrock

Avalon soils
Landform: Hills
Position on landform: Toeslopes, footslopes
Parent material: Alluvium derived from sandstone and shale
Slope: 5 to 12 percent
Aspect: Southeast to southwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Semidesert Loam
Potential native vegetation: Wyoming big sagebrush, galleta, Indian ricegrass, needleandthread, shadscale saltbush, western wheatgrass, squirreltail, fourwing saltbush, saline wildrye, winterfat
Land capability subclass (nonirrigated): 4e

Typical Profile:
A—0 to 3 inches; loam
Bw—3 to 12 inches; clay loam
Bk1—12 to 22 inches; clay loam

Figure 8.—Map unit 17, Deaver-Avalon complex, 5 to 45 percent slopes, is on the valley; and map unit 51, Rock outcrop, Torriorthents, and Ustorthents soils, 25 to 75 percent slopes, rubbly, is on the hill.

Bk2—22 to 42 inches; clay loam
Bk3—42 to 55 inches; clay loam
Bk4—55 to 62 inches; clay loam

Minor Components

Chipeta and similar soils
Composition: About 10 percent
Landform: Hills
Position on landform: Footslopes, backslopes
Slope: 3 to 35 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Clayey Saltdesert

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

18—Deaver-Chipeta silty clay loams, 3 to 35 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,400 to 6,100 feet (1,646 to 1,859 meters)

Mean annual precipitation: 9 to 11 inches (229 to 279 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Deaver and similar soils: 60 percent
Chipeta and similar soils: 30 percent
Minor components: 10 percent

Component Descriptions

Deaver soils
Landform: Hills
Position on landform: Footslopes, backslopes, base slopes, side slopes, nose slopes, head slopes
Parent material: Residuum weathered from shale
Slope: 3 to 35 percent
Aspect: East to southeast
Shape (down/across): Concave/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: .06 to 0.2 in./hr. (slow)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: Gardner's saltbush, shadscale saltbush, galleta, mat saltbush, Indian ricegrass, squirreltail, saline wildrye
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 2 inches; silty clay loam
AC—2 to 8 inches; silty clay
Cy1—8 to 18 inches; silty clay
Cy2—18 to 35 inches; silty clay
Cr—35 to 39 inches; unweathered bedrock

Chipeta soils
Landform: Hills
Position on landform: Footslopes, backslopes, nose slopes, head slopes, side slopes, base slopes
Parent material: Residuum weathered from shale
Slope: 3 to 35 percent
Aspect: East to southeast
Shape (down/across): Linear/linear
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: .06 to 0.2 in./hr. (slow)
Available water capacity: About 2.7 inches (very low)

Shrink-swell potential: About 7.5 percent (high)
Runoff class: Very high
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation:
Common trees: twoneedle pinyon, Utah juniper
Other plants: saltbush, saline wildrye, mat saltbush, Indian ricegrass, squirreltail, shadscale saltbush, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 1 inch; silty clay loam
AC—1 to 12 inches; silty clay
C—12 to 17 inches; silty clay
Cr—17 to 21 inches; weathered bedrock

Minor Components
Avalon and similar soils
Composition: About 5 percent
Landform: Hills
Position on landform: Toeslopes, footslopes
Slope: 5 to 12 percent
Drainage class: Well drained
Ecological site: Semidesert Loam

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

19—Detra-Cortyzack complex, 1 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 47
Elevation: 6,800 to 7,800 feet (2,073 to 2,377 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Detra and similar soils: 50 percent
Cortyzack and similar soils: 40 percent
Minor components: 10 percent

Component Descriptions

Detra soils
Landform: Hills
Position on landform: Toeslopes, footslopes, nose slopes, head slopes, side slopes, base slopes
Parent material: Slope alluvium derived from sandstone

Slope: 1 to 12 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 9.1 inches (high)
Shrink-swell potential: About 3.2 percent (moderate)
Runoff class: Medium
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Loam (Mountain Big Sagebrush)
Potential native vegetation: mountain big sagebrush, needleandthread, western wheatgrass, Indian ricegrass, Letterman's needlegrass, Sandberg bluegrass, Utah serviceberry, arrowleaf balsamroot, bluebunch wheatgrass, mountain snowberry, muttongrass, prairie Junegrass
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 8 inches; fine sandy loam
A2—8 to 19 inches; fine sandy loam
Bt1—19 to 27 inches; sandy clay loam
Bt2—27 to 38 inches; sandy clay loam
Bt3—38 to 50 inches; sandy clay loam
Bk—50 to 60 inches; sandy clay loam

Cortyzack soils
Landform: Hills
Position on landform: Toeslopes, footslopes, base slopes, head slopes, nose slopes, side slopes
Parent material: Slope alluvium and/or eolian deposits derived from sandstone
Slope: 3 to 12 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 9.9 inches (high)
Shrink-swell potential: About 3.9 percent (moderate)
Runoff class: Medium
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Loam (Mountain Big Sagebrush)
Potential native vegetation: Columbia needlegrass, mountain big sagebrush, western wheatgrass, bluegrass, alderleaf mountain mahogany, Indian ricegrass, Utah serviceberry, arrowleaf balsamroot, mountain snowberry, needleandthread, prairie Junegrass, sedge, tapertip hawksbeard
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; loam
Bt1—3 to 8 inches; clay loam
Bt2—8 to 12 inches; clay loam
Bt3—12 to 23 inches; clay loam
Bk1—23 to 39 inches; clay loam
Bk2—39 to 48 inches; clay loam
Bk3—48 to 72 inches; loam
C—72 to 76 inches; loam

Minor Components
Forsey and similar soils
Composition: About 10 percent
Slope: 12 to 35 percent
Drainage class: Well drained
Ecological site: Mountain Windswept Ridge (Black Sagebrush)

20—Eghelm-Uffens complex, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,700 to 4,800 feet (1,433 to 1,463 meters)
Mean annual precipitation: 5 to 8 inches (127 to 203 millimeters)
Mean annual air temperature: 45 to 47 degrees F. (7.2 to 8.3 degrees C.)
Frost-free period: 110 to 125 days

Map Unit Composition

Eghelm and similar soils: 55 percent
Uffens and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Eghelm soils
Landform: Flood plains
Position on landform: Talfs, dips, rises
Parent material: Alluvium
Slope: 1 to 3 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 5.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Loamy Bottom (Basin Big Sagebrush)

Potential native vegetation: basin wildrye, basin big sagebrush, muttongrass, needleandthread, western wheatgrass, Indian ricegrass, rubber rabbitbrush
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; silt loam
C1—4 to 18 inches; fine sandy loam
C2—18 to 26 inches; sandy loam
C3—26 to 41 inches; sand
C4—41 to 60 inches; sand

Uffens soils
Landform: Terraces
Position on landform: Treads
Parent material: Alluvium
Slope: 0 to 2 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 32 mmhos/cm (strongly saline)
Sodium adsorption ratio maximum: About 50 (strongly sodic)
Ecological site: Alkali Flat (Black Greasewood)
Potential native vegetation: greasewood, alkali sacaton, squirreltail, shadscale saltbush, Indian ricegrass, galleta, seepweed
Land capability subclass (nonirrigated): 7s

Typical Profile:
E—0 to 3 inches; sandy loam
Btn—3 to 24 inches; sandy clay loam
BCy—24 to 37 inches; loam
2BC—37 to 60 inches; sand

Minor Components
Green River and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Moderately well drained
Flooding hazard: Rare
Ecological site: River Floodplain (Fremont Cottonwood)

Fluvaquents and similar soils
Composition: About 5 percent
Landform: Flood plains
Slope: 0 to 1 percent
Drainage class: Poorly drained
Flooding hazard: Frequent

21—Emlin loam, 1 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 47
Elevation: 6,600 to 8,100 feet (2,012 to 2,469 meters)
Mean annual precipitation: 13 to 16 inches (330 to 406 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Emlin and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Emlin soils
Landform: Mountains
Position on landform: Mountainbases, mountaintops, mountainflanks
Parent material: Alluvium derived from limestone and sandstone
Slope: 1 to 12 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 10.3 inches (high)
Shrink-swell potential: About 4.1 percent (moderate)
Runoff class: Medium
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Mountain Loam (Mountain Big Sagebrush)
Potential native vegetation: mountain big sagebrush, western wheatgrass, bluebunch wheatgrass, needleandthread, Sandberg bluegrass, Sandberg bluegrass, Utah serviceberry, mountain snowberry, prairie Junegrass, scarlet globemallow, yellow rabbitbrush
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 2 inches; loam
A2—2 to 5 inches; loam
AB—5 to 11 inches; loam
Bt1—11 to 14 inches; clay loam
Bt2—14 to 19 inches; clay loam
Bk1—19 to 30 inches; silty clay loam
Bk2—30 to 41 inches; silty clay loam
Bk3—41 to 60 inches; silty clay loam

Minor Components
Lakebench and similar soils
Composition: About 10 percent
Slope: 3 to 15 percent
Drainage class: Well drained
Ecological site: Rolling Loam

22—Fluvaquents, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 5,800 feet (1,524 to 1,768 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Fluvaquents and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Fluvaquents soils
Landform: Oxbows, flood plains
Position on landform: Dips, rises, talfs
Parent material: Alluvium from various sources
Slope: 0 to 1 percent
Aspect: Northeast to southwest
Shape (down/across): Linear, concave/linear
Depth class: Very deep
Drainage class: Poorly drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 6.8 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Frequent
Ponding hazard: Frequent
Seasonal high water table depth: About 0 to 18 inches
Runoff class: Negligible
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation: cattail, rush, sedge, willow, common reed, reed canarygrass
Land capability subclass (nonirrigated): 6w

Typical Profile:
A—0 to 5 inches; fine sand
C1—5 to 22 inches; loamy fine sand
C2—22 to 30 inches; fine sandy loam
C3—30 to 36 inches; silt loam
C4—36 to 43 inches; fine sandy loam
C5—43 to 50 inches; loam
C6—50 to 60 inches; sand

Minor Components
Bankard Family and similar soils
Composition: About 5 percent
Slope: 0 to 5 percent

Drainage class: Excessively drained
Flooding hazard: Rare
Ecological site: Loamy Bottom (Basin Big Sagebrush)

Cameo and similar soils
Composition: About 5 percent
Slope: 0 to 5 percent
Drainage class: Well drained
Flooding hazard: Rare
Ecological site: Loamy Bottom (Basin Big Sagebrush)

Green River and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Moderately well drained
Flooding hazard: Rare
Ecological site: River Floodplain (Fremont Cottonwood)

23—Green River-Fluvaquents complex, 0 to 2 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,700 to 5,800 feet (1,433 to 1,768 meters)
Mean annual precipitation: 5 to 12 inches (127 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Green River and similar soils: 70 percent
Fluvaquents and similar soils: 15 percent
Minor components: 15 percent

Component Descriptions

Green River soils
Landform: Upper flood plains
Position on landform: Dips, rises, talfs
Parent material: Alluvium
Slope: 0 to 2 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Moderately well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 5.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: About 24 to 48 inches
Runoff class: Very low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)

Figure 9.—Shown is map unit 23, Green River-Fluvaquents complex, 0 to 2 percent slopes.

Sodium adsorption ratio maximum: About 15 (moderately sodic)
Ecological site: River Floodplain (Fremont Cottonwood)
Potential native vegetation: bluegrass, sandbar willow, wheatgrass, basin big sagebrush, rubber rabbitbrush, Fremont cottonwood, alkali sacaton, saltgrass
Land capability subclass (nonirrigated): 7w

Typical Profile:
A1—0 to 5 inches; fine sandy loam
C2—5 to 60 inches; stratified coarse sand to loam

Fluvaquents soils
Landform: Lower oxbows, flood plains
Position on landform: Dips, rises, talfs
Parent material: Alluvium from various sources
Slope: 0 to 1 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Poorly drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 6.8 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Frequent
Ponding hazard: Frequent
Seasonal high water table depth: About 0 to 18 inches
Runoff class: Negligible
Calcium carbonate maximum: About 25 percent

Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation: cattail, rush, sedge, willow, common reed, reed canarygrass
Land capability subclass (nonirrigated): 6w

Typical Profile:
A—0 to 5 inches; fine sand
C1—5 to 22 inches; loamy fine sand
C2—22 to 30 inches; fine sandy loam
C3—30 to 36 inches; silt loam
C4—36 to 43 inches; fine sandy loam
C5—43 to 50 inches; loam
C6—50 to 60 inches; sand

Minor Components
Bankard Family and similar soils
Composition: About 10 percent
Slope: 0 to 5 percent
Drainage class: Excessively drained
Flooding hazard: Rare
Ecological site: Loamy Bottom (Basin Big Sagebrush)

Riverwash
Composition: About 5 percent
Landform: Channels
Slope: 0 to 4 percent
Flooding hazard: Frequent

24—Hanksville silty clay loam, 25 to 50 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,800 to 5,100 feet (1,463 to 1,554 meters)
Mean annual precipitation: 5 to 8 inches (127 to 203 millimeters)
Mean annual air temperature: 45 to 47 degrees F. (7.2 to 8.3 degrees C.)
Frost-free period: 110 to 125 days

Map Unit Composition

Hanksville and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Hanksville soils
Landform: Hillslopes
Position on landform: Backslopes, side slopes
Parent material: Colluvium over residuum
Slope: 25 to 50 percent
Aspect: East to southwest
Shape (down/across): Concave/concave
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic

Drainage class: Well drained
Slowest permeability: .001 to .06 in./hr. (very slow)
Available water capacity: About 4.2 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: Very high
Calcium carbonate maximum: About 25 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Desert Shallow Clay (Mat Saltbush)
Potential native vegetation: mat saltbush, galleta, Native American pipeweed, bud sagebrush
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 2 inches; silty clay loam
Cy—2 to 13 inches; silty clay
C—13 to 33 inches; silty clay
Cr—33 to 37 inches; weathered bedrock

Minor Components
Badland
Composition: About 10 percent
Slope: 50 to 75 percent
Depth to restrictive feature: 0 to 3 inches to bedrock, paralithic

Deaver and similar soils
Composition: About 5 percent
Slope: 12 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Clayey Slopes

25—Holter-Detra Family complex, 3 to 25 percent slopes, extremely stony

Map Unit Setting

Major Land Resource Area: 47
Elevation: 7,000 to 8,200 feet (2,134 to 2,499 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Holter and similar soils: 55 percent
Detra Family and similar soils: 30 percent
Minor components: 15 percent

Component Descriptions

Holter soils
Landform: Mountains
Position on landform: Mountaintops, mountainflanks, mountainbases
Parent material: Alluvium and/or colluvium derived from limestone and sandstone

Slope: 10 to 25 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Surface fragments: About 2 percent stones
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 3.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 4 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Loam (Mountain Big Sagebrush)
Potential native vegetation: mountain big sagebrush, elk sedge, slender wheatgrass, Columbia needlegrass, Letterman's needlegrass, Utah serviceberry, arrowleaf balsamroot, bluebunch wheatgrass, mountain brome, mountain snowberry, prairie Junegrass, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; very stony fine sandy loam
AB—3 to 10 inches; very stony fine sandy loam
Bt1—10 to 16 inches; very cobbly clay loam
Bt2—16 to 23 inches; extremely cobbly clay loam
Btk—23 to 29 inches; extremely cobbly clay loam
Bk1—29 to 36 inches; extremely cobbly sandy clay loam
Bk2—36 to 45 inches; extremely cobbly loam
Bk3—45 to 60 inches; extremely cobbly loam

Detra Family soils
Landform: Mountains
Position on landform: Mountainflanks, mountainbases, mountaintops
Parent material: Alluvium derived from sandstone
Slope: 3 to 10 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 7.8 inches (moderate)
Shrink-swell potential: About 2.6 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Loam (Mountain Big Sagebrush)
Potential native vegetation: mountain big sagebrush, bluebunch wheatgrass, needleandthread, western wheatgrass, Indian ricegrass, Letterman's needlegrass, Utah serviceberry, arrowleaf balsamroot, mountain snowberry, muttongrass, prairie Junegrass
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 6 inches; loam
A2—6 to 15 inches; loam
Bt—15 to 25 inches; clay loam
Btk—25 to 36 inches; clay loam
Bk—36 to 60 inches; very gravelly sandy clay loam

Minor Components
Mantlemine and similar soils
Composition: About 10 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Rolling Loam

Cortyzack and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Mountain Loam (Mountain Big Sagebrush)

26—Ironco-Mulgon, dry, complex, 25 to 50 percent slopes, extremely bouldery

Map Unit Setting

Major Land Resource Area: 47
Elevation: 7,000 to 9,000 feet (2,134 to 2,743 meters)
Mean annual precipitation: 16 to 18 inches (406 to 457 millimeters)
Mean annual air temperature: 40 to 43 degrees F. (4.4 to 6.1 degrees C.)
Frost-free period: 65 to 85 days

Map Unit Composition

Ironco and similar soils: 60 percent
Mulgon and similar soils: 25 percent
Minor components: 15 percent

Component Descriptions

Ironco soils
Landform: Mountains
Position on landform: Mountainflanks, mountainbases, mountaintops
Parent material: Colluvium derived from sandstone
Slope: 25 to 50 percent
Aspect: East to north
Shape (down/across): Concave/concave
Surface fragments: About 2 percent boulders
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 5.2 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)

Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Stony Loam (Ghost)
Potential native vegetation: curl-leaf mountain mahogany, Utah serviceberry, mountain brome, slender wheatgrass, bluebunch wheatgrass, elk sedge, mountain big sagebrush, mountain snowberry, muttongrass, oniongrass, alderleaf mountain mahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
A1—0 to 4 inches; very bouldery loam
A2—4 to 10 inches; very bouldery loam
Bt1—10 to 31 inches; very stony clay loam
Bt2—31 to 60 inches; very stony clay loam

Mulgon soils
Landform: Mountains
Position on landform: Mountainflanks, mountainbases, mountaintops
Parent material: Colluvium derived from sandstone
Slope: 25 to 50 percent
Aspect: East to north
Shape (down/across): Linear/linear
Surface fragments: About 2 percent stones
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 5.2 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Rocky Mountain Douglas-fir
Other plants: elk sedge, mountain brome, nodding brome, Utah serviceberry, Oregon boxleaf, chokecherry, heartleaf arnica, mountain snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inches; slightly decomposed plant material
A—1 to 8 inches; very stony sandy loam
E—8 to 16 inches; very stony sandy loam
E/B—16 to 23 inches; very stony sandy clay loam
Bt1—23 to 32 inches; very stony sandy clay loam
Bt2—32 to 60 inches; very stony sandy clay loam

Minor Components
Rock outcrop
Composition: About 10 percent
Slope: 10 to 99 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Stout and similar soils
Composition: About 5 percent
Slope: 5 to 35 percent

Depth to restrictive feature: 7 to 20 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Ecological site: Pinyon-Juniper

27—Lakebench-Strell loamy fine sands, 5 to 30 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,200 to 7,000 feet (1,890 to 2,134 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Lakebench and similar soils: 50 percent
Strell and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Lakebench soils
Landform: Structural benches, alluvial fans
Position on landform: Treads, talfs
Parent material: Mixed source alluvium and/or residuum
Slope: 5 to 30 percent
Aspect: Southeast to west
Shape (down/across): Linear, concave/linear, concave
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 9.1 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, squirreltail, Indian ricegrass, Sandberg bluegrass, bluebunch wheatgrass, scarlet globemallow
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; loamy fine sand
Bk1—3 to 9 inches; loam
Bk2—9 to 25 inches; loam
Bk3—25 to 35 inches; loam
Bk4—35 to 45 inches; loam
Bk5—45 to 50 inches; gravelly loam
Bk6—50 to 60 inches; loam

Strell soils
Landform: Cuestas, mesas
Parent material: Slope alluvium and/or colluvium derived from sandstone
Slope: 5 to 30 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 7 to 20 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 1.1 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, bluebunch wheatgrass, squirreltail, broom snakeweed, needleandthread, prairie Junegrass, scarlet globemallow, twoneedle pinyon, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 3 inches; loamy fine sand
C—3 to 13 inches; sand
R—13 to 17 inches; unweathered bedrock

Minor Components
Mantlemine and similar soils
Composition: About 5 percent
Slope: 3 to 15 percent
Drainage class: Well drained
Ecological site: Rolling Loam

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Yampa and similar soils
Composition: About 5 percent
Slope: 5 to 30 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

28—Lakebench-Yampa complex, 5 to 30 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,000 to 7,000 feet (1,829 to 2,134 meters)
Mean annual precipitation: 12 to 15 inches (305 to 381 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 90 days

Map Unit Composition

Lakebench and similar soils: 50 percent
Yampa and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Lakebench soils
Landform: Structural benches, fan remnants
Position on landform: Treads
Parent material: Mixed source alluvium and/or residuum
Slope: 5 to 30 percent
Aspect: South to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 9.2 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, squirreltail, Indian ricegrass, Sandberg bluegrass, bluebunch wheatgrass, scarlet globemallow
Land capability subclass (nonirrigated): 6e
Typical Profile:
A—0 to 3 inches; silt loam
Bk1—3 to 9 inches; loam
Bk2—9 to 25 inches; loam
Bk3—25 to 35 inches; loam
Bk4—35 to 45 inches; loam
Bk5—45 to 50 inches; gravelly loam
Bk6—50 to 60 inches; loam

Yampa soils
Landform: Structural benches, fan remnants
Position on landform: Treads
Parent material: Mixed calcareous source alluvium and/or colluvium and/or residuum

Slope: 5 to 30 percent
Aspect: South to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 3.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, bluebunch wheatgrass, Indian ricegrass, Wyoming big sagebrush, black sagebrush, needleandthread, prairie Junegrass, twoneedle pinyon, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 7 inches; very cobbly loam
Bk1—7 to 13 inches; extremely gravelly loam
Bk2—13 to 31 inches; very cobbly loam
Bk3—31 to 60 inches; extremely cobbly sandy loam

Figure 10.—Map unit 28, Lakebench-Yampa complex, 5 to 30 percent slopes, very stony, is in a burned area in the foreground.

Figure 11.—A profile of Yampa soil in map unit 28, Lakebench-Yampa complex, 5 to 30 percent slopes, very stony.

Minor Components

Mantlemine and similar soils

Composition: About 10 percent
Slope: 3 to 15 percent
Drainage class: Well drained
Ecological site: Rolling Loam

Emlin and similar soils

Composition: About 5 percent
Slope: 1 to 12 percent
Drainage class: Well drained
Ecological site: Mountain Loam (Mountain Big Sagebrush)

29—Layoint-Moosed-Berlake complex, 1 to 20 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 7,300 to 8,000 feet (2,225 to 2,438 meters)
Mean annual precipitation: 13 to 15 inches (330 to 381 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Layoint and similar soils: 35 percent
Moosed and similar soils: 25 percent
Berlake and similar soils: 20 percent
Minor components: 20 percent

Component Descriptions

Layoint soils
Landform: Plateaus
Parent material: Eolian deposits over residuum weathered from sandstone
Slope: 1 to 8 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 3.0 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Sandy Foothills
Potential native vegetation: needleandthread, Wyoming big sagebrush, Indian ricegrass, Sandberg bluegrass, western wheatgrass, Sandberg bluegrass, antelope bitterbrush, arrowleaf balsamroot, squirreltail, prairie Junegrass
Land capability subclass (nonirrigated): 6s

Typical Profile:
A1—0 to 1 inches; loamy fine sand
A2—1 to 4 inches; loamy fine sand
A3—4 to 8 inches; loamy fine sand
AB—8 to 14 inches; loamy fine sand
Bw1—14 to 24 inches; loamy fine sand
Bw2—24 to 32 inches; loamy fine sand
R—32 to 36 inches; unweathered bedrock

Moosed soils
Landform: Plateaus
Parent material: Residuum weathered from sandstone

Slope: 1 to 20 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 7 to 20 inches to bedrock, lithic
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Sandy Foothills
Potential native vegetation: needleandthread, Wyoming big sagebrush, Indian ricegrass, Sandberg bluegrass, western wheatgrass, Sandberg bluegrass, antelope bitterbrush, arrowleaf balsamroot, squirreltail, prairie Junegrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A1—0 to 2 inches; loamy fine sand
A2—2 to 7 inches; loamy fine sand
Bw1—7 to 11 inches; loamy fine sand
Bw2—11 to 15 inches; loamy fine sand
C—15 to 18 inches; channery sand
R—18 to 22 inches; unweathered bedrock

Berlake soils
Landform: Plateaus
Parent material: Alluvium derived from sandstone
Slope: 1 to 15 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 8.0 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Loam (Mountain Big Sagebrush)
Potential native vegetation: mountain big sagebrush, needleandthread, western wheatgrass, Indian ricegrass, Letterman's needlegrass, Sandberg bluegrass, Utah serviceberry, arrowleaf balsamroot, bluebunch wheatgrass, mountain snowberry, muttongrass, prairie Junegrass
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 3 inches; coarse sandy loam
A2—3 to 14 inches; coarse sandy loam
BA—14 to 18 inches; sandy clay loam

Bt1—18 to 27 inches; sandy clay loam
Bt2—27 to 39 inches; sandy clay loam
Bt3—39 to 49 inches; sandy clay loam
BC—49 to 57 inches; sandy clay loam
C—57 to 60 inches; sandy loam

Minor Components

Dearjosh and similar soils
Composition: About 10 percent
Slope: 3 to 15 percent
Drainage class: Excessively drained
Ecological site: Sandy Land

Schoonover and similar soils
Composition: About 10 percent
Slope: 3 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Mountain Windswept Ridge (Black Sagebrush)

30—Lodore-Mantlemine-Strell complex, 3 to 15 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,200 to 7,000 feet (1,890 to 2,134 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Lodore and similar soils: 35 percent
Mantlemine and similar soils: 25 percent
Strell and similar soils: 25 percent
Minor components: 15 percent

Component Descriptions

Lodore soils

Landform: Mesas, cuestas
Parent material: Alluvium and/or residuum weathered from sandstone
Slope: 3 to 15 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 4.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)

Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, Sandberg bluegrass, bluebunch wheatgrass, Indian ricegrass, squirreltail, prairie Junegrass, scarlet globemallow
Land capability subclass (nonirrigated): 4e

Typical Profile:
A—0 to 2 inches; gravelly loam
C1—2 to 13 inches; loam
C2—13 to 35 inches; loam
R—35 to 39 inches; unweathered bedrock

Mantlemine soils
Landform: Structural benches, alluvial fans
Position on landform: Talfs
Parent material: Alluvium and/or residuum weathered from limestone and sandstone
Slope: 3 to 15 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 10.4 inches (high)
Shrink-swell potential: About 2.6 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, Sandberg bluegrass, bluebunch wheatgrass, Indian ricegrass, squirreltail, prairie Junegrass, scarlet globemallow
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 2 inches; loam
A2—2 to 5 inches; loam
Bt—5 to 20 inches; clay loam
Btk—20 to 25 inches; clay loam
Bk1—25 to 45 inches; clay loam
Bk2—45 to 60 inches; loam

Strell soils
Landform: Mesas, cuestas
Parent material: Slope alluvium and/or colluvium derived from sandstone
Slope: 3 to 15 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 7 to 20 inches to bedrock, lithic
Drainage class: Somewhat excessively drained

Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 1.1 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, bluebunch wheatgrass, squirreltail, broom snakeweed, needleandthread, prairie Junegrass, scarlet globemallow, twoneedle pinyon, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 3 inches; loamy fine sand
C—3 to 13 inches; fine sand
R—13 to 17 inches; unweathered bedrock

Minor Components
Lakebench and similar soils
Composition: About 10 percent
Slope: 3 to 15 percent
Drainage class: Well drained
Ecological site: Rolling Loam

Figure 12.—An elk on an area of map unit 30, Ladore-Mantlemine-Strell complex, 3 to 15 percent slopes, very stony. Grass species are thriving after fire removed most of the shrubs in this area.

Hackling and similar soils
Composition: About 5 percent
Landform: Structural benches, fan remnants
Position on landform: Footslopes, backslopes
Slope: 5 to 45 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

31—Mantlemine loam, 1 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,000 to 7,200 feet (1,829 to 2,195 meters)
Mean annual precipitation: 12 to 15 inches (305 to 381 millimeters)
Mean annual air temperature: 42 to 46 degrees F. (5.6 to 7.8 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Mantlemine and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Mantlemine soils
Landform: Structural benches
Position on landform: Treads
Parent material: Alluvium and/or residuum weathered from limestone and sandstone
Slope: 1 to 8 percent
Aspect: East to southwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 10.4 inches (high)
Shrink-swell potential: About 2.6 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, Sandberg bluegrass, bluebunch wheatgrass, Indian ricegrass, squirreltail, prairie Junegrass, scarlet globemallow
Land capability subclass (nonirrigated): 4c

Typical Profile:
A1—0 to 2 inches; loam
A2—2 to 5 inches; loam
Bt—5 to 20 inches; clay loam
Btk—20 to 25 inches; clay loam
Bk1—25 to 45 inches; clay loam
Bk2—45 to 60 inches; loam

Minor Components
Emlin and similar soils
Composition: About 5 percent
Slope: 1 to 12 percent
Drainage class: Well drained
Ecological site: Mountain Loam (Mountain Big Sagebrush)

Yampa and similar soils
Composition: About 5 percent
Slope: 3 to 15 percent
Drainage class: Well drained
Ecological site: Rolling Loam

Redrock Family and similar soils
Composition: About 5 percent
Slope: 3 to 15 percent
Drainage class: Well drained
Ecological site: Rolling Loam

32—Mantlemine-Emlin loams, 1 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 47
Elevation: 6,600 to 7,800 feet (2,012 to 2,377 meters)
Mean annual precipitation: 13 to 15 inches (330 to 381 millimeters)
Mean annual air temperature: 42 to 46 degrees F. (5.6 to 7.8 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Mantlemine and similar soils: 55 percent
Emlin and similar soils: 30 percent
Minor components: 15 percent

Component Descriptions

Mantlemine soils
Landform: Structural benches
Position on landform: Treads
Parent material: Alluvium and/or residuum weathered from limestone and sandstone
Slope: 1 to 12 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 10.4 inches (high)
Shrink-swell potential: About 2.6 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)

Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, Sandberg bluegrass, bluebunch wheatgrass, Indian ricegrass, squirreltail, prairie Junegrass, scarlet globemallow
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 2 inches; loam
A2—2 to 5 inches; loam
Bt—5 to 20 inches; clay loam
Btk—20 to 25 inches; clay loam
Bk1—25 to 45 inches; clay loam
Bk2—45 to 60 inches; loam

Emlin soils
Landform: Structural benches
Position on landform: Treads
Parent material: Alluvium derived from sandstone
Slope: 1 to 12 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 10.3 inches (high)
Shrink-swell potential: About 4.1 percent (moderate)
Runoff class: Medium

Figure 13.—In the foreground is map unit 32, Mantlemine-Emlin loams, 1 to 12 percent slopes.

Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Mountain Loam (Mountain Big Sagebrush)
Potential native vegetation: mountain big sagebrush, needleandthread, western wheatgrass, Sandberg bluegrass, Sandberg bluegrass, Utah serviceberry, squirreltail, mountain snowberry, prairie Junegrass, scarlet globemallow, yellow rabbitbrush
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 2 inches; loam
A2—2 to 5 inches; loam
AB—5 to 11 inches; loam
Bt1—11 to 14 inches; clay loam
Bt2—14 to 19 inches; clay loam
Bk1—19 to 30 inches; silty clay loam
Bk2—30 to 41 inches; silty clay loam
Bk3—41 to 60 inches; silty clay loam

Minor Components
Yampa and similar soils
Composition: About 5 percent
Slope: 3 to 15 percent
Drainage class: Well drained
Ecological site: Rolling Loam
Cragnot and similar soils
Composition: About 5 percent
Slope: 6 to 75 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Grapit and similar soils
Composition: About 5 percent
Slope: 12 to 75 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

33—Massadona silty clay loam, 2 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,700 to 4,900 feet (1,433 to 1,494 meters)
Mean annual precipitation: 5 to 8 inches (127 to 203 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 125 days

Map Unit Composition

Massadona and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Massadona soils
Landform: Hills
Position on landform: Toeslopes, side slopes, base slopes, head slopes, nose slopes
Parent material: Alluvium derived from shale
Slope: 2 to 8 percent
Aspect: South to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: .001 to .06 in./hr. (very slow)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: Medium
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Alkali Flat (Black Greasewood)
Potential native vegetation: greasewood, alkali sacaton, squirreltail, shadscale saltbush, Indian ricegrass, galleta, seepweed
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 2 inches; silty clay loam
Bw—2 to 11 inches; silty clay
Bk—11 to 20 inches; silty clay
C1—20 to 34 inches; silty clay
Cy2—34 to 41 inches; silty clay
Cy3—41 to 60 inches; silty clay

Minor Components
Hanksville and similar soils
Composition: About 10 percent
Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Desert Shallow Clay (Mat Saltbush)

Avalon and similar soils
Composition: About 5 percent
Slope: 5 to 12 percent
Drainage class: Well drained
Ecological site: Semidesert Loam

34—Mespun fine sand, 4 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,500 to 6,000 feet (1,676 to 1,829 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)

Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Mespun and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Mespun soils
Landform: Fan remnants, hillslopes
Position on landform: Fan remnants, hillslopes, treads
Parent material: Eolian deposits
Slope: 4 to 25 percent
Aspect: Northeast to south
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Sand (Fourwing Saltbush)
Potential native vegetation: Indian ricegrass, fourwing saltbush, needleandthread, sand sagebrush, crispleaf buckwheat, galleta, scarlet globemallow
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 9 inches; fine sand
C—9 to 60 inches; fine sand

Minor Components
Begay and similar soils
Composition: About 5 percent
Slope: 2 to 15 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Four-wing Saltbush)

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Yarts and similar soils
Composition: About 5 percent
Slope: 2 to 5 percent
Drainage class: Well drained
Ecological site: Alkali Flat (Black Greasewood)

35—Mido loamy fine sand, 3 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,350 to 5,950 feet (1,631 to 1,814 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Mido and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Mido soils
Landform: Hills
Position on landform: Toeslopes, base slopes, side slopes, head slopes, nose slopes
Parent material: Alluvium
Slope: 3 to 12 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 5.9 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Sandy Loam
Potential native vegetation: needleandthread, Indian ricegrass, fourwing saltbush, galleta, Wyoming big sagebrush, squirreltail, scarlet globemallow, shadscale saltbush, winterfat
Land capability subclass (nonirrigated): 4e

Typical Profile:
A—0 to 8 inches; loamy fine sand
C—8 to 60 inches; loamy fine sand

Minor Components
Tsetaa Family and similar soils
Composition: About 10 percent
Slope: 3 to 45 percent
Drainage class: Excessively drained
Ecological site: Pinyon-Juniper

Anasazi and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

36—Mikim complex, 1 to 4 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 5,400 feet (1,524 to 1,646 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Mikim loam and similar soils: 55 percent
Mikim silt loam and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Mikim loam soils
Landform: Alluvial flats, alluvial fans
Position on landform: Talfs
Parent material: Alluvium
Slope: 1 to 3 percent
Aspect: Northeast to southwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 9.6 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)
Potential native vegetation: Indian ricegrass, Wyoming big sagebrush, squirreltail, galleta, needleandthread, scarlet globemallow, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
A1—0 to 2 inches; loam
A2—2 to 6 inches; loam
Bk1—6 to 12 inches; loam
Bk2—12 to 25 inches; loam
Bk3—25 to 43 inches; loam
Bk4—43 to 60 inches; loam

Mikim silt loam soils
Landform: Alluvial flats, alluvial fans
Position on landform: Talfs
Parent material: Alluvium
Slope: 1 to 4 percent
Aspect: Northeast to southwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained

Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 4.4 percent (moderate)
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 12 (slightly sodic)
Ecological site: Alkali Flat (Black Greasewood)
Potential native vegetation: greasewood, alkali sacaton, squirreltail, shadscale saltbush, Indian ricegrass, galleta, seepweed
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 6 inches; silt loam
Bk—6 to 60 inches; stratified sandy loam to clay loam

Minor Components
Hanksville and similar soils
Composition: About 10 percent
Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Desert Shallow Clay (Mat Saltbush)

37—Milok fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,800 to 6,000 feet (1,463 to 1,829 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Milok and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Milok soils
Landform: Fan remnants
Position on landform: Treads
Parent material: Eolian deposits over alluvium and/or colluvium
Slope: 3 to 8 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 7.0 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 20 percent

Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush)
Potential native vegetation: Indian ricegrass, needleandthread, fourwing saltbush, galleta, Wyoming big sagebrush
Land capability subclass (nonirrigated): 4e

Typical Profile:
A—0 to 4 inches; fine sandy loam
Bw—4 to 15 inches; fine sandy loam
Bk—15 to 37 inches; fine sandy loam
C1—37 to 50 inches; fine sandy loam
C2—50 to 60 inches; sandy loam

Minor Components
Hanksville and similar soils
Composition: About 10 percent
Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Desert Shallow Clay (Mat Saltbush)

Abracon and similar soils
Composition: About 5 percent
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)

38—Milok-Solirec-Strych complex, 10 to 65 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,500 to 6,400 feet (1,676 to 1,951 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Milok and similar soils: 45 percent
Solirec and similar soils: 25 percent
Strych and similar soils: 15 percent
Minor components: 15 percent

Component Descriptions

Milok soils
Landform: Hillslopes
Position on landform: Backslopes, footslopes, side slopes
Parent material: Eolian deposits over alluvium and/or colluvium
Slope: 10 to 65 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear

Figure 14.—In the foreground is map unit 38, Milock-Solirec-Strych complex, 10 to 65 percent slopes, very stony. The background shows map unit 14, Cragnot-Pensore-Grapit association, 6 to 75 percent slopes, very stony.

Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 7.0 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 20 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: twoneedle pinyon, Utah juniper
Other plants: Utah juniper, Indian ricegrass, galleta, Wyoming big sagebrush, needleandthread, twoneedle pinyon
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; fine sandy loam
Bw—4 to 15 inches; fine sandy loam
Bk—15 to 37 inches; fine sandy loam
C1—37 to 50 inches; fine sandy loam
C2—50 to 60 inches; sandy loam

Solirec soils
Landform: Hillslopes
Position on landform: Backslopes, footslopes, side slopes
Parent material: Eolian deposits over alluvium and/or colluvium derived from sandstone and shale
Slope: 10 to 40 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 10.4 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Sandy Loam
Potential native vegetation: Indian ricegrass, needleandthread, Wyoming big sagebrush, fourwing saltbush, galleta, scarlet globemallow, shadscale saltbush, western wheatgrass, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 8 inches; loam
Bt—8 to 52 inches; clay loam
Bk—52 to 60 inches; clay loam

Strych soils
Landform: Hillslopes
Position on landform: Backslopes, footslopes, side slopes
Parent material: Alluvium and/or colluvium derived from limestone and sandstone
Slope: 10 to 65 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 5.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, galleta, Mormon tea, Sandberg bluegrass, Wyoming big sagebrush, black sagebrush, bluebunch wheatgrass, needleandthread, alderleaf mountain mahogany, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 5 inches; cobbly loam
Bk1—5 to 10 inches; cobbly loam
Bk2—10 to 34 inches; very stony loam
BCk—34 to 50 inches; very cobbly loam
2C—50 to 60 inches; loam

Minor Components
Cragnot and similar soils
Composition: About 10 percent
Slope: 6 to 75 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

39—Milok-Strych complex, 3 to 25 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 6,000 feet (1,524 to 1,829 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 90 to 140 days

Map Unit Composition

Milok and similar soils: 70 percent
Strych and similar soils: 20 percent
Minor components: 10 percent

Component Descriptions

Milok soils
Landform: Fan remnants
Position on landform: Risers, treads
Parent material: Eolian deposits over alluvium and/or colluvium
Slope: 8 to 25 percent
Aspect: North to south
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 9.3 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)

Ecological site: Semidesert Sandy Loam (Fourwing Saltbush)
Potential native vegetation: Indian ricegrass, needleandthread, fourwing saltbush, galleta, Wyoming big sagebrush
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 6 inches; fine sandy loam
Bw—6 to 12 inches; loam
Bk1—12 to 24 inches; loam
Bk2—24 to 37 inches; loam
C1—37 to 44 inches; silt loam
C2—44 to 60 inches; loam

Strych soils
Landform: Fan remnants
Position on landform: Treads
Parent material: Alluvium and/or colluvium derived from limestone and sandstone
Slope: 3 to 25 percent
Aspect: North to south
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 3.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush)
Potential native vegetation: Wyoming big sagebrush, rubber rabbitbrush, spiny hopsage, Indian ricegrass, bluegrass, squirreltail, horsebrush, shadscale saltbush
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 8 inches; very cobbly fine sandy loam
Bk1—8 to 39 inches; extremely cobbly sandy loam
Bk2—39 to 60 inches; extremely cobbly loamy sand

Minor Components
Polychrome and similar soils
Composition: About 5 percent
Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Solirec and similar soils
Composition: About 5 percent
Slope: 10 to 40 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam

40—Notlic-logoon-Labyrinth complex, 2 to 15 percent slopes, extremely stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 5,800 feet (1,524 to 1,768 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Notlic and similar soils: 35 percent
logoon and similar soils: 30 percent
Labyrinth and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Notlic soils
Landform: Alluvial fans
Position on landform: Talfs
Parent material: Alluvium derived from sedimentary rock
Slope: 5 to 15 percent
Aspect: East to northwest
Shape (down/across): Concave/concave
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 4.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Mormon tea, black sagebrush, galleta, needleandthread, alderleaf mountain mahogany, Indian ricegrass, bluebunch wheatgrass, squirreltail, saline wildrye
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; very cobbly loam
C1—4 to 13 inches; extremely gravelly fine sandy loam
C2—13 to 29 inches; extremely gravelly loam
C3—29 to 48 inches; extremely gravelly sandy clay loam
C4—48 to 60 inches; extremely cobbly sandy clay loam

logoon soils
Landform: Flood plains
Position on landform: Talfs, dips, rises
Parent material: Alluvium derived from sedimentary rock

Slope: 2 to 5 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Moderately well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 5.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: About 36 to 60 inches
Runoff class: Very low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Potential native vegetation:
Common trees: boxelder
Other plants: water birch, willow, Kentucky bluegrass, Utah serviceberry, Woods' rose, Wyoming big sagebrush, basin wildrye, mountain brome
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 5 inches; fine sandy loam
C1—5 to 11 inches; gravelly fine sandy loam
C2—11 to 32 inches; extremely cobbly fine sandy loam
C3—32 to 47 inches; fine sandy loam
C4—47 to 60 inches; gravelly fine sandy loam

Labyrinth soils
Landform: Flood plains
Position on landform: Dips, rises, talfs
Parent material: Alluvium derived from sandstone
Slope: 2 to 5 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Moderately well drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 5.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: About 36 to 60 inches
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Potential native vegetation:
Common trees: boxelder
Other plants: water birch, willow, Kentucky bluegrass, Utah serviceberry, Woods' rose, basin big sagebrush, basin wildrye, mountain brome
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 6 inches; fine sandy loam
C1—6 to 16 inches; loamy very fine sand
C2—16 to 35 inches; loamy fine sand
C3—35 to 60 inches; loamy fine sand

Minor Components
Fluvaquents and similar soils
Composition: About 10 percent
Landform: Flood plains
Slope: 0 to 1 percent
Drainage class: Poorly drained
Flooding hazard: Frequent
Yarts and similar soils
Composition: About 5 percent
Landform: Alluvial flats
Slope: 4 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush)

41—Paradox loam, 3 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,000 to 6,700 feet (1,829 to 2,042 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Paradox and similar soils: 95 percent
Minor components: 5 percent

Component Descriptions

Paradox soils
Landform: Alluvial flats, alluvial fans
Position on landform: Treads
Parent material: Alluvium
Slope: 3 to 8 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)

Potential native vegetation: Indian ricegrass, Wyoming big sagebrush, squirreltail, galleta, needleandthread, globemallow, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 2 inches; loam
Cy1—2 to 11 inches; loam
Cy2—11 to 26 inches; loam
Cy3—26 to 48 inches; loam
C—48 to 60 inches; loam

Minor Components
Yarts and similar soils
Composition: About 5 percent
Slope: 4 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Four-wing Saltbush)

42—Pensore-Lodore-Rock outcrop complex, 3 to 45 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,500 to 7,400 feet (1,981 to 2,256 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Pensore and similar soils: 40 percent
Lodore and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 15 percent

Component Descriptions

Pensore soils
Landform: Hills
Position on landform: Footslopes, backslopes, head slopes, nose slopes, base slopes, side slopes
Parent material: Residuum weathered from limestone
Slope: 3 to 45 percent
Aspect: East to west
Shape (down/across): Convex/convex
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 1.0 inch (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: About 60 percent
Gypsum maximum: None

Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: twoneedle pinyon, Utah juniper
Other plants: twoneedle pinyon, Indian ricegrass, Utah juniper, bluebunch wheatgrass, Sandberg bluegrass, Wyoming big sagebrush, black sagebrush, needleandthread, prairie Junegrass, stemless mock goldenweed, alderleaf mountain mahogany, antelope bitterbrush, Mormon tea
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 3 inches; cobbly loam
BA—3 to 10 inches; extremely cobbly loam
Bk—10 to 16 inches; extremely channery fine sandy loam
R—16 to 20 inches; unweathered bedrock

Lodore soils
Landform: Hills
Position on landform: Footslopes, backslopes, base slopes, head slopes, nose slopes, side slopes
Parent material: Alluvium and/or residuum weathered from sandstone
Slope: 3 to 45 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 4.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: twoneedle pinyon, Utah juniper
Other plants: twoneedle pinyon, bluebunch wheatgrass, Indian ricegrass, Utah juniper, Wyoming big sagebrush, needleandthread, prairie Junegrass, stemless mock goldenweed, squirreltail, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 2 inches; gravelly loam
C1—2 to 13 inches; loam
C2—13 to 35 inches; loam
R—35 to 39 inches; unweathered bedrock

Rock outcrop
Landform: Ridges, cliffs, hills
Parent material: Exposed hard bedrock limestone and sandstone
Slope: 3 to 45 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic

Runoff class: Very high
Land capability subclass (nonirrigated): 8s

Minor Components
Hackling and similar soils
Composition: About 5 percent
Slope: 5 to 45 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Lakebench and similar soils
Composition: About 5 percent
Slope: 5 to 30 percent
Drainage class: Well drained
Ecological site: Rolling Loam

Cragnot and similar soils
Composition: About 5 percent
Slope: 6 to 75 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

43—Pensore-Roto complex, 3 to 45 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,500 to 7,500 feet (1,981 to 2,286 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Pensore and similar soils: 60 percent
Roto and similar soils: 25 percent
Minor components: 15 percent

Component Descriptions

Pensore soils
Landform: Mesas, hills
Position on landform: Summits, shoulders, backslopes, head slopes, side slopes, base slopes, nose slopes
Parent material: Residuum weathered from limestone
Slope: 3 to 45 percent
Aspect: North to southwest
Shape (down/across): Linear/linear
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 1.0 inch (very low)
Shrink-swell potential: About 1.5 percent (low)

Runoff class: Very high
Calcium carbonate maximum: About 60 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: twoneedle pinyon, Indian ricegrass, Utah juniper, bluebunch wheatgrass, Sandberg bluegrass, Wyoming big sagebrush, black sagebrush, needleandthread, prairie Junegrass, stemless mock goldenweed, alderleaf mountain mahogany, antelope bitterbrush, Mormon tea
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 3 inches; gravelly loam
BA—3 to 10 inches; extremely cobbly loam
Bk—10 to 16 inches; extremely channery loam
R—16 to 20 inches; unweathered bedrock

Roto soils
Landform: Mesas, hills
Position on landform: Backslopes, shoulders, summits, nose slopes, head slopes, base slopes, side slopes
Parent material: Slope alluvium and/or colluvium over residuum weathered from limestone and sandstone
Slope: 3 to 45 percent
Aspect: North to southwest
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 1.4 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 60 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: twoneedle pinyon, Indian ricegrass, bluebunch wheatgrass, Utah juniper, Wyoming big sagebrush, broom snakeweed, needleandthread, prairie Junegrass, stemless mock goldenweed, black sagebrush, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 2 inches; very gravelly loam
Bk1—2 to 9 inches; very gravelly loam
Bk2—9 to 22 inches; extremely gravelly sandy clay loam
R—22 to 26 inches; unweathered bedrock

Minor Components

Mantlemine and similar soils
Composition: About 10 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Rolling Loam

Rock outcrop
Composition: About 5 percent
Slope: 5 to 35 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

44—Polychrome-Milok complex, 8 to 50 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,300 to 6,000 feet (1,615 to 1,829 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 44 to 49 degrees F. (6.7 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Polychrome and similar soils: 50 percent
Milok and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Polychrome soils

Landform: Hillslopes
Position on landform: Backslopes, side slopes
Parent material: Colluvium over residuum weathered from sedimentary rock
Slope: 25 to 50 percent
Aspect: Northeast to northwest
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 3.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Wyoming big sagebrush, galleta, Indian ricegrass, needleandthread, bud sagebrush, shadscale saltbush, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very channery loam
Cy1—3 to 16 inches; very channery loam
Cy2—16 to 23 inches; extremely channery loam
Cy3—23 to 38 inches; very stony loam
Cr—38 to 42 inches; weathered bedrock

Milok soils
Landform: Fan remnants
Position on landform: Treads
Parent material: Eolian deposits over alluvium and/or colluvium
Slope: 8 to 25 percent
Aspect: Northeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 9.3 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush)
Potential native vegetation: Indian ricegrass, needleandthread, fourwing saltbush, galleta, Wyoming big sagebrush
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 6 inches; fine sandy loam
Bw—6 to 12 inches; loam
Bk1—12 to 24 inches; loam
Bk2—24 to 37 inches; loam
C1—37 to 44 inches; silt loam
C2—44 to 60 inches; loam

Minor Components
Hanksville and similar soils
Composition: About 5 percent
Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Desert Shallow Clay (Mat Saltbush)

Clapper and similar soils
Composition: About 5 percent
Landform: Hillslopes
Position on landform: Backslopes
Slope: 25 to 50 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Splimo and similar soils
Composition: About 3 percent
Slope: 25 to 50 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Badland
Composition: About 2 percent
Slope: 50 to 75 percent
Depth to restrictive feature: 0 to 3 inches to bedrock, paralithic

45—Redrock Family-Roto complex, 3 to 15 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,350 to 6,800 feet (1,935 to 2,073 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Redrock Family and similar soils: 55 percent
Roto and similar soils: 30 percent
Minor components: 15 percent

Component Descriptions

Redrock Family soils
Landform: Mesas, cuestas
Parent material: Slope alluvium
Slope: 3 to 15 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 7.7 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 45 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, Sandberg bluegrass, bluebunch wheatgrass, Indian ricegrass, Sandberg bluegrass, squirreltail, prairie Junegrass, scarlet globemallow
Land capability subclass (nonirrigated): 4e

Typical Profile:
A—0 to 3 inches; loam
Bw1—3 to 10 inches; loam
Bw2—10 to 17 inches; loam
Bk1—17 to 28 inches; loam
Bk2—28 to 35 inches; loam
Bk3—35 to 43 inches; gravelly loam
2Bk4—43 to 54 inches; very cobbly loam
2Bk5—54 to 60 inches; cobbly loam

Roto soils
Landform: Mesas, cuestas
Parent material: Slope alluvium and/or colluvium over residuum weathered from limestone and sandstone
Slope: 3 to 15 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 1.4 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 60 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, Sandberg bluegrass, bluebunch wheatgrass, Indian ricegrass, broom snakeweed, prairie Junegrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 2 inches; very gravelly loam
Bk1—2 to 9 inches; very gravelly loam
Bk2—9 to 22 inches; extremely gravelly sandy clay loam
R—22 to 26 inches; unweathered bedrock

Minor Components
Schoonover and similar soils
Composition: About 10 percent
Slope: 3 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Mountain Windswept Ridge (Black Sagebrush)

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

46—Riverwash

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 5,650 feet (1,524 to 1,722 meters)
Mean annual precipitation: 8 to 14 inches (203 to 356 millimeters)
Frost-free period: 90 to 140 days

Map Unit Composition

Riverwash: 85 percent
Minor components: 15 percent

Component Descriptions

Riverwash
Description: Riverwash consists of water-worked sediments. Little or no permanent vegetation grows on this unit.
Landform: Lower flood plains
Position on landform: Rises, talfs, dips
Parent material: Alluvium
Slope: 0 to 4 percent
Aspect: South to west
Shape (down/across): Linear/linear
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 2.9 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Frequent
Seasonal high water table depth: About 0 to 24 inches
Runoff class: High
Salinity maximum: About 0 mmhos/cm (nonsaline)
Land capability subclass (nonirrigated): 8

Minor Components
Green River and similar soils
Composition: About 10 percent
Slope: 0 to 2 percent
Drainage class: Moderately well drained
Flooding hazard: Rare
Ecological site: River Floodplain (Fremont Cottonwood)

Bankard Family and similar soils
Composition: About 5 percent
Slope: 0 to 5 percent
Drainage class: Excessively drained
Flooding hazard: Rare
Ecological site: Loamy Bottom (Basin Big Sagebrush)

47—Rizno-Windcomb-Anasazi complex, 3 to 25 percent slopes, extremely flaggy

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,400 to 6,400 feet (1,646 to 1,951 meters)

Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Rizno and similar soils: 35 percent
Windcomb and similar soils: 35 percent
Anasazi and similar soils: 15 percent
Minor components: 15 percent

Component Descriptions

Rizno soils
Landform: Cuestas
Parent material: Slope alluvium and/or colluvium over residuum weathered from limestone and sandstone
Slope: 3 to 25 percent
Aspect: Northeast to south
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 4 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 1.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, galleta, bluebunch wheatgrass, broom snakeweed, needleandthread, prairie Junegrass, shadscale saltbush, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 5 inches; cobbly fine sandy loam
C—5 to 15 inches; cobbly fine sandy loam
R—15 to 19 inches; unweathered bedrock

Windcomb soils
Landform: Cuestas
Parent material: Slope alluvium and/or colluvium derived from limestone over residuum weathered from sandstone and siltstone
Slope: 3 to 25 percent
Aspect: Northeast to south
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 6 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)

Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: black sagebrush, saline wildrye, Mormon tea, bluebunch wheatgrass, galleta
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 4 inches; very channery silt loam
C1—4 to 9 inches; very channery loam
C2—9 to 17 inches; very channery loam
R—17 to 21 inches; unweathered bedrock

Anasazi soils
Landform: Cuestas
Parent material: Alluvium and/or colluvium over residuum weathered from limestone and sandstone
Slope: 3 to 25 percent
Aspect: Northeast to south
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 2.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Indian ricegrass, Utah juniper, Wyoming big sagebrush, galleta, needleandthread, bluebunch wheatgrass, broom snakeweed, prairie Junegrass, shadscale saltbush, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; fine sandy loam
Bw—3 to 10 inches; cobbly fine sandy loam
Bk—10 to 19 inches; gravelly fine sandy loam
BCk—19 to 24 inches; very gravelly loamy sand
R—24 to 28 inches; unweathered bedrock

Minor Components
Milok and similar soils
Composition: About 5 percent
Slope: 8 to 25 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Four-wing Saltbush)

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Strych and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush)

48—Rock outcrop

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,900 to 8,000 feet (1,494 to 2,438 meters)
Mean annual precipitation: 10 to 18 inches (254 to 457 millimeters)
Frost-free period: 60 to 105 days

Map Unit Composition

Rock outcrop: 85 percent
Minor components: 15 percent

Component Descriptions

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Cliffs, canyons, mountains
Parent material: Exposed hard bedrock sandstone
Slope: 1 to 99 percent
Aspect: East to west
Shape (down/across): Linear, convex/linear, convex
Depth to restrictive feature: 0 inches to bedrock, lithic
Runoff class: Very high
Land capability subclass (nonirrigated): 8s

Minor Components
Torriorthents and similar soils
Composition: About 5 percent
Slope: 25 to 75 percent
Depth to restrictive feature: 4 to 30 inches to bedrock, lithic
Drainage class: Well drained

Ustorthents and similar soils
Composition: About 5 percent
Slope: 25 to 75 percent
Depth to restrictive feature: 10 to 40 inches to bedrock, lithic
Drainage class: Well drained

Cryochrepts and similar soils
Composition: About 5 percent
Slope: 50 to 90 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

49—Rock outcrop-Hackling complex, 10 to 45 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 47
Elevation: 5,800 to 8,400 feet (1,768 to 2,560 meters)
Mean annual precipitation: 12 to 15 inches (305 to 381 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Rock outcrop: 60 percent
Hackling and similar soils: 30 percent
Minor components: 10 percent

Component Descriptions

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Mountains, ridges, cliffs
Parent material: Exposed hard bedrock limestone and sandstone
Slope: 75 to 99 percent
Aspect: East to southwest
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Available water capacity: About 0.0 inches (very low)
Runoff class: Very high
Land capability subclass (nonirrigated): 8

Hackling soils
Landform: Mountains
Position on landform: Mountaintops, mountainflanks, mountainbases
Parent material: Calcareous colluvium and/or residuum weathered from limestone and sandstone
Slope: 10 to 45 percent
Aspect: East to southwest
Shape (down/across): Linear/linear
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 0.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)

Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: twoneedle pinyon, Wyoming big sagebrush, bluebunch wheatgrass, Indian ricegrass, Utah juniper, antelope bitterbrush, squirreltail, broom snakeweed, needleandthread, prairie Junegrass, sand dropseed, alderleaf mountain mahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 1 inch; gravelly sandy loam
Bk1—1 to 4 inches; very gravelly sandy loam
Bk2—4 to 15 inches; extremely cobbly sandy loam
R—15 to 19 inches; unweathered bedrock

Minor Components
Lodore and similar soils
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Roto and similar soils
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

50—Rock outcrop-Haploborolls complex, 10 to 40 percent slopes

Map Unit Setting

Major Land Resource Area: 47
Elevation: 6,400 to 8,000 feet (1,951 to 2,438 meters)
Mean annual precipitation: 12 to 18 inches (305 to 457 millimeters)
Frost-free period: 75 to 95 days

Map Unit Composition

Rock outcrop: 50 percent
Haploborolls and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Ridges, cliffs, mountains
Parent material: Exposed hard bedrock limestone and sandstone
Slope: 10 to 99 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Runoff class: Very high
Land capability subclass (nonirrigated): 8s

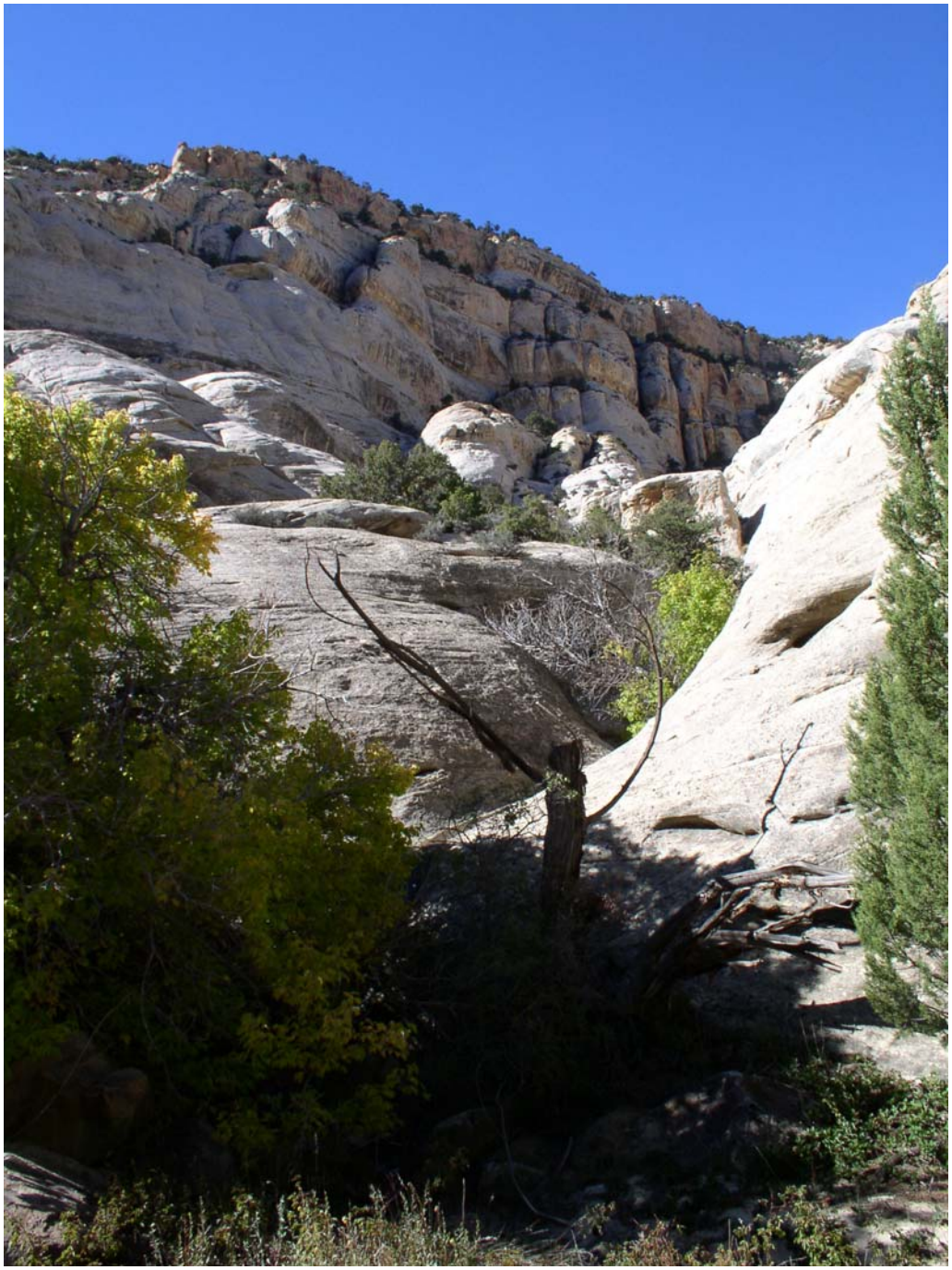

Figure 14.—Rock outcrop is featured in this photo.

Haploborolls soils
Landform: Mountains
Position on landform: Mountaintops, mountainflanks, mountainbases
Parent material: Colluvium and/or residuum weathered from sandstone
Slope: 10 to 40 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Surface fragments: Less than 1 percent stones

Depth class: Very shallow to moderately deep
Depth to restrictive feature: 4 to 30 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 1.4 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: twoneedle pinyon, bluebunch wheatgrass, Indian ricegrass, Utah juniper, Sandberg bluegrass, Utah serviceberry, Wyoming big sagebrush, mountain big sagebrush, needleandthread, prairie Junegrass, alderleaf mountain mahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 3 inches; slightly decomposed plant material
A—3 to 7 inches; stony loamy fine sand
C—7 to 10 inches; cobbly loamy fine sand
R—10 to 13 inches; unweathered bedrock

Minor Components
Strell and similar soils
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 5 to 20 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Ecological site: Pinyon-Juniper
Marthaspeak and similar soils
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Ecological site: Pinyon-Juniper

Ustorthents and similar soils
Composition: About 5 percent
Slope: 25 to 75 percent
Depth to restrictive feature: 10 to 40 inches to bedrock, lithic
Drainage class: Well drained

51—Rock outcrop, Torriorthents, and Ustorthents soils, 25 to 75 percent slopes, rubbly

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 8,000 feet (1,524 to 2,438 meters)
Mean annual precipitation: 9 to 16 inches (229 to 406 millimeters)
Frost-free period: 75 to 105 days

Map Unit Composition

Rock outcrop: 30 percent
Torriorthents and similar soils: 30 percent
Ustorthents and similar soils: 30 percent
Minor components: 10 percent

Component Descriptions

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Cliffs, canyons, mountains
Parent material: Exposed hard bedrock limestone and sandstone
Slope: 25 to 99 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Available water capacity: About 0.0 inches (very low)
Runoff class: Very high
Land capability subclass (nonirrigated): 8

Torriorthents soils
Landform: Canyons, mountains
Position on landform: Mountainbases, mountainflanks, mountaintops
Parent material: Colluvium and/or residuum weathered from limestone and sandstone
Slope: 25 to 75 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very shallow to moderately deep
Depth to restrictive feature: 4 to 30 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: .06 to 0.2 in./hr. (slow)
Available water capacity: About 1.3 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: About 50 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation: Indian ricegrass, Mormon tea, Utah juniper, bluebunch wheatgrass, Wyoming big sagebrush, antelope bitterbrush, needleandthread, alderleaf mountain mahogany, twoneedle pinyon, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; very gravelly loam
C—4 to 18 inches; very gravelly loam
R—18 to 22 inches; unweathered bedrock

Ustorthents soils
Landform: Canyons, mountains
Position on landform: Mountainbases, mountainflanks, mountaintops
Parent material: Colluvium and/or residuum weathered from sedimentary rock
Slope: 25 to 75 percent
Aspect: East to west
Shape (down/across): Linear/linear

Figure 16.—This photo shows map unit 51, Rock outcrop, Torriorthents, and Ustorthents soils, 25 to 75 percent slopes, rubbly.

Depth class: Shallow and moderately deep
Depth to restrictive feature: 10 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 4.0 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, Sandberg bluegrass, Utah serviceberry, Wyoming big sagebrush, mountain snowberry, needleandthread, prairie Junegrass, alderleaf mountain mahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 6 inches; cobbly loam
C—6 to 33 inches; cobbly sandy clay loam
R—33 to 37 inches; unweathered bedrock

Minor Components
Borolls and similar soils
Composition: About 10 percent
Slope: 25 to 75 percent
Depth to restrictive feature: 20 to 60 inches to bedrock, lithic
Drainage class: Well drained

52—Rock outcrop-Ustochrepts-Cryochrepts complex, 50 to 90 percent slopes, extremely stony

Map Unit Setting

Major Land Resource Area: 47
Elevation: 5,000 to 7,400 feet (1,524 to 2,256 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Frost-free period: 50 to 110 days

Map Unit Composition

Rock outcrop: 50 percent
Ustochrepts and similar soils: 25 percent
Cryochrepts and similar soils: 15 percent
Minor components: 10 percent

Component Descriptions

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Cliffs, mountains
Parent material: Exposed hard bedrock limestone and sandstone
Slope: 50 to 90 percent
Aspect: Northeast to north
Shape (down/across): Concave, linear/concave, linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Runoff class: Very high
Land capability subclass (nonirrigated): 8s

Ustochrepts soils
Landform: Mountains
Position on landform: Mountaintops, mountainbases, mountainflanks
Parent material: Colluvium
Slope: 50 to 90 percent
Aspect: Northeast to north
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 6.7 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: alderleaf mountain mahogany, black sagebrush, needleandthread, saline wildrye, Indian ricegrass, Mormon tea, Utah serviceberry, bluebunch wheatgrass, bluegrass
Land capability subclass (nonirrigated): 8e

Typical Profile:
A—0 to 6 inches; extremely cobbly fine sandy loam
Bk1—6 to 11 inches; very gravelly loam
Bk2—11 to 19 inches; very gravelly loam
Bk3—19 to 60 inches; very cobbly loam

Cryochrepts soils
Landform: Mountains
Position on landform: Mountaintops, mountainbases, mountainflanks
Parent material: Colluvium derived from sedimentary rock
Slope: 50 to 90 percent
Aspect: Northeast to north
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 45 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Rocky Mountain Douglas-fir
Other plants: mountain snowberry, elk sedge, alderleaf mountain mahogany, Engelmann's aster, Creeping barberry, Woods' rose, blue wildrye, bluegrass, Oregon boxleaf, currant, heartleaf arnica, quaking aspen
Land capability subclass (nonirrigated): 8e

Typical Profile:
A—0 to 5 inches; extremely cobbly loam
Bk1—5 to 11 inches; very cobbly loam
Bk2—11 to 18 inches; very cobbly loam
Bk3—18 to 33 inches; extremely cobbly loam
Bk4—33 to 60 inches; extremely cobbly loam

Minor Components
Badland
Composition: About 10 percent
Slope: 1 to 99 percent
Depth to restrictive feature: 0 to 3 inches to bedrock, paralithic

53—Schoonover-Duffymont complex, 3 to 25 percent slopes, rubbly

Map Unit Setting

Major Land Resource Area: 47
Elevation: 7,000 to 8,500 feet (2,134 to 2,591 meters)
Mean annual precipitation: 14 to 18 inches (356 to 457 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Schoonover and similar soils: 55 percent
Duffymont and similar soils: 30 percent
Minor components: 15 percent

Component Descriptions

Schoonover soils
Landform: Mountains
Position on landform: Mountaintops, mountainbases, mountainflanks
Parent material: Residuum weathered from limestone
Slope: 3 to 25 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 0.9 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Windswept Ridge (Black Sagebrush)
Potential native vegetation: bluebunch wheatgrass, black sagebrush, prairie Junegrass, Indian ricegrass, Sandberg bluegrass, squirreltail, needleandthread, prairie sagewort, stemless mock goldenweed, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; very gravelly loam
Bk1—3 to 8 inches; very gravelly loam
Bk2—8 to 11 inches; very gravelly loam
R—11 to 14 inches; unweathered bedrock

Duffymont soils
Landform: Mountain slopes
Position on landform: Mountainflanks
Parent material: Slope alluvium and/or colluvium derived from sandstone
Slope: 3 to 25 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 4 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 1.0 inch (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)

Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush)
Potential native vegetation: bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, needleandthread, Indian ricegrass, Sandberg bluegrass, Utah serviceberry, arrowleaf balsamroot, sheep fescue
Land capability subclass (nonirrigated): 7s

Typical Profile:
A1—0 to 3 inches; extremely flaggy fine sandy loam
A2—3 to 13 inches; extremely flaggy fine sandy loam
C—13 to 17 inches; extremely flaggy sandy loam
R—17 to 21 inches; unweathered bedrock

Minor Components
Emlin and similar soils
Composition: About 10 percent
Slope: 1 to 12 percent
Drainage class: Well drained
Ecological site: Mountain Loam (Mountain Big Sagebrush)

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

54—Sheecal channery loam, 10 to 40 percent slopes

Map Unit Setting

Major Land Resource Area: 47
Elevation: 6,500 to 7,800 feet (1,981 to 2,377 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 90 to 110 days

Map Unit Composition

Sheecal and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Sheecal soils
Landform: Hillslopes
Position on landform: Footslopes, backslopes, side slopes
Parent material: Colluvium over residuum
Slope: 10 to 40 percent
Aspect: East to south
Shape (down/across): Concave/concave
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 2.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 15 percent

Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: black sagebrush, bluebunch wheatgrass, alderleaf mountain mahogany, Indian ricegrass, Mormon tea, needleandthread, prairie Junegrass, slender buckwheat
Land capability subclass (nonirrigated): 7e

Typical Profile:
A1—0 to 2 inches; channery loam
A2—2 to 5 inches; channery loam
C1—5 to 15 inches; very flaggy loam
C2—15 to 29 inches; extremely flaggy loam
R—29 to 33 inches; unweathered bedrock

Minor Components
Rizno and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Depth to restrictive feature: 4 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Badland
Composition: About 5 percent
Slope: 1 to 99 percent
Depth to restrictive feature: 0 to 3 inches to bedrock, paralithic

55—Sheecal channery loam, 40 to 80 percent slopes

Map Unit Setting

Major Land Resource Area: 47
Elevation: 6,500 to 7,800 feet (1,981 to 2,377 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 90 to 110 days

Map Unit Composition

Sheecal and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Sheecal soils
Landform: Hillslopes
Position on landform: Backslopes, side slopes
Parent material: Colluvium over residuum

Slope: 40 to 80 percent
Aspect: Northeast to southwest
Shape (down/across): Concave/concave
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 1.9 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: black sagebrush, alderleaf mountain mahogany, Indian ricegrass, Mormon tea, antelope bitterbrush, bluebunch wheatgrass, needleandthread
Land capability subclass (nonirrigated): 8e

Typical Profile:
A—0 to 4 inches; channery loam
C1—4 to 12 inches; very flaggy loam
C2—12 to 21 inches; extremely flaggy loam
R—21 to 25 inches; unweathered bedrock

Minor Components
Badland
Composition: About 5 percent
Slope: 1 to 99 percent
Depth to restrictive feature: 0 to 3 inches to bedrock, paralithic

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Milok and similar soils
Composition: About 5 percent
Slope: 10 to 65 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

56—Shotnick-Uffens complex, 0 to 4 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,700 to 4,900 feet (1,433 to 1,494 meters)
Mean annual precipitation: 5 to 8 inches (127 to 203 millimeters)
Mean annual air temperature: 45 to 47 degrees F. (7.2 to 8.3 degrees C.)
Frost-free period: 110 to 125 days

Map Unit Composition

Shotnick and similar soils: 45 percent
Uffens and similar soils: 45 percent
Minor components: 10 percent

Component Descriptions

Shotnick soils
Landform: Hills, alluvial flats
Position on landform: Toeslopes, talfs
Parent material: Alluvium
Slope: 2 to 4 percent
Aspect: South to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 6.2 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 15 (moderately sodic)
Ecological site: Alkali Flat (Black Greasewood)
Potential native vegetation: greasewood, alkali sacaton, squirreltail, shadscale saltbush, Indian ricegrass, galleta, seepweed
Land capability subclass (nonirrigated): 7c

Typical Profile:
A—0 to 3 inches; fine sandy loam
C1—3 to 16 inches; fine sandy loam
C2—16 to 30 inches; fine sandy loam
C3—30 to 60 inches; sandy loam

Uffens soils
Landform: Terraces
Position on landform: Treads
Parent material: Alluvium
Slope: 1 to 3 percent
Aspect: South to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 32 mmhos/cm (strongly saline)
Sodium adsorption ratio maximum: About 50 (strongly sodic)
Ecological site: Alkali Flat (Black Greasewood)

Potential native vegetation: greasewood, alkali sacaton, squirreltail, shadscale saltbush, Indian ricegrass, galleta, seepweed
Land capability subclass (nonirrigated): 7s

Typical Profile:
E—0 to 3 inches; sandy loam
Btn—3 to 24 inches; sandy clay loam
BCy—24 to 37 inches; loam
2BC—37 to 60 inches; sand

Minor Components
Utaline and similar soils
Composition: About 5 percent
Slope: 8 to 25 percent
Drainage class: Well drained
Ecological site: Desert Loam (Shadscale)

Turzo and similar soils
Composition: About 3 percent
Slope: 0 to 4 percent
Drainage class: Well drained
Ecological site: Alkali Flat (Black Greasewood)

Bankard Family and similar soils
Composition: About 2 percent
Slope: 0 to 5 percent
Drainage class: Excessively drained
Flooding hazard: Rare
Ecological site: Loamy Bottom (Basin Big Sagebrush)

57—Splimo very gravelly loam, 8 to 25 percent slopes, extremely flaggy

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 6,800 feet (1,524 to 2,073 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Splimo and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Splimo soils
Landform: Hillslopes
Position on landform: Toeslopes, footslopes, side slopes
Parent material: Colluvium over residuum
Slope: 8 to 25 percent
Aspect: Southeast to west
Shape (down/across): Concave/linear
Depth class: Very shallow and shallow

Depth to restrictive feature: 8 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 1.0 inch (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 60 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: black sagebrush, saline wildrye, Mormon tea, bluebunch wheatgrass, galleta
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very gravelly loam
Bk1—3 to 7 inches; extremely flaggy loam
Bk2—7 to 11 inches; extremely flaggy loam
R—11 to 15 inches; unweathered bedrock

Minor Components

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Yarts and similar soils
Composition: About 5 percent
Slope: 4 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Four-wing Saltbush)

Clapper and similar soils
Composition: About 5 percent
Landform: Hillslopes
Position on landform: Backslopes
Slope: 25 to 50 percent
Drainage class: Well drained
Ecological site: Pinyon-Juniper

58—Splimo-Chew-Rock outcrop complex, 10 to 50 percent slopes, extremely flaggy

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 6,800 feet (1,524 to 2,073 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Splimo and similar soils: 40 percent
Chew and similar soils: 35 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Splimo soils
Landform: Hillslopes
Position on landform: Backslopes, side slopes
Parent material: Colluvium over residuum
Slope: 25 to 50 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 1.4 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 60 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: black sagebrush, saline wildrye, Mormon tea, bluebunch wheatgrass, galleta
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 2 inches; extremely channery loam
Bk1—2 to 4 inches; extremely channery loam
Bk2—4 to 19 inches; extremely channery loam
R—19 to 23 inches; unweathered bedrock

Chew soils
Landform: Hillslopes
Position on landform: Shoulders, side slopes
Parent material: Reworked eolian deposits and/or residuum weathered from sandstone
Slope: 10 to 50 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 4.9 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 55 percent
Gypsum maximum: About 5 percent

Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush)
Potential native vegetation: Wyoming big sagebrush, galleta, Indian ricegrass, needleandthread, bud sagebrush, shadscale saltbush, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very channery loam
Bw—3 to 9 inches; very channery loam
Bk1—9 to 17 inches; channery loam
Bk2—17 to 27 inches; channery loam
BCky—27 to 38 inches; channery loam
R—38 to 42 inches; unweathered bedrock

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Ridges, cliffs, hills
Parent material: Exposed hard bedrock limestone and sandstone
Slope: 10 to 99 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Runoff class: Very high
Land capability subclass (nonirrigated): 8s

Minor Components
Torriorthents and similar soils
Composition: About 10 percent
Slope: 12 to 40 percent
Depth to restrictive feature: 4 to 30 inches to bedrock, lithic
Drainage class: Well drained

59—Stout-Rock outcrop complex, 5 to 35 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 47
Elevation: 6,800 to 7,800 feet (2,073 to 2,377 meters)
Mean annual precipitation: 16 to 18 inches (406 to 457 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Stout and similar soils: 60 percent
Rock outcrop: 30 percent
Minor components: 10 percent

Component Descriptions

Stout soils
Landform: Mountains
Position on landform: Mountainflanks, mountaintops, mountainbases
Parent material: Residuum weathered from sandstone

Slope: 5 to 35 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 7 to 20 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 1.3 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: twoneedle pinyon, Indian ricegrass, Sandberg bluegrass, Utah juniper, Wyoming big sagebrush, antelope bitterbrush, black sagebrush, bluebunch wheatgrass, squirreltail, curl-leaf mountain mahogany, needleandthread, prairie Junegrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 2 inches; sandy loam
AC—2 to 11 inches; sandy loam
R—11 to 15 inches; unweathered bedrock

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Mountains, ridges, cliffs
Parent material: Exposed hard bedrock sandstone
Slope: 5 to 35 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Available water capacity: About 0.0 inches (very low)
Runoff class: Very high
Land capability subclass (nonirrigated): 8

Minor Components
Cortyzack and similar soils
Composition: About 10 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Mountain Loam (Mountain Big Sagebrush)

60—Strell-Marthaspeak-Rock outcrop complex, 1 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,200 to 7,000 feet (1,890 to 2,134 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)

Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 70 to 95 days

Map Unit Composition

Strell and similar soils: 45 percent
Marthaspeak and similar soils: 25 percent
Rock outcrop: 15 percent
Minor components: 15 percent

Component Descriptions

Strell soils
Landform: Cuestas, mesas
Parent material: Eolian deposits over sandstone
Slope: 1 to 25 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 5 to 20 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 0.9 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, bluebunch wheatgrass, squirreltail, broom snakeweed, needleandthread, prairie Junegrass, sand dropseed, scarlet globemallow, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 2 inches; loamy fine sand
C—2 to 11 inches; fine sand
R—11 to 15 inches; unweathered bedrock

Marthaspeak soils
Landform: Mesas, cuestas
Parent material: Residuum weathered from sandstone
Slope: 1 to 25 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 2.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None

Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Sandy Land
Potential native vegetation: Wyoming big sagebrush, Indian ricegrass, needleandthread, bluebunch wheatgrass, squirreltail, sand dropseed, scarlet globemallow, western wheatgrass, broom snakeweed, prairie Junegrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; loamy fine sand
C1—3 to 25 inches; loamy fine sand
C2—25 to 33 inches; loamy fine sand
R—33 to 37 inches; unweathered bedrock

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Ridges, mesas, cuestas
Parent material: Exposed hard bedrock sandstone
Slope: 1 to 25 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Runoff class: High
Land capability subclass (nonirrigated): 8s

Minor Components
Dearjosh and similar soils
Composition: About 5 percent
Slope: 3 to 15 percent
Drainage class: Excessively drained
Ecological site: Sandy Land

Lakebench and similar soils
Composition: About 5 percent
Slope: 3 to 15 percent
Drainage class: Well drained
Ecological site: Rolling Loam

Mantlemine and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Rolling Loam

61—Strell-Rock outcrop-Marthaspeak complex, 3 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,200 to 7,000 feet (1,890 to 2,134 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 70 to 95 days

Map Unit Composition

Strell and similar soils: 45 percent
Rock outcrop: 20 percent
Marthaspeak and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Strell soils
Landform: Mesas, cuestas
Parent material: Eolian deposits over sandstone
Slope: 3 to 45 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 5 to 20 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 0.9 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, bluebunch wheatgrass, squirreltail, broom snakeweed, needleandthread, prairie Junegrass, sand dropseed, scarlet globemallow, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 2 inches; loamy fine sand
C—2 to 11 inches; fine sand
R—11 to 15 inches; unweathered bedrock

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Ridges, mesas, cuestas
Parent material: Exposed hard bedrock sandstone
Slope: 3 to 45 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Runoff class: Very high
Land capability subclass (nonirrigated): 8s

Marthaspeak soils
Landform: Mesas, cuestas
Parent material: Residuum weathered from sandstone
Slope: 3 to 45 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth class: Moderately deep

Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Somewhat excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 2.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, bluebunch wheatgrass, squirreltail, broom snakeweed, needleandthread, prairie Junegrass, sand dropseed, scarlet globemallow, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; loamy fine sand
C1—3 to 25 inches; loamy fine sand
C2—25 to 33 inches; loamy fine sand
R—33 to 37 inches; unweathered bedrock

Minor Components
Dearjosh and similar soils
Composition: About 10 percent
Slope: 3 to 15 percent
Drainage class: Excessively drained
Ecological site: Sandy Land

Mantlemine and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Rolling Loam

62—Strych-Mellenthin complex, 3 to 45 percent slopes, very bouldery

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,500 to 6,500 feet (1,676 to 1,981 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Strych and similar soils: 50 percent
Mellenthin and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Strych soils
Landform: Fan remnants, structural benches
Position on landform: Treads
Parent material: Alluvium and/or colluvium derived from limestone and sandstone
Slope: 3 to 45 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 5.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, galleta, Mormon tea, Sandberg bluegrass, Wyoming big sagebrush, black sagebrush, bluebunch wheatgrass, needleandthread, alderleaf mountain mahogany, winterfat
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 5 inches; cobbly loam
Bk1—5 to 10 inches; cobbly loam
Bk2—10 to 34 inches; very stony loam
BCk—34 to 50 inches; very cobbly loam
2C—50 to 60 inches; loam

Mellenthin soils
Landform: Fan remnants, structural benches
Position on landform: Treads
Parent material: Colluvium over residuum weathered from limestone and sandstone
Slope: 3 to 45 percent
Aspect: Southeast to west
Shape (down/across): Linear/linear
Surface fragments: About 2 percent stones
Depth class: Very shallow and shallow
Depth to restrictive feature: 8 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 0.8 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)

Ecological site: Pinyon-Juniper
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, galleta, bluebunch wheatgrass, broom snakeweed, needleandthread, plains pricklypear, prairie Junegrass, twoneedle pinyon, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 2 inches; very stony sandy loam
Bk—2 to 12 inches; very stony sandy loam
R—12 to 16 inches; unweathered bedrock

Minor Components
Anasazi and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Windcomb and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Depth to restrictive feature: 6 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

63—Tipper-Crustown loamy fine sands, 10 to 40 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,500 to 5,750 feet (1,676 to 1,753 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Tipper and similar soils: 55 percent
Crustown and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Tipper soils
Landform: Hillslopes
Position on landform: Footslopes, backslopes, side slopes
Parent material: Colluvium over residuum weathered from calcareous sandstone

Slope: 10 to 40 percent
Aspect: South to northwest
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 2.3 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, galleta, black sagebrush, broom snakeweed, needleandthread, plains pricklypear, scarlet globemallow, twoneedle pinyon
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 5 inches; loamy fine sand
C—5 to 25 inches; loamy fine sand
Cr—25 to 29 inches; weathered bedrock

Crustown soils
Landform: Hillslopes
Position on landform: Footslopes, backslopes, side slopes
Parent material: Residuum weathered from calcareous sandstone
Slope: 10 to 40 percent
Aspect: South to northwest
Shape (down/across): Linear/linear
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 1.0 inch (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, galleta, black sagebrush, bluebunch wheatgrass, broom snakeweed, needleandthread, plains pricklypear, scarlet globemallow, spiny hopsage, twoneedle pinyon
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; loamy fine sand
C—3 to 13 inches; fine sand
Cr—13 to 17 inches; weathered bedrock

Minor Components
Mido and similar soils
Composition: About 10 percent
Slope: 3 to 12 percent
Drainage class: Excessively drained
Ecological site: Semidesert Sandy Loam

64—Torriorthents-Torripsamments complex, 12 to 40 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,500 to 6,000 feet (1,676 to 1,829 meters)
Mean annual precipitation: 9 to 12 inches (229 to 305 millimeters)
Mean annual air temperature: 42 to 48 degrees F. (5.6 to 8.9 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Torriorthents and similar soils: 60 percent
Torripsamments and similar soils: 30 percent
Minor components: 10 percent

Component Descriptions

Torriorthents soils
Landform: Hillslopes
Position on landform: Footslopes, backslopes, side slopes
Parent material: Colluvium and/or residuum weathered from limestone and sandstone
Slope: 12 to 40 percent
Aspect: East to west
Shape (down/across): Concave/linear
Depth class: Very shallow to moderately deep
Depth to restrictive feature: 4 to 30 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: .06 to 0.2 in./hr. (slow)
Available water capacity: About 1.3 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: About 50 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation: Indian ricegrass, Mormon tea, Utah juniper, bluebunch wheatgrass, Wyoming big sagebrush, antelope bitterbrush, needleandthread, alderleaf mountain mahogany, twoneedle pinyon, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; very gravelly loam
C—4 to 18 inches; very gravelly loam
R—18 to 22 inches; unweathered bedrock

Torripsamments soils
Landform: Hillslopes
Position on landform: Footslopes, backslopes, side slopes
Parent material: Alluvium and/or colluvium over residuum weathered from sandstone
Slope: 12 to 40 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Moderately deep and deep
Depth to restrictive feature: 20 to 60 inches to bedrock, lithic
Drainage class: Excessively drained
Slowest permeability: Greater than 20 in./hr. (very rapid)
Available water capacity: About 1.8 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Potential native vegetation: Indian ricegrass, needleandthread, western wheatgrass, threadleaf sedge, Sandberg bluegrass, Wyoming big sagebrush
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; sand
AC—4 to 16 inches; sand
C—16 to 26 inches; sand
R—26 to 30 inches; unweathered bedrock

Minor Components
Avalon and similar soils
Composition: About 5 percent
Slope: 5 to 12 percent
Drainage class: Well drained
Ecological site: Semidesert Loam

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

65—Tsetaa Family-Bankard Family-Fluvaquents complex, 0 to 45 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 47
Elevation: 5,000 to 6,000 feet (1,524 to 1,829 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)

Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Tsetaa Family and similar soils: 35 percent
Bankard Family and similar soils: 30 percent
Fluvaquents and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Tsetaa Family soils
Landform: Mountain slopes
Position on landform: Mountainflanks
Parent material: Alluvium and/or colluvium derived from sandstone
Slope: 3 to 45 percent
Aspect: East to northwest
Shape (down/across): Concave/concave
Surface fragments: About 2 percent stones
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 1.9 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Potential native vegetation:
Common trees: Rocky Mountain juniper, Utah juniper, twoneedle pinyon
Other plants: Indian ricegrass, basin big sagebrush, Mormon tea, Wyoming big sagebrush, needleandthread
Land capability subclass (nonirrigated): 7s
Typical Profile:
A1—0 to 2 inches; very stony sandy loam
A2—2 to 6 inches; very stony sandy loam
C1—6 to 15 inches; extremely cobbly sand
C2—15 to 60 inches; extremely cobbly sand

Bankard Family soils
Landform: Flood plains
Position on landform: Rises, dips, talfs
Parent material: Alluvium from various sources
Slope: 1 to 8 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Runoff class: Low
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None

Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: River Floodplain (Fremont Cottonwood)
Potential native vegetation: basin wildrye, western wheatgrass, alkali sacaton, basin big sagebrush, boxelder, saltgrass, needleandthread, rush, sandbar willow, sedge, skunkbush sumac
Land capability subclass (nonirrigated): 4c

Typical Profile:
A—0 to 2 inches; sand
C1—2 to 23 inches; sand
C2—23 to 28 inches; loamy sand
C3—28 to 34 inches; sand
C4—34 to 60 inches; sand

Fluvaquents soils
Landform: Oxbows, flood plains
Position on landform: Dips, rises, talfs
Parent material: Alluvium from various sources
Slope: 0 to 1 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Poorly drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 6.8 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Frequent
Ponding hazard: Frequent
Seasonal high water table depth: About 0 to 18 inches
Runoff class: Negligible
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation: cattail, rush, sedge, willow, common reed, reed canarygrass
Land capability subclass (nonirrigated): 6w

Typical Profile:
A—0 to 5 inches; fine sand
C1—5 to 22 inches; loamy fine sand
C2—22 to 30 inches; fine sandy loam
C3—30 to 36 inches; silt loam
C4—36 to 43 inches; fine sandy loam
C5—43 to 50 inches; loam
C6—50 to 60 inches; sand

Minor Components
Rock outcrop
Composition: About 10 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Anasazi and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam

66—Turzo loam, 0 to 4 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,600 to 4,700 feet (1,402 to 1,433 meters)
Mean annual precipitation: 5 to 8 inches (127 to 203 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 110 to 125 days

Map Unit Composition

Turzo and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Turzo soils
Landform: Alluvial flats
Position on landform: Talfs, rises, dips
Parent material: Alluvium
Slope: 0 to 4 percent
Aspect: East
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 7.8 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Low
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 20 (moderately sodic)
Ecological site: Alkali Flat (Black Greasewood)
Potential native vegetation: greasewood, alkali sacaton, squirreltail, shadscale saltbush, Indian ricegrass, galleta, seepweed
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 4 inches; loam
C—4 to 60 inches; loam

Minor Components
Uffens and similar soils
Composition: About 10 percent
Slope: 1 to 3 percent
Drainage class: Well drained
Ecological site: Alkali Flat (Black Greasewood)

Shotnick and similar soils
Composition: About 5 percent
Slope: 2 to 4 percent
Drainage class: Well drained
Ecological site: Alkali Flat (Black Greasewood)

67—Ustic Torrifluvents complex, 2 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,200 to 5,600 feet (1,585 to 1,707 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 48 degrees F. (7.2 to 8.9 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Ustic Torrifluvents and similar soils: 60 percent
Ustic Torrifluvents and similar soils: 25 percent
Minor components: 15 percent

Component Descriptions

Ustic Torrifluvents soils
Landform: Flood plains, fan remnants
Position on landform: Treads
Parent material: Alluvium
Slope: 2 to 8 percent
Aspect: Northeast to west
Shape (down/across): Linear, concave/linear, concave
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 1.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation: basin wildrye, Indian ricegrass, basin big sagebrush, bluebunch wheatgrass, needleandthread, western wheatgrass, Utah juniper, twoneedle pinyon
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; stratified extremely stony coarse sand to extremely stony loamy sand

Ustic Torrifluvents soils
Landform: Flood plains, fan remnants
Position on landform: Treads
Parent material: Alluvium

Slope: 2 to 8 percent
Aspect: Northeast to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 1.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation: basin wildrye, Indian ricegrass, basin big sagebrush, bluebunch wheatgrass, needleandthread, western wheatgrass, Utah juniper, twoneedle pinyon
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; stratified extremely stony coarse sand to extremely stony loamy sand

Minor Components
Abracon and similar soils
Composition: About 10 percent
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)

Strych and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush)

68—Ustorthents, frigid-Borolls complex, 25 to 75 percent slopes, rubbly

Map Unit Setting

Major Land Resource Area: 47
Elevation: 6,500 to 8,500 feet (1,981 to 2,591 meters)
Mean annual precipitation: 14 to 20 inches (356 to 508 millimeters)
Mean annual air temperature: 37 to 45 degrees F. (2.8 to 7.2 degrees C.)
Frost-free period: 50 to 95 days

Map Unit Composition

Ustorthents, frigid and similar soils: 55 percent
Borolls and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Ustorthents, frigid soils
Landform: Mountains
Position on landform: Mountaintops, mountainflanks, mountainbases
Parent material: Colluvium and/or residuum weathered from sedimentary rock
Slope: 25 to 75 percent
Aspect: Northeast to northwest
Shape (down/across): Concave/concave
Depth class: Shallow and moderately deep
Depth to restrictive feature: 10 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 4.0 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, Sandberg bluegrass, Utah serviceberry, Wyoming big sagebrush, mountain snowberry, needleandthread, prairie Junegrass, alderleaf mountain mahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 6 inches; cobbly loam
C—6 to 33 inches; cobbly sandy clay loam
R—33 to 37 inches; unweathered bedrock

Borolls soils
Landform: Mountains
Position on landform: Mountaintops, mountainflanks, mountainbases
Parent material: Colluvium and/or residuum weathered from sedimentary rock
Slope: 25 to 75 percent
Aspect: Northeast to northwest
Shape (down/across): Linear/linear
Depth class: Moderately deep and deep
Depth to restrictive feature: 20 to 60 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 4.2 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation: mountain big sagebrush, Idaho fescue, Letterman's needlegrass, Utah serviceberry, mountain brome, mountain snowberry, arrowleaf balsamroot, elk sedge, prairie Junegrass, slender wheatgrass
Land capability subclass (nonirrigated): 7e

Figure 17.—Map unit 68, Ustorthents, frigid-Borolls complex, 25 to 75 percent slope, rubbly.

Typical Profile:
A1—0 to 10 inches; loam
A2—10 to 19 inches; loam
Bw—19 to 30 inches; cobbly sandy clay loam
R—30 to 34 inches; unweathered bedrock

Minor Components
Schoonover and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Mountain Windswept Ridge (Black Sagebrush)

Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

69—Utaline-Hanksville complex, 8 to 50 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,800 to 5,100 feet (1,463 to 1,554 meters)
Mean annual precipitation: 5 to 8 inches (127 to 203 millimeters)

Mean annual air temperature: 45 to 47 degrees F. (7.2 to 8.3 degrees C.)
Frost-free period: 110 to 125 days

Map Unit Composition

Utaline and similar soils: 45 percent
Hanksville and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Utaline soils
Landform: Fan remnants
Position on landform: Treads
Parent material: Alluvium and/or colluvium
Slope: 8 to 25 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 5.2 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Desert Loam (Shadscale)
Potential native vegetation: Indian ricegrass, shadscale saltbush, galleta, bud sagebrush, scarlet globemallow, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very gravelly sandy loam
Bw—3 to 7 inches; very gravelly loam
Bk1—7 to 23 inches; very gravelly loam
Bk2—23 to 46 inches; very gravelly loam
Bk3—46 to 60 inches; very gravelly loam

Hanksville soils
Landform: Hillslopes
Position on landform: Footslopes, backslopes, side slopes
Parent material: Colluvium and/or residuum
Slope: 25 to 50 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: .001 to .06 in./hr. (very slow)
Available water capacity: About 4.2 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: Very high
Calcium carbonate maximum: About 25 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)

Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Desert Shallow Clay (Mat Saltbush)
Potential native vegetation: mat saltbush, galleta, Native American pipeweed, bud sagebrush
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 2 inches; silty clay loam
Cy—2 to 13 inches; silty clay
C—13 to 33 inches; silty clay
Cr—33 to 37 inches; weathered bedrock

Minor Components
Badland
Composition: About 10 percent
Slope: 1 to 99 percent
Depth to restrictive feature: 0 to 3 inches to bedrock, paralithic

Avalon and similar soils
Composition: About 5 percent
Slope: 5 to 12 percent
Drainage class: Well drained
Ecological site: Semidesert Loam

70—Windcomb-Badland-Rock outcrop complex, 8 to 25 percent slopes, extremely flaggy

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,000 to 5,800 feet (1,524 to 1,768 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Windcomb and similar soils: 45 percent
Badland: 30 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Windcomb soils
Landform: Hillslopes
Position on landform: Toeslopes, footslopes, side slopes
Parent material: Slope alluvium and/or colluvium derived from limestone over residuum weathered from sandstone and siltstone
Slope: 8 to 25 percent
Aspect: East to northwest
Shape (down/across): Convex/convex
Depth class: Very shallow and shallow
Depth to restrictive feature: 6 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)

Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: black sagebrush, saline wildrye, Mormon tea, bluebunch wheatgrass, galleta
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 4 inches; very channery silt loam
C1—4 to 9 inches; very channery loam
C2—9 to 17 inches; very channery loam
R—17 to 21 inches; unweathered bedrock

Badland
Description: Badland usually consists of little or no soil over sedimentary rock with little or no vegetation. These areas usually have been strongly dissected by erosion.
Landform: Hills
Position on landform: Toeslopes, footslopes
Parent material: Semiconsolidated sedimentary rock
Slope: 8 to 25 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 to 4 inches to bedrock, paralithic
Available water capacity: About 0.0 inches (very low)
Runoff class: High
Salinity maximum: About 0 mmhos/cm (nonsaline)
Land capability subclass (nonirrigated): 8e

Rock outcrop
Description: Rock outcrop consists of exposed hard sandstone or limestone bedrock.
Landform: Ridges, cliffs, hills
Parent material: Exposed hard bedrock sandstone
Slope: 8 to 99 percent
Aspect: East to northwest
Shape (down/across): Linear/linear
Depth to restrictive feature: 0 inches to bedrock, lithic
Runoff class: Very high
Land capability subclass (nonirrigated): 8s

Minor Components
Mikim and similar soils
Composition: About 5 percent
Slope: 1 to 3 percent
Drainage class: Well drained
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)

Strych and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush)

71—Windcomb-Rizno-Anasazi complex, 3 to 25 percent slopes, extremely flaggy

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,400 to 6,400 feet (1,646 to 1,951 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 90 to 105 days

Map Unit Composition

Windcomb and similar soils: 35 percent
Rizno and similar soils: 30 percent
Anasazi and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Windcomb soils
Landform: Cuestas
Parent material: Slope alluvium and/or colluvium derived from limestone over residuum weathered from sandstone and siltstone
Slope: 3 to 25 percent
Aspect: South to west
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 6 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: black sagebrush, saline wildrye, Mormon tea, bluebunch wheatgrass, galleta
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 4 inches; very channery silt loam
C1—4 to 9 inches; very channery loam
C2—9 to 17 inches; very channery loam
R—17 to 21 inches; unweathered bedrock

Rizno soils
Landform: Cuestas
Parent material: Slope alluvium and/or colluvium over residuum weathered from limestone and sandstone
Slope: 3 to 25 percent
Aspect: South to west
Shape (down/across): Linear/linear
Depth class: Very shallow and shallow
Depth to restrictive feature: 4 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 1.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Shallow Loam (Wyoming Big Sagebrush)
Potential native vegetation: Wyoming big sagebrush, needleandthread, Indian ricegrass, galleta, shadscale saltbush, squirreltail, scarlet globemallow, western wheatgrass, broom snakeweed, prairie Junegrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 5 inches; cobbly fine sandy loam
C—5 to 15 inches; cobbly fine sandy loam
R—15 to 19 inches; unweathered bedrock

Anasazi soils
Landform: Cuestas
Parent material: Alluvium and/or colluvium over residuum weathered from limestone and sandstone
Slope: 3 to 25 percent
Aspect: South to west
Shape (down/across): Linear/linear
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 2.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Sandy Loam
Potential native vegetation: Indian ricegrass, needleandthread, Wyoming big sagebrush, fourwing saltbush, galleta, squirreltail, shadscale saltbush, western wheatgrass, broom snakeweed, prairie Junegrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; fine sandy loam
Bw—3 to 10 inches; cobbly fine sandy loam
Bk—10 to 19 inches; gravelly fine sandy loam
BCk—19 to 24 inches; very gravelly loamy sand
R—24 to 28 inches; unweathered bedrock

Minor Components
Rock outcrop
Composition: About 5 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Milok and similar soils
Composition: About 5 percent
Slope: 8 to 25 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Four-wing Saltbush)

Strych and similar soils
Composition: About 5 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush)

72—Yampa gravelly loam, 3 to 15 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 6,500 to 7,000 feet (1,981 to 2,134 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Yampa and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Yampa soils
Landform: Alluvial fans
Position on landform: Talfs
Parent material: Mixed calcareous source alluvium and/or residuum
Slope: 3 to 15 percent
Aspect: Northeast to north
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 3.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate maximum: About 40 percent

Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, bluebunch wheatgrass, Indian ricegrass, Sandberg bluegrass, prairie Junegrass
Land capability subclass (nonirrigated): 4e

Typical Profile:
A—0 to 7 inches; gravelly loam
Bk1—7 to 13 inches; extremely gravelly loam
Bk2—13 to 31 inches; very cobbly loam
Bk3—31 to 60 inches; extremely cobbly sandy loam

Minor Components
Lakebench and similar soils
Composition: About 10 percent
Slope: 3 to 15 percent
Drainage class: Well drained
Ecological site: Rolling Loam

Emlin and similar soils
Composition: About 5 percent
Slope: 1 to 12 percent
Drainage class: Well drained
Ecological site: Mountain Loam (Mountain Big Sagebrush)

73—Yampa-Hackling-Mantlemine complex, 3 to 45 percent slopes, very stony

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,800 to 7,200 feet (1,768 to 2,195 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Yampa and similar soils: 40 percent
Hackling and similar soils: 25 percent
Mantlemine and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Yampa soils
Landform: Structural benches, fan remnants
Position on landform: Treads
Parent material: Mixed calcareous source alluvium and/or colluvium and/or residuum
Slope: 3 to 45 percent
Aspect: Southeast to southwest
Shape (down/across): Linear/linear
Depth class: Very deep

Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 3.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Potential native vegetation:
Common trees: Utah juniper, twoneedle pinyon
Other plants: Utah juniper, bluebunch wheatgrass, Indian ricegrass, Wyoming big sagebrush, black sagebrush, needleandthread, prairie Junegrass, twoneedle pinyon, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 7 inches; very cobbly loam
Bk1—7 to 13 inches; extremely gravelly loam
Bk2—13 to 31 inches; very cobbly loam
Bk3—31 to 60 inches; extremely cobbly sandy loam

Hackling soils
Landform: Structural benches, fan remnants
Position on landform: Treads
Parent material: Calcareous colluvium derived from limestone and sandstone and/or residuum
Slope: 5 to 45 percent
Aspect: Southeast to southwest
Shape (down/across): Linear/linear
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 0.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very high
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Potential native vegetation:
Common trees: twoneedle pinyon, Utah juniper
Other plants: Utah juniper, Indian ricegrass, Wyoming big sagebrush, bluebunch wheatgrass, squirreltail, broom snakeweed, needleandthread, prairie Junegrass, sand dropseed, twoneedle pinyon
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 1 inch; gravelly sandy loam
Bk1—1 to 4 inches; very gravelly sandy loam
Bk2—4 to 15 inches; extremely cobbly sandy loam
R—15 to 19 inches; unweathered bedrock

Mantlemine soils
Landform: Structural benches, fan remnants
Position on landform: Treads
Parent material: Alluvium and/or residuum weathered from limestone and sandstone
Slope: 3 to 25 percent
Aspect: Southeast to southwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 10.4 inches (high)
Shrink-swell potential: About 3.7 percent (moderate)
Runoff class: Medium
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Rolling Loam
Potential native vegetation: Wyoming big sagebrush, needleandthread, western wheatgrass, Sandberg bluegrass, bluebunch wheatgrass, Indian ricegrass, squirreltail, prairie Junegrass, scarlet globemallow
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 13 inches; clay loam
Bk1—13 to 45 inches; clay loam
Bk2—45 to 60 inches; loam

Minor Components
Rock outcrop
Composition: About 10 percent
Slope: 3 to 45 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Lakebench and similar soils
Composition: About 5 percent
Slope: 5 to 30 percent
Drainage class: Well drained
Ecological site: Rolling Loam

74—Yarts fine sandy loam, 4 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 5,200 to 5,600 feet (1,585 to 1,707 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Yarts and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Yarts soils
Landform: Alluvial flats
Position on landform: Talfs
Parent material: Alluvium
Slope: 4 to 8 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 7.0 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush)
Potential native vegetation: Indian ricegrass, needleandthread, fourwing saltbush, galleta, Torrey's jointfir
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 8 inches; fine sandy loam
C—8 to 60 inches; sandy loam

Minor Components
Milok and similar soils
Composition: About 5 percent
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Four-wing Saltbush)

Paradox and similar soils
Composition: About 5 percent
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)

75—Yarts complex, 2 to 5 percent slopes

Map Unit Setting

Major Land Resource Area: 34
Elevation: 4,900 to 5,100 feet (1,494 to 1,554 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.5 degrees C.)
Frost-free period: 110 to 140 days

Map Unit Composition

Yarts and similar soils: 45 percent
Yarts and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Yarts soils
Landform: Alluvial flats
Position on landform: Talfs
Parent material: Alluvium
Slope: 2 to 5 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 6.4 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 15 (moderately sodic)
Ecological site: Alkali Flat (Black Greasewood)
Potential native vegetation: greasewood, alkali sacaton, squirreltail, shadscale saltbush, Indian ricegrass, galleta, seepweed
Land capability subclass (nonirrigated): 7s

Typical Profile:
A—0 to 8 inches; fine sandy loam
C1—8 to 26 inches; loamy fine sand
C2—26 to 39 inches; fine sandy loam
C3—39 to 57 inches; loamy fine sand
C4—57 to 60 inches; very fine sandy loam

Yarts soils
Landform: Alluvial flats
Position on landform: Talfs
Parent material: Alluvium
Slope: 2 to 5 percent
Aspect: East to west
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: About 7.0 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Loamy Bottom (Basin Big Sagebrush)
Potential native vegetation: basin wildrye, basin big sagebrush, muttongrass, needleandthread, western wheatgrass, Indian ricegrass, rubber rabbitbrush
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; fine sandy loam
C1—4 to 10 inches; loam
C2—10 to 17 inches; sandy loam
C3—17 to 37 inches; sandy loam
C4—37 to 60 inches; fine sandy loam

Minor Components
Paradox and similar soils
Composition: About 10 percent
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Loam (Wyoming Big Sagebrush)

Milok and similar soils
Composition: About 5 percent
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Semidesert Sandy Loam (Four-wing Saltbush)

76—Zillion-Yampa-Clyl complex, 25 to 65 percent slopes, extremely flaggy

Map Unit Setting

Major Land Resource Area: 47
Elevation: 7,000 to 8,000 feet (2,134 to 2,438 meters)
Mean annual precipitation: 14 to 18 inches (356 to 457 millimeters)
Mean annual air temperature: 42 to 45 degrees F. (5.6 to 7.2 degrees C.)
Frost-free period: 75 to 95 days

Map Unit Composition

Zillion and similar soils: 40 percent
Yampa and similar soils: 25 percent
Clyl and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Zillion soils
Landform: Mountains
Position on landform: Mountainbases, mountainflanks, mountaintops
Parent material: Colluvium derived from limestone and sandstone
Slope: 25 to 65 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 4.9 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)

Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Stony Loam (Browse)
Potential native vegetation: mountain big sagebrush, mountain snowberry, western wheatgrass, Columbia needlegrass, Letterman's needlegrass, Utah serviceberry, arrowleaf balsamroot, prairie Junegrass, slender wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 7 inches; loam
AB—7 to 18 inches; cobbly loam
Bt—18 to 26 inches; very cobbly loam
Btk—26 to 34 inches; very cobbly sandy clay loam
Bk1—34 to 45 inches; extremely cobbly sandy clay loam
Bk2—45 to 60 inches; extremely cobbly sandy clay loam

Yampa soils
Landform: Mountains
Position on landform: Mountaintops, mountainflanks, mountainbases
Parent material: Colluvium and/or mixed calcareous source residuum
Slope: 25 to 65 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: About 3.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Mountain Windswept Ridge (Black Sagebrush)
Potential native vegetation: bluebunch wheatgrass, Indian ricegrass, Sandberg bluegrass, black sagebrush, needleandthread, prairie sagewort
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 7 inches; very cobbly loam
Bk1—7 to 13 inches; extremely gravelly loam
Bk2—13 to 31 inches; very cobbly loam
Bk3—31 to 60 inches; extremely cobbly sandy loam

Clyl soils
Landform: Mountain slopes
Position on landform: Mountainflanks
Parent material: Colluvium
Slope: 25 to 65 percent
Aspect: Southeast to northwest
Shape (down/across): Linear/linear
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: About 5.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)

Runoff class: High
Calcium carbonate maximum: About 60 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Mountain Stony Loam (Browse)
Potential native vegetation: mountain snowberry, Letterman's needlegrass, bluebunch wheatgrass, mountain big sagebrush, slender wheatgrass, Columbia needlegrass, Utah serviceberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
A1—0 to 2 inches; channery silt loam
A2—2 to 9 inches; channery silt loam
Bk1—9 to 19 inches; very channery silt loam
Bk2—19 to 29 inches; very channery loam
Bk3—29 to 60 inches; extremely flaggy loam

Minor Components
Emlin and similar soils
Composition: About 10 percent
Slope: 1 to 12 percent
Drainage class: Well drained
Ecological site: Mountain Loam (Mountain Big Sagebrush)

Pensore and similar soils
Composition: About 5 percent
Slope: 6 to 75 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinyon-Juniper

77—Water

Map Unit Setting

Major Land Resource Area: 34

Map Unit Composition

Water: 100 percent

Component Description

Water
Aspect: East to west

Range and Forest Land

Range

The Dinosaur National Monument Natural Resources Staff assisted in writing this section.

The upland and riparian vegetation of the Monument is characteristic of the Submontane/Cold-temperate Lowland climate-elevation zone on the Colorado Plateau. Several physiographic provinces, including the Wyoming Basin, Great Basin, central Rocky Mountains, and Colorado Plateau, converge in the Park. This phenomenon, coupled with unusual local diversity in topography, elevation, substrate, and moisture availability, contributes to notable plant community diversity. The most common plant community types in the Monument are big sagebrush/grassland and pinyon/juniper woodlands. On higher elevations and northern exposures are areas of ponderosa pine and Rocky Mountain Douglas fir. Riparian and hanging garden communities occur less frequently, but contribute significantly to biological diversity.

About 650 species of vascular plants have been collected and identified in Dinosaur National Monument. Botanists expect that another 200 to 250 species might be located through more intensive surveys. Several rare plant species occur in the Monument. These sensitive species are often substrate specific, and occur on friable soils that are easily disturbed by livestock or human activity (Rowlands et al., 1994).

Over 100 species of lichens have been identified in initial inventory efforts, including several species that are new to science. Many species have been found at elevations and on substrates not previously recorded.

During an intensive three-year (1987-1989) vascular plant survey of the Monument, nearly 40 sensitive plant species were identified. State Natural Heritage Programs considered these species rare or sensitive. By National Park Service policy, these species are afforded protection similar to that of the Endangered Species Act. Candidate plant species include Monument rockcress (Arabis vivariensis), alcove bog orchid (Habenaria zothecina), Ownbey thistle (Cirsium ownbeyi), Hamilton milkvetch (Astragalus hamiltonii), and Wilken's fleabane (Erigeron wilkenii). Ute ladies'-tresses orchid (Spiranthes diluvialis) is the only federally listed plant species known to occur in the Monument. Management of the Ute ladies' tresses orchid includes a riparian restoration project and demographic monitoring (Naumann, 1990).

Over the last century, human activities throughout the Monument have caused changes in the distribution and abundance of native vegetation and have contributed to conditions favoring the invasion of nonnative species. Grazing by domestic livestock and suppression of natural fires have increased the frequency of big sagebrush, pinyon pine, and Utah juniper, and decreased the abundance of native grasses. Current fire management practices are designed to restore a more natural fire regime through use of prescribed fire and associated fire effects monitoring.

The range on Dinosaur National Monument is used primarily for wildlife habitat and recreational areas, as watershed, and has esthetic value.

Ecological Sites and Characteristic Native Vegetation

In areas that have similar climate and topography, differences in the kind and amount of rangeland and forest understory vegetation, and the tree species are closely related to the kind of soil. Effective management is based upon the relationship between the soils and vegetation and water.

Table 6 shows, for each soil, the ecological site and site identification (ID); the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic native vegetation; the average percentage of each species for rangeland and for forest understory vegetation; and common trees and their site index. An explanation of the column headings in Table 6 follows.

An *ecological site* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Total production is the amount of dry-weight vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percentage of air-dry moisture content.

*Characteristic native vegetation*consists of the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil is listed by common name. Under *composition*, the expected percentage of the total annual production of rangeland and forest understory vegetation is given for each species making up the characteristic native vegetation. The amount that can be used as forage depends upon the kinds of grazing animals and on the grazing season.

Common trees are those tree species that naturally occur on a soil. The potential productivity is expressed as *site index*. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands.

More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Range Condition

Range condition is based on a comparison of the present plant community with the potential natural plant community on a particular range site. The more closely the existing community resembles the natural community, the better the range condition.

Abnormal disturbances that change the natural plant community include repeated overuse by livestock, excessive burning, erosion, and plowing. Grazing animals select the most palatable plants. These plants will eventually die if they are continually grazed. A very severe disturbance can completely destroy the natural community. Under these conditions the less desirable plants, such as annuals and weedlike plants, can invade. If the plant community has not deteriorated significantly, it eventually can return to dominantly natural plants if proper grazing management is applied.

Four range condition classes are used to show the degree of deterioration of the natural plant community. An area of rangeland is in *excellent* condition if more than 75 percent of the present plant community is the same as the natural plant community. It is in *good* condition if the natural plants make up 51 to 75 percent of the present plant community; in *fair* condition if those plants make up 26 to 50 percent; and in *poor* condition if they make up less than 25 percent of the present plant community.

Knowledge of the range site and condition is necessary as a basis for planning and applying the management needed to maintain or improve the desired plant community for selected uses. Such information is needed to determine management objectives, proper grazing systems and stocking rates, suitable wildlife management practices, the potential for recreational uses, and the condition of watersheds.

Rangeland Management

Rangeland management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range condition.

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, reduction of less desirable species, conservation of water, and control of erosion. Sometimes, however, a range condition somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Grazing management is the most important part of any rangeland management program. Proper grazing use, timely deferment of grazing, and planned rotation grazing systems are key practices. The experience of ranchers and research have shown that if no more than one-half of the current year's growth is grazed, a plant community in good or excellent condition can be maintained and one in fair condition can be improved. The remaining one-half enables plants to make and store food for regrowth and root development. As a result, the desirable plants remain healthy and are not replaced by less desirable grasses and weeds. The plant cover also protects the soil from water erosion and soil blowing, improves tilth, increases the rate of water infiltration, and helps to control runoff.

Certain practices commonly are needed to obtain a uniform distribution of grazing. These include developing livestock watering facilities, fencing, properly locating salt and mineral supplements, constructing livestock trails in steeply sloping areas, and riding or herding.

Various kinds of grazing systems can be used in range management. No single grazing system is best under all conditions. The grazing system should increase the quantity and improve the quality of the range vegetation, should meet the needs of the individual operator, and should be designed according to the topography, the type of grazing animals, and the resource management objectives.

Special improvement practices are needed in areas where management practices do not achieve the desired results or where recovery is too slow under forage management alone. These include range seeding, brush management, water spreading, prescribed burning, and mechanical treatment.

Some soils are suited to mechanical treatment for range improvement. On other soils, however, only proper grazing management can improve the range. Where feasible, mechanical renovation practices, such as shallow chiseling, can help to speed recovery of the desired plants. These practices open up the surface and thus allow the absorption of more moisture and production of the more desirable plants. Mechanical renovation, brush management, and timely deferment of grazing allow recovery of the desired plants.

Seeding may be needed in areas where the less desirable plants are dominant. A clean, firm seedbed should be prepared, suitable species should be selected for seeding, and rest periods should be long enough to allow the new plants to become established.

Special improvement practices can be effective only if the management system helps to keep the desirable plants healthy.

Forest Land Understory Vegetation

Understory vegetation consists of grasses, forbs, shrubs, and other plants. If well managed, some forest land can produce enough understory vegetation to support grazing of livestock or wildlife, or both, without damage to the trees.

The quantity and quality of understory vegetation vary with the kind of soil, the age and kind of trees in the canopy, the density of the canopy, and the depth and condition of the litter. The density of the canopy determines the amount of light that understory plants receive.

The table “Ecological Sites and Characteristic Native Vegetation” shows, for each soil suitable for forest land, the characteristic native vegetation. The total production of characteristic native vegetation includes the herbaceous plants and the leaves, twigs, and fruit of woody plants up to a height of 4.5 feet. It is expressed in pounds per acre of air-dry vegetation in *favorable, normal*, and *unfavorable* years. In a favorable year, soil moisture is *above average* during the optimal part of the growing season; in a normal year, soil moisture is *average*; and in an unfavorable year, it is *below average*.

The table also lists the common names of the characteristic native vegetation on each soil and the composition, by percentage of air-dry weight, of each kind of plant. The table shows the kind and percentage of understory plants expected under a canopy density that is most nearly typical of forest land in which the production of wood crops is highest.

Ecological Site Descriptions

Alkali Flat (Greasewood), #034XY006UT

The potential plant community consists mainly of saltgrass and greasewood. Dominant grasses are squirreltail, alkali sacaton, galleta, and Indian ricegrass. Dominant shrubs are greasewood, shadscale, and bud sagebrush. Annual production ranges from 500 to 1,000 pounds per acre (air-dry). Annual precipitation ranges from 5 to 12 inches.

Overgrazing by cattle or wildlife will reduce the quantity of perennial grasses such as Indian ricegrass and squirreltail while greasewood will increase to dominate the site. Plant species that commonly invade this site include cheatgrass, seepweed, Russian thistle, and other annuals.

Common conservation practices applicable for this site are proper grazing use, brush management (mechanical and others), deferred grazing, range seeding, and planned grazing systems.

Clayey Saltdesert, #034AY403CO

The potential plant community consists mainly of Nuttall saltbush and mat saltbush mixed with many grasses and several forbs. The dominant grass is Salina wildrye.

Dominant shrubs include shadscale, mat saltbush, and Nuttall saltbush. Annual production ranges from 200 to 500 pounds per acre (air-dry). Annual precipitation ranges from 9 to 11 inches.

Grazing on this site must be carefully managed, as degradation can be rapid. The first indication of degradation on this fragile site is reduction of production. After this, species such as Indian ricegrass, Salina wildrye, winterfat, bud sagebrush, and fourwing saltbush start to drop out of the plant community. Further degradation results in undesirables growing on the site; these undesirables include cheatgrass, annual wheatgrass, Russian thistle, kochia, and halogeton.

Common conservation practices applicable for this site are proper grazing use, deferred grazing, range seeding, and planned grazing systems.

Clayey Slopes, #034AY246CO

The potential plant community consists mainly of grassland with small amounts of shrubs and forbs.

Dominant grasses are Salina wildrye and western wheatgrass. Forbs include onion, Hood phlox, stonecrop, hollyleaf clover, fleabane, and aster. Dominant shrubs include shadscale, big sagebrush, and Utah serviceberry. Annual production ranges from 300 to 600 pounds per acre (air-dry). Annual precipitation is about 11 inches.

Overgrazing will reduce the quantity of palatable perennial grasses such as western wheatgrass, Salina wildrye, and muttongrass, and will result in an increase of big sagebrush and other shrubs. Cheatgrass is a common invader on this site.

Common conservation practices that may be applied are proper grazing use, deferred grazing, planned grazing systems, and range seeding.

Desert Loam (Shadscale), #034XY106UT

The potential plant community consists mainly of shadscale and Indian ricegrass. Dominant grasses are Indian ricegrass, squirreltail, and galleta. Dominant shrubs include shadscale, winterfat, and bud sagebrush. Annual production ranges from 300 to 700 pounds per acre (air-dry). Annual precipitation ranges from 5 to 8 inches.

Overgrazing by cattle or wildlife will reduce the quantity of palatable shrubs and perennial grasses such as Indian ricegrass and bud sagebrush. Plant species that commonly invade this site include halogeton, cheatgrass, Russian thistle, and other annual weeds.

Common conservation practices applicable for this site are proper grazing use, deferred grazing, range seeding, and planned grazing systems.

Desert Shallow Clay (Mat Saltbush), #034XY117UT

The potential plant community consists mainly of mat saltbush. Dominant grasses are galleta, squirreltail, and Indian ricegrass. Dominant shrubs are mat saltbush, bud sagebrush, and Castlevalley saltbush. Annual production ranges from 100 to 300 pounds per acre (air-dry). Annual precipitation ranges from 5 to 8 inches.

Overgrazing by cattle or wildlife will reduce the quantity of perennial grasses such as galleta, Indian ricegrass, and squirreltail. Plant species that commonly invade this site include halogeton and Russian thistle.

Common conservation practices applicable for this site are proper grazing use, deferred grazing, and planned grazing systems.

Loamy Bottom (Basin Big Sagebrush), #034XY009UT

The potential plant community consists mainly of basin big sagebrush and great basin wildrye. Dominant grasses are great basin wildrye, needleandthread, Indian ricegrass, and muttongrass. Dominant shrubs are basin big sagebrush, fourwing saltbush, and rubber rabbitbrush. Annual production ranges from 900 to 2,500 pounds per acre (air-dry). Annual precipitation ranges from 5 to 14 inches.

Overgrazing by cattle or wildlife will reduce the quantity of palatable grasses such as great basin wildrye and needleandthread, while basin big sagebrush and rubber rabbitbrush increase. Plant species that commonly invade this site include cheatgrass, halogeton, greasewood, and other annual weeds.

Common conservation practices applicable for this site are proper grazing use, brush management (prescribed fire, mechanical, and others), deferred grazing, range seeding and planned grazing systems.

Mountain Loam (Mountain Big Sagebrush), #047CY430UT

The potential plant community consists mainly of open grassland with mountain big sagebrush. Dominant grasses are western wheatgrass, Columbia needlegrass, needleandthread, and Sandberg bluegrass. Dominant shrubs are mountain big sagebrush, slender wild buckwheat, and longflower rabbitbrush. Annual production ranges from 900 to 2,000 pounds per acre (air-dry). Annual precipitation ranges from 13 to 20 inches.

Overgrazing by cattle or wildlife will reduce the quantity of palatable shrubs and perennial grasses such as Columbia needlegrass, bluegrass, bitterbrush, and palatable forbs, while mountain big sagebrush, lupine, rabbitbrush, western wheatgrass, and Letterman needlegrass increase.

Common conservation practices applicable for this site are proper grazing use, brush management (prescribed fire, mechanical, and others), deferred grazing, range seeding, and planned grazing systems.

Mountain Shallow Loam (Mountain Big Sagebrush), #047CY446UT

The potential plant community consists mainly of bluebunch wheatgrass and mountain big sagebrush. Dominant grasses are bluebunch wheatgrass, needleandthread, and Sandberg bluegrass. Dominant shrubs include mountain big sagebrush, bitterbrush, and Utah serviceberry. Annual production ranges from 750 to 1,250 pounds per acre (air-dry). Annual precipitation ranges from 14 to 20 inches.

Overgrazing by cattle or wildlife will reduce the quantity of perennial grasses such as bluebunch wheatgrass, needleandthread, and Sandberg bluegrass. Plant species that commonly increase with overgrazing at this site are mountain big sagebrush, western wheatgrass, lupine, and aster.

Common conservation practices applicable for this site are proper grazing use, brush management (prescribed fire and others), deferred grazing, range seeding, and planned grazing systems.

Mountain Stony Loam, #048AY378CO

The potential plant community consists mainly of a grass-shrub community dominated by bluebunch wheatgrass, muttongrass, Sandberg bluegrass, curl-leaf mountain mahogany, and mountain snowberry. Predominant forbs are arrowleaf balsamroot and Louisiana sagewort. Other common shrubs are Utah serviceberry, chokecherry, and alderleaf mountain mahogany. Annual production ranges from 1,300 to 2,400 pounds per acre (air-dry). Annual precipitation ranges from 14 to 18 inches.

Overgrazing by cattle or elk will reduce the quantity of palatable perennial grasses such as bluebunch wheatgrass, muttongrass, and slender wheatgrass. Excessive browsing by wildlife use may adversely effect palatable shrubs such as alderleaf mountain mahogany, Utah serviceberry, and curl-leaf mountain mahogany. Plant species that commonly invade this site include Kentucky bluegrass, cheatgrass, and annual mustards.

Common conservation practices that may be applied to this site are proper grazing use, deferred grazing, and planned grazing systems.

Mountain Stony Loam (Bitterbrush), #047CY456UT

The potential plant community consists mainly of antelope bitterbrush and mountain big sagebrush. Dominant grasses are needleandthread, bluebunch wheatgrass, and Sandberg bluegrass. Dominant shrubs include bitterbrush, mountain big sagebrush, and Utah serviceberry. Annual production ranges from 1,200 to 1,800 pounds per acre (air-dry). Annual precipitation ranges from 14 to 18 inches.

Overgrazing by cattle or wildlife will reduce the quantity of palatable shrubs and perennial grasses such as needleandthread, bluegrass, sheep fescue, and bitterbrush. Plant species that commonly increase with overgrazing include mountain big sagebrush, western wheatgrass, lupine, and aster.

Common conservation practices applicable for this site are proper grazing use, brush management such as prescribed fire, deferred grazing, range seeding, and planned grazing systems.

Mountain Stony Loam (Browse), #047CY460UT

The potential plant community consists mainly of birchleaf mountainmahogany and Utah serviceberry. Dominant grasses are bluebunch wheatgrass, bluegrass, and basin wildrye. Dominant shrubs include birchleaf mountainmahogany, Utah serviceberry, and mountain snowberry. Annual production ranges from 1,400 to 2,600 pounds per acre (air-dry). Annual precipitation ranges from 14 to 18 inches.

Overgrazing by cattle or wildlife will reduce the quantity of palatable shrubs and perennial grasses such as birchleaf mountainmahogany and bluebunch wheatgrass. Plant species that commonly increase due to overgrazing at this site are mountain big sagebrush, Oregon grape, and mountain snowberry. Plant species that commonly invade this site include cheatgrass and Utah sweetvetch.

Common conservation practices applicable for this site are proper grazing use, brush management (prescribed fire, mechanical, and others), deferred grazing, range seeding and planned grazing systems.

Mountain Windswept Ridge (Black Sagebrush), #047CY475UT

The potential plant community consists mainly of open grassland with scattered shrubs. Dominant grasses are bluebunch wheatgrass, muttongrass, and prairie Junegrass. Dominant shrubs include black sagebrush, fringed sagebrush, and Utah serviceberry. Annual production ranges from 200 to 550 pounds per acre (air-dry). Annual precipitation ranges from 14 to 18 inches.

Overgrazing by cattle or wildlife will reduce the quantity of perennial grasses such as bluebunch wheatgrass, muttongrass, prairie Junegrass, and needleandthread. Plant species that commonly increase with overgrazing on this site include Letterman needlegrass, cushion milkvetch, pussytoes, rock goldenrod, and horsebrush.

Common conservation practices applicable for this site are proper grazing use, deferred grazing, and planned grazing systems.

River Floodplain (Fremont Cottonwood), #034XY011UT

The potential plant community consists mainly of an open savannah of cottonwood with an understory of willows and grass. Inland boxelder through the deeper canyons on the Green and Yampa Rivers is the overstory tree species on this site. Dominant grasses are Sandberg bluegrass, slender wheatgrass, and western wheatgrass. Dominant shrubs are coyote willow, rubber rabbitbrush, and basin big sagebrush. Annual production ranges from 1,200 to 1,600 pounds per acre (air-dry). Annual precipitation ranges from 8 to 12 inches.

A wide variety of seral stages and site developments can be found with the dynamic river system. When newly deposited sediments become stabilized, early stages of primary plant succession appear and begin to advance toward the potential natural plant community. Natural meandering of the river also cuts away established

parts of the community. These natural processes within the river flood plain ecosystem cause difficulties in determining the potential natural plant community or climax.

Common conservation practices applicable for this site are proper grazing use, brush management (mechanical and others), deferred grazing, range seeding, and planned grazing systems.

Rolling Loam, #034AY298CO

The potential plant community consists mainly of an open stand of big sagebrush with an abundance of grasses including western wheatgrass, bluebunch wheatgrass, needlegrasses, squirreltail, bluegrasses, and Indian ricegrass. Other shrubs include gray horsebrush, low rabbitbrush, tall rabbitbrush, and Utah serviceberry. Forbs include American vetch, buckwheats, bluebells, balsamroot, globemallow, lupine, yarrow, and fleabane. Annual production ranges from 400 to 900 pounds per acre (air-dry). Annual precipitation ranges from 12 to 15 inches.

Continued overgrazing by cattle or wildlife will reduce the quantity of palatable perennial grasses such as western wheatgrass, bluebunch wheatgrass, and needleandthread. Plant species that commonly invade this site include pinyon, Utah juniper, cheatgrass, and other introduced annuals.

Common conservation practices applicable for this site are proper grazing use, deferred grazing, planned grazing systems, and range seeding.

Sandy Foothills, #034AY310CO

The potential plant community consists mainly of a grass-shrub community dominated by needleandthread, Indian ricegrass, antelope bitterbrush, and mountain big sagebrush. Other abundant grasses are Sandberg bluegrass, Sandberg bluegrass, and prairie Junegrass. Predominant forbs are arrowleaf balsamroot and lupine. Annual production ranges from 400 to 1,200 pounds per acre (air-dry). Annual precipitation ranges from 13 to 15 inches.

Overgrazing by cattle or elk will reduce the quantity of palatable perennial grasses such as needleandthread and Sandberg bluegrass, and will result in an increase of big sagebrush and other shrubs. Antelope bitterbrush may also be adversely affected by excessive wildlife browsing. Plant species that commonly invade this site include Russian thistle, cheatgrass, annual mustards, and Utah juniper.

Common conservation practices that may be applied are brush management (prescribed fire, mechanical, and others), proper grazing use, deferred grazing, planned grazing systems, and range seeding.

Sandy Land, #034AY330CO

The potential plant community consists mainly of a grass-shrub community dominated by needleandthread, Indian ricegrass, and Wyoming big sagebrush. Other abundant grasses are Sandberg bluegrass, Sandberg bluegrass, and prairie Junegrass. Predominant forbs are arrowleaf balsamroot and foothills deathcamas. Other shrubs commonly found are antelope bitterbrush and small low rabbitbrush. Annual production ranges from 500 to 1,000 pounds per acre (air-dry). Annual precipitation ranges from 12 to 14 inches.

Overgrazing by cattle or elk will reduce the quantity of palatable perennial grasses such as needleandthread and Sandberg bluegrass, and will result in an increase of Wyoming big sagebrush and other shrubs. Plant species that commonly invade this site include Russian thistle, cheatgrass, annual mustards, and Utah juniper.

Common conservation practices that may be applied are brush management (prescribed fire, mechanical, and others), proper grazing use, deferred grazing, planned grazing systems, and range seeding.

Semidesert Clay Loam, #034AY328CO

The potential plant community consists mainly of a grass-shrub community dominated by western wheatgrass, Salina wildrye, squirreltail, and Wyoming big sagebrush. Other abundant grasses are Sandberg bluegrass and galleta. Other common shrubs are shadscale and fourwing saltbush. Annual production ranges from 500 to 1,000 pounds per acre (air-dry). Annual precipitation ranges from 8 to 12 inches.

Overgrazing by cattle or elk will reduce the quantity of palatable perennial grasses (such as Indian ricegrass and western wheatgrass) and palatable shrubs (such as fourwing saltbush and winterfat), and will result in an increase of big sagebrush and other shrubs. Excessive winter use by cattle and big game will adversely effect palatable shrubs such as fourwing saltbush, winterfat, and Wyoming big sagebrush. Plant species that commonly invade this site include Russian thistle, cheatgrass, annual mustards, and occasionally Utah juniper.

Common conservation practices that may be applied are brush management (prescribed fire, mechanical, and others), proper grazing use, deferred grazing, planned grazing systems, and range seeding.

Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush), #034XY206UT

The potential plant community consists mainly of open grassland with Wyoming big sagebrush. Dominant grasses are squirreltail, Indian ricegrass, and Sandberg bluegrass. Dominant shrubs include Wyoming big sagebrush, spiny hopsage, and rubber rabbitbrush. Annual production ranges from 250 to 600 pounds per acre (air-dry). Annual precipitation ranges from 8 to 12 inches.

Overgrazing by cattle or wildlife will reduce the quantity of perennial grasses such as Indian ricegrass and needleandthread. Plant species that commonly invade this site include cheatgrass and Utah juniper.

Common conservation practices applicable for this site are proper grazing use, brush management (prescribed fire, mechanical, and others), deferred grazing, range seeding, and planned grazing systems.

Semidesert Loam, #034AY327CO

The potential plant community consists mainly of Wyoming big sagebrush with a grass understory. The dominant grasses are galleta, Indian ricegrass, needleandthread, and western wheatgrass. Dominant shrubs include Wyoming big sagebrush, winterfat and shadscale. Annual production ranges from 500 to 750 pounds per acre (air-dry). Annual precipitation ranges from 9 to 11 inches.

Overgrazing by cattle or big game will reduce the quantity of palatable shrubs and perennial grasses such as winterfat, shadscale, Indian ricegrass, and needleandthread. Plant species that commonly invade the site include bulbous bluegrass, black greasewood, cheatgrass, and Russian thistle.

Common conservation practices applicable for this site are proper grazing use, deferred grazing, and planned grazing systems.

Semidesert Loam (Wyoming Big Sagebrush), #034XY212UT

The potential plant community consists mainly of a grass-shrub community dominated by western wheatgrass, needleandthread, Indian ricegrass, and Wyoming big sagebrush. Other abundant grasses are Sandberg bluegrass, galleta, and squirreltail. Other common shrubs are shadscale, winterfat, Nuttall saltbush, and fourwing saltbush. Annual production ranges from 500 to 900 pounds per acre (air-dry). Annual precipitation ranges from 8 to 12 inches.

Overgrazing by cattle or elk will reduce the quantity of palatable perennial grasses (such as needleandthread and Indian ricegrass) and palatable shrubs (such as fourwing saltbush and winterfat), and will result in an increase of big sagebrush and

other shrubs. Excessive winter use by cattle and big game will adversely effect palatable shrubs such as fourwing saltbush, winterfat, and Wyoming big sagebrush. Plant species that commonly invade this site include Russian thistle, cheatgrass, annual mustards, black greasewood, and Utah juniper.

Common conservation practices that may be applied are brush management (prescribed fire, mechanical, and others), proper grazing use, deferred grazing, planned grazing systems, and range seeding.

Semidesert Sand (Fourwing Saltbush), #034XY214UT

The potential plant community consists mainly of open grassland with Indian ricegrass and fourwing saltbush. Dominant grasses are Indian ricegrass, needleandthread, and sandhill muhly. Dominant shrubs are fourwing saltbush, Wyoming big sagebrush, shadscale, and sand sagebrush. Annual production ranges from 250 to 700 pounds per acre (air-dry). Annual precipitation ranges from 8 to 12 inches.

Overgrazing by cattle or wildlife will reduce the quantity of palatable shrubs and perennial grasses such as Indian ricegrass, needleandthread, and fourwing saltbush. Plant species that commonly invade this site include cheatgrass and other annual weeds.

Common conservation practices applicable for this site are proper grazing use, deferred grazing, range seeding, and planned grazing systems.

Semidesert Sandy Loam, #034AY326CO

The potential plant community consists mainly of Wyoming big sagebrush with a grass understory. The dominant grasses are galleta, Indian ricegrass, needleandthread, streambank wheatgrass, and Salina wildrye. Dominant shrubs include Wyoming big sagebrush, winterfat, and shadscale. Annual production ranges from 400 to 800 pounds per acre (air-dry). Annual precipitation ranges from 10 to 12 inches.

Overgrazing by cattle or big game will reduce the quantity of palatable shrubs and perennial grasses such as winterfat, shadscale, Indian ricegrass and needleandthread. Plant species that commonly invade the site include cheatgrass and Russian thistle, mustard, and scattered Utah juniper.

Common conservation practices applicable for this site are proper grazing use, deferred grazing, and planned grazing systems.

Semidesert Sandy Loam (Fourwing Saltbush), #034XY216UT

The potential plant community consists mainly of a grass-shrub community dominated by needleandthread, Indian ricegrass, fourwing saltbush, and Wyoming big sagebrush. Other abundant grasses are Sandberg bluegrass, galleta, and sand dropseed. Predominant forbs are scarlet globemallow and yellow cryptantha. Other common shrubs are shadscale and winterfat. Annual production ranges from 450 to 800 pounds per acre (air-dry). Annual precipitation ranges from 8 to 12 inches.

Overgrazing by cattle or elk will reduce the quantity of palatable perennial grasses (such as needleandthread and Indian ricegrass) and palatable shrubs (such as fourwing saltbush), and will result in an increase of big sagebrush and other shrubs. Excessive winter use by cattle and big game will adversely effect fourwing saltbush, and Wyoming big sagebrush. Plant species that commonly invade this site include Russian thistle, cheatgrass, annual mustards, and Utah juniper.

Common conservation practices that may be applied are brush management (prescribed fire, mechanical, and others), proper grazing use, deferred grazing, planned grazing systems, and range seeding.

Semidesert Shallow Loam (Wyoming Big Sagebrush), #034XY225UT

The potential plant community consists mainly of open grassland with Wyoming big sagebrush. Dominant grasses are bluebunch wheatgrass, Indian ricegrass, and squirreltail. Dominant shrubs include Wyoming big sagebrush, shadscale, and low rabbitbrush. Annual production ranges from 250 to 500 pounds per acre (air-dry). Annual precipitation ranges from 10 to 12 inches.

Overgrazing by cattle or wildlife will reduce the quantity of palatable shrubs and perennial grasses such as Indian ricegrass, bluebunch wheatgrass, Sandberg bluegrass, and bud sagebrush. Plant species that commonly invade or increase on this site include Wyoming big sagebrush, cheatgrass, and broom snakeweed.

Common conservation practices applicable for this site are proper grazing use, deferred grazing, range seeding, and planned grazing systems.

Forest Land

Present and projected future uses do not include commercial timber production within the survey area. In the event that the need for this type of information arises, assistance can be obtained by contacting the local office of the Natural Resources Conservation Service or the Cooperative Extension Service. Table 7, “Forestland productivity,” can be used by forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed.

Common Trees

Only the common trees found on each mapping unit component are listed in the table, “Forestland productivity.”

Recreation

The soils of the survey area are rated in the table “Recreational Development” according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area; the size and shape of the area and its scenic quality; the ability of the soil to support vegetation; access to water; potential water impoundment sites; and the capacity of the soil to absorb septic tank effluent. Soils subject to flooding are limited, in varying degrees, for recreational uses by the duration of flooding and the season when it occurs. Onsite assessment of the height, duration, intensity, and frequency of flooding is essential in planning recreational facilities.

Camp areas are tracts of land used intensively as sites for tents, trailers, and campers and for outdoor activities that accompany such sites. These areas usually require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The soils are rated on the basis of soil properties that influence the ease of developing camp areas and performance of the areas after development. Also considered are the soil properties that influence trafficability and promote the growth of vegetation after heavy use.

Picnic areas are natural or landscaped tracts of land that are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The soils are rated on the basis of soil properties that influence the cost of shaping the site, trafficability, and the growth of vegetation after development. The surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry.

Paths and trails are areas used for hiking and horseback riding. The areas should require little or no cutting and filling during site preparation. The soils are rated on the basis of soil properties that influence trafficability and erodibility. Paths and trails should remain firm under foot traffic and not be dusty when dry.

The interpretative ratings in this table help engineers, planners, and others to understand how soil properties influence recreational uses. Ratings for proposed uses are given in terms of limitations. Only the most restrictive features are listed. Other features may limit a specific recreational use.

The degree of soil limitation is expressed as *slight, moderate*, or *severe*.

Slight means that soil properties are favorable for the rated use. The limitations are minor and can be easily overcome. Good performance and low maintenance are expected.

Moderate means that soil properties are moderately favorable for the rated use. The limitations can be overcome or modified by special planning, design, or maintenance. During some part of the year, the expected performance may be less desirable than that of soils rated *slight*.

Severe means that soil properties are unfavorable for the rated use. Examples of limitations are slope, bedrock near the surface, flooding, and a seasonal high water

table. These limitations generally require major soil reclamation, special design, or intensive maintenance. Overcoming the limitations generally is difficult and costly.

The information in the table “Camps and Picnic Areas” can be supplemented by other information in this survey, for example, interpretations for local roads and streets in the table “Building Site Development,” and interpretations for septic tank absorption fields in the table “Sanitary Facilities.”

Wildlife Habitat

The Dinosaur National Monument Natural Resources Staff assisted in writing this section.

High habitat diversity in the Monument supports a similarly diverse fauna. Examples of small mammal species known are several bat species, Ord's kangaroo rat, deer mouse, sagebrush vole, pinyon mouse, northern grasshopper mouse, Apache pocket mouse, bushytailed wood rat, white-tailed prairie dog, least chipmunk, golden-mantled ground squirrel, and desert cottontail. Large mammals include coyote, badger, striped skunk, mountain lion, bobcat, black bear, elk, mule deer, pronghorn antelope, and bighorn sheep.

Common bird species are the turkey vulture, red-tailed hawk, northern harrier, prairie falcon, peregrine falcon, great horned owl, American kestrel, nighthawk, white-throated swift, northern flicker, violet-green swallow, scrub jay, pinyon jay, common raven, cactus wren, and numerous sparrow species.

Dinosaur National Monument harbors all of the bat species known to occur in the northeastern Colorado Plateau. High bat species diversity is a reflection of the habitat diversity (water, roosting sites, and abundant prey) found in the Monument.

Some of the common herpetofauna include sagebrush lizard, shorthorned lizard, tree lizard, Great Basin gopher snake, garter snake, midget faded rattlesnake, and racer.

Over 1,000 species of insects, many of them new county or state records, have been identified in recent surveys. An ongoing inventory has identified over 350 species of butterflies and moths. The total insect fauna of the Monument may exceed 3,000 species.

Seven Federally-listed threatened or endangered species find habitat in the Monument. These include four species of fish and two species of birds. Many other species are identified as candidates for listing or as sensitive by State Natural Heritage programs.

The Colorado squawfish (Ptychocheilus lucius), humpback chub (Gila cypha), razorback sucker (Xyrauchen texanus), and the bonytail chub (Gila elegans) inhabit the Green and Yampa Rivers. Colorado squawfish populations seem to be stable or increasing slightly. This species exhibits spawning migrations of up to 250 miles to very specialized spawning areas, the largest of which is in Dinosaur. Razorback suckers are in great peril: only about 500 adults remain in natural riverine systems. Flooded backwaters seem to be critical to the survival of larval razorbacks, and recruitment has been almost nonexistent since the closure of Flaming Gorge Dam on the Green River. Razorbacks exhibit shorter spawning migrations. Only two spawning sites are known, and both are in or near Dinosaur National Monument. Both Colorado squawfish and razorback sucker apparently rely on substrate-related olfactory cues to locate spawning sites. Humpback chub populations are believed to be rather sedentary. Populations are known from the Yampa and Whirlpool Canyons, but the population status is largely unknown. The bonytail may be functionally extinct in natural riverine systems.

Current recovery efforts include continued research, limited population augmentation programs, flow management and habitat protection.

Candidate fish species in the Monument include the flannelmouth sucker (Catostomus latipinnis) and roundtail chub (Gila robusta). Nearly 30 nonnative fish species also inhabit the Monument.

Federally listed birds include the endangered American peregrine falcon (Falco peregrinus anatum) and the threatened American bald eagle (Haliaeetus leucocephalus). Candidate bird species include the burrowing owl (Athene cunicularia), northern goshawk (Accipiter gentilis), and the ferruginous hawk (Buteo regalis).

Recovery efforts for the peregrine falcon have been active in the Monument since 1976. Current monitoring consists of determining site occupancy, documenting nesting activities, characterizing eyrie sites, and confirming fledging success. The Monument is a nucleus for repopulating adjacent areas. Sheer cliffs along the Yampa and Green Rivers provide important eyrie sites and the diverse plant communities throughout the Monument support an abundant prey base. Peregrine falcons are especially sensitive to human activity occurring at the cliff rims above eyries during breeding season.

The Monument provides winter habitat for threatened bald eagles. From December through March, eagles concentrate along the Green and Yampa Rivers in cottonwood-dominated riparian areas. The best bald eagle habitat in the planning area is in Echo Park.

No Federally-listed mammals occur in the Monument, although there have been reports of black-footed ferrets (Mustela nigripes) near the Monument. Candidate species include the spotted bat (Euderma maculatum), the fringed myotis (Myotis thysanodes), and the Yuma myotis (Myotis yumanensis). The endangered gray wolf (Canis lupus) and the threatened grizzly bear (Ursus arctos horribilis) have been extirpated.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. If food, cover, or water is missing, inadequate, or inaccessible, wildlife will be scarce or will not inhabit the area.

If the soils have potential for habitat development, wildlife habitat can be created or improved by planting appropriate vegetation, properly managing the existing plant cover, and fostering the natural establishment of desirable plants.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site-specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the *Glossary*.

Building Site Development

The table “Building Site Development” shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, and local roads and streets. The limitations are considered *slight* if soil properties and site features generally are favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils.The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements.The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills generally are limited to less than 6 feet.The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, potential for frost action, and depth to a high water table affect the traffic-supporting capacity.

Sanitary Facilities

The table “Sanitary Facilities” shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. It also shows the suitability of the soils for use as a daily cover for landfill.

Soil properties are important in selecting sites for sanitary facilities and in identifying limiting soil properties and site features to be considered in planning, design, and installation. Soil limitation ratings of slight, moderate, or severe are given for septic tank absorption fields, sewage lagoons, and trench and area sanitary landfills. Soil suitability ratings of good, fair, and poor are given for daily cover for landfill.

A rating of *slight* or *good* indicates that the soils have no limitations or that the limitations can be easily overcome. Good performance and low maintenance can be expected. A rating of *moderate* or *fair* indicates that the limitations should be recognized but generally can be overcome by good management or special design. A

rating of *severe* or *poor* indicates that overcoming the limitations is difficult or impractical. Increased maintenance may be required.

Septic tank absorption fields are areas in which subsurface systems of tile or perforated pipe distribute effluent from a septic tank into the natural soil. The centerline of the tile is assumed to be at a depth of 24 inches. Only the part of the soil between depths of 24 and 60 inches is considered in making the ratings.The soil properties and site features considered are those that affect the absorption of the effluent, those that affect the construction and maintenance of the system, and those that may affect public health.

The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted, relatively impervious soil material. Aerobic lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Relatively impervious soil material for the lagoon floor and sides is desirable to minimize seepage and contamination of local ground water.

The table “Sanitary Facilities” gives ratings for the natural soil that makes up the lagoon floor.The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments.The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

A *trench sanitary landfill* is an area where solid waste is disposed of by placing refuse in successive layers in an excavated trench.The waste is spread, compacted, and covered daily with a thin layer of soil that is excavated from the trench. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. Soil properties that influence the risk of pollution, the ease of excavation, trafficability, and revegetation are the major considerations in rating the soils.

An *area sanitary landfill* is an area where solid waste is disposed of by placing refuse in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil that is imported from a source away from the site. A final cover of soil at least 2 feet thick is placed over the completed landfill. Soil properties that influence trafficability, revegetation, and the risk of pollution are the main considerations in rating the soils for area sanitary landfills.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of groundwater pollution.The ratings in the table “Sanitary Facilities” are based on soil properties, site features, and observed performance of the soils.

Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill.The soil material is obtained offsite, transported to the landfill, and spread over the waste. The suitability of a soil for use as cover is based on properties that affect workability and the ease of digging, moving, and spreading the material over the refuse daily during both wet and dry periods.

Soil texture, wetness, rock fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation.The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Waste Management

Soil properties are important when organic waste is applied as fertilizer and wastewater is applied in irrigated areas.They also are important when the soil is used as a medium for the treatment and disposal of the organic waste and wastewater. Unfavorable soil properties can result in environmental damage.

The usage of organic waste and wastewater as production resources results in energy and resource conservation and minimizes the problems associated with waste disposal. If disposal is the goal, applying a maximum amount of the organic waste or the wastewater to a minimal area holds costs to a minimum and environmental damage is the main hazard. If reuse is the goal, a minimum amount should be applied to a maximum area and environmental damage is unlikely.

Interpretations developed for waste management may include ratings for manure- and food-processing waste, municipal sewage sludge, use of wastewater for irrigation, and treatment of wastewater by slow rate, overland flow, and rapid infiltration processes.

Specific information regarding waste management is available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Construction Materials

The table “Construction Materials” gives information about the soils as a source of roadfill, sand, gravel, and topsoil.The soils are rated good, fair, or poor as a source of roadfill and topsoil.They are rated as a probable or improbable source of sand and gravel.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In the table “Construction Materials,” the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile.The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The

performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils.The thickness of suitable material is a major consideration. Large stones, a high water table, and slope affect the ease of excavation. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel, or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate potential of shrink-swell, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have one or more of the following characteristics: a plasticity index of more than 10, a high shrink-swell potential, many stones, slopes of more than 25 percent, or a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing.They are used in many kinds of construction. Specifications for each use vary widely. In the table “Construction Materials,” only the probability of finding material in suitable quantity in or below the soil is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, alkalinity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a *probable source* has a layer of clean sand or gravel or a layer of sand or gravel that is as much as 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Fragments of soft bedrock, such as shale, sandstone, and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained.The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils generally is preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

The table “Water Management” gives information on the soil properties and site features that affect water management.The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds.The limitations are considered *slight* if soil properties and site features generally are favorable for the indicated use and limitations are minor and are easily overcome; moderate if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and severe if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives, for each soil, the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches.The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and *levees* are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In the table “Water Management,” the soils are rated as a source of material for embankment fill.The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even more than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving.The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, or sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth.The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope.The construction of a system is affected by large stones and depth to bedrock or to a cemented pan.The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and *diversions* are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff.

Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of soil blowing or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, which conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of soil blowing, low available water capacity, restricted rooting depth, toxic substances such as salts or sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features listed in tables are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

The table “Engineering Index Properties” gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given in the series descriptions of this survey.

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 as much as 15 percent, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the *Glossary*.

Classification of the soils is determined according to the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1986) and the Unified soil classification system (ASTM, 1993).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil

that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis.The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight.The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent.Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

The tables “Physical Properties of the Soils” and “Chemical Properties of the Soils” show estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.The range in depth and information on other properties of each layer are given in the series descriptions in this survey.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture.They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In the table “Physical Properties of the Soils,” the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots.

A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air.The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity 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 inches of water per inch of soil for each major soil layer.The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. 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. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated *moderate* to *very high*, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design often is needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, more than 9 percent, sometimes is used.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table “Physical Properties of Soils,” 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 or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average rate of soil loss by sheet and rill erosion in tons per acre per year.The estimates are based primarily on percentage of silt, very fine sand, sand, and organic matter (as much as 4 percent) and on soil structure and permeability.The estimates are modified by the presence of rock fragments. Values of K range from 0.02 to 0.69.The higher the value, the more susceptible the soil is to sheet and rill erosion.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period.The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to soil blowing in cultivated areas.The groups indicate the

susceptibility of soil to soil blowing. Soils are grouped according to the following distinctions:

1. Coarse sands, sands, fine sands, and very fine sands. These soils generally are not suitable for crops. They are extremely erodible, and vegetation is difficult to establish.

2. Loamy coarse sands, loamy sands, loamy fine sands, and loamy very fine sands. These soils are very highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams that have more than 5 percent finely divided calcium carbonate.These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.These soils are moderately erodible. Crops can be grown if measures to control soil blowing are used.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, and sandy clays. These soils have less than 5 percent finely divided calcium carbonate. These soils are moderately erodible. Crops can be grown if measures to control soil blowing are used.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay. These soils have less than 5 percent finely divided calcium carbonate. These soils are moderately erodible. Crops can be grown if ordinary measures to control soil blowing are used.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material. These soils have less than 5 percent finely divided calcium carbonate. These soils are very slightly erodible. Crops can be grown if ordinary measures to control soil blowing are used.

8. Soils that are not subject to soil blowing because of rock fragments on the surface or because of surface wetness.

A *wind erodibility index* is a numerical value indicating the susceptibility of soil to soil blowing, or the tons per acre per year that can be expected to be lost to soil blowing. There is a close correlation between soil blowing and the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence soil blowing.

Cation-exchange capacity is the total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. Soils having a high cation-exchange capacity can retain cations. The ability to retain cations helps to prevent the pollution of ground water.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many

soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

The *calcium carbonate equivalent* is the percent of carbonates, by weight, in the soil. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is given as the percent, by weight, of hydrated calcium sulfates in the soil. Gypsum is partially soluble in water and can be dissolved and removed by water. Soils that have a high content of gypsum (more than 10 percent) may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of the soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio is the measure of sodium relative to calcium and magnesium in the water extract from saturated soil paste. Soils having a sodium adsorption ratio of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Water Features

Table 17 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

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 four hydrologic soil groups are:

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.

The months in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 17 indicates, by month, depth to the top (upper limit) and base (lower limit) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 17 indicates surface water depth and the duration and frequency of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as *none, rare, occasional*, and *frequent*. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

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.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as *none, very rare, rare, occasional, frequent*, and *very frequent*. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it 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); and *very frequent* that it 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).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

The table “Soil Features” gives estimates of several important soil features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

Depth to bedrock is given if bedrock is within a depth of 60 inches. The depth is based on many soil borings and on observations during soil mapping. The rock is specified as either soft or hard. If the rock is soft or fractured, excavations can be

made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

A *cemented pan* is a nearly continuous layer of indurated or strongly cemented material that is hard and brittle. The particles are held together by cementing substances, such as calcium carbonate and oxides of silicon, iron, or aluminum. Pans are identified when they are within a depth of 60 inches.

They are classified as *thin* or *thick*. A *thin* pan can be excavated by trenching machines, backhoes, small rippers, and other equipment commonly used to dig excavations for pipelines, sewer lines, and graves. A *thick* pan is so thick or massive that blasting or special equipment is needed when excavations are made.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table "Soil Features" shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage mainly to pavements and other rigid structures.

A *low* potential for frost action indicates that the soil is rarely susceptible to the formation of ice lenses; a *moderate* potential indicates that the soil is susceptible to formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength; and a *high* potential indicates that the soil is highly susceptible to formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The *rate of corrosion* of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil.

Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low, moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

Bajada. A broad alluvial slope extending from the base of a mountain range out into a basin and formed by coalescence of separate alluvial fans.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Butte. An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Caliche. A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common

compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coppice dune. A small dune of fine grained soil material stabilized around shrubs or small trees.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cuesta. A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Desert pavement. On a desert surface, a layer of gravel or larger fragments that was emplaced by upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

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 *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess lime (in tables). Excess carbonates in the soil that restrict the growth of some plants.

Excess salts (in tables). Excess water-soluble salts in the soil that restrict the growth of most plants.

Excess sodium (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum

rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Lithic. Hard bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat topped and commonly isolated upland mass characterized by summit widths that are more than the heights of bounding erosional scarps.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Paralithic. Soft bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch

Moderate ..... 0.6 inch to 2.0 inches
Moderately rapid ..... 2.0 to 6.0 inches
Rapid ..... 6.0 to 20 inches
Very rapid ..... more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 1 percent
Gently sloping	1 to 3 percent
Moderately sloping	3 to 6 percent
Strongly sloping	6 to 12 percent
Moderately steep	12 to 25 percent
Steep	25 to 45 percent
Very steep	45 percent and higher

Classes for complex slopes are as follows:

Nearly level	0 to 1 percent
Undulating	1 to 3 percent
Gently rolling	3 to 6 percent
Rolling	6 to 12 percent
Hilly	12 to 25 percent
Steep	25 to 45 percent
Very steep	45 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slope alluvium Soil material and rock fragments, gradually transported on hill slopes primarilly by alluvial processes.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of

climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are

constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Too arid (in tables). The soil is dry most of the time, and vegetation is difficult to establish.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1A.--Temperature and precipitation

(Recorded in the period 1961-90 at Dinosaur National Monument, CO)

Month	Temperature (Degrees F.)						Precipitation (Inches)				
	avg. daily max	avg. daily min	avg.	2 yrs in 10 will have max. temp. >than	2 yrs in 10 will have min. temp. <than	avg. # of grow. deg. days*	avg.	2 yrs.in 10 will have less than	2 yrs.in 10 will have more than	avg. # of days w/.1 or more	avg. total snow-fall
January	32.0	8.4	20.2	51	-17	0	0.68	0.26	1.03	2	11.0
February	38.4	13.2	25.8	57	-12	4	0.53	0.21	0.79	2	7.7
March	49.4	23.7	36.5	68	3	55	1.01	0.37	1.54	3	8.6
April	60.8	30.8	45.8	79	12	208	1.07	0.51	1.55	3	4.5
May	71.3	39.5	55.4	87	23	479	1.28	0.46	2.06	3	1.0
June	83.2	48.2	65.7	98	30	771	1.22	0.26	1.97	2	0.4
July	90.3	55.8	73.1	100	43	1,015	1.09	0.43	1.64	3	0.0
August	87.8	53.7	70.8	98	39	953	0.80	0.24	1.31	2	0.0
September	77.7	44.6	61.1	93	27	634	1.11	0.35	1.73	3	0.4
October	63.4	34.1	48.8	80	14	293	1.46	0.69	2.22	3	2.1
November	46.1	22.9	34.5	66	1	39	0.77	0.39	1.16	2	5.3
December	33.9	11.3	22.6	52	-13	1	0.74	0.28	1.13	2	10.2
Yearly:											
Average	61.2	32.2	46.7	---	---	---	----	----	----	---	---
Extreme	103	-29	---	101	-20	---	----	----	----	---	---
Total	---	---	---	---	---	4,451	11.76	9.18	13.67	30	51.2

Table 1B.--Temperature and precipitation

(Recorded in the period 1961-90 at Jensen, UT)

Month	Temperature (Degrees F.)						Precipitation (Inches)				
	avg. daily max.	avg. daily min.	avg.	2 yrs in 10 will have max. temp. >than	2 yrs in 10 will have min. temp. <than	avg. # of grow. deg. days*	avg.	2 yrs.in 10 will have less than	2 yrs.in 10 will have more than	avg. # of days w/.1 or more	avg. total snow-fall
January	28.6	1.1	14.9	51	-26	0	0.46	0.20	0.82	1	5.8
February	37.3	8.3	22.8	59	-21	2	0.52	0.12	0.84	1	4.8
March	51.4	21.3	36.4	72	-2	48	0.61	0.23	0.97	2	2.9
April	63.8	30.3	47.0	82	13	226	0.72	0.30	1.08	2	1.4
May	74.1	39.2	56.7	89	24	515	0.77	0.37	1.27	2	0.3
June	84.0	46.5	65.2	98	32	751	0.64	0.10	1.09	1	0.0
July	91.2	52.9	72.0	101	41	992	0.66	0.11	1.16	1	0.0
August	88.7	49.9	69.3	99	36	865	0.57	0.21	0.90	1	0.0
September	78.9	40.7	59.8	93	23	586	0.91	0.33	1.45	2	0.5
October	66.1	30.0	48.1	83	13	261	1.02	0.37	1.57	2	0.9
November	47.9	19.5	33.7	67	-1	23	0.59	0.27	0.94	2	3.0
December	32.3	6.5	19.4	52	-20	0	0.63	0.22	1.05	2	7.5
Yearly:											
Average	62.0	28.9	45.4	---	---	---	----	----	----	---	---
Extreme	105	-40	---	102	-30	---	----	----	----	---	---
Total	---	---	---	---	---	4,269	8.12	6.17	9.88	19	27.1

Table 2A.--Freeze dates in spring and fall

(Recorded in the period 1961-1990 at Grand Lake, CO 3496)

	Temperature		
Probability	24°F or lower	28°F or lower	32°F or lower
Last freezing temperature in spring:			
1 year in 10 later than----	June 19	July 15	August 2
2 years in 10 later than---	June 13	July 7	July 27
5 years in 10 later than---	June 3	June 24	July 16
First freezing temperature in fall:			
1 yr. in 10 earlier than---	August 22	August 8	July 29
2 yrs. in 10 earlier than--	August 29	August 15	August 3
5 yrs. in 10 earlier than--	September 12	August 28	August 13

Table 2B.--Freeze dates in spring and fall

(Recorded in the period 1961-1990 at Estes Park, CO 2759)

	Temperature		
Probability	24°F or lower	28°F or lower	32°F or lower
Last freezing temperature in spring:			
1 year in 10 later than----	May 14	May 29	June 16
2 years in 10 later than---	May 10	May 26	June 12
5 years in 10 later than---	May 4	May 19	June 4
First freezing temperature in fall:			
1 yr. in 10 earlier than---	September 19	September 7	August 28
2 yrs. in 10 earlier than--	September 24	September 11	September 1
5 yrs. in 10 earlier than--	October 4	September 20	September 10

Table 3.--Growing season

(Recorded for the period 1961-90 at Dinosaur National Monument, CO)

	Daily Minimum Temperature		
Probability	# days > 24°F	# days > 28°F	# days > 32°F
9 years in 10	150	122	97
8 years in 10	161	131	106
5 years in 10	181	149	123
2 years in 10	201	166	140
1 year in 10	212	176	149

(Recorded for the period 1961-90 at Jensen, UT)

	Daily Minimum Temperature		
Probability	# days > 24°F	# days > 28°F	# days > 32°F
9 years in 10	148	120	91
8 years in 10	155	128	100
5 years in 10	169	145	118
2 years in 10	183	162	137
1 year in 10	191	171	146

Table 4.--Taxonomic Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Abracon	Coarse-loamy, mixed, superactive, mesic Ustic Haplocalcids
Anasazi	Coarse-loamy, mixed, superactive, mesic Ustic Haplocalcids
Arches	Mixed, mesic Lithic Torripsamments
Avalon	Fine-loamy, mixed, superactive, mesic Typic Haplocalcids
Bankard family	Sandy, mixed, mesic Ustic Torrifluvents
Begay	Coarse-loamy, mixed, superactive, mesic Ustic Haplocambids
Berlake	Fine-loamy, mixed, superactive Aridic Argiborolls
Bodry	Fine, smectitic, calcareous, mesic Ustertic Torriorthents
Bondman	Loamy, mixed, superactive, mesic Lithic Ustic Haplargids
Borolls	Borolls
Cameo	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents
*Cameo	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents
Chew	Fine-loamy, carbonatic, mesic Ustic Haplocalcids
Chipeta	Clayey, mixed, active, calcareous, mesic, shallow Typic Torriorthents
Clapper	Loamy-skeletal, mixed, superactive, mesic Ustic Haplocalcids
Clyl	Loamy-skeletal, carbonatic Typic Calciborolls
Cortyzack	Fine-loamy, mixed, superactive Typic Argiborolls
Cragnot	Loamy-skeletal, carbonatic, frigid Haplocalcidic Ustochrepts
*Crustown	Mixed, mesic, shallow Typic Torripsamments
Cryochrepts	Cryochrepts
Davtone	Fine-loamy, mixed, superactive Argic Pachic Cryoborolls
Dearjosh	Mixed, frigid Aridic Ustipsamments
Deaver	Fine, smectitic, calcareous, mesic Typic Torriorthents
Detra	Fine-loamy, mixed, superactive Pachic Argiborolls
Detra family	Fine-loamy, mixed, superactive Pachic Argiborolls
Duffymont	Loamy-skeletal, mixed, superactive Lithic Haploborolls
Eghelm	Coarse-loamy, mixed, superactive, calcareous, mesic Typic Torrifluvents
Emlin	Fine-loamy, mixed, superactive Aridic Argiborolls
Fluvaquents	Fluvaquents
Forsey	Loamy-skeletal, mixed, superactive Argic Cryoborolls
Grapit	Loamy-skeletal, carbonatic Aridic Calciborolls
Green River	Coarse-loamy, mixed, superactive, calcareous, mesic Oxyaquic Torrifluvents
Hackling	Loamy-skeletal, mixed, superactive, frigid Aridic Lithic Ustochrepts
Hanksville	Fine, mixed, active, calcareous, mesic Typic Torriorthents
Haploborolls	Haploborolls
Holter	Loamy-skeletal, mixed, superactive Typic Argiborolls
Iogoon	Loamy-skeletal, mixed, superactive, calcareous, mesic Oxyaquic Torrifluvents
*Ironco	Loamy-skeletal, mixed, superactive Aridic Argiborolls
Labyrinth	Sandy, mixed, mesic Oxyaquic Torrifluvents
Lakebench	Coarse-loamy, mixed, superactive, frigid Haplocalcidic Ustochrepts
Layoint	Sandy, mixed Aridic Haploborolls
Lodore	Coarse-loamy, mixed, superactive, calcareous, frigid Aridic Ustorthents
Mantlemine	Fine-loamy, mixed, superactive, frigid Calcidic Haplustalfs
Marthaspeak	Mixed, frigid Aridic Ustipsamments
Massadona	Fine, smectitic, mesic Typic Haplocambids
Mellenthin	Loamy-skeletal, mixed, superactive, mesic Lithic Ustic Haplocalcids
Mespun	Siliceous, mesic Ustic Torripsamments
Mido	Mixed, mesic Ustic Torripsamments
Mikim	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Milok	Coarse-loamy, mixed, superactive, mesic Ustic Haplocalcids
Moosed	Sandy, mixed Lithic Haploborolls
Mulgon	Loamy-skeletal, mixed, superactive Glossic Cryoboralfs

Table 4.--Taxonomic Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Notlic	Loamy-skeletal, mixed, superactive, calcareous, mesic Ustic Torriorthents
Paradox	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Pensore	Loamy-skeletal, carbonatic, frigid Aridic Lithic Ustochrepts
Polychrome	Loamy-skeletal, mixed, superactive, calcareous, mesic Ustic Torriorthents
Redrock family	Fine-loamy, mixed, superactive, frigid Haplocalcidic Ustochrepts
Rizno	Loamy, mixed, superactive, calcareous, mesic Lithic Ustic Torriorthents
Roto	Loamy-skeletal, carbonatic, frigid Haplocalcidic Ustochrepts
Schoonover	Loamy-skeletal, mixed, superactive, frigid Aridic Lithic Ustochrepts
Sheecal	Loamy-skeletal, mixed, superactive, calcareous, frigid Aridic Ustorthents
Shotnick	Coarse-loamy, mixed, superactive, calcareous, mesic Typic Torriorthents
Solirec	Fine-loamy, mixed, superactive, mesic Ustic Calciargids
Splimo	Loamy-skeletal, carbonatic, mesic Lithic Ustic Haplocalcids
Stout	Loamy, mixed, superactive, nonacid, frigid Lithic Ustorthents
Strell	Frigid, coated Lithic Quartzipsamments
Strych	Loamy-skeletal, mixed, superactive, mesic Ustic Haplocalcids
*Tipper	Mixed, mesic Typic Torripsamments
Torriorthents	Torriorthents
Torripsamments	Torripsamments
Tsetaa family	Sandy-skeletal, mixed, mesic Ustic Torriorthents
Turzo	Fine-loamy, mixed, superactive, calcareous, mesic Typic Torriorthents
Uffens	Fine-loamy, mixed, superactive, mesic Typic Natrargids
Ustic Torrifluvents	Ustic Torrifluvents
Ustochrepts	Ustochrepts
Ustorthents	Ustorthents
Ustorthents, frigid	Ustorthents
Utaline	Loamy-skeletal, mixed, superactive, mesic Typic Haplocalcids
Windcomb	Loamy-skeletal, mixed, superactive, calcareous, mesic Lithic Ustic Torriorthents
Yampa	Loamy-skeletal, mixed, superactive, frigid Haplocalcidic Ustochrepts
Yarts	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Zillion	Loamy-skeletal, mixed, superactive Pachic Argiborolls

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Moffat County	Uintah County	Total	
				Area	Extent
		Acres	Acres	Acres	Pct.
1	Abracon-Solirec complex, 3 to 8 percent slopes	836	1,318	2,154	1.4
2	Arches-Mespun-Rock outcrop complex, 4 to 40 percent slopes	2,582	4,241	6,823	4.4
3	Badland-Polychrome-Rock outcrop complex, 50 to 75 percent slopes	---	1,887	1,887	1.2
4	Badland-Rock outcrop complex	265	1,319	1,584	1.0
5	Bankard family-Cameo complex, 0 to 5 percent slopes	437	---	437	0.3
6	Begay sandy loam, 2 to 15 percent slopes	---	132	132	*
7	Begay-Mespun complex, 2 to 25 percent slopes	---	283	283	0.2
8	Bodry silty clay loam, 10 to 40 percent slopes	---	612	612	0.4
9	Bondman-Rock outcrop complex, 5 to 40 percent slopes	600	---	600	0.4
10	Cameo loamy fine sand, 0 to 5 percent slopes	229	---	229	0.1
11	Cameo sandy clay loam, 1 to 8 percent slopes	163	---	163	0.1
12	Clapper-Abracon complex, 8 to 50 percent slopes	---	177	177	0.1
13	Cortyzack-Duffymont complex, 3 to 25 percent slopes, rubbly	818	4,544	5,362	3.4
14	Cragnot-Pensore-Grapit association, 6 to 75 percent slopes, very stony	13,584	62	13,646	8.8
15	Davtone-Forsey complex, 12 to 35 percent slopes, very stony	140	---	140	*
16	Dearjosh-Lakebench complex, 3 to 15 percent slopes	908	---	908	0.6
17	Deaver-Avalon complex, 5 to 45 percent slopes	36	---	36	*
18	Deaver-Chipeta silty clay loams, 3 to 35 percent slopes	17	---	17	*
19	Detra-Cortyzack complex, 1 to 12 percent slopes	824	---	824	0.5
20	Eghelm-Uffens complex, 0 to 3 percent slopes	---	155	155	*
21	Emlin loam, 1 to 12 percent slopes	980	---	980	0.6
22	Fluvaquents, 0 to 1 percent slopes, frequently flooded	25	---	25	*
23	Green River-Fluvaquents complex, 0 to 2 percent slopes	317	836	1,153	0.7
24	Hanksville silty clay loam, 25 to 50 percent slopes	---	195	195	0.1
25	Holter-Detra family complex, 3 to 25 percent slopes, extremely stony	3,710	---	3,710	2.4
26	Ironco-Mulgon, dry, complex, 25 to 50 percent slopes, extremely bouldery	1,233	---	1,233	0.8
27	Lakebench-Strell loamy fine sands, 5 to 30 percent slopes	853	---	853	0.5
28	Lakebench-Yampa complex, 5 to 30 percent slopes, very stony	2,855	---	2,855	1.8
29	Layoint-Moosed-Berlake complex, 1 to 20 percent slopes	610	---	610	0.4
30	Lodore-Mantlemine-Strell complex, 3 to 15 percent slopes, very stony	566	---	566	0.4
31	Mantlemine loam, 1 to 8 percent slopes	2,876	17	2,893	1.9
32	Mantlemine-Emlin loams, 1 to 12 percent slopes	1,885	---	1,885	1.2
33	Massadona silty clay loam, 2 to 8 percent slopes	---	321	321	0.2
34	Mespun fine sand, 4 to 25 percent slopes	---	47	47	*
35	Mido loamy fine sand, 3 to 12 percent slopes	289	---	289	0.2
36	Mikim complex, 1 to 4 percent slopes	160	170	330	0.2
37	Milok fine sandy loam, 3 to 8 percent slopes	805	1,227	2,032	1.3

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Moffat County	Uintah County	Total	
				Area	Extent
		Acres	Acres	Acres	Pct.
38	Milok-Solirec-Strych complex, 10 to 65 percent slopes, very stony	2,766	---	2,766	1.8
39	Milok-Strych complex, 3 to 25 percent slopes, very stony	1,140	993	2,133	1.4
40	Notlic-Iogoon-Labyrinth complex, 2 to 15 percent slopes, extremely stony	---	439	439	0.3
41	Paradox loam, 3 to 8 percent slopes	---	354	354	0.2
42	Pensore-Lodore-Rock outcrop complex, 3 to 45 percent slopes, very stony	1,424	2,785	4,209	2.7
43	Pensore-Roto complex, 3 to 45 percent slopes, very stony	3,929	---	3,929	2.5
44	Polychrome-Milok complex, 8 to 50 percent slopes	1,220	412	1,632	1.0
45	Redrock family-Roto complex, 3 to 15 percent slopes, very stony	1,186	121	1,307	0.8
46	Riverwash	126	211	337	0.2
47	Rizno-Windcomb-Anasazi complex, 3 to 25 percent slopes, extremely flaggy	3,112	---	3,112	2.0
48	Rock outcrop	11,354	2,295	13,649	8.8
49	Rock outcrop-Hackling complex, 10 to 45 percent slopes, very stony	7,557	---	7,557	4.8
50	Rock outcrop-Haploborolls complex, 10 to 40 percent slopes	1,232	---	1,232	0.8
51	Rock outcrop, Torriorthents, and Ustorthents soils, 25 to 75 percent slopes, rubbly	41,577	9,167	50,744	32.5
52	Rock outcrop-Ustochrepts-Cryochrepts complex, 50 to 90 percent slopes, extremely stony	3,367	7,757	11,124	7.1
53	Schoonover-Duffymont complex, 3 to 25 percent slopes, rubbly	3,059	---	3,059	2.0
54	Sheecal channery loam, 10 to 40 percent slopes	---	137	137	*
55	Sheecal channery loam, 40 to 80 percent slopes	---	116	116	*
56	Shotnick-Uffens complex, 0 to 4 percent slopes	---	1,080	1,080	0.7
57	Splimo very gravelly loam, 8 to 25 percent slopes, extremely flaggy	---	600	600	0.4
58	Splimo-Chew-Rock outcrop complex, 10 to 50 percent slopes, extremely flaggy	---	3,503	3,503	2.2
59	Stout-Rock outcrop complex, 5 to 35 percent slopes, very stony	4,277	528	4,805	3.1
60	Strell-Marthaspeak-Rock outcrop complex, 1 to 25 percent slopes	1,772	---	1,772	1.1
61	Strell-Rock outcrop-Marthaspeak complex, 3 to 45 percent slopes	3,754	---	3,754	2.4
62	Strych-Mellenthin complex, 3 to 45 percent slopes, very bouldery	4,187	2,325	6,512	4.2
63	Tipper-Crustown loamy fine sands, 10 to 40 percent slopes	109	---	109	*
64	Torriorthents-Torripsamments complex, 12 to 40 percent slopes, very stony	144	---	144	*
65	Tsetaa family-Bankard family-Fluvaquents complex, 0 to 45 percent slopes, very stony-	282	---	282	0.2
66	Turzo loam, 0 to 4 percent slopes	---	23	23	*
67	Ustic Torrifluvents complex, 2 to 8 percent slopes	242	---	242	0.2
68	Ustorthents, frigid-Borolls complex, 25 to 75 percent slopes, rubbly	11,723	---	11,723	7.5
69	Utaline-Hanksville complex, 8 to 50 percent slopes	---	1,040	1,040	0.7
70	Windcomb-Badland-Rock outcrop complex, 8 to 25 percent slopes, extremely flaggy	---	2,427	2,427	1.6

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Moffat County	Uintah County	Total	
				Area	Extent
		Acres	Acres	Acres	Pct.
71	Windcomb-Rizno-Anasazi complex, 3 to 25 percent slopes, extremely flaggy	1,758	---	1,758	1.1
72	Yampa gravelly loam, 3 to 15 percent slopes, very stony	179	---	179	0.1
73	Yampa-Hackling-Mantlemine complex, 3 to 45 percent slopes, very stony	1,466	---	1,466	0.9
74	Yarts fine sandy loam, 4 to 8 percent slopes	---	207	207	0.1
75	Yarts complex, 2 to 5 percent slopes	---	1,116	1,116	0.7
76	Zillion-Yampa-Clyl complex, 25 to 65 percent slopes, extremely flaggy	2,155	---	2,155	1.4
77	Water	2,200	604	2,804	1.8
	Total	155,900	55,783	211,683	135.8

* Less than 0.1 percent.

Table 6.--Ecological sites and characteristic native vegetation

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
1:								
Abracon---------	Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)	Favorable	900	Indian ricegrass	20		---	---
		Normal	700	Wyoming big sagebrush	20			
		Unfavorable	500	squirreltail	10			
				galleta	10			
				needleandthread	10			
				other perennial forbs	10			
				globemallow	5			
				other perennial grasses	5			
				other shrubs	5			
				winterfat	5			
Solirec---------	Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)	Favorable	900	Indian ricegrass	20		---	---
		Normal	700	Wyoming big sagebrush	20			
		Unfavorable	500	squirreltail	10			
				galleta	10			
				needleandthread	10			
				other perennial forbs	10			
				globemallow	5			
				other perennial grasses	5			
				other shrubs	5			
				winterfat	5			
2:								
Arches----------	Pinyon-Juniper (R034XY909CO)	Favorable	350	black sagebrush		20	Utah juniper	---
		Normal	250	other shrubs		20	twoneedle pinyon	---
		Unfavorable	150	saline wildrye		20		
				Mormon tea		10		
				bluebunch wheatgrass		10		
				other perennial grasses		10		
				galleta		5		
				other perennial forbs		5		
Mespun----------	Semidesert Sand (Fourwing Saltbush) (R034XY214UT)	Favorable	700	Indian ricegrass	25		---	---
		Normal	500	other shrubs	15			
		Unfavorable	250	fourwing saltbush	10			
				needleandthread	10			
				other perennial grasses	10			
				sand sagebrush	10			
				crispleaf buckwheat	5			
				galleta	5			
				other perennial forbs	5			
				scarlet globemallow	5			
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
3:								
Badland---------	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Polychrome------	Pinyon-Juniper (No ID)	Favorable	250	black sagebrush		20	Utah juniper	---
		Normal	200	other shrubs		20	twoneedle pinyon	---
		Unfavorable	100	saline wildrye		20		
				Mormon tea		10		
				bluebunch wheatgrass		10		
				other perennial grasses		10		
				galleta		5		
				other perennial forbs		5		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
3:								
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
4:								
Badland---------	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
5:								
Bankard family--	Loamy Bottom (Basin Big Sagebrush) (R034XY009UT)	Favorable	2,400	basin big sagebrush	15		---	---
		Normal	1,600	basin wildrye	15			
		Unfavorable	900	other shrubs	15			
				Indian ricegrass	10			
				alkali sacaton	10			
				needleandthread	10			
				other perennial forbs	10			
				other perennial grasses	10			
				western wheatgrass	5			
Cameo-----------	Loamy Bottom (Basin Big Sagebrush) (R034XY009UT)	Favorable	2,500	basin big sagebrush	15		---	---
		Normal	1,600	basin wildrye	15			
		Unfavorable	900	Indian ricegrass	10			
				alkali sacaton	10			
				needleandthread	10			
				other perennial forbs	10			
				other perennial grasses	10			
				other shrubs	10			
				fourwing saltbush	5			
				galleta	5			
6:								
Begay-----------	Semidesert Sandy Loam (Fourwing Saltbush) (R034XY216UT)	Favorable	800	Indian ricegrass	20		---	---
		Normal	650	needleandthread	15			
		Unfavorable	450	other perennial grasses	15			
				other shrubs	15			
				fourwing saltbush	10			
				galleta	10			
				other perennial forbs	10			
7:								
Begay-----------	Semidesert Sandy Loam (Fourwing Saltbush) (R034XY216UT)	Favorable	800	Indian ricegrass	20		---	---
		Normal	650	needleandthread	15			
		Unfavorable	450	other perennial grasses	15			
				other shrubs	15			
				fourwing saltbush	10			
				galleta	10			
				other perennial forbs	10			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
7:								
Mespun----------	Semidesert Sand (Fourwing Saltbush) (R034XY214UT)	Favorable	700	Indian ricegrass	25		---	---
		Normal	500	other shrubs	15			
		Unfavorable	250	fourwing saltbush	10			
				needleandthread	10			
				other perennial grasses	10			
				sand sagebrush	10			
				crispleaf buckwheat	5			
				galleta	5			
				other perennial forbs	5			
				scarlet globemallow	5			
8:								
Bodry-----------	Semidesert Clay Loam (R034XB328CO)	Favorable	1,000	Wyoming big sagebrush	20		---	---
		Normal	700	Sandberg bluegrass	15			
		Unfavorable	500	bluebunch wheatgrass	15			
				western wheatgrass	15			
				squirreltail	10			
				shadscale saltbush	10			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
9:								
Bondman---------	Pinyon-Juniper (R034XY909CO)	Favorable	525	Utah juniper		20	Utah juniper	---
		Normal	425	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	300	Wyoming big sagebrush		10		
				galleta		10		
				black sagebrush		5		
				bluebunch wheatgrass		5		
				needleandthread		5		
				other perennial forbs		5		
				other perennial grasses		5		
				plains pricklypear		5		
				scarlet globemallow		5		
				twoneedle pinyon		5		
				broom snakeweed		3		
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
10:								
Cameo-----------	Loamy Bottom (Basin Big Sagebrush) (R034XY009UT)	Favorable	2,500	basin big sagebrush	15		---	---
		Normal	1,600	basin wildrye	15			
		Unfavorable	900	Indian ricegrass	10			
				alkali sacaton	10			
				needleandthread	10			
				other perennial forbs	10			
				other perennial grasses	10			
				other shrubs	10			
				fourwing saltbush	5			
				galleta	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
11:								
Cameo----------	Loamy Bottom (Basin Big Sagebrush) (R034XY009UT)	Favorable	2,400	basin wildrye	20		---	---
		Normal	1,600	basin big sagebrush	15			
		Unfavorable	900	muttongrass	10			
				other perennial forbs	10			
				other perennial grasses	10			
				other shrubs	10			
				western wheatgrass	10			
				Indian ricegrass	5			
				fourwing saltbush	5			
				needleandthread	5			
12:								
Clapper---------	Pinyon-Juniper (No ID)	Favorable	650	other perennial forbs		15	Utah juniper	---
		Normal	500	Mormon tea		10	twoneedle pinyon	---
		Unfavorable	350	black sagebrush		10		
				galleta		10		
				needleandthread		10		
				other shrubs		10		
				alderleaf mountain mahogany		10		
				Indian ricegrass		5		
				bluebunch wheatgrass		5		
				squirreltail		5		
				other perennial grasses		5		
				saline wildrye		5		
Abracon---------	Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)	Favorable	900	Indian ricegrass	20		---	---
		Normal	700	Wyoming big sagebrush	20			
		Unfavorable	500	squirreltail	10			
				galleta	10			
				needleandthread	10			
				other perennial forbs	10			
				globemallow	5			
				other perennial grasses	5			
				other shrubs	5			
				winterfat	5			
13:								
Cortyzack-------	Mountain Loam (Mountain Big Sagebrush) (R047XC430UT)	Favorable	2,000	Columbia needlegrass	15		---	---
		Normal	1,500	mountain big sagebrush	15			
		Unfavorable	1,000	western wheatgrass	15			
				bluegrass	10			
				alderleaf mountain mahogany	10			
				Indian ricegrass	5			
				Utah serviceberry	5			
				arrowleaf balsamroot	5			
				mountain snowberry	5			
				needleandthread	5			
				prairie Junegrass	5			
				sedge	5			
				tapertip hawksbeard	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
13:								
Duffymont-------	Mountain Shallow Loam (Mountain Big Sagebrush) (R047XC446UT)	Favorable	1,200	bluebunch wheatgrass	20		---	---
		Normal	1,000	mountain big sagebrush	20			
		Unfavorable	700	antelope bitterbrush	10			
				needleandthread	10			
				Indian ricegrass	5			
				Sandberg bluegrass	5			
				Utah serviceberry	5			
				arrowleaf balsamroot	5			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
				sheep fescue	5			
14:								
Cragnot---------	Pinyon-Juniper (R034XY909CO)	Favorable	800	twoneedle pinyon		20	Utah juniper	---
		Normal	550	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	300	Utah juniper		10		
				bluebunch wheatgrass		10		
				other perennial forbs		10		
				Sandberg bluegrass		5		
				Wyoming big sagebrush		5		
				black sagebrush		5		
				needleandthread		5		
				other shrubs		5		
				stemless goldenweed		5		
				alderleaf mountain mahogany		5		
				antelope bitterbrush		3		
				Mormon tea		2		
Pensore---------	Pinyon-Juniper (R034XY909CO)	Favorable	800	twoneedle pinyon		20	Utah juniper	---
		Normal	550	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	300	Utah juniper		10		
				bluebunch wheatgrass		10		
				other perennial forbs		10		
				Sandberg bluegrass		5		
				Wyoming big sagebrush		5		
				black sagebrush		5		
				needleandthread		5		
				prairie Junegrass		5		
				stemless goldenweed		5		
				alderleaf mountain mahogany		5		
				antelope bitterbrush		3		
				Mormon tea		2		
Grapit----------	Pinyon-Juniper (R034XY909CO)	Favorable	800	twoneedle pinyon		20	Utah juniper	---
		Normal	550	Wyoming big sagebrush		15	twoneedle pinyon	---
		Unfavorable	300	bluebunch wheatgrass		15		
				Indian ricegrass		10		
				western wheatgrass		10		
				Sandberg bluegrass		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				alderleaf mountain mahogany		5		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
15:								
Davtone---------	Mountain Loam (Mountain Big Sagebrush) (R047XC430UT)	Favorable	1,800	mountain big sagebrush	15		---	---
		Normal	1,400	Letterman's needlegrass	10			
		Unfavorable	900	bluebunch wheatgrass	10			
				elk sedge	10			
				other perennial forbs	10			
				slender wheatgrass	10			
				Columbia needlegrass	5			
				Utah serviceberry	5			
				arrowleaf balsamroot	5			
				mountain brome	5			
				mountain snowberry	5			
				other shrubs	5			
				western wheatgrass	5			
Forsey----------	Mountain Windswept Ridge (Black Sagebrush) (R047XC475UT)	Favorable	500	bluebunch wheatgrass	25		---	---
		Normal	400	Indian ricegrass	10			
		Unfavorable	200	black sagebrush	10			
				muttongrass	10			
				other perennial forbs	10			
				prairie Junegrass	10			
				squirreltail	5			
				needleandthread	5			
				western wheatgrass	5			
16:								
Dearjosh--------	Sandy Land (R034XY330CO)	Favorable	1,000	Indian ricegrass	20		---	---
		Normal	850	Wyoming big sagebrush	20			
		Unfavorable	600	needleandthread	20			
				other perennial grasses	10			
				western wheatgrass	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				rabbitbrush	5			
				sand dropseed	5			
Lakebench-------	Rolling Loam (R034XY298CO)	Favorable	900	Wyoming big sagebrush	15		---	---
		Normal	750	needleandthread	15			
		Unfavorable	600	western wheatgrass	15			
				Indian ricegrass	10			
				other perennial forbs	10			
				other perennial grasses	10			
				squirreltail	5			
				other shrubs	5			
				rabbitbrush	5			
				scarlet globemallow	5			
17:								
Deaver----------	Clayey Slopes (R034XY246CO)	Favorable	600	western wheatgrass	25		---	---
		Normal	500	saline wildrye	10			
		Unfavorable	300	shadscale saltbush	10			
				Indian ricegrass	5			
				Sandberg bluegrass	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
				prairie Junegrass	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
17:								
Avalon----------	Semidesert Loam (R034XY327CO)	Favorable	750	Wyoming big sagebrush	15		---	---
		Normal	600	galleta	15			
		Unfavorable	500	Indian ricegrass	10			
				needleandthread	10			
				shadscale saltbush	10			
				western wheatgrass	10			
				squirreltail	5			
				fourwing saltbush	5			
				other perennial forbs	5			
				other perennial grasses	5			
				saline wildrye	5			
				winterfat	5			
18:								
Deaver----------	Clayey Saltdesert (R034XY403CO)	Favorable	500	Gardner's saltbush	20		---	---
		Normal	350	shadscale saltbush	20			
		Unfavorable	200	galleta	15			
				mat saltbush	10			
				Indian ricegrass	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
				saline wildrye	5			
Chipeta---------	Clayey Saltdesert (R034XY403CO)	Favorable	500	saltbush	20		Utah juniper	---
		Normal	350	saline wildrye	15		twoneedle pinyon	---
		Unfavorable	200	mat saltbush	10			
				Indian ricegrass	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
				shadscale saltbush	5			
				western wheatgrass	5			
19:								
Detra-----------	Mountain Loam (Mountain Big Sagebrush) (R047XC430UT)	Favorable	1,800	mountain big sagebrush	15		---	---
		Normal	1,400	needleandthread	10			
		Unfavorable	900	other perennial forbs	10			
				western wheatgrass	10			
				Indian ricegrass	5			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				Utah serviceberry	5			
				arrowleaf balsamroot	5			
				bluebunch wheatgrass	5			
				mountain snowberry	5			
				muttongrass	5			
				other perennial grasses	5			
				other shrubs	5			
				prairie Junegrass	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
19:								
Cortyzack-------	Mountain Loam (Mountain Big Sagebrush) (R047XC430UT)	Favorable	2,000	Columbia needlegrass	15		---	---
		Normal	1,500	mountain big sagebrush	15			
		Unfavorable	1,000	western wheatgrass	15			
				bluegrass	10			
				alderleaf mountain mahogany	10			
				Indian ricegrass	5			
				Utah serviceberry	5			
				arrowleaf balsamroot	5			
				mountain snowberry	5			
				needleandthread	5			
				prairie Junegrass	5			
				sedge	5			
				tapertip hawksbeard	5			
20:								
Eghelm----------	Loamy Bottom (Basin Big Sagebrush) (R034XY009UT)	Favorable	2,000	basin wildrye	25		---	---
		Normal	1,500	basin big sagebrush	15			
		Unfavorable	1,000	muttongrass	10			
				needleandthread	10			
				other perennial grasses	10			
				western wheatgrass	10			
				Indian ricegrass	5			
				other perennial forbs	5			
				other shrubs	5			
				rubber rabbitbrush	5			
Uffens----------	Alkali Flat (Black Greasewood) (R034XY006UT)	Favorable	1,000	greasewood	30		---	---
		Normal	700	other shrubs	15			
		Unfavorable	500	alkali sacaton	10			
				squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				galleta	5			
				other perennial forbs	5			
				other perennial grasses	5			
				seepweed	5			
21:								
Emlin-----------	Mountain Loam (Mountain Big Sagebrush) (R047XC430UT)	Favorable	1,800	mountain big sagebrush	15		---	---
		Normal	1,400	western wheatgrass	15			
		Unfavorable	900	bluebunch wheatgrass	10			
				needleandthread	10			
				other perennial forbs	10			
				Sandberg bluegrass	5			
				Sandberg bluegrass	5			
				Utah serviceberry	5			
				mountain snowberry	5			
				prairie Junegrass	5			
				scarlet globemallow	5			
				yellow rabbitbrush	5			
22:								
Fluvaquents-----	Not Specified (No ID)	Favorable	3,000	cattail	15		---	---
		Normal	2,000	rush	15			
		Unfavorable	1,000	sedge	15			
				willow	15			
				common reed	10			
				other perennial forbs	10			
				other perennial grasses	10			
				reed canarygrass	10			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
23:								
Green River-----	River Floodplain (Fremont Cottonwood) (R034XY011UT)	Favorable	1,600	bluegrass	15		---	---
		Normal	1,400	sandbar willow	15			
		Unfavorable	1,200	wheatgrass	15			
				basin big sagebrush	10			
				other perennial forbs	10			
				rubber rabbitbrush	10			
				Fremont cottonwood	5			
				alkali sacaton	5			
				saltgrass	5			
				other perennial grasses	5			
				other shrubs	5			
Fluvaquents-----	Not Specified (No ID)	Favorable	3,000	cattail	15		---	---
		Normal	2,000	rush	15			
		Unfavorable	1,000	sedge	15			
				willow	15			
				common reed	10			
				other perennial forbs	10			
				other perennial grasses	10			
				reed canarygrass	10			
24:								
Hanksville------	Desert Shallow Clay (Mat Saltbush) (R034XY117UT)	Favorable	300	mat saltbush	60		---	---
		Normal	200	galleta	10			
		Unfavorable	100	other shrubs	10			
				Native American pipeweed	5			
				bud sagebrush	5			
				other perennial forbs	5			
				other perennial grasses	5			
25:								
Holter----------	Mountain Loam (Mountain Big Sagebrush) (R047XC430UT)	Favorable	1,800	mountain big sagebrush	15		---	---
		Normal	1,400	elk sedge	10			
		Unfavorable	900	slender wheatgrass	10			
				Columbia needlegrass	5			
				Letterman's needlegrass	5			
				Utah serviceberry	5			
				arrowleaf balsamroot	5			
				bluebunch wheatgrass	5			
				mountain brome	5			
				mountain snowberry	5			
				other perennial forbs	5			
				other shrubs	5			
				prairie Junegrass	5			
				western wheatgrass	5			
Detra family----	Mountain Loam (Mountain Big Sagebrush) (R047XC430UT)	Favorable	1,800	mountain big sagebrush	15		---	---
		Normal	1,400	bluebunch wheatgrass	10			
		Unfavorable	900	needleandthread	10			
				other perennial forbs	10			
				western wheatgrass	10			
				Indian ricegrass	5			
				Letterman's needlegrass	5			
				Utah serviceberry	5			
				arrowleaf balsamroot	5			
				mountain snowberry	5			
				muttongrass	5			
				other perennial grasses	5			
				other shrubs	5			
				prairie Junegrass	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
26:								
Ironco----------	Mountain Stony Loam (R047XY378CO)	Favorable	2,400	curl-leaf mountain mahogany	20		---	---
		Normal	1,800	Utah serviceberry	10			
		Unfavorable	1,300	mountain brome	10			
				other perennial forbs	10			
				slender wheatgrass	10			
				bluebunch wheatgrass	5			
				elk sedge	5			
				mountain big sagebrush	5			
				mountain snowberry	5			
				muttongrass	5			
				oniongrass	5			
				other shrubs	5			
				alderleaf mountain mahogany	5			
Mulgon----------	Douglas Fir (No ID)	Favorable	800	elk sedge		15	Rocky Mountain Douglas-fir	---
		Normal	600	other perennial forbs		15		
		Unfavorable	400	other shrubs		15		
				mountain brome		10		
				nodding brome		10		
				other perennial grasses		10		
				Utah serviceberry		5		
				Oregon boxleaf		5		
				chokecherry		5		
				heartleaf arnica		5		
				mountain snowberry		5		
27:								
Lakebench-------	Rolling Loam (R034XY298CO)	Favorable	900	Wyoming big sagebrush	15		---	---
		Normal	700	needleandthread	15			
		Unfavorable	500	western wheatgrass	15			
				squirreltail	10			
				other perennial forbs	10			
				other shrubs	10			
				Indian ricegrass	5			
				Sandberg bluegrass	5			
				bluebunch wheatgrass	5			
				other perennial grasses	5			
				scarlet globemallow	5			
Strell----------	Pinyon-Juniper (R034XY909CO)	Favorable	525	Utah juniper		20	Utah juniper	---
		Normal	425	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	300	Wyoming big sagebrush		10		
				bluebunch wheatgrass		5		
				squirreltail		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial forbs		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				scarlet globemallow		5		
				twoneedle pinyon		5		
				western wheatgrass		5		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
28:								
Lakebench-------	Rolling Loam (R034XY298CO)	Favorable	900	Wyoming big sagebrush	15		---	---
		Normal	700	needleandthread	15			
		Unfavorable	500	western wheatgrass	15			
				squirreltail	10			
				other perennial forbs	10			
				other shrubs	10			
				Indian ricegrass	5			
				Sandberg bluegrass	5			
				bluebunch wheatgrass	5			
				other perennial grasses	5			
				scarlet globemallow	5			
Yampa-----------	Pinyon-Juniper (R034XY909CO)	Favorable	525	Utah juniper		15	Utah juniper	---
		Normal	400	bluebunch wheatgrass		15	twoneedle pinyon	---
		Unfavorable	300	Indian ricegrass		10		
				Wyoming big sagebrush		10		
				other perennial forbs		10		
				other shrubs		10		
				black sagebrush		5		
				needleandthread		5		
				prairie Junegrass		5		
				twoneedle pinyon		5		
				western wheatgrass		5		
29:								
Layoint---------	Sandy Foothills (R034XY310CO)	Favorable	1,200	needleandthread	20		---	---
		Normal	1,000	Wyoming big sagebrush	15			
		Unfavorable	600	Indian ricegrass	10			
				Sandberg bluegrass	10			
				western wheatgrass	10			
				Sandberg bluegrass	5			
				antelope bitterbrush	5			
				arrowleaf balsamroot	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				prairie Junegrass	5			
Moosed----------	Sandy Foothills (R034XY310CO)	Favorable	1,000	needleandthread	20		---	---
		Normal	800	Wyoming big sagebrush	15			
		Unfavorable	400	Indian ricegrass	10			
				Sandberg bluegrass	10			
				western wheatgrass	10			
				Sandberg bluegrass	5			
				antelope bitterbrush	5			
				arrowleaf balsamroot	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				prairie Junegrass	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
29:								
Berlake---------	Mountain Loam (Mountain Big Sagebrush) (R047XC430UT)	Favorable	1,800	mountain big sagebrush	15		---	---
		Normal	1,400	needleandthread	10			
		Unfavorable	900	other perennial forbs	10			
				western wheatgrass	10			
				Indian ricegrass	5			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				Utah serviceberry	5			
				arrowleaf balsamroot	5			
				bluebunch wheatgrass	5			
				mountain snowberry	5			
				muttongrass	5			
				other perennial grasses	5			
				other shrubs	5			
				prairie Junegrass	5			
30:								
Lodore----------	Rolling Loam (R034XY298CO)	Favorable	800	Wyoming big sagebrush	15		---	---
		Normal	700	needleandthread	15			
		Unfavorable	600	western wheatgrass	15			
				Sandberg bluegrass	10			
				bluebunch wheatgrass	10			
				Indian ricegrass	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
				prairie Junegrass	5			
				scarlet globemallow	5			
Mantlemine------	Rolling Loam (R034XY298CO)	Favorable	900	Wyoming big sagebrush	15		---	---
		Normal	750	needleandthread	15			
		Unfavorable	600	western wheatgrass	15			
				Sandberg bluegrass	10			
				bluebunch wheatgrass	10			
				Indian ricegrass	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
				prairie Junegrass	5			
				scarlet globemallow	5			
Strell----------	Pinyon-Juniper (No ID)	Favorable	525	Utah juniper		20	Utah juniper	---
		Normal	425	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	300	Wyoming big sagebrush		10		
				bluebunch wheatgrass		5		
				squirreltail		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial forbs		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				scarlet globemallow		5		
				twoneedle pinyon		5		
				western wheatgrass		5		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
31:								
Mantlemine------	Rolling Loam (R034XY298CO)	Favorable	900	Wyoming big sagebrush	15		---	---
		Normal	750	needleandthread	15			
		Unfavorable	600	western wheatgrass	15			
				Sandberg bluegrass	10			
				bluebunch wheatgrass	10			
				Indian ricegrass	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
				prairie Junegrass	5			
				scarlet globemallow	5			
32:								
Mantlemine------	Rolling Loam (R034XY298CO)	Favorable	900	Wyoming big sagebrush	15		---	---
		Normal	750	needleandthread	15			
		Unfavorable	600	western wheatgrass	15			
				Sandberg bluegrass	10			
				bluebunch wheatgrass	10			
				Indian ricegrass	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
				prairie Junegrass	5			
				scarlet globemallow	5			
Emlin-----------	Mountain Loam (Mountain Big Sagebrush) (R047XC430UT)	Favorable	1,800	mountain big sagebrush	15		---	---
		Normal	1,500	needleandthread	15			
		Unfavorable	900	other perennial forbs	15			
				western wheatgrass	15			
				Sandberg bluegrass	5			
				Sandberg bluegrass	5			
				Utah serviceberry	5			
				squirreltail	5			
				mountain snowberry	5			
				prairie Junegrass	5			
				scarlet globemallow	5			
				yellow rabbitbrush	5			
33:								
Massadona-------	Alkali Flat (Black Greasewood) (R034XY006UT)	Favorable	1,000	greasewood	30		---	---
		Normal	700	other shrubs	15			
		Unfavorable	500	alkali sacaton	10			
				squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				galleta	5			
				other perennial forbs	5			
				other perennial grasses	5			
				seepweed	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
34:								
Mespun----------	Semidesert Sand (Fourwing Saltbush) (R034XY214UT)	Favorable	700	Indian ricegrass	25		---	---
		Normal	500	other shrubs	15			
		Unfavorable	250	fourwing saltbush	10			
				needleandthread	10			
				other perennial grasses	10			
				sand sagebrush	10			
				crispleaf buckwheat	5			
				galleta	5			
				other perennial forbs	5			
				scarlet globemallow	5			
35:								
Mido----------	Semidesert Sandy Loam (R034XY326CO)	Favorable	800	needleandthread	20		---	---
		Normal	600	other perennial grasses	15			
		Unfavorable	400	Indian ricegrass	10			
				fourwing saltbush	10			
				galleta	10			
				other shrubs	10			
				Wyoming big sagebrush	5			
				squirreltail	5			
				scarlet globemallow	5			
				shadscale saltbush	5			
				winterfat	5			
36:								
Mikim----------	Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)	Favorable	900	Indian ricegrass	20		---	---
		Normal	700	Wyoming big sagebrush	20			
		Unfavorable	500	squirreltail	10			
				galleta	10			
				needleandthread	10			
				other perennial forbs	10			
				other perennial grasses	5			
				other shrubs	5			
				scarlet globemallow	5			
				winterfat	5			
Mikim----------	Alkali Flat (Black Greasewood) (R034XY006UT)	Favorable	1,000	greasewood	30		---	---
		Normal	700	other shrubs	15			
		Unfavorable	500	alkali sacaton	10			
				squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				galleta	5			
				other perennial forbs	5			
				other perennial grasses	5			
				seepweed	5			
37:								
Milok----------	Semidesert Sandy Loam (Fourwing Saltbush) (R034XY216UT)	Favorable	800	Indian ricegrass	20		---	---
		Normal	650	needleandthread	15			
		Unfavorable	450	other perennial grasses	15			
				other shrubs	15			
				fourwing saltbush	10			
				galleta	10			
				other perennial forbs	10			
				Wyoming big sagebrush	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
38:								
Milok----------	Pinyon-Juniper (R034XY909CO)	Favorable	525	Utah juniper		30	Utah juniper	---
		Normal	400	other shrubs		15	twoneedle pinyon	---
		Unfavorable	300	Indian ricegrass		10		
				galleta		10		
				other perennial forbs		10		
				other perennial grasses		10		
				Wyoming big sagebrush		5		
				needleandthread		5		
				twoneedle pinyon		5		
Solirec----------	Semidesert Sandy Loam (R034XB326CO)	Favorable	800	Indian ricegrass	15		---	---
		Normal	600	needleandthread	15			
		Unfavorable	400	Wyoming big sagebrush	10			
				fourwing saltbush	10			
				galleta	10			
				other perennial forbs	10			
				other perennial grasses	10			
				scarlet globemallow	5			
				shadscale saltbush	5			
				western wheatgrass	5			
				winterfat	5			
Strych----------	Pinyon-Juniper (R034XY909CO)	Favorable	500	Utah juniper		20	Utah juniper	---
		Normal	400	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	250	galleta		10		
				other perennial forbs		10		
				other perennial grasses		10		
				Mormon tea		5		
				Sandberg bluegrass		5		
				Wyoming big sagebrush		5		
				black sagebrush		5		
				bluebunch wheatgrass		5		
				needleandthread		5		
				alderleaf mountain mahogany		5		
				winterfat		5		
39:								
Milok----------	Semidesert Sandy Loam (Fourwing Saltbush) (R034XY216UT)	Favorable	800	Indian ricegrass	20		---	---
		Normal	650	needleandthread	15			
		Unfavorable	450	other perennial grasses	15			
				other shrubs	15			
				fourwing saltbush	10			
				galleta	10			
				other perennial forbs	10			
				Wyoming big sagebrush	5			
Strych----------	Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush) (R034XY206UT)	Favorable	600	Wyoming big sagebrush	30		---	---
		Normal	400	other perennial forbs	10			
		Unfavorable	250	other shrubs	10			
				rubber rabbitbrush	10			
				spiny hopsage	10			
				Indian ricegrass	5			
				bluegrass	5			
				squirreltail	5			
				horsebrush	5			
				other perennial grasses	5			
				shadscale saltbush	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
40:								
Notlic----------	Pinyon-Juniper (No ID)	Favorable	650	other perennial forbs		15	Utah juniper	---
		Normal	500	Mormon tea		10	twoneedle pinyon	---
		Unfavorable	350	black sagebrush		10		
				galleta		10		
				needleandthread		10		
				other shrubs		10		
				alderleaf mountain mahogany		10		
				Indian ricegrass		5		
				bluebunch wheatgrass		5		
				squirreltail		5		
				other perennial grasses		5		
				saline wildrye		5		
Iogoon----------	Boxelder (No ID)	Favorable	2,500	other shrubs		20	boxelder	---
		Normal	2,000	water birch		20		
		Unfavorable	1,500	other perennial grasses		15		
				willow		15		
				other perennial forbs		10		
				Kentucky bluegrass		5		
				Utah serviceberry		5		
				Woods' rose		5		
				Wyoming big sagebrush		5		
				basin wildrye		5		
				mountain brome		5		
Labyrinth-------	Boxelder (No ID)	Favorable	2,500	other shrubs		20	boxelder	---
		Normal	2,000	water birch		20		
		Unfavorable	1,500	other perennial grasses		15		
				willow		15		
				other perennial forbs		10		
				Kentucky bluegrass		5		
				Utah serviceberry		5		
				Woods' rose		5		
				basin big sagebrush		5		
				basin wildrye		5		
				mountain brome		5		
41:								
Paradox---------	Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)	Favorable	900	Indian ricegrass	20		---	---
		Normal	700	Wyoming big sagebrush	20			
		Unfavorable	500	squirreltail	10			
				galleta	10			
				needleandthread	10			
				other perennial forbs	10			
				globemallow	5			
				other perennial grasses	5			
				other shrubs	5			
				winterfat	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
42:								
Pensore---------	Pinyon-Juniper (No ID)	Favorable	800	twoneedle pinyon		20	Utah juniper	---
		Normal	550	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	300	Utah juniper		10		
				bluebunch wheatgrass		10		
				other perennial forbs		10		
				Sandberg bluegrass		5		
				Wyoming big sagebrush		5		
				black sagebrush		5		
				needleandthread		5		
				prairie Junegrass		5		
				stemless goldenweed		5		
				alderleaf mountain mahogany		5		
				antelope bitterbrush		3		
				Mormon tea		2		
Lodore----------	Pinyon-Juniper (No ID)	Favorable	800	twoneedle pinyon		20	Utah juniper	---
		Normal	500	bluebunch wheatgrass		15	twoneedle pinyon	---
		Unfavorable	300	Indian ricegrass		10		
				other perennial forbs		10		
				Utah juniper		5		
				Wyoming big sagebrush		5		
				needleandthread		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				stemless goldenweed		5		
				squirreltail		3		
				western wheatgrass		2		
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
43:								
Pensore---------	Pinyon-Juniper (R034XY909CO)	Favorable	800	twoneedle pinyon		20	Utah juniper	---
		Normal	550	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	300	Utah juniper		10		
				bluebunch wheatgrass		10		
				other perennial forbs		10		
				Sandberg bluegrass		5		
				Wyoming big sagebrush		5		
				black sagebrush		5		
				needleandthread		5		
				prairie Junegrass		5		
				stemless goldenweed		5		
				alderleaf mountain mahogany		5		
				antelope bitterbrush		3		
				Mormon tea		2		
Roto------------	Pinyon-Juniper (R034XY909CO)	Favorable	800	twoneedle pinyon		20	Utah juniper	---
		Normal	500	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	300	bluebunch wheatgrass		10		
				other perennial forbs		10		
				Utah juniper		5		
				Wyoming big sagebrush		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				stemless goldenweed		5		
				black sagebrush		3		
				western wheatgrass		2		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
44:								
Polychrome------	Pinyon-Juniper (No ID)	Favorable	600	Wyoming big sagebrush		30	Utah juniper	---
		Normal	400	galleta		15	twoneedle pinyon	---
		Unfavorable	300	Indian ricegrass		10		
				needleandthread		10		
				other shrubs		10		
				bud sagebrush		5		
				other perennial forbs		5		
				other perennial grasses		5		
				shadscale saltbush		5		
				winterfat		5		
Milok-----------	Semidesert Sandy Loam (Fourwing Saltbush) (R034XY216UT)	Favorable	800	Indian ricegrass	20		---	---
		Normal	650	needleandthread	15			
		Unfavorable	450	other perennial grasses	15			
				other shrubs	15			
				fourwing saltbush	10			
				galleta	10			
				other perennial forbs	10			
				Wyoming big sagebrush	5			
45:								
Redrock family--	Rolling Loam (R034XY298CO)	Favorable	900	Wyoming big sagebrush	15		---	---
		Normal	750	needleandthread	15			
		Unfavorable	600	western wheatgrass	15			
				Sandberg bluegrass	10			
				bluebunch wheatgrass	10			
				Indian ricegrass	5			
				Sandberg bluegrass	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				prairie Junegrass	5			
				scarlet globemallow	5			
Roto------------	Rolling Loam (R034XY298CO)	Favorable	800	Wyoming big sagebrush	15		---	---
		Normal	650	needleandthread	15			
		Unfavorable	500	western wheatgrass	15			
				Sandberg bluegrass	10			
				bluebunch wheatgrass	10			
				other shrubs	10			
				Indian ricegrass	5			
				broom snakeweed	5			
				other perennial forbs	5			
				other perennial grasses	5			
				prairie Junegrass	5			
46:								
Riverwash-------	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
47:								
Rizno----------	Pinyon-Juniper (R034XY909CO)	Favorable	400	Utah juniper		20	Utah juniper	---
		Normal	300	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	150	Wyoming big sagebrush		10		
				galleta		10		
				bluebunch wheatgrass		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial forbs		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				shadscale saltbush		5		
				western wheatgrass		5		
Windcomb--------	Pinyon-Juniper (R034XY909CO)	Favorable	350	black sagebrush		20	Utah juniper	---
		Normal	250	other shrubs		20	twoneedle pinyon	---
		Unfavorable	150	saline wildrye		20		
				Mormon tea		10		
				bluebunch wheatgrass		10		
				other perennial grasses		10		
				galleta		5		
				other perennial forbs		5		
Anasazi---------	Pinyon-Juniper (R034XY909CO)	Favorable	525	Indian ricegrass		15	Utah juniper	---
		Normal	400	Utah juniper		15	twoneedle pinyon	---
		Unfavorable	250	Wyoming big sagebrush		10		
				galleta		10		
				needleandthread		10		
				bluebunch wheatgrass		5		
				broom snakeweed		5		
				other perennial forbs		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				shadscale saltbush		5		
				western wheatgrass		5		
48:								
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
49:								
Rock outcrop----	Pinyon-Juniper (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Hackling--------	--- (No ID)	Favorable	800	twoneedle pinyon		20	Utah juniper	---
		Normal	550	Wyoming big sagebrush		10	twoneedle pinyon	---
		Unfavorable	300	bluebunch wheatgrass		10		
				Indian ricegrass		5		
				Utah juniper		5		
				antelope bitterbrush		5		
				squirreltail		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial forbs		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				sand dropseed		5		
				alderleaf mountain mahogany		5		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
50:								
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Haploborolls----	Pinyon-Juniper (No ID)	Favorable	800	twoneedle pinyon		20	Utah juniper	---
		Normal	550	bluebunch wheatgrass		15	twoneedle pinyon	---
		Unfavorable	300	Indian ricegrass		10		
				Utah juniper		10		
				other perennial forbs		10		
				Sandberg bluegrass		5		
				Utah serviceberry		5		
				Wyoming big sagebrush		5		
				mountain big sagebrush		5		
				needleandthread		5		
				prairie Junegrass		5		
				alderleaf mountain mahogany		5		
51:								
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Torriorthents---	Not Specified (No ID)	Favorable	800	Indian ricegrass	10		---	---
		Normal	400	Mormon tea	10			
		Unfavorable	100	Utah juniper	10			
				bluebunch wheatgrass	10			
				other perennial forbs	10			
				other shrubs	10			
				Wyoming big sagebrush	5			
				antelope bitterbrush	5			
				needleandthread	5			
				other perennial grasses	5			
				alderleaf mountain mahogany	5			
				twoneedle pinyon	5			
				western wheatgrass	5			
Ustorthents-----	Not Specified (No ID)	Favorable	1,200	Indian ricegrass	10		---	---
		Normal	950	bluebunch wheatgrass	10			
		Unfavorable	750	mountain big sagebrush	10			
				other perennial forbs	10			
				Idaho fescue	5			
				Sandberg bluegrass	5			
				Utah serviceberry	5			
				Wyoming big sagebrush	5			
				mountain snowberry	5			
				needleandthread	5			
				other perennial grasses	5			
				prairie Junegrass	5			
				alderleaf mountain mahogany	5			
52:								
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
52:								
Ustochrepts-----	Pinyon-Juniper (No ID)	Favorable	800	alderleaf mountain mahogany		15	Utah juniper	---
		Normal	600	black sagebrush		10	twoneedle pinyon	---
		Unfavorable	500	needleandthread		10		
				other perennial forbs		10		
				other perennial grasses		10		
				other shrubs		10		
				saline wildrye		10		
				Indian ricegrass		5		
				Mormon tea		5		
				Utah serviceberry		5		
				bluebunch wheatgrass		5		
				bluegrass		5		
Cryochrepts-----	Pinyon-Juniper (No ID)	Favorable	400	mountain snowberry		15	Rocky Mountain Douglas-fir	---
		Normal	100	elk sedge		10		
		Unfavorable	50	other shrubs		10		
				alderleaf mountain mahogany		10		
				Engelmann's aster		5		
				creeping barberry		5		
				Woods' rose		5		
				blue wildrye		5		
				bluegrass		5		
				Oregon boxleaf		5		
				currant		5		
				heartleaf arnica		5		
				other perennial forbs		5		
				other perennial grasses		5		
				quaking aspen		5		
53:								
Schoonover------	Mountain Windswept Ridge (Black Sagebrush) (R047XC475UT)	Favorable	550	bluebunch wheatgrass	25		---	---
		Normal	400	black sagebrush	15			
		Unfavorable	250	other perennial forbs	10			
				prairie Junegrass	10			
				Indian ricegrass	5			
				Sandberg bluegrass	5			
				squirreltail	5			
				needleandthread	5			
				other shrubs	5			
				prairie sagewort	5			
				stemless goldenweed	5			
				western wheatgrass	5			
Duffymont-------	Mountain Shallow Loam (Mountain Big Sagebrush) (R047XC446UT)	Favorable	1,250	bluebunch wheatgrass	20		---	---
		Normal	1,000	mountain big sagebrush	20			
		Unfavorable	750	antelope bitterbrush	10			
				needleandthread	10			
				Indian ricegrass	5			
				Sandberg bluegrass	5			
				Utah serviceberry	5			
				arrowleaf balsamroot	5			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
				sheep fescue	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
54:								
Sheecal---------	Pinyon-Juniper (No ID)	Favorable	800	black sagebrush		25	Utah juniper	---
		Normal	600	bluebunch wheatgrass		15	twoneedle pinyon	---
		Unfavorable	400	alderleaf mountain mahogany		15		
				other shrubs		10		
				Indian ricegrass		5		
				Mormon tea		5		
				needleandthread		5		
				other perennial forbs		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				slender buckwheat		5		
55:								
Sheecal---------	Pinyon-Juniper (No ID)	Favorable	500	black sagebrush		20	Utah juniper	---
		Normal	400	alderleaf mountain mahogany		20	twoneedle pinyon	---
		Unfavorable	200	other shrubs		15		
				Indian ricegrass		5		
				Mormon tea		5		
				antelope bitterbrush		5		
				bluebunch wheatgrass		5		
				needleandthread		5		
				other perennial forbs		5		
				other perennial grasses		5		
56:								
Shotnick---------	Alkali Flat (Black Greasewood) (R034XY006UT)	Favorable	1,000	greasewood	30		---	---
		Normal	700	other shrubs	15			
		Unfavorable	500	alkali sacaton	10			
				squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				galleta	5			
				other perennial forbs	5			
				other perennial grasses	5			
				seepweed	5			
Uffens----------	Alkali Flat (Black Greasewood) (R034XY006UT)	Favorable	1,000	greasewood	30		---	---
		Normal	700	other shrubs	15			
		Unfavorable	500	alkali sacaton	10			
				squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				galleta	5			
				other perennial forbs	5			
				other perennial grasses	5			
				seepweed	5			
57:								
Splimo----------	Pinyon-Juniper (No ID)	Favorable	350	black sagebrush		20	Utah juniper	---
		Normal	250	other shrubs		20	twoneedle pinyon	---
		Unfavorable	150	saline wildrye		20		
				Mormon tea		10		
				bluebunch wheatgrass		10		
				other perennial grasses		10		
				galleta		5		
				other perennial forbs		5		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
58:								
Splimo----------	Pinyon-Juniper (No ID)	Favorable	350	black sagebrush		20	Utah juniper	---
		Normal	250	other shrubs		20	twoneedle pinyon	---
		Unfavorable	150	saline wildrye		20		
				Mormon tea		10		
				bluebunch wheatgrass		10		
				other perennial grasses		10		
				galleta		5		
				other perennial forbs		5		
Chew----------	Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush) (R034XY206UT)	Favorable	600	Wyoming big sagebrush	30		---	---
		Normal	400	galleta	15			
		Unfavorable	300	Indian ricegrass	10			
				needleandthread	10			
				other shrubs	10			
				bud sagebrush	5			
				other perennial forbs	5			
				other perennial grasses	5			
				shadscale saltbush	5			
				winterfat	5			
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
59:								
Stout----------	Pinyon-Juniper (R034XY909CO)	Favorable	800	twoneedle pinyon		15	Utah juniper	---
		Normal	550	other perennial forbs		10	twoneedle pinyon	---
		Unfavorable	300	other perennial grasses		10		
				Indian ricegrass		5		
				Sandberg bluegrass		5		
				Utah juniper		5		
				Wyoming big sagebrush		5		
				antelope bitterbrush		5		
				black sagebrush		5		
				bluebunch wheatgrass		5		
				squirreltail		5		
				curl-leaf mountain mahogany		5		
				needleandthread		5		
				prairie Junegrass		5		
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
60:								
Strell----------	Pinyon-Juniper (No ID)	Favorable	525	Utah juniper		20	Utah juniper	---
		Normal	400	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	250	Wyoming big sagebrush		10		
				bluebunch wheatgrass		5		
				squirreltail		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial forbs		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				sand dropseed		5		
				scarlet globemallow		5		
				western wheatgrass		5		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
60:								
Marthaspeak-----	Sandy Land (R034XY330CO)	Favorable	1,000	Wyoming big sagebrush	20		---	---
		Normal	700	Indian ricegrass	15			
		Unfavorable	500	needleandthread	15			
				other perennial grasses	10			
				bluebunch wheatgrass	5			
				squirreltail	5			
				other perennial forbs	5			
				sand dropseed	5			
				scarlet globemallow	5			
				western wheatgrass	5			
				broom snakeweed	3			
				prairie Junegrass	2			
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
61:								
Strell----------	Pinyon-Juniper (No ID)	Favorable	525	Utah juniper		20	Utah juniper	---
		Normal	400	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	250	Wyoming big sagebrush		10		
				bluebunch wheatgrass		5		
				squirreltail		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial forbs		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				sand dropseed		5		
				scarlet globemallow		5		
				western wheatgrass		5		
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Marthaspeak-----	Pinyon-Juniper (No ID)	Favorable	525	Utah juniper		20	Utah juniper	---
		Normal	350	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	250	Wyoming big sagebrush		10		
				other perennial forbs		10		
				bluebunch wheatgrass		5		
				squirreltail		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial grasses		5		
				prairie Junegrass		5		
				sand dropseed		5		
				scarlet globemallow		5		
				western wheatgrass		5		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
62:								
Strych----------	Pinyon-Juniper (R034XY909CO)	Favorable	500	Utah juniper		20	Utah juniper	---
		Normal	400	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	250	galleta		10		
				other perennial forbs		10		
				other perennial grasses		10		
				Mormon tea		5		
				Sandberg bluegrass		5		
				Wyoming big sagebrush		5		
				black sagebrush		5		
				bluebunch wheatgrass		5		
				needleandthread		5		
				alderleaf mountain mahogany		5		
				winterfat		5		
Mellenthin------	Pinyon-Juniper (R034XY909CO)	Favorable	525	Utah juniper		20	Utah juniper	---
		Normal	400	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	250	Wyoming big sagebrush		10		
				galleta		10		
				bluebunch wheatgrass		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial forbs		5		
				other perennial grasses		5		
				plains pricklypear		5		
				prairie Junegrass		5		
				twoneedle pinyon		5		
				western wheatgrass		5		
63:								
Tipper----------	Pinyon-Juniper (No ID)	Favorable	525	Utah juniper		20	Utah juniper	---
		Normal	400	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	250	Wyoming big sagebrush		10		
				galleta		10		
				other perennial forbs		10		
				black sagebrush		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial grasses		5		
				other shrubs		5		
				plains pricklypear		5		
				scarlet globemallow		5		
				twoneedle pinyon		5		
Crustown--------	Pinyon-Juniper (No ID)	Favorable	500	Utah juniper		20	Utah juniper	---
		Normal	250	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	150	Wyoming big sagebrush		10		
				galleta		10		
				black sagebrush		5		
				bluebunch wheatgrass		5		
				broom snakeweed		5		
				needleandthread		5		
				other perennial forbs		5		
				plains pricklypear		5		
				scarlet globemallow		5		
				spiny hopsage		5		
				twoneedle pinyon		5		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
64:								
Torriorthents---	Not Specified (No ID)	Favorable	800	Indian ricegrass	10		---	---
		Normal	400	Mormon tea	10			
		Unfavorable	100	Utah juniper	10			
				bluebunch wheatgrass	10			
				other perennial forbs	10			
				other shrubs	10			
				Wyoming big sagebrush	5			
				antelope bitterbrush	5			
				needleandthread	5			
				other perennial grasses	5			
				alderleaf mountain mahogany	5			
				twoneedle pinyon	5			
				western wheatgrass	5			
Torripsamments--	Not Specified (No ID)	Favorable	800	Indian ricegrass	15		---	---
		Normal	500	needleandthread	15			
		Unfavorable	300	western wheatgrass	15			
				other perennial grasses	10			
				threadleaf sedge	10			
				Sandberg bluegrass	5			
				Wyoming big sagebrush	5			
				other perennial forbs	5			
				other shrubs	5			
65:								
Tsetaa family---	Pinyon-Juniper (No ID)	Favorable	1,500	Rocky Mountain juniper		15	Rocky Mountain juniper	---
		Normal	1,100	other perennial grasses		15	Utah juniper	---
		Unfavorable	700	other shrubs		15	twoneedle pinyon	---
				Indian ricegrass		10		
				Utah juniper		10		
				basin big sagebrush		10		
				Mormon tea		5		
				Wyoming big sagebrush		5		
				needleandthread		5		
				twoneedle pinyon		5		
Bankard family--	River Floodplain (Fremont Cottonwood) (R034XY011UT)	Favorable	2,000	other perennial forbs	15		---	---
		Normal	1,500	other perennial grasses	15			
		Unfavorable	1,000	basin wildrye	10			
				western wheatgrass	10			
				alkali sacaton	5			
				basin big sagebrush	5			
				boxelder	5			
				saltgrass	5			
				needleandthread	5			
				other shrubs	5			
				rush	5			
				sandbar willow	5			
				sedge	5			
				skunkbush sumac	5			
Fluvaquents-----	Not Specified (No ID)	Favorable	3,000	cattail	15		---	---
		Normal	2,000	rush	15			
		Unfavorable	1,000	sedge	15			
				willow	15			
				common reed	10			
				other perennial forbs	10			
				other perennial grasses	10			
				reed canarygrass	10			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
66:								
Turzo----------	Alkali Flat (Black Greasewood) (R034XY006UT)	Favorable	1,000	greasewood	30		---	---
		Normal	700	other shrubs	15			
		Unfavorable	500	alkali sacaton	10			
				squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				galleta	5			
				other perennial forbs	5			
				other perennial grasses	5			
				seepweed	5			
67:								
Ustic Torrifluvents--	Not Specified (No ID)	Favorable	1,500	basin wildrye	15		---	---
		Normal	1,000	other perennial grasses	15			
		Unfavorable	500	Indian ricegrass	10			
				basin big sagebrush	10			
				bluebunch wheatgrass	10			
				needleandthread	10			
				other shrubs	10			
				western wheatgrass	10			
				Utah juniper	5			
				twoneedle pinyon	5			
Ustic Torrifluvents--	Not Specified (No ID)	Favorable	1,500	basin wildrye	15		---	---
		Normal	1,000	other perennial grasses	15			
		Unfavorable	500	Indian ricegrass	10			
				basin big sagebrush	10			
				bluebunch wheatgrass	10			
				needleandthread	10			
				other shrubs	10			
				western wheatgrass	10			
				Utah juniper	5			
				twoneedle pinyon	5			
68:								
Ustorthents, frigid---------	Not Specified (No ID)	Favorable	1,200	Indian ricegrass	10		---	---
		Normal	950	bluebunch wheatgrass	10			
		Unfavorable	750	mountain big sagebrush	10			
				other perennial forbs	10			
				Idaho fescue	5			
				Sandberg bluegrass	5			
				Utah serviceberry	5			
				Wyoming big sagebrush	5			
				mountain snowberry	5			
				needleandthread	5			
				other perennial grasses	5			
				prairie Junegrass	5			
				alderleaf mountain mahogany	5			
Borolls---------	Not Specified (No ID)	Favorable	2,000	mountain big sagebrush	15		---	---
		Normal	1,500	Idaho fescue	10			
		Unfavorable	1,000	Letterman's needlegrass	10			
				Utah serviceberry	10			
				mountain brome	10			
				mountain snowberry	10			
				arrowleaf balsamroot	5			
				elk sedge	5			
				other perennial forbs	5			
				prairie Junegrass	5			
				slender wheatgrass	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
69:								
Utaline---------	Desert Loam (Shadscale) (R034XY106UT)	Favorable	700	Indian ricegrass	20		---	---
		Normal	500	shadscale saltbush	20			
		Unfavorable	300	other perennial forbs	15			
				galleta	10			
				other perennial grasses	10			
				other shrubs	10			
				bud sagebrush	5			
				scarlet globemallow	5			
				winterfat	5			
Hanksville------	Desert Shallow Clay (Mat Saltbush) (R034XY117UT)	Favorable	300	mat saltbush	60		---	---
		Normal	200	galleta	10			
		Unfavorable	100	other shrubs	10			
				Native American pipeweed	5			
				bud sagebrush	5			
				other perennial forbs	5			
				other perennial grasses	5			
70:								
Windcomb--------	Pinyon-Juniper (No ID)	Favorable	350	black sagebrush		20	Utah juniper	---
		Normal	250	other shrubs		20	twoneedle pinyon	---
		Unfavorable	150	saline wildrye		20		
				Mormon tea		10		
				bluebunch wheatgrass		10		
				other perennial grasses		10		
				galleta		5		
				other perennial forbs		5		
Badland---------	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Rock outcrop----	--- (No ID)	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
71:								
Windcomb--------	Pinyon-Juniper (No ID)	Favorable	350	black sagebrush		20	Utah juniper	---
		Normal	250	other shrubs		20	twoneedle pinyon	---
		Unfavorable	150	saline wildrye		20		
				Mormon tea		10		
				bluebunch wheatgrass		10		
				other perennial grasses		10		
				galleta		5		
				other perennial forbs		5		
Rizno-----------	Semidesert Shallow Loam (Wyoming Big Sagebrush) (R034XY225UT)	Favorable	500	Wyoming big sagebrush	20		---	---
		Normal	350	needleandthread	15			
		Unfavorable	250	Indian ricegrass	10			
				galleta	10			
				shadscale saltbush	10			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				scarlet globemallow	5			
				western wheatgrass	5			
				broom snakeweed	3			
				prairie Junegrass	2			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
71:								
Anasazi---------	Semidesert Sandy Loam (R034XB326CO)	Favorable	750	Indian ricegrass	15		---	---
		Normal	600	needleandthread	15			
		Unfavorable	400	Wyoming big sagebrush	10			
				fourwing saltbush	10			
				galleta	10			
				other perennial forbs	10			
				squirreltail	5			
				other perennial grasses	5			
				shadscale saltbush	5			
				western wheatgrass	5			
				broom snakeweed	3			
				prairie Junegrass	2			
72:								
Yampa-----------	Rolling Loam (R034XY298CO)	Favorable	800	Wyoming big sagebrush	15		---	---
		Normal	600	needleandthread	15			
		Unfavorable	400	western wheatgrass	15			
				bluebunch wheatgrass	10			
				other perennial forbs	10			
				other perennial grasses	10			
				other shrubs	10			
				Indian ricegrass	5			
				Sandberg bluegrass	5			
				prairie Junegrass	5			
73:								
Yampa-----------	Pinyon-Juniper (No ID)	Favorable	525	Utah juniper		15	Utah juniper	---
		Normal	400	bluebunch wheatgrass		15	twoneedle pinyon	---
		Unfavorable	300	Indian ricegrass		10		
				Wyoming big sagebrush		10		
				other perennial forbs		10		
				other shrubs		10		
				black sagebrush		5		
				needleandthread		5		
				prairie Junegrass		5		
				twoneedle pinyon		5		
				western wheatgrass		5		
Hackling--------	Pinyon-Juniper (No ID)	Favorable	525	Utah juniper		20	Utah juniper	---
		Normal	400	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	250	Wyoming big sagebrush		10		
				other perennial forbs		10		
				other perennial grasses		10		
				bluebunch wheatgrass		5		
				squirreltail		5		
				broom snakeweed		5		
				needleandthread		5		
				prairie Junegrass		5		
				sand dropseed		5		
				twoneedle pinyon		5		

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
73:								
Mantlemine------	Rolling Loam (R034XY298CO)	Favorable	900	Wyoming big sagebrush	15		---	---
		Normal	750	needleandthread	15			
		Unfavorable	600	western wheatgrass	15			
				Sandberg bluegrass	10			
				bluebunch wheatgrass	10			
				Indian ricegrass	5			
				squirreltail	5			
				other perennial forbs	5			
				other perennial grasses	5			
				other shrubs	5			
				prairie Junegrass	5			
				scarlet globemallow	5			
74:								
Yarts-----------	Semidesert Sandy Loam (Fourwing Saltbush) (R034XY216UT)	Favorable	800	Indian ricegrass	20		---	---
		Normal	650	needleandthread	15			
		Unfavorable	450	other perennial grasses	15			
				other shrubs	15			
				fourwing saltbush	10			
				galleta	10			
				other perennial forbs	10			
				Torrey's jointfir	5			
75:								
Yarts-----------	Alkali Flat (Black Greasewood) (R034XY006UT)	Favorable	1,000	greasewood	30		---	---
		Normal	700	other shrubs	15			
		Unfavorable	500	alkali sacaton	10			
				squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				galleta	5			
				other perennial forbs	5			
				other perennial grasses	5			
				seepweed	5			
Yarts-----------	Loamy Bottom (Basin Big Sagebrush) (R034XY009UT)	Favorable	2,000	basin wildrye	25		---	---
		Normal	1,500	basin big sagebrush	15			
		Unfavorable	1,000	muttongrass	10			
				needleandthread	10			
				other perennial grasses	10			
				western wheatgrass	10			
				Indian ricegrass	5			
				other perennial forbs	5			
				other shrubs	5			
				rubber rabbitbrush	5			
76:								
Zillion---------	Mountain Stony Loam (Browse) (R047XC460UT)	Favorable	1,800	mountain big sagebrush	15		---	---
		Normal	1,500	other perennial grasses	15			
		Unfavorable	1,200	mountain snowberry	10			
				other perennial forbs	10			
				other shrubs	10			
				western wheatgrass	10			
				Columbia needlegrass	5			
				Letterman's needlegrass	5			
				Utah serviceberry	5			
				arrowleaf balsamroot	5			
				prairie Junegrass	5			
				slender wheatgrass	5			

Table 6.--Ecological sites and characteristic native vegetation --Continued

Map symbol and soil name	Ecological site (Site ID)	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		
76:								
Yampa----------	Mountain Windswept Ridge (Black Sagebrush) (R047XC475UT)	Favorable Normal Unfavorable	500 350 200	bluebunch wheatgrass Indian ricegrass Sandberg bluegrass black sagebrush needleandthread prairie sagewort	15 10 10 10 5 5		---	---
Clyl----------	Mountain Stony Loam (Browse) (R047XC460UT)	Favorable Normal Unfavorable	1,800 1,500 1,200	mountain snowberry Letterman's needlegrass bluebunch wheatgrass mountain big sagebrush slender wheatgrass Columbia needlegrass Utah serviceberry	15 10 10 10 10 5 5		---	---
77:								
Water----------	--- (No ID)	Favorable Normal Unfavorable	--- --- ---				---	---

Table 7.--Forestland productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
1:				
Abracon	---	---	---	---
Solirec	---	---	---	---
2:				
Arches	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Mespun	---	---	---	---
Rock outcrop	---	---	---	---
3:				
Badland	---	---	---	---
Polychrome	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Rock outcrop	---	---	---	---
4:				
Badland	---	---	---	---
Rock outcrop	---	---	---	---
5:				
Bankard family	---	---	---	---
Cameo	---	---	---	---
6:				
Begay	---	---	---	---
7:				
Begay	---	---	---	---
Mespun	---	---	---	---
8:				
Bodry	---	---	---	---
9:				
Bondman	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Rock outcrop	---	---	---	---
10:				
Cameo	---	---	---	---
11:				
Cameo	---	---	---	---
12:				
Clapper	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Abracon	---	---	---	---

Table 7.--Forestland productivity--continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
13:				
Cortyzack	---	---	---	---
Duffymont	---	---	---	---
14:				
Cragnot	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Pensore	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Grapit	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
15:				
Davtone	---	---	---	---
Forsey	---	---	---	---
16:				
Dearjosh	---	---	---	---
Lakebench	---	---	---	---
17:				
Deaver	---	---	---	---
Avalon	---	---	---	---
18:				
Deaver	---	---	---	---
Chipeta	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
19:				
Detra	---	---	---	---
Cortyzack	---	---	---	---
20:				
Eghelm	---	---	---	---
Uffens	---	---	---	---
21:				
Emlin	---	---	---	---
22:				
Fluvaquents	---	---	---	---
23:				
Green River	---	---	---	---
Fluvaquents	---	---	---	---
24:				
Hanksville	---	---	---	---

Table 7.--Forestland productivity--continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
25:				
Holter	---	---	---	---
Detra family	---	---	---	---
26:				
Ironco	---	---	---	---
Mulgon	Rocky Mountain Douglas-fir	---	0	---
27:				
Lakebench	---	---	---	---
Strell	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
28:				
Lakebench	---	---	---	---
Yampa	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
29:				
Layoint	---	---	---	---
Moosed	---	---	---	---
Berlake	---	---	---	---
30:				
Lodore	---	---	---	---
Mantlemine	---	---	---	---
Strell	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
31:				
Mantlemine	---	---	---	---
32:				
Mantlemine	---	---	---	---
Emlin	---	---	---	---
33:				
Massadona	---	---	---	---
34:				
Mespun	---	---	---	---
35:				
Mido	---	---	---	---
36:				
Mikim loam	---	---	---	---
Mikim silt loam	---	---	---	---

Table 7.--Forestland productivity--continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
37:				
Milok	---	---	---	---
38:				
Milok	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Solirec	---	---	---	---
Strych	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
39:				
Milok	---	---	---	---
Strych	---	---	---	---
40:				
Notlic	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Iogoon	boxelder	---	0	---
Labyrinth	boxelder	---	0	---
41:				
Paradox	---	---	---	---
42:				
Pensore	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Lodore	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Rock outcrop	---	---	---	---
43:				
Pensore	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Roto	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
44:				
Polychrome	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Milok	---	---	---	---
45:				
Redrock family	---	---	---	---
Roto	---	---	---	---
46:				
Riverwash	---	---	---	---

Table 7.--Forestland productivity--continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
47:				
Rizno	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Windcomb	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Anasazi	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
48:				
Rock outcrop	---	---	---	---
49:				
Rock outcrop	---	---	---	---
Hackling	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
50:				
Rock outcrop	---	---	---	---
Haploborolls	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
51:				
Rock outcrop	---	---	---	---
Torriorthents	---	---	---	---
Ustorthents	---	---	---	---
52:				
Rock outcrop	---	---	---	---
Ustochrepts	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Cryochrepts	Rocky Mountain Douglas-fir	---	0	---
53:				
Schoonover	---	---	---	---
Duffymont	---	---	---	---
54:				
Sheecal	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
55:				
Sheecal	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
56:				
Shotnick	---	---	---	---
Uffens	---	---	---	---

Table 7.--Forestland productivity--continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
57:				
Splimo	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
58:				
Splimo	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Chew	---	---	---	---
Rock outcrop	---	---	---	---
59:				
Stout	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Rock outcrop	---	---	---	---
60:				
Strell	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Marthaspeak	---	---	---	---
Rock outcrop	---	---	---	---
61:				
Strell	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Rock outcrop	---	---	---	---
Marthaspeak	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
62:				
Strych	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Mellenthin	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
63:				
Tipper	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Crustown	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
64:				
Torriorthents	---	---	---	---
Torripsamments	---	---	---	---
65:				
Tsetaa family	Rocky Mountain juniper	---	0	---
	twoneedle pinyon	---	0	
	Utah juniper	---	0	

Table 7.--Forestland productivity--continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
65:				
Bankard family	---	---	---	---
Fluvaquents	---	---	---	---
66:				
Turzo	---	---	---	---
67:				
Ustic Torrifluvents	---	---	---	---
Ustic Torrifluvents	---	---	---	---
68:				
Ustorthents, frigid	---	---	---	---
Borolls	---	---	---	---
69:				
Utaline	---	---	---	---
Hanksville	---	---	---	---
70:				
Windcomb	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Badland	---	---	---	---
Rock outcrop	---	---	---	---
71:				
Windcomb	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Rizno	---	---	---	---
Anasazi	---	---	---	---
72:				
Yampa	---	---	---	---
73:				
Yampa	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Hackling	twoneedle pinyon	---	0	---
	Utah juniper	---	0	
Mantlemine	---	---	---	---
74:				
Yarts	---	---	---	---
75:				
Yarts	---	---	---	---
Yarts	---	---	---	---

Table 7.--Forestland productivity--continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
76:				
Zillion	---	---	---	---
Yampa	---	---	---	---
Clyl	---	---	---	---
77:				
Water	---	---	---	---

Table 8.--Camp and picnic areas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Abracon	45	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
Solirec	40	Not limited		Not limited	
2:					
Arches	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Too sandy	0.57	Too sandy	0.57
Mespun	20	Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00
		Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated	
3:					
Badland	40	Not rated		Not rated	
Polychrome	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel content	0.81	Gravel content	0.81
Rock outcrop	20	Not rated		Not rated	
4:					
Badland	50	Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated	
5:					
Bankard family	55	Very limited		Very limited	
		Flooding	1.00	Too sandy	1.00
		Too sandy	1.00		

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
5:					
Cameo	35	Very limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.31
		Too sandy	0.31		
6:					
Begay	85	Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04
7:					
Begay	55	Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04
Mespun	35	Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00
		Slope	1.00	Slope	1.00
8:					
Bodry	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
9:					
Bondman	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
Rock outcrop	35	Not rated		Not rated	
10:					
Cameo	85	Very limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.31
		Too sandy	0.31		
11:					
Cameo	85	Very limited		Not limited	
		Flooding	1.00		
12:					
Clapper	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.61	Large stones content	0.61
		Dusty	0.50	Dusty	0.50

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
12:					
Abracon	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
13:					
Cortyzack	55	Somewhat limited		Somewhat limited	
		Slope	0.96	Slope	0.96
Duffymont	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.98	Large stones content	0.98
		Slope	0.96	Slope	0.96
14:					
Cragnot	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel content	0.85	Gravel content	0.85
		Large stones content	0.01	Large stones content	0.01
Pensore	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
		Gravel content	0.09	Gravel content	0.09
Grapit	15	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
		Gravel content	0.03	Gravel content	0.03
15:					
Davtone	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21
Forsey	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
16:					
Dearjosh	50	Somewhat limited		Somewhat limited	
		Too sandy	0.89	Too sandy	0.89
		Slope	0.04	Slope	0.04

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
16:					
Lakebench	40	Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04
17:					
Deaver	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
		Gravel content	0.16	Gravel content	0.16
Avalon	35	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
		Slow water movement	0.21	Slow water movement	0.21
		Slope	0.04	Slope	0.04
18:					
Deaver	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
Chipeta	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
19:					
Detra	50	Not limited		Not limited	
Cortyzack	40	Somewhat limited		Somewhat limited	
		Slope	0.01	Slope	0.01
20:					
Eghelm	55	Very limited		Somewhat limited	
		Flooding	1.00	Dusty	0.50
		Dusty	0.50		
Uffens	35	Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00
		Salinity	1.00	Salinity	1.00
		Slow water movement	0.21	Slow water movement	0.21
21:					
Emlin	90	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
22:					
Fluvaquents	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Too sandy	1.00
		Flooding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
		Too sandy	1.00	Flooding	0.40
23:					
Green River	70	Very limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.01
		Too sandy	0.01		
Fluvaquents	15	Very limited		Very limited	
		Depth to saturated zone	1.00	Too sandy	1.00
		Flooding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
		Too sandy	1.00	Flooding	0.40
24:					
Hanksville	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.45	Slow water movement	0.45
		Salinity	0.13	Salinity	0.13
25:					
Holter	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.77	Large stones content	0.77
		Slow water movement	0.21	Slow water movement	0.21
Detra family	30	Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21
26:					
Ironco	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.99	Large stones content	0.99
		Dusty	0.50	Dusty	0.50
Mulgon	25	Not rated		Not rated	

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
27:					
Lakebench	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too sandy	0.76	Too sandy	0.76
Strell	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Too sandy	0.31	Too sandy	0.31
28:					
Lakebench	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
Yampa	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.77	Large stones content	0.77
29:					
Layoint	35	Somewhat limited		Somewhat limited	
		Too sandy	0.96	Too sandy	0.96
Moosed	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too sandy	0.96	Too sandy	0.96
		Slope	0.37	Slope	0.37
Berlake	20	Somewhat limited		Somewhat limited	
		Slope	0.01	Slope	0.01
30:					
Lodore	35	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
		Gravel content	0.09	Gravel content	0.09
		Slope	0.04	Slope	0.04
Mantlemine	25	Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04
Strell	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too sandy	0.96	Too sandy	0.96
		Slope	0.04	Slope	0.04

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
31:					
Mantlemine----------	85	Not limited		Not limited	
32:					
Mantlemine----------	55	Not limited		Not limited	
Emlin---------------	30	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
33:					
Massadona-----------	85	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Salinity	0.50	Salinity	0.50
34:					
Mespun--------------	85	Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00
		Slope	1.00	Slope	1.00
35:					
Mido----------------	85	Somewhat limited		Somewhat limited	
		Too sandy	0.76	Too sandy	0.76
		Slope	0.01	Slope	0.01
36:					
Mikim loam----------	55	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
Mikim silt loam-----	35	Somewhat limited		Somewhat limited	
		Salinity	0.50	Salinity	0.50
		Dusty	0.50	Dusty	0.50
37:					
Milok---------------	85	Not limited		Not limited	
38:					
Milok---------------	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
Solirec-------------	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
38:					
Strych	15	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
		Large stones content	0.08	Large stones content	0.08
39:					
Milok	70	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too sandy	0.01	Too sandy	0.01
Strych	20	Somewhat limited		Somewhat limited	
		Slope	0.96	Slope	0.96
		Gravel content	0.11	Gravel content	0.11
		Large stones content	0.08	Large stones content	0.08
40:					
Notlic	35	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
		Slope	0.16	Slope	0.16
		Large stones content	0.14	Large stones content	0.14
		Gravel content	0.06	Gravel content	0.06
Iogoon	30	Very limited		Not limited	
		Flooding	1.00		
Labyrinth	20	Very limited		Not limited	
		Flooding	1.00		
41:					
Paradox	95	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
42:					
Pensore	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
		Large stones content	0.08	Large stones content	0.08
Lodore	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
		Gravel content	0.09	Gravel content	0.09

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
42:					
Rock outcrop--------	15	Not rated		Not rated	
43:					
Pensore-------------	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
		Gravel content	0.09	Gravel content	0.09
Roto----------------	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel content	0.90	Gravel content	0.90
		Large stones content	0.01	Large stones content	0.01
44:					
Polychrome----------	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel content	1.00	Gravel content	1.00
		Dusty	0.50	Dusty	0.50
Milok---------------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
45:					
Redrock family------	55	Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04
Roto----------------	30	Somewhat limited		Somewhat limited	
		Gravel content	0.90	Gravel content	0.90
		Slope	0.04	Slope	0.04
		Large stones content	0.01	Large stones content	0.01
46:					
Riverwash-----------	85	Not rated		Not rated	
47:					
Rizno---------------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.96	Slope	0.96
		Large stones content	0.08	Large stones content	0.08

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
47:					
Windcomb	35	Very limited		Very limited	
		Gravel content	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.96	Slope	0.96
		Dusty	0.50	Dusty	0.50
Anasazi	15	Somewhat limited		Somewhat limited	
		Slope	0.96	Slope	0.96
48:					
Rock outcrop	85	Not rated		Not rated	
49:					
Rock outcrop	60	Not rated		Not rated	
Hackling	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Gravel content	0.09	Gravel content	0.09
50:					
Rock outcrop	50	Not rated		Not rated	
Haploborolls	35	Not rated		Not rated	
51:					
Rock outcrop	30	Not rated		Not rated	
Torriorthents	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.90	Gravel content	0.90
		Dusty	0.50	Dusty	0.50
		Large stones content	0.01	Large stones content	0.01
Ustorthents	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.05	Large stones content	0.05
52:					
Rock outcrop	50	Not rated		Not rated	

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
52:					
Ustochrepts	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.99	Large stones content	0.99
Cryochrepts	15	Very limited		Very limited	
		Slope	1.00	Large stones content	1.00
		Large stones content	1.00	Slope	1.00
53:					
Schoonover	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.99	Gravel content	0.99
		Slope	0.96	Slope	0.96
		Dusty	0.50	Dusty	0.50
Duffymont	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.98	Large stones content	0.98
		Slope	0.96	Slope	0.96
54:					
Sheecal	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
		Gravel content	0.04	Gravel content	0.04
55:					
Sheecal	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
		Gravel content	0.04	Gravel content	0.04
56:					
Shotnick	45	Somewhat limited		Somewhat limited	
		Salinity	0.13	Salinity	0.13
Uffens	45	Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00
		Salinity	1.00	Salinity	1.00
		Slow water movement	0.21	Slow water movement	0.21

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
57:					
Splimo	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Gravel content	0.81	Gravel content	0.81
		Dusty	0.50	Dusty	0.50
58:					
Splimo	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	1.00	Gravel content	1.00
		Dusty	0.50	Dusty	0.50
		Large stones content	0.01	Large stones content	0.01
Chew	35	Very limited		Very limited	
		Gravel content	1.00	Gravel content	1.00
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
Rock outcrop	15	Not rated		Not rated	
59:					
Stout	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
Rock outcrop	30	Not rated		Not rated	
60:					
Strell	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too sandy	0.96	Too sandy	0.96
		Slope	0.84	Slope	0.84
Marthaspeak	25	Somewhat limited		Somewhat limited	
		Too sandy	0.96	Too sandy	0.96
		Slope	0.84	Slope	0.84
Rock outcrop	15	Not rated		Not rated	

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
61:					
Strell	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Too sandy	0.96	Too sandy	0.96
Rock outcrop	20	Not rated		Not rated	
Marthaspeak	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too sandy	0.96	Too sandy	0.96
62:					
Strych	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
		Large stones content	0.08	Large stones content	0.08
Mellenthin	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.99	Large stones content	0.99
63:					
Tipper	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too sandy	0.87	Too sandy	0.87
Crustown	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Too sandy	0.87	Too sandy	0.87
64:					
Torriorthents	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Gravel content	0.90	Gravel content	0.90
		Dusty	0.50	Dusty	0.50
		Large stones content	0.01	Large stones content	0.01
Torripsamments	30	Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00
		Slope	1.00	Slope	1.00

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
65:					
Tsetaa family-------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.99	Large stones content	0.99
Bankard family------	30	Very limited		Very limited	
		Flooding	1.00	Too sandy	1.00
		Too sandy	1.00		
Fluvaquents---------	20	Very limited		Very limited	
		Depth to saturated zone	1.00	Too sandy	1.00
				Ponding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
		Ponding	1.00		
		Too sandy	1.00	Flooding	0.40
66:					
Turzo---------------	85	Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00
		Salinity	0.50	Salinity	0.50
		Dusty	0.50	Dusty	0.50
67:					
Ustic Torrifluvents-	60	Not limited		Not limited	
Ustic Torrifluvents-	25	Very limited		Not limited	
		Flooding	1.00		
68:					
Ustorthents, frigid-	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.05	Large stones content	0.05
Borolls-------------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
69:					
Utaline-------------	45	Very limited		Very limited	
		Gravel content	1.00	Gravel content	1.00
		Slope	1.00	Slope	1.00
Hanksville----------	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.45	Slow water movement	0.45
		Salinity	0.13	Salinity	0.13

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
70:					
Windcomb	45	Very limited		Very limited	
		Gravel content	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50
Badland	30	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	
71:					
Windcomb	35	Very limited		Very limited	
		Gravel content	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.96	Slope	0.96
		Dusty	0.50	Dusty	0.50
Rizno	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.96	Slope	0.96
		Large stones content	0.08	Large stones content	0.08
Anasazi	20	Somewhat limited		Somewhat limited	
		Slope	0.96	Slope	0.96
72:					
Yampa	85	Somewhat limited		Somewhat limited	
		Gravel content	0.09	Gravel content	0.09
		Slope	0.04	Slope	0.04
73:					
Yampa	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.77	Large stones content	0.77
Hackling	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00
		Gravel content	0.09	Gravel content	0.09
Mantlemine	20	Somewhat limited		Somewhat limited	
		Slope	0.96	Slope	0.96

Table 8.--Camp and picnic areas--continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
74:					
Yarts	90	Not limited		Not limited	
75:					
Yarts	45	Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00
Yarts	40	Not limited		Not limited	
76:					
Zillion	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
Yampa	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.77	Large stones content	0.77
Clyl	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel content	1.00	Gravel content	1.00
77:					
Water	95	Not rated		Not rated	

Table 9.--Nonirrigated land capabilities by map unit component

Map symbol and soil name	Comp. pct.	Land capability
		Nonirrigated
1:		
Abracon	45	7e
Solirec	40	7e
2:		
Arches	45	7e
Mespun	20	7e
3:		
Polychrome	30	8e
5:		
Bankard family	55	4c
Cameo	35	4c
6:		
Begay	85	7e
7:		
Begay	55	7e
Mespun	35	7e
8:		
Bodry	85	7e
9:		
Bondman	50	6e
10:		
Cameo	85	4c
11:		
Cameo	85	4c
12:		
Clapper	65	7e
Abracon	20	7e
13:		
Cortyzack	55	6e
Duffymont	30	7s
14:		
Cragnot	35	7e
Pensore	35	7e
Grapit	15	7e
15:		
Davtone	50	6e
Forsey	35	6e

Table 9.--Nonirrigated land capabilities by map unit component--Continued

Map symbol and soil name	Comp. pct.	Land capability: Nonirrigated
16:		
Dearjosh	50	4e
Lakebench	40	4e
17:		
Deaver	50	7e
Avalon	35	4e
18:		
Deaver	60	6e
Chipeta	30	6e
19:		
Detra	50	4e
Cortyzack	40	6e
20:		
Eghelm	55	7e
Uffens	35	7s
21:		
Emlin	90	4e
22:		
Fluvaquents	85	6w
23:		
Green River	70	7w
Fluvaquents	15	6w
24:		
Hanksville	85	7e
25:		
Holter	55	6e
Detra family	30	4e
26:		
Ironco	60	7e
Mulgon	25	7e
27:		
Lakebench	50	6e
Strell	35	7s
28:		
Lakebench	50	6e
Yampa	35	6e

Table 9.--Nonirrigated land capabilities by map unit component--Continued

Map symbol and soil name	Comp. pct.	Land capability (Nonirrigated)
29:		
Layoint	35	6s
Moosed	25	7s
Berlake	20	4e
30:		
Lodore	35	4e
Mantlemine	25	4e
Strell	25	7s
31:		
Mantlemine	85	4c
32:		
Mantlemine	55	4e
Emlin	30	4e
33:		
Massadona	85	7e
34:		
Mespun	85	7e
35:		
Mido	85	4e
36:		
Mikim loam	55	7e
Mikim silt loam	35	7e
37:		
Milok	85	4e
38:		
Milok	45	7e
Solirec	25	7e
Strych	15	7e
39:		
Milok	70	7e
Strych	20	7s
40:		
Notlic	35	7e
Iogoon	30	7s
Labyrinth	20	7s

Table 9.--Nonirrigated land capabilities by map unit component--Continued

Map symbol and soil name	Comp. pct.	Land capability: Nonirrigated
41:		
Paradox	95	7e
42:		
Pensore	40	7s
Lodore	30	6e
43:		
Pensore	60	7s
Roto	25	7s
44:		
Polychrome	50	7e
Milok	35	7e
45:		
Redrock family	55	4e
Roto	30	7s
47:		
Rizno	35	7s
Windcomb	35	7s
Anasazi	15	6e
49:		
Hackling	30	7e
50:		
Haploborolls	35	7e
51:		
Torriorthents	30	7e
Ustorthents	30	7e
52:		
Ustochrepts	25	8e
Cryochrepts	15	8e
53:		
Schoonover	55	6e
Duffymont	30	7s
54:		
Sheecal	85	7e
55:		
Sheecal	85	8e
56:		
Shotnick	45	7c

Table 9.--Nonirrigated land capabilities by map unit component--Continued

Map symbol and soil name	Comp. pct.	Land capability: Nonirrigated
56:		
Uffens	45	7s
57:		
Splimo	85	7e
58:		
Splimo	40	7e
Chew	35	7e
59:		
Stout	60	7s
60:		
Strell	45	7s
Marthaspeak	25	6e
61:		
Strell	45	7s
Marthaspeak	20	6e
62:		
Strych	50	6e
Mellenthin	35	7s
63:		
Tipper	55	7e
Crustown	35	7e
64:		
Torriorthents	60	7e
Torripsamments	30	7e
65:		
Tsetaa family	35	7s
Bankard family	30	4c
Fluvaquents	20	6w
66:		
Turzo	85	7s
67:		
Ustic Torrifluvents	60	7s
Ustic Torrifluvents	25	7s
68:		
Ustorthents, frigid	55	7e

Table 9.--Nonirrigated land capabilities by map unit component--Continued

Map symbol and soil name	Comp. pct.	Land capability Nonirrigated
68:		
Borolls	35	7e
69:		
Utaline	45	7e
Hanksville	40	7e
70:		
Windcomb	45	7s
71:		
Windcomb	35	7s
Rizno	30	7s
Anasazi	20	6e
72:		
Yampa	85	4e
73:		
Yampa	40	6e
Hackling	25	7e
Mantlemine	20	6e
74:		
Yarts	90	7e
75:		
Yarts	45	7s
Yarts	40	7e
76:		
Zillion	40	7e
Yampa	25	7e
Clyl	20	7e

Table 10.--Dwellings and Small Commercial Buildings

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Abracon	45	Not limited		Not limited		Somewhat limited	
						Slope	0.50
Solirec	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50
2:							
Arches	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Mespun	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
3:							
Badland	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Polychrome	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to hard bedrock	0.54		
				Depth to soft bedrock	0.29		
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
4:							
Badland	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Slope	1.00
Rock outcrop	35	Not rated		Not rated		Not rated	
5:							
Bankard family	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Cameo	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
6:							
Begay	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
7:							
Begay	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Mespun	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
8:							
Bodry	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Shrink-swell	1.00
				Depth to hard bedrock	0.42		
				Depth to soft bedrock	0.01		
9:							
Bondman	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	35	Not rated		Not rated		Not rated	

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
10:							
Cameo	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
11:							
Cameo	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
						Slope	0.12
12:							
Clapper	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Abracon	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
13:							
Cortyzack	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
Duffymont	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	0.96	Slope	0.96	Slope	1.00
14:							
Cragnot	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19
Pensore	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.96	Large stones content	0.96	Large stones content	0.96

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
14:							
Grapit	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.33	Large stones content	0.33	Large stones content	0.33
15:							
Davtone	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
Forsey	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.52	Large stones content	0.52	Large stones content	0.52
16:							
Dearjosh	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Lakebench	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
17:							
Deaver	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.10		
Avalon	35	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
18:							
Deaver	60	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.10		

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
18:							
Chipeta	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Depth to soft bedrock	1.00	Shrink-swell	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Slope	1.00
19:							
Detra	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50
Cortyzack	40	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Slope	0.01	Slope	1.00
		Slope	0.01			Shrink-swell	0.50
20:							
Eghelm	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Uffens	35	Not limited		Not limited		Not limited	
21:							
Emlin	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50
22:							
Fluvaquents	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
23:							
Green River	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.95		

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23:							
Fluvaquents	15	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
24:							
Hanksville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.46		
25:							
Holter	55	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
Detra family	30	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Slope	0.88
						Shrink-swell	0.50
26:							
Ironco	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Mulgon	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
27:							
Lakebench	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Strell	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
28:							
Lakebench	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Yampa	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
29:							
Layoint	35	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
						Slope	0.12
Moosed	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.37	Slope	0.37	Slope	1.00
Berlake	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.01	Slope	0.01	Slope	1.00
30:							
Lodore	35	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to hard bedrock	0.10
Mantlemine	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Strell	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
31:							
Mantlemine	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
32:							
Mantlemine	55	Not limited		Not limited		Somewhat limited Slope	0.88
Emlin	30	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.88 0.50
33:							
Massadona	85	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell Slope	1.00 0.12
34:							
Mespun	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
35:							
Mido	85	Somewhat limited Slope	0.01	Somewhat limited Slope	0.01	Very limited Slope	1.00
36:							
Mikim loam	55	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Mikim silt loam	35	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
37:							
Milok	85	Not limited		Not limited		Somewhat limited Slope	0.50
38:							
Milok	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Solirec	25	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Strych	15	Very limited Slope Large stones content	1.00 1.00	Very limited Slope Large stones content	1.00 1.00	Very limited Slope Large stones content	1.00 1.00

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
39:							
Milok	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Strych	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
		Large stones content	0.93	Large stones content	0.93	Large stones content	0.93
40:							
Notlic	35	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.40	Large stones content	0.40	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.40
Iogoon	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Large stones content	0.04	Depth to saturated zone	0.61	Large stones content	0.04
				Large stones content	0.04		
Labyrinth	20	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.61		
41:							
Paradox	95	Not limited		Not limited		Somewhat limited	
						Slope	0.50
42:							
Pensore	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
42:							
Lodore	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Slope	1.00	Depth to hard bedrock	0.10
Rock outcrop	15	Not rated		Not rated		Not rated	
43:							
Pensore	60	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.96	Large stones content	0.96	Large stones content	0.96
Roto	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.97	Slope	1.00	Depth to hard bedrock	0.97
		Large stones content	0.08	Large stones content	0.08	Large stones content	0.08
44:							
Polychrome	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.35	Large stones content	0.35	Large stones content	0.35
				Depth to soft bedrock	0.01		
Milok	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
45:							
Redrock family	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
45:							
Roto	30	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Slope	1.00
		Large stones content	0.08	Large stones content	0.08	Depth to hard bedrock	0.97
		Slope	0.04	Slope	0.04	Large stones content	0.08
46:							
Riverwash	85	Not rated		Not rated		Not rated	
47:							
Rizno	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Slope	0.96	Slope	1.00
		Large stones content	0.32	Large stones content	0.32	Large stones content	0.32
Windcomb	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Slope	0.96	Slope	1.00
Anasazi	15	Somewhat limited		Very limited		Very limited	
		Slope	0.96	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Slope	0.96	Depth to hard bedrock	0.90
48:							
Rock outcrop	85	Not rated		Not rated		Not rated	
49:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Hackling	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to hard bedrock	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
50:							
Rock outcrop--------	50	Not rated		Not rated		Not rated	
Haploborolls--------	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to hard bedrock	1.00
		Organic matter content	1.00	Large stones content	0.01	Organic matter content	1.00
		Large stones content	0.01			Large stones content	0.01
51:							
Rock outcrop--------	30	Not rated		Not rated		Not rated	
Torriorthents-------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.01
Ustorthents---------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.20	Depth to hard bedrock	1.00	Large stones content	0.20
		Depth to hard bedrock	0.20	Large stones content	0.20	Depth to hard bedrock	0.20
52:							
Rock outcrop--------	50	Not rated		Not rated		Not rated	
Ustochrepts---------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19
Cryochrepts---------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53:							
Schoonover	55	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Slope	0.96	Slope	1.00
Duffymont	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	0.96	Slope	0.96	Slope	1.00
54:							
Sheecal	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.54	Slope	1.00	Depth to hard bedrock	0.54
		Large stones content	0.29	Large stones content	0.29	Large stones content	0.29
55:							
Sheecal	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.99	Depth to hard bedrock	1.00	Depth to hard bedrock	0.99
		Large stones content	0.24	Large stones content	0.24	Large stones content	0.24
56:							
Shotnick	45	Not limited		Not limited		Not limited	
Uffens	45	Not limited		Not limited		Not limited	
57:							
Splimo	85	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
58:							
Splimo	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Chew	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.01	Slope	1.00	Depth to hard bedrock	0.01
Rock outcrop	15	Not rated		Not rated		Not rated	
59:							
Stout	60	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
60:							
Strell	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.84	Slope	0.84	Slope	1.00
Marthaspeak	25	Somewhat limited		Very limited		Very limited	
		Slope	0.84	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	0.84	Depth to hard bedrock	0.20
Rock outcrop	15	Not rated		Not rated		Not rated	
61:							
Strell	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
61:							
Marthaspeak---------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	1.00	Depth to hard bedrock	0.20
62:							
Strych--------------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Mellenthin----------	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
63:							
Tipper--------------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.84		
Crustown------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Depth to soft bedrock	1.00
64:							
Torriorthents-------	60	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to hard bedrock	1.00
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.01
Torripsamments------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Slope	1.00	Depth to hard bedrock	0.79

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
65:							
Tsetaa family-------	35	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Bankard family------	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
						Slope	0.12
Fluvaquents---------	20	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
66:							
Turzo---------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
67:							
Ustic Torrifluvents-	60	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
						Slope	0.12
Ustic Torrifluvents-	25	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
						Slope	0.12
68:							
Ustorthents, frigid-	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.20	Depth to hard bedrock	1.00	Large stones content	0.20
		Depth to hard bedrock	0.20	Large stones content	0.20	Depth to hard bedrock	0.20

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68:							
Borolls	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
69:							
Utaline	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Hanksville	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.46		
70:							
Windcomb	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to hard bedrock	1.00
Badland	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Depth to soft bedrock	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
71:							
Windcomb	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Slope	0.96	Slope	1.00
Rizno	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Slope	0.96	Slope	1.00
		Large stones content	0.32	Large stones content	0.32	Large stones content	0.32

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
71:							
Anasazi	20	Somewhat limited		Very limited		Very limited	
		Slope	0.96	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Slope	0.96	Depth to hard bedrock	0.90
72:							
Yampa	85	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.95	Large stones content	0.95	Slope	1.00
		Slope	0.04	Slope	0.04	Large stones content	0.95
73:							
Yampa	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Hackling	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Mantlemine	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
74:							
Yarts	90	Not limited		Not limited		Somewhat limited	
						Slope	0.50
75:							
Yarts	45	Not limited		Not limited		Not limited	
Yarts	40	Not limited		Not limited		Not limited	

Table 10.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
76:							
Zillion	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.72	Large stones content	0.72	Large stones content	0.72
Yampa	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Clyl	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Large stones content	0.03	Large stones content	0.03
77:							
Water	95	Not rated		Not rated		Not rated	

Table 11.--Sewage Disposal

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Abracon	45	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Slope	0.92
				Seepage	0.53
Solirec	40	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Slope	0.92
				Seepage	0.53
2:					
Arches	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00		
				Slope	1.00
Mespun	20	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
		Slope	1.00		
Rock outcrop	20	Not rated		Not rated	
3:					
Badland	40	Very limited		Not rated	
		Depth to bedrock	1.00		
		Slope	1.00		
Polychrome	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
		Slow water movement	0.46	Slope	1.00
				Depth to hard bedrock	0.54
				Seepage	0.53
Rock outcrop	20	Not rated		Not rated	
4:					
Badland	50	Very limited		Not rated	
		Depth to bedrock	1.00		
		Slope	1.00		
Rock outcrop	35	Not rated		Not rated	
5:					
Bankard family	55	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Flooding	0.40
		Flooding	0.40	Slope	0.08
Cameo	35	Somewhat limited		Very limited	
		Flooding	0.40	Seepage	1.00
				Flooding	0.40
				Slope	0.08

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
6:					
Begay	85	Somewhat limited		Very limited	
		Slope	0.04	Seepage	1.00
				Slope	1.00
7:					
Begay	55	Somewhat limited		Very limited	
		Slope	0.04	Seepage	1.00
				Slope	1.00
Mespun	35	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
8:					
Bodry	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Depth to hard bedrock	0.42
9:					
Bondman	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
Rock outcrop	35	Not rated		Not rated	
10:					
Cameo	85	Somewhat limited		Very limited	
		Flooding	0.40	Seepage	1.00
				Flooding	0.40
				Slope	0.08
11:					
Cameo	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.72	Slope	0.68
		Flooding	0.40	Flooding	0.40
				Seepage	0.28
12:					
Clapper	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.46	Seepage	0.53
Abracon	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	0.53

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
13:					
Cortyzack	55	Somewhat limited		Very limited	
		Slope	0.96	Slope	1.00
		Slow water movement	0.46	Seepage	0.53
Duffymont	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	1.00	Large stones content	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	0.96	Slope	1.00
14:					
Cragnot	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Large stones content	0.84
		Large stones content	0.19	Seepage	0.28
Pensore	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.96	Seepage	1.00
				Large stones content	1.00
Grapit	15	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	1.00
		Large stones content	0.33	Large stones content	0.03
15:					
Davtone	50	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
Forsey	35	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Large stones content	0.52	Large stones content	0.99
		Slow water movement	0.46		
16:					
Dearjosh	50	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
16:					
Lakebench	40	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
17:					
Deaver	50	Very limited		Very limited	
		Slow water movement	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
Avalon	35	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.04		
18:					
Deaver	60	Very limited		Very limited	
		Slow water movement	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
Chipeta	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
19:					
Detra	50	Somewhat limited		Very limited	
		Slow water movement	0.72	Seepage	1.00
				Slope	1.00
Cortyzack	40	Somewhat limited		Very limited	
		Slow water movement	0.46	Slope	1.00
		Slope	0.01	Seepage	0.53
20:					
Eghelm	55	Somewhat limited		Very limited	
		Flooding	0.40	Seepage	1.00
				Flooding	0.40
Uffens	35	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
21:					
Emlin	90	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
22:					
Fluvaquents	85	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
		Seepage, bottom layer	1.00		
23:					
Green River	70	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	0.40	Seepage	1.00
				Flooding	0.40
Fluvaquents	15	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
		Seepage, bottom layer	1.00		
24:					
Hanksville	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
25:					
Holter	55	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Seepage	0.53
Detra family	30	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Seepage	0.53
26:					
Ironco	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00	Large stones content	1.00
		Large stones content	1.00		
Mulgon	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.72	Seepage	1.00

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
27:					
Lakebench	50	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
Strell	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
28:					
Lakebench	50	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
Yampa	35	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.72		
29:					
Layoint	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.68
Moosed	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	0.37	Slope	1.00
Berlake	20	Somewhat limited		Very limited	
		Slow water movement	0.72	Seepage	1.00
		Slope	0.01	Slope	1.00
30:					
Lodore	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.04	Seepage	1.00
				Slope	1.00
Mantlemine	25	Somewhat limited		Very limited	
		Slow water movement	0.72	Slope	1.00
		Slope	0.04	Seepage	0.53

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
30:					
Strell	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
31:					
Mantlemine	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.72	Slope	0.68
				Seepage	0.53
32:					
Mantlemine	55	Somewhat limited		Very limited	
		Slow water movement	0.72	Slope	1.00
				Seepage	0.53
Emlin	30	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
33:					
Massadona	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
34:					
Mespun	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
35:					
Mido	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.01	Slope	1.00
36:					
Mikim loam	55	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Seepage	0.53
Mikim silt loam	35	Somewhat limited		Somewhat limited	
		Slow water movement	0.72	Seepage	0.28
				Slope	0.08
37:					
Milok	85	Not limited		Very limited	
				Seepage	1.00
				Slope	0.92
38:					
Milok	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
38:					
Solirec	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Seepage	1.00
Strych	15	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Seepage	1.00
				Large stones content	1.00
39:					
Milok	70	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
Strych	20	Somewhat limited		Very limited	
		Slope	0.96	Seepage	1.00
		Large stones content	0.93	Large stones content	1.00
				Slope	1.00
40:					
Notlic	35	Somewhat limited		Very limited	
		Slow water movement	0.46	Slope	1.00
		Large stones content	0.40	Large stones content	1.00
		Slope	0.16	Seepage	0.53
Iogoon	30	Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Seepage	1.00
		Flooding	0.40	Depth to saturated zone	0.71
		Large stones content	0.04	Flooding	0.40
				Slope	0.32
				Large stones content	0.32
Labyrinth	20	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.71
		Flooding	0.40	Flooding	0.40
				Slope	0.32
41:					
Paradox	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Slope	0.92
				Seepage	0.53
42:					
Pensore	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Seepage	1.00
				Large stones content	1.00

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
42:					
Lodore	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
Rock outcrop	15	Not rated		Not rated	
43:					
Pensore	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.96	Seepage	1.00
				Large stones content	1.00
Roto	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Large stones content	0.08	Large stones content	0.76
44:					
Polychrome	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	0.53
		Large stones content	0.35	Large stones content	0.28
Milok	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
45:					
Redrock family	55	Somewhat limited		Very limited	
		Slow water movement	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
Roto	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Large stones content	0.08	Seepage	1.00
		Slope	0.04	Large stones content	0.76
46:					
Riverwash	85	Not rated		Not rated	

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
47:					
Rizno	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Seepage	1.00
		Large stones content	0.32	Slope	1.00
				Large stones content	0.53
Windcomb	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Slope	1.00
				Seepage	0.53
Anasazi	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.96	Slope	1.00
				Large stones content	0.01
48:					
Rock outcrop	85	Not rated		Not rated	
49:					
Rock outcrop	60	Not rated		Not rated	
Hackling	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Seepage	1.00
				Large stones content	1.00
50:					
Rock outcrop	50	Not rated		Not rated	
Haploborolls	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	1.00	Large stones content	0.01
		Large stones content	0.01		
51:					
Rock outcrop	30	Not rated		Not rated	
Torriorthents	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.01	Seepage	1.00
				Large stones content	0.14

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
51:					
Ustorthents	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Large stones content	0.96
		Large stones content	0.20	Seepage	0.28
52:					
Rock outcrop	50	Not rated		Not rated	
Ustochrepts	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Large stones content	1.00
		Large stones content	0.19	Seepage	0.53
Cryochrepts	15	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.46	Seepage	0.53
53:					
Schoonover	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Slope	1.00
Duffymont	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	1.00	Large stones content	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	0.96	Slope	1.00
54:					
Sheecal	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Large stones content	0.74
		Large stones content	0.29	Seepage	0.53
55:					
Sheecal	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.24	Large stones content	0.96
				Seepage	0.53

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
56:					
Shotnick	45	Not limited		Very limited	
				Seepage	1.00
				Slope	0.08
Uffens	45	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
57:					
Splimo	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	1.00	Slope	1.00
		Slope	1.00	Large stones content	1.00
58:					
Splimo	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53
				Large stones content	0.06
Chew	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
59:					
Stout	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	1.00		
Rock outcrop	30	Not rated		Not rated	
60:					
Strell	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.84		
Marthaspeak	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
Rock outcrop	15	Not rated		Not rated	

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
61:					
Strell	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	1.00		
Rock outcrop	20	Not rated		Not rated	
Marthaspeak	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
62:					
Strych	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Seepage	1.00
				Large stones content	1.00
Mellenthin	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	1.00	Slope	1.00
		Slope	1.00	Large stones content	1.00
63:					
Tipper	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Crustown	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
64:					
Torriorthents	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.01	Seepage	1.00
				Large stones content	0.14
Torripsamments	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
65:					
Tsetaa family-------	35	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Slope	1.00
Bankard family------	30	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Flooding	0.40	Slope	0.68
				Flooding	0.40
Fluvaquents---------	20	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
		Seepage, bottom layer	1.00		
66:					
Turzo---------------	85	Very limited		Not limited	
		Slow water movement	1.00		
67:					
Ustic Torrifluvents-	60	Very limited		Very limited	
		Filtering capacity	1.00	Large stones content	1.00
		Large stones content	1.00	Seepage	1.00
				Slope	0.68
Ustic Torrifluvents-	25	Very limited		Very limited	
		Filtering capacity	1.00	Large stones content	1.00
		Large stones content	1.00	Seepage	1.00
		Flooding	0.40	Slope	0.68
				Flooding	0.40
68:					
Ustorthents, frigid-	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Large stones content	0.96
		Large stones content	0.20	Seepage	0.28
Borolls-------------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Seepage	1.00

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
69:					
Utaline	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	0.53
Hanksville	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
70:					
Windcomb	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53
Badland	30	Very limited		Not rated	
		Depth to bedrock	1.00		
		Slope	1.00		
Rock outcrop	15	Not rated		Not rated	
71:					
Windcomb	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Slope	1.00
				Seepage	0.53
Rizno	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Seepage	1.00
		Large stones content	0.32	Slope	1.00
				Large stones content	0.53
Anasazi	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.96	Slope	1.00
				Large stones content	0.01
72:					
Yampa	85	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Large stones content	0.95	Slope	1.00
		Slow water movement	0.72	Large stones content	0.99
		Slope	0.04		

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
73:					
Yampa	40	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.72		
Hackling	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Seepage	1.00
		Large stones content	1.00	Slope	1.00
				Large stones content	1.00
Mantlemine	20	Somewhat limited		Very limited	
		Slope	0.96	Slope	1.00
		Slow water movement	0.72	Seepage	0.53
74:					
Yarts	90	Not limited		Very limited	
				Seepage	1.00
				Slope	0.92
75:					
Yarts	45	Not limited		Very limited	
				Seepage	1.00
				Slope	0.32
Yarts	40	Not limited		Very limited	
				Seepage	1.00
				Slope	0.32
76:					
Zillion	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.72	Seepage	0.53
		Slow water movement	0.46	Large stones content	0.01
Yampa	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.72		
Clyl	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	0.53
		Large stones content	0.03		

Table 11.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
77: Water	95	Not rated		Not rated	

Table 12.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1:				
Abracon	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Solirec	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
2:				
Arches	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too sandy depth to rock
Mespun	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
3:				
Badland	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Polychrome	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: excess salt slope small stones
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
4:				
Badland	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
5:				
Bankard family	Good	Probable	Improbable: too sandy	Poor: too sandy
Cameo	Good	Improbable: excess fines	Improbable: excess fines	Good
6:				
Begay	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
7:				
Begay	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Mespun	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
8:				
Bodry	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey
9:				
Bondman	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Rock outcrop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
10:				
Cameo	Good	Improbable: excess fines	Improbable: excess fines	Good
11:				
Cameo	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
12:				
Clapper	Poor: large stones slope	Improbable: large stones excess fines	Improbable: large stones excess fines	Poor: area reclaim large stones slope

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
12:				
Abracon	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
13:				
Cortyzack	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope too clayey
Duffymont	Poor: large stones depth to rock	Improbable: large stones excess fines	Improbable: large stones excess fines	Poor: large stones depth to rock
14:				
Cragnot	Poor: slope	Improbable: small stones	Probable	Poor: area reclaim slope small stones
Pensore	Poor: large stones slope depth to rock	Improbable: small stones	Improbable: thin layer	Poor: slope small stones depth to rock
Grapit	Poor: slope	Improbable: large stones excess fines	Improbable: large stones excess fines	Poor: area reclaim slope small stones
15:				
Davtone	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope
Forsey	Fair: large stones slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
16:				
Dearjosh	Good	Probable	Improbable: too sandy	Poor: too sandy
Lakebench	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
17:				
Deaver	Poor: low strength, shrink-swell, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, too clayey
Avalon	Fair: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: slope, small stones, too clayey
18:				
Deaver	Poor: low strength, shrink-swell, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, too clayey
Chipeta	Poor: low strength, shrink-swell, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, too clayey, depth to rock
19:				
Detra	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey
Cortyzack	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
20:				
Eghelm	Good	Probable	Improbable: too sandy	Fair: small stones, thin layer
Uffens	Good	Probable	Improbable: too sandy	Poor: excess sodium, excess salt
21:				
Emlin	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim, small stones, too clayey

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
22:				
Fluvaquents	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
23:				
Green River	Fair: wetness	Probable	Probable	Poor: too sandy
Fluvaquents	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
24:				
Hanksville	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: excess salt slope too clayey
25:				
Holter	Poor: large stones	Improbable: large stones excess fines	Improbable: large stones excess fines	Poor: area reclaim slope small stones
Detra family	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim
26:				
Ironco	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
Mulgon	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
27:				
Lakebench	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Strell	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too sandy depth to rock

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
28:				
Lakebench	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Yampa	Poor: large stones	Improbable: small stones	Probable	Poor: area reclaim slope small stones
29:				
Layoint	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer too sandy depth to rock
Moosed	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Berlake	Good	Probable	Improbable: too sandy	Poor: small stones
30:				
Lodore	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Mantlemine	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope too clayey
Strell	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too sandy depth to rock
31:				
Mantlemine	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
32:				
Mantlemine	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Emlin	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones too clayey

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
33:				
Massadona	Poor: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
34:				
Mespun	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
35:				
Mido	Good	Improbable: excess fines	Improbable: excess fines	Fair: too sandy
36:				
Mikim loam	Fair: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey
Mikim silt loam	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
37:				
Milok	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
38:				
Milok	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Solirec	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Strych	Poor: large stones, slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim, slope, small stones
39:				
Milok	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Strych	Fair: large stones	Probable	Probable	Poor: area reclaim, small stones

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
40:				
Notlic	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Iogoon	Fair: large stones	Improbable: small stones	Improbable: thin layer	Poor: small stones
Labyrinth	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones too sandy
41:				
Paradox	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
42:				
Pensore	Poor: large stones depth to rock	Improbable: small stones	Improbable: thin layer	Poor: slope small stones depth to rock
Lodore	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
Rock outcrop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
43:				
Pensore	Poor: large stones depth to rock	Improbable: small stones	Improbable: thin layer	Poor: slope small stones depth to rock
Roto	Poor: depth to rock	Improbable: small stones	Improbable: thin layer	Poor: slope small stones
44:				
Polychrome	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: excess salt slope small stones

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
44:				
Milok	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
45:				
Redrock family	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim
Roto	Poor: depth to rock	Improbable: small stones	Improbable: thin layer	Poor: small stones
46:				
Riverwash	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
47:				
Rizno	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: large stones depth to rock
Windcomb	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
Anasazi	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
48:				
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
49:				
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Hackling	Poor: large stones slope depth to rock	Improbable: large stones	Improbable: large stones	Poor: slope small stones depth to rock
50:				
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
50:				
Haploborolls	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: large stones, slope, depth to rock
51:				
Rock outcrop	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
Torriorthents	Poor: slope, depth to rock	Improbable: small stones	Improbable: thin layer	Poor: small stones, too clayey, depth to rock
Ustorthents	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: large stones, slope, depth to rock
52:				
Rock outcrop	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
Ustochrepts	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim, slope, small stones
Cryochrepts	Poor: large stones, slope	Improbable: large stones, excess fines	Improbable: large stones, excess fines	Poor: area reclaim, slope, small stones
53:				
Schoonover	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones, depth to rock
Duffymont	Poor: large stones, depth to rock	Improbable: large stones, excess fines	Improbable: large stones, excess fines	Poor: large stones, depth to rock

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
54:				
Sheecal	Poor: slope, depth to rock	Improbable: large stones, excess fines	Improbable: large stones, excess fines	Poor: slope, small stones
55:				
Sheecal	Poor: slope, depth to rock	Improbable: large stones, excess fines	Improbable: large stones, excess fines	Poor: slope, small stones
56:				
Shotnick	Good	Improbable: excess fines	Improbable: excess fines	Fair: excess salt
Uffens	Good	Probable	Improbable: too sandy	Poor: excess sodium, excess salt
57:				
Splimo	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, small stones, depth to rock
58:				
Splimo	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, small stones, depth to rock
Chew	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, small stones
Rock outcrop	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
59:				
Stout	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
Rock outcrop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
60:				
Strell	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, depth to rock
Marthaspeak	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Rock outcrop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
61:				
Strell	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, too sandy, depth to rock
Rock outcrop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
Marthaspeak	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, too sandy
62:				
Strych	Poor: large stones	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim, slope, small stones
Mellenthin	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, small stones, depth to rock
63:				
Tipper	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Crustown	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, too sandy, depth to rock

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
64:				
Torriorthents	Poor: slope, depth to rock	Improbable: small stones	Improbable: thin layer	Poor: small stones, too clayey, depth to rock
Torripsamments	Poor: slope, depth to rock	Improbable: thin layer	Improbable: too sandy	Poor: slope, too sandy
65:				
Tsetaa family	Poor: large stones	Improbable: large stones	Improbable: large stones	Poor: area reclaim, small stones, too sandy
Bankard family	Good	Probable	Improbable: too sandy	Poor: too sandy
Fluvaquents	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, wetness
66:				
Turzo	Fair: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium, excess salt
67:				
Ustic Torrifluvents	Poor: large stones	Improbable: large stones	Improbable: large stones	Poor: area reclaim, small stones, too sandy
Ustic Torrifluvents	Poor: large stones	Improbable: large stones	Improbable: large stones	Poor: area reclaim, small stones, too sandy
68:				
Ustorthents, frigid	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: large stones, slope, depth to rock
Borolls	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, small stones

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
69:				
Utaline	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
Hanksville	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: excess salt slope too clayey
70:				
Windcomb	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock
Badland	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
71:				
Windcomb	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
Rizno	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: large stones depth to rock
Anasazi	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
72:				
Yampa	Poor: large stones	Improbable: small stones	Probable	Poor: area reclaim small stones
73:				
Yampa	Poor: large stones	Improbable: small stones	Probable	Poor: area reclaim slope small stones

Table 12.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
73:				
Hackling	Poor: large stones, slope, depth to rock	Improbable: large stones	Improbable: large stones	Poor: slope, small stones, depth to rock
Mantlemine	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope, too clayey
74:				
Yarts	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
75:				
Yarts	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
Yarts	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
76:				
Zillion	Poor: slope	Improbable: large stones, excess fines	Improbable: large stones, excess fines	Poor: area reclaim, slope, small stones
Yampa	Poor: large stones, slope	Improbable: small stones	Probable	Poor: area reclaim, slope, small stones
Clyl	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim, slope, small stones
77:				
Water	---	---	---	---

Table 13.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1:							
Abracon	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily too arid
Solirec	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
2:							
Arches	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope soil blowing depth to rock	Limitation: slope too arid droughty
Mespun	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope too arid droughty
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
3:							
Badland	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Polychrome	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
4:							
Badland	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
5:							
Bankard family	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake droughty	Limitation: too sandy soil blowing	Limitation: too arid droughty
Cameo	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake soil blowing	Limitation: soil blowing	Limitation: too arid
6:							
Begay	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
7:							
Begay	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
Mespun	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope too arid droughty
8:							
Bodry	Severe: slope	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
9:							
Bondman	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope depth to rock	Limitation: slope too arid
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
10:							
Cameo	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake soil blowing	Limitation: soil blowing	Limitation: too arid
11:							
Cameo	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
12:							
Clapper	Severe: seepage slope	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
Abracon	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
13:							
Cortyzack	Severe: slope	Moderate: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
Duffymont	Severe: slope depth to rock	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
14:							
Cragnot	Severe: slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope droughty
Pensore	Severe: slope depth to rock	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Grapit	Severe: seepage slope	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
15:							
Davtone	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
Forsey	Severe: seepage slope	Moderate: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope soil blowing	Limitation: large stones slope droughty
16:							
Dearjosh	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope too arid droughty
Lakebench	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope
17:							
Deaver	Severe: slope	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope depth to rock	Limitation: slope too arid depth to rock

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
17:							
Avalon	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
18:							
Deaver	Severe: slope	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope depth to rock	Limitation: slope too arid depth to rock
Chipeta	Severe: slope depth to rock	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope depth to rock	Limitation: slope too arid depth to rock
19:							
Detra	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Favorable
Cortyzack	Moderate: seepage slope	Moderate: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable	Favorable
20:							
Eghelm	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily droughty	Limitation: erodes easily too sandy	Limitation: erodes easily too arid droughty
Uffens	Severe: seepage	Severe: excess sodium seepage piping	Severe: no water	Limitation: deep to water	Limitation: excess sodium soil blowing droughty	Limitation: erodes easily too sandy soil blowing	Limitation: excess sodium excess salt too arid
21:							
Emlin	Moderate: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
22:							
Fluvaquents	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Limitation: flooding ponding cutbanks cave	Limitation: fast intake ponding droughty	Limitation: too sandy soil blowing ponding	Limitation: wetness droughty
23:							
Green River	Severe: seepage	Severe: piping	Moderate: slow refill cutbanks cave deep to water	Limitation: frost action cutbanks cave	Limitation: wetness droughty	Limitation: erodes easily too sandy wetness	Limitation: erodes easily excess salt too arid
Fluvaquents	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Limitation: flooding ponding cutbanks cave	Limitation: fast intake ponding droughty	Limitation: too sandy soil blowing ponding	Limitation: wetness droughty
24:							
Hanksville	Severe: slope	Moderate: hard to pack piping thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: excess salt slope too arid
25:							
Holter	Severe: slope	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope droughty
Detra family	Moderate: seepage slope	Slight	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable	Favorable
26:							
Ironco	Severe: slope	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
26:							
Mulgon	Severe: slope	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope droughty
27:							
Lakebench	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope
Strell	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope depth to rock droughty
28:							
Lakebench	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope
Yampa	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
29:							
Layoint	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy soil blowing depth to rock	Limitation: too arid depth to rock droughty
Moosed	Severe: slope depth to rock	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope depth to rock droughty
Berlake	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
30:							
Lodore	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope too arid
Mantlemine	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope
Strell	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope depth to rock droughty
31:							
Mantlemine	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
32:							
Mantlemine	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
Emlin	Moderate: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
33:							
Massadona	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily percs slowly	Limitation: erodes easily excess salt too arid
34:							
Mespun	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope too arid droughty

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
35:							
Mido	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: soil blowing	Limitation: too arid droughty
36:							
Mikim loam	Moderate: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily too arid
Mikim silt loam	Moderate: seepage	Severe: excess sodium piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily excess sodium	Limitation: erodes easily	Limitation: excess sodium excess salt too arid
37:							
Milok	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
38:							
Milok	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
Solirec	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Strych	Severe: seepage slope	Severe: large stones seepage piping	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
39:							
Milok	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope too arid
Strych	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope droughty
40:							
Notlic	Severe: slope	Moderate: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope droughty
Iogoon	Severe: seepage	Severe: seepage	Moderate: large stones deep to water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: erodes easily large stones soil blowing	Limitation: erodes easily large stones droughty
Labyrinth	Severe: seepage	Severe: piping	Severe: cutbanks cave	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: erodes easily soil blowing	Limitation: erodes easily droughty
41:							
Paradox	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily too arid
42:							
Pensore	Severe: slope depth to rock	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Lodore	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope too arid
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
43:							
Pensore	Severe: slope depth to rock	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Roto	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
44:							
Polychrome	Severe: slope	Moderate: excess salt large stones thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Milok	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope too arid
45:							
Redrock family	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope
Roto	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
46:							
Riverwash	Severe: seepage	Severe: seepage piping wetness	Moderate: cutbanks cave	Limitation: flooding cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness soil blowing	Limitation: wetness droughty
47:							
Rizno	Severe: slope depth to rock	Severe: large stones piping	Severe: no water	Limitation: deep to water	Limitation: large stones slope soil blowing	Limitation: large stones slope depth to rock	Limitation: large stones slope too arid
Windcomb	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope too arid droughty
Anasazi	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope too arid
48:							
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
49:							
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Hackling	Severe: slope depth to rock	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
50:							
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Haploborolls	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
51:							
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
51:							
Torriorthents	Severe: slope depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope too arid
Ustorthents	Severe: slope depth to rock	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope depth to rock	Limitation: large stones slope depth to rock	Limitation: large stones slope depth to rock
52:							
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Ustochrepts	Severe: slope	Moderate: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope droughty
Cryochrepts	Severe: slope	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope droughty
53:							
Schoonover	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Duffymont	Severe: slope depth to rock	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
54:							
Sheecal	Severe: slope	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
55:							
Sheecal	Severe: slope	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
56:							
Shotnick	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: erodes easily soil blowing	Limitation: erodes easily excess salt droughty
Uffens	Severe: seepage	Severe: excess sodium seepage piping	Severe: no water	Limitation: deep to water	Limitation: excess sodium soil blowing droughty	Limitation: erodes easily too sandy soil blowing	Limitation: excess sodium excess salt too arid
57:							
Splimo	Severe: slope depth to rock	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
58:							
Splimo	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Chew	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope too arid depth to rock
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
59:							
Stout	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope soil blowing depth to rock	Limitation: slope depth to rock droughty
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
60:							
Strell	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope depth to rock droughty
Marthaspeak	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
61:							
Strell	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope depth to rock droughty
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Marthaspeak	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty
62:							
Strych	Severe: seepage slope	Severe: large stones seepage piping	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
Mellenthin	Severe: slope depth to rock	Severe: large stones seepage piping	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope too arid
63:							
Tipper	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope soil blowing depth to rock	Limitation: slope too arid droughty
Crustown	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty
64:							
Torriorthents	Severe: slope depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope too arid
Torripsamments	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty
65:							
Tsetaa family	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope too arid
Bankard family	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy soil blowing	Limitation: too arid droughty

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
55:							
Fluvaquents	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Limitation: flooding ponding cutbanks cave	Limitation: fast intake ponding droughty	Limitation: too sandy soil blowing ponding	Limitation: wetness droughty
66:							
Turzo	Slight	Severe: excess sodium piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily excess sodium	Limitation: erodes easily	Limitation: excess sodium excess salt too arid
67:							
Ustic Torrifluvents	Severe: seepage	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones too sandy soil blowing	Limitation: large stones too arid droughty
Ustic Torrifluvents	Severe: seepage	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones too sandy soil blowing	Limitation: large stones too arid droughty
68:							
Ustorthents, frigid	Severe: slope depth to rock	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope depth to rock	Limitation: large stones slope depth to rock	Limitation: large stones slope depth to rock
Borolls	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: large stones slope depth to rock	Limitation: large stones slope depth to rock
69:							
Utaline	Severe: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: slope	Limitation: slope too arid droughty
Hanksville	Severe: slope	Moderate: hard to pack piping thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: excess salt slope too arid
70:							
Windcomb	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope too arid droughty
Badland	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Rock outcrop	Severe: slope depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
71:							
Windcomb	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope too arid droughty
Rizno	Severe: slope depth to rock	Severe: large stones piping	Severe: no water	Limitation: deep to water	Limitation: large stones slope soil blowing	Limitation: large stones slope depth to rock	Limitation: large stones slope too arid
Anasazi	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope too arid
72:							
Yampa	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
73:							
Yampa	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
Hackling	Severe: slope depth to rock	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Mantlemine	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope
74:							
Yarts	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Favorable	Limitation: too arid
75:							
Yarts	Severe: seepage	Severe: excess sodium piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: soil blowing	Limitation: excess sodium too arid droughty
Yarts	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Favorable	Limitation: too arid
76:							
Zillion	Severe: slope	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope droughty
Yampa	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
Clyl	Severe: slope	Moderate: large stones piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope	Limitation: large stones slope droughty
77:							
Water	---	---	---	---	---	---	---

Table 14.--Engineering Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
1:												
Abracon---------	0-4	Loam	CL-ML	A-4	0	0	85-100	80-100	65-95	50-75	20-30	5-10
	4-10	Loam	CL-ML, ML	A-4	0	0	90-100	85-100	70-95	55-75	20-30	NP-10
	10-21	Loam, clay loam	CL-ML, ML	A-4	0	0	85-100	80-100	65-100	50-80	20-30	NP-10
	21-35	Loam, clay loam	CL-ML, ML	A-4	0	0	85-100	80-100	65-100	50-80	20-30	NP-10
	35-51	Loam, clay loam	CL-ML, ML	A-4	0	0	85-100	80-100	65-100	50-80	20-30	NP-10
	51-60	Loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	70-95	55-75	20-30	NP-10
Solirec---------	0-4	Fine sandy loam	CL-ML, SC-SM	A-4	0	0	100	100	70-85	40-55	20-30	5-10
	4-12	Sandy clay loam	CL-ML, SC-SM	A-4	0	0	100	100	80-90	35-55	20-30	5-10
	12-19	Loam	CL-ML	A-4	0	0	100	100	85-95	60-75	20-30	5-10
	19-37	Clay loam	CL-ML	A-4	0	0	100	95-100	85-100	65-80	20-30	5-10
	37-53	Clay loam	CL-ML	A-4	0	0	100	95-100	85-100	65-80	20-30	5-10
	53-75	Clay loam	CL-ML	A-4	0	0	100	95-100	85-100	65-80	20-30	5-10
2:												
Arches----------	0-2	Loamy fine sand	SM	A-2, A-4	0	0	100	100	80-90	30-50	0-14	NP
	2-5	Loamy fine sand	SM	A-2, A-4	0	0	100	100	80-90	30-50	0-14	NP
	5-9	Fine sand	SM	A-2	0	0	90-100	85-95	65-75	20-30	0-14	NP
	9-13	Unweathered bedrock			---	---	---	---	---	---	---	---
Mespun----------	0-3	Fine sand	SM	A-2	0	0	100	100	65-80	20-35	0-14	NP
	3-8	Fine sand	SM	A-2	0	0	100	100	65-80	20-35	0-14	NP
	8-19	Fine sand	SM	A-2	0	0	100	100	65-80	20-35	0-14	NP
	19-21	Fine sand, loamy fine sand	SM	A-2	0	0	100	100	70-80	20-35	0-14	NP
	21-37	Fine sand, loamy fine sand	SM	A-2	0	0	100	100	70-80	20-35	0-14	NP
	37-49	Fine sand, loamy fine sand	SM	A-2	0	0	100	100	70-80	20-35	0-14	NP
	49-60	Fine sand, loamy fine sand	SM	A-2	0	0	100	100	70-80	20-35	0-14	NP
3:												
Polychrome------	0-6	Very gravelly fine sandy loam	GC-GM	A-1, A-2	0	15-30	40-60	35-55	20-45	10-30	25-30	5-10
	6-13	Gravelly loam	CL-ML, GC-GM, SC-SM	A-4	0	10-15	65-90	60-85	50-75	35-60	25-30	5-10
	13-18	Very channery loam	GC-GM	A-2, A-4	0	10-15	40-55	35-50	25-50	20-40	25-30	5-10
	18-32	Extremely channery silt loam	GC-GM	A-2	0	0-10	15-30	10-25	5-20	5-20	25-30	5-10
	32-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-53	Unweathered bedrock			---	---	---	---	---	---	---	---
5:												
Bankard family--	0-2	Sand	SM, SW-SM	A-2-4, A-3	0	0	100	100	50-70	5-15	---	NP
	2-23	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP
	23-28	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP
	28-34	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP
	34-60	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP
Cameo-----------	0-2	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	2-7	Fine sandy loam, silt loam, loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	40-75	20-25	NP-5
	7-22	Fine sandy loam, silt loam, loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	40-75	20-25	NP-5
	22-34	Fine sandy loam, silt loam, loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	40-75	20-25	NP-5
	34-60	Fine sandy loam, silt loam, loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	40-75	20-25	NP-5
6:												
Begay-----------	0-4	Sandy loam	SM	A-2, A-4	0	0	100	100	60-70	30-40	10-20	NP-5
	4-12	Sandy loam	SM	A-2, A-4	0	0	100	100	60-70	30-40	10-20	NP-5
	12-24	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	60-70	30-40	20-30	NP-10
	24-37	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	60-70	30-40	20-30	NP-10
	37-60	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	60-70	30-40	20-30	NP-10
7:												
Begay-----------	0-4	Sandy loam	SM	A-2, A-4	0	0	100	100	60-70	30-40	10-20	NP-5
	4-12	Sandy loam	SM	A-2, A-4	0	0	100	100	60-70	30-40	10-20	NP-5
	12-24	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	60-70	30-40	20-30	NP-10
	24-37	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	60-70	30-40	20-30	NP-10
	37-60	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	60-70	30-40	20-30	NP-10

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
7:												
Mespun----------	0-3	Fine sand	SM	A-2	0	0	100	100	65-80	20-35	0-14	NP
	3-8	Fine sand	SM	A-2	0	0	100	100	65-80	20-35	0-14	NP
	8-19	Fine sand	SM	A-2	0	0	100	100	65-80	20-35	0-14	NP
	19-21	Loamy fine sand, fine sand	SM	A-2	0	0	100	100	70-80	20-35	0-14	NP
	21-37	Loamy fine sand, fine sand	SM	A-2	0	0	100	100	70-80	20-35	0-14	NP
	37-49	Loamy fine sand, fine sand	SM	A-2	0	0	100	100	70-80	20-35	0-14	NP
	49-60	Loamy fine sand, fine sand	SM	A-2	0	0	100	100	70-80	20-35	0-14	NP
8:												
Bodry-----------	0-8	Silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	85-100	80-95	35-45	15-20
	8-15	Silty clay	CL	A-7	0	0	100	100	95-100	90-95	40-50	15-25
	15-28	Silty clay	CL	A-7	0	0	100	100	95-100	90-95	40-50	15-25
	28-38	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-95	35-45	15-20
	38-50	Weathered bedrock			---	---	---	---	---	---	---	---
	50-54	Unweathered bedrock			---	---	---	---	---	---	---	---
9:												
Bondman---------	0-2	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0	100	100	60-70	30-40	25-30	5-10
	2-8	Sandy clay loam, loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	100	100	80-95	35-75	25-35	5-15
	8-12	Unweathered bedrock			---	---	---	---	---	---	---	---
10:												
Cameo-----------	0-2	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	2-7	Fine sandy loam, silt loam, loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	40-75	20-25	NP-5
	7-22	Fine sandy loam, silt loam, loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	40-75	20-25	NP-5
	22-34	Fine sandy loam, silt loam, loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	40-75	20-25	NP-5
	34-60	Fine sandy loam, silt loam, loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	40-75	20-25	NP-5
11:												
Cameo-----------	0-5	Sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	100	100	80-90	35-55	25-35	5-15
	5-9	Sandy clay loam, clay loam, silty clay loam	CL, CL-ML, SC, SC-SM	A-4	0	0	100	100	80-100	35-95	25-30	5-10
	9-60	Silt loam, loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-4	0	0	100	100	80-100	35-90	25-30	5-10
12:												
Clapper---------	0-3	Gravelly loam	GC-GM	A-2, A-4	10-15	30-50	60-70	55-65	40-55	30-45	25-30	5-10
	3-7	Gravelly loam	GC-GM	A-2, A-4	10-15	30-50	60-70	55-65	40-55	30-45	25-30	5-10
	7-13	Gravelly loam	GC-GM	A-2, A-4	10-15	30-50	60-70	55-65	40-55	30-45	25-30	5-10
	13-21	Very cobbly loam	GC-GM	A-2, A-4	10-15	30-50	60-70	55-65	40-55	30-45	25-30	5-10
	21-36	Very cobbly loam	GC-GM	A-2, A-4	10-15	30-50	60-70	55-65	40-55	30-45	25-30	5-10
	36-49	Very cobbly loam	GC-GM	A-2, A-4	10-15	30-50	60-70	55-65	40-55	30-45	25-30	5-10
	49-60	Very cobbly sandy clay loam	GC, GC-GM, SC, SC-SM	A-2	0	30-55	55-70	50-65	40-55	20-35	25-35	5-15
Abracon---------	0-5	Loam	CL-ML	A-4	0	0	85-100	80-100	65-95	50-75	20-30	5-10
	5-56	Loam, clay loam	CL-ML, ML	A-4	0	0	85-100	80-100	65-100	50-80	20-30	NP-10
	56-60	Loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	70-95	55-75	20-30	NP-10
13:												
Cortyzack-------	0-3	Loam	CL-ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
	3-8	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-15
	8-12	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-15
	12-23	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-15
	23-39	Clay loam	CL	A-6	0	0	95-100	90-100	80-100	65-80	30-40	10-15
	39-48	Clay loam	CL	A-6	0	0	95-100	90-100	80-100	65-80	30-40	10-15
	48-72	Loam	CL-ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
	72-76	Loam	CL-ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
Duffymont-------	0-3	Extremely flaggy fine sandy loam	GM	A-1, A-2	0-10	60-70	40-55	35-50	25-45	15-30	20-30	NP-5
	3-13	Extremely flaggy fine sandy loam	GM	A-1, A-2	0-10	60-70	40-55	35-50	25-45	15-30	20-30	NP-5
	13-17	Extremely flaggy sandy loam	GC-GM, GM	A-1, A-2	0-10	60-70	40-55	35-50	20-35	15-20	20-30	NP-10
	17-21	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
14:												
Cragnot---------	0-3	Very channery loam	GC-GM, GM	A-1-b, A-2-4, A-4	0-25	0-30	30-55	30-50	25-50	20-40	20-25	NP-5
	3-12	Very channery silt loam, very channery loam, very channery clay loam	GC-GM, GM, GC	A-1-b, A-2-4, A-4	0-25	0-30	30-55	30-50	30-50	20-45	20-30	NP-10
	12-30	Extremely channery silt loam, extremely channery loam, extremely channery clay loam	GC, GC-GM, GM, GW-GM	A-1-a, A-1-b, A-2-4	0-30	0-40	10-30	10-25	10-25	5-20	20-30	NP-10
	30-38	Extremely channery silt loam, extremely channery loam, extremely channery clay loam	GC, GC-GM, GM, GW-GM	A-1-a, A-1-b, A-2-4	0-30	0-40	10-30	10-25	10-25	5-20	20-30	NP-10
	38-60	Very channery silt loam, very channery sandy loam, very channery clay loam	GC, GC-GM, GM, GW-GM	A-1-a, A-1-b, A-2-4	0-25	0-30	30-55	30-50	20-50	10-40	20-30	NP-10
Pensore---------	0-3	Gravelly loam	GM, ML, SC-SM, SM	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	NP-5
	3-10	Extremely cobbly loam, extremely cobbly fine sandy loam	CL, GM, ML, SC	A-1, A-2, A-3, A-4	0-30	30-85	20-80	15-75	10-70	5-55	20-30	NP-10
	10-16	Extremely channery loam, extremely channery fine sandy loam, extremely channery sandy loam	GC-GM, GM, GW, GW-GM	A-1-a, A-1-b	0-30	0-40	10-30	10-25	5-25	0-20	20-25	NP-5
	16-20	Unweathered bedrock			---	---	---	---	---	---	---	---
Grapit----------	0-5	Gravelly loam	CL, GC, SC	A-4	0-5	5-15	60-80	60-75	50-70	35-55	25-30	5-10
	5-14	Very gravelly loam	GC, GC-GM	A-1, A-2, A-4	5-15	5-20	35-55	30-50	25-50	20-40	25-30	5-10
	14-30	Extremely gravelly loam	GC, GC-GM, GW-GC	A-1, A-2	5-20	5-25	15-30	10-25	10-25	5-20	25-30	5-10
	30-54	Extremely cobbly loam	CL, GC, SC	A-4, A-1, A-2	5-20	30-85	20-80	15-75	15-70	10-55	25-30	5-10
	54-60	Very cobbly loam	GM, ML, SM	A-2, A-4	0-15	30-60	45-90	40-85	35-85	25-65	20-25	NP-5
15:												
Davtone---------	0-2	Loam	CL, CL-ML	A-4	0	0	90-100	85-100	75-95	65-75	25-30	5-10
	2-6	Loam	CL, CL-ML	A-4	0	0	90-100	85-100	75-95	65-75	25-30	5-10
	6-17	Clay loam	CL	A-6	0	0	90-100	85-100	80-95	65-80	30-35	10-15
	17-30	Clay loam	CL	A-6	0	0-5	95-100	90-100	80-95	65-80	30-35	10-15
	30-60	Cobbly loam	CL, CL-ML	A-4	0-5	15-25	75-90	70-85	60-80	50-65	25-30	5-10
Forsey----------	0-2	Cobbly sandy loam	SC, SC-SM	A-2-4	0-10	15-25	80-90	75-85	50-60	25-35	25-30	5-10
	2-8	Cobbly sandy loam	SC, SC-SM	A-2-4	0-10	15-25	80-90	75-85	50-60	25-35	25-30	5-10
	8-18	Very cobbly sandy clay loam, very cobbly sandy loam	GC, SC, SC-SM	A-1-b, A-2-4, A-4	10-15	20-35	45-90	40-85	25-75	15-40	25-30	5-10
	18-24	Very cobbly sandy clay loam, very cobbly sandy loam	GC, SC, SC-SM	A-1-b, A-2-4, A-4	10-15	20-35	45-90	40-85	25-75	15-40	25-30	5-10
	24-60	Very cobbly sandy loam	GC, GC-GM, SC	A-1-b, A-2-4	10-15	20-35	45-90	40-85	25-55	15-35	25-30	5-10
16:												
Dearjosh--------	0-5	Loamy sand	SM	A-2-4	0	0	100	100	50-75	15-30	---	NP
	5-21	Loamy sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	50-85	15-50	---	NP
	21-48	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP
	48-54	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP
	54-60	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP
Lakebench-------	0-6	Fine sandy loam	CL, CL-ML, SC, SC-SM	A-4	0	0	100	100	70-85	40-55	25-30	5-10
	6-22	Fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	40-75	20-25	NP-5
	22-60	Fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	40-75	20-25	NP-5
17:												
Deaver----------	0-2	Gravelly silty clay loam	ML	A-7	0	0-15	60-80	55-75	55-75	50-70	40-45	10-15
	2-8	Silty clay	MH, ML	A-7	0	0	100	100	95-100	90-95	45-55	15-25
	8-18	Silty clay	MH, ML	A-7	0	0	100	100	95-100	90-95	45-55	15-25
	18-35	Silty clay	MH, ML	A-7	0	0	100	100	95-100	90-95	45-55	15-25
	35-39	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
17:												
Avalon----------	0-3	Loam	CL, CL-ML	A-4	0	0	95-100	90-100	85-95	60-75	25-30	5-10
	3-12	Clay loam	CL	A-6	0	0	90-100	90-100	80-100	60-80	30-35	10-15
	12-22	Clay loam	CL	A-6	0	0	90-100	90-100	80-100	60-80	30-35	10-15
	22-42	Clay loam	CL	A-6	0	0	90-100	90-100	80-100	60-80	30-35	10-15
	42-55	Clay loam	CL	A-6	0	0	90-100	90-100	80-100	60-80	30-35	10-15
	55-62	Clay loam	CL	A-6	0	0	90-100	90-100	80-100	60-80	30-35	10-15
18:												
Deaver----------	0-2	Silty clay loam	ML	A-7	0	0	100	100	95-100	85-95	40-45	10-15
	2-8	Silty clay	MH, ML	A-7	0	0	100	100	95-100	90-95	45-55	15-25
	8-18	Silty clay	MH, ML	A-7	0	0	100	100	95-100	90-95	45-55	15-25
	18-35	Silty clay	MH, ML	A-7	0	0	100	100	95-100	90-95	45-55	15-25
	35-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Chipeta---------	0-1	Silty clay loam	ML	A-7	0	0	100	100	95-100	85-95	45-55	10-15
	1-12	Silty clay	MH, ML	A-7	0	0	100	100	95-100	95-100	45-55	15-25
	12-17	Silty clay	MH, ML	A-7	0	0	100	100	95-100	95-100	45-55	15-25
	17-21	Weathered bedrock			---	---	---	---	---	---	---	---
19:												
Detra-----------	0-8	Fine sandy loam	CL, SC, SC-SM	A-4	0	0	90-100	90-100	70-85	40-55	25-30	5-10
	8-19	Fine sandy loam	CL, SC, SC-SM	A-4	0	0	90-100	90-100	70-85	40-55	25-30	5-10
	19-27	Sandy clay loam	CL, SC	A-6	0	0	90-100	90-100	80-90	35-55	30-35	10-15
	27-38	Sandy clay loam	CL, SC	A-6	0	0	90-100	90-100	80-90	35-55	30-35	10-15
	38-50	Sandy clay loam	CL, SC	A-6	0	0	90-100	90-100	80-90	35-55	30-35	10-15
	50-60	Sandy clay loam	SC, SC-SM	A-4	0	0	90-100	90-100	80-90	35-50	25-30	5-10
Cortyzack-------	0-3	Loam	CL-ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
	3-8	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-15
	8-12	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-15
	12-23	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-15
	23-39	Clay loam	CL	A-6	0	0	95-100	90-100	80-100	65-80	30-40	10-15
	39-48	Clay loam	CL	A-6	0	0	95-100	90-100	80-100	65-80	30-40	10-15
	48-72	Loam	CL-ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
	72-76	Loam	CL-ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
20:												
Eghelm----------	0-4	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	4-18	Sandy loam, fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	60-85	30-50	20-30	NP-10
	18-26	Sandy loam, fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	60-85	30-50	20-30	NP-10
	26-41	Sand	SM, SW-SM	A-2	0	0	85-95	80-95	45-65	5-15	0-10	NP-5
	41-60	Sand	SM, SW-SM	A-2	0	0	85-95	80-95	45-65	5-15	0-10	NP-5
Uffens----------	0-3	Sandy loam	SM	A-2, A-4	0	0	100	100	60-70	30-40	20-30	NP-5
	3-24	Sandy clay loam	CL-ML, SC, SC-SM, CL	A-4	0	0	100	100	80-90	35-55	25-35	5-10
	24-37	Loam	CL-ML	A-4	0	0	100	100	85-95	70-80	20-30	5-10
	37-60	Sand	SM, SW-SM	A-2, A-3	0	0	100	100	50-70	5-15	0-0	NP
21:												
Emlin-----------	0-2	Loam	CL, CL-ML	A-4	0	0-5	90-100	85-100	70-95	60-70	25-30	5-10
	2-5	Loam	CL, CL-ML	A-4	0	0-5	90-100	85-100	70-95	60-70	25-30	5-10
	5-11	Loam	CL, CL-ML	A-4	0	0-5	90-100	85-100	70-95	60-70	25-30	5-10
	11-14	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-100	70-80	30-35	10-15
	14-19	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-100	70-80	30-35	10-15
	19-30	Silty clay loam	ML	A-4, A-6, A-7	0	0-10	95-100	90-100	80-100	70-95	30-45	5-15
	30-41	Silty clay loam	ML	A-4, A-6, A-7	0	0-10	95-100	90-100	80-100	70-95	30-45	5-15
	41-60	Silty clay loam	ML	A-4, A-6, A-7	0	0-10	95-100	90-100	80-100	70-95	30-45	5-15
22:												
Fluvaquents-----	0-5	Fine sand	SC-SM, SM	A-2-4	0	0	100	100	65-80	20-35	20-25	NP-5
	5-22	Loamy fine sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	22-30	Sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	30-36	Sand, fine sandy loam, silt loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	36-43	Sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	43-50	Sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	50-60	Sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
23:												
Green River-----	0-5	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-85	40-55	20-30	NP-10
	5-60	Stratified coarse sand to loam	SC, SC-SM, SM	A-2, A-4	0	0	100	95-100	60-80	25-50	20-30	NP-10

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
23:												
Fluvaquents-----	0-5	Fine sand	SC-SM, SM	A-2-4	0	0	100	100	65-80	20-35	20-25	NP-5
	5-22	Loamy fine sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	22-30	Sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	30-36	Sand, fine sandy loam, silt loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	36-43	Sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	43-50	Sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	50-60	Sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
24:												
Hanksville------	0-2	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	30-45	10-20
	2-13	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7	0	0	100	100	90-100	75-95	30-55	10-35
	13-33	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7	0	0	100	100	90-100	75-95	30-55	10-35
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
25:												
Holter----------	0-3	Very stony fine sandy loam	GC, SC, SC-SM	A-1, A-2-4, A-4	25-40	10-40	45-90	40-80	30-70	20-45	25-30	5-10
	3-10	Very stony fine sandy loam	GC, SC, SC-SM	A-1, A-2-4, A-4	25-40	10-40	45-90	40-80	30-70	20-45	25-30	5-10
	10-16	Very cobbly clay loam	CL, GC, SC	A-2-6, A-6	5-15	30-50	45-90	40-85	35-85	30-70	30-35	10-15
	16-23	Extremely cobbly clay loam	CL, GC, SC	A-2-6, A-6	5-15	40-70	20-80	15-75	15-75	10-60	30-35	10-15
	23-29	Extremely cobbly clay loam	CL, GC, SC	A-2-6, A-6	5-15	40-70	20-80	15-75	15-75	10-60	30-35	10-15
	29-36	Extremely cobbly sandy clay loam	GC, GW-GC, SC, SP-SC	A-2-6, A-6	5-15	40-70	20-80	15-75	10-70	5-40	30-35	10-15
	36-45	Extremely cobbly loam	CL, GC, SC	A-1-a, A-2-4, A-4	5-15	40-70	20-80	15-75	15-70	10-55	25-30	5-10
	45-60	Extremely cobbly loam	CL, GC, SC	A-1-a, A-2-4, A-4	5-15	40-70	20-80	15-75	15-70	10-55	25-30	5-10
Detra family----	0-6	Loam	CL, CL-ML	A-4	0	0	90-100	85-100	80-95	60-75	25-30	5-10
	6-15	Loam	CL, CL-ML	A-4	0	0	90-100	85-100	80-95	60-75	25-30	5-10
	15-25	Clay loam	CL	A-6	0	0	95-100	90-100	75-95	60-80	30-35	10-15
	25-36	Clay loam	CL	A-6	0	0	95-100	90-100	75-95	60-80	30-35	10-15
	36-60	Very gravelly sandy clay loam, very cobbly sandy clay loam	GC, SC	A-2-6, A-6	0-10	25-50	45-90	40-85	30-75	15-45	30-35	10-15
26:												
Ironco----------	0-4	Very bouldery loam	CL, GC, SC, SC-SM	A-2-4, A-4	25-70	0-50	45-90	40-85	35-80	25-65	25-30	5-10
	4-10	Very bouldery loam	CL, GC, SC, SC-SM	A-2-4, A-4	25-70	0-50	45-90	40-85	35-80	25-65	25-30	5-10
	10-31	Very stony sandy clay loam, very stony clay loam	CL, GC, SC	A-2-6, A-6	25-70	0-50	45-90	40-85	30-85	15-70	30-35	10-15
	31-60	Very stony sandy clay loam, very stony clay loam	CL, GC, SC	A-2-6, A-6	25-70	0-50	45-90	40-85	30-85	15-70	30-35	10-15
Mulgon----------	0-1	Slightly decomposed plant material	PT	A-8	---	---	100	100	---	---	---	---
	1-8	Very stony sandy loam	GC, GC-GM, SC, SC-SM	A-1-b, A-2-4	25-70	0-50	45-90	40-85	25-60	15-35	25-30	5-10
	8-16	Very stony sandy loam, very stony loam	CL, GC, SC, SC-SM	A-1-b, A-2-4, A-4	25-70	0-50	45-90	40-85	25-80	15-65	25-30	5-10
	16-23	Very stony loam, very stony sandy clay loam, very stony clay loam	CL, GC, GC-GM, SC	A-2-4, A-2-6, A-4	25-70	0-50	45-90	40-85	35-85	25-70	25-35	5-15
	23-32	Very stony loam, very stony sandy clay loam, very stony clay loam	CL, GC, GC-GM, SC	A-2-4, A-2-6, A-4	25-70	0-50	45-90	40-85	35-85	25-70	25-35	5-15
	32-60	Very stony loam, very stony sandy clay loam, very stony clay loam	CL, GC, GC-GM, SC	A-2-4, A-2-6, A-4	25-70	0-50	45-90	40-85	35-85	25-70	25-35	5-15

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
27:												
Lakebench-------	0-3	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	100	70-85	30-50	20-25	NP-5
	3-9	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-25	NP-5
	9-25	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-25	NP-5
	25-35	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-25	NP-5
	35-45	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-25	NP-5
	45-50	Gravelly loam	ML, SM	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	NP-5
	50-60	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-25	NP-5
Strell----------	0-3	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	3-13	Sand, loamy sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	65-85	20-50	---	NP
	13-17	Unweathered bedrock			---	---	---	---	---	---	---	---
28:												
Lakebench-------	0-3	Silt loam	ML	A-4	0	0	85-100	80-100	75-100	55-90	25-30	NP-5
	3-9	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-25	NP-5
	9-25	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-25	NP-5
	25-35	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-25	NP-5
	35-45	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-25	NP-5
	45-50	Gravelly loam	ML, SM	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	NP-5
	50-60	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-25	NP-5
Yampa-----------	0-7	Very cobbly loam	GC-GM, GM, ML, SC-SM	A-2, A-4	0-25	20-70	45-90	40-85	35-80	25-65	20-25	NP-5
	7-13	Extremely gravelly loam	GM, GW-GM	A-1	0-30	0-35	15-30	10-25	10-25	5-20	20-25	NP-5
	13-31	Very cobbly loam, very cobbly clay loam	CL, GC, SC	A-2, A-4	0-25	20-70	45-90	45-85	35-85	25-70	25-30	5-10
	31-60	Extremely cobbly sandy loam, extremely gravelly loamy sand, extremely gravelly sandy loam	GP, GP-GM, GW, GW-GM	A-1, A-2	0-30	0-85	15-80	10-75	5-50	0-30	20-25	NP-3
29:												
Layoint---------	0-1	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	1-4	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	4-8	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	8-14	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	14-24	Loamy sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	50-85	15-50	---	NP
	24-32	Loamy sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	50-85	15-50	---	NP
	32-36	Unweathered bedrock			---	---	---	---	---	---	---	---
Moosed----------	0-2	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	2-7	Loamy sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	50-85	15-50	---	NP
	7-11	Loamy sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	50-85	15-50	---	NP
	11-15	Loamy sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	50-85	15-50	---	NP
	15-18	Channery sand, channery fine sand, channery loamy fine sand	SM, SP-SM, SW-SM	A-3, A-1-b, A-2-4	0-10	0-25	55-80	55-75	30-65	5-40	---	NP
	18-22	Unweathered bedrock			---	---	---	---	---	---	---	---
Berlake---------	0-3	Coarse sandy loam	SC, SC-SM	A-1-b, A-2-4	0-10	0-10	85-100	80-100	45-65	20-30	25-30	5-10
	3-14	Coarse sandy loam	SC, SC-SM	A-1-b, A-2-4	0-10	0-10	85-100	80-100	45-65	20-30	25-30	5-10
	14-18	Sandy clay loam	SC-SM, CL, CL-ML, SC	A-2-4, A-4, A-6	0-10	0-10	85-100	80-100	65-90	30-55	25-35	5-15
	18-27	Sandy clay loam	SC-SM, CL, CL-ML, SC	A-2-4, A-4, A-6	0-10	0-10	85-100	80-100	65-90	30-55	25-35	5-15
	27-39	Sandy clay loam	SC-SM, CL, CL-ML, SC	A-2-4, A-4, A-6	0-10	0-10	85-100	80-100	65-90	30-55	25-35	5-15
	39-49	Sandy clay loam	SC-SM, CL, CL-ML, SC	A-2-4, A-4, A-6	0-10	0-10	85-100	80-100	65-90	30-55	25-35	5-15
	49-57	Sandy clay loam	SC-SM, CL, CL-ML, SC	A-2-4, A-4, A-6	0-10	0-10	85-100	80-100	65-90	30-55	25-35	5-15
	57-60	Loamy coarse sand, loamy sand, sandy loam	SC-SM, SM, SW-SM	A-1-b, A-2-4, A-4	0-10	0-10	85-100	80-100	35-70	10-40	20-25	NP-5
30:												
Lodore----------	0-2	Gravelly loam	CL-ML, GM, ML, SC-SM	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	NP-5
	2-13	Sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-20	0-20	85-100	80-100	50-95	25-75	20-25	NP-5
	13-35	Sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-20	0-20	85-100	80-100	50-95	25-75	20-25	NP-5
	35-39	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
30:												
Mantlemine------	0-2	Loam	CL, CL-ML	A-4	0	0	100	100	70-85	40-55	25-30	5-10
	2-5	Loam	CL, CL-ML	A-4	0	0	100	100	70-85	40-55	25-30	5-10
	5-20	Silt loam, loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	20-25	Silt loam, loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	25-45	Loam, clay loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-80	25-30	5-10
	45-60	Silt loam, loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-90	25-30	5-10
Strell----------	0-3	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	3-13	Fine sand, loamy sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	65-85	20-50	---	NP
	13-17	Unweathered bedrock			---	---	---	---	---	---	---	---
31:												
Mantlemine------	0-2	Loam	CL, CL-ML	A-4	0	0	100	100	70-85	40-55	25-30	5-10
	2-5	Loam	CL, CL-ML	A-4	0	0	100	100	70-85	40-55	25-30	5-10
	5-20	Silt loam, loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	20-25	Silt loam, loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	25-45	Loam, clay loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-80	25-30	5-10
	45-60	Silt loam, loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-90	25-30	5-10
32:												
Mantlemine------	0-2	Loam	CL, CL-ML	A-4	0	0	100	100	70-85	40-55	25-30	5-10
	2-5	Loam	CL, CL-ML	A-4	0	0	100	100	70-85	40-55	25-30	5-10
	5-20	Silt loam, loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	20-25	Silt loam, loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	25-45	Loam, clay loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-80	25-30	5-10
	45-60	Silt loam, loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-90	25-30	5-10
Emlin----------	0-2	Loam	CL, CL-ML	A-4	0	0-5	90-100	85-100	70-95	60-70	25-30	5-10
	2-5	Loam	CL, CL-ML	A-4	0	0-5	90-100	85-100	70-95	60-70	25-30	5-10
	5-11	Loam	CL, CL-ML	A-4	0	0-5	90-100	85-100	70-95	60-70	25-30	5-10
	11-14	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-100	70-80	30-35	10-15
	14-19	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-100	70-80	30-35	10-15
	19-30	Silty clay loam	ML	A-4, A-6, A-7	0	0-10	95-100	90-100	80-100	70-95	30-45	5-15
	30-41	Silty clay loam	ML	A-4, A-6, A-7	0	0-10	95-100	90-100	80-100	70-95	30-45	5-15
	41-60	Silty clay loam	ML	A-4, A-6, A-7	0	0-10	95-100	90-100	80-100	70-95	30-45	5-15
33:												
Massadona-------	0-2	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-20
	2-11	Silty clay	CL	A-6, A-7	0	0	100	100	95-100	90-95	35-50	15-30
	11-20	Silty clay	CL	A-6, A-7	0	0	100	100	95-100	90-95	35-50	15-30
	20-34	Silty clay	CL	A-6, A-7	0	0	100	100	95-100	90-95	35-50	15-30
	34-41	Silty clay	CL	A-6, A-7	0	0	100	100	95-100	90-95	35-50	15-30
	41-60	Silty clay	CL	A-6, A-7	0	0	100	100	95-100	90-95	35-50	15-30
34:												
Mespun----------	0-9	Fine sand	SM	A-2	0	0	100	100	65-80	20-35	0-14	NP
	9-60	Fine sand, loamy fine sand	SM	A-2	0	0	100	100	70-80	20-35	0-14	NP
35:												
Mido------------	0-8	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	100	70-85	30-50	20-25	NP-5
	8-60	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	100	70-85	30-50	20-25	NP-5
36:												
Mikim loam------	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	60-80	25-35	5-15
	2-6	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	60-80	25-35	5-15
	6-12	Loam, clay loam	CL, CL-ML	A-4, A-6	0	0	85-100	80-100	65-100	50-80	25-40	5-20
	12-25	Loam, clay loam	CL, CL-ML	A-4, A-6	0	0	85-100	80-100	65-100	50-80	25-40	5-20
	25-43	Loam, clay loam	CL, CL-ML	A-4, A-6	0	0	85-100	80-100	65-100	50-80	25-40	5-20
	43-60	Loam, clay loam	CL, CL-ML	A-4, A-6	0	0	85-100	80-100	65-100	50-80	25-40	5-20
Mikim silt loam-	0-6	Silt loam	CL, CL-ML	A-4	0	0	100	100	90-100	70-90	25-30	5-10
	6-60	Stratified sandy loam to clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	100	100	80-95	40-75	25-40	5-15
37:												
Milok-----------	0-4	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-85	30-55	20-30	NP-10
	4-15	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-85	30-55	20-30	NP-10
	15-37	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-85	30-55	20-30	NP-10
	37-50	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-85	30-55	20-30	NP-10
	50-60	Sandy loam	SC-SM, SM	A-2, A-4	0	0	95-100	90-100	45-70	25-40	20-30	NP-10

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
38:												
Milok----------	0-4	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-85	30-55	20-30	NP-10
	4-15	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-85	30-55	20-30	NP-10
	15-37	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-85	30-55	20-30	NP-10
	37-50	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-85	30-55	20-30	NP-10
	50-60	Sandy loam	SC-SM, SM	A-2, A-4	0	0	95-100	90-100	45-70	25-40	20-30	NP-10
Solirec---------	0-8	Loam	CL, CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-30	NP-10
	8-52	Clay loam, loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-80	25-30	5-10
	52-60	Clay loam, loam, fine sandy loam	SM, CL, ML, SC	A-4	0	0	100	100	70-100	40-80	20-30	NP-10
Strych----------	0-5	Cobbly loam	CL, ML, SC, SM	A-4	0-10	15-45	75-90	70-85	60-80	45-65	20-30	NP-10
	5-10	Cobbly loam, cobbly sandy loam	CL, ML, SC, SM	A-2-4, A-4	0-10	15-45	75-90	70-85	45-80	25-65	20-30	NP-10
	10-34	Very stony loam, very stony sandy loam	CL, GM, ML, SC	A-1-b, A-2-4, A-4	25-70	0-50	45-90	40-85	25-80	15-65	20-30	NP-10
	34-50	Very cobbly loam, very cobbly sandy loam	CL, GM, ML, SM	A-1-b, A-2-4, A-4	0-25	20-70	45-90	40-85	25-80	15-65	20-30	NP-10
	50-60	Loam, loamy fine sand	CL, ML, SC, SM	A-2-4, A-4	0	0	100	100	70-95	30-75	20-30	NP-10
39:												
Milok----------	0-6	Fine sandy loam	ML, SM	A-4	0	0	100	100	70-85	40-55	20-25	NP-5
	6-12	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-30	NP-10
	12-24	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-30	NP-10
	24-37	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-30	NP-10
	37-44	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	20-30	NP-10
	44-60	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-30	NP-10
Strych----------	0-8	Very cobbly fine sandy loam	GM	A-1, A-2	0-10	25-35	55-60	50-55	35-45	20-30	20-25	NP-5
	8-39	Extremely cobbly sandy loam	GM, GW-GM	A-1	0-10	35-50	30-40	25-35	10-20	5-15	20-25	NP-5
	39-60	Extremely cobbly loamy sand	GW, GW-GM	A-1	0-10	35-50	30-40	25-35	10-20	0-10	20-25	NP-5
40:												
Notlic----------	0-4	Very cobbly loam	GC, GC-GM	A-2, A-4	0-15	25-35	50-65	45-60	35-55	30-45	25-30	5-10
	4-13	Extremely gravelly fine sandy loam, extremely gravelly loam	GC, GC-GM, GW-GC	A-1, A-2	10-15	15-30	25-35	20-30	15-30	5-25	25-30	5-10
	13-29	Extremely gravelly fine sandy loam, extremely gravelly loam	GC, GC-GM, GW-GC	A-1, A-2	10-15	15-30	25-35	20-30	15-30	5-25	25-30	5-10
	29-48	Extremely gravelly sandy clay loam	GC, GC-GM, GW-GC	A-2	10-15	15-30	25-35	20-30	15-30	5-15	25-30	5-10
	48-60	Extremely cobbly sandy clay loam	GC, GC-GM	A-2	15-30	30-45	30-45	25-40	20-35	10-20	25-30	5-10
Iogoon----------	0-5	Fine sandy loam	ML, SM	A-4	0-5	0-5	95-100	90-100	65-85	35-55	20-25	NP-5
	5-11	Gravelly fine sandy loam	SM	A-2, A-4	0	0-15	70-80	65-75	40-60	25-40	20-25	NP-5
	11-32	Extremely cobbly fine sandy loam	GM, GW-GM	A-1	5-15	30-50	30-40	25-35	15-25	5-15	20-25	NP-5
	32-47	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-100	80-100	55-85	30-55	20-25	NP-5
	47-60	Gravelly fine sandy loam	SM	A-2, A-4	0	0-15	70-80	65-75	40-60	25-40	20-25	NP-5
Labyrinth-------	0-6	Fine sandy loam	ML, SM	A-4	0	0	90-100	85-100	65-85	40-55	20-25	NP-5
	6-16	Loamy very fine sand	ML, SM	A-4	0	0	90-100	85-100	75-95	35-60	20-25	NP-5
	16-35	Loamy fine sand	SM	A-2, A-4	0	0	85-100	80-100	60-85	20-50	20-25	NP-5
	35-60	Loamy fine sand	SM	A-2, A-4	0	0	85-100	80-100	60-85	20-50	20-25	NP-5
41:												
Paradox---------	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-95	60-75	25-35	5-15
	2-11	Loam	CL, CL-ML	A-4, A-6	0	0	100	85-100	70-95	55-75	25-35	5-15
	11-26	Loam	CL, CL-ML	A-4, A-6	0	0	100	85-100	70-95	55-75	25-35	5-15
	26-48	Loam	CL, CL-ML	A-4, A-6	0	0	100	85-100	70-95	55-75	25-35	5-15
	48-60	Loam	CL, CL-ML	A-4, A-6	0	0	100	85-100	70-95	55-75	25-35	5-15

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
42:												
Pensore---------	0-3	Cobbly loam	CL-ML, ML, SC-SM, SM	A-4	0-10	15-45	75-90	70-85	60-80	45-65	20-25	NP-5
	3-10	Extremely cobbly fine sandy loam, extremely cobbly loam	CL, GM, ML, SC	A-1, A-2, A-3, A-4	0-30	30-85	20-80	15-75	10-70	5-55	20-30	NP-10
	10-16	Extremely channery sandy loam, extremely channery fine sandy loam, extremely channery loam	GC-GM, GM, GW, GW-GM	A-1-a, A-1-b	0-30	0-40	10-30	10-25	5-25	0-20	20-25	NP-5
	16-20	Unweathered bedrock			---	---	---	---	---	---	---	---
Lodore----------	0-2	Gravelly loam	CL-ML, GM, ML, SC-SM	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	NP-5
	2-13	Sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-20	0-20	85-100	80-100	50-95	25-75	20-25	NP-5
	13-35	Sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-20	0-20	85-100	80-100	50-95	25-75	20-25	NP-5
	35-39	Unweathered bedrock			---	---	---	---	---	---	---	---
43:												
Pensore---------	0-3	Gravelly loam	GM, ML, SC-SM, SM	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	NP-5
	3-10	Extremely cobbly loam, extremely cobbly fine sandy loam	CL, GM, ML, SC	A-1, A-2, A-3, A-4	0-30	30-85	20-80	15-75	10-70	5-55	20-30	NP-10
	10-16	Extremely channery loam, extremely channery fine sandy loam, extremely channery sandy loam	GC-GM, GM, GW, GW-GM	A-1-a, A-1-b	0-30	0-40	10-30	10-25	5-25	0-20	20-25	NP-5
	16-20	Unweathered bedrock			---	---	---	---	---	---	---	---
Roto------------	0-2	Very gravelly loam	GC-GM, GM	A-4, A-1-b, A-2-4	0-25	0-25	35-55	30-50	25-50	20-40	20-25	NP-5
	2-9	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy clay loam	GC, GC-GM, GM, GW-GM	A-1-a, A-1-b, A-2-4	0-25	0-25	35-55	30-50	20-45	10-30	20-30	NP-10
	9-22	Extremely gravelly sandy clay loam, extremely gravelly loam, extremely gravelly fine sandy loam	GC, GM, GW-GC, GW-GM	A-1-a, A-2-4	0-30	0-35	15-30	10-25	5-20	5-15	20-30	NP-10
	22-26	Unweathered bedrock			---	---	---	---	---	---	---	---
44:												
Polychrome------	0-3	Very channery loam	GC-GM	A-2	0-10	0-10	40-50	35-45	25-40	20-30	25-30	5-10
	3-16	Very channery loam	GC-GM	A-2	10-15	10-15	40-60	35-55	25-50	20-40	25-35	5-10
	16-23	Extremely channery loam	GC-GM	A-2	10-20	15-30	25-35	20-30	15-30	10-25	25-35	5-10
	23-38	Very stony loam	GC-GM	A-2, A-4	25-40	10-20	55-70	50-65	40-55	30-45	25-35	5-10
	38-42	Weathered bedrock			---	---	---	---	---	---	---	---
Milok-----------	0-6	Fine sandy loam	ML, SM	A-4	0	0	100	100	70-85	40-55	20-25	NP-5
	6-12	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-30	NP-10
	12-24	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-30	NP-10
	24-37	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-30	NP-10
	37-44	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	20-30	NP-10
	44-60	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	60-75	20-30	NP-10
45:												
Redrock family--	0-3	Loam	CL, CL-ML	A-4	0	0	90-100	85-100	70-95	50-75	25-30	5-10
	3-10	Loam	CL, CL-ML	A-4	0	0	90-100	85-100	70-95	50-75	25-30	5-10
	10-17	Loam	CL, CL-ML	A-4	0	0	100	90-100	70-95	50-75	25-30	5-10
	17-28	Loam	CL, CL-ML	A-4	0	0	100	90-100	70-95	50-75	25-30	5-10
	28-35	Loam	CL, CL-ML	A-4	0	0	100	90-100	70-95	50-75	25-30	5-10
	35-43	Gravelly loam	CL, CL-ML, GC, SC	A-4	0	0-10	60-80	55-75	50-70	35-55	25-30	5-10
	43-54	Very cobbly loam	CL, CL-ML, GC, SC	A-2-4, A-4	0-10	30-60	45-90	40-85	35-80	25-65	25-30	5-10
	54-60	Cobbly loam	SC, SC-SM, CL, CL-ML	A-4	0-5	20-40	75-90	70-85	60-80	45-65	25-30	5-10

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
46:												
Roto----------	0-2	Very gravelly loam	GC-GM, GM	A-1-b, A-2-4, A-4	0-25	0-25	35-55	30-50	25-50	20-40	20-25	NP-5
	2-9	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy clay loam	GC, GC-GM, GM, GW-GM	A-1-a, A-1-b, A-2-4	0-25	0-25	35-55	30-50	20-45	10-30	20-30	NP-10
	9-22	Extremely gravelly fine sandy loam, extremely gravelly loam, extremely gravelly sandy clay loam	GC, GM, GW-GC, GW-GM	A-1-a, A-2-4	0-30	0-35	15-30	10-25	5-20	5-15	20-30	NP-10
	22-26	Unweathered bedrock			---	---	---	---	---	---	---	---
47:												
Rizno----------	0-5	Cobbly fine sandy loam	SC-SM, SM	A-2-4, A-4	0-10	15-45	75-90	70-85	50-70	30-45	20-25	NP-5
	5-15	Cobbly fine sandy loam, cobbly loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-10	15-45	75-90	70-85	50-80	30-65	20-25	NP-5
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---
Windcomb--------	0-4	Very channery silt loam	GC-GM	A-2, A-4	0	0	35-50	30-45	25-40	25-40	25-35	5-10
	4-9	Very channery loam	GC-GM	A-2	0	0	35-50	30-45	25-40	20-30	20-30	5-10
	9-17	Very channery loam	GC-GM	A-2	0	0	35-50	30-45	25-40	20-30	20-30	5-10
	17-21	Unweathered bedrock			---	---	---	---	---	---	---	---
Anasazi---------	0-3	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0-20	0-20	85-100	80-100	55-85	35-55	20-25	NP-5
	3-10	Cobbly fine sandy loam, cobbly loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-10	15-45	75-90	70-85	50-80	30-65	20-25	NP-5
	10-19	Gravelly fine sandy loam, gravelly loam	CL-ML, GM, SC-SM, SM	A-2-4, A-4	0-10	0-15	60-80	55-75	40-70	25-55	20-25	NP-5
	19-24	Very gravelly loamy sand, very gravelly loam, very gravelly loamy fine sand	GM, GW-GM	A-1, A-2, A-4	0-25	0-25	35-55	30-50	20-50	10-40	20-25	NP-5
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---
49:												
Hackling--------	0-1	Gravelly sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2-4	0-15	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
	1-4	Very gravelly sandy loam	GC, GC-GM, GW-GC	A-1, A-2-4	0-10	0-15	35-55	30-50	20-35	10-20	20-25	5-10
	4-15	Extremely cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1, A-2-4	0-30	30-85	20-80	15-75	10-50	5-30	25-30	NP-5
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---
50:												
Haploborolls----	0-3	Slightly decomposed plant material	PT	A-8	---	---	100	100	---	---	---	---
	3-7	Stony loamy fine sand	SC-SM, SM	A-1, A-2, A-4	15-40	5-25	75-90	70-85	45-75	20-40	20-25	NP-5
	7-10	Cobbly loamy fine sand	SC-SM, SM	A-1, A-2, A-4	0-5	15-45	75-90	70-85	45-75	20-40	20-25	NP-5
	10-13	Unweathered bedrock			---	---	---	---	---	---	---	---
51:												
Torriorthents---	0-4	Very gravelly loam	GC, GC-GM, GM, GW-GM	A-1, A-2-4, A-4, A-6	0-25	0-25	35-55	30-50	20-50	10-40	20-35	NP-15
	4-18	Very gravelly loam, very gravelly sandy loam, very gravelly clay	GC, GC-GM, GM, GW-GM	A-1, A-2-4, A-4, A-6	0-25	0-25	35-55	30-50	20-50	10-50	20-45	NP-20
	18-22	Unweathered bedrock			---	---	---	---	---	---	---	---
Ustorthents-----	0-6	Cobbly loam	CL, CL-ML, SC, SC-SM	A-4	0-5	15-45	75-90	70-85	60-80	45-65	25-30	5-10
	6-33	Cobbly sandy clay loam	SC, SC-SM	A-2, A-4	0-5	15-45	75-90	70-85	55-75	25-45	25-30	5-10
	33-37	Unweathered bedrock			---	---	---	---	---	---	---	---
52:												
Ustochrepts-----	0-6	Extremely cobbly fine sandy loam	GC-GM, GM	A-1, A-2	20-35	35-50	40-45	30-40	20-35	10-20	15-25	NP-10
	6-11	Very gravelly loam	GC-GM	A-2, A-4	0-10	10-25	45-55	40-50	35-50	25-40	20-25	5-10
	11-19	Very gravelly loam	GC-GM	A-2, A-4	0-10	10-25	45-55	40-50	35-50	25-40	20-25	5-10
	19-60	Very cobbly loam	GC-GM	A-2, A-4	0-10	15-30	45-55	40-50	35-50	25-40	20-25	5-10
Cryochrepts-----	0-5	Extremely cobbly loam	GC-GM, SC-SM	A-2, A-4	25-35	50-60	55-75	50-65	40-55	30-45	25-35	5-10
	5-11	Very cobbly loam	GC-GM, SC-SM	A-2, A-4	0-10	25-40	50-70	45-65	40-55	30-45	25-35	5-10
	11-18	Very cobbly loam	GC-GM, SC-SM	A-2, A-4	0-10	25-40	50-70	45-65	40-55	30-45	25-35	5-10
	18-33	Extremely cobbly loam	GC-GM	A-1, A-2	0-10	50-60	30-45	25-40	20-40	15-30	25-35	5-10
	33-60	Extremely cobbly loam	GC-GM	A-1, A-2	0-10	50-60	30-45	25-40	20-40	15-30	25-35	5-10

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
53:												
Schoonover------	0-3	Very gravelly loam	GC, GC-GM	A-1-b, A-2-4, A-4	0-10	5-20	35-55	30-50	25-50	20-40	25-30	5-10
	3-8	Very gravelly loam	GC, GC-GM	A-1-b, A-2-4, A-4	0-10	5-20	35-55	30-50	25-50	20-40	25-30	5-10
	8-11	Very gravelly loam	GC, GC-GM	A-1-b, A-2-4, A-4	0-10	5-20	35-55	30-50	25-50	20-40	25-30	5-10
	11-14	Unweathered bedrock			---	---	---	---	---	---	---	---
Duffymont-------	0-3	Extremely flaggy fine sandy loam	GM	A-1, A-2	0-10	60-70	40-55	35-50	25-45	15-30	20-30	NP-5
	3-13	Extremely flaggy fine sandy loam	GM	A-1, A-2	0-10	60-70	40-55	35-50	25-45	15-30	20-30	NP-5
	13-17	Extremely flaggy sandy loam	GC-GM, GM	A-1, A-2	0-10	60-70	40-55	35-50	20-35	15-20	20-30	NP-10
	17-21	Unweathered bedrock			---	---	---	---	---	---	---	---
54:												
Sheecal---------	0-2	Channery loam	SC-SM	A-4	0	0-10	70-80	65-75	55-65	35-50	25-35	5-10
	2-5	Channery loam	SC-SM	A-4	0	0-10	70-80	65-75	55-65	35-50	25-35	5-10
	5-15	Very flaggy loam	GC-GM	A-2, A-4	0	25-45	50-70	45-65	35-55	25-45	25-35	5-10
	15-29	Extremely flaggy loam	GC-GM	A-2	0	35-55	35-45	30-40	25-40	20-30	25-35	5-10
	29-33	Unweathered bedrock			---	---	---	---	---	---	---	---
55:												
Sheecal---------	0-4	Channery loam	SC-SM	A-4	0	0-10	70-80	65-75	55-65	35-50	25-35	5-10
	4-12	Very flaggy loam	GC-GM	A-2, A-4	0	25-45	50-70	45-65	35-55	25-45	25-35	5-10
	12-21	Extremely flaggy loam	GC-GM	A-2	0	35-55	35-45	30-40	25-40	20-30	25-35	5-10
	21-25	Unweathered bedrock			---	---	---	---	---	---	---	---
56:												
Shotnick--------	0-3	Fine sandy loam	CL-ML, SC-SM	A-4	0	0	100	100	70-85	40-55	20-30	5-10
	3-16	Sandy loam, fine sandy loam	CL-ML, SC-SM	A-4	0	0	100	100	70-85	40-55	20-30	5-10
	16-30	Sandy loam, fine sandy loam	CL-ML, SC-SM	A-4	0	0	100	100	70-85	40-55	20-30	5-10
	30-60	Sandy loam	SC-SM	A-2, A-4	0	0	100	100	60-70	30-40	20-30	5-10
Uffens----------	0-3	Sandy loam	SM	A-2, A-4	0	0	100	100	60-70	30-40	20-30	NP-5
	3-24	Sandy clay loam	CL-ML, SC, SC-SM, CL	A-4	0	0	100	100	80-90	35-55	25-35	5-10
	24-37	Loam	CL-ML	A-4	0	0	100	100	85-95	70-80	20-30	5-10
	37-60	Sand	SM, SW-SM	A-2, A-3	0	0	100	100	50-70	5-15	0-0	NP
57:												
Splimo----------	0-3	Very gravelly loam	GC-GM	A-2, A-4	0	15-30	40-60	35-55	25-50	20-40	20-30	5-10
	3-7	Extremely flaggy loam	GC-GM	A-2	15-25	35-50	35-45	30-40	25-40	20-30	25-35	5-10
	7-11	Extremely flaggy loam	GC-GM	A-2	15-25	35-50	35-45	30-40	25-40	20-30	25-35	5-10
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
58:												
Splimo----------	0-2	Extremely channery loam	GC-GM, GM	A-1, A-2	5-20	10-20	25-35	20-30	15-30	10-25	20-30	NP-10
	2-4	Extremely channery loam	GC-GM	A-2	5-15	10-15	35-45	30-40	25-40	20-30	20-30	5-10
	4-19	Extremely channery loam	GC-GM	A-2	5-15	10-15	25-35	20-30	15-30	10-25	20-30	5-10
	19-23	Unweathered bedrock			---	---	---	---	---	---	---	---
Chew------------	0-3	Very channery loam	GM	A-1, A-2	0	15-20	40-45	35-40	25-40	20-30	20-30	NP-5
	3-9	Very channery loam	GC-GM	A-2	0	10-15	45-50	40-45	35-40	25-30	20-30	5-10
	9-17	Channery loam, channery clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0	5-10	80-90	75-85	60-80	40-65	25-35	5-15
	17-27	Channery loam, channery clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0	5-10	80-90	75-85	60-80	40-65	25-35	5-15
	27-38	Channery loam	CL-ML, SC-SM	A-4	0	5-10	75-85	70-80	60-75	40-60	20-30	5-10
	38-42	Unweathered bedrock			---	---	---	---	---	---	---	---
59:												
Stout-----------	0-2	Sandy loam	SC-SM, SM	A-2-4, A-4	0-5	0-5	85-100	80-100	50-70	25-40	20-25	NP-5
	2-11	Sandy loam	SC-SM, SM	A-2-4, A-4	0	0-5	95-100	90-100	50-70	30-40	20-25	NP-5
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
60:												
Strell----------	0-2	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	2-11	Fine sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	65-85	20-50	---	NP
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
Marthaspeak-----	0-3	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	3-25	Fine sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	65-85	20-50	---	NP
	25-33	Fine sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	65-85	20-50	---	NP
	33-37	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
61:												
Strell----------	0-2	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	2-11	Fine sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	65-85	20-50	---	NP
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
Marthaspeak-----	0-3	Loamy fine sand	SM	A-2-4, A-4	0	0	100	100	70-85	30-50	---	NP
	3-25	Fine sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	65-85	20-50	---	NP
	25-33	Fine sand, loamy fine sand	SM	A-2-4, A-4	0	0	100	100	65-85	20-50	---	NP
	33-37	Unweathered bedrock			---	---	---	---	---	---	---	---
62:												
Strych----------	0-5	Cobbly loam	CL, ML, SC, SM	A-4	0-10	15-45	75-90	70-85	60-80	45-65	20-30	NP-10
	5-10	Cobbly loam, cobbly sandy loam	CL, ML, SC, SM	A-2-4, A-4	0-10	15-45	75-90	70-85	45-80	25-65	20-30	NP-10
	10-34	Very stony loam, very stony sandy loam	CL, GM, ML, SC	A-1-b, A-2-4, A-4	25-70	0-50	45-90	40-85	25-80	15-65	20-30	NP-10
	34-50	Very cobbly loam, very cobbly sandy loam	CL, GM, ML, SM	A-1-b, A-2-4, A-4	0-25	20-70	45-90	40-85	25-80	15-65	20-30	NP-10
	50-60	Loam, loamy fine sand	CL, ML, SC, SM	A-2-4, A-4	0	0	100	100	70-95	30-75	20-30	NP-10
Mellenthin------	0-2	Very stony sandy loam	GC-GM, GM, SC-SM, SM	A-1-b, A-2-4	25-70	0-50	45-90	40-85	25-60	15-35	20-25	NP-5
	2-12	Very stony sandy loam, very stony fine sandy loam, very stony loam	CL-ML, GM, ML, SM	A-1-b, A-2-4, A-4	25-75	0-50	45-90	40-85	25-85	15-65	20-25	NP-5
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
63:												
Tipper----------	0-5	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	85-100	80-100	50-85	25-50	20-25	NP-5
	5-25	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	85-100	80-100	50-85	25-50	20-25	NP-5
	25-29	Weathered bedrock			---	---	---	---	---	---	---	---
Crustown--------	0-3	Loamy fine sand	SC-SM, SM	A-4, A-2-4	0	0	95-100	95-100	70-85	30-50	20-25	NP-5
	3-13	Fine sand	SC-SM, SM	A-2-4	0	0	90-100	90-100	65-80	20-35	20-25	NP-5
	13-17	Weathered bedrock			---	---	---	---	---	---	---	---
64:												
Torriorthents---	0-4	Very gravelly loam	GC, GC-GM, GM, GW-GM	A-1, A-2-4, A-4, A-6	0-25	0-25	35-55	30-50	20-50	10-40	20-35	NP-15
	4-18	Very gravelly sandy loam, very gravelly loam, very gravelly clay	GC, GC-GM, GM, GW-GM	A-1, A-2-4, A-4, A-6	0-25	0-25	35-55	30-50	20-50	10-50	20-45	NP-20
	18-22	Unweathered bedrock			---	---	---	---	---	---	---	---
Torripsamments--	0-4	Sand	SC-SM, SM, SW-SM	A-2, A-3	0	0	100	100	50-70	5-15	20-25	NP-5
	4-16	Sand	SC-SM, SM, SW-SM	A-2, A-3	0	0	100	100	50-70	5-15	20-25	NP-5
	16-26	Sand	SC-SM, SM, SW-SM	A-2, A-3	0	0	100	100	50-70	5-15	20-25	NP-5
	26-30	Unweathered bedrock			---	---	---	---	---	---	---	---
65:												
Tsetaa family---	0-2	Very stony sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2	25-70	0-50	45-90	40-85	25-60	15-35	20-25	NP-5
	2-6	Very stony sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2	25-70	0-50	45-90	40-85	25-60	15-35	20-25	NP-5
	6-15	Extremely cobbly loamy fine sand, extremely cobbly loamy sand, extremely cobbly sand	GM, GP-GM, SM, SP-SM	A-1, A-2, A-3, A-4	0-30	30-85	20-80	15-75	10-65	0-40	20-25	NP-5
	15-60	Extremely cobbly loamy fine sand, extremely cobbly loamy sand, extremely cobbly sand	GM, GP-GM, SM, SP-SM	A-1, A-2, A-3, A-4	0-30	30-85	20-80	15-75	10-65	0-40	20-25	NP-5
Bankard family--	0-2	Sand	SM, SW-SM	A-2-4, A-3	0	0	100	100	50-70	5-15	---	NP
	2-23	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP
	23-28	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP
	28-34	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP
	34-60	Sand, loamy sand, loamy fine sand	SM, SP-SM, SW-SM	A-2-4, A-3, A-4	0	0	100	100	50-85	5-50	---	NP

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
55:												
Fluvaquents-----	0-5	Fine sand	SC-SM, SM	A-2-4	0	0	100	100	65-80	20-35	20-25	NP-5
	5-22	Loamy fine sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	22-30	Sand, fine sandy loam, loam	ML, SC, SM, CL	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	30-36	Sand, fine sandy loam, silt loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	36-43	Sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	43-50	Sand, fine sandy loam, loam	SM, CL, ML, SC	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
	50-60	Sand, fine sandy loam, loam	CL, ML, SC, SM	A-2-4, A-3, A-4	0	0	100	100	50-95	5-75	20-30	NP-10
66:												
Turzo-----------	0-4	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-95	60-75	25-35	5-15
	4-60	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	60-85	25-40	5-15
67:												
Ustic Torrifluvents--	0-5	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0-5	0-10	85-100	80-100	55-85	35-55	20-25	NP-5
	5-60	Stratified extremely stony coarse sand to extremely stony loamy sand	GP, GW, SP, SW	A-1	42-47	42-45	56-100	20-100	9-55	2-18	20-25	NP-5
Ustic Torrifluvents--	0-5	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0-5	0-10	85-100	80-100	55-85	35-55	20-25	NP-5
	5-60	Stratified extremely stony coarse sand to extremely stony loamy sand	GP, GW, SP, SW	A-1	42-47	42-45	56-100	20-100	9-55	2-18	20-25	NP-5
68:												
Ustorthents, frigid---------	0-6	Cobbly loam	CL, CL-ML, SC, SC-SM	A-4	0-5	15-45	75-90	70-85	60-80	45-65	25-30	5-10
	6-33	Cobbly sandy clay loam	SC, SC-SM	A-2, A-4	0-5	15-45	75-90	70-85	55-75	25-45	25-30	5-10
	33-37	Unweathered bedrock			---	---	---	---	---	---	---	---
Borolls---------	0-10	Loam	CL, CL-ML	A-4	0-5	0-10	85-100	80-100	70-95	50-75	25-30	5-10
	10-19	Loam	CL, CL-ML	A-4	0-5	0-10	85-100	80-100	70-95	50-75	25-30	5-10
	19-30	Cobbly sandy clay loam	SC, SC-SM	A-2, A-4	0-10	15-45	75-90	70-85	55-75	25-45	25-30	5-10
	30-34	Unweathered bedrock			---	---	---	---	---	---	---	---
69:												
Utaline---------	0-3	Very gravelly sandy loam	GC-GM, GM	A-1	0	5-15	35-55	30-50	20-35	10-20	20-25	NP-5
	3-7	Very gravelly loam	GC-GM	A-2	0	5-15	35-45	30-40	25-40	20-30	25-35	5-10
	7-23	Very gravelly loam	GC-GM	A-2	0	5-15	35-45	30-40	25-40	20-30	25-35	5-10
	23-46	Very gravelly loam	GC-GM	A-2	0	5-15	35-45	30-40	25-40	20-30	25-35	5-10
	46-60	Very gravelly loam	GC-GM	A-2	0	5-15	35-45	30-40	25-40	20-30	25-35	5-10
Hanksville------	0-2	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	30-45	10-20
	2-13	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7	0	0	100	100	90-100	75-95	30-55	10-35
	13-33	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7	0	0	100	100	90-100	75-95	30-55	10-35
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
70:												
Windcomb--------	0-4	Very channery silt loam	GC-GM	A-2, A-4	0	0	35-50	30-45	25-40	25-40	25-35	5-10
	4-9	Very channery loam	GC-GM	A-2	0	0	35-50	30-45	25-40	20-30	20-30	5-10
	9-17	Very channery loam	GC-GM	A-2	0	0	35-50	30-45	25-40	20-30	20-30	5-10
	17-21	Unweathered bedrock			---	---	---	---	---	---	---	---
71:												
Windcomb--------	0-4	Very channery silt loam	GC-GM	A-2, A-4	0	0	35-50	30-45	25-40	25-40	25-35	5-10
	4-9	Very channery loam	GC-GM	A-2	0	0	35-50	30-45	25-40	20-30	20-30	5-10
	9-17	Very channery loam	GC-GM	A-2	0	0	35-50	30-45	25-40	20-30	20-30	5-10
	17-21	Unweathered bedrock			---	---	---	---	---	---	---	---
Rizno-----------	0-5	Cobbly fine sandy loam	SC-SM, SM	A-2-4, A-4	0-10	15-45	75-90	70-85	50-70	30-45	20-25	NP-5
	5-15	Cobbly fine sandy loam, cobbly loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-10	15-45	75-90	70-85	50-80	30-65	20-25	NP-5
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
71:												
Anasazi---------	0-3	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0-20	0-20	85-100	80-100	55-85	35-55	20-25	NP-5
	3-10	Cobbly fine sandy loam, cobbly loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-10	15-45	75-90	70-85	50-80	30-65	20-25	NP-5
	10-19	Gravelly fine sandy loam, gravelly loam	GM, SC-SM, SM, CL-ML	A-2-4, A-4	0-10	0-15	60-80	55-75	40-70	25-55	20-25	NP-5
	19-24	Very gravelly loamy fine sand, very gravelly loam, very gravelly loamy sand	GM, GW-GM	A-1, A-2, A-4	0-25	0-25	35-55	30-50	20-50	10-40	20-25	NP-5
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---
72:												
Yampa-----------	0-7	Gravelly loam	GC-GM, GM, SC-SM, SM	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	NP-5
	7-13	Extremely gravelly loam	GM, GW-GM	A-1	0-30	0-35	15-30	10-25	10-25	5-20	20-25	NP-5
	13-31	Very cobbly loam, very cobbly clay loam	CL, GC, SC	A-2, A-4	0-25	20-70	45-90	45-85	35-85	25-70	25-30	5-10
	31-60	Extremely gravelly sandy loam, extremely gravelly loamy sand, extremely cobbly sandy loam	GP, GP-GM, GW, GW-GM	A-1, A-2	0-30	0-85	15-80	10-75	5-50	0-30	20-25	NP-3
73:												
Yampa-----------	0-7	Very cobbly loam	GC-GM, GM, ML, SC-SM	A-2, A-4	0-25	20-70	45-90	40-85	35-80	25-65	20-25	NP-5
	7-13	Extremely gravelly loam	GM, GW-GM	A-1	0-30	0-35	15-30	10-25	10-25	5-20	20-25	NP-5
	13-31	Very cobbly loam, very cobbly clay loam	CL, GC, SC	A-2, A-4	0-25	20-70	45-90	45-85	35-85	25-70	25-30	5-10
	31-60	Extremely gravelly sandy loam, extremely gravelly loamy sand, extremely cobbly sandy loam	GP, GP-GM, GW, GW-GM	A-1, A-2	0-30	0-85	15-80	10-75	5-50	0-30	20-25	NP-3
Hackling--------	0-1	Gravelly sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2-4	0-15	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
	1-4	Very gravelly sandy loam	GC, GC-GM, GW-GC	A-1, A-2-4	0-10	0-15	35-55	30-50	20-35	10-20	20-25	5-10
	4-15	Extremely cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1, A-2-4	0-30	30-85	20-80	15-75	10-50	5-30	25-30	NP-5
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---
Mantlemine------	0-3	Fine sandy loam	CL, CL-ML, SC, SC-SM	A-4	0	0	100	100	70-85	40-55	25-30	5-10
	3-13	Silt loam, loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	13-45	Silt loam, loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	45-60	Silt loam, loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-90	25-30	5-10
74:												
Yarts-----------	0-8	Fine sandy loam	SC-SM, SM	A-4	0	0	100	95-100	65-80	35-50	20-30	NP-10
	8-60	Sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	85-100	80-100	50-85	30-55	0-20	NP-10
75:												
Yarts-----------	0-8	Fine sandy loam	ML, SM	A-4	0	0	100	100	70-85	40-55	20-25	NP-5
	8-26	Loamy fine sand	SM	A-2, A-4	0	0	100	100	60-85	25-40	15-20	NP-5
	26-39	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-85	40-55	20-30	NP-10
	39-57	Loamy fine sand	SM	A-2, A-4	0	0	100	100	60-85	25-40	0-14	NP
	57-60	Very fine sandy loam	ML	A-4	0	0	100	100	85-95	50-65	20-25	NP-5
Yarts-----------	0-4	Fine sandy loam	SC-SM, SM	A-4	0	0	100	95-100	65-80	35-50	20-30	NP-10
	4-10	Sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	85-100	80-100	50-85	30-55	0-20	NP-10
	10-17	Sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	85-100	80-100	50-85	30-55	0-20	NP-10
	17-37	Sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	85-100	80-100	50-85	30-55	0-20	NP-10
	37-60	Sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	85-100	80-100	50-85	30-55	0-20	NP-10

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In.				Pct.	Pct.					Pct.	
76:												
Zillion---------	0-7	Loam	CL, CL-ML	A-4	0	5-10	85-100	80-100	75-90	55-70	25-30	5-10
	7-18	Cobbly loam	CL, CL-ML	A-4	0-5	15-25	80-90	70-85	65-80	50-65	25-30	5-10
	18-26	Very cobbly loam	GC, GC-GM, SC, SC-SM	A-2, A-4	0-15	30-60	50-90	45-80	40-70	30-60	25-30	5-10
	26-34	Very cobbly sandy clay loam	GC, SC	A-2, A-6	5-25	25-60	45-85	40-80	30-75	15-45	30-35	10-15
	34-45	Extremely cobbly sandy clay loam	GC, GC-GM, SC, SP-SC	A-1, A-2, A-4	10-25	30-85	20-80	15-75	10-70	5-40	22-27	5-10
	45-60	Extremely cobbly sandy clay loam	GC, GC-GM, SC, SP-SC	A-1, A-2, A-4	10-25	30-85	20-80	15-75	10-70	5-40	22-27	5-10
Yampa-----------	0-7	Very cobbly loam	GC-GM, GM, ML, SC-SM	A-2, A-4	0-25	20-70	45-90	40-85	35-80	25-65	20-25	NP-5
	7-13	Extremely gravelly loam	GM, GW-GM	A-1	0-30	0-35	15-30	10-25	10-25	5-20	20-25	NP-5
	13-31	Very cobbly loam, very cobbly clay loam	CL, GC, SC	A-2, A-4	0-25	20-70	45-90	45-85	35-85	25-70	25-30	5-10
	31-60	Extremely cobbly sandy loam, extremely gravelly loamy sand, extremely gravelly sandy loam	GP, GP-GM, GW, GW-GM	A-1, A-2	0-30	0-85	15-80	10-75	5-50	0-30	20-25	NP-3
Clyl------------	0-2	Channery silt loam	GC-GM, GM	A-2, A-4	0	0-10	45-55	40-50	35-50	30-45	20-30	NP-10
	2-9	Channery silt loam	GC-GM, GM	A-4	0	0-10	60-70	55-65	45-60	35-50	20-30	NP-10
	9-19	Very channery silt loam	GC-GM, GM	A-2	0-5	5-10	40-50	35-45	25-40	20-35	25-35	5-10
	19-29	Very channery loam	GC-GM, GM	A-2	5-10	10-15	40-50	35-45	25-40	20-30	25-35	5-10
	29-60	Extremely flaggy loam	GC-GM, GM	A-2, A-4	30-35	35-40	55-65	50-60	40-55	30-45	25-35	5-10

Table 15.--Physical Soil Properties

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
1:														
Abracon	0-4	---	---	15-25	1.25-1.40	4.23-14.11	0.14-0.17	0.0-2.9	1.0-2.0	.37	.37	5	4L	86
	4-10	---	---	18-27	1.25-1.40	4.23-14.11	0.14-0.17	0.0-2.9	1.0-2.0	.37	.37			
	10-21	---	---	18-35	1.30-1.45	4.23-14.11	0.14-0.18	0.0-2.9	0.5-2.0	.37	.43			
	21-35	---	---	18-35	1.30-1.45	4.23-14.11	0.14-0.18	0.0-2.9	0.5-2.0	.37	.43			
	35-51	---	---	18-35	1.30-1.45	4.23-14.11	0.14-0.18	0.0-2.9	0.5-2.0	.37	.43			
	51-60	---	---	18-27	1.30-1.45	4.23-14.11	0.14-0.17	0.0-2.9	0.0-0.5	.32	.43			
Solirec	0-4	---	---	13-20	1.35-1.50	4.23-14.11	0.10-0.14	0.0-2.9	0.5-1.0	.32	.32	3	3	86
	4-12	---	---	20-27	1.25-1.40	4.23-14.11	0.13-0.19	3.0-5.9	0.0-1.0	.24	.24			
	12-19	---	---	20-27	1.25-1.40	4.23-14.11	0.13-0.19	0.0-2.9	0.0-0.5	.43	.43			
	19-37	---	---	28-32	1.30-1.45	4.23-14.11	0.14-0.20	3.0-5.9	0.0-0.5	.37	.37			
	37-53	---	---	28-32	1.30-1.45	4.23-14.11	0.14-0.20	3.0-5.9	0.0-0.5	.37	.37			
	53-75	---	---	28-32	1.30-1.45	4.23-14.11	0.14-0.20	3.0-5.9	0.0-0.5	.37	.37			
2:														
Arches	0-2	---	---	0-5	1.45-1.60	42.34-141.14	0.07-0.10	0.0-2.9	0.0-0.5	.32	.32	1	2	134
	2-5	---	---	0-5	1.45-1.60	42.34-141.14	0.07-0.10	0.0-2.9	0.0-0.5	.32	.32			
	5-9	---	---	0-5	1.45-1.60	42.34-141.14	0.06-0.08	0.0-2.9	0.0-0.5	.28	.28			
	9-13	---	---	---	---	0.00-0.42	---	---	---	---	---			
Mespun	0-3	---	---	0-8	1.55-1.65	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.24	.24	5	1	220
	3-8	---	---	0-8	1.55-1.65	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.24	.24			
	8-19	---	---	0-8	1.55-1.65	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.24	.24			
	19-21	---	---	0-8	1.45-1.55	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28			
	21-37	---	---	0-8	1.45-1.55	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28			
	37-49	---	---	0-8	1.45-1.55	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28			
	49-60	---	---	0-8	1.45-1.55	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28			
3:														
Polychrome	0-6	---	---	15-19	1.35-1.50	4.23-14.11	0.06-0.09	0.0-2.9	0.5-1.0	.10	.32	3	6	48
	6-13	---	---	18-25	1.25-1.40	4.23-14.11	0.11-0.17	0.0-2.9	0.0-0.5	.24	.43			
	13-18	---	---	18-25	1.25-1.40	4.23-14.11	0.08-0.13	0.0-2.9	0.0-0.5	.10	.43			
	18-32	---	---	18-25	1.25-1.40	4.23-14.11	0.06-0.10	0.0-2.9	0.0-0.5	.05	.43			
	32-49	---	---	---	---	1.41-4.23	---	---	---	---	---			
	49-53	---	---	---	---	0.42-1.41	---	---	---	---	---			
5:														
Bankard family	0-2	---	---	0-5	1.45-1.60	141.14-141.14	0.05-0.08	0.0-2.9	0.0-1.0	.17	.17	5	1	220
	2-23	---	---	0-8	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-1.0	.20	.20			
	23-28	---	---	0-8	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-1.0	.20	.20			
	28-34	---	---	0-8	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-1.0	.20	.20			
	34-60	---	---	0-8	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-1.0	.20	.20			
Cameo	0-2	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.5-2.0	.28	.28	5	2	134
	2-7	---	---	9-18	1.25-1.50	14.11-42.34	0.13-0.18	0.0-2.9	0.0-1.0	.32	.32			
	7-22	---	---	9-18	1.25-1.50	14.11-42.34	0.13-0.18	0.0-2.9	0.0-1.0	.32	.32			
	22-34	---	---	9-18	1.25-1.50	14.11-42.34	0.13-0.18	0.0-2.9	0.0-1.0	.32	.32			
	34-60	---	---	9-18	1.25-1.50	14.11-42.34	0.13-0.18	0.0-2.9	0.0-1.0	.32	.32			
6:														
Begay	0-4	---	---	2-8	1.25-1.35	14.11-42.34	0.10-0.13	0.0-2.9	0.5-1.0	.20	.20	5	3	86
	4-12	---	---	9-13	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.5-1.0	.24	.24			
	12-24	---	---	10-15	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
	24-37	---	---	10-15	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
	37-60	---	---	10-15	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
7:														
Begay	0-4	---	---	2-8	1.25-1.35	14.11-42.34	0.10-0.13	0.0-2.9	0.5-1.0	.20	.20	5	3	86
	4-12	---	---	9-13	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.5-1.0	.24	.24			
	12-24	---	---	10-15	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
	24-37	---	---	10-15	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
	37-60	---	---	10-15	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
Mespun	0-3	---	---	0-8	1.55-1.65	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.24	.24	5	1	220
	3-8	---	---	0-8	1.55-1.65	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.24	.24			
	8-19	---	---	0-8	1.55-1.65	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.24	.24			
	19-21	---	---	0-8	1.45-1.55	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28			
	21-37	---	---	0-8	1.45-1.55	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28			
	37-49	---	---	0-8	1.45-1.55	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28			
	49-60	---	---	0-8	1.45-1.55	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28			
8:														
Bodry	0-8	---	---	35-40	1.15-1.30	1.41-4.23	0.16-0.20	3.0-5.9	0.5-1.0	.43	.43	3	4L	86
	8-15	---	---	40-45	1.15-1.30	0.42-1.41	0.16-0.20	6.0-8.9	0.0-0.5	.32	.32			
	15-28	---	---	40-45	1.25-1.40	0.42-1.41	0.16-0.20	6.0-8.9	0.0-0.5	.32	.32			
	28-38	---	---	35-40	1.25-1.40	1.41-4.23	0.16-0.20	3.0-5.9	0.0-0.5	.37	.37			
	38-50	---	---	---	---	0.42-1.41	---	---	---	---	---			
	50-54	---	---	---	---	0.00-0.42	---	---	---	---	---			

Table 15.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
9:														
Bondman	0-2	---	---	12-20	1.35-1.50	4.23-42.34	0.10-0.13	0.0-2.9	0.5-1.0	.28	.28	1	3	86
	2-8	---	---	20-30	1.25-1.40	1.41-14.11	0.14-0.18	0.0-2.9	0.0-0.6	.32	.32			
	8-12	---	---	---	---	0.00-0.42	---	---	---	---	---			
10:														
Cameo	0-2	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.5-2.0	.28	.28	5	2	134
	2-7	---	---	9-18	1.25-1.50	14.11-42.34	0.13-0.18	0.0-2.9	0.0-1.0	.32	.32			
	7-22	---	---	9-18	1.25-1.50	14.11-42.34	0.13-0.18	0.0-2.9	0.0-1.0	.32	.32			
	22-34	---	---	9-18	1.25-1.50	14.11-42.34	0.13-0.18	0.0-2.9	0.0-1.0	.32	.32			
	34-60	---	---	9-18	1.25-1.50	14.11-42.34	0.13-0.18	0.0-2.9	0.0-1.0	.32	.32			
11:														
Cameo	0-5	---	---	20-35	1.25-1.40	1.41-14.11	0.14-0.18	0.0-2.9	0.0-1.0	.20	.20	5	5	56
	5-9	---	---	27-35	1.15-1.40	1.41-4.23	0.14-0.21	0.0-2.9	0.0-0.5	.32	.32			
	9-60	---	---	18-30	1.25-1.30	1.41-14.11	0.14-0.20	0.0-2.9	0.0-0.5	.37	.37			
12:														
Clapper	0-3	---	---	15-25	1.15-1.30	4.23-14.11	0.07-0.13	0.0-2.9	1.0-2.0	.10	.37	5	6	48
	3-7	---	---	15-25	1.15-1.30	4.23-14.11	0.07-0.13	0.0-2.9	1.0-2.0	.10	.37			
	7-13	---	---	15-25	1.15-1.30	4.23-14.11	0.07-0.13	0.0-2.9	1.0-2.0	.10	.37			
	13-21	---	---	18-27	1.25-1.40	4.23-14.11	0.07-0.13	0.0-2.9	1.0-2.0	.10	.37			
	21-36	---	---	18-27	1.25-1.40	4.23-14.11	0.07-0.13	0.0-2.9	1.0-2.0	.10	.37			
	36-49	---	---	18-27	1.25-1.40	4.23-14.11	0.07-0.13	0.0-2.9	1.0-2.0	.10	.37			
	49-60	---	---	20-27	1.25-1.40	4.23-14.11	0.07-0.13	0.0-2.9	0.5-1.0	.05	.20			
Abracon	0-5	---	---	15-25	1.25-1.40	4.23-14.11	0.14-0.17	0.0-2.9	1.0-2.0	.37	.37	5	4L	86
	5-56	---	---	18-35	1.30-1.45	4.23-14.11	0.14-0.18	0.0-2.9	0.5-2.0	.37	.43			
	56-60	---	---	18-27	1.30-1.45	4.23-14.11	0.14-0.17	0.0-2.9	0.0-0.5	.32	.43			
13:														
Cortyzack	0-3	---	---	20-27	1.15-1.25	4.23-14.11	0.13-0.19	0.0-2.9	2.0-4.0	.20	.20	5	6	48
	3-8	---	---	28-32	1.25-1.40	4.23-14.11	0.14-0.20	3.0-5.9	2.0-4.0	.17	.17			
	8-12	---	---	28-32	1.25-1.40	4.23-14.11	0.14-0.20	3.0-5.9	2.0-4.0	.17	.17			
	12-23	---	---	28-32	1.25-1.40	4.23-14.11	0.14-0.20	3.0-5.9	1.0-2.0	.32	.32			
	23-39	---	---	28-32	1.25-1.40	4.23-14.11	0.14-0.20	3.0-5.9	0.5-1.0	.32	.32			
	39-48	---	---	28-32	1.25-1.40	4.23-14.11	0.14-0.20	3.0-5.9	0.5-1.0	.32	.32			
	48-72	---	---	18-25	1.25-1.40	4.23-14.11	0.13-0.19	0.0-2.9	0.0-0.5	.37	.43			
	72-76	---	---	18-25	1.25-1.40	4.23-14.11	0.13-0.19	0.0-2.9	0.0-0.5	.43	.43			
Duffymont	0-3	---	---	8-13	1.35-1.50	14.11-42.34	0.03-0.08	0.0-2.9	2.0-3.0	.05	.28	1	8	0
	3-13	---	---	8-13	1.35-1.50	14.11-42.34	0.03-0.08	0.0-2.9	2.0-3.0	.05	.28			
	13-17	---	---	10-18	1.35-1.50	14.11-42.34	0.03-0.08	0.0-2.9	1.0-2.0	.05	.37			
	17-21	---	---	---	---	0.00-0.42	---	---	---	---	---			
14:														
Cragnot	0-3	---	---	12-20	1.25-1.40	4.23-14.11	0.07-0.09	0.0-2.9	0.0-2.0	.15	.37	2	8	0
	3-12	---	---	15-30	1.25-1.30	1.41-14.11	0.08-0.11	0.0-2.9	0.0-1.0	.15	.32			
	12-30	---	---	15-30	1.25-1.30	1.41-14.11	0.04-0.06	0.0-2.9	0.0-0.5	.05	.37			
	30-38	---	---	15-30	1.25-1.30	1.41-14.11	0.04-0.06	0.0-2.9	0.0-0.5	.05	.37			
	38-60	---	---	12-30	1.25-1.50	1.41-14.11	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
Pensore	0-3	---	---	12-20	1.25-1.40	4.23-42.34	0.10-0.13	0.0-2.9	0.0-2.0	.20	.37	1	4L	86
	3-10	---	---	10-27	1.25-1.50	4.23-42.34	0.04-0.05	0.0-2.9	0.0-1.0	.05	.32			
	10-16	---	---	10-27	1.25-1.50	4.23-42.34	0.03-0.05	0.0-2.9	0.0-0.5	.05	.37			
	16-20	---	---	---	---	0.00-0.42	---	---	---	---	---			
Grapit	0-5	---	---	15-25	1.25-1.40	4.23-42.34	0.10-0.13	0.0-2.9	2.0-3.0	.15	.28	2	4L	86
	5-14	---	---	15-25	1.25-1.40	4.23-42.34	0.07-0.09	0.0-2.9	2.0-3.0	.10	.28			
	14-30	---	---	20-27	1.25-1.40	4.23-14.11	0.04-0.05	0.0-2.9	0.5-1.0	.05	.32			
	30-54	---	---	20-27	1.25-1.40	4.23-14.11	0.04-0.05	0.0-2.9	0.0-0.5	.05	.43			
	54-60	---	---	15-25	1.25-1.40	4.23-42.34	0.07-0.09	0.0-2.9	0.0-0.5	.15	.43			
15:														
Davtone	0-2	---	---	18-25	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	2.0-4.0	.24	.24	5	6	48
	2-6	---	---	18-25	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	2.0-4.0	.24	.24			
	6-17	---	---	27-35	1.25-1.40	4.23-14.11	0.16-0.19	3.0-5.9	1.0-2.0	.20	.20			
	17-30	---	---	27-35	1.25-1.40	1.41-4.23	0.16-0.19	3.0-5.9	0.5-1.0	.24	.24			
	30-60	---	---	20-27	1.25-1.40	4.23-14.11	0.10-0.13	0.0-2.9	0.0-1.0	.24	.43			
Forsey	0-2	---	---	12-18	1.35-1.50	14.11-42.34	0.07-0.10	0.0-2.9	2.0-3.0	.15	.24	5	3	86
	2-8	---	---	12-18	1.35-1.50	14.11-42.34	0.07-0.10	0.0-2.9	2.0-3.0	.15	.24			
	8-18	---	---	18-27	1.25-1.40	4.23-14.11	0.06-0.08	0.0-2.9	0.5-2.0	.10	.24			
	18-24	---	---	18-27	1.25-1.40	4.23-14.11	0.06-0.08	0.0-2.9	0.5-2.0	.10	.24			
	24-60	---	---	12-18	1.35-1.50	14.11-42.34	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32			
16:														
Dearjosh	0-5	---	---	2-9	1.45-1.60	42.34-141.14	0.06-0.08	0.0-2.9	0.6-2.0	.20	.20	5	2	134
	5-21	---	---	3-9	1.45-1.60	42.34-141.14	0.06-0.11	0.0-2.9	0.0-0.5	.32	.32			
	21-48	---	---	1-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.32	.32			
	48-54	---	---	1-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.32	.32			
	54-60	---	---	1-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.32	.32			

Table 15.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
16:														
Lakebench	0-6	---	---	10-18	1.35-1.50	14.11-42.34	0.13-0.15	0.0-2.9	0.8-2.0	.28	.28	5	3	86
	6-22	---	---	10-18	1.25-1.50	14.11-42.34	0.13-0.18	0.0-2.9	0.0-0.6	.37	.37			
	22-60	---	---	12-18	1.25-1.50	14.11-42.34	0.13-0.18	0.0-2.9	0.0-0.5	.37	.37			
17:														
Deaver	0-2	---	---	35-40	1.15-1.30	0.42-1.41	0.13-0.16	3.0-5.9	0.5-1.0	.17	.32	3	4L	86
	2-8	---	---	40-50	1.15-1.30	0.42-1.41	0.14-0.17	6.0-8.9	0.0-0.5	.28	.28			
	8-18	---	---	40-50	1.15-1.30	0.42-1.41	0.14-0.17	6.0-8.9	0.0-0.5	.28	.28			
	18-35	---	---	40-50	1.15-1.30	0.42-1.41	0.14-0.17	6.0-8.9	0.0-0.5	.28	.28			
	35-39	---	---	---	---	0.42-1.41	---	---	---	---	---			
Avalon	0-3	---	---	18-27	1.25-1.40	4.23-14.11	0.14-0.18	0.0-2.9	0.5-1.0	.37	.37	5	4L	86
	3-12	---	---	28-34	1.25-1.40	1.41-4.23	0.13-0.19	3.0-5.9	0.0-0.5	.28	.28			
	12-22	---	---	28-34	1.25-1.40	1.41-4.23	0.13-0.19	3.0-5.9	0.0-0.5	.28	.28			
	22-42	---	---	28-34	1.25-1.40	1.41-4.23	0.13-0.19	3.0-5.9	0.0-0.5	.28	.28			
	42-55	---	---	28-34	1.25-1.40	1.41-4.23	0.13-0.19	3.0-5.9	0.0-0.5	.28	.28			
	55-62	---	---	28-34	1.25-1.40	1.41-4.23	0.13-0.19	3.0-5.9	0.0-0.5	.28	.28			
18:														
Deaver	0-2	---	---	35-40	1.15-1.30	0.42-1.41	0.17-0.21	3.0-5.9	0.5-1.0	.32	.32	3	4L	86
	2-8	---	---	40-50	1.15-1.30	0.42-1.41	0.14-0.17	6.0-8.9	0.0-0.5	.28	.28			
	8-18	---	---	40-50	1.15-1.30	0.42-1.41	0.14-0.17	6.0-8.9	0.0-0.5	.28	.28			
	18-35	---	---	40-50	1.15-1.30	0.42-1.41	0.14-0.17	6.0-8.9	0.0-0.5	.28	.28			
	35-39	---	---	---	---	0.42-1.41	---	---	---	---	---			
Chipeta	0-1	---	---	35-40	1.15-1.30	0.42-1.41	0.17-0.21	3.0-5.9	0.0-0.5	.32	.32	2	4L	86
	1-12	---	---	40-50	1.15-1.30	0.42-1.41	0.14-0.17	6.0-8.9	0.0-0.5	.28	.28			
	12-17	---	---	40-50	1.15-1.30	0.42-1.41	0.14-0.17	6.0-8.9	0.0-0.5	.28	.28			
	17-21	---	---	---	---	0.42-1.41	---	---	---	---	---			
19:														
Detra	0-8	---	---	10-20	1.35-1.50	4.23-42.34	0.13-0.15	0.0-2.9	2.0-3.0	.20	.20	5	3	86
	8-19	---	---	10-20	1.35-1.50	4.23-42.34	0.13-0.15	0.0-2.9	2.0-3.0	.20	.20			
	19-27	---	---	22-32	1.25-1.40	1.41-14.11	0.14-0.18	3.0-5.9	1.0-2.0	.17	.17			
	27-38	---	---	22-32	1.25-1.40	1.41-14.11	0.14-0.18	3.0-5.9	1.0-2.0	.17	.17			
	38-50	---	---	22-32	1.25-1.40	1.41-14.11	0.14-0.18	3.0-5.9	1.0-2.0	.17	.17			
	50-60	---	---	20-27	1.25-1.40	4.23-14.11	0.14-0.18	0.0-2.9	0.5-1.0	.20	.20			
Cortyzack	0-3	---	---	20-27	1.15-1.25	4.23-14.11	0.13-0.19	0.0-2.9	2.0-4.0	.20	.20	5	6	48
	3-8	---	---	28-32	1.25-1.40	4.23-14.11	0.14-0.20	3.0-5.9	2.0-4.0	.17	.17			
	8-12	---	---	28-32	1.25-1.40	4.23-14.11	0.14-0.20	3.0-5.9	2.0-4.0	.17	.17			
	12-23	---	---	28-32	1.25-1.40	4.23-14.11	0.14-0.20	3.0-5.9	1.0-2.0	.32	.32			
	23-39	---	---	28-32	1.25-1.40	4.23-14.11	0.14-0.20	3.0-5.9	0.5-1.0	.32	.32			
	39-48	---	---	28-32	1.25-1.40	4.23-14.11	0.14-0.20	3.0-5.9	0.5-1.0	.32	.32			
	48-72	---	---	18-25	1.25-1.40	4.23-14.11	0.13-0.19	0.0-2.9	0.0-0.5	.37	.43			
	72-76	---	---	18-25	1.25-1.40	4.23-14.11	0.13-0.19	0.0-2.9	0.0-0.5	.43	.43			
20:														
Eghelm	0-4	---	---	18-27	1.15-1.30	4.23-14.11	0.17-0.19	0.0-2.9	0.5-1.0	.49	.49	3	4L	86
	4-18	---	---	12-18	1.35-1.50	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.32	.32			
	18-26	---	---	12-18	1.35-1.50	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.32	.32			
	26-41	---	---	2-8	1.45-1.60	42.34-141.14	0.05-0.07	0.0-2.9	0.0-0.5	.05	.05			
	41-60	---	---	2-8	1.45-1.60	42.34-141.14	0.05-0.07	0.0-2.9	0.0-0.5	.05	.05			
Uffens	0-3	---	---	5-10	1.25-1.35	14.11-42.34	0.07-0.09	0.0-2.9	0.0-0.5	.32	.32	3	3	86
	3-24	---	---	20-27	1.25-1.40	1.41-4.23	0.07-0.13	0.0-2.9	0.0-0.5	.24	.24			
	24-37	---	---	13-27	1.25-1.40	4.23-14.11	0.07-0.13	0.0-2.9	0.0-0.5	.49	.49			
	37-60	---	---	0-5	1.45-1.60	42.34-141.14	0.04-0.06	0.0-2.9	0.0-0.5	.10	.10			
21:														
Emlin	0-2	---	---	20-25	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	2.0-4.0	.24	.24	5	4L	86
	2-5	---	---	20-25	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	2.0-4.0	.24	.24			
	5-11	---	---	20-25	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	2.0-4.0	.24	.24			
	11-14	---	---	28-34	1.25-1.40	1.41-4.23	0.16-0.19	3.0-5.9	0.5-1.0	.24	.24			
	14-19	---	---	28-34	1.25-1.40	1.41-4.23	0.16-0.19	3.0-5.9	0.5-1.0	.24	.24			
	19-30	---	---	27-34	1.15-1.30	1.41-4.23	0.16-0.19	3.0-5.9	0.0-1.0	.37	.37			
	30-41	---	---	27-34	1.15-1.30	1.41-4.23	0.16-0.19	3.0-5.9	0.0-1.0	.37	.37			
	41-60	---	---	27-34	1.15-1.30	1.41-4.23	0.16-0.19	3.0-5.9	0.0-1.0	.37	.37			
22:														
Fluvaquents	0-5	---	---	0-10	1.45-1.60	141.14-141.14	0.05-0.08	0.0-2.9	0.0-3.0	.20	.20	5	1	250
	5-22	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	22-30	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	30-36	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	36-43	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	43-50	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	50-60	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			

Table 15.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
23:														
Green River----------	0-5	---	---	8-19	1.35-1.50	14.11-42.34	0.10-0.13	0.0-2.9	0.5-1.0	.37	.37	5	3	86
	5-60	---	---	5-18	1.30-1.55	4.23-42.34	0.06-0.11	0.0-2.9	0.0-0.5	.32	.32			
Fluvaquents----------	0-5	---	---	0-10	1.45-1.60	141.14-141.14	0.05-0.08	0.0-2.9	0.0-3.0	.20	.20	5	1	250
	5-22	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	22-30	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	30-36	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	36-43	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	43-50	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	50-60	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
24:														
Hanksville----------	0-2	---	---	35-40	1.20-1.40	0.42-1.41	0.15-0.18	3.0-5.9	0.0-1.0	.43	.43	3	4L	86
	2-13	---	---	36-55	1.30-1.50	0.07-0.42	0.10-0.17	6.0-8.9	0.0-0.5	.32	.32			
	13-33	---	---	36-55	1.30-1.50	0.07-0.42	0.10-0.17	6.0-8.9	0.0-0.5	.32	.32			
	33-37	---	---	---	---	0.07-0.42	---	---	---	---	---			
25:														
Holter----------	0-3	---	---	10-18	1.35-1.50	14.11-42.34	0.07-0.08	0.0-2.9	2.0-3.0	.10	.24	5	8	0
	3-10	---	---	10-18	1.35-1.50	14.11-42.34	0.07-0.08	0.0-2.9	2.0-3.0	.10	.24			
	10-16	---	---	27-35	1.25-1.40	1.41-4.23	0.09-0.11	0.0-2.9	1.0-2.0	.05	.20			
	16-23	---	---	27-35	1.25-1.40	1.41-4.23	0.05-0.06	0.0-2.9	0.5-1.0	.05	.24			
	23-29	---	---	27-35	1.25-1.40	1.41-4.23	0.05-0.06	0.0-2.9	0.5-1.0	.05	.24			
	29-36	---	---	27-35	1.25-1.40	1.41-4.23	0.04-0.05	0.0-2.9	0.5-1.0	.02	.20			
	36-45	---	---	20-25	1.25-1.40	4.23-14.11	0.04-0.05	0.0-2.9	0.0-0.5	.05	.43			
	45-60	---	---	20-25	1.25-1.40	4.23-14.11	0.04-0.05	0.0-2.9	0.0-0.5	.05	.43			
Detra family---------	0-6	---	---	18-25	1.25-1.40	4.23-14.11	0.14-0.18	0.0-2.9	2.0-4.0	.24	.24	4	6	48
	6-15	---	---	18-25	1.25-1.40	4.23-14.11	0.14-0.18	0.0-2.9	2.0-4.0	.24	.24			
	15-25	---	---	28-35	1.25-1.40	1.41-4.23	0.14-0.19	3.0-5.9	1.0-2.0	.20	.20			
	25-36	---	---	28-35	1.25-1.40	1.41-4.23	0.14-0.19	3.0-5.9	1.0-2.0	.20	.20			
	36-60	---	---	23-28	1.25-1.40	4.23-14.11	0.07-0.09	0.0-2.9	0.5-1.0	.05	.20			
26:														
Ironco----------	0-4	---	---	15-27	1.25-1.40	4.23-42.34	0.07-0.09	0.0-2.9	1.0-3.0	.10	.28	5	8	0
	4-10	---	---	15-27	1.25-1.40	4.23-42.34	0.07-0.09	0.0-2.9	1.0-3.0	.10	.28			
	10-31	---	---	27-35	1.25-1.40	1.41-4.23	0.07-0.11	0.0-2.9	0.0-1.0	.10	.24			
	31-60	---	---	27-35	1.25-1.40	1.41-4.23	0.07-0.11	0.0-2.9	0.0-1.0	.10	.24			
Mulgon----------	0-1	---	---	12-20	0.20-1.00	100.00-600.00	0.15-0.45	---	70-95	---	---	5	8	0
	1-8	---	---	12-20	1.35-1.50	4.23-42.34	0.05-0.07	0.0-2.9	1.0-3.0	.10	.24			
	8-16	---	---	12-24	1.25-1.50	4.23-42.34	0.05-0.09	0.0-2.9	0.0-1.0	.10	.32			
	16-23	---	---	18-35	1.25-1.40	1.41-14.11	0.07-0.11	0.0-2.9	0.0-1.0	.15	.32			
	23-32	---	---	18-35	1.25-1.40	1.41-14.11	0.07-0.11	0.0-2.9	0.0-1.0	.15	.32			
	32-60	---	---	18-35	1.25-1.40	1.41-14.11	0.07-0.11	0.0-2.9	0.0-1.0	.15	.32			
27:														
Lakebench----------	0-3	---	---	5-10	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.5-1.0	.28	.28	2	2	134
	3-9	---	---	10-15	1.25-1.40	14.11-42.34	0.14-0.18	0.0-2.9	0.0-0.5	.37	.37			
	9-25	---	---	10-18	1.25-1.40	14.11-42.34	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43			
	25-35	---	---	10-18	1.25-1.40	14.11-42.34	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43			
	35-45	---	---	10-18	1.25-1.40	14.11-42.34	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43			
	45-50	---	---	10-18	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.43			
	50-60	---	---	10-18	1.25-1.40	14.11-42.34	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43			
Strell----------	0-3	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.5-1.0	.28	.28	1	2	134
	3-13	---	---	0-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.28	.28			
	13-17	---	---	---	---	0.00-0.42	---	---	---	---	---			
28:														
Lakebench----------	0-3	---	---	10-15	1.15-1.30	14.11-42.34	0.14-0.18	0.0-2.9	0.5-1.0	.43	.43	2	4L	86
	3-9	---	---	10-15	1.25-1.40	14.11-42.34	0.14-0.18	0.0-2.9	0.0-0.5	.37	.37			
	9-25	---	---	10-18	1.25-1.40	14.11-42.34	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43			
	25-35	---	---	10-18	1.25-1.40	14.11-42.34	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43			
	35-45	---	---	10-18	1.25-1.40	14.11-42.34	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43			
	45-50	---	---	10-18	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.43			
	50-60	---	---	10-18	1.25-1.40	14.11-42.34	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43			
Yampa----------	0-7	---	---	10-15	1.25-1.40	14.11-42.34	0.07-0.09	0.0-2.9	0.5-1.0	.15	.37	5	8	0
	7-13	---	---	10-20	1.25-1.40	4.23-42.34	0.04-0.05	0.0-2.9	0.0-0.5	.05	.43			
	13-31	---	---	18-35	1.25-1.40	1.41-14.11	0.07-0.11	0.0-2.9	0.0-0.5	.15	.43			
	31-60	---	---	5-10	1.35-1.60	14.11-141.14	0.02-0.04	0.0-2.9	0.0-0.5	.05	.32			

Table 15.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
29:														
Layoint	0-1	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	1.0-3.0	.24	.24	2	2	134
	1-4	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	1.0-3.0	.24	.24			
	4-8	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	1.0-3.0	.24	.24			
	8-14	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	1.0-3.0	.24	.24			
	14-24	---	---	2-9	1.45-1.60	42.34-141.14	0.06-0.11	0.0-2.9	0.0-1.0	.24	.24			
	24-32	---	---	2-9	1.45-1.60	42.34-141.14	0.06-0.11	0.0-2.9	0.0-1.0	.24	.24			
	32-36	---	---	---	---	0.00-0.42	---	---	---	---	---			
Moosed	0-2	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	1.0-3.0	.24	.24	1	2	134
	2-7	---	---	2-9	1.45-1.60	42.34-141.14	0.06-0.11	0.0-2.9	0.5-1.0	.24	.24			
	7-11	---	---	2-9	1.45-1.60	42.34-141.14	0.06-0.11	0.0-2.9	0.5-1.0	.24	.24			
	11-15	---	---	2-9	1.45-1.60	42.34-141.14	0.06-0.11	0.0-2.9	0.5-1.0	.24	.24			
	15-18	---	---	0-9	1.45-1.60	42.34-141.14	0.04-0.08	0.0-2.9	0.0-0.6	.15	.24			
	18-22	---	---	---	---	0.00-0.42	---	---	---	---	---			
Berlake	0-3	---	---	10-18	1.35-1.50	14.11-42.34	0.08-0.11	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	3-14	---	---	10-18	1.35-1.50	14.11-42.34	0.08-0.11	0.0-2.9	1.0-3.0	.20	.20			
	14-18	---	---	20-32	1.25-1.40	1.41-14.11	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20			
	18-27	---	---	20-32	1.25-1.40	1.41-14.11	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20			
	27-39	---	---	20-32	1.25-1.40	1.41-14.11	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20			
	39-49	---	---	20-32	1.25-1.40	1.41-14.11	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20			
	49-57	---	---	20-32	1.25-1.40	1.41-14.11	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20			
	57-60	---	---	2-18	1.35-1.60	14.11-141.14	0.05-0.12	0.0-2.9	0.0-0.5	.24	.24			
30:														
Lodore	0-2	---	---	8-18	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.0-2.0	.20	.37	2	4L	86
	2-13	---	---	8-18	1.25-1.50	14.11-42.34	0.09-0.16	0.0-2.9	0.0-0.6	.37	.37			
	13-35	---	---	8-18	1.25-1.50	14.11-42.34	0.09-0.16	0.0-2.9	0.0-0.6	.37	.37			
	35-39	---	---	---	---	0.00-0.42	---	---	---	---	---			
Mantlemine	0-2	---	---	12-20	1.25-1.40	4.23-42.34	0.14-0.18	0.0-2.9	0.0-2.0	.37	.37	5	5	56
	2-5	---	---	12-20	1.25-1.40	4.23-42.34	0.14-0.18	0.0-2.9	0.0-2.0	.37	.37			
	5-20	---	---	18-35	1.25-1.30	1.41-14.11	0.15-0.21	3.0-5.9	0.0-0.6	.37	.37			
	20-25	---	---	18-35	1.25-1.30	1.41-14.11	0.15-0.21	3.0-5.9	0.0-0.5	.37	.37			
	25-45	---	---	22-35	1.25-1.40	1.41-14.11	0.14-0.21	0.0-2.9	0.0-0.5	.37	.37			
	45-60	---	---	18-27	1.25-1.30	4.23-14.11	0.14-0.20	0.0-2.9	0.0-0.5	.43	.43			
Strell	0-3	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.5-1.0	.28	.28	1	2	134
	3-13	---	---	0-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.28	.28			
	13-17	---	---	---	---	0.00-0.42	---	---	---	---	---			
31:														
Mantlemine	0-2	---	---	12-20	1.25-1.40	4.23-42.34	0.14-0.18	0.0-2.9	0.0-2.0	.37	.37	5	5	56
	2-5	---	---	12-20	1.25-1.40	4.23-42.34	0.14-0.18	0.0-2.9	0.0-2.0	.37	.37			
	5-20	---	---	18-35	1.25-1.30	1.41-14.11	0.15-0.21	3.0-5.9	0.0-0.6	.37	.37			
	20-25	---	---	18-35	1.25-1.30	1.41-14.11	0.15-0.21	3.0-5.9	0.0-0.5	.37	.37			
	25-45	---	---	22-35	1.25-1.40	1.41-14.11	0.14-0.21	0.0-2.9	0.0-0.5	.37	.37			
	45-60	---	---	18-27	1.25-1.30	4.23-14.11	0.14-0.20	0.0-2.9	0.0-0.5	.43	.43			
32:														
Mantlemine	0-2	---	---	12-20	1.25-1.40	4.23-42.34	0.14-0.18	0.0-2.9	0.0-2.0	.37	.37	5	5	56
	2-5	---	---	12-20	1.25-1.40	4.23-42.34	0.14-0.18	0.0-2.9	0.0-2.0	.37	.37			
	5-20	---	---	18-35	1.25-1.30	1.41-14.11	0.15-0.21	3.0-5.9	0.0-0.6	.37	.37			
	20-25	---	---	18-35	1.25-1.30	1.41-14.11	0.15-0.21	3.0-5.9	0.0-0.5	.37	.37			
	25-45	---	---	22-35	1.25-1.40	1.41-14.11	0.14-0.21	0.0-2.9	0.0-0.5	.37	.37			
	45-60	---	---	18-27	1.25-1.30	4.23-14.11	0.14-0.20	0.0-2.9	0.0-0.5	.43	.43			
Emlin	0-2	---	---	20-25	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	2.0-4.0	.24	.24	5	4L	86
	2-5	---	---	20-25	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	2.0-4.0	.24	.24			
	5-11	---	---	20-25	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	2.0-4.0	.24	.24			
	11-14	---	---	28-34	1.25-1.40	1.41-4.23	0.16-0.19	3.0-5.9	0.5-1.0	.24	.24			
	14-19	---	---	28-34	1.25-1.40	1.41-4.23	0.16-0.19	3.0-5.9	0.5-1.0	.24	.24			
	19-30	---	---	27-34	1.15-1.30	1.41-4.23	0.16-0.19	3.0-5.9	0.0-1.0	.37	.37			
	30-41	---	---	27-34	1.15-1.30	1.41-4.23	0.16-0.19	3.0-5.9	0.0-1.0	.37	.37			
	41-60	---	---	27-34	1.15-1.30	1.41-4.23	0.16-0.19	3.0-5.9	0.0-1.0	.37	.37			
33:														
Massadona	0-2	---	---	35-40	1.05-1.15	0.42-1.41	0.15-0.17	3.0-5.9	0.0-0.5	.37	.37	5	4L	86
	2-11	---	---	40-50	1.15-1.30	0.42-1.41	0.13-0.16	6.0-8.9	0.0-0.5	.28	.28			
	11-20	---	---	40-50	1.15-1.30	0.42-1.41	0.13-0.16	6.0-8.9	0.0-0.5	.28	.28			
	20-34	---	---	40-50	1.15-1.30	0.07-0.42	0.13-0.16	6.0-8.9	0.0-0.5	.28	.28			
	34-41	---	---	40-50	1.15-1.30	0.07-0.42	0.13-0.16	6.0-8.9	0.0-0.5	.28	.28			
	41-60	---	---	40-50	1.15-1.30	0.07-0.42	0.13-0.16	6.0-8.9	0.0-0.5	.28	.28			
34:														
Mespun	0-9	---	---	0-8	1.55-1.65	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.24	.24	5	1	220
	9-60	---	---	0-8	1.45-1.55	42.34-141.14	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28			
35:														
Mido	0-8	---	---	5-10	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.0-0.5	.32	.32	5	2	134
	8-60	---	---	5-10	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.0-0.5	.32	.32			

Table 15.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
36:														
Mikim loam----------	0-2	---	---	20-27	1.20-1.30	4.23-14.11	0.17-0.18	3.0-5.9	1.0-2.0	.43	.43	5	4L	86
	2-6	---	---	20-27	1.20-1.30	4.23-14.11	0.17-0.18	3.0-5.9	1.0-2.0	.43	.43			
	6-12	---	---	20-35	1.10-1.25	4.23-14.11	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32			
	12-25	---	---	20-35	1.10-1.25	4.23-14.11	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32			
	25-43	---	---	20-35	1.10-1.25	4.23-14.11	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32			
	43-60	---	---	20-35	1.10-1.25	4.23-14.11	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32			
Mikim silt loam------	0-6	---	---	18-27	1.15-1.30	4.23-14.11	0.15-0.17	0.0-2.9	1.0-2.0	.49	.49	5	4L	86
	6-60	---	---	18-30	1.25-1.40	1.41-14.11	0.12-0.17	3.0-5.9	0.0-1.0	.43	.43			
37:														
Milok----------	0-4	---	---	5-18	1.35-1.45	14.11-42.34	0.10-0.13	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	4-15	---	---	10-18	1.35-1.45	14.11-42.34	0.10-0.13	0.0-2.9	0.5-1.0	.24	.24			
	15-37	---	---	10-18	1.35-1.45	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
	37-50	---	---	10-18	1.35-1.45	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
	50-60	---	---	5-18	1.35-1.45	14.11-42.34	0.09-0.12	0.0-2.9	0.0-0.5	.24	.24			
38:														
Milok----------	0-4	---	---	5-18	1.35-1.45	14.11-42.34	0.10-0.13	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	4-15	---	---	10-18	1.35-1.45	14.11-42.34	0.10-0.13	0.0-2.9	0.5-1.0	.24	.24			
	15-37	---	---	10-18	1.35-1.45	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
	37-50	---	---	10-18	1.35-1.45	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
	50-60	---	---	5-18	1.35-1.45	14.11-42.34	0.09-0.12	0.0-2.9	0.0-0.5	.24	.24			
Solirec----------	0-8	---	---	12-24	1.25-1.40	4.23-42.34	0.14-0.18	0.0-2.9	0.5-1.0	.37	.37	5	4L	86
	8-52	---	---	18-35	1.25-1.40	1.41-14.11	0.14-0.21	0.0-2.9	0.0-0.5	.37	.37			
	52-60	---	---	12-35	1.25-1.50	1.41-42.34	0.13-0.21	0.0-2.9	0.0-0.5	.32	.32			
Strych----------	0-5	---	---	12-16	1.25-1.40	4.23-42.34	0.10-0.13	0.0-2.9	0.6-1.0	.20	.37	5	4L	86
	5-10	---	---	12-18	1.25-1.50	4.23-42.34	0.07-0.13	0.0-2.9	0.0-0.6	.20	.37			
	10-34	---	---	12-18	1.25-1.50	4.23-42.34	0.05-0.09	0.0-2.9	0.0-0.6	.10	.37			
	34-50	---	---	12-18	1.25-1.50	4.23-42.34	0.05-0.09	0.0-2.9	0.0-0.6	.10	.37			
	50-60	---	---	6-18	1.25-1.60	4.23-141.14	0.08-0.18	0.0-2.9	0.0-0.5	.37	.37			
39:														
Milok----------	0-6	---	---	5-10	1.35-1.50	14.11-42.34	0.11-0.13	0.0-2.9	0.5-1.0	.37	.37	5	3	86
	6-12	---	---	12-17	1.25-1.40	14.11-42.34	0.15-0.17	0.0-2.9	0.5-1.0	.43	.43			
	12-24	---	---	12-17	1.25-1.40	14.11-42.34	0.15-0.17	0.0-2.9	0.0-0.5	.43	.43			
	24-37	---	---	12-17	1.25-1.40	14.11-42.34	0.15-0.17	0.0-2.9	0.0-0.5	.43	.43			
	37-44	---	---	10-15	1.15-1.30	14.11-42.34	0.16-0.18	0.0-2.9	0.0-0.5	.55	.55			
	44-60	---	---	10-15	1.25-1.40	14.11-42.34	0.15-0.17	0.0-2.9	0.0-0.5	.49	.49			
Strych----------	0-8	---	---	8-13	1.35-1.50	14.11-42.34	0.05-0.10	0.0-2.9	0.5-1.0	.10	.37	5	6	48
	8-39	---	---	8-13	1.35-1.50	14.11-42.34	0.04-0.07	0.0-2.9	0.0-0.5	.02	.28			
	39-60	---	---	3-8	1.45-1.60	42.34-141.14	0.03-0.06	0.0-2.9	0.0-0.5	.02	.20			
40:														
Notlic----------	0-4	---	---	18-25	1.25-1.40	4.23-14.11	0.08-0.13	0.0-2.9	0.5-1.0	.10	.43	5	6	48
	4-13	---	---	18-27	1.30-1.45	4.23-14.11	0.04-0.08	0.0-2.9	0.5-1.0	.05	.37			
	13-29	---	---	18-27	1.30-1.45	4.23-14.11	0.04-0.08	0.0-2.9	0.5-1.0	.05	.37			
	29-48	---	---	20-27	1.25-1.40	4.23-14.11	0.06-0.10	0.0-2.9	0.0-0.5	.02	.17			
	48-60	---	---	18-27	1.25-1.40	4.23-14.11	0.06-0.10	0.0-2.9	0.0-0.5	.02	.17			
Iogoon----------	0-5	---	---	5-13	1.35-1.50	14.11-42.34	0.09-0.13	0.0-2.9	1.0-2.0	.37	.37	3	3	86
	5-11	---	---	5-13	1.35-1.50	14.11-42.34	0.08-0.12	0.0-2.9	0.5-1.0	.20	.37			
	11-32	---	---	5-13	1.35-1.50	14.11-42.34	0.03-0.07	0.0-2.9	0.5-1.0	.10	.37			
	32-47	---	---	5-13	1.45-1.60	14.11-42.34	0.09-0.13	0.0-2.9	0.0-0.5	.43	.43			
	47-60	---	---	5-13	1.45-1.60	14.11-42.34	0.08-0.12	0.0-2.9	0.0-0.5	.28	.43			
Labyrinth----------	0-6	---	---	5-13	1.35-1.50	42.34-141.14	0.10-0.13	0.0-2.9	0.5-1.0	.37	.37	5	3	86
	6-16	---	---	0-10	1.45-1.60	42.34-141.14	0.08-0.10	0.0-2.9	0.5-1.0	.55	.55			
	16-35	---	---	0-10	1.45-1.60	42.34-141.14	0.06-0.09	0.0-2.9	0.0-0.5	.32	.43			
	35-60	---	---	0-10	1.45-1.60	42.34-141.14	0.06-0.09	0.0-2.9	0.0-0.5	.32	.43			
41:														
Paradox----------	0-2	---	---	16-27	1.30-1.45	4.23-14.11	0.15-0.18	0.0-2.9	1.0-2.0	.43	.43	5	4L	86
	2-11	---	---	20-27	1.30-1.45	4.23-14.11	0.15-0.18	0.0-2.9	0.0-1.0	.43	.43			
	11-26	---	---	20-27	1.30-1.45	4.23-14.11	0.15-0.18	0.0-2.9	0.0-1.0	.43	.43			
	26-48	---	---	20-27	1.30-1.45	4.23-14.11	0.15-0.18	0.0-2.9	0.0-1.0	.43	.43			
	48-60	---	---	20-27	1.30-1.45	4.23-14.11	0.15-0.18	0.0-2.9	0.0-1.0	.43	.43			
42:														
Pensore----------	0-3	---	---	12-20	1.25-1.40	4.23-42.34	0.10-0.13	0.0-2.9	0.0-2.0	.20	.37	1	4L	86
	3-10	---	---	10-27	1.25-1.50	4.23-42.34	0.04-0.05	0.0-2.9	0.0-1.0	.05	.32			
	10-16	---	---	10-27	1.25-1.50	4.23-42.34	0.03-0.05	0.0-2.9	0.0-0.5	.05	.37			
	16-20	---	---	---	---	0.00-0.42	---	---	---	---	---			
Lodore----------	0-2	---	---	8-18	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.0-2.0	.20	.37	2	4L	86
	2-13	---	---	8-18	1.25-1.50	14.11-42.34	0.09-0.16	0.0-2.9	0.0-0.6	.37	.37			
	13-35	---	---	8-18	1.25-1.50	14.11-42.34	0.09-0.16	0.0-2.9	0.0-0.6	.37	.37			
	35-39	---	---	---	---	0.00-0.42	---	---	---	---	---			

Table 15.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
43:														
Pensore	0-3	---	---	12-20	1.25-1.40	4.23-42.34	0.10-0.13	0.0-2.9	0.0-2.0	.20	.37	1	4L	86
	3-10	---	---	10-27	1.25-1.50	4.23-42.34	0.04-0.05	0.0-2.9	0.0-1.0	.05	.32			
	10-16	---	---	10-27	1.25-1.50	4.23-42.34	0.03-0.05	0.0-2.9	0.0-0.5	.05	.37			
	16-20	---	---	---	---	0.00-0.42	---	---	---	---	---			
Roto	0-2	---	---	10-20	1.25-1.40	4.23-42.34	0.07-0.09	0.0-2.9	0.5-2.0	.15	.37	2	8	0
	2-9	---	---	10-27	1.25-1.50	4.23-42.34	0.07-0.09	0.0-2.9	0.0-0.7	.10	.28			
	9-22	---	---	10-27	1.25-1.50	4.23-42.34	0.04-0.05	0.0-2.9	0.0-0.5	.05	.28			
	22-26	---	---	---	---	0.00-0.42	---	---	---	---	---			
44:														
Polychrome	0-3	---	---	15-23	1.25-1.40	4.23-14.11	0.07-0.13	0.0-2.9	0.5-1.0	.15	.43	3	6	48
	3-16	---	---	18-27	1.25-1.40	4.23-14.11	0.07-0.13	0.0-2.9	0.0-0.5	.15	.43			
	16-23	---	---	18-27	1.40-1.55	4.23-14.11	0.05-0.10	0.0-2.9	0.0-0.5	.05	.43			
	23-38	---	---	18-27	1.40-1.55	4.23-14.11	0.07-0.13	0.0-2.9	0.0-0.5	.17	.43			
	38-42	---	---	---	---	1.41-4.23	---	---	---	---	---			
Milok	0-6	---	---	5-10	1.35-1.50	14.11-42.34	0.11-0.13	0.0-2.9	0.5-1.0	.37	.37	5	3	86
	6-12	---	---	12-17	1.25-1.40	14.11-42.34	0.15-0.17	0.0-2.9	0.5-1.0	.43	.43			
	12-24	---	---	12-17	1.25-1.40	14.11-42.34	0.15-0.17	0.0-2.9	0.0-0.5	.43	.43			
	24-37	---	---	12-17	1.25-1.40	14.11-42.34	0.15-0.17	0.0-2.9	0.0-0.5	.43	.43			
	37-44	---	---	10-15	1.15-1.30	14.11-42.34	0.16-0.18	0.0-2.9	0.0-0.5	.55	.55			
	44-60	---	---	10-15	1.25-1.40	14.11-42.34	0.15-0.17	0.0-2.9	0.0-0.5	.49	.49			
45:														
Redrock family	0-3	---	---	10-20	1.25-1.40	4.23-42.34	0.13-0.16	0.0-2.9	0.5-1.0	.37	.37	2	4L	86
	3-10	---	---	10-20	1.25-1.40	4.23-42.34	0.13-0.16	0.0-2.9	0.5-1.0	.37	.37			
	10-17	---	---	18-27	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	0.0-0.5	.43	.43			
	17-28	---	---	18-27	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	0.0-0.5	.43	.43			
	28-35	---	---	18-27	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	0.0-0.5	.43	.43			
	35-43	---	---	18-27	1.25-1.40	4.23-14.11	0.10-0.13	0.0-2.9	0.0-0.5	.24	.43			
	43-54	---	---	18-27	1.25-1.40	4.23-14.11	0.07-0.09	0.0-2.9	0.0-0.5	.15	.43			
	54-60	---	---	18-27	1.25-1.40	4.23-14.11	0.10-0.13	0.0-2.9	0.0-0.5	.24	.43			
Roto	0-2	---	---	10-20	1.25-1.40	4.23-42.34	0.07-0.09	0.0-2.9	0.5-2.0	.15	.37	2	8	0
	2-9	---	---	10-27	1.25-1.50	4.23-42.34	0.07-0.09	0.0-2.9	0.0-0.7	.10	.28			
	9-22	---	---	10-27	1.25-1.50	4.23-42.34	0.04-0.05	0.0-2.9	0.0-0.5	.05	.28			
	22-26	---	---	---	---	0.00-0.42	---	---	---	---	---			
47:														
Rizno	0-5	---	---	10-18	1.35-1.50	14.11-42.34	0.10-0.11	0.0-2.9	0.5-1.0	.15	.28	1	3	86
	5-15	---	---	10-18	1.25-1.50	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.6	.20	.37			
	15-19	---	---	---	---	0.00-0.42	---	---	---	---	---			
Windcomb	0-4	---	---	18-27	1.15-1.30	1.41-4.23	0.07-0.12	0.0-2.9	0.5-1.0	.15	.43	1	6	48
	4-9	---	---	13-18	1.25-1.40	4.23-14.11	0.07-0.11	0.0-2.9	0.0-0.5	.15	.43			
	9-17	---	---	13-18	1.25-1.40	4.23-14.11	0.07-0.11	0.0-2.9	0.0-0.5	.15	.43			
	17-21	---	---	---	---	0.00-0.42	---	---	---	---	---			
Anasazi	0-3	---	---	10-18	1.35-1.50	14.11-42.34	0.12-0.14	0.0-2.9	0.6-1.0	.28	.28	2	3	86
	3-10	---	---	10-18	1.25-1.50	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.6	.20	.37			
	10-19	---	---	10-18	1.25-1.50	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.20	.37			
	19-24	---	---	5-18	1.25-1.60	14.11-141.14	0.03-0.09	0.0-2.9	0.0-0.5	.15	.37			
	24-28	---	---	---	---	0.00-0.42	---	---	---	---	---			
49:														
Hackling	0-1	---	---	5-12	1.35-1.50	14.11-42.34	0.07-0.10	0.0-2.9	1.0-2.0	.05	.24	1	3	86
	1-4	---	---	12-18	1.35-1.50	14.11-42.34	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28			
	4-15	---	---	12-18	1.35-1.50	14.11-42.34	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32			
	15-19	---	---	---	---	0.00-0.42	---	---	---	---	---			
50:														
Haploborolls	0-3	---	---	5-15	0.20-1.00	100.00-600.00	0.15-0.45	---	70-95	---	---	1	2	134
	3-7	---	---	5-15	1.45-1.60	42.34-141.14	0.06-0.08	0.0-2.9	2.0-3.0	.15	.24			
	7-10	---	---	5-15	1.45-1.60	42.34-141.14	0.06-0.08	0.0-2.9	1.0-3.0	.15	.24			
	10-13	---	---	---	---	0.00-0.42	---	---	---	---	---			
51:														
Torriorthents	0-4	---	---	10-35	1.25-1.50	1.41-42.34	0.05-0.11	0.0-2.9	0.5-2.0	.10	.28	1	8	0
	4-18	---	---	10-45	1.15-1.50	0.42-42.34	0.05-0.08	0.0-2.9	0.0-0.6	.10	.24			
	18-22	---	---	---	---	0.00-0.42	---	---	---	---	---			
Ustorthents	0-6	---	---	10-25	1.25-1.40	4.23-42.34	0.10-0.13	0.0-2.9	0.5-2.0	.20	.37	2	4L	86
	6-33	---	---	20-30	1.25-1.40	1.41-14.11	0.10-0.13	0.0-2.9	0.0-1.0	.10	.20			
	33-37	---	---	---	---	0.00-0.42	---	---	---	---	---			
52:														
Ustochrepts	0-6	---	---	12-16	1.35-1.50	14.11-42.34	0.04-0.07	0.0-2.9	0.5-1.0	.02	.37	2	8	0
	6-11	---	---	14-18	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.5-1.0	.15	.43			
	11-19	---	---	18-25	1.25-1.40	4.23-14.11	0.10-0.13	0.0-2.9	0.0-0.5	.17	.43			
	19-60	---	---	18-25	1.25-1.40	4.23-14.11	0.10-0.13	0.0-2.9	0.0-0.5	.17	.43			

Table 15.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
52:														
Cryochrepts	0-5	---	---	18-27	1.15-1.25	4.23-14.11	0.05-0.08	0.0-2.9	1.0-2.0	.05	.37	2	8	0
	5-11	---	---	18-27	1.25-1.40	4.23-14.11	0.08-0.13	0.0-2.9	1.0-2.0	.15	.37			
	11-18	---	---	18-27	1.25-1.40	4.23-14.11	0.08-0.13	0.0-2.9	1.0-2.0	.15	.37			
	18-33	---	---	18-27	1.25-1.40	4.23-14.11	0.05-0.08	0.0-2.9	1.0-2.0	.10	.37			
	33-60	---	---	18-27	1.25-1.40	4.23-14.11	0.05-0.08	0.0-2.9	0.5-1.0	.10	.43			
53:														
Schoonover	0-3	---	---	18-27	1.25-1.40	4.23-14.11	0.07-0.09	0.0-2.9	0.5-1.0	.15	.37	1	8	0
	3-8	---	---	18-27	1.25-1.40	4.23-14.11	0.07-0.09	0.0-2.9	0.0-0.5	.15	.43			
	8-11	---	---	18-27	1.25-1.40	4.23-14.11	0.07-0.09	0.0-2.9	0.0-0.5	.15	.43			
	11-14	---	---	---	---	0.00-4.23	---	---	---	---	---			
Duffymont	0-3	---	---	8-13	1.35-1.50	14.11-42.34	0.03-0.08	0.0-2.9	2.0-3.0	.05	.28	1	8	0
	3-13	---	---	8-13	1.35-1.50	14.11-42.34	0.03-0.08	0.0-2.9	2.0-3.0	.05	.28			
	13-17	---	---	10-18	1.35-1.50	14.11-42.34	0.03-0.08	0.0-2.9	1.0-2.0	.05	.37			
	17-21	---	---	---	---	0.00-0.42	---	---	---	---	---			
54:														
Sheecal	0-2	---	---	22-27	1.25-1.40	4.23-14.11	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37	3	5	56
	2-5	---	---	22-27	1.25-1.40	4.23-14.11	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37			
	5-15	---	---	18-27	1.25-1.40	4.23-14.11	0.08-0.11	0.0-2.9	0.5-1.0	.10	.37			
	15-29	---	---	18-27	1.25-1.40	4.23-14.11	0.05-0.08	0.0-2.9	0.0-0.5	.05	.37			
	29-33	---	---	---	---	0.00-4.23	---	---	---	---	---			
55:														
Sheecal	0-4	---	---	22-27	1.25-1.40	4.23-14.11	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37	3	5	56
	4-12	---	---	18-27	1.25-1.40	4.23-14.11	0.08-0.11	0.0-2.9	0.5-1.0	.10	.37			
	12-21	---	---	18-27	1.25-1.40	4.23-14.11	0.05-0.08	0.0-2.9	0.0-0.5	.05	.37			
	21-25	---	---	---	---	0.00-4.23	---	---	---	---	---			
56:														
Shotnick	0-3	---	---	13-17	1.30-1.45	14.11-42.34	0.09-0.12	0.0-2.9	0.0-0.5	.37	.37	5	3	86
	3-16	---	---	13-17	1.35-1.50	14.11-42.34	0.09-0.12	0.0-2.9	0.0-0.5	.37	.37			
	16-30	---	---	13-17	1.35-1.50	14.11-42.34	0.09-0.12	0.0-2.9	0.0-0.5	.37	.37			
	30-60	---	---	13-17	1.35-1.50	14.11-42.34	0.08-0.12	0.0-2.9	0.0-0.5	.28	.28			
Uffens	0-3	---	---	5-10	1.25-1.35	14.11-42.34	0.07-0.09	0.0-2.9	0.0-0.5	.32	.32	3	3	86
	3-24	---	---	20-27	1.25-1.40	1.41-4.23	0.07-0.13	0.0-2.9	0.0-0.5	.24	.24			
	24-37	---	---	13-27	1.25-1.40	4.23-14.11	0.07-0.13	0.0-2.9	0.0-0.5	.49	.49			
	37-60	---	---	0-5	1.45-1.60	42.34-141.14	0.04-0.06	0.0-2.9	0.0-0.5	.10	.10			
57:														
Splimo	0-3	---	---	15-25	1.25-1.40	4.23-14.11	0.08-0.13	0.0-2.9	1.0-2.0	.15	.37	1	6	48
	3-7	---	---	18-27	1.30-1.45	4.23-14.11	0.05-0.10	0.0-2.9	1.0-2.0	.10	.37			
	7-11	---	---	18-27	1.30-1.45	4.23-14.11	0.05-0.10	0.0-2.9	0.5-1.0	.05	.43			
	11-15	---	---	---	---	0.00-4.23	---	---	---	---	---			
58:														
Splimo	0-2	---	---	10-20	1.15-1.25	14.11-42.34	0.08-0.10	0.0-2.9	1.0-2.0	.05	.43	1	8	0
	2-4	---	---	15-25	1.25-1.40	4.23-14.11	0.07-0.09	0.0-2.9	0.5-2.0	.10	.43			
	4-19	---	---	20-27	1.25-1.40	4.23-14.11	0.06-0.08	0.0-2.9	0.0-0.5	.05	.43			
	19-23	---	---	---	---	0.00-4.23	---	---	---	---	---			
Chew	0-3	---	---	10-15	1.10-1.30	14.11-42.34	0.08-0.09	0.0-2.9	1.0-2.0	.10	.43	2	6	48
	3-9	---	---	20-27	1.25-1.40	4.23-14.11	0.09-0.10	0.0-2.9	1.0-2.0	.10	.37			
	9-17	---	---	25-29	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	0.5-1.0	.28	.37			
	17-27	---	---	25-29	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	0.5-1.0	.28	.37			
	27-38	---	---	10-16	1.25-1.40	14.11-42.34	0.11-0.13	0.0-2.9	0.0-0.5	.20	.43			
	38-42	---	---	---	---	0.00-0.42	---	---	---	---	---			
59:														
Stout	0-2	---	---	5-15	1.35-1.50	14.11-42.34	0.09-0.12	0.0-2.9	0.5-1.0	.28	.28	1	3	86
	2-11	---	---	5-15	1.35-1.50	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.32	.32			
	11-15	---	---	---	---	0.00-0.42	---	---	---	---	---			
60:														
Strell	0-2	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.5-1.0	.28	.28	1	2	134
	2-11	---	---	0-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.28	.28			
	11-15	---	---	---	---	0.00-0.42	---	---	---	---	---			
Marthaspeak	0-3	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.5-1.0	.28	.28	2	2	134
	3-25	---	---	0-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.28	.28			
	25-33	---	---	0-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.28	.28			
	33-37	---	---	---	---	0.00-0.42	---	---	---	---	---			
61:														
Strell	0-2	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.5-1.0	.28	.28	1	2	134
	2-11	---	---	0-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.28	.28			
	11-15	---	---	---	---	0.00-0.42	---	---	---	---	---			

Table 15.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
51:														
Marthaspeak----------	0-3	---	---	3-9	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.5-1.0	.28	.28	2	2	134
	3-25	---	---	0-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.28	.28			
	25-33	---	---	0-9	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-0.5	.28	.28			
	33-37	---	---	---	---	0.00-0.42	---	---	---	---	---			
62:														
Strych---------------	0-5	---	---	12-16	1.25-1.40	4.23-42.34	0.10-0.13	0.0-2.9	0.6-1.0	.20	.37	5	4L	86
	5-10	---	---	12-18	1.25-1.50	4.23-42.34	0.07-0.13	0.0-2.9	0.0-0.6	.20	.37			
	10-34	---	---	12-18	1.25-1.50	4.23-42.34	0.05-0.09	0.0-2.9	0.0-0.6	.10	.37			
	34-50	---	---	12-18	1.25-1.50	4.23-42.34	0.05-0.09	0.0-2.9	0.0-0.6	.10	.37			
	50-60	---	---	6-18	1.25-1.60	4.23-141.14	0.08-0.18	0.0-2.9	0.0-0.5	.37	.37			
Mellenthin-----------	0-2	---	---	8-17	1.35-1.50	14.11-42.34	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28	1	8	0
	2-12	---	---	8-17	1.25-1.50	14.11-42.34	0.05-0.09	0.0-2.9	0.0-0.6	.15	.37			
	12-16	---	---	---	---	0.00-0.42	---	---	---	---	---			
63:														
Tipper---------------	0-5	---	---	5-12	1.45-1.60	42.34-141.14	0.07-0.10	0.0-2.9	0.0-0.5	.32	.32	3	2	134
	5-25	---	---	5-12	1.45-1.60	42.34-141.14	0.07-0.10	0.0-2.9	0.0-0.5	.32	.32			
	25-29	---	---	---	---	1.41-4.23	---	---	---	---	---			
Crustown-------------	0-3	---	---	5-12	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.0-0.5	.32	.32	2	2	134
	3-13	---	---	3-12	1.45-1.60	141.14-141.14	0.05-0.08	0.0-2.9	0.0-0.5	.28	.28			
	13-17	---	---	---	---	1.41-4.23	---	---	---	---	---			
64:														
Torriorthents--------	0-4	---	---	10-35	1.25-1.50	1.41-42.34	0.05-0.11	0.0-2.9	0.5-2.0	.10	.28	1	8	0
	4-18	---	---	10-45	1.15-1.50	0.42-42.34	0.05-0.08	0.0-2.9	0.0-0.6	.10	.24			
	18-22	---	---	---	---	0.00-0.42	---	---	---	---	---			
Torripsamments-------	0-4	---	---	0-10	1.45-1.60	141.14-141.14	0.05-0.08	0.0-2.9	0.0-0.5	.20	.20	2	1	220
	4-16	---	---	0-10	1.45-1.60	141.14-141.14	0.05-0.08	0.0-2.9	0.0-0.5	.20	.20			
	16-26	---	---	0-10	1.45-1.60	141.14-141.14	0.05-0.08	0.0-2.9	0.0-0.5	.20	.20			
	26-30	---	---	---	---	0.00-0.42	---	---	---	---	---			
65:														
Tsetaa family--------	0-2	---	---	5-15	1.35-1.50	14.11-42.34	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32	5	8	0
	2-6	---	---	5-15	1.35-1.50	14.11-42.34	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32			
	6-15	---	---	0-10	1.45-1.60	42.34-141.14	0.02-0.03	0.0-2.9	0.0-0.5	.05	.28			
	15-60	---	---	0-10	1.45-1.60	42.34-141.14	0.02-0.03	0.0-2.9	0.0-0.5	.05	.28			
Bankard family-------	0-2	---	---	0-5	1.45-1.60	141.14-141.14	0.05-0.08	0.0-2.9	0.0-1.0	.17	.17	5	1	220
	2-23	---	---	0-8	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-1.0	.20	.20			
	23-28	---	---	0-8	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-1.0	.20	.20			
	28-34	---	---	0-8	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-1.0	.20	.20			
	34-60	---	---	0-8	1.45-1.60	42.34-141.14	0.05-0.11	0.0-2.9	0.0-1.0	.20	.20			
Fluvaquents----------	0-5	---	---	0-10	1.45-1.60	141.14-141.14	0.05-0.08	0.0-2.9	0.0-3.0	.20	.20	5	1	250
	5-22	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	22-30	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	30-36	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	36-43	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	43-50	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
	50-60	---	---	0-27	1.25-1.60	4.23-141.14	0.05-0.18	0.0-2.9	0.0-2.0	.24	.24			
66:														
Turzo----------------	0-4	---	---	18-27	1.25-1.40	4.23-14.11	0.13-0.17	3.0-5.9	0.5-1.0	.37	.37	5	4L	86
	4-60	---	---	18-35	1.30-1.40	1.41-4.23	0.11-0.15	3.0-5.9	0.0-0.5	.43	.43			
67:														
Ustic Torrifluvents--	0-5	---	---	5-15	1.35-1.50	14.11-42.34	0.12-0.14	0.0-2.9	0.5-1.0	.28	.28	5	3	86
	5-60	---	---	0-10	1.45-1.60	42.34-141.14	0.01-0.02	0.0-2.9	0.0-1.0	.02	.15			
Ustic Torrifluvents--	0-5	---	---	5-15	1.35-1.50	14.11-42.34	0.12-0.14	0.0-2.9	0.5-1.0	.28	.28	5	3	86
	5-60	---	---	0-10	1.45-1.60	42.34-141.14	0.01-0.02	0.0-2.9	0.0-1.0	.02	.15			
68:														
Ustorthents, frigid--	0-6	---	---	10-25	1.25-1.40	4.23-42.34	0.10-0.13	0.0-2.9	0.5-2.0	.20	.37	2	4L	86
	6-33	---	---	20-30	1.25-1.40	1.41-14.11	0.10-0.13	0.0-2.9	0.0-1.0	.10	.20			
	33-37	---	---	---	---	0.00-0.42	---	---	---	---	---			
Borolls--------------	0-10	---	---	10-25	1.25-1.40	4.23-42.34	0.13-0.16	0.0-2.9	2.0-4.0	.28	.28	2	4L	86
	10-19	---	---	10-25	1.25-1.40	4.23-42.34	0.13-0.16	0.0-2.9	2.0-4.0	.28	.28			
	19-30	---	---	20-30	1.25-1.40	1.41-14.11	0.10-0.13	0.0-2.9	0.0-1.0	.10	.20			
	30-34	---	---	---	---	0.00-0.42	---	---	---	---	---			

Table 15.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
69:														
Utaline	0-3	---	---	10-20	1.35-1.50	14.11-42.34	0.05-0.07	0.0-2.9	0.0-0.5	.10	.28	2	8	0
	3-7	---	---	18-27	1.25-1.40	4.23-14.11	0.08-0.10	0.0-2.9	0.0-0.5	.10	.37			
	7-23	---	---	18-27	1.25-1.40	4.23-14.11	0.08-0.10	0.0-2.9	0.0-0.5	.10	.37			
	23-46	---	---	18-27	1.25-1.40	4.23-14.11	0.08-0.10	0.0-2.9	0.0-0.5	.10	.37			
	46-60	---	---	18-27	1.25-1.40	4.23-14.11	0.08-0.10	0.0-2.9	0.0-0.5	.10	.37			
Hanksville	0-2	---	---	35-40	1.20-1.40	0.42-1.41	0.15-0.18	3.0-5.9	0.0-1.0	.43	.43	3	4L	86
	2-13	---	---	36-55	1.30-1.50	0.07-0.42	0.10-0.17	6.0-8.9	0.0-0.5	.32	.32			
	13-33	---	---	36-55	1.30-1.50	0.07-0.42	0.10-0.17	6.0-8.9	0.0-0.5	.32	.32			
	33-37	---	---	---	---	0.07-0.42	---	---	---	---	---			
70:														
Windcomb	0-4	---	---	18-27	1.15-1.30	1.41-4.23	0.07-0.12	0.0-2.9	0.5-1.0	.15	.43	1	6	48
	4-9	---	---	13-18	1.25-1.40	4.23-14.11	0.07-0.11	0.0-2.9	0.0-0.5	.15	.43			
	9-17	---	---	13-18	1.25-1.40	4.23-14.11	0.07-0.11	0.0-2.9	0.0-0.5	.15	.43			
	17-21	---	---	---	---	0.00-0.42	---	---	---	---	---			
71:														
Windcomb	0-4	---	---	18-27	1.15-1.30	1.41-4.23	0.07-0.12	0.0-2.9	0.5-1.0	.15	.43	1	6	48
	4-9	---	---	13-18	1.25-1.40	4.23-14.11	0.07-0.11	0.0-2.9	0.0-0.5	.15	.43			
	9-17	---	---	13-18	1.25-1.40	4.23-14.11	0.07-0.11	0.0-2.9	0.0-0.5	.15	.43			
	17-21	---	---	---	---	0.00-0.42	---	---	---	---	---			
Rizno	0-5	---	---	10-18	1.35-1.50	14.11-42.34	0.10-0.11	0.0-2.9	0.5-1.0	.15	.28	1	3	86
	5-15	---	---	10-18	1.25-1.50	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.6	.20	.37			
	15-19	---	---	---	---	0.00-0.42	---	---	---	---	---			
Anasazi	0-3	---	---	10-18	1.35-1.50	14.11-42.34	0.12-0.14	0.0-2.9	0.6-1.0	.28	.28	2	3	86
	3-10	---	---	10-18	1.25-1.50	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.6	.20	.37			
	10-19	---	---	10-18	1.25-1.50	14.11-42.34	0.10-0.13	0.0-2.9	0.0-0.5	.20	.37			
	19-24	---	---	5-18	1.25-1.60	14.11-141.14	0.03-0.09	0.0-2.9	0.0-0.5	.15	.37			
	24-28	---	---	---	---	0.00-0.42	---	---	---	---	---			
72:														
Yampa	0-7	---	---	10-15	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	0.5-1.0	.20	.37	5	4L	86
	7-13	---	---	10-20	1.25-1.40	4.23-42.34	0.04-0.05	0.0-2.9	0.0-0.5	.05	.43			
	13-31	---	---	18-35	1.25-1.40	1.41-14.11	0.07-0.11	0.0-2.9	0.0-0.5	.15	.43			
	31-60	---	---	5-10	1.35-1.60	14.11-141.14	0.02-0.04	0.0-2.9	0.0-0.5	.05	.32			
73:														
Yampa	0-7	---	---	10-15	1.25-1.40	14.11-42.34	0.07-0.09	0.0-2.9	0.5-1.0	.15	.37	5	8	0
	7-13	---	---	10-20	1.25-1.40	4.23-42.34	0.04-0.05	0.0-2.9	0.0-0.5	.05	.43			
	13-31	---	---	18-35	1.25-1.40	1.41-14.11	0.07-0.11	0.0-2.9	0.0-0.5	.15	.43			
	31-60	---	---	5-10	1.35-1.60	14.11-141.14	0.02-0.04	0.0-2.9	0.0-0.5	.05	.32			
Hackling	0-1	---	---	5-12	1.35-1.50	14.11-42.34	0.07-0.10	0.0-2.9	1.0-2.0	.05	.24	1	3	86
	1-4	---	---	12-18	1.35-1.50	14.11-42.34	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28			
	4-15	---	---	12-18	1.35-1.50	14.11-42.34	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32			
	15-19	---	---	---	---	0.00-0.42	---	---	---	---	---			
Mantlemine	0-3	---	---	12-20	1.35-1.50	4.23-42.34	0.13-0.15	0.0-2.9	0.0-2.0	.28	.28	5	3	86
	3-13	---	---	18-35	1.25-1.30	1.41-14.11	0.15-0.21	3.0-5.9	0.0-0.6	.37	.37			
	13-45	---	---	18-35	1.25-1.30	1.41-14.11	0.15-0.21	3.0-5.9	0.0-0.5	.37	.37			
	45-60	---	---	18-27	1.25-1.30	4.23-14.11	0.14-0.20	0.0-2.9	0.0-0.5	.43	.43			
74:														
Yarts	0-8	---	---	5-14	1.35-1.50	14.11-42.34	0.10-0.12	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	8-60	---	---	5-18	1.35-1.50	14.11-42.34	0.10-0.14	0.0-2.9	0.5-1.0	.24	.32			
75:														
Yarts	0-8	---	---	5-10	1.35-1.50	14.11-42.34	0.10-0.14	0.0-2.9	0.5-1.0	.24	.24	5	3	86
	8-26	---	---	2-10	1.45-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.5-1.0	.32	.32			
	26-39	---	---	5-18	1.40-1.55	14.11-42.34	0.10-0.14	0.0-2.9	0.0-0.5	.28	.28			
	39-57	---	---	2-5	1.50-1.65	42.34-141.14	0.08-0.11	0.0-2.9	0.0-0.5	.32	.32			
	57-60	---	---	5-10	1.40-1.55	14.11-42.34	0.15-0.17	0.0-2.9	0.0-0.5	.49	.49			
Yarts	0-4	---	---	5-14	1.35-1.50	14.11-42.34	0.10-0.12	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	4-10	---	---	5-18	1.35-1.50	14.11-42.34	0.10-0.14	0.0-2.9	0.5-1.0	.24	.32			
	10-17	---	---	5-18	1.35-1.50	14.11-42.34	0.10-0.14	0.0-2.9	0.5-1.0	.24	.32			
	17-37	---	---	5-18	1.35-1.50	14.11-42.34	0.10-0.14	0.0-2.9	0.5-1.0	.24	.32			
	37-60	---	---	5-18	1.35-1.50	14.11-42.34	0.10-0.14	0.0-2.9	0.5-1.0	.24	.32			
76:														
Zillion	0-7	---	---	18-22	1.25-1.40	4.23-14.11	0.13-0.16	0.0-2.9	2.0-4.0	.24	.24	3	5	56
	7-18	---	---	18-22	1.25-1.40	4.23-14.11	0.10-0.13	0.0-2.9	1.0-3.0	.15	.28			
	18-26	---	---	20-27	1.25-1.40	4.23-14.11	0.07-0.09	0.0-2.9	0.5-1.0	.15	.37			
	26-34	---	---	25-32	1.25-1.40	4.23-14.11	0.07-0.09	0.0-2.9	0.0-0.5	.10	.24			
	34-45	---	---	25-30	1.25-1.40	4.23-14.11	0.04-0.05	0.0-2.9	0.0-0.5	.05	.24			
	45-60	---	---	25-30	1.25-1.40	4.23-14.11	0.04-0.05	0.0-2.9	0.0-0.5	.05	.24			

Table 15.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In.	Pct.	Pct.	Pct.	g/cc	um/sec.	In./in.	Pct.	Pct.					
76:														
Yampa----------	0-7	---	---	10-15	1.25-1.40	14.11-42.34	0.07-0.09	0.0-2.9	0.5-1.0	.15	.37	5	8	0
	7-13	---	---	10-20	1.25-1.40	4.23-42.34	0.04-0.05	0.0-2.9	0.0-0.5	.05	.43			
	13-31	---	---	18-35	1.25-1.40	1.41-14.11	0.07-0.11	0.0-2.9	0.0-0.5	.15	.43			
	31-60	---	---	5-10	1.35-1.60	14.11-141.14	0.02-0.04	0.0-2.9	0.0-0.5	.05	.32			
Clyl----------	0-2	---	---	10-18	1.05-1.15	4.23-14.11	0.11-0.13	0.0-2.9	2.0-4.0	.15	.37	3	6	48
	2-9	---	---	10-18	1.10-1.40	4.23-14.11	0.12-0.14	0.0-2.9	1.0-2.0	.20	.43			
	9-19	---	---	18-26	1.20-1.40	4.23-14.11	0.09-0.11	0.0-2.9	0.5-1.0	.15	.43			
	19-29	---	---	18-26	1.25-1.40	4.23-14.11	0.09-0.11	0.0-2.9	0.0-0.5	.10	.43			
	29-60	---	---	18-26	1.25-1.40	4.23-14.11	0.06-0.08	0.0-2.9	0.0-0.5	.05	.43			

Table 16.--Chemical Soil Properties

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
1:								
Abracon	0-4	8.0-20	---	7.9-9.0	5-20	0	0.0-2.0	0-5
	4-10	7.0-15	---	7.9-9.0	5-25	0	0.0-2.0	0-5
	10-21	6.0-15	---	7.9-9.0	15-40	0	0.0-2.0	5-10
	21-35	6.0-15	---	7.9-9.0	15-40	0	0.0-2.0	5-10
	35-51	6.0-15	---	7.9-9.0	15-40	0	0.0-2.0	5-10
	51-60	6.0-12	---	7.9-9.0	5-25	0	0.0-2.0	5-10
Solirec	0-4	6.0-14	---	7.4-8.4	0	0	0.0-2.0	0
	4-12	9.0-18	---	7.4-8.4	0	0	0.0-2.0	0
	12-19	8.0-17	---	7.9-8.4	10-20	0	0.0-2.0	0
	19-37	11-20	---	7.9-9.0	15-40	0	0.0-2.0	0-5
	37-53	11-20	---	7.9-9.0	15-40	0	0.0-2.0	0-5
	53-75	11-20	---	7.9-9.0	15-40	0	0.0-2.0	0-5
2:								
Arches	0-2	1.0-2.0	---	7.9-8.4	0-5	0	0	0
	2-5	1.0-2.0	---	7.9-8.4	0-5	0	0	0
	5-9	0.0-1.0	---	7.9-8.4	1-5	0	0	0
	9-13	---	---	---	---	---	---	---
Mespun	0-3	1.0-7.0	---	6.6-8.4	0	0	0	0
	3-8	1.0-7.0	---	6.6-8.4	0	0	0	0
	8-19	1.0-7.0	---	6.6-8.4	0	0	0	0
	19-21	1.0-6.0	---	6.6-8.4	0	0	0	0
	21-37	1.0-6.0	---	6.6-8.4	0	0	0	0
	37-49	1.0-6.0	---	6.6-8.4	0	0	0	0
	49-60	1.0-6.0	---	6.6-8.4	0	0	0	0
Rock outcrop	0-60	---	---	---	---	---	---	---
3:								
Badland	0-60	---	---	---	---	---	0	---
Polychrome	0-6	8.0-16	---	7.9-9.0	1-15	1-3	2.0-4.0	0-5
	6-13	7.0-16	---	7.9-9.0	1-15	1-5	2.0-4.0	0-5
	13-18	7.0-16	---	7.9-9.0	1-15	5-10	4.0-8.0	0-5
	18-32	7.0-16	---	7.9-9.0	1-15	5-10	4.0-16.0	0-5
	32-49	---	---	---	---	---	---	---
	49-53	---	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---	---

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
4:								
Badland	0-60	---	---	---	---	---	0	---
Rock outcrop	0-60	---	---	---	---	---	---	---
5:								
Bankard family	0-2	0.0-5.0	---	6.6-8.4	0-10	0	0.0-2.0	0
	2-23	0.0-5.0	---	7.4-8.4	0-25	0	0.0-2.0	0
	23-28	0.0-5.0	---	7.4-8.4	0-25	0	0.0-2.0	0
	28-34	0.0-5.0	---	7.4-8.4	0-25	0	0.0-2.0	0
	34-60	0.0-5.0	---	7.4-8.4	0-25	0	0.0-2.0	0
Cameo	0-2	1.0-10	---	7.9-9.0	0-25	0	0.0-2.0	0
	2-7	2.0-10	---	7.9-9.0	10-30	0	0.0-2.0	0
	7-22	2.0-10	---	7.9-9.0	10-30	0	0.0-2.0	0
	22-34	2.0-10	---	7.9-9.0	10-30	0	0.0-2.0	0
	34-60	2.0-10	---	7.9-9.0	10-30	0	0.0-2.0	0
6:								
Begay	0-4	2.0-7.0	---	7.9-8.4	0-3	0-2	0	1-10
	4-12	5.0-10	---	7.9-8.4	0-3	0-2	0.0-2.0	1-10
	12-24	4.0-10	---	7.9-8.4	1-5	0-2	0.0-2.0	1-10
	24-37	4.0-10	---	7.9-8.4	1-5	0-2	0.0-2.0	1-10
	37-60	4.0-10	---	8.5-9.0	0-5	0-2	0.0-2.0	1-10
7:								
Begay	0-4	2.0-7.0	---	7.9-8.4	0-3	0-2	0	1-10
	4-12	5.0-10	---	7.9-8.4	0-3	0-2	0.0-2.0	1-10
	12-24	4.0-10	---	7.9-8.4	1-5	0-2	0.0-2.0	1-10
	24-37	4.0-10	---	7.9-8.4	1-5	0-2	0.0-2.0	1-10
	37-60	4.0-10	---	8.5-9.0	0-5	0-2	0.0-2.0	1-10
Mespun	0-3	1.0-7.0	---	6.6-8.4	0	0	0	0
	3-8	1.0-7.0	---	6.6-8.4	0	0	0	0
	8-19	1.0-7.0	---	6.6-8.4	0	0	0	0
	19-21	1.0-6.0	---	6.6-8.4	0	0	0	0
	21-37	1.0-6.0	---	6.6-8.4	0	0	0	0
	37-49	1.0-6.0	---	6.6-8.4	0	0	0	0
	49-60	1.0-6.0	---	6.6-8.4	0	0	0	0

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
8:								
Bodry	0-8	15-26	---	7.9-8.4	1-10	1-3	2.0-4.0	0-5
	8-15	16-28	---	7.9-8.4	1-10	1-3	2.0-4.0	0-5
	15-28	16-28	---	7.9-8.4	1-10	2-5	4.0-8.0	0-5
	28-38	14-25	---	7.9-8.4	1-10	2-5	4.0-8.0	0-5
	38-50	---	---	---	---	---	---	---
	50-54	---	---	---	---	---	---	---
9:								
Bondman	0-2	5.0-15	---	6.6-7.8	0-5	0	0	0
	2-8	5.0-20	---	6.6-7.8	0-15	0	0	0
	8-12	---	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---	---
10:								
Cameo	0-2	1.0-10	---	7.9-9.0	0-25	0	0.0-2.0	0
	2-7	2.0-10	---	7.9-9.0	10-30	0	0.0-2.0	0
	7-22	2.0-10	---	7.9-9.0	10-30	0	0.0-2.0	0
	22-34	2.0-10	---	7.9-9.0	10-30	0	0.0-2.0	0
	34-60	2.0-10	---	7.9-9.0	10-30	0	0.0-2.0	0
11:								
Cameo	0-5	5.0-20	---	7.4-9.0	10-40	0	0.0-2.0	0
	5-9	4.0-15	---	7.9-9.0	15-40	0	0.0-2.0	0
	9-60	4.0-15	---	7.9-9.0	15-40	0	0.0-2.0	0
12:								
Clapper	0-3	8.0-19	---	7.9-9.0	5-15	0	0.0-2.0	0-5
	3-7	8.0-19	---	7.9-9.0	5-20	0	0.0-2.0	0-5
	7-13	8.0-19	---	7.9-9.0	30-40	0	0.0-2.0	0-5
	13-21	9.0-20	---	7.9-9.0	35-40	0	0.0-2.0	0-5
	21-36	9.0-20	---	7.9-9.0	10-35	0	0.0-2.0	0-5
	36-49	9.0-20	---	7.9-9.0	10-30	0	0.0-2.0	0-5
	49-60	9.0-20	---	7.9-9.0	15-25	0	0.0-2.0	0-10
Abracon	0-5	8.0-20	---	7.9-9.0	5-20	0	0.0-2.0	0-5
	5-56	6.0-15	---	7.9-9.0	15-40	0	0.0-2.0	5-10
	56-60	6.0-12	---	7.9-9.0	5-25	0	0.0-2.0	5-10

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
13:								
Cortyzack	0-3	12-24	---	6.6-7.3	0	0	0	0
	3-8	15-27	---	7.4-7.8	0	0	0	0
	8-12	15-27	---	7.4-7.8	0	0	0	0
	12-23	13-23	---	7.4-8.4	0	0	0	0
	23-39	11-20	---	7.9-8.4	15-30	0	0	0
	39-48	11-20	---	7.9-8.4	15-30	0	0	0
	48-72	7.0-16	---	7.9-8.4	5-15	0	0	0
	72-76	7.0-16	---	7.9-8.4	1-10	0	0	0
Duffymont	0-3	7.0-14	---	6.6-7.3	0	0	0.0-2.0	0
	3-13	7.0-14	---	6.6-7.3	0	0	0.0-2.0	0
	13-17	6.0-15	---	6.6-7.8	0	0	0.0-2.0	0
	17-21	---	---	---	---	---	---	---
14:								
Cragnot	0-3	5.0-15	---	7.4-8.4	0-25	0	0	0
	3-12	2.0-15	---	7.9-9.0	30-60	0	0	0
	12-30	2.0-15	---	7.9-9.0	40-60	0	0.0-2.0	0
	30-38	2.0-15	---	7.9-9.0	40-60	0	0.0-2.0	0
	38-60	1.0-15	---	7.9-9.0	40-60	0	0.0-2.0	0
Pensore	0-3	5.0-15	---	7.4-8.4	0-25	0	0	0
	3-10	2.0-15	---	7.4-9.0	10-40	0	0	0
	10-16	1.0-10	---	7.9-9.0	40-60	0	0	0
	16-20	---	---	---	---	---	---	---
Grapit	0-5	10-20	---	7.4-8.4	5-15	0	0.0-2.0	0
	5-14	10-20	---	7.4-8.4	5-15	0	0.0-2.0	0
	14-30	5.0-15	---	7.9-9.0	40-50	0	0.0-2.0	0
	30-54	5.0-10	---	7.9-9.0	40-50	0	0.0-2.0	0
	54-60	3.0-10	---	7.9-9.0	30-45	0	0.0-2.0	0
15:								
Davtone	0-2	10-25	---	6.6-7.8	0	0	0	0
	2-6	10-25	---	6.6-7.8	0	0	0	0
	6-17	15-25	---	6.6-7.8	0	0	0	0
	17-30	10-25	---	6.6-7.8	0	0	0	0
	30-60	10-15	---	6.6-7.8	0	0	0	0

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
15:								
Forsey	0-2	10-15	---	6.6-7.8	0	0	0	0
	2-8	10-15	---	6.6-7.8	0	0	0	0
	8-18	5.0-15	---	6.6-7.8	0	0	0	0
	18-24	5.0-15	---	6.6-7.8	0	0	0	0
	24-60	4.0-10	---	7.9-8.4	2-5	0	0	0
16:								
Dearjosh	0-5	2.0-10	---	6.6-7.8	0-5	0	0	0
	5-21	1.0-5.0	---	6.6-7.8	0-10	0	0	0
	21-48	0.0-5.0	---	7.4-8.4	0-15	0	0	0
	48-54	0.0-5.0	---	7.4-8.4	0-15	0	0	0
	54-60	0.0-5.0	---	7.4-8.4	0-15	0	0	0
Lakebench	0-6	5.0-15	---	6.6-7.8	0-5	0	0	0
	6-22	4.0-10	---	6.6-7.8	0-10	0	0	0
	22-60	4.0-10	---	7.9-9.0	15-25	0	0	0
17:								
Deaver	0-2	20-35	---	7.9-8.4	0-10	0	0.0-4.0	1-5
	2-8	20-40	---	7.9-8.4	5-15	5-10	0.0-4.0	3-10
	8-18	20-40	---	7.9-8.4	5-15	5-10	0.0-4.0	3-10
	18-35	20-40	---	7.9-8.4	5-15	5-10	0.0-4.0	3-10
	35-39	---	---	---	---	---	---	---
Avalon	0-3	10-20	---	7.4-8.4	1-2	0	0	0
	3-12	10-20	---	7.9-9.0	15-30	0	2.0-4.0	1-3
	12-22	10-20	---	7.9-9.0	15-30	0	2.0-4.0	1-3
	22-42	10-20	---	7.9-9.0	15-30	0	2.0-4.0	1-3
	42-55	10-20	---	7.9-9.0	15-30	0	2.0-4.0	1-3
	55-62	10-20	---	7.9-9.0	15-30	0	2.0-4.0	1-3
18:								
Deaver	0-2	20-35	---	7.9-8.4	0-10	0	0.0-4.0	1-5
	2-8	20-40	---	7.9-8.4	5-15	5-10	0.0-4.0	3-10
	8-18	20-40	---	7.9-8.4	5-15	5-10	0.0-4.0	3-10
	18-35	20-40	---	7.9-8.4	5-15	5-10	0.0-4.0	3-10
	35-39	---	---	---	---	---	---	---
Chipeta	0-1	20-35	---	7.9-9.0	1-10	1-5	2.0-4.0	5-10
	1-12	15-30	---	7.9-9.0	1-10	5-10	4.0-8.0	5-10
	12-17	15-30	---	7.9-9.0	1-10	5-10	4.0-8.0	5-10
	17-21	---	---	---	---	---	---	---

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
19:								
Detra	0-8	10-20	---	6.6-7.3	0	0	0	0
	8-19	10-20	---	6.6-7.3	0	0	0	0
	19-27	10-25	---	6.6-7.8	0	0	0	0
	27-38	10-25	---	6.6-7.8	0	0	0	0
	38-50	10-25	---	6.6-7.8	0	0	0	0
	50-60	10-20	---	7.4-8.4	0	0	0	0
Cortyzack	0-3	12-24	---	6.6-7.3	0	0	0	0
	3-8	15-27	---	7.4-7.8	0	0	0	0
	8-12	15-27	---	7.4-7.8	0	0	0	0
	12-23	13-23	---	7.4-8.4	0	0	0	0
	23-39	11-20	---	7.9-8.4	15-30	0	0	0
	39-48	11-20	---	7.9-8.4	15-30	0	0	0
	48-72	7.0-16	---	7.9-8.4	5-15	0	0	0
	72-76	7.0-16	---	7.9-8.4	1-10	0	0	0
20:								
Eghelm	0-4	8.0-18	---	7.9-8.4	1-10	0	0.0-4.0	1-13
	4-18	5.0-12	---	7.9-8.4	1-10	0	0.0-4.0	1-13
	18-26	5.0-12	---	7.9-8.4	1-10	0	0.0-4.0	1-13
	26-41	1.0-6.0	---	7.9-8.4	1-10	0	0.0-4.0	1-10
	41-60	1.0-6.0	---	7.9-8.4	1-10	0	0.0-4.0	1-10
Uffens	0-3	3.0-7.0	---	8.5-11.0	1-10	0	8.0-16.0	5-15
	3-24	6.0-16	---	8.5-11.0	5-15	0-1	8.0-32.0	13-50
	24-37	6.0-16	---	8.5-11.0	5-15	1-3	8.0-32.0	10-30
	37-60	1.0-3.0	---	8.5-11.0	5-10	0-3	4.0-8.0	5-20
21:								
Emlin	0-2	10-25	---	6.6-7.8	0-1	0	0	0
	2-5	10-25	---	6.6-7.8	0-1	0	0	0
	5-11	10-25	---	6.6-7.8	0-1	0	0	0
	11-14	10-20	---	7.4-8.4	0-1	0	0	0
	14-19	10-20	---	7.4-8.4	0-1	0	0	0
	19-30	10-20	---	7.4-8.4	20-30	0	0.0-4.0	0-1
	30-41	10-20	---	7.9-9.0	20-30	0	0.0-4.0	0-1
	41-60	10-20	---	7.9-9.0	20-30	0	0.0-4.0	0-1

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
22:								
Fluvaquents	0-5	0.0-10	---	6.6-8.4	0-25	0	0.0-2.0	0
	5-22	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	22-30	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	30-36	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	36-43	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	43-50	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	50-60	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
23:								
Green River	0-5	4.0-13	---	7.9-9.0	2-10	0	2.0-4.0	5-10
	5-60	2.0-11	---	7.9-9.0	5-15	0-2	4.0-8.0	5-15
Fluvaquents	0-5	0.0-10	---	6.6-8.4	0-25	0	0.0-2.0	0
	5-22	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	22-30	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	30-36	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	36-43	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	43-50	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	50-60	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
24:								
Hanksville	0-2	15-25	---	7.9-9.0	5-25	1-10	2.0-8.0	2-5
	2-13	15-30	---	7.9-9.0	5-25	1-10	2.0-16.0	2-13
	13-33	15-30	---	7.9-9.0	5-25	1-10	2.0-16.0	2-13
	33-37	---	---	---	---	---	---	---
25:								
Holter	0-3	10-15	---	6.6-7.8	0	0	0	0
	3-10	10-15	---	6.6-7.8	0	0	0	0
	10-16	15-25	---	6.6-7.8	0	0	0	0
	16-23	10-20	---	6.6-7.8	0	0	0	0
	23-29	10-20	---	6.6-7.8	0	0	0	0
	29-36	10-20	---	7.4-8.4	1-4	0	0	0
	36-45	10-15	---	7.9-9.0	2-4	0	0.0-2.0	0
	45-60	10-15	---	7.9-9.0	2-4	0	0.0-2.0	0
Detra family	0-6	10-25	---	6.6-7.8	0	0	0	0
	6-15	10-25	---	6.6-7.8	0	0	0	0
	15-25	15-25	---	6.6-8.4	0	0	0	0
	25-36	15-25	---	6.6-8.4	2-10	0	0	0
	36-60	10-20	---	7.9-8.4	2-10	0	0.0-2.0	0

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
26:								
Ironco	0-4	10-20	---	6.6-7.8	0	0	0	0
	4-10	10-20	---	6.6-7.8	0	0	0	0
	10-31	10-25	---	6.1-7.3	0	0	0	0
	31-60	10-25	---	6.1-7.3	0	0	0	0
Mulgon	0-1	50-90	---	5.1-6.0	0	0	0.0-2.0	0
	1-8	5.0-20	---	5.6-6.5	0	0	0	0
	8-16	5.0-15	---	5.6-6.5	0	0	0	0
	16-23	5.0-25	---	5.6-6.5	0	0	0	0
	23-32	5.0-25	---	5.6-6.5	0	0	0	0
	32-60	5.0-25	---	5.6-6.5	0	0	0	0
27:								
Lakebench	0-3	4.0-10	---	7.4-7.8	5-15	0	0	0
	3-9	4.0-10	---	7.4-8.4	15-40	0	0	0
	9-25	4.0-10	---	7.4-8.4	20-40	0	0	0
	25-35	4.0-10	---	7.4-8.4	20-40	0	0	0
	35-45	4.0-10	---	7.4-8.4	20-40	0	0	0
	45-50	3.0-10	---	7.4-8.4	15-25	0	0.0-2.0	0
	50-60	3.0-10	---	7.4-8.4	15-25	0	0.0-2.0	0
Strell	0-3	1.0-5.0	---	6.6-8.4	0-15	0	0	0
	3-13	0.0-5.0	---	7.4-8.4	10-25	0	0	0
	13-17	---	---	---	---	---	---	---
28:								
Lakebench	0-3	4.0-10	---	7.4-7.8	5-15	0	0	0
	3-9	4.0-10	---	7.4-8.4	15-40	0	0	0
	9-25	4.0-10	---	7.4-8.4	20-40	0	0	0
	25-35	4.0-10	---	7.4-8.4	20-40	0	0	0
	35-45	4.0-10	---	7.4-8.4	20-40	0	0	0
	45-50	3.0-10	---	7.4-8.4	15-25	0	0.0-2.0	0
	50-60	3.0-10	---	7.4-8.4	15-25	0	0.0-2.0	0
Yampa	0-7	4.0-10	---	7.4-8.4	5-20	0	0.0-2.0	0
	7-13	2.0-10	---	7.9-9.0	20-35	0	0.0-2.0	0
	13-31	4.0-15	---	7.9-9.0	30-40	0	0.0-2.0	0-1
	31-60	1.0-5.0	---	7.9-9.0	10-20	0	2.0-4.0	0-1

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
29:								
Layoint	0-1	2.0-10	---	6.6-7.8	0-10	0	0	0
	1-4	2.0-10	---	6.6-7.8	0-10	0	0	0
	4-8	2.0-10	---	6.6-7.8	0-10	0	0	0
	8-14	2.0-10	---	6.6-7.8	0-10	0	0	0
	14-24	2.0-5.0	---	6.6-7.8	0-10	0	0	0
	24-32	2.0-5.0	---	6.6-7.8	0-10	0	0	0
	32-36	---	---	---	---	---	---	---
Moosed	0-2	3.0-10	---	6.6-7.8	0-10	0	0	0
	2-7	1.0-5.0	---	6.6-7.8	0-10	0	0	0
	7-11	1.0-5.0	---	6.6-7.8	0-10	0	0	0
	11-15	1.0-5.0	---	6.6-7.8	0-10	0	0	0
	15-18	0.0-5.0	---	6.6-7.8	0-10	0	0	0
	18-22	---	---	---	---	---	---	---
Berlake	0-3	5.0-15	---	6.6-7.3	0	0	0	0
	3-14	5.0-15	---	6.6-7.3	0	0	0	0
	14-18	5.0-20	---	6.6-7.8	0-10	0	0	0
	18-27	5.0-20	---	6.6-7.8	0-10	0	0	0
	27-39	5.0-20	---	6.6-7.8	0-10	0	0	0
	39-49	5.0-20	---	6.6-7.8	0-10	0	0	0
	49-57	5.0-20	---	6.6-7.8	0-10	0	0	0
	57-60	0.0-10	---	6.6-7.8	0-15	0	0	0
30:								
Lodore	0-2	3.0-15	---	7.4-8.4	10-25	0	0	0
	2-13	1.0-10	---	7.9-9.0	15-40	0	0	0
	13-35	1.0-10	---	7.9-9.0	15-40	0	0	0
	35-39	---	---	---	---	---	---	---
Mantlemine	0-2	5.0-15	---	6.6-7.8	0	0	0	0
	2-5	5.0-15	---	6.6-7.8	0	0	0	0
	5-20	5.0-20	---	6.6-7.8	0-10	0	0	0
	20-25	5.0-20	---	7.4-8.4	5-20	0	0	0
	25-45	5.0-20	---	7.4-8.4	15-25	0	0	0
	45-60	5.0-15	---	7.4-8.4	15-25	0	0	0
Strell	0-3	1.0-5.0	---	6.6-8.4	0-15	0	0	0
	3-13	0.0-5.0	---	7.4-8.4	10-25	0	0	0
	13-17	---	---	---	---	---	---	---

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
31:								
Mantlemine	0-2	5.0-15	---	6.6-7.8	0	0	0	0
	2-5	5.0-15	---	6.6-7.8	0	0	0	0
	5-20	5.0-20	---	6.6-7.8	0-10	0	0	0
	20-25	5.0-20	---	7.4-8.4	5-20	0	0	0
	25-45	5.0-20	---	7.4-8.4	15-25	0	0	0
	45-60	5.0-15	---	7.4-8.4	15-25	0	0	0
32:								
Mantlemine	0-2	5.0-15	---	6.6-7.8	0	0	0	0
	2-5	5.0-15	---	6.6-7.8	0	0	0	0
	5-20	5.0-20	---	6.6-7.8	0-10	0	0	0
	20-25	5.0-20	---	7.4-8.4	5-20	0	0	0
	25-45	5.0-20	---	7.4-8.4	15-25	0	0	0
	45-60	5.0-15	---	7.4-8.4	15-25	0	0	0
Emlin	0-2	10-25	---	6.6-7.8	0-1	0	0	0
	2-5	10-25	---	6.6-7.8	0-1	0	0	0
	5-11	10-25	---	6.6-7.8	0-1	0	0	0
	11-14	10-20	---	7.4-8.4	0-1	0	0	0
	14-19	10-20	---	7.4-8.4	0-1	0	0	0
	19-30	10-20	---	7.4-8.4	20-30	0	0.0-4.0	0-1
	30-41	10-20	---	7.9-9.0	20-30	0	0.0-4.0	0-1
	41-60	10-20	---	7.9-9.0	20-30	0	0.0-4.0	0-1
33:								
Massadona	0-2	15-25	---	7.9-9.0	5-10	0	4.0-8.0	5-10
	2-11	25-30	---	7.9-9.0	10-20	0	4.0-8.0	5-10
	11-20	25-30	---	8.5-9.0	10-20	0	4.0-8.0	5-10
	20-34	25-30	---	8.5-9.0	10-20	0-1	4.0-8.0	5-10
	34-41	25-30	---	7.9-9.0	10-20	0-5	4.0-8.0	0-10
	41-60	25-30	---	7.9-9.0	10-20	0-5	4.0-8.0	0-10
34:								
Mespun	0-9	1.0-7.0	---	6.6-8.4	0	0	0	0
	9-60	1.0-6.0	---	6.6-8.4	0	0	0	0
35:								
Mido	0-8	2.0-5.0	---	7.4-7.8	1-10	0	0.0-2.0	0
	8-60	2.0-5.0	---	7.4-7.8	1-10	0	0.0-2.0	0

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
36:								
Mikim loam	0-2	10-20	---	7.9-8.4	5-10	0	0.0-2.0	0
	2-6	10-20	---	7.9-8.4	5-10	0	0.0-2.0	0
	6-12	5.0-20	---	8.5-9.0	5-15	0	0.0-2.0	0
	12-25	5.0-20	---	8.5-9.0	5-15	0	0.0-2.0	0
	25-43	5.0-20	---	8.5-9.0	5-15	0	0.0-2.0	0
	43-60	5.0-20	---	8.5-9.0	5-15	0	0.0-2.0	0
Mikim silt loam	0-6	9.0-19	---	7.9-9.0	5-10	0	4.0-8.0	0-12
	6-60	8.0-20	---	8.5-9.0	5-10	0	2.0-8.0	5-12
37:								
Milok	0-4	4.0-14	---	7.9-8.4	3-10	0	0.0-2.0	0
	4-15	5.0-13	---	7.9-8.4	5-15	0	0.0-2.0	0-5
	15-37	5.0-13	---	7.9-9.0	10-20	0	0.0-2.0	0-5
	37-50	5.0-13	---	7.9-9.0	5-10	0	0.0-2.0	0-5
	50-60	3.0-12	---	8.5-9.0	5-10	0	0.0-2.0	0-5
38:								
Milok	0-4	4.0-14	---	7.9-8.4	3-10	0	0.0-2.0	0
	4-15	5.0-13	---	7.9-8.4	5-15	0	0.0-2.0	0-5
	15-37	5.0-13	---	7.9-9.0	10-20	0	0.0-2.0	0-5
	37-50	5.0-13	---	7.9-9.0	5-10	0	0.0-2.0	0-5
	50-60	3.0-12	---	8.5-9.0	5-10	0	0.0-2.0	0-5
Solirec	0-8	5.0-15	---	7.4-8.4	0-25	0	0	0
	8-52	4.0-20	---	7.9-9.0	15-40	0	0	0
	52-60	2.0-20	---	7.9-9.0	15-40	0	0	0
Strych	0-5	5.0-15	---	7.4-8.4	0-25	0	0	0
	5-10	2.0-15	---	7.4-9.0	15-40	0	0	0
	10-34	2.0-15	---	7.9-9.0	15-40	0	0	0
	34-50	2.0-15	---	7.9-9.0	15-40	0	0	0
	50-60	0.0-15	---	7.4-9.0	10-40	0	0	0
39:								
Milok	0-6	3.0-8.0	---	7.9-8.4	1-10	0	0	0
	6-12	6.0-12	---	7.9-9.0	1-10	0-1	0	0-5
	12-24	5.0-11	---	7.9-9.0	10-20	0-1	0	0-5
	24-37	5.0-11	---	7.9-9.0	10-20	0-1	0	0-5
	37-44	4.0-10	---	7.9-9.0	1-10	0-2	0	0-5
	44-60	4.0-10	---	7.9-9.0	1-10	0-2	0	0-5

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
39:								
Strych	0-8	4.0-10	---	7.4-8.4	5-25	0	0	0
	8-39	3.0-9.0	---	7.9-8.4	15-40	0	0	0
	39-60	1.0-6.0	---	7.9-8.4	10-30	0	0	0
40:								
Notlic	0-4	8.0-17	---	7.9-9.0	5-15	0	0.0-2.0	0-5
	4-13	8.0-17	---	7.9-9.0	5-15	0	0.0-2.0	0-5
	13-29	8.0-17	---	7.9-9.0	5-15	0	0.0-2.0	0-5
	29-48	8.0-16	---	7.9-9.0	5-15	0	0.0-2.0	0-5
	48-60	8.0-16	---	7.9-9.0	5-15	0	0.0-2.0	0-5
Iogoon	0-5	4.0-12	---	7.9-9.0	1-10	0	0.0-2.0	0-5
	5-11	3.0-10	---	7.9-9.0	1-10	0	0.0-2.0	0-5
	11-32	3.0-10	---	7.9-9.0	1-10	0	0.0-2.0	0-5
	32-47	2.0-9.0	---	7.9-9.0	1-10	0	0.0-2.0	0-5
	47-60	2.0-9.0	---	7.9-9.0	1-10	0	0.0-2.0	0-5
Labyrinth	0-6	3.0-10	---	7.9-9.0	1-5	0	0.0-2.0	0-5
	6-16	1.0-8.0	---	7.9-9.0	1-5	0	0.0-2.0	0-5
	16-35	0.0-7.0	---	7.9-9.0	1-5	0	0.0-2.0	0-5
	35-60	0.0-7.0	---	7.9-9.0	1-5	0	0.0-2.0	0-5
41:								
Paradox	0-2	8.0-20	---	7.9-9.0	1-15	0	0.0-4.0	5-10
	2-11	10-20	---	7.9-9.0	1-15	0-5	0.0-4.0	5-10
	11-26	10-20	---	7.9-9.0	1-15	0-5	0.0-4.0	5-10
	26-48	10-20	---	7.9-9.0	1-15	0-5	0.0-4.0	5-10
	48-60	10-20	---	7.9-9.0	1-15	0-5	0.0-4.0	5-10
42:								
Pensore	0-3	5.0-15	---	7.4-8.4	0-25	0	0	0
	3-10	2.0-15	---	7.4-9.0	10-40	0	0	0
	10-16	1.0-10	---	7.9-9.0	40-60	0	0	0
	16-20	---	---	---	---	---	---	---
Lodore	0-2	3.0-15	---	7.4-8.4	10-25	0	0	0
	2-13	1.0-10	---	7.9-9.0	15-40	0	0	0
	13-35	1.0-10	---	7.9-9.0	15-40	0	0	0
	35-39	---	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---	---

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
43:								
Pensore	0-3	5.0-15	---	7.4-8.4	0-25	0	0	0
	3-10	2.0-15	---	7.4-9.0	10-40	0	0	0
	10-16	1.0-10	---	7.9-9.0	40-60	0	0	0
	16-20	---	---	---	---	---	---	---
Roto	0-2	4.0-15	---	7.4-8.4	0-20	0	0	0
	2-9	2.0-15	---	7.9-9.0	10-40	0	0	0
	9-22	2.0-15	---	7.9-9.0	40-60	0	0	0
	22-26	---	---	---	---	---	---	---
44:								
Polychrome	0-3	7.0-16	---	7.9-9.0	1-10	1-3	2.0-4.0	0-5
	3-16	7.0-17	---	7.9-9.0	1-10	1-5	2.0-4.0	0-5
	16-23	7.0-17	---	7.9-9.0	1-10	5-10	4.0-8.0	0-5
	23-38	7.0-17	---	7.9-9.0	1-10	5-10	4.0-16.0	0-5
	38-42	---	---	---	---	---	---	---
Milok	0-6	3.0-8.0	---	7.9-8.4	1-10	0	0	0
	6-12	6.0-12	---	7.9-9.0	1-10	0-1	0	0-5
	12-24	5.0-11	---	7.9-9.0	10-20	0-1	0	0-5
	24-37	5.0-11	---	7.9-9.0	10-20	0-1	0	0-5
	37-44	4.0-10	---	7.9-9.0	1-10	0-2	0	0-5
	44-60	4.0-10	---	7.9-9.0	1-10	0-2	0	0-5
45:								
Redrock family	0-3	5.0-15	---	7.4-7.8	0-10	0	0	0
	3-10	5.0-15	---	7.4-7.8	0-10	0	0	0
	10-17	5.0-15	---	8.5-9.0	15-45	0	0.0-2.0	0
	17-28	5.0-15	---	8.5-9.0	15-45	0	0.0-2.0	0
	28-35	5.0-15	---	8.5-9.0	15-45	0	0.0-2.0	0
	35-43	5.0-15	---	8.5-9.0	15-45	0	0.0-2.0	0
	43-54	5.0-15	---	8.5-9.0	30-45	0	2.0-4.0	0-5
	54-60	5.0-15	---	8.5-9.0	15-30	0	0.0-2.0	0
Roto	0-2	4.0-15	---	7.4-8.4	0-20	0	0	0
	2-9	2.0-15	---	7.9-9.0	10-40	0	0	0
	9-22	2.0-15	---	7.9-9.0	40-60	0	0	0
	22-26	---	---	---	---	---	---	---
46:								
Riverwash	0-6	---	---	6.6-7.8	---	---	0	---
	6-60	---	---	---	---	---	0	---

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
47:								
Rizno	0-5	4.0-10	---	7.4-8.4	10-25	0	0	0
	5-15	2.0-10	---	7.9-9.0	15-40	0	0	0
	15-19	---	---	---	---	---	---	---
Windcomb	0-4	8.0-18	---	7.9-8.4	1-10	0-1	0.0-2.0	0
	4-9	5.0-12	---	7.9-8.4	1-10	1-5	0.0-2.0	0
	9-17	5.0-12	---	7.9-8.4	1-10	1-5	0.0-2.0	0
	17-21	---	---	---	---	---	---	---
Anasazi	0-3	4.0-15	---	7.4-8.4	0-15	0	0	0
	3-10	2.0-10	---	7.9-9.0	10-30	0	0	0
	10-19	2.0-10	---	7.9-9.0	15-40	0	0	0
	19-24	0.0-10	---	7.9-9.0	15-40	0	0	0
	24-28	---	---	---	---	---	---	---
48:								
Rock outcrop	0-60	---	---	---	---	---	---	---
49:								
Rock outcrop	0-60	---	---	---	---	---	---	---
Hackling	0-1	5.0-10	---	7.4-7.8	1-10	0	0	0
	1-4	5.0-15	---	7.4-8.4	1-10	0	0	0
	4-15	5.0-10	---	7.4-8.4	1-10	0	0	0
	15-19	---	---	---	---	---	---	---
50:								
Rock outcrop	0-60	---	---	---	---	---	---	---
Haploborolls	0-3	50-90	30-60	5.1-6.0	0	0	0.0-2.0	0
	3-7	5.0-15	---	6.1-7.8	0	0	0	0
	7-10	4.0-15	---	6.6-7.8	0	0	0	0
	10-13	---	---	---	---	---	---	---
51:								
Rock outcrop	0-60	---	---	---	---	---	---	---
Torriorthents	0-4	7.4-25	---	6.6-8.4	0-40	0	0	0
	4-18	5.7-28	---	7.4-9.0	0-50	0	0	0
	18-22	---	---	---	---	---	---	---
Ustorthents	0-6	5.0-20	---	6.6-8.4	0-5	0	0	0
	6-33	10-20	---	6.6-9.0	0-5	0	0	0
	33-37	---	---	---	---	---	---	---

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
52:								
Rock outcrop	0-60	---	---	---	---	---	---	---
Ustochrepts	0-6	6.0-12	---	7.9-8.4	1-10	0	0.0-2.0	0-5
	6-11	7.0-13	---	7.9-8.4	5-15	0	0.0-2.0	0-5
	11-19	7.0-16	---	8.5-9.0	15-30	0	0.0-2.0	0-5
	19-60	7.0-16	---	8.5-9.0	25-40	0	0.0-2.0	0-5
Cryochrepts	0-5	9.0-20	---	7.9-8.4	5-10	0	0	0
	5-11	9.0-20	---	7.9-8.4	15-30	0	0	0
	11-18	9.0-20	---	7.9-8.4	15-30	0	0	0
	18-33	9.0-20	---	7.9-8.4	25-40	0	0	0
	33-60	8.0-18	---	7.9-8.4	25-45	0	0	0
53:								
Schoonover	0-3	5.0-20	---	7.4-8.4	5-10	0	0.0-2.0	0
	3-8	5.0-15	---	7.9-9.0	10-20	0	0.0-2.0	0
	8-11	4.0-15	---	7.9-9.0	15-40	0	0.0-2.0	0
	11-14	---	---	---	---	---	---	---
Duffymont	0-3	7.0-14	---	6.6-7.3	0	0	0.0-2.0	0
	3-13	7.0-14	---	6.6-7.3	0	0	0.0-2.0	0
	13-17	6.0-15	---	6.6-7.8	0	0	0.0-2.0	0
	17-21	---	---	---	---	---	---	---
54:								
Sheecal	0-2	11-20	---	7.9-9.0	1-15	0	0.0-2.0	0
	2-5	11-20	---	7.9-9.0	1-15	0	0.0-2.0	0
	5-15	10-18	---	7.9-9.0	1-15	0-1	0.0-2.0	0-5
	15-29	9.0-17	---	7.9-9.0	1-15	0-2	0.0-2.0	0-5
	29-33	---	---	---	---	---	---	---
55:								
Sheecal	0-4	11-20	---	7.9-9.0	1-15	0	0.0-2.0	0
	4-12	10-18	---	7.9-9.0	1-15	0-1	0.0-2.0	0-5
	12-21	9.0-17	---	7.9-9.0	1-15	0-2	0.0-2.0	0-5
	21-25	---	---	---	---	---	---	---
56:								
Shotnick	0-3	5.0-11	---	7.9-8.4	3-5	0	2.0-8.0	5-10
	3-16	5.0-10	---	7.9-9.0	5-10	0	2.0-8.0	5-10
	16-30	5.0-10	---	7.9-9.0	5-10	0	2.0-8.0	5-10
	30-60	5.0-10	---	8.5-9.0	5-15	0	4.0-8.0	5-15

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
56:								
Uffens	0-3	3.0-7.0	---	8.5-11.0	1-10	0	8.0-16.0	5-15
	3-24	6.0-16	---	8.5-11.0	5-15	0-1	8.0-32.0	13-50
	24-37	6.0-16	---	8.5-11.0	5-15	1-3	8.0-32.0	10-30
	37-60	1.0-3.0	---	8.5-11.0	5-10	0-3	4.0-8.0	5-20
57:								
Splimo	0-3	8.0-18	---	7.9-9.0	30-40	0	0.0-2.0	0-5
	3-7	9.0-20	---	7.9-9.0	40-50	0	0.0-2.0	0-5
	7-11	8.0-18	---	8.5-9.0	50-60	0-3	0.0-2.0	5-10
	11-15	---	---	---	---	---	---	---
58:								
Splimo	0-2	6.0-16	---	7.9-8.4	15-30	0	0.0-2.0	0
	2-4	7.0-17	---	7.9-8.4	15-30	0	0.0-2.0	0-5
	4-19	8.0-17	---	7.9-9.0	40-60	0-3	0.0-2.0	0-10
	19-23	---	---	---	---	---	---	---
Chew	0-3	8.1-13	---	7.9-8.4	5-10	0	0.0-2.0	0
	3-9	14-22	---	7.9-8.4	10-20	0	0.0-2.0	0
	9-17	14-20	---	7.9-9.0	40-55	0-1	0.0-4.0	0-5
	17-27	14-20	---	7.9-9.0	40-55	0-1	0.0-4.0	0-5
	27-38	2.9-10	---	7.9-8.4	35-45	0-5	2.0-4.0	0-5
	38-42	---	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---	---
59:								
Stout	0-2	3.0-10	---	6.6-7.3	0	0	0	0
	2-11	2.0-10	---	6.6-7.3	0	0	0	0
	11-15	---	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---	---
60:								
Strell	0-2	2.0-5.0	---	6.6-7.8	0	0	0	0
	2-11	0.0-5.0	---	6.6-7.8	0-5	0	0	0
	11-15	---	---	---	---	---	---	---
Marthaspeak	0-3	2.0-5.0	---	6.6-7.8	0	0	0	0
	3-25	0.0-5.0	---	6.6-7.8	0-5	0	0	0
	25-33	0.0-5.0	---	6.6-7.8	0-5	0	0	0
	33-37	---	---	---	---	---	---	---

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
60:								
Rock outcrop	0-60	---	---	---	---	---	---	---
61:								
Strell	0-2	2.0-5.0	---	6.6-7.8	0	0	0	0
	2-11	0.0-5.0	---	6.6-7.8	0-5	0	0	0
	11-15	---	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---	---
Marthaspeak	0-3	2.0-5.0	---	6.6-7.8	0	0	0	0
	3-25	0.0-5.0	---	6.6-7.8	0-5	0	0	0
	25-33	0.0-5.0	---	6.6-7.8	0-5	0	0	0
	33-37	---	---	---	---	---	---	---
62:								
Strych	0-5	5.0-15	---	7.4-8.4	0-25	0	0	0
	5-10	2.0-15	---	7.4-9.0	15-40	0	0	0
	10-34	2.0-15	---	7.9-9.0	15-40	0	0	0
	34-50	2.0-15	---	7.9-9.0	15-40	0	0	0
	50-60	0.0-15	---	7.4-9.0	10-40	0	0	0
Mellenthin	0-2	3.0-10	---	7.4-8.4	5-25	0	0	0
	2-12	1.0-10	---	7.9-9.0	15-40	0	0	0
	12-16	---	---	---	---	---	---	---
63:								
Tipper	0-5	2.0-10	---	7.4-7.8	1-5	0	0.0-4.0	0
	5-25	2.0-10	---	7.4-7.8	1-5	0	0.0-4.0	0
	25-29	---	---	---	---	---	---	---
Crustown	0-3	2.0-10	---	7.4-7.8	5-10	0	0	0
	3-13	0.0-5.0	---	7.4-7.8	5-10	0	0	0
	13-17	---	---	---	---	---	---	---
64:								
Torriorthents	0-4	3.0-25	---	6.6-8.4	0-40	0	0	0
	4-18	1.0-30	---	7.4-9.0	0-50	0	0	0
	18-22	---	---	---	---	---	---	---
Torripsamments	0-4	0.0-5.0	---	6.6-7.8	0-5	0-1	0.0-2.0	0-1
	4-16	0.0-5.0	---	7.4-8.4	0-5	0-1	0.0-2.0	0-1
	16-26	0.0-5.0	---	7.4-8.4	0-5	0-1	0.0-2.0	0-1
	26-30	---	---	---	---	---	---	---

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
65:								
Tsetaa family--------	0-2	2.0-5.0	---	6.6-8.4	1-10	0	0	0-1
	2-6	2.0-5.0	---	6.6-8.4	1-10	0	0	0-1
	6-15	2.0-5.0	---	6.6-8.4	1-10	0	0.0-2.0	0-1
	15-60	2.0-5.0	---	6.6-8.4	1-10	0	0.0-2.0	0-1
Bankard family-------	0-2	0.0-5.0	---	6.6-8.4	0-10	0	0.0-2.0	0
	2-23	0.0-5.0	---	7.4-8.4	0-25	0	0.0-2.0	0
	23-28	0.0-5.0	---	7.4-8.4	0-25	0	0.0-2.0	0
	28-34	0.0-5.0	---	7.4-8.4	0-25	0	0.0-2.0	0
	34-60	0.0-5.0	---	7.4-8.4	0-25	0	0.0-2.0	0
Fluvaquents----------	0-5	0.0-10	---	6.6-8.4	0-25	0	0.0-2.0	0
	5-22	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	22-30	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	30-36	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	36-43	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	43-50	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
	50-60	0.0-20	---	6.6-8.4	0-25	0	0.0-2.0	0
66:								
Turzo----------	0-4	8.0-20	---	8.5-9.0	5-15	0	4.0-8.0	10-20
	4-60	7.0-20	---	8.5-9.0	5-20	1-3	4.0-16.0	10-20
67:								
Ustic Torrifluvents--	0-5	3.0-10	---	7.4-7.8	0-5	0	0	0
	5-60	0.0-10	---	7.4-7.8	0-5	0	0	0
Ustic Torrifluvents--	0-5	3.0-10	---	7.4-7.8	0-5	0	0	0
	5-60	0.0-10	---	7.4-7.8	0-5	0	0	0
68:								
Ustorthents, frigid--	0-6	5.0-20	---	6.6-8.4	0-5	0	0	0
	6-33	10-20	---	6.6-9.0	0-5	0	0	0
	33-37	---	---	---	---	---	---	---
Borolls----------	0-10	5.0-25	---	6.1-8.4	0-5	0	0	0
	10-19	5.0-25	---	6.1-8.4	0-5	0	0	0
	19-30	10-20	---	6.6-9.0	0-5	0	0	0
	30-34	---	---	---	---	---	---	---

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
69:								
Utaline	0-3	5.0-15	---	7.9-8.4	3-15	0	0.0-2.0	0
	3-7	8.0-15	---	8.5-9.0	15-40	0-1	0.0-2.0	0-5
	7-23	8.0-15	---	8.5-9.0	15-40	0-1	0.0-2.0	0-5
	23-46	8.0-15	---	8.5-9.0	15-40	0-1	0.0-2.0	0-5
	46-60	8.0-15	---	8.5-9.0	15-40	0-1	0.0-2.0	0-5
Hanksville	0-2	15-25	---	7.9-9.0	5-25	1-10	2.0-8.0	2-5
	2-13	15-30	---	7.9-9.0	5-25	1-10	2.0-16.0	2-13
	13-33	15-30	---	7.9-9.0	5-25	1-10	2.0-16.0	2-13
	33-37	---	---	---	---	---	---	---
70:								
Windcomb	0-4	8.0-18	---	7.9-8.4	1-10	0-1	0.0-2.0	0
	4-9	5.0-12	---	7.9-8.4	1-10	1-5	0.0-2.0	0
	9-17	5.0-12	---	7.9-8.4	1-10	1-5	0.0-2.0	0
	17-21	---	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	0	---
Rock outcrop	0-60	---	---	---	---	---	---	---
71:								
Windcomb	0-4	8.0-18	---	7.9-8.4	1-10	0-1	0.0-2.0	0
	4-9	5.0-12	---	7.9-8.4	1-10	1-5	0.0-2.0	0
	9-17	5.0-12	---	7.9-8.4	1-10	1-5	0.0-2.0	0
	17-21	---	---	---	---	---	---	---
Rizno	0-5	4.0-10	---	7.4-8.4	10-25	0	0	0
	5-15	2.0-10	---	7.9-9.0	15-40	0	0	0
	15-19	---	---	---	---	---	---	---
Anasazi	0-3	4.0-15	---	7.4-8.4	0-15	0	0	0
	3-10	2.0-10	---	7.9-9.0	10-30	0	0	0
	10-19	2.0-10	---	7.9-9.0	15-40	0	0	0
	19-24	0.0-10	---	7.9-9.0	15-40	0	0	0
	24-28	---	---	---	---	---	---	---
72:								
Yampa	0-7	4.0-10	---	7.4-8.4	5-20	0	0.0-2.0	0
	7-13	2.0-10	---	7.9-9.0	20-35	0	0.0-2.0	0
	13-31	4.0-15	---	7.9-9.0	30-40	0	0.0-2.0	0-1
	31-60	1.0-5.0	---	7.9-9.0	10-20	0	2.0-4.0	0-1

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
73:								
Yampa	0-7	4.0-10	---	7.4-8.4	5-20	0	0.0-2.0	0
	7-13	2.0-10	---	7.9-9.0	20-35	0	0.0-2.0	0
	13-31	4.0-15	---	7.9-9.0	30-40	0	0.0-2.0	0-1
	31-60	1.0-5.0	---	7.9-9.0	10-20	0	2.0-4.0	0-1
Hackling	0-1	5.0-10	---	7.4-7.8	1-10	0	0	0
	1-4	5.0-15	---	7.4-8.4	1-10	0	0	0
	4-15	5.0-10	---	7.4-8.4	1-10	0	0	0
	15-19	---	---	---	---	---	---	---
Mantlemine	0-3	5.0-15	---	6.6-7.8	0	0	0	0
	3-13	5.0-20	---	6.6-7.8	0-10	0	0	0
	13-45	5.0-20	---	7.4-8.4	5-20	0	0	0
	45-60	5.0-15	---	7.4-8.4	15-25	0	0	0
74:								
Yarts	0-8	4.0-12	---	7.9-9.0	1-10	0	2.0-4.0	0-5
	8-60	3.0-13	---	7.9-9.0	1-10	0-1	2.0-4.0	0-10
75:								
Yarts	0-8	4.0-8.0	---	8.5-9.0	1-10	0	2.0-4.0	10-15
	8-26	3.0-8.0	---	8.5-9.0	1-10	0	2.0-8.0	10-15
	26-39	2.0-12	---	8.5-9.0	1-10	0-2	2.0-8.0	10-15
	39-57	1.0-4.0	---	8.5-9.0	1-10	0-2	2.0-8.0	5-10
	57-60	2.0-7.0	---	8.5-9.0	1-10	0-2	2.0-8.0	5-10
Yarts	0-4	4.0-12	---	7.9-9.0	1-10	0	2.0-4.0	0-5
	4-10	3.0-13	---	7.9-9.0	1-10	0-1	2.0-4.0	0-10
	10-17	3.0-13	---	7.9-9.0	1-10	0-1	2.0-4.0	0-10
	17-37	3.0-13	---	7.9-9.0	1-10	0-1	2.0-4.0	0-10
	37-60	3.0-13	---	7.9-9.0	1-10	0-1	2.0-4.0	0-10
76:								
Zillion	0-7	10-20	---	7.4-7.8	0	0	0	0
	7-18	10-20	---	7.4-7.8	0	0	0	0
	18-26	10-20	---	7.4-7.8	0	0	0	0
	26-34	10-20	---	7.4-7.8	5-15	0	0	0
	34-45	5.0-15	---	7.9-8.4	15-40	0	0	0
	45-60	5.0-15	---	7.9-8.4	15-40	0	0	0
Yampa	0-7	4.0-10	---	7.4-8.4	5-20	0	0.0-2.0	0
	7-13	2.0-10	---	7.9-9.0	20-35	0	0.0-2.0	0
	13-31	4.0-15	---	7.9-9.0	30-40	0	0.0-2.0	0-1
	31-60	1.0-5.0	---	7.9-9.0	10-20	0	2.0-4.0	0-1

Table 16.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	meq/100 g	pH	Pct.	Pct.	mmhos/cm	
76:								
Clyl	0-2	8.0-20	---	7.4-8.4	0-5	0	0	0
	2-9	9.0-20	---	7.4-8.4	5-10	0	0	0
	9-19	8.0-15	---	7.9-8.4	40-60	0	0.0-2.0	0
	19-29	8.0-15	---	7.9-8.4	40-60	0	0.0-2.0	0
	29-60	8.0-15	---	7.9-8.4	40-60	0	0.0-2.0	0
77:								
Water	0-79	---	---	---	---	---	---	---

Table 17.--Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
1:										
Abracon	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Solirec	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
2:										
Arches	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Mespun	A	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
3:										
Polychrome	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
5:										
Bankard family----------	A	Very low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Cameo----------	B	Very low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
6:										
Begay----------	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
7:										
Begay----------	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Mespun----------	A	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
8:										
Bodry----------	C	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
9:										
Bondman	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
10:										
Cameo	B	Very low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
11:										
Cameo	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
12:										
Clapper	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
12:										
Abracon	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
13:										
Cortyzack	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
13:										
Duffymont	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
14:										
Cragnot	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Pensore	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Grapit	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
15:										
Davtone	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Forsey	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
16:										
Dearjosh	A	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Lakebench	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
17:										
Deaver	C	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Avalon	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
18:										
Deaver	C	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Chipeta	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
19:										
Detra	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Cortyzack	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
20:										
Eghelm	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Uffens	C	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
21:										
Emlin	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
22:										
Fluvaquents	C	Negligible	January	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			February	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			March	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			April	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			May	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			June	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			July	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			August	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			September	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			October	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			November	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			December	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
23:										
Green River	C	Very low	January	2.0-4.0	>6.0	---	---	None	---	None
			February	2.0-4.0	>6.0	---	---	None	---	None
			March	2.0-4.0	>6.0	---	---	None	Brief	Rare
			April	2.0-4.0	>6.0	---	---	None	Brief	Rare
			May	2.0-4.0	>6.0	---	---	None	Brief	Rare
			June	2.0-4.0	>6.0	---	---	None	Brief	Rare
			July	2.0-4.0	>6.0	---	---	None	---	None
			August	2.0-4.0	>6.0	---	---	None	---	None
			September	2.0-4.0	>6.0	---	---	None	---	None
			October	2.0-4.0	>6.0	---	---	None	---	None
			November	2.0-4.0	>6.0	---	---	None	---	None
			December	2.0-4.0	>6.0	---	---	None	---	None
Fluvaquents	C	Negligible	January	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			February	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			March	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			April	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			May	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			June	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			July	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			August	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			September	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			October	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			November	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			December	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
24:										
Hanksville	C	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
25:										
Holter	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Detra family	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
26:										
Ironco	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
26:										
Mulgon	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
27:										
Lakebench	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Strell	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
28:										
Lakebench	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Yampa	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
29:										
Layoint	C	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
29:										
Moosed	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Berlake	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
30:										
Lodore	C	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Mantlemine	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Strell	D	High								
			January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
31:										
Mantlemine	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
32:										
Mantlemine	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Emlin	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
33:										
Massadona	C	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
34:										
Mespun	A	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
35:										
Mido	A	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
36:										
Mikim loam	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
36:										
Mikim silt loam----------	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
37:										
Milok----------	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
38:										
Milok----------	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Solirec----------	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Strych----------	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
39:										
Milok----------	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
39:										
Strych	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
40:										
Notlic	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Iogoon	B	Very low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	3.0-5.0	>6.0	---	---	None	Brief	Rare
			April	3.0-5.0	>6.0	---	---	None	Brief	Rare
			May	3.0-5.0	>6.0	---	---	None	Brief	Rare
			June	3.0-5.0	>6.0	---	---	None	Brief	Rare
			July	3.0-5.0	>6.0	---	---	None	---	None
			August	3.0-5.0	>6.0	---	---	None	---	None
			September	3.0-5.0	>6.0	---	---	None	---	None
			October	3.0-5.0	>6.0	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Labyrinth	A	Very low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	3.0-5.0	>6.0	---	---	None	Brief	Rare
			April	3.0-5.0	>6.0	---	---	None	Brief	Rare
			May	3.0-5.0	>6.0	---	---	None	Brief	Rare
			June	3.0-5.0	>6.0	---	---	None	Brief	Rare
			July	3.0-5.0	>6.0	---	---	None	---	None
			August	3.0-5.0	>6.0	---	---	None	---	None
			September	3.0-5.0	>6.0	---	---	None	---	None
			October	3.0-5.0	>6.0	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
41:										
Paradox	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
42:										
Pensore	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
42:										
Lodore	C	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
43:										
Pensore	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Roto	C	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
44:										
Polychrome	C	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Milok	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
45:										
Redrock family	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
46:										
Roto	C	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
47:										
Rizno	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Windcomb	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Anasazi	C	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
49:										
Hackling	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
50:										
Haploborolls	B	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
51:										
Torriorthents	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Ustorthents	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
52:										
Ustochrepts	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Cryochrepts	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
53:										
Schoonover	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Duffymont	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
54:										
Sheecal	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
55:										
Sheecal	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
56:										
Shotnick	B	Very low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Uffens	C	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
57:										
Splimo	D	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
58:										
Splimo	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
58:										
Chew----------	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
59:										
Stout----------	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
60:										
Strell----------	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Marthaspeak----------	C	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
61:										
Strell----------	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Marthaspeak----------	C	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
62:										
Strych	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Mellenthin	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
63:										
Tipper	A	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Crustown	C	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
64:										
Torriorthents	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Torripsamments	A	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
65:										
Tsetaa family----------	A	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Bankard family----------	A	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Fluvaquents----------	C	Negligible	January	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			February	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			March	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			April	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			May	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			June	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			July	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			August	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			September	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			October	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			November	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
			December	0.0-1.5	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
66:										
Turzo----------	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
67:										
Ustic Torrifluvents-------	A	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Ustic Torrifluvents-------	A	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
68:										
Ustorthents, frigid-------	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Borolls-------------------	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
69:										
Utaline-------------------	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Hanksville----------------	C	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
70:										
Windcomb------------------	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
71:										
Windcomb------------------	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
71:										
Rizno	D	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Anasazi	C	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
72:										
Yampa	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
73:										
Yampa	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Hackling	D	Very high	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Mantlemine	B	Medium	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 17.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft.	Ft.	Ft.				
74:										
Yarts	B	Low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
75:										
Yarts	B	Very low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Yarts	B	Very low	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
76:										
Zillion	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Yampa	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None
Clyl	B	High	January	---	---	---	---	None	---	None
			February	---	---	---	---	None	---	None
			March	---	---	---	---	None	---	None
			April	---	---	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	---	---	---	---	None	---	None

Table 18.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In.	In.		In.	In.			
1:									
Abracon	---	---	---	---	0	---	Low	High	Moderate
Solirec	---	---	---	---	0	---	Low	High	Moderate
2:									
Arches	Lithic bedrock	5-20	---	Indurated	0	---	Low	High	Moderate
Mespun	---	---	---	---	0	---	Low	Moderate	Low
3:									
Polychrome	Paralithic bedrock	20-40	---	Moderately cemented	0	---	Low	High	High
	Lithic bedrock	43-51	---	Very strongly cemented					
5:									
Bankard family	---	---	---	---	0	---	Low	Low	Low
Cameo	---	---	---	---	0	---	Moderate	Low	Low
6:									
Begay	---	---	---	---	0	---	Low	High	Moderate
7:									
Begay	---	---	---	---	0	---	Low	High	Moderate
Mespun	---	---	---	---	0	---	Low	Moderate	Low
8:									
Bodry	Paralithic bedrock	20-40	---	Moderately cemented	0	---	Low	High	High
	Lithic bedrock	43-51	---	Strongly cemented					
9:									
Bondman	Lithic bedrock	7-20	---	Indurated	0	---	Moderate	Low	Low
10:									
Cameo	---	---	---	---	0	---	Moderate	Low	Low
11:									
Cameo	---	---	---	---	0	---	Low	Low	Low
12:									
Clapper	---	---	---	---	0	---	Low	High	High
Abracon	---	---	---	---	0	---	Low	High	Moderate
13:									
Cortyzack	---	---	---	---	0	---	Moderate	High	Moderate
Duffymont	Lithic bedrock	4-20	---	Indurated	0	---	Moderate	High	Moderate
14:									
Cragnot	---	---	---	---	0	---	Moderate	Low	Low
Pensore	Lithic bedrock	10-20	---	Indurated	0	---	Low	Moderate	Low
Grapit	---	---	---	---	0	---	Low	Low	Low
15:									
Davtone	---	---	---	---	0	---	Moderate	Moderate	Low
Forsey	---	---	---	---	0	---	Moderate	Moderate	Low
16:									
Dearjosh	---	---	---	---	0	---	Low	Low	Low
Lakebench	---	---	---	---	0	---	Moderate	Low	Low
17:									
Deaver	Paralithic bedrock	20-40	---	Moderately cemented	0	---	Moderate	High	Low
Avalon	---	---	---	---	0	---	Low	Moderate	Low
18:									
Deaver	Paralithic bedrock	20-40	---	Moderately cemented	0	---	Moderate	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In.	In.		In.	In.			
18:									
Chipeta	Paralithic bedrock	10-20	---	Moderately cemented	0	---	Moderate	High	Low
19:									
Detra	---	---	---	---	0	---	Moderate	Moderate	Low
Cortyzack	---	---	---	---	0	---	Moderate	High	Moderate
20:									
Eghelm	---	---	---	---	0	---	Low	High	Moderate
Uffens	---	---	---	---	0	---	Low	High	High
21:									
Emlin	---	---	---	---	0	---	Moderate	Moderate	Low
22:									
Fluvaquents	---	---	---	---	0	---	Moderate	High	Low
23:									
Green River	---	---	---	---	0	---	High	High	High
Fluvaquents	---	---	---	---	0	---	Moderate	High	Low
24:									
Hanksville	Paralithic bedrock	20-40	---	Moderately cemented	0	---	Low	High	High
25:									
Holter	---	---	---	---	0	---	Moderate	Moderate	Low
Detra family	---	---	---	---	0	---	Moderate	Moderate	Low
26:									
Ironco	---	---	---	---	0	---	Moderate	Moderate	Low
Mulgon	---	---	---	---	0	---	Moderate	Moderate	Moderate
27:									
Lakebench	---	---	---	---	0	---	Moderate	Low	Low
Strell	Lithic bedrock	7-20	---	Indurated	0	---	Low	Low	Low
28:									
Lakebench	---	---	---	---	0	---	Moderate	Low	Low
Yampa	---	---	---	---	0	---	Moderate	Low	Low
29:									
Layoint	Lithic bedrock	20-40	---	Indurated	0	---	Low	Low	Low
Moosed	Lithic bedrock	7-20	---	Indurated	0	---	Low	Low	Low
Berlake	---	---	---	---	0	---	Low	Low	Low
30:									
Lodore	Lithic bedrock	20-40	---	Indurated	0	---	Moderate	Low	Low
Mantlemine	---	---	---	---	0	---	Moderate	Low	Low
Strell	Lithic bedrock	7-20	---	Indurated	0	---	Low	Low	Low
31:									
Mantlemine	---	---	---	---	0	---	Moderate	Low	Low
32:									
Mantlemine	---	---	---	---	0	---	Moderate	Low	Low
Emlin	---	---	---	---	0	---	Moderate	Moderate	Low
33:									
Massadona	---	---	---	---	0	---	Low	High	Moderate
34:									
Mespun	---	---	---	---	0	---	Low	Moderate	Low
35:									
Mido	---	---	---	---	0	---	Low	Low	Low
36:									
Mikim loam	---	---	---	---	0	---	Low	High	Moderate
Mikim silt loam	---	---	---	---	0	---	Low	High	High

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In.	In.		In.	In.			
37:									
Milok	---	---	---	---	0	---	Low	High	Moderate
38:									
Milok	---	---	---	---	0	---	Low	High	Moderate
Solirec	---	---	---	---	0	---	Low	Moderate	Low
Strych	---	---	---	---	0	---	Low	Moderate	Low
39:									
Milok	---	---	---	---	0	---	Low	High	Moderate
Strych	---	---	---	---	0	---	Low	High	Moderate
40:									
Notlic	---	---	---	---	---	0	Low	High	Moderate
Iogoon	---	---	---	---	0	---	Low	High	Moderate
Labyrinth	---	---	---	---	0	---	Low	High	Moderate
41:									
Paradox	---	---	---	---	0	---	Low	High	Moderate
42:									
Pensore	Lithic bedrock	10-20	---	Indurated	0	---	Low	Moderate	Low
Lodore	Lithic bedrock	20-40	---	Indurated	0	---	Moderate	Low	Low
43:									
Pensore	Lithic bedrock	10-20	---	Indurated	0	---	Low	Moderate	Low
Roto	Lithic bedrock	20-40	---	Indurated	0	---	Low	Low	Low
44:									
Polychrome	Paralithic bedrock	20-40	---	Moderately cemented	0	---	Low	High	High
Milok	---	---	---	---	0	---	Low	High	Moderate
45:									
Redrock family	---	---	---	---	0	---	Moderate	Moderate	Low
Roto	Lithic bedrock	20-40	---	Indurated	0	---	Low	Low	Low
47:									
Rizno	Lithic bedrock	4-20	---	Indurated	0	---	Moderate	Low	Low
Windcomb	Lithic bedrock	6-20	---	Indurated	0	---	Low	High	High
Anasazi	Lithic bedrock	20-40	---	Indurated	0	---	Moderate	Low	Low
49:									
Hackling	Lithic bedrock	10-20	---	Indurated	0	---	Low	Moderate	Low
50:									
Haploborolls	Lithic bedrock	4-30	---	Indurated	0	---	Moderate	Moderate	Low
51:									
Torriorthents	Lithic bedrock	4-30	---	Indurated	0	---	Moderate	Moderate	Low
Ustorthents	Lithic bedrock	10-40	---	Indurated	0	---	Moderate	Low	Low
52:									
Ustochrepts	---	---	---	---	0	---	Moderate	High	Moderate
Cryochrepts	---	---	---	---	0	---	Moderate	High	Moderate
53:									
Schoonover	Lithic bedrock	10-20	---	Indurated	0	---	Moderate	Low	Low
Duffymont	Lithic bedrock	4-20	---	Indurated	0	---	Moderate	High	Moderate
54:									
Sheecal	Lithic bedrock	20-40	---	Indurated	0	---	Moderate	High	High
55:									
Sheecal	Lithic bedrock	20-40	---	Indurated	0	---	Moderate	High	High
56:									
Shotnick	---	---	---	---	---	---	Low	High	High
Uffens	---	---	---	---	0	---	Low	High	High

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In.	In.		In.	In.			
57:									
Splimo	Lithic bedrock	8-20	---	Very strongly cemented	---	---	Low	High	High
58:									
Splimo	Lithic bedrock	10-20	---	Very strongly cemented	---	---	Low	High	Moderate
Chew	Lithic bedrock	20-40	---	Indurated	0	---	Low	High	Moderate
59:									
Stout	Lithic bedrock	7-20	---	Indurated	0	---	Low	Low	Low
60:									
Strell	Lithic bedrock	5-20	---	Indurated	0	---	Low	Low	Low
Marthaspeak	Lithic bedrock	20-40	---	Indurated	0	---	Low	Low	Low
61:									
Strell	Lithic bedrock	5-20	---	Indurated	0	---	Low	Low	Low
Marthaspeak	Lithic bedrock	20-40	---	Indurated	0	---	Low	Low	Low
62:									
Strych	---	---	---	---	0	---	Low	Moderate	Low
Mellenthin	Lithic bedrock	8-20	---	Indurated	0	---	Moderate	Low	Low
63:									
Tipper	Paralithic bedrock	20-40	---	Moderately cemented	0	---	Low	Low	Low
Crustown	Paralithic bedrock	10-20	---	Moderately cemented	0	---	Low	Low	Low
64:									
Torriorthents	Lithic bedrock	4-30	---	Indurated	0	---	Moderate	Moderate	Low
Torripsamments	Lithic bedrock	20-60	---	Indurated	0	---	Low	Low	Low
65:									
Tsetaa family	---	---	---	---	0	---	Low	Low	Low
Bankard family	---	---	---	---	0	---	Low	Low	Low
Fluvaquents	---	---	---	---	0	---	Moderate	High	Low
66:									
Turzo	---	---	---	---	0	---	Low	High	High
67:									
Ustic Torrifluvents	---	---	---	---	0	---	Low	Low	Low
Ustic Torrifluvents	---	---	---	---	0	---	Low	Low	Low
68:									
Ustorthents, frigid	Lithic bedrock	10-40	---	Indurated	0	---	Moderate	Low	Low
Borolls	Lithic bedrock	20-60	---	Indurated	0	---	Moderate	Low	Low
69:									
Utaline	---	---	---	---	0	---	Low	High	Moderate
Hanksville	Paralithic bedrock	20-40	---	Moderately cemented	0	---	Low	High	High
70:									
Windcomb	Lithic bedrock	6-20	---	Indurated	0	---	Low	High	High
71:									
Windcomb	Lithic bedrock	6-20	---	Indurated	0	---	Low	High	High
Rizno	Lithic bedrock	4-20	---	Indurated	0	---	Moderate	Low	Low
Anasazi	Lithic bedrock	20-40	---	Indurated	0	---	Moderate	Low	Low
72:									
Yampa	---	---	---	---	0	---	Moderate	Low	Low
73:									
Yampa	---	---	---	---	0	---	Moderate	Low	Low
Hackling	Lithic bedrock	10-20	---	Indurated	0	---	Low	Moderate	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In.	In.		In.	In.			
73:									
Mantlemine	---	---	---	---	0	---	Moderate	Low	Low
74:									
Yarts	---	---	---	---	0	---	Low	High	Moderate
75:									
Yarts	---	---	---	---	0	---	Low	High	High
Yarts	---	---	---	---	0	---	Low	High	Moderate
76:									
Zillion	---	---	---	---	0	---	Moderate	Low	Low
Yampa	---	---	---	---	0	---	Moderate	Low	Low
Clyl	---	---	---	---	0	---	High	High	Moderate

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