United States Department of Agriculture

Natural Resources Conservation Service

United States Department of the Interior

National Park Service

In cooperation with Yosemite National Park and the Regents of the University of California (Agricultural Experiment Station)

Soil Survey of Yosemite National Park, California

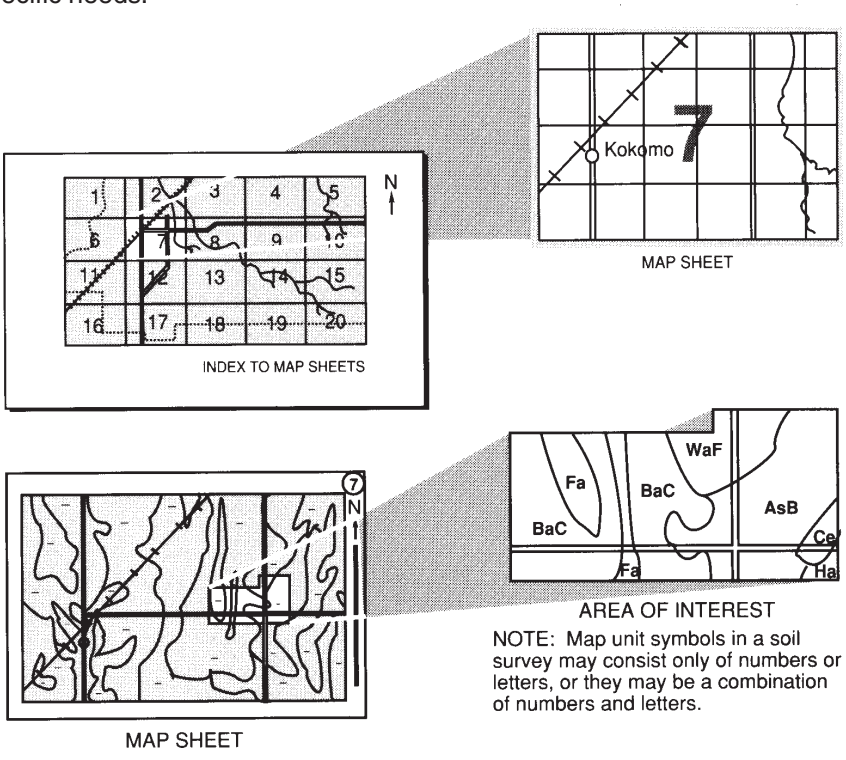
How To Use This Soil Survey

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 go to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Go 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.

National Cooperative Soil Survey

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

This survey was made cooperatively by the Natural Resources Conservation Service; the United States Department of the Interior, National Park Service, Yosemite National Park; and the Regents of the University of California (Agricultural Experiment Station). The Natural Resources Conservation Service had primary responsibility for conducting the survey. The survey is part of the technical assistance furnished to the Tuolumne County, Mariposa County, and Coarsegold Resource Conservation Districts; Central Sierra Resource Conservation and Development; and Yosemite/Sequoia Resource Conservation and Development.

Fieldwork for the Yosemite Valley portion of this soil survey was conducted in 1990 and 1991. Fieldwork for the remainder of the park was conducted between 1996 and 2001. Soil names and descriptions were approved in 2006. Unless otherwise indicated, statements in this publication refer to conditions in the survey area during the fieldwork period.

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.

The most current soil information and interpretations for this survey area are available either through the Soil Data Mart or in the Field Office Technical Guide (FOTG) at the local field office of the Natural Resources Conservation Service. The Soil Data Mart is the Natural Resources Conservation Service data storage site for the official soil survey information. The FOTG is linked to the Soil Data Mart; therefore, the same information is available from both sources. Soil survey maps and tabular data can be accessed through the Soil Data Mart at http://soildatamart.nrcs.usda.gov. The official soil survey information stored at the Soil Data Mart and this soil survey report are also available through Web Soil Survey at http://soils.usda.gov/survey.

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Citation

The correct citation for this survey is as follows:

United States Department of Agriculture, Natural Resources Conservation Service. 2007. Soil survey of Yosemite National Park, California. Accessible online at: http://soils.usda.gov/surve/printed_survey/.

Cover: The south bank of the Merced River below Bridalveil Falls. The soil shown is a Mollic Xerofluvent that formed on an active flood plain of cobbly and stony channel deposits in an area of Oxyaquic Xerofluvents-Riverwash complex, 1 to 4 percent slopes, mesic.

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

Contents

Issued 2006

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.

This soil survey is designed for many different users of Yosemite National Park. Planners, community officials, engineers, and builders can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment. Researchers and other scientists should find the soil and the landscape characterizations useful in developing hypotheses, conducting investigations, and interpreting results.

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. Soils with a high water table are poorly suited to basements or underground installations.

These and many other soil properties that affect land use and interpretations are described in this soil survey. The location of each soil described is shown on the detailed soil maps. 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.

Lincoln E. Burton
State Conservationist, California
Natural Resources Conservation Service

Soil Survey of
Yosemite National Park, California

By Ronald D. Taskey and Kerry D. Arroues, Natural Resources Conservation Service

Fieldwork by Ronald D. Taskey, Stephan Leimroth, Katie Banister, Seth Burgess, Foster Fell, Victoria Saylor, Paula McCarthy, and John Collins, Natural Resources Conservation Service

Fieldwork on the Yosemite Valley part by David Smith, Arlene Tugel, John C. Rule, Andrew Conlin, Jon Schlegal, and Eric Vinson, Natural Resources Conservation Service

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Assistance with Geographical Information Systems by David Howell and Russell Almaraz, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
United States Department of the Interior, National Park Service, Yosemite National Park; Tuolumne County, Mariposa County, and Coarsegold Resource Conservation Districts; Central Sierra Resource Conservation and Development; and Yosemite/Sequoia Resource Conservation and Development

This soil survey area includes all of Yosemite National Park, California (fig. 1). It encompasses an area of approximately 761,236 acres (308,072 hectares). It is bordered on the northeast by the Toiyabe National Forest, on the northwest and west by the Stanislaus National Forest, on the southwest, south, and southeast by the Sierra National Forest, and on the east by the Inyo National Forest.

The lowest elevation in the survey area is approximately 1,650 feet (504 meters), near El Portal in the western part of the soil survey area. The highest elevation is approximately 13,065 feet (3,982 meters), along the crest of the Sierra Nevada Mountains.

Previous soil survey work in Yosemite National Park includes “The Soil and Vegetation of the Yosemite Valley” *(28)*. The current soil survey provides information for the entire park and includes additional information and interpretations not included in the prior survey of the Yosemite Valley.

General Nature of the Survey Area

The following paragraphs provide general information about Yosemite National Park. This section concentrates primarily on the Yosemite Valley area, although the Yosemite

Figure 1.—Location of Yosemite National Park in California.

National Park encompasses a highly diverse range in physiography, relief, and drainage; geology; and climate. Much of this diversity is illustrated by the soils and landscapes mapped in Yosemite National Park as part of this soil survey. "The Geological Story of Yosemite National Park," by N. King Huber, provides an overview of the geology and geomorphology of the park *(7)*.

Physiography, Relief, and Drainage

The Yosemite Valley area occurs in a U-shaped canyon. This area was invaded by glaciers which retreated and left a canyon with a broad floor *(8)*. The valley floor is now cut by the Merced River and its tributaries. Tenaya Creek flows into the Merced River in the eastern part of the survey area. Other streams flow from the canyon rim into the valley, resulting in spectacular waterfalls, such as Bridalveil Falls. The Merced River flows from east to west. The elevation at the east edge of the Yosemite Valley area ranges from about 4,200 feet (1,280 meters), where the Merced River meanders through the valley, to about 3,700 feet (1,128 meters) at the west edge. About 200 feet (61 meters) of this drop occurs in the lower one-third of the Yosemite Valley area. The middle reach of the Merced River in Yosemite Valley is fairly flat, with a change of about 50 feet (15 meters) in elevation. The river has numerous oxbow-shaped turns, suggesting little downcutting. In some places there are abandoned oxbow-shaped channels in the meadows. The distance from the valley floor to the canyon rim ranges from 600 feet (183 meters) to more than 3,000 feet (914 meters). The original landscape was an array of joint-controlled topography with fairly steep walls produced by weathering, erosion, and sheeting along vertical joints. These fairly steep walls were later vertically shaped by the action of glaciers. The central part of Yosemite

Valley has received sediment from deposition into a former lake that was created above terminal moraines after the retreat of the earlier glaciers. More recent glaciers have also added to the deposition. The resulting relatively flat valley floor with sheer walls make Yosemite Valley the spectacular valley that it is today.

Geology

The geology of Yosemite Valley is complex, with a long history *(3, 7, 10, 11, 13, 26, 27)*. In 1865, John Muir recognized evidence of glacial activity. He believed ice was the chief agent of erosion in the Yosemite Valley. In 1930, Francois Matthes did a comprehensive study of the Yosemite Valley *(10, 11)*. He concluded that glacial and stream erosion played equal roles in excavating the valley. In 1962, Wahrhaftig discussed the geomorphology of the Yosemite Valley *(25)*. In 1985, a detailed bedrock geology map of the Yosemite Valley was published *(4)*. This was the result of fieldwork by Calkins done during the period of 1913 through 1916. It shows the various kinds of granitoid rocks in the area. In 1986, Schaffer suggested that Tenaya Creek and not the Merced River was the primary stream cutting the pre-glacial Yosemite Valley *(13)*. In 1987, Huber gave a less technical geological story of Yosemite National Park *(7)*. In 1989, Huber, Bateman, and Wahrhaftig made a more recent geologic map of the whole Yosemite National Park *(8)*. This map summarizes the distribution of the geologic units.

The Yosemite Valley area is part of the Sierra Nevada mountain range. The Sierra Nevada ranges from 50 to 80 miles (80 to 120 kilometers) in width and is more than 300 miles (483 kilometers) long. It has a gentle western slope and a steep eastern escarpment. The Yosemite Valley part of the Sierra Nevada is composed of plutonic granitoid rocks of Mesozoic age. The more recent development of the Sierra Nevada consists of uplift and tilting and faulting, which were preceded and accompanied by volcanic activity. During the Quaternary period, the area was glaciated several times. It is estimated that some glaciers attained thicknesses of almost 6,000 feet (1,829 meters). Most glaciations came to an end more than 9,500 years ago with the advent of a warmer postglacial climate. After and during the retreat of the last glacial ice from the valley, a lake formed behind moraines on the western side of the Yosemite Valley and the valley was filled. The lake existed not only because the moraines acted liked a natural dam but also because they occupied the basin that was scoured from the rock floor of the valley by the ancient Yosemite Glacier *(12)*. With the accumulation of sediment in the valley, prehistoric Lake Yosemite was instrumental in turning Yosemite Valley into a meadow. Soils in the map unit Sentinel loam, 0 to 2 percent slopes, mesic, are an example of soils that formed in these glaciolacustrine deposits.

Climate

Tables 1A and 1B give data on temperature and precipitation for the soil survey area of Yosemite National Park as recorded at Yosemite National Park Headquarters and Cherry Valley Dam in the period 1961 to 1990. Tables 2A and 2B show probable dates of the first freeze in fall and the last freeze in spring. Tables 3A and 3B provide data on the length of the growing season.

In winter, the average temperature is 38.8 degrees F at Yosemite National Park Headquarters and 40.1 at Cherry Valley Dam. The average daily minimum temperature in winter is 27.0 degrees at Yosemite National Park Headquarters and 28.1 degrees at Cherry Valley Dam. The lowest temperatures on record were –1 degree at Yosemite National Park Headquarters, recorded on December 10, 1972, and –3 degrees at Cherry Valley Dam, recorded on December 9, 1972. In summer, the average temperature is 69.4 degrees at Yosemite National Park Headquarters and 68.1 degrees at Cherry Valley Dam. The average daily maximum temperature is 87.3

degrees at Yosemite National Park Headquarters and 83.7 degrees at Cherry Valley Dam. The highest temperatures ever recorded were 109 at Yosemite National Park Headquarters, recorded on August 2, 1977, and 105 degrees at Cherry Valley Dam, recorded on July 15, 1972. As a general rule, temperatures decrease with elevation, except on clear, calm nights or during inversion situations, such as during winter. The normal lapse rate is around 3.8 degrees F per 1,000 feet of elevation rise, occurring during most spring through autumn afternoons and in well mixed (somewhat windy) conditions.

Growing degree days are shown in tables 1A and 1B. 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.

Average annual precipitation is highly variable across the park; the greatest amounts are at the highest elevations, especially along the northern border of the park. Average annual totals range from around 30 inches, in the lowest western valleys of the park, to nearly 60 inches, at the higher elevations in the north. Average annual total precipitation is 37.46 inches at Yosemite National Park Headquarters and 45.86 inches at Cherry Valley Dam. Of the approximately 37 inches at Yosemite National Park Headquarters, about 5.8 inches, or 15 percent, usually falls in May through October. The growing season for vegetation falls within this period. The heaviest 1-day rainfalls during the periods of record were 6.92 inches at Yosemite National Park Headquarters, recorded on December 23, 1955, and 12.87 inches at Cherry Valley Dam, recorded on February 17, 1986. Thunderstorms occur on about 5 to 10 days each year, and most occur in July and August.

Average seasonal snowfall also varies across the park. At Yosemite National Park Headquarters, the average is 55.0 inches per year; at Cherry Valley Dam, it is 115.7 inches per year. It is estimated that areas at the higher elevations, especially between 8,000 and 10,000 feet, receive an average of 150 to 200 inches of snowfall per year. The greatest snow depth at any one time during the period of record was 54 inches at Yosemite National Park Headquarters, recorded on February 7, 1949, and 64 inches at Cherry Valley Dam, recorded on March 3, 1969. On average, 34 days per year have at least 1 inch of snow on the ground at Yosemite National Park Headquarters, while an average of 60 days have at least 1 inch of snow on the ground at Cherry Valley Dam. The heaviest 1-day snowfalls on record were 28.0 inches at Yosemite National Park Headquarters, recorded on January 22, 1964, and 25.0 inches at Cherry Valley Dam, recorded on March 25, 1991.

The average relative humidity in mid-afternoon is about 40 percent. Humidity is higher at night, and the average at dawn is about 85 percent. The sun shines 92 percent of the time possible in summer and 55 percent in winter. The prevailing wind direction and speed are highly dependent on location and exposure. On average, winds are from the west or southwest, and average windspeeds are highest in the spring and early summer (averaging around 8 to 9 miles per hour at locations in the valley).

The procedure for determining mean annual precipitation and mean annual air temperature for each map unit in the Yosemite National Park Soil Survey utilized PRISM (Parameter-elevation Regressions on Independent Slopes Model). PRISM is a hybrid statistical-geographical approach to mapping climate. PRISM uses point measurements of climate data and a digital elevation model (DEM), which is a digital, gridded version of a topographic map, to generate estimates of annual, monthly, and event-based climatic elements *(21)*. These estimates were derived for a horizontal grid and were used on Geographic Information Systems (GIS) as the foundation for precipitation and air temperature for each map unit in the survey area.

Soil Temperature Regimes

Soil temperature regimes characterize mean annual soil temperatures and seasonal fluctuations measured at a depth of 50 cm, or to the depth of a shallower root-restricting layer (termed a densic, lithic, or paralithic contact) if one is present. For this survey, temperature regimes were determined from two sets of measurements: (1) individual temperatures taken at standard depth (and at a depth of 20 cm in most cases) for each of the 450 pedon descriptions, and (2) accumulated measurements recorded at 8-hour intervals for 3 to 5 years by 42 sensors buried at a depth of 50 cm.

At the various pedon sites, the extra temperature reading at a depth of 20 cm was useful in judging whether the soil was in a warming or cooling trend at the time of measurement. If in spring or summer the temperature at a depth of 20 cm was warmer than that at a depth of 50 cm, the soil was judged to be warming. If in late summer or fall the temperature at a depth of 20 cm was cooler than that at a depth of 50 cm, the soil was judged to be cooling. Judgments of this type must consider recent rainfall and subsequent differences in soil moisture at the two depths because rainwater temperature can significantly influence soil temperature, especially if the soils are coarse textured.

The data on temperature differences according to depth are particularly useful in distinguishing frigid regime soils from cryic regime soils. Although mean annual temperatures are lower than 8 degrees C in both regimes, frigid mineral soils warm more in summer than cryic mineral soils. If, while continuing to warm, a soil had not yet exceeded the maximum mean summer (defined as June, July, and August) temperature for the cryic regime, the soil was classified as cryic. In these cases, a cryic soil can be judged with reasonable confidence from only a single measurement.

The 42 sites for automatic temperature recordings were chosen to cover a wide range of elevations (1,975 feet/602 meters to 10,870 feet/3,313 meters), aspects, steepness of slope, and vegetation types. Soil taxonomic criteria also were considered by selecting soils with and without an O horizon and by excluding shallow soils and soils saturated with water in summer.

Temperature data from automatic readings were plotted to reveal temperature fluctuations throughout the year. The data also were correlated with elevation, aspect, and slope steepness. These correlations were then used to construct simple models that relate soil temperature regimes to these three attributes. These models were entered as modifiers in the landscape hierarchy and incorporated into the overall soil-landscape model, thus impacting map unit design and delineation. See figures 2, 3, and 4.

How This Survey Was Made

This section explains how the soil survey in the Yosemite Valley part of Yosemite National Park 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 plants; and the kinds of bedrock. They dug many holes to study the soil pedon, which is the sequence of natural layers, or horizons, in a soil. The pedon extends from the surface down into the soil parent material, which originates from either unconsolidated deposits or bedrock. Parent materials have few roots and little biological activity in comparison to the soil above.

The pattern of soils and miscellaneous areas is related to the geology, landforms,

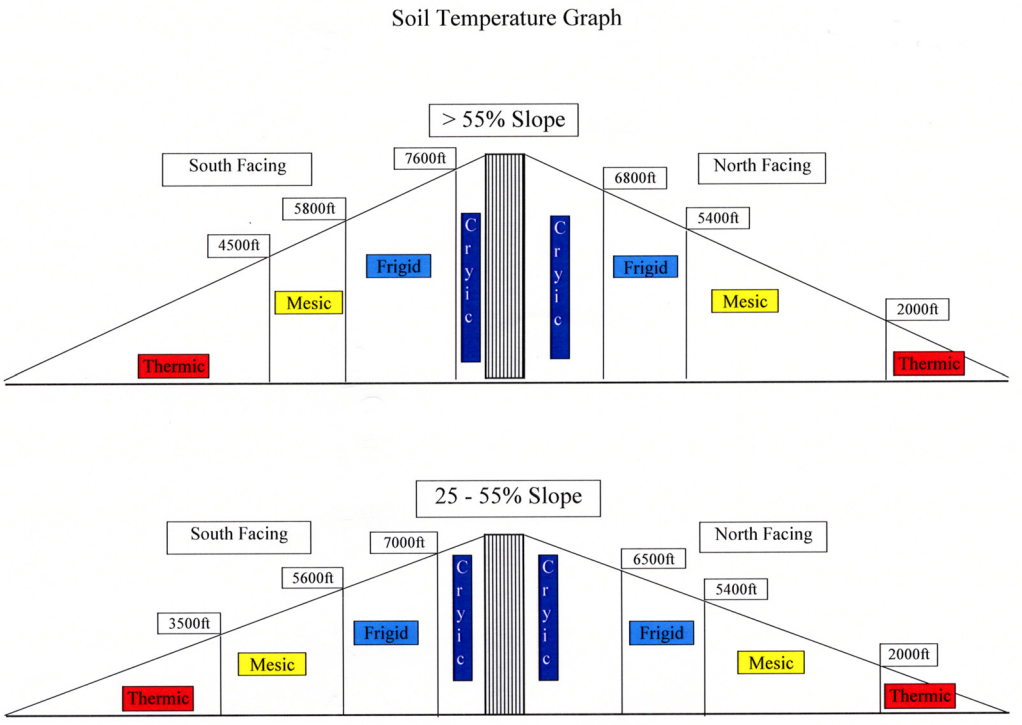

Figure 2

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

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

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

While a soil survey is in progress, samples of some of the soils in the area generally

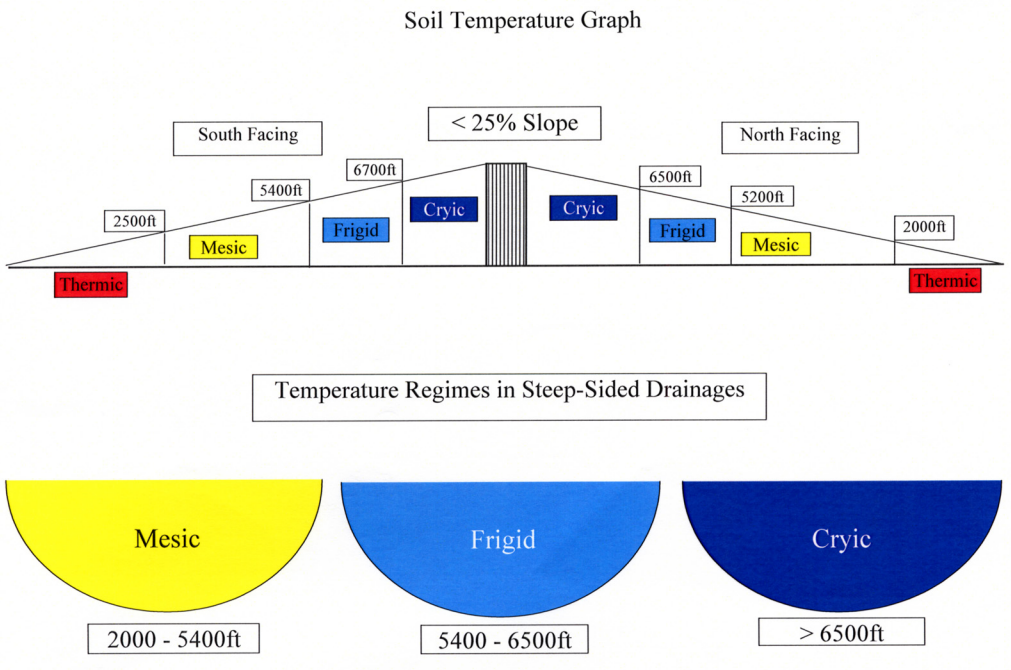

Figure 3

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.

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 Yosemite Valley, they drew the boundaries of these bodies on aerial photographs at a 1:6,000 scale and identified each as a specific map unit. This soil mapping was then compiled at 1:12,000 and 1:24,000 scales. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Map Unit Delineation

R.D. Taskey helped prepare this section.

This section explains map production and how the landscape was modeled for this soil survey in the remainder of Yosemite National Park, exclusive of the Yosemite Valley part.

Map unit delineations (polygons) were hand drawn on stereo-pairs of color infrared aerial photographs at a scale of approximately 1:40,000. These photographs were then electronically scanned and orthorectified, and the resulting on-screen images were

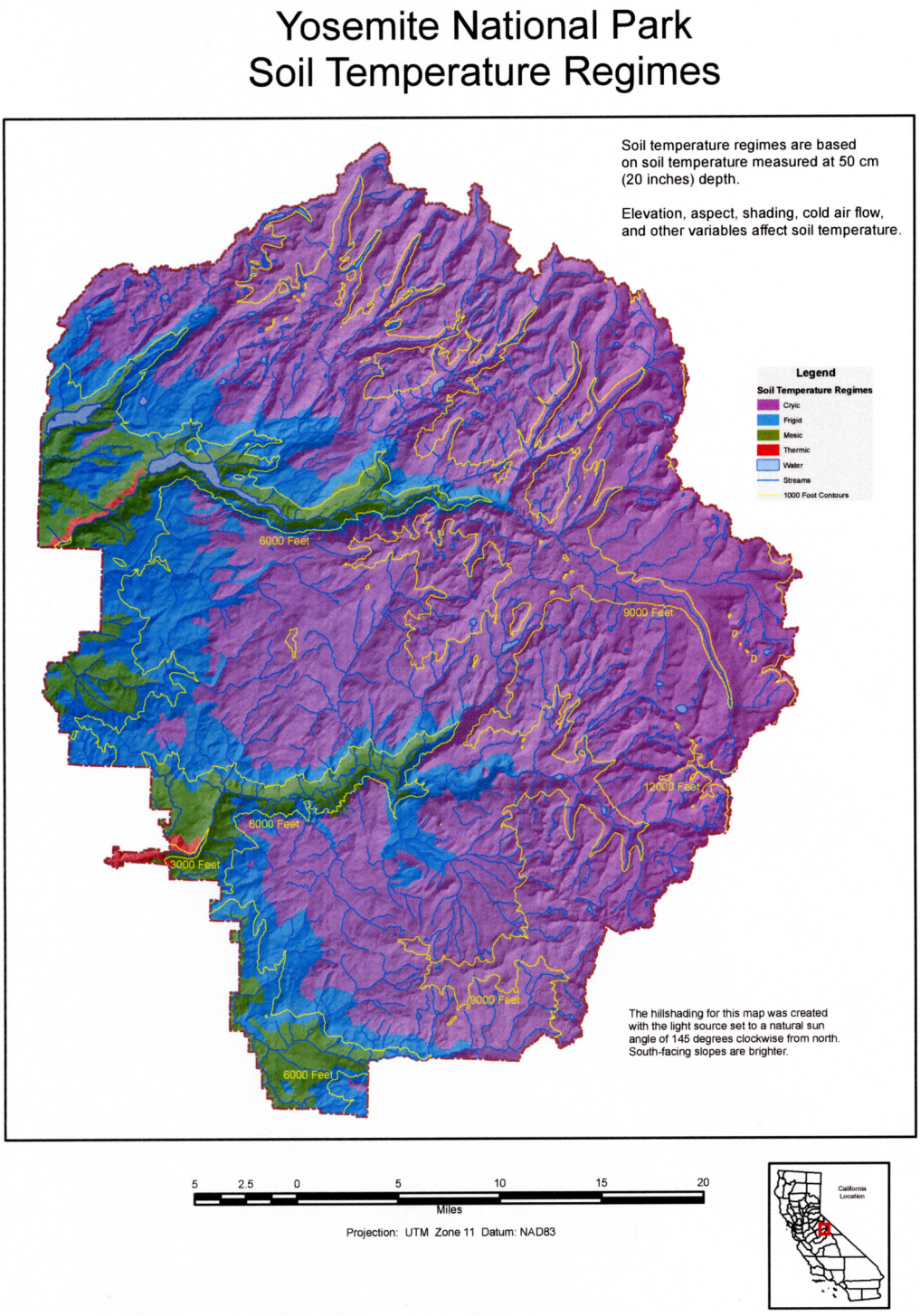
Yosemite National Park
Soil Temperature Regimes
Soil temperature regimes are based on soil temperature measured at 50 cm (20 inches) depth.
Elevation, aspect, shading, cold air flow, and other variables affect soil temperature.
Legend
Soil Temperature Regimes
Cryic
Frigid
Mesic
Thermic
Water
Streams
1000 Foot Contours
6000 Feet
9000 Feet
12000 Feet
6000 Feet
3000 Feet
9000 Feet
6000 Feet
The hillshading for this map was created with the light source set to a natural sun angle of 145 degrees clockwise from north. South-facing slopes are brighter.
5 2.5 0 5 10 15 20
Miles
Projection: UTM Zone 11 Datum: NAD83
California Location

Figure 4

used to hand-digitize the delineation boundaries. The digitized polygons were printed on 1:24,000-scale gray-tone orthophotographs, edited, and then redigitized as needed. The orthophotographs were produced by the United States Geological Survey (USGS) through the National Digital Orthophotograph Program (NDOP) and were joined together by the Natural Resources Conservation Service.

The final product is offered to the user in at least two forms: (1) a limited number of traditional, paper-copy 1:24,000-scale gray-tone orthophotographs with map unit delineations and symbols printed on them and (2) a digitized polygon layer which can be downloaded on a computer and overlain by a geographic information system (GIS) on a digitized landscape image of the user's choosing.

Map accuracy and precision are limited by the initial mapping scale of 1:40,000. Any transfer to a larger scale, such as the standardized 1:24,000 maps included with this document, does not produce maps of greater precision but rather produces images for which the accuracy and precision could be misleading.

Designing and Delineating Map Unit Landscapes

Criteria and procedures for designing and naming map units and for relating soils to map units are outlined in the "National Soil Survey Handbook" (NSSH), part 627, Legend Development and Data Collection, and part 631, Soil Survey Investigations. These guidelines were augmented as described below.

Map unit boundaries were hand drawn on stereographic pairs of color infrared aerial photographs at a scale of approximately 1:40,000. Interpretations of the photographs were aided by extensive field investigations and by reference to 7.5-minute series, 1:24,000-scale USGS topographic maps, and the 1:125,000-scale Geologic Map of Yosemite National Park and Vicinity, California *(8)*. Additional documents consulted included published soil surveys of surrounding areas, vegetative maps, and numerous geological and ecological reports.

Decisions of where to draw lines on the photographs and, ultimately, how to design map units were guided by a landscape hierarchy designed by R.D. Taskey. See figure 5. This landscape hierarchy was developed in Yosemite National Park and other diverse areas during the time of this survey. The hierarchy provides a theoretical framework for designing map units deductively from observations of landscape features. Normally, it consists of four tiers—*land type, component, element,* and *modifier.* When needed for complex landscapes or increased detail, a fifth tier, the subcomponent, can be inserted between component and element.

The first three hierarchical tiers (or four tiers if a subcomponent is included) follow a geomorphic sequence of increasing specificity. The fourth level modifier may or may not be geomorphic, and it may be observed at a broader, equal, or more narrow scale than the element above. Divisions and features in the geomorphic tiers are based primarily on form and secondarily on process.

Tiers in the hierarchy are defined as follows:

Land type.—An extensive (greater than or equal to tens of km^2) assemblage of related features having a characteristic morphology; a major geomorphic unit. The land types found in Yosemite National Park are mountain and river valley.

Component.—An intermediary, individually recognizable land feature (equal to or less than tens of hectares) consisting of multiple, closely related, contiguous land elements. A component name usually denotes process of formation as well as form. Components can be divided into subcomponents as needed and appropriate, as in the following example: mountain (land type)-landslide complex (component)-slump block (subcomponent)-riser (element). The term component as used in the landscape hierarchy is not the same as the component used to identify major and minor components in the map units described in this soil survey.

Land type components and subcomponents recognized in Yosemite National Park

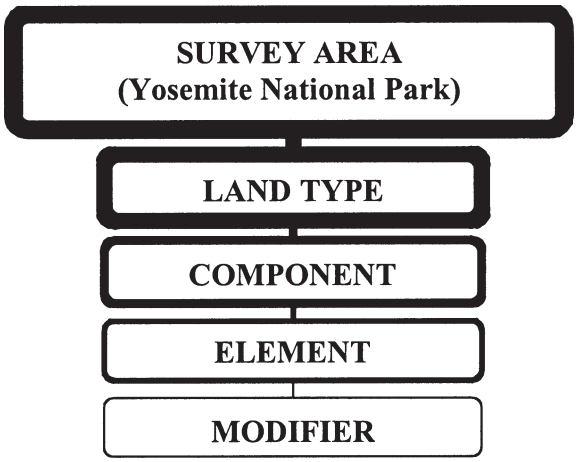

Figure 5.—Landscape hierarchical tiers used for design of map units.

are mountain crest, mountainflank, mountain slope, apron, rock outcrop, dome, bedrock bench, cliff, ledge, rubble (talus and scree), joint, fracture, bedrock dimple, ridge, spur, glacier, rock glacier, cirque, nivational cirque, moraine, lateral moraine, medial moraine, recessional moraine, ground moraine, moraine remnant, glacial step, kettle, mound, structural bench, landslide complex, ancient landslide, debris avalanche, debris torrent, (snow) avalanche track, avalanche (deposit), mountain basin, mountain valley, fan, stream terrace, drainageway (ephemeral drainage), flood plain, valley fill, gravel bar, and erosion channel (gully).

Element.—The simplest geomorphic feature, which describes a portion of its component. An element is recognized by its form or position in the component, and normally does not denote geomorphic process (although process might be inferred from an element designation). Elements recognized in Yosemite National Park are shoulder, backslope, footslope, toeslope, tread, riser, floor, bottom, margin, and summit.

Modifier.—Modifiers might or might not denote a geomorphic refinement, and they are not necessary for naming geomorphic features. Nonetheless, they further distinguish the landscape and are important in predicting and understanding soil distributions. Modifiers can be assigned at any scale to clarify soil-landscape relationships and enhance interpretations. Rational modifier classes can be created to fit the needs of the work. Soil-forming factors and land use attributes can be included as modifiers. General examples include classes of elevation, aspect, slope shape, and slope steepness, as well as vegetation type, vegetative cover, rock type, and distinctive surface features.

Modifiers utilized in this survey are slope steepness class, scoured (glacially), scoured/filled, metamorphic, metasedimentary, mafic, metavolcanic, bouldery, stony, fluted, wet/dry, hummocky, meadow, and channery surface.

In addition to fitting landscape features into the hierarchy, features also were characterized as follows: (Note that the following categories could be inserted into the hierarchy as modifiers.)

Constructional components owe their form or character to upbuilding processes, such as volcanic extrusion or by glacial or erosional deposition. Constructional features may be reworked so that they have erosional, depositional, or transient surfaces within them.

Destructional components owe their form or character to degrading processes, such as erosional removal or weathering. Destructional features may have erosional, depositional, or transient surfaces within them.

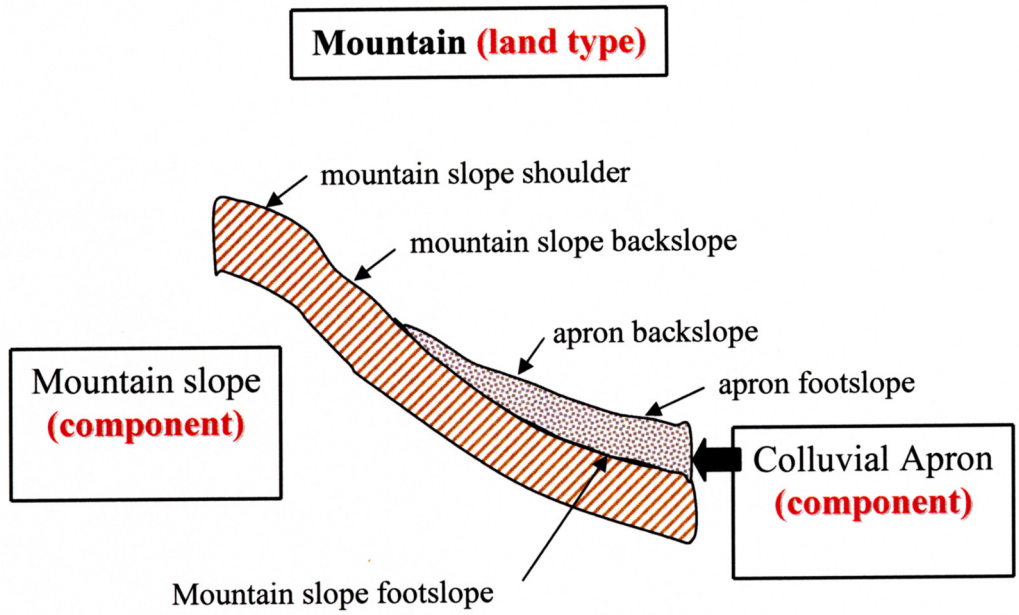

Figure 6.—Components may be superimposed on one another as in this mountain land type. Note that each component has its own set of elements and that no single element crosses a component boundary. In this case, the footslope of the mountain slope is buried beneath the colluvial apron.

Structurally controlled, or bedrock controlled, components or surfaces are those whose shape and orientation are strongly influenced by the attitude and relative position of the underlying rock mass.

Erosional surfaces are created by overland flow of water and exclude those that are formed by eolian, fluvial, and glaciofluvial processes.

Depositional surfaces are those that receive significant amounts of sediment that has eroded from positions at the higher elevations.

Transient means that sediments are alternately or simultaneously deposited and eroded at a frequency or rate that renders the land surface too unstable for the development of soils that might occur on more stable surrounding areas.

Convergent refers to a land surface with a concave shape that tends to concentrate surface (and in most cases, subsurface) water runoff.

Divergent refers to a land surface having a convex shape that tends to disperse surface (and in most cases, subsurface) water runoff.

Definitions of geomorphic terms used in the land type, component, and element levels follow the Glossary of Landform and Geologic Terms in the "National Soil Survey Handbook," part 629 *(15)*. Additional explanations are given in map unit descriptions included in this survey.

Several rules and allowances govern the hierarchy's use:

(1) Each lower tier defines the landscape more specifically than does the tier above.

(2) A descriptor cannot be used in different tiers (except that a component term may become a subcomponent term when a fifth tier is needed).

(3) Components may be, and often are, superimposed one on the other in the landscape. See figure 6.

(4) While the tier's land type, component, (subcomponent), and element follow a graduated sequence of increasing geomorphic specificity (i.e., increasing scale), modifiers can be chosen for any readily recognizable characteristic and applied at any

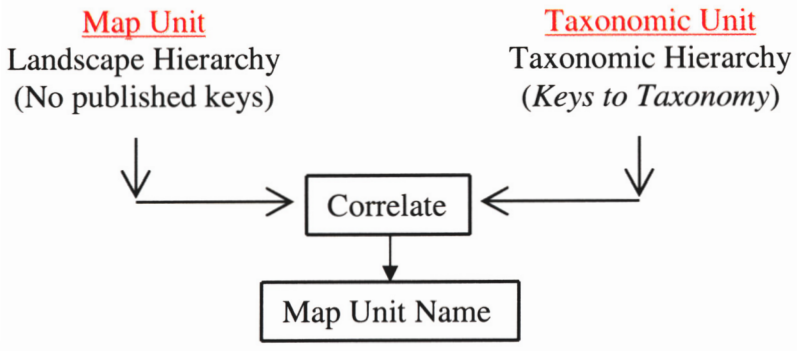

Figure 7.—Map units and taxonomic units are separate and distinct products.

level, regardless of scale. Modifiers nonetheless add specificity in characterizing the landscape.

(5) Multiple modifiers are allowed.

(6) The sequence in which landscape features might be recognized does not determine their position in the hierarchy. For example, vegetation type and rock type might extend across multiple components and elements and they might be more readily recognized than the component or element with which they are associated. Nonetheless, they are modifiers, which are placed at the bottom of the hierarchy.

Relating Soils to Map Units

Sites for describing, classifying, and sampling soils were selected to represent a wide range of topographic conditions, vegetative types, and parent materials, while encompassing the dominant and most important soil-bearing landscape components. Limitations due to access and time deterred data collection for a few map units. In these cases, soil classifications were extrapolated from other, comparable units.

Soil types and properties, which were amassed from the point data, were classified into soil taxonomic units and matched with their respective spatially delineated map units, which had been generated through use of the landscape hierarchy. Additional correlations were established by entering all soil and site data into a computer spread sheet and plotting numerous correlative combinations. Working models in the form of dichotomous keys were developed to relate predicted taxonomic units with map units.

Although soil taxonomic unit names, which were generated from point data, are assigned to the spatially generated map units, the user should bear in mind that the two types of units are separate and distinct products. See figure 7.

Detailed Soil Map Units

The map units delineated on the detailed soil maps outline areas dominated by 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*. Some 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, Happyisles sandy loam, 0 to 3 percent slopes, somewhat poorly drained, mesic, is a phase of the Happyisles series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes and associations.

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. Waterwheel-Humic Dystroxerepts complex, 15 to 45 percent slopes, mountain slopes, frigid, 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. Badgerpass-Oxyaquic Dystroxerepts association, 0 to 15 percent slopes, mountain valley floors, frigid, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop, domes, cryic, is an example.

For information on management, see the section “Use and Management of the Soils.” (See tables 12 and 14 for data on component horizons.) For additional component horizon data, see the section “Soil Properties.” A typical soil description with range in characteristics is included, in alphabetical order, in the section “Classification of the Soils.”

Appendix I provides accessory notes for components of various detailed soil map units.

Table 4 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.

101—Oxyaquic Xerofluvents-Riverwash-Fluvaquents association, 0 to 2 percent slopes, mesic

Setting

General location: Adjacent to the Merced River in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,940 to 3,995 feet (1,202 to 1,218 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Oxyaquic Xerofluvents—35 percent
Riverwash—35 percent
Fluvaquents—15 percent
Minor components—15 percent

Description of Oxyaquic Xerofluvents

Slope: 0 to 2 percent

Landform: Convex highest bar, point bar, active flood plain, or mountain valley
Parent material: Coarse textured stream alluvium derived from granitoid rock
Typical vegetation: Main tree species—immature cottonwoods, cedar, alder and ponderosa pine; common understory plants—Artemesia species, carex species, Equisetum species, and grasses

Selected properties and qualities

General features: The low flood plain of this component is the youngest geomorphic surface in the valley and cuts the intermediate and high flood plains and terraces. It is characterized by floods, usually from high-intensity winter storms and spring runoff from snowmelt. It is parallel to the river. This component floods less often than the other components but may flood every year. It is less likely to be scoured than the other components in this map unit. It may receive fresh sediments after periods of high flow in the river.
Surface area covered by coarse fragments: 2 to 10 percent fine subangular gravel and 2 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.3 inches (low)

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: Very low
Current water table: Present
Natural drainage class: Somewhat poorly drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 4w
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A1—0 to 2 inches; fine sandy loam
A2—2 to 4 inches; loamy coarse sand
A3—4 to 10 inches; loamy sand
C1—10 to 17 inches; stratified gravelly sand to fine sandy loam
C2—17 to 28 inches; stratified gravelly sand to fine sandy loam
C3—28 to 39 inches; stratified gravelly sand to fine sandy loam
C4—39 to 43 inches; stratified gravelly sand to fine sandy loam
C5—43 to 57 inches; stratified gravelly sand to fine sandy loam
Ab—57 to 60 inches; stratified gravelly sand to fine sandy loam

Description of Riverwash

Slope: 0 to 2 percent
Landform: Channel, active flood plain, or mountain valley
Parent material: Coarse textured stream alluvium derived from granitoid rock
Typical vegetation: Riverwash does not support vegetation because of frequent reworking by floodwaters

Selected properties and qualities

General features: The low flood plain of this component is the youngest geomorphic surface in the valley and cuts the intermediate and high flood plains and terraces. It is characterized by floods, usually from high-intensity winter storms and spring

runoff from snowmelt. Riverwash occurs as areas of unstabilized sand, gravel, cobbles, or stones that are along the periphery of stream and river channels. These areas are flooded, washed, scoured, and reworked frequently by the Merced River. This component may be scoured or overwashed with new deposits of sand and gravel in any year. In some areas the texture is stratified coarse sand to loamy fine sand with strata of gravel; in other areas the texture is freshly deposited gravel, cobbles, or stones.

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Poorly drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 4w
Other vegetative classification: None assigned

Description of Fluvaquents

Slope: 0 to 2 percent
Landform: Bar and channel, active flood plain, or mountain valley
Parent material: Coarse textured stream alluvium derived from granitoid rock
Typical vegetation: Main tree species—willow and alder; common understory plants—hydrophytic forbs; vegetation may be removed by floodwaters when scouring occurs

Selected properties and qualities

General features: The low flood plain of this component is the youngest geomorphic surface in the valley and cuts the intermediate and high flood plains and terraces. It is characterized by floods, usually from high-intensity winter storms and spring runoff from snowmelt. It may be scoured or overwashed with new deposits of sand and gravel in any year. Redoximorphic features or gleying occurs throughout the soil.

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel, 0 to 10 percent subangular cobbles, and 0 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.7 inches (moderate)

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: Very high
Current water table: Present
Natural drainage class: Very poorly drained
Hydrologic soil group: D

California land use interpretive groups

Land capability classification (nonirrigated): 6w
Other vegetative classification: None assigned

Typical profile

A1—0 to 1 inch; stratified coarse sand to sandy loam
A2—1 to 4 inches; stratified coarse sand to sandy loam
C—4 to 6 inches; stratified coarse sand to sandy loam
Ab—6 to 10 inches; stratified coarse sand to sandy loam
C´—10 to 60 inches; stratified coarse sand to sandy loam

Minor Components

Unnamed soils

Composition: About 9 percent
Slope: 0 to 2 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Endoaquolls very poorly drained and similar soils

Composition: About 3 percent
Slope: 0 to 2 percent
Landform: Abandoned channel, mountain valley, or oxbow
Vegetative classification: None assigned

Riverwash cobbly

Composition: About 2 percent
Slope: 0 to 2 percent
Landform: Mountain valley or stream
Vegetative classification: None assigned

Typic Xerofluvents recently overwashed and similar soils

Composition: About 1 percent
Slope: 0 to 2 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- All of the map unit components are subject to flooding and deposition.
- Riverwash and Fluvaquents are subject to scouring.
- The undercutting of vertical banks is a concern in areas of the Oxyaquic Xerofluvents.
- The undercutting of minor components is a concern at the higher levels of the flood plain.
- Streambank erosion is a management concern in heavily used areas.
- The varied composition of plant species indicates an actively colonizing or frequently disturbed site.
- High water tables are a management concern.
- The coarse soil textures have high detachability.

101t—Lithnip-Rock outcrop-Fishsnooze complex, 30 to 75 percent slopes, mountains, cryic

Setting

General location: None noted
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains

Elevation: 9,000 to 12,000 feet (2,744 to 3,659 meters)
Mean annual precipitation: 35 to 55 inches (889 to 1,397 millimeters)
Mean annual air temperature: 36 to 39 degrees F (2 to 4 degrees C)
Frost-free period: 15 to 60 days

Composition

Lithnip moist soil—40 percent
Rock outcrop—25 percent
Fishsnooze soil—20 percent
Minor components—15 percent

Description of the Lithnip Moist Soil

Slope: 30 to 75 percent
Landform: Mountain
Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 2 percent stones and 50 to 70 percent coarse gravel
Restrictive feature: Bedrock (lithic) at a depth of 4 to 10 inches
Available water capacity to a depth of 60 inches: About 0.3 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: D

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Typical profile

0 to 1 inch; extremely gravelly sandy loam
1 to 5 inches; very gravelly sandy loam
5 to 15 inches; bedrock

Description of Rock Outcrop

Slope: 15 to 99 percent
Landform: Mountain
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Fishsnooze Soil

Slope: 30 to 50 percent
Landform: Mountain
Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 25 to 45 percent coarse gravel and 0 to 10 percent cobbles
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Available water capacity to a depth of 60 inches: About 2.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: 022XY126NV_1, PIAL-PIFL WSG:0R3011

Typical profile

0 to 1 inch; very gravelly sandy loam
1 to 9 inches; very gravelly coarse sandy loam
9 to 13 inches; extremely gravelly coarse sandy loam
13 to 35 inches; extremely cobbly coarse sandy loam
35 to 45 inches; bedrock

Minor Components

Hawkinspeak and similar soils

Composition: About 3 percent
Slope: 15 to 50 percent
Landform: Mountain
Vegetative classification: None assigned

Lithnip and similar soils

Composition: About 3 percent
Slope: 30 to 75 percent
Landform: Mountain
Vegetative classification: 022XY012NV_2, BARREN SLOPE 30+" P.Z.

Hawkridge and similar soils

Composition: About 2 percent
Slope: 8 to 30 percent

Landform: Mountain
Vegetative classification: None assigned

Chutes

Composition: About 1 percent
Slope: 75 to 150 percent
Landform: Avalanche chute
Vegetative classification: None assigned

Fishsnooze cold and similar soils

Composition: About 2 percent
Slope: 8 to 50 percent
Landform: Mountain
Vegetative classification: 022XYXXXNV_2, stunted pifl

Florand and similar soils

Composition: About 2 percent
Slope: 8 to 50 percent
Landform: Mountain
Vegetative classification: None assigned

Glaciers

Composition: About 1 percent
Slope: 15 to 99 percent
Landform: Glacier
Vegetative classification: None assigned

Pachic Argicryolls and similar soils

Composition: About 1 percent
Slope: 15 to 50 percent
Landform: Mountain
Vegetative classification: 022XY020NV_2, Snow Pocket

Thiefridge and similar soils

Composition: About 1 percent
Slope: 8 to 50 percent
Landform: Mountain
Vegetative classification: None assigned

102—Oxyaquic Xerofluvents-Riverwash complex, 1 to 4 percent slopes, mesic

Setting

General location: Adjacent to the Merced River in the downstream part of Yosemite Valley (fig. 8)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,855 to 3,910 feet (1,175 to 1,193 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Figure 8.—An area of Oxyaquic Xerofluvents-Riverwash complex, 1 to 4 percent slopes, mesic, on an active flood plain on the south bank of the Merced River below Bridalveil Falls. Cobbly and stony channel deposits are exposed.

Composition

Oxyaquic Xerofluvents—45 percent
Riverwash—40 percent
Minor components—15 percent

Description of Oxyaquic Xerofluvents

Slope: 1 to 4 percent
Landform: Bar, low and youngest active flood plain, or mountain valley
Parent material: Coarse textured stream alluvium derived from granitoid rock
Typical vegetation: Main tree species—immature cottonwoods, cedar, alder, and ponderosa pine; common understory plants—Artemesia species, carex species, Equisetum species, and grasses

Selected properties and qualities

General features: The low flood plain of this component is the youngest geomorphic surface in the valley and cuts the intermediate and high flood plains and terraces. It is characterized by floods, usually from high-intensity winter storms and spring runoff from snowmelt. It is parallel to the river. This component floods less often than the Riverwash, but may flood every year. It is less likely to be scoured than the Riverwash. It may receive fresh sediments after periods of high flow in the river.
Surface area covered by coarse fragments: 2 to 10 percent subrounded stones, 2 to 10 percent subrounded cobbles, 2 to 10 percent fine subangular gravel, and 2 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.7 inches (low)

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: Very low
Current water table: Present
Natural drainage class: Somewhat poorly drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 4w
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; stony slightly decomposed plant material
A1—0 to 2 inches; fine sandy loam
A2—2 to 4 inches; loamy coarse sand
A3—4 to 10 inches; loamy sand
C1—10 to 17 inches; stratified gravelly sand to fine sandy loam
C2—17 to 28 inches; stratified gravelly sand to fine sandy loam
C3—28 to 39 inches; stratified gravelly sand to fine sandy loam
C4—39 to 43 inches; stratified gravelly sand to fine sandy loam
C5—43 to 57 inches; stratified gravelly sand to fine sandy loam
Ab—57 to 60 inches; stratified gravelly sand to fine sandy loam

Description of Riverwash

Slope: 1 to 4 percent
Landform: Channel, active flood plain, or mountain valley
Parent material: Coarse textured stream alluvium derived from granitoid rock
Typical vegetation: Riverwash does not support vegetation because of frequent reworking by floodwaters

Selected properties and qualities

General features: The low flood plain of this component is the youngest geomorphic surface in the valley and cuts the intermediate and high flood plains and terraces. It is characterized by floods, usually from high-intensity winter storms and spring runoff from snowmelt. Riverwash occurs as areas of unstabilized sand, gravel, cobbles, or stones that are along the periphery of stream and river channels. These areas are flooded, washed, scoured, and reworked frequently by the Merced River. This component may be scoured or overwashed with new deposits of sand, gravel, cobbles, or stones in any year. In some areas the texture is stratified coarse sand to loamy fine sand with strata of gravel; in other areas the texture is freshly deposited gravel, cobbles, or stones
Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Poorly drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 4w
Other vegetative classification: None assigned

Minor Components

Unnamed soils

Composition: About 9 percent
Slope: 1 to 4 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Aquandic Humaquepts and similar soils

Composition: About 3 percent
Slope: 1 to 4 percent
Landform: Abandoned channel, mountain valley, or oxbow
Vegetative classification: None assigned

Riverwash noncobbly

Composition: About 3 percent
Slope: 1 to 4 percent
Landform: Flood plain or mountain valley
Other vegetative classification: None assigned

Use and Management Considerations

- All components are subject to flooding and deposition.
- Riverwash is subject to scouring.
- The undercutting of vertical banks is a concern in areas of the Oxyaquic Xerofluvents.
- The undercutting of minor components is a concern at the higher levels of the flood plain.

- Streambank erosion is a concern in heavily used areas.
- The varied composition of plant species indicates an actively colonizing or frequently disturbed site.
- High water tables are a management concern.
- The coarse soil textures have high detachability.

102t—Lithnip-Rock outcrop-Fishsnooze complex, 8 to 30 percent slopes, mountains, cryic

Setting

General location: None noted
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 9,000 to 12,000 feet (2,744 to 3,659 meters)
Mean annual precipitation: 35 to 55 inches (889 to 1,397 millimeters)
Mean annual air temperature: 36 to 39 degrees F (2 to 4 degrees C)
Frost-free period: 15 to 60 days

Composition

Lithnip soil—40 percent
Rock outcrop—25 percent
Fishsnooze soil—20 percent
Minor components—15 percent

Description of the Lithnip Soil

Slope: 8 to 30 percent
Landform: Mountain
Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 50 to 70 percent coarse gravel and 0 to 2 percent stones
Restrictive feature: Bedrock (lithic) at a depth of 4 to 10 inches
Available water capacity to a depth of 60 inches: About 0.3 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: D

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: 022XY012NV_2, BARREN SLOPE 30+" P.Z.

Typical profile

0 to 1 inch; extremely gravelly sandy loam
1 to 5 inches; very gravelly sandy loam
5 to 15 inches; bedrock

Description of Rock Outcrop

Slope: 15 to 99 percent
Landform: Mountain
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Fishsnooze Soil

Slope: 8 to 30 percent
Landform: Mountain
Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent cobbles and 25 to 45 percent coarse gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Available water capacity to a depth of 60 inches: About 2.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: 022XY126NV_1, PIAL-PIFL WSG:0R3011

Typical profile

0 to 1 inch; very gravelly sandy loam
1 to 9 inches; very gravelly coarse sandy loam
9 to 13 inches; extremely gravelly coarse sandy loam
13 to 35 inches; extremely cobbly coarse sandy loam
35 to 45 inches; bedrock

Minor Components

Hawkinspeak and similar soils

Composition: About 3 percent

Slope: 8 to 30 percent
Landform: Mountain
Vegetative classification: None assigned

Hawkridge and similar soils

Composition: About 2 percent
Slope: 8 to 30 percent
Landform: Mountain
Vegetative classification: None assigned

Lithnip moist and similar soils

Composition: About 2 percent
Slope: 8 to 30 percent
Landform: Mountain
Vegetative classification: None assigned

Rubble land

Composition: About 2 percent
Slope: 15 to 99 percent
Landform: Scree slope
Vegetative classification: None assigned

Thiefridge and similar soils

Composition: About 2 percent
Slope: 4 to 30 percent
Landform: Mountain
Vegetative classification: None assigned

Aspocket and similar soils

Composition: About 1 percent
Slope: 8 to 30 percent
Landform: Mountain
Vegetative classification: None assigned

Fishsnooze cold and similar soils

Composition: About 1 percent
Slope: 8 to 50 percent
Landform: Mountain
Vegetative classification: 022XYXXXNV_2, stunted pifl

Florand and similar soils

Composition: About 1 percent
Slope: 8 to 30 percent
Landform: Mountain
Vegetative classification: None assigned

Glaciers

Composition: About 1 percent
Landform: Glacier
Vegetative classification: None assigned

Figure 9.—An area of Aquandic Humaquepts, 0 to 2 percent slopes, mesic, in Stoneman Meadow is in the foreground. An area of Happlyisles sandy loam, 0 to 3 percent slopes, somewhat poorly drained, mesic, is in the middleground. An area of Leidig fine sandy loam, 0 to 2 percent slopes, occasionally flooded, mesic, is in the background.

104—Aquandic Humaquepts, 0 to 2 percent slopes, mesic

Setting

General location: Adjacent to the Merced River and Tenaya Creek in Yosemite Valley (fig. 9)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,895 to 4,070 feet (1,187 to 1,241 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Aquandic Humaquepts—85 percent
Minor components—15 percent

Description of Aquandic Humaquepts

Slope: 0 to 2 percent
Landform: Low active flood plain or mountain valley
Parent material: Stream alluvium derived from granitoid rock
Typical vegetation: Main tree species—willow and alder along the periphery; common understory plants—hydrophytic grasses (carex species) and forbs

Selected properties and qualities

General features: The low flood plain of this component is the youngest geomorphic surface in Yosemite Valley and cuts the intermediate and high flood plains and terraces. It is characterized by floods, usually from high-intensity winter storms and spring runoff from snowmelt. Pools of stagnant water are often associated with this map unit along the Merced River throughout the growing season. This component is not likely to be scoured. It usually receives fresh sediments after periods of high flow in the river. Floodwater remains on the surface for extended periods. Woody floaters on the surface are common.
Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 6.3 inches (moderate)

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: Very high
Current water table: Present
Natural drainage class: Poorly drained
Hydrologic soil group: C

California land use interpretive groups

Land capability classification (nonirrigated): 6w
Other vegetative classification: None assigned

Typical profile

A1—0 to 8 inches; mucky very fine sandy loam
A2—8 to 18 inches; mucky silt loam
A3—18 to 26 inches; fine sandy loam
C—26 to 68 inches; sand

Minor Components

Unnamed soils

Composition: About 10 percent
Slope: 0 to 2 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Histosols mesic, relict pools and similar soils

Composition: About 3 percent
Slope: 0 to 2 percent
Landform: Abandoned channel, mountain valley, or oxbow
Vegetative classification: None assigned

Stagnant water in pools and similar areas

Composition: About 2 percent
Slope: 0 to 2 percent
Landform: Abandoned channel or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- All components are subject to flooding and deposition.

- The varied composition of plant species indicates an actively colonizing or frequently disturbed site.
- High water tables are a management concern.
- Because of the year-round high water tables, pools of stagnant water in oxbows provide excellent breeding sites for mosquitoes.

111t—Whittell-Jobsis-Rock outcrop complex, 30 to 75 percent slopes, mountains, cryic

Setting

General location: None noted
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 8,995 to 12,000 feet (2,743 to 3,659 meters)
Mean annual precipitation: 35 to 55 inches (889 to 1,397 millimeters)
Mean annual air temperature: 34 to 37 degrees F (1 to 3 degrees C)
Frost-free period: 25 to 45 days

Composition

Whittell soil—45 percent
Jobsis soil—25 percent
Rock outcrop—15 percent
Minor components—15 percent

Description of the Whittell Soil

Slope: 30 to 75 percent
Landform: Mountain
Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 1 to 15 percent subrounded stones, 0 to 15 percent subrounded cobbles, 45 to 90 percent angular gravel, and 2 to 20 percent subrounded boulders
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 39 inches
Available water capacity to a depth of 60 inches: About 1.1 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: C

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: None assigned

Typical profile

0 to 0 inches; slightly decomposed plant material

0 to 7 inches; very cobbly loamy coarse sand
7 to 20 inches; very stony loamy coarse sand
20 to 32 inches; extremely stony loamy coarse sand
32 to 42 inches; bedrock

Description of the Jobsis Soil

Slope: 30 to 75 percent
Landform: Mountain
Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 8 percent stones, 10 to 20 percent fine gravel, 10 to 20 percent boulders, and 5 to 15 percent coarse gravel
Restrictive feature: Bedrock (paralithic) at a depth of 10 to 20 inches
Available water capacity to a depth of 60 inches: About 0.8 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: D

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: None assigned

Typical profile

0 to 5 inches; very gravelly loamy coarse sand
5 to 9 inches; very gravelly loamy coarse sand
9 to 17 inches; very gravelly loamy coarse sand
17 to 20 inches; very gravelly coarse sand
20 to 30 inches; bedrock

Description of Rock Outcrop

Slope: 15 to 99 percent
Landform: Mountain
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Typic Cryorthents and similar soils

Composition: About 3 percent
Slope: 8 to 30 percent
Landform: Mountain
Vegetative classification: None assigned

Klauspeak and similar soils

Composition: About 2 percent
Slope: 15 to 50 percent
Landform: Mountain
Vegetative classification: None assigned

Shalgran and similar soils

Composition: About 2 percent
Slope: 30 to 75 percent
Landform: Mountain
Vegetative classification: None assigned

Buggin and similar soils

Composition: About 1 percent
Slope: 30 to 75 percent
Landform: Mountain
Vegetative classification: None assigned

Chutes

Composition: About 1 percent
Slope: 75 to 150 percent
Landform: Avalanche chute
Vegetative classification: None assigned

Glaciers

Composition: About 1 percent
Landform: Glacier
Vegetative classification: None assigned

Typic Cryorthents and similar soils

Composition: About 1 percent
Slope: 15 to 50 percent
Landform: Mountain
Vegetative classification: 022XYXXXNV_2, stunted pifl

Waterpeak and similar soils

Composition: About 1 percent
Slope: 30 to 75 percent
Landform: Mountain
Vegetative classification: None assigned

151—Elcapitan fine sandy loam, 0 to 2 percent slopes, mesic

Setting

General location: Adjacent to the Merced River and Tenaya Creek in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,870 to 4,025 feet (1,180 to 1,228 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Elcapitan soil—80 percent
Minor components—20 percent

Description of the Elcapitan Soil

Slope: 0 to 2 percent
Landform: Relict point bar, well defined bar and channel, scour channel, abandoned channel with year-round pools, intermediate flood plain, or mountain valley
Parent material: Stream alluvium derived from granitoid rock and reworked lake sediments
Typical vegetation: This soil supports a wide range of vegetation, from woodland to hydrophytes; main tree species—ponderosa pine and incense cedar; common understory plants—grasses and forbs

Selected properties and qualities

General features: This component is characterized by floods, usually from high-intensity winter storms and spring runoff from snowmelt. It is likely to be scoured. It usually receives fresh sediments after periods of high flows in the river. Floodwater remains on the surface for extended periods. Woody floaters on the surface are common.
Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 6.4 inches (moderate)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: Very low
Current water table: Present
Natural drainage class: Somewhat poorly drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 3w
Other vegetative classification: None assigned

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 7 inches; stratified sandy loam to mucky loam
2Ab1—7 to 12 inches; stratified sandy loam to mucky loam
2Ab2—12 to 20 inches; stratified sandy loam to mucky loam

2Ab3—20 to 31 inches; stratified sandy loam to mucky loam
2Ab4—31 to 38 inches; stratified sandy loam to mucky loam
3C—38 to 44 inches; stratified sand to loam
3Ab—44 to 47 inches; stratified sandy loam to mucky loam
3C´—47 to 53 inches; stratified sand to loam
3A´b1—53 to 58 inches; stratified sandy loam to mucky loam
3A´b2—58 to 60 inches; stratified sandy loam to mucky loam

Minor Components

Unnamed soils

Composition: About 6 percent
Slope: 0 to 2 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Unnamed soils with sandy surface textures and high base saturation and similar soils

Composition: About 5 percent
Slope: 0 to 2 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Histosols mesic, relict pools and similar soils

Composition: About 3 percent
Slope: 0 to 2 percent
Landform: Mountain valley or oxbow
Vegetative classification: None assigned

Unnamed frequently flooded and similar soils, unnamed gravelly and similar soils, and stagnant water in pools and similar areas

Composition: About 2 percent
Slope: 0 to 2 percent
Landform: Relict point bar, flood plain, or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Flooding with deposition and scouring can occur simultaneously at different locations.
- The varied composition of plant species indicates an actively colonizing or frequently disturbed site.
- Because of the moderately high water table, year-round pools of stagnant water occur in abandoned channels and provide excellent breeding sites for mosquitoes.
- Sloughing and the undercutting of banks adjacent to the stream is particularly rapid in areas that have sandy substrata.
- Grass fires impede conifer encroachment by controlling the establishment of seedlings.

152—Vitrandic Haploxerolls, sandy, 0 to 3 percent slopes, mesic

Setting

General location: Adjacent to the Merced River in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)

Landscape: Mountain valleys or canyons
Elevation: 3,955 to 3,995 feet (1,207 to 1,219 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Vitrandic Haploxerolls—80 percent
Minor components—20 percent

Description of Vitrandic Haploxerolls

Slope: 0 to 3 percent
Landform: Hummocky and scoured point bar, intermediate flood plain, or mountain valley
Parent material: Coarse textured stream alluvium derived from granitoid rock and reworked lake sediments
Typical vegetation: Common understory plants—shrubs, grasses, and forbs

Selected properties and qualities

General features: This component is characterized by floods, usually from high-intensity winter storms and spring runoff from snowmelt. It is likely to have deposition on it and minor scouring. Floodwater remains on the surface for extended periods.
Surface area covered by coarse fragments: 0 to 3 percent coarse subangular gravel and 0 to 9 percent fine subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.4 inches (low)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: Very low
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 3s
Other vegetative classification: None assigned

Typical profile

A—0 to 2 inches; fine sandy loam
C—2 to 3 inches; stratified gravelly coarse sand to sand
A´1—3 to 5 inches; fine sandy loam
A´2—5 to 13 inches; fine sandy loam
A´3—13 to 18 inches; fine sandy loam
C´1—18 to 24 inches; stratified gravelly coarse sand to sand
C´2—24 to 28 inches; stratified gravelly coarse sand to sand
C´3—28 to 32 inches; stratified gravelly coarse sand to sand
C´4—32 to 60 inches; stratified gravelly coarse sand to sand

Minor Components

Unnamed soils that are coarse-loamy over sandy/sandy-skeletal and similar soils

Composition: About 8 percent
Slope: 0 to 3 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Unnamed soils

Composition: About 4 percent
Slope: 0 to 3 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Aquandic Humaquepts and similar soils

Composition: About 3 percent
Slope: 0 to 3 percent
Landform: Lower-position flood plain or mountain valley
Vegetative classification: None assigned

Elcapitan fine sandy loam and similar soils

Composition: About 3 percent
Slope: 0 to 3 percent
Landform: Drainageway or mountain valley
Vegetative classification: None assigned

Mollic Xerofluvents and similar soils

Composition: About 2 percent
Slope: 0 to 3 percent
Landform: Higher-position flood plain or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Flooding with deposition and scouring are management concerns.
- The coarse soil textures have high detachability.
- The low water-holding capacity is a management concern.
- Soil disturbance and the subsequent loss of the organic surface layer are concerns.

201—Leidig fine sandy loam, 0 to 2 percent slopes, occasionally flooded, mesic

Setting

General location: None noted
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,905 to 4,030 feet (1,191 to 1,229 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Leidig soil—80 percent
Minor components—20 percent

Description of the Leidig Soil

Slope: 0 to 2 percent
Landform: Relict point bar, distinct bar and channel, hung channel, high flood plain, meander scar, or mountain valley
Parent material: Alluvium derived from granitoid rock and reworked lake sediments
Typical vegetation: This soil supports a wide range in vegetation, from woodland to facultative hydrophytes; main tree species—ponderosa pine and incense cedar; common understory plants—grasses and forbs

Selected properties and qualities

General features: This soil is characterized by floods, usually from high-intensity winter storms and spring runoff from snowmelt. It is not likely to be scoured. It usually receives fresh sediments after periods of high flow in the river. Floodwater remains on the surface for brief periods.
Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 8.7 inches (high)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: Very low
Current water table: Present
Natural drainage class: Somewhat poorly drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6w
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A—0 to 7 inches; fine sandy loam
2Ab1—7 to 16 inches; loam
2Ab2—16 to 23 inches; loam
2Ab3—23 to 30 inches; very fine sandy loam
2Ab4—30 to 34 inches; fine sandy loam
2Ab5—34 to 42 inches; fine sandy loam
2Ab6—42 to 46 inches; fine sandy loam
3Ab1—46 to 52 inches; sandy loam
3Ab2—52 to 58 inches; fine sandy loam
C—58 to 60 inches; stratified loamy sand to fine sandy loam

Minor Components

Unnamed soils

Composition: About 6 percent
Slope: 0 to 2 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Vitrandic Haploxerolls randomly occurring and similar soils

Composition: About 5 percent
Slope: 0 to 2 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Happyisles overwash and similar soils

Composition: About 3 percent
Slope: 0 to 2 percent
Landform: Area adjacent to alluvial fan flood plain or mountain valley
Vegetative classification: None assigned

Unnamed meander scars, unnamed relict point bars, and stagnant water in pools

Composition: About 2 percent
Slope: 0 to 2 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Flooding with deposition and scouring can occur simultaneously at different locations.
- The varied composition of plant species indicates an actively colonizing or frequently disturbed site.
- Because of the moderately high water tables, year-round pools of stagnant water occur in abandoned channels and provide excellent breeding sites for mosquitoes.
- Grass fires impede conifer encroachment by controlling the establishment of seedlings.

210—Rubble land-Typic Cryorthents-Rock outcrop-Xeric Dystrocryepts complex, 30 to 80 percent slopes, mountainflanks, metamorphic, mafic, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,535 to 13,045 feet (1,992 to 3,977 meters)
Mean annual precipitation: 31 to 63 inches (787 to 1,600 millimeters)
Mean annual air temperature: 37 to 38 degrees F (about 3 degrees C)
Frost-free period: 15 to 45 days

Composition

Rubble land—30 percent
Typic Cryorthents—25 percent
Rock outcrop—20 percent
Xeric Dystrocryepts—20 percent
Minor components—5 percent

Description of Rubble Land

Slope: 30 to 80 percent

Landform: Periglacial cirque, debris avalanche, colluvial fan apron, scree slope, or talus slope
Parent material: Colluvium derived from metavolcanic hornfels with lesser amounts of mafic igneous intrusive rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Typic Cryorthents

Slope: 30 to 80 percent
Landform: Periglacial cirque, drainageway, colluvial fan apron, crests of mountain, or mountainside
Parent material: Colluvium derived from metavolcanic, mafic, and a minor amount of granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent coarse subangular gravel and 5 to 15 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.2 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 86120, Whitebark Pine Forest

Typical profile

A1—0 to 2 inches; gravelly sandy loam
A2—2 to 13 inches; very cobbly sandy loam
C1—13 to 19 inches; very cobbly fine sandy loam
C2—19 to 60 inches; extremely stony fine sandy loam

Description of Rock Outcrop

Slope: 30 to 80 percent
Landform: Cirque, cliff, or mountainside

Parent material: Metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Xeric Dystrocryepts

Slope: 30 to 80 percent
Landform: Mountainside
Parent material: Colluvium derived from metavolcanic and mafic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.2 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: None assigned

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material
A1—1 to 5 inches; fine sandy loam
A2—5 to 13 inches; very cobbly fine sandy loam
Bw—13 to 28 inches; very cobbly fine sandy loam
C—28 to 60 inches; gravelly sandy loam

Minor Components

Humic Dystrocryepts loamy-skeletal and similar soils

Composition: About 3 percent
Slope: 30 to 80 percent
Landform: Mountainside
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- The types of rock in this map unit are dominantly metavolcanic hornfels with lesser amounts of mafic igneous intrusive rock, mostly south of Ireland Lake. Inclusions (about 10 percent) of granitoid rock occur, especially in the northern part of the park in the vicinity of Mary Lake and Dorothy Lake.
- Most rock rubble is derived from heavy frost shatter of hornfelsic bedrock, but some is derived from unconsolidated rock in debris avalanches, colluvial aprons, and periglacial cirques.
- Metamorphic rocks (hornfels) tend to be more susceptible than igneous rocks to frost shatter.
- This map unit has convergent to divergent drainage patterns.
- Mountain flanks that are steeper than 55 percent are prone to snow and debris avalanches.
- Slopes that are about or more than 30 percent occur on mountain shoulders and crests, periglacial cirques, and apron toes.
- Sheet erosion is common on soils that have slopes of more than 35 percent.
- Colluvial slopes that are steeper that about 35 percent are subject to creep.

211—Xeric Dystrocryepts-Canisrocks-Oxyaquic Dystrocryepts association, 10 to 40 percent slopes, aprons, lateral moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 8,870 to 10,650 feet (2,704 to 3,247 meters)
Mean annual precipitation: 37 to 45 inches (940 to 1,143 millimeters)
Mean annual air temperature: 34 to 34 degrees F (about 1 degree C)
Frost-free period: 15 to 45 days

Composition

Xeric Dystrocryepts—35 percent
Canisrocks soil—30 percent
Oxyaquic Dystrocryepts—15 percent
Minor components—20 percent

Description of Xeric Dystrocryepts

Slope: 10 to 40 percent
Landform: Lateral moraine

Parent material: Colluvium derived from mixed metamorphic hornfels and granitoid rock and/or tioga till
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subangular cobbles, 0 to 5 percent subrounded stones, and 0 to 5 percent coarse subangular gravel
Restrictive feature: Dense material at a depth of 32 inches
Available water capacity to a depth of 60 inches: About 1.6 inches (very low)

Selected hydrologic properties

Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 9 inches; very stony fine sandy loam
Bw1—9 to 19 inches; very stony sandy loam
Bw2—19 to 32 inches; extremely stony coarse sandy loam
Cd—32 to 60 inches; extremely cobbly coarse sandy loam

Description of the Canisrocks Soil

Slope: 10 to 40 percent
Landform: Lateral moraine, colluvial aprons on mountain slope, or mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles, 2 to 10 percent subrounded stones, and 2 to 10 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material

Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Description of Oxyaquic Dystrocryepts

Slope: 10 to 40 percent
Landform: Avalanche chute or area below concave rock outcrop on mountain slope
Parent material: Nonbouldery colluvium derived from granitoid rock over till
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent coarse subangular gravel and 0 to 5 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.0 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

A1—0 to 0 inches; sandy loam
A2—0 to 9 inches; gravelly sandy loam
Bt1—9 to 16 inches; cobbly sandy loam
Bt2—16 to 23 inches; sandy loam
Ct—23 to 60 inches; very gravelly sandy loam

Minor Components

Rubble land

Composition: About 10 percent
Slope: 10 to 40 percent
Landform: Mountainside
Vegetative classification: None assigned

Rock outcrop

Composition: About 5 percent
Slope: 10 to 40 percent
Landform: Mountain slope
Vegetative classification: None assigned

Vitrandic Dystrocryepts loamy-skeletal and similar soils

Composition: About 3 percent
Slope: 10 to 40 percent

Landform: Moraine or mountain slope
Vegetative classification: None assigned

Vitrandic Cryorthents coarse-loamy and similar soils

Composition: About 2 percent
Slope: 10 to 40 percent
Landform: Moraine
Vegetative classification: None assigned

Use and Management Considerations

- This map unit occurs at the base of mountain flanks and below areas of rock outcrop.
- Water flows over upslope bedrock surfaces and under rock rubble.
- Slope drainage patterns are mostly parallel to slightly convergent.
- Entisols tend to be more bouldery than Inceptisols.
- This map unit is susceptible to debris and snow avalanches from upslope areas.
- Rubble is concentrated on aprons and the lower mountain flanks.
- Brush is concentrated in avalanche tracks.

213—Canisrocks-Glacierpoint-Vitrandic Dystrocryepts complex, bouldery, 20 to 45 percent slopes, medial moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 7,285 to 10,965 feet (2,221 to 3,343 meters)
Mean annual precipitation: 33 to 49 inches (838 to 1,245 millimeters)
Mean annual air temperature: 45 to 47 degrees F (7 to 8 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—50 percent
Glacierpoint soil—15 percent
Vitrandic Dystrocryepts—15 percent
Minor components—20 percent

Description of the Canisrocks Soil

Slope: 20 to 45 percent
Landform: Lateral moraine, summits on medial moraine, mountain slope, or mountainside
Parent material: Till derived from granitoid rock and minor metamorphic rock and colluvium over till with minor volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 10 percent subrounded stones, 15 to 25 percent coarse subrounded gravel, and 15 to 25 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.0 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: 86200, Sierra Mixed Subalpine Coniferous Forest

Typical profile

Oi—0 to 0 inches; very stony slightly decomposed plant material
A—0 to 3 inches; cobbly loamy sand
C1—3 to 12 inches; cobbly loamy sand
C2—12 to 60 inches; very cobbly loamy sand

Description of Glacierpoint Soil

Slope: 20 to 45 percent
Landform: Lower moraine
Parent material: Till derived from granitoid rock with minor amounts of volcanic ash in some areas
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent coarse subangular gravel, 5 to 15 percent subangular cobbles, and 5 to 15 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.3 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; stony slightly decomposed plant material
Oe—0 to 1 inch; stony moderately decomposed plant material
A1—1 to 9 inches; very stony loamy sand
A2—9 to 15 inches; extremely stony loamy sand
Bw—15 to 20 inches; very cobbly loamy sand
C1—20 to 29 inches; very cobbly loamy sand
C2—29 to 37 inches; very cobbly loamy sand
C3—37 to 60 inches; very cobbly loamy sand

Description of Vitrandic Dystrocryepts

Slope: 20 to 45 percent
Landform: Moraine
Parent material: Till derived from granitoid rock and/or volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders, and 0 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.1 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; slightly decomposed plant material
A1—1 to 11 inches; loamy sand
A2—11 to 17 inches; sandy loam
Bw—17 to 25 inches; cobbly loamy sand
BC—25 to 37 inches; stony loamy coarse sand
C—37 to 60 inches; cobbly loamy coarse sand

Minor Components

Vitrandic Cryorthents sandy-skeletal and similar soils

Composition: About 7 percent
Slope: 20 to 45 percent
Landform: Moraine, mountain slope, or mountain valley
Vegetative classification: None assigned

Typic Cryorthents coarse-loamy, acid and similar soils

Composition: About 5 percent
Slope: 20 to 45 percent
Landform: Lateral moraine, summits on medial moraine, mountain slope, or mountainside
Vegetative classification: None assigned

Rock outcrop

Composition: About 3 percent
Slope: 20 to 45 percent
Landform: Mountain slope
Vegetative classification: None assigned

Xeric Dystrocryepts sandy and similar soils

Composition: About 3 percent
Slope: 20 to 45 percent
Landform: Lower moraine
Vegetative classification: None assigned

Xeric Dystrocryepts coarse-loamy and similar soils

Composition: About 2 percent
Slope: 20 to 45 percent
Landform: Lower moraine
Vegetative classification: None assigned

Use and Management Considerations

- This map unit occurs at and near the confluence of mountain valleys where tributary glaciers commonly coalesced with larger valley glaciers, forming valley steps in some areas.
- This map unit has generally well defined, sharply crested moraines of Tioga age.
- Morainal surfaces tend to be bouldery.
- The moraines commonly are deeply incised by streams.
- In some areas this map unit occurs below mountain slope-lateral moraine complexes (such as map unit 221).
- This map unit normally has greater tree cover and less brush than the higher map unit.

214—Marmotland-Oxyaquic Dystrocryepts-Xeric Dystrocryepts complex, 0 to 15 percent slopes, mountain valley floors, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park (fig. 10)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys, mountain canyons, or mountains
Elevation: 6,515 to 10,315 feet (1,986 to 3,146 meters)
Mean annual precipitation: 31 to 61 inches (787 to 1,549 millimeters)
Mean annual air temperature: 37 to 38 degrees F (about 3 degrees C)
Frost-free period: 15 to 45 days

Composition

Marmotland soil—25 percent
Oxyaquic Dystrocryepts—15 percent
Xeric Dystrocryepts—15 percent
Minor components—45 percent

Description of the Marmotland Soil

Slope: 0 to 15 percent
Landform: Moraine or area above normally active flood plain on valley floor
Parent material: Alluvium and/or minor till derived from granitoid rock and volcanic ash
Typical vegetation: Dry alpine and subalpine meadows

Figure 10.—An area of Marmotland-Oxyaquic Dystrocryepts-Xeric Dystrocryepts complex, 0 to 15 percent slopes, mountain valley floors, cryic, in a meadow near Badger Pass ski area off Glacier Point Road. This area shows the diversity of vegetation on flood plains.

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: Dense material at a depth of 31 inches
Available water capacity to a depth of 60 inches: About 4.6 inches (low)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: Medium
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 45220, Dry Subalpine and Alpine Meadow

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A1—0 to 11 inches; fine sandy loam
A2—11 to 19 inches; fine sandy loam
Bt1—19 to 36 inches; fine sandy loam
Bt2—36 to 48 inches; sandy loam
C—48 to 60 inches; ashy sandy loam

Description of Oxyaquic Dystrocryepts

Slope: 0 to 15 percent
Landform: Old and active flood plain or valley floor
Parent material: Alluvium, till derived from granitoid rock, and volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.4 inches (very low)

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: C

California land use interpretive groups

Land capability classification (nonirrigated): 6w
Other vegetative classification: 45110, Wet Montane Meadow

Typical profile

A1—0 to 2 inches; loamy coarse sand
A2—2 to 7 inches; coarse sand
A3—7 to 14 inches; loamy coarse sand
AB—14 to 20 inches; loamy coarse sand
Bw—20 to 31 inches; coarse sand
C1—31 to 40 inches; loamy coarse sand
C2—40 to 61 inches; extremely bouldery coarse sand

Description of Xeric Dystrocryepts

Slope: 0 to 15 percent
Landform: Raised, well drained ground moraine, toes on lateral moraine, colluvial aprons on mountain slopes or mountain slope
Parent material: Alluvium derived from granitoid and metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.4 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 16 inches; sandy loam
AB—16 to 23 inches; loamy sand
Bw—23 to 36 inches; gravelly loamy sand
C1—36 to 63 inches; very cobbly loamy sand
C2—63 to 69 inches; very cobbly sand

Minor Components

Vitrandic Cryofluvents coarse-loamy and similar soils

Composition: About 10 percent
Slope: 0 to 15 percent
Landform: Valley floor
Vegetative classification: 45220, Dry Subalpine and Alpine Meadow

Aquandic Cryaquepts and similar soils

Composition: About 5 percent
Slope: 0 to 4 percent
Landform: Flood plain on slopes of less than 4 percent
Vegetative classification: None assigned

Cumulic Cryaquolls and similar soils

Composition: About 5 percent
Slope: 0 to 6 percent
Landform: Valley floor
Vegetative classification: 45110, Wet Montane Meadow

Histosols cryic and similar soils

Composition: About 5 percent
Slope: 0 to 15 percent
Landform: Lakeshore or mountain valley
Vegetative classification: None assigned

Humic Cryaquepts and similar soils

Composition: About 4 percent
Slope: 0 to 5 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Oxyaquic Dystrocryepts coarse-loamy and similar soils

Composition: About 4 percent
Slope: 0 to 15 percent
Landform: Fringes of flood plain or terrace
Vegetative classification: 45110, Wet Montane Meadow

Typic Cryaquands and similar soils

Composition: About 4 percent
Slope: 0 to 15 percent
Landform: Mountain or floors on mountain valley
Vegetative classification: 45220, Dry Subalpine and Alpine Meadow

Glacierpoint and similar soils

Composition: About 2 percent
Slope: 6 to 15 percent
Landform: Raised, well drained ground moraine, toes on lateral moraine, mountain slope, or colluvial aprons on mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Typic Cryopsamments and similar soils

Composition: About 2 percent
Slope: 0 to 15 percent
Landform: Margins on mountain valley
Vegetative classification: 86110, Lodgepole Pine Forest

Typic Cryorthents coarse-loamy, nonacid and similar soils

Composition: About 2 percent
Slope: 0 to 15 percent
Landform: Ground moraine
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Xeric Dystrocryepts coarse-loamy and similar soils

Composition: About 1 percent
Slope: 6 to 15 percent
Landform: Raised, well drained ground moraine, toes on lateral moraine, mountain slope, or colluvial aprons on mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Use and Management Considerations

- From a pedological perspective, this map unit is one of the most complex map units in Yosemite National Park.
- This map unit includes stream channels, flood plains, and small stream terraces.
- This map unit has dominantly dry to wet meadows and some areas with significant forest invasion of primarily lodgepole pine.
- The steepest slopes are on risers of valley steps.

215—Typic Cryorthents-Rock outcrop-Rubble land complex, 30 to 65 percent slopes, metamorphic, glacially scoured mountain slopes, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 7,195 to 11,220 feet (2,194 to 3,420 meters)
Mean annual precipitation: 39 to 51 inches (991 to 1,295 millimeters)
Mean annual air temperature: 48 to 49 degrees F (about 9 degrees C)
Frost-free period: 15 to 45 days

Composition

Typic Cryorthents—40 percent
Rock outcrop—20 percent
Rubble land—20 percent
Minor components—20 percent

Description of Typic Cryorthents

Slope: 30 to 65 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded stones, 2 to 10 percent subangular cobbles, and 10 to 20 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.4 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; stony slightly decomposed plant material
Oe—0 to 1 inch; stony moderately decomposed plant material
A—1 to 3 inches; loamy fine sand
Bw1—3 to 12 inches; very gravelly loamy sand
Bw2—12 to 18 inches; very gravelly loamy sand
Bw3—18 to 22 inches; very gravelly loamy sand
Cd—22 to 60 inches; very gravelly sandy loam

Description of Rock Outcrop

Slope: 30 to 65 percent
Landform: Avalanche track or cliff
Parent material: Metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Rubble Land

Slope: 30 to 65 percent
Landform: Avalanche track or talus slope
Parent material: Colluvium derived from metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 10 percent
Slope: 0 to 10 percent

Landform: Narrow (few meters) fringes around rock outcrop on mountain slope
Vegetative classification: None assigned

Xeric Dystrocryepts sandy-skeletal and similar soils

Composition: About 10 percent
Landform: Mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- The types of rock in this map unit are metasedimentary with mafic plutonic rock, especially in the Ten Lakes area.
- Talus, avalanche tracks, and remnant moraines are superimposed on mountain slopes; rock outcrop is superimposed on mountain flanks.
- Mountain slopes have been glacially scoured.
- There is a hazard of snow or debris avalanches on slopes that are about or more than 55 percent.
- Mountain slopes grade to mountain flanks, typically upslope but also laterally.

219—Rock outcrop-Rubble land-Canisrocks association, 0 to 80 percent slopes, cirqued mountainflanks, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 7,795 to 13,025 feet (2,377 to 3,970 meters)
Mean annual precipitation: 35 to 65 inches (889 to 1,651 millimeters)
Mean annual air temperature: 34 to 42 degrees F (1 to 6 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—40 percent
Rubble land—25 percent
Canisrocks soil—15 percent
Minor components—20 percent

Description of Rock Outcrop

Slope: 0 to 80 percent
Landform: Mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Rubble Land

Slope: 0 to 80 percent
Landform: Mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Canisrocks Soil

Slope: 9 to 80 percent
Landform: Cirque, mountain, or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 15 percent subrounded stones, 0 to 15 percent subangular cobbles, and 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand

C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Minor Components

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 10 percent
Slope: 0 to 10 percent
Landform: Narrow (few meters) fringes around rock outcrop on mountain slope
Vegetative classification: None assigned

Humic Lithic Dystrocryepts sandy and similar soils

Composition: About 7 percent
Slope: 0 to 10 percent
Landform: Mountain, dimples in bedrock in mountain slope, or shallow fractures in bedrock in mountain slope
Vegetative classification: None assigned

Water

Composition: About 2 percent
Landform: Lake
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Use and Management Considerations

- This map unit has been intensively scoured glacially.
- The mountain flanks are dominated by rock outcrop and rubble from frost shatter.
- Talus is superimposed on mountain flanks, cirques, and mountain slopes.
- Cirques dominantly are northeast-facing and dominated by rock outcrop and rubble.
- Volcanic ash commonly is mixed in soils on slopes that are about or more than 30 percent.
- Cirques provide good habitat for marmot.
- This map unit is prone to snow avalanches on slopes that are about or more than 55 percent.
- This map unit includes areas with slopes that are about or more than 35 percent on cirque floors, bedrock joints, ridge summits, and mountain slopes. These areas are too small to be mapped separately at the 1:40,000 scale.

221—Typic Cryorthents-Xeric Dystrocryepts-Oxyaquic Dystrocryepts complex, 15 to 45 percent slopes, metamorphic, mountain slopes, lateral moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 9,845 to 11,220 feet (3,001 to 3,420 meters)

Mean annual precipitation: 35 to 47 inches (889 to 1,194 millimeters)
Mean annual air temperature: 38 to 40 degrees F (3 to 4 degrees C)
Frost-free period: 15 to 45 days

Composition

Typic Cryorthents—35 percent
Xeric Dystrocryepts—20 percent
Oxyaquic Dystrocryepts—15 percent
Minor components—30 percent

Description of Typic Cryorthents

Slope: 15 to 45 percent
Landform: Lateral moraine, recessional moraine, or mountain slope
Parent material: Mixed granitoid rock colluvium and/or till derived from metamorphic rock and volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 25 percent subangular cobbles and 5 to 25 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.5 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

A1—0 to 2 inches; gravelly sandy loam
A2—2 to 13 inches; very cobbly loam
C1—13 to 19 inches; very cobbly fine sandy loam
C2—19 to 60 inches; extremely stony fine sandy loam

Description of Xeric Dystrocryepts

Slope: 15 to 45 percent
Landform: Ground moraine or lateral moraine
Parent material: Colluvium and/or till derived from metasedimentary rock and volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded stones, 2 to 10 percent subangular cobbles, and 2 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 7.4 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

A—0 to 3 inches; stony sandy loam
Bw—3 to 19 inches; very stony sandy loam
Cd—19 to 60 inches; sandy loam

Description of Oxyaquic Dystrocryepts

Slope: 15 to 45 percent
Landform: Parallel ephemeral stream or subsurface water flow with ephemeral stream
Parent material: Colluvium and/or till derived from metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded stones and 0 to 5 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.0 inches (low)

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6w
Other vegetative classification: None assigned

Typical profile

A1—0 to 0 inches; sandy loam
A2—0 to 9 inches; gravelly sandy loam
Bt1—9 to 16 inches; cobbly sandy loam
Bt2—16 to 23 inches; sandy loam
Ct—23 to 60 inches; very gravelly sandy loam

Minor Components

Rock outcrop

Composition: About 10 percent
Slope: 15 to 45 percent

Landform: Eroded lateral moraine or mountain slope
Vegetative classification: None assigned

Vitrandic Dystrocryepts loamy-skeletal and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Histic Cryaquepts loamy-skeletal and similar soils

Composition: About 3 percent
Slope: 15 to 45 percent
Landform: Eroded lateral moraine
Vegetative classification: None assigned

Rubble land

Composition: About 2 percent
Slope: 15 to 45 percent
Landform: Mountain slope
Vegetative classification: None assigned

Water

Composition: About 2 percent
Landform: Lake
Vegetative classification: None assigned

Xeric Dystrocryepts loamy-skeletal and similar soils

Composition: About 2 percent
Slope: 15 to 45 percent
Landform: Ground moraine or lateral moraine
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Use and Management Considerations

- The type of rock in this map unit is metasedimentary hornfels, schist, and lesser amounts of mixed granitoid in the colluvium and till.
- Except for the moraine in the upper Virginia Canyon, which is of Tioga age, geologic erosion of moraines suggests that they are older than Tioga age.
- Mountain slopes typically exhibit parallel drainage patterns.
- The soil moisture regime dominantly is xeric, but areas of udic and aquic moisture regimes occur in ephemeral drainages and near geomorphic contacts that concentrate subsurface water flow.
- In the wet areas, soils with a xeric moisture regime commonly occur on slightly raised drier “islands.”
- This map unit includes till-covered slopes of more than 15 percent on spur summits in the upper Parker Pass Creek drainageway.

222—Canisrocks-Rubble land-Rock outcrop-Crazymule complex, 30 to 75 percent slopes, mountainflanks, colluvial aprons, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,215 to 12,535 feet (1,896 to 3,821 meters)
Mean annual precipitation: 39 to 55 inches (991 to 1,397 millimeters)
Mean annual air temperature: 38 to 40 degrees F (3 to 4 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—30 percent
Rubble land—30 percent
Rock outcrop—20 percent
Crazymule soil—15 percent
Minor components—5 percent

Description of the Canisrocks Soil

Slope: 30 to 75 percent
Landform: Avalanche chute, crests on mountain, or backslope on mountainside
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: California red fir forest

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded stones, 2 to 10 percent subangular cobbles, and 2 to 10 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 2 inches; bouldery slightly decomposed plant material
A—2 to 7 inches; very cobbly loamy coarse sand
AC—7 to 14 inches; extremely cobbly sand
C—14 to 60 inches; extremely stony coarse sand

Description of Rubble Land

Slope: 30 to 75 percent
Landform: Avalanche tract on mountain slope or colluvial apron mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Rock Outcrop

Slope: 30 to 75 percent
Landform: Lateral moraine or mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Crazymule Soil

Slope: 30 to 35 percent
Landform: Colluvial fan apron or mountain
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 25 to 35 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium

Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; gravelly slightly decomposed plant material
A—0 to 5 inches; gravelly loamy sand
Bw1—5 to 22 inches; very bouldery loamy sand
Bw2—22 to 35 inches; very bouldery loamy sand
C—35 to 60 inches; cobbly loam

Minor Components

Craneflat and similar soils

Composition: About 3 percent
Slope: 30 to 75 percent
Landform: Aprons on mountainside
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- Although this map unit may extend from mountain summit to toeslope, it commonly is bordered above by outcrops of map units 223, 219, 210, and 235. This contributes to water runoff, snow avalanches, and rock rubble.
- Rubble (talus and scree) and avalanche tracks are superimposed on mountain flanks and aprons at footslopes and toeslopes.
- Most of the rock rubble is derived from avalanches, frost action, and erosional deposition from map units above map unit 222.
- This map unit is highly prone to snow avalanches and, to a lesser extent, debris avalanches.
- The soils are highly susceptible to creep.
- The proportion of rock outcrop varies from about 10 to 30 percent among map unit delineations.
- Compared to map unit 235, map unit 222 tends to have more concave surfaces, a greater tendency to form rubble (talus and scree), less rock outcrop, and greater vegetative cover (40 percent).
- Areas with a frigid soil temperature regime occur along the low elevation margin of the map unit.
- Morainal inclusions are indistinct.

223—Rock outcrop-Rubble land-Canisrocks association, 10 to 65 percent slopes, mountain slopes, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 9,020 to 12,320 feet (2,750 to 3,756 meters)
Mean annual precipitation: 39 to 45 inches (991 to 1,143 millimeters)
Mean annual air temperature: 36 to 36 degrees F (about 2 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—35 percent
Rubble land—35 percent
Canisrocks soil—20 percent
Minor components—10 percent

Description of Rock Outcrop

Slope: 10 to 65 percent
Landform: Cirque, cliff, or mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Rubble Land

Slope: 10 to 65 percent
Landform: Cirque, mountain slope, or rock glacier
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Canisrocks Soil

Slope: 10 to 65 percent
Landform: Mountain slope, small areas in mountain valley, colluvial aprons on mountainside, bedrock joints in mountainside, or mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 15 percent subangular cobbles, 0 to 15 percent coarse subangular gravel, and 0 to 15 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85310, Red Fir Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Minor Components

Vitrandic Cryorthents sandy-skeletal and similar soils

Composition: About 5 percent
Slope: 10 to 65 percent
Landform: Mountain slope or small mountain valley
Vegetative classification: None assigned

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 0 to 10 percent
Landform: Narrow (few meters) fringe around rock outcrop in mountainside
Vegetative classification: None assigned

Humic Lithic Dystrocryepts sandy and similar soils

Composition: About 2 percent

Slope: 0 to 10 percent
Landform: Bedrock dimples in mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- Rubble encompasses frost-shattered bedrock, including talus, scree, aprons, and rock glaciers.
- Mountain ridges and mountain flanks are dominated by rock outcrop and rubble, with less than 15 percent soil.

224—Rock outcrop-Crazymule-Vitrandic Cryorthents association, 0 to 45 percent slopes, joints, fractures, scoured, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,565 to 11,675 feet (2,002 to 3,560 meters)
Mean annual precipitation: 31 to 65 inches (787 to 1,651 millimeters)
Mean annual air temperature: 34 to 50 degrees F (1 to 10 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—40 percent
Crazymule soil—20 percent
Vitrandic Cryorthents—15 percent
Minor components—25 percent

Description of Rock Outcrop

Slope: 0 to 45 percent
Landform: Mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Crazymule Soil

Slope: 5 to 35 percent

Landform: Mountain slope, mountain valley, steps on mountainside, or bedrock joints and fractures in mountainside
Parent material: Colluvium and/or residuum and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subrounded stones, 5 to 15 percent subangular cobbles, and 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86800, Mountain Hemlock Forest; 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; stony slightly decomposed plant material
A—0 to 5 inches; gravelly loamy sand
Bw1—5 to 22 inches; very bouldery loamy sand
Bw2—22 to 35 inches; very bouldery loamy sand
Cd—35 to 60 inches; cobbly loam

Description of Vitrandic Cryorthents

Slope: 0 to 45 percent
Landform: Mountain slope or bedrock joints and fractures in mountainside
Parent material: Colluvium and/or residuum and/or till derived from granitoid rock and/or surficial tephra
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subrounded stones and 0 to 10 percent subrounded boulders
Restrictive feature: Bedrock (lithic) at a depth of 24 to 26 inches
Available water capacity to a depth of 60 inches: About 1.3 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 2 inches; slightly decomposed plant material
A—2 to 7 inches; loamy fine sand
Bw—7 to 15 inches; loamy sand
C—15 to 24 inches; gravelly loamy sand
R—24 to 60 inches; bedrock

Minor Components

Xeric Dystrocryepts coarse-loamy, Xeric Dystrocryepts sandy-skeletal, and similar soils

Composition: About 4 percent
Slope: 0 to 45 percent
Landform: Mountain slope, mountain valley, steps on mountainside, or bedrock joints and fractures in mountainside
Vegetative classification: 85310, Red Fir Forest; 86110, Lodgepole Pine Forest

Humic Dystrocryepts sandy and similar soils

Composition: About 3 percent
Slope: 0 to 45 percent
Landform: Floor on mountain valley
Vegetative classification: 81900, Aspen Forest

Humic Lithic Dystrocryepts sandy and similar soils

Composition: About 3 percent
Slope: 0 to 10 percent
Landform: Mountain slope, small benches on mountainside, or bedrock dimples in mountainside
Vegetative classification: 85120, Western White Pine Forest; 85200, Upper Montane Mixed Coniferous Forest

Badgerpass and similar soils

Composition: About 2 percent
Slope: 0 to 45 percent
Landform: Mountain slope or bedrock small benches and dimples on mountainside
Vegetative classification: 37500, Montane Chaparral

Oxyaquic Dystrocryepts coarse-loamy and similar soils

Composition: About 2 percent
Slope: 0 to 10 percent
Landform: Bedrock joints in mountainside
Vegetative classification: 85310, Red Fir Forest

Typic Cryorthents sandy-skeletal and similar soils

Composition: About 2 percent
Slope: 0 to 9 percent
Landform: Bedrock joints in mountainside or mountainside
Vegetative classification: None assigned

Xeric Dystrocryepts sandy and similar soils

Composition: About 2 percent
Slope: 0 to 45 percent
Landform: Mountain slope, mountain valley, steps on mountainside, or bedrock joints and fractures in mountainside
Vegetative classification: 85310, Red Fir Forest

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Lithic Cryopsamments and similar soils

Composition: About 1 percent
Slope: 0 to 45 percent
Landform: Backslope mountain slope
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- Systematic and nonsystematic joint sets cut indurated rock masses.
- Till from remnant moraines occurs in about 20 percent of the joints, especially those that are more than 20 meters wide.
- A small amount of metasedimentary rock is included in this map unit southwest of the Glen Aulin High Sierra Camp.
- Mostly scattered rubble from adjacent upslope map units and from frost action occurs on about one-third of the slopes steeper than 35 percent.
- Tephra commonly occurs in joints.
- Small (less than 1 hectare) meadows are scattered throughout the map unit (1 to 2 percent) but are most common in mountain valley components.
- The mountain slope components are typically short (less than 100 meters).

225—Canisrocks-Rock outcrop-Rubble land-Vitrandic Dystrocryepts association, 2 to 30 percent slopes, glacially scoured mountain valleys, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,535 to 11,355 feet (1,993 to 3,461 meters)
Mean annual precipitation: 39 to 65 inches (991 to 1,651 millimeters)
Mean annual air temperature: 38 to 41 degrees F (3 to 5 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—15 percent
Rock outcrop—15 percent
Rubble land—15 percent
Vitrandic Dystrocryepts—15 percent
Minor components—40 percent

Description of the Canisrocks Soil

Slope: 9 to 30 percent
Landform: Nivational cirques on mountain or colluvial aprons on mountainside
Parent material: Alluvium and/or colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded boulders, 2 to 10 percent subrounded stones, and 2 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Description of Rock Outcrop

Slope: 2 to 30 percent
Landform: Mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Rubble Land

Slope: 2 to 30 percent
Landform: Mountain valley
Parent material: Colluvium derived from igneous rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Vitrandic Dystrocryepts

Slope: 2 to 30 percent
Landform: Moraine, mountain slope, floors on mountain valley, or bedrock joints in mountainside
Parent material: Colluvium and/or till derived from granitoid and/or metamorphic rock and volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders, and 0 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.6 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 1 inch; bouldery slightly decomposed plant material

Oe—1 to 2 inches; bouldery moderately decomposed plant material
A1—2 to 5 inches; loamy sand
A2—5 to 12 inches; very bouldery loamy sand
Bw1—12 to 26 inches; extremely bouldery sandy loam
Bw2—26 to 30 inches; extremely bouldery sandy loam
C—30 to 60 inches; extremely bouldery loamy sand

Minor Components

Vitrandic Cryorthents sandy-skeletal and similar soils

Composition: About 12 percent
Slope: 2 to 20 percent
Landform: Nivational cirque, mountain slope, flood plains in mountain valley, margins in mountain valley, or colluvial aprons on mountainside
Vegetative classification: None assigned

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 6 percent
Slope: 0 to 10 percent
Landform: Narrow fringes along bedrock on mountainside
Vegetative classification: None assigned

Oxyaquic Cryorthents and similar soils

Composition: About 4 percent
Slope: 0 to 10 percent
Landform: Narrow riparian zones on glacial-valley floor or flood plains in mountain valley
Vegetative classification: None assigned

Humic Cryaquepts and similar soils

Composition: About 2 percent
Slope: 2 to 10 percent
Landform: Flood plain
Vegetative classification: None assigned

Water

Composition: About 2 percent
Landform: Lake
Vegetative classification: None assigned

Oxyaquic Cryopsamments and similar soils

Composition: About 2 percent
Slope: 2 to 8 percent
Landform: Kettles on glacial-valley floor or riparian zones on glacial-valley floor
Vegetative classification: None assigned

Oxyaquic Dystrocryepts loamy-skeletal and similar soils

Composition: About 2 percent
Slope: 0 to 10 percent
Landform: Moraine or bedrock kettles and joints in mountainside
Vegetative classification: None assigned

Typic Cryorthents sandy-skeletal and similar soils

Composition: About 2 percent
Slope: 2 to 8 percent

Landform: Flood plain, nivational cirques on mountain, or colluvial aprons on mountainside
Vegetative classification: None assigned

Typic Vitricryands and similar soils

Composition: About 2 percent
Slope: 2 to 30 percent
Landform: Mountain slope or margins on mountain valley
Vegetative classification: None assigned

Ultic Vitricryands and similar soils

Composition: About 2 percent
Slope: 2 to 30 percent
Landform: Mountain slope or margins on mountain valley
Vegetative classification: None assigned

Vitrandic Dystrocryepts coarse-loamy and similar soils

Composition: About 2 percent
Slope: 2 to 30 percent
Landform: Moraine, mountain slope, floors in mountain valley, or bedrock joints in mountainside
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore or mountain valley
Vegetative classification: None assigned

Typic Dystrocryepts sandy and similar soils

Composition: About 1 percent
Slope: 2 to 30 percent
Landform: Upslope to ephemeral stream or stable margins on mountain valley
Other vegetative classification: None assigned

Use and Management Considerations

- The types of rock in this map unit are dominantly granitoid, but metamorphic rock (quartzite and hornfels) occurs in upper Dana Fork.
- The valleys have been glacially scoured mostly to bedrock and then partially recovered with thin, mixed deposits of colluvium, till, alluvium, and volcanic ash.
- Alluvium occurs in narrow flood plains and behind obstacles and valley constraints.
- The till deposits do not have a distinct morainal form.
- Joints, aprons, and moraines are superimposed on or extend into mountain valleys.
- Volcanic ash occurs most commonly on gently sloping surfaces (more than about 20 percent).
- Drainage patterns are dominantly convergent.
- Above about 10,500 feet (3,200 meters) in elevation, vegetative development on valley margins is greater on south-facing aspects than on north-facing aspects.
- Cryoturbation is significant in soils above about 9,500 feet (2,896 meters) in elevation.

227—Canisrocks-Crazymule complex, 15 to 45 percent slopes, mountain slopes, lateral moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,485 to 11,460 feet (1,977 to 3,493 meters)
Mean annual precipitation: 35 to 53 inches (889 to 1,346 millimeters)
Mean annual air temperature: 35 to 48 degrees F (1 to 9 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—45 percent
Crazymule soil—40 percent
Minor components—15 percent

Description of the Canisrocks Soil

Slope: 15 to 45 percent
Landform: Moraine, mountain slope, or bedrock small benches on mountainside
Parent material: Colluvium over till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 20 percent coarse subangular gravel, 0 to 20 percent subangular cobbles, and 0 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86800, Mountain Hemlock Forest

Typical profile

Oi—0 to 0 inches; stony slightly decomposed plant material
A1—0 to 2 inches; cobbly sandy loam
A2—2 to 6 inches; cobbly sandy loam
AB—6 to 17 inches; very stony loamy coarse sand
Bw1—17 to 25 inches; very stony loamy coarse sand
Bw2—25 to 34 inches; very stony loamy coarse sand
C—34 to 60 inches; very stony loamy coarse sand

Description of the Crazymule Soil

Slope: 15 to 35 percent
Landform: Lateral moraine, mountain slope, or bedrock joints in mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded stones, 0 to 5 percent subangular cobbles, and 0 to 5 percent coarse subangular gravel
Restrictive feature: Dense material at a depth of 32 inches
Available water capacity to a depth of 60 inches: About 2.3 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85310, Red Fir Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oa—1 to 2 inches; highly decomposed plant material
A—2 to 12 inches; loamy fine sand
Bw1—12 to 22 inches; very stony fine sandy loam
Bw2—22 to 34 inches; cobbly fine sandy loam
C—34 to 60 inches; very cobbly loamy sand

Minor Components

Vitrandic Dystrocryepts loamy-skeletal and similar soils

Composition: About 5 percent
Slope: 15 to 45 percent
Landform: Crests on moraine, moraine, or bedrock small benches on mountainside
Vegetative classification: 86800, Mountain Hemlock Forest

Rock outcrop

Composition: About 4 percent
Slope: 15 to 45 percent
Landform: Mountain slope
Vegetative classification: None assigned

Oxyaquic Cryorthents and similar soils

Composition: About 3 percent
Slope: 0 to 10 percent
Landform: Wet, sloping meadows on moraine
Vegetative classification: None assigned

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 1 percent

Slope: 0 to 10 percent
Landform: Rock outcrop along fringes of mountainside
Vegetative classification: None assigned

Oxyaquic Dystroxerepts sandy-skeletal and similar soils

Composition: About 1 percent
Slope: 15 to 45 percent
Landform: Wet, sloping meadows on moraine
Vegetative classification: None assigned

Xeric Haplocryalfs loamy-skeletal and similar soils

Composition: About 1 percent
Slope: 15 to 45 percent
Landform: Gentle moraine
Vegetative classification: 81900, Aspen Forest

Use and Management Considerations

- Mountain slope surfaces tend to be erosional; morainal surfaces tend to be depositional.
- Although moraines sometimes are broken and discontinuous, they typically have retained distinct morainal form, which is recognizable in the 1:40,000 scale aerial photograph used to delineate map units in this survey. In contrast, moraines in map unit 279 are of various types and are more highly eroded, showing little or no distinct form at the map scale.
- Moraines are superimposed on the lower mountain slopes.
- Stands of mountain hemlock in this map unit tend to be concentrated on northwest-facing morainal slopes (see the delineation about 2 kilometers northwest of Merced Lake for an example).
- The soil temperature regime grades to frigid at low elevations in the map unit (such as 6,600 feet, or 2,012 meters, in the delineation about 3 kilometers southwest of Mount Starr King).

228—Xeric Dystrocryepts-Vitrandic Eutrocryepts complex, 0 to 15 percent slopes, wet/dry meadows, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,955 to 11,350 feet (2,121 to 3,461 meters)
Mean annual precipitation: 37 to 49 inches (940 to 1,245 millimeters)
Mean annual air temperature: 35 to 46 degrees F (2 to 8 degrees C)
Frost-free period: 15 to 45 days

Composition

Xeric Dystrocryepts—35 percent
Vitrandic Eutrocryepts—25 percent
Minor components—40 percent

Description of Xeric Dystrocryepts

Slope: 0 to 15 percent
Landform: Mounds on glacial-valley floor, dry moraine, or mountain slope
Parent material: Colluvium and/or till derived from metamorphic rock and granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subangular cobbles and 0 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.5 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 45220, Dry Subalpine and Alpine Meadow

Typical profile

A—0 to 4 inches; sandy loam
Bw1—4 to 14 inches; very gravelly sandy loam
Bw2—14 to 20 inches; very gravelly loamy sand
C1—20 to 30 inches; very gravelly loamy coarse sand
C2—30 to 60 inches; very cobbly loamy coarse sand

Description of Vitrandic Eutrocryepts

Slope: 0 to 15 percent
Landform: Avalanche chute, margins on mountain valley, wet alpine on valley floor, or subalpine on valley floor
Parent material: Alluvium and/or colluvium derived from granitoid rock and/or till derived from metasedimentary rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent coarse subangular gravel and 0 to 10 percent subangular cobbles
Restrictive feature: Dense material at a depth of 35 inches
Available water capacity to a depth of 60 inches: About 3.8 inches (low)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 45220, Dry Subalpine and Alpine Meadow

Typical profile

A1—0 to 6 inches; very fine sandy loam
A2—6 to 14 inches; stony very fine sandy loam
Bt—14 to 21 inches; cobbly sandy loam
CB—21 to 28 inches; cobbly sandy loam
C—28 to 60 inches; very cobbly coarse sandy loam

Minor Components

Marmotland and similar soils

Composition: About 10 percent
Slope: 0 to 15 percent
Landform: Ground moraine, mounds on valley floor, or valley floor
Vegetative classification: 45110, Wet Montane Meadow

Oxyaquic Cryofluvents coarse-loamy and similar soils

Composition: About 10 percent
Slope: 0 to 8 percent
Landform: Mountain valley floors on flood plain
Vegetative classification: 45210, Wet Subalpine and Alpine Meadow

Xeric Dystrocryepts coarse-loamy and similar soils

Composition: About 10 percent
Slope: 0 to 15 percent
Landform: Mounds on glacial-valley floor, dry moraine, or mountain slope
Vegetative classification: 91000, Alpine Boulder and Rock Field

Xeric Dystrocryepts sandy and similar soils

Composition: About 6 percent
Slope: 0 to 15 percent
Landform: Mounds on glacial-valley floor, dry moraine, or mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Water

Composition: About 3 percent
Landform: Lake
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- The types of rock in this map unit are dominantly granitoid with inclusions of metamorphic till in upper Parker Pass Creek valley.
- The present-day land surface was probably shaped as much by subglacial fluvial erosion as by ice itself. Ice crushes, plucks, and abrades to form new parent material.

- Areas with a frigid soil temperature regime are included along the low elevation margin of the map unit.

229—Marmotland-Oxyaquic Dystrocryepts association, 0 to 8 percent slopes, mountain valleys, ground moraines, fluted, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 9,040 to 10,020 feet (2,757 to 3,055 meters)
Mean annual precipitation: 35 to 39 inches (889 to 991 millimeters)
Mean annual air temperature: 36 to 44 degrees F (2 to 7 degrees C)
Frost-free period: 15 to 45 days

Composition

Marmotland soil—40 percent
Oxyaquic Dystrocryepts—40 percent
Minor components—20 percent

Description of the Marmotland Soil

Slope: 0 to 8 percent
Landform: Ground moraine or mountain valley
Parent material: Colluvium over till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded stones and 0 to 5 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.6 inches (low)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: Low
Current water table: Present
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 45200, Subalpine and Alpine Meadow

Typical profile

A1—0 to 0 inches; sandy loam
A2—0 to 9 inches; cobbly sandy loam
Bt1—9 to 16 inches; cobbly sandy loam
Bt2—16 to 23 inches; sandy loam
Ct—23 to 60 inches; very gravelly sandy loam

Description of Oxyaquic Dystrocryepts

Slope: 0 to 8 percent
Landform: Kettles on glacial-valley floor or valley floor
Parent material: Alluvium and/or till and/or minor colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6w
Other vegetative classification: 86800, Mountain Hemlock Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oa—0 to 2 inches; highly decomposed plant material
A1—2 to 5 inches; sandy loam
A2—5 to 12 inches; sandy loam
Bw—12 to 19 inches; cobbly sandy loam
C1—19 to 28 inches; gravelly coarse sandy loam
C2—28 to 60 inches; very gravelly sandy loam

Minor Components

Vitrandic Dystrocryepts sandy-skeletal and similar soils

Composition: About 10 percent
Slope: 0 to 8 percent
Landform: Ground moraine or mountain valley
Vegetative classification: None assigned

Vitrandic Cryorthents coarse-loamy and similar soils

Composition: About 5 percent
Slope: 0 to 8 percent
Landform: Flood plain
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 5 percent
Landform: Mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Ground moraines occupy mountain valleys and are fluted in the direction of ice movement.

- Flood plains support small (less than about 1 hectare) meadows.
- Mounds and kettles occur mostly in upper Dana Meadow, near Tioga Pass.
- Lateral moraines and crests of fluted ground moraines are well drained.

231—Canisrocks-Typic Cryaquents complex, 5 to 30 percent slopes, lateral moraines, aprons, wet/dry, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 9,520 to 10,040 feet (2,902 to 3,061 meters)
Mean annual precipitation: 35 to 39 inches (900 to 1,000 millimeters)
Mean annual air temperature: 38 to 41 degrees F (3 to 5 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—40 percent
Typic Cryaquents—21 percent
Minor components—39 percent

Description of the Canisrocks Soil

Slope: 9 to 30 percent
Landform: Moraine or mountain slope
Parent material: Till with volcanic ash and colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles, 2 to 10 percent coarse subangular gravel, 10 to 20 percent subrounded stones, and 10 to 20 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.5 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 1 inch; very bouldery slightly decomposed plant material
Oe—1 to 1 inch; very bouldery moderately decomposed plant material
Oa—1 to 2 inches; very bouldery highly decomposed plant material
A1—2 to 6 inches; fine sand

A2—6 to 10 inches; gravelly loamy fine sand
Bw—10 to 17 inches; cobbly loamy fine sand
BC—17 to 26 inches; very cobbly fine sand
C1—26 to 35 inches; very gravelly fine sand
C2—35 to 60 inches; extremely stony fine sand

Description of Typic Cryaquents

Slope: 5 to 30 percent
Landform: Colluvial aprons on moraine or moraine
Parent material: Till with colluvium derived from granitoid rock and volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 15 percent subangular cobbles, 2 to 15 percent subrounded boulders, and 2 to 15 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: Present
Natural drainage class: Somewhat poorly drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A1—1 to 3 inches; very fine sandy loam
A2—3 to 9 inches; very stony loamy very fine sand
C1—9 to 17 inches; very stony loamy sand
C2—17 to 60 inches; very stony loamy sand

Minor Components

Xeric Dystrocryepts sandy-skeletal and similar soils

Composition: About 14 percent
Slope: 5 to 30 percent
Landform: Moraine
Vegetative classification: None assigned

Oxyaquic Dystrocryepts sandy-skeletal and similar soils

Composition: About 10 percent
Slope: 0 to 10 percent
Landform: Colluvial fan apron or lateral moraine
Vegetative classification: None assigned

Vitrandic Dystrocryepts sandy-skeletal and similar soils

Composition: About 10 percent
Slope: 5 to 30 percent

Landform: Moraine or mountain slope
Vegetative classification: None assigned

Typic Cryorthents sandy-skeletal and similar soils

Composition: About 5 percent
Slope: 5 to 9 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- Delineations of this map unit lie below areas of rock outcrop and rubble, which concentrate and shed water to this unit by subsurface and overland flow.

232—Canisrocks-Glacierpoint complex, 0 to 25 percent slopes, lateral moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,960 to 10,890 feet (2,122 to 3,320 meters)
Mean annual precipitation: 31 to 49 inches (787 to 1,245 millimeters)
Mean annual air temperature: 38 to 41 degrees F (3 to 5 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—25 percent
Glacierpoint soil—21 percent
Minor components—54 percent

Description of the Canisrocks Soil

Slope: 9 to 25 percent
Landform: Lateral moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles, 5 to 20 percent subrounded stones, and 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.9 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: 85310, Red Fir Forest

Typical profile

Oi—0 to 0 inches; very stony slightly decomposed plant material
A1—0 to 2 inches; loamy sand
A2—2 to 10 inches; stony loamy sand
C1—10 to 24 inches; very stony sand
C2—24 to 60 inches; extremely gravelly sand

Description of the Glacierpoint Soil

Slope: 0 to 25 percent
Landform: Lateral moraine
Parent material: Till with colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 3 to 10 percent subangular cobbles and 10 to 20 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; gravelly slightly decomposed plant material
A—0 to 6 inches; gravelly loamy sand
Bw1—6 to 9 inches; cobbly loamy sand
Bw2—9 to 18 inches; very cobbly loamy fine sand
C1—18 to 31 inches; very cobbly loamy fine sand
C2—31 to 60 inches; very stony loamy fine sand

Minor Components

Vitrandic Dystrocryepts sandy-skeletal and similar soils

Composition: About 14 percent
Slope: 0 to 25 percent
Landform: Lateral moraine
Vegetative classification: 86800, Mountain Hemlock Forest

Xeric Dystrocryepts sandy and similar soils

Composition: About 14 percent
Slope: 0 to 25 percent

Landform: Lateral moraine
Vegetative classification: 85310, Red Fir Forest

Typic Dystrocryepts caorse-loamy and similar soils

Composition: About 13 percent
Slope: 0 to 25 percent
Landform: Lateral moraine
Vegetative classification: 85310, Red Fir Forest

Oxyaquic Dystrocryepts sandy and similar soils

Composition: About 7 percent
Slope: 0 to 10 percent
Landform: Lateral moraine or small mountain valley
Vegetative classification: 86800, Mountain Hemlock Forest

Rock outcrop

Composition: About 3 percent
Slope: 0 to 25 percent
Landform: Lateral moraine or mountain slope
Vegetative classification: None assigned

Typic Cryopsamments and similar soils

Composition: About 2 percent
Slope: 0 to 9 percent
Landform: Moraine
Vegetative classification: 85210, Jeffrey Pine-Fir Forest

Mollic Cryofluvents and similar soils

Composition: About 1 percent
Slope: 0 to 25 percent
Landform: Moraine, mountain slope, or small mountain valley
Vegetative classification: 86800, Mountain Hemlock Forest

Use and Management Considerations

- In comparison with map unit 253, moraines in this map unit generally are either more gently sloping or exhibit a less distinctive morainal form. A few gently sloping moraines exhibit a distinctive form. A good example can be seen about 2 kilometers southeast of Clouds Rest.

234—Rock outcrop-Rubble land association, 0 to 80 percent slopes, metamorphic, cirques, mountainflanks, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 9,305 to 13,065 feet (2,837 to 3,982 meters)
Mean annual precipitation: 39 to 45 inches (991 to 1,143 millimeters)
Mean annual air temperature: 39 to 40 degrees F (about 4 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—35 percent
Rubble land—35 percent
Minor components—30 percent

Description of Rock Outcrop

Slope: 0 to 80 percent
Landform: Cirque or ridge
Parent material: Metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Rubble Land

Slope: 0 to 80 percent
Landform: Cirque
Parent material: Colluvium derived from metamorphic rock and/or rockfall deposits
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Xeric Dystrocryepts sandy-skeletal and similar soils

Composition: About 14 percent
Slope: 0 to 80 percent
Landform: Mountain slope or bedrock joints in mountainside
Vegetative classification: None assigned

Typic Cryorthents sandy-skeletal and similar soils

Composition: About 11 percent

Slope: 0 to 80 percent
Landform: Cirque, mountain slope, small mountain valley, or mountainside
Vegetative classification: None assigned

Glaciers

Composition: About 2 percent
Slope: 0 to 80 percent
Landform: Glacier or mountain valley
Vegetative classification: None assigned

Water

Composition: About 2 percent
Landform: Lake
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Use and Management Considerations

- The types of rock in this map unit are metamorphic with less than 5 percent granitoid rock.
- This map unit has been intensively scoured glacially.
- Mountain flanks are dominated by rock outcrop and frost-shattered rubble (talus and scree).
- Cirques dominantly are northeast-facing and dominated by outcrop and rubble.
- This map unit is prone to snow avalanches on slopes that are about or more than 55 percent.
- This map unit includes areas with slopes that are about or more than 35 percent on cirque floors, bedrock joints, ridge summits, mountain slopes, and small mountain valleys. These areas are too small to be mapped separately at the 1:40,000 scale.

235—Canisrocks-Rock outcrop-Rubble land complex, 30 to 80 percent slopes, mountainflanks, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,725 to 12,210 feet (1,441 to 3,723 meters)
Mean annual precipitation: 37 to 65 inches (940 to 1,651 millimeters)
Mean annual air temperature: 36 to 42 degrees F (2 to 6 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—35 percent
Rock outcrop—30 percent
Rubble land—20 percent
Minor components—15 percent

Description of the Canisrocks Soil

Slope: 30 to 80 percent
Landform: Avalanche chute, colluvial aprons on mountain slope, benches on mountain slope, or backslope on mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 85310, Red Fir Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 3 inches; moderately decomposed plant material
Oa—3 to 4 inches; highly decomposed plant material
A1—4 to 11 inches; loamy coarse sand
A2—11 to 17 inches; loamy coarse sand
C1—17 to 37 inches; loamy coarse sand
C2—37 to 53 inches; very stony loamy coarse sand
C3—53 to 68 inches; cobbly loamy coarse sand

Description of Rock Outcrop

Slope: 30 to 80 percent
Landform: Mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Rubble Land

Slope: 30 to 80 percent
Landform: Colluvial aprons on mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Xeric Dystrocryepts loamy-skeletal and similar soils

Composition: About 10 percent
Slope: 30 to 80 percent
Landform: Mountainside
Vegetative classification: 85310, Red Fir Forest

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 0 to 10 percent
Landform: Fan apron
Vegetative classification: 85310, Red Fir Forest

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- Avalanche tracks, bedrock benches, joints, and fractures are superimposed on mountain flanks.
- Aprons and minor fans lie on the lower footslopes and toeslopes of mountain flanks.
- Mountain flank walls commonly are glacially scoured.
- Frost heave produces abundant rubble (talus and scree).
- This map unit sheds significant amounts of water and snow to lower-lying units.
- The mountain valleys, bedrock benches, and periglacial cirques include slopes that are less than 30 percent.

237—Canisrocks-Glacierpoint-Vitrandic Cryorthents complex, bouldery, 5 to 20 percent slopes, ground moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 7,190 to 10,585 feet (2,192 to 3,227 meters)
Mean annual precipitation: 35 to 51 inches (889 to 1,295 millimeters)
Mean annual air temperature: 36 to 41 degrees F (2 to 5 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—25 percent
Glacierpoint soil—15 percent
Vitrandic Cryorthents—15 percent
Minor components—45 percent

Description of the Canisrocks Soil

Slope: 9 to 20 percent
Landform: Ground moraine, lateral moraine, mountain slope, or recessional moraine
Parent material: Till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded boulders, 2 to 10 percent subrounded stones, and 2 to 10 percent subangular cobbles
Restrictive feature: Bedrock (densic) at a depth of 27 inches
Available water capacity to a depth of 60 inches: About 1.2 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
A1—0 to 3 inches; sandy loam
A2—3 to 8 inches; sandy loam
Bw—8 to 13 inches; very stony sandy loam
C—13 to 27 inches; very cobbly sandy loam
Cd—27 to 60 inches; extremely gravelly sandy loam

Description of the Glacierpoint Soil

Slope: 5 to 20 percent
Landform: Moraine
Parent material: Till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded boulders, 2 to 10 percent subrounded stones, 0 to 10 percent coarse subangular gravel, and 0 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
A1—0 to 4 inches; loamy sand
A2—4 to 17 inches; sandy loam
Bw—17 to 27 inches; very stony loamy sand
C—27 to 60 inches; very stony loamy sand

Description of Vitrandic Cryorthents

Slope: 5 to 20 percent
Landform: Interfluves on ground moraine
Parent material: Till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 15 percent subrounded stones and 2 to 15 percent subrounded boulders
Restrictive feature: Bedrock (densic) at a depth of 12 inches
Available water capacity to a depth of 60 inches: About 0.7 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: None assigned

Typical profile

A—0 to 1 inch; loamy sand
Bw1—1 to 6 inches; loamy coarse sand
Bw2—6 to 12 inches; loamy sand
Cd—12 to 60 inches; very gravelly sandy loam

Minor Components

Humic Dystrocryepts loamy-skeletal and similar soils

Composition: About 13 percent
Slope: 5 to 20 percent
Landform: Moraine
Vegetative classification: None assigned

Oxyaquic Dystrocryepts sandy-skeletal and similar soils

Composition: About 12 percent
Slope: 0 to 10 percent
Landform: Depressional and small fluvial areas on ground moraine
Vegetative classification: None assigned

Xeric Dystrocryepts coarse-loamy over sandy and similar soils

Composition: About 11 percent
Slope: 5 to 20 percent
Landform: Drainageway
Vegetative classification: None assigned

Rock outcrop

Composition: About 7 percent
Slope: 5 to 20 percent
Landform: Ground moraine
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- Most moraines occupy broad mountain valleys.
- Surface stones and boulders occupy less than 10 percent of the ground surface, indicating that most moraines are young (of Tioga age).
- Small (less than about 0.5 hectare) elongated stringer meadows that extend in the direction of glacier movement occupy about 2 percent of this map unit.
- Few surface stones and boulders occur in areas where alluvium overlies till

(see map unit 237 in the Gaylor Lakes area for an example). Oxyaquic soil moisture conditions commonly exist in these areas.

238—Oxyaquic Cryorthents-Canisrocks complex, 0 to 15 percent slopes, ground moraines, wet/dry, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 9,605 to 10,965 feet (2,929 to 3,344 meters)
Mean annual precipitation: 39 to 43 inches (991 to 1,092 millimeters)
Mean annual air temperature: 38 to 40 degrees F (3 to 4 degrees C)
Frost-free period: 15 to 45 days

Composition

Oxyaquic Cryorthents—25 percent
Canisrocks soil—15 percent
Minor components—60 percent

Description of the Oxyaquic Cryorthents

Slope: 0 to 8 percent
Landform: Drainageway or ground moraine
Parent material: Till derived from granitoid rock and volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles, 2 to 10 percent coarse subangular gravel, 2 to 10 percent subrounded stones, and 2 to 10 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.7 inches (low)

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6w
Other vegetative classification: 45220, Dry Subalpine and Alpine Meadow

Typical profile

A1—0 to 3 inches; sandy loam
A2—3 to 13 inches; sandy loam
2C1—13 to 18 inches; sandy loam
2C2—18 to 30 inches; loamy coarse sand
2C3—30 to 60 inches; coarse sand

Description of the Canisrocks Soil

Slope: 9 to 15 percent
Landform: Ground moraine
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel, 0 to 5 percent subrounded stones, and 0 to 5 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 45220, Dry Subalpine and Alpine Meadow

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Minor Components

Oxyaquic Dystrocryepts coarse-loamy over sandy and similar soils

Composition: About 14 percent
Slope: 0 to 15 percent
Landform: Ground moraine
Vegetative classification: None assigned

Vitrandic Cryorthents sandy-skeletal and similar soils

Composition: About 14 percent
Slope: 0 to 15 percent
Landform: Ground moraine
Vegetative classification: 45220, Dry Subalpine and Alpine Meadow

Typic Cryorthents sandy and similar soils

Composition: About 10 percent
Slope: 0 to 9 percent
Landform: Ground moraine
Vegetative classification: 45220, Dry Subalpine and Alpine Meadow

Xeric Dystrocryepts sandy-skeletal and similar soils

Composition: About 10 percent
Slope: 0 to 15 percent
Landform: Ground moraine
Vegetative classification: None assigned

Oxyaquic Cryopsamments and similar soils

Composition: About 7 percent
Slope: 0 to 20 percent
Landform: Drainageways in ground moraine
Vegetative classification: None assigned

Water

Composition: About 4 percent
Landform: Lake
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Use and Management Considerations

- This map unit is characterized by complex surface and subsurface water drainage patterns, which result in a complex distribution of wet and dry areas, and contains xeric and udic moisture regimes.
- This map unit is dominated by riparian and nonriparian grasses, sedges, and forbs, with less than 10 percent tree cover.

239—Crazymule-Canisrocks complex, 0 to 20 percent slopes, ground moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,850 to 10,975 feet (2,089 to 3,346 meters)
Mean annual precipitation: 33 to 47 inches (838 to 1,194 millimeters)
Mean annual air temperature: 35 to 36 degrees F (about 2 degrees C)
Frost-free period: 15 to 45 days

Composition

Crazymule soil—45 percent
Canisrocks soil—34 percent
Minor components—21 percent

Description of the Crazymule Soil

Slope: 5 to 15 percent
Landform: Moraine

Parent material: Till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subrounded stones, 0 to 10 percent subangular cobbles, and 0 to 10 percent coarse subangular gravel
Restrictive feature: Bedrock (densic) at a depth of 23 inches
Available water capacity to a depth of 60 inches: About 1.9 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A1—0 to 5 inches; sandy loam
A2—5 to 13 inches; gravelly sandy loam
Bw—13 to 23 inches; cobbly sandy loam
Cd—23 to 60 inches; very cobbly sandy loam

Description of the Canisrocks Soil

Slope: 9 to 15 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subangular cobbles, 0 to 10 percent coarse subangular gravel, and 0 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material

Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Minor Components

Oxyaquic Dystrocryepts loamy-skeletal and similar soils

Composition: About 14 percent
Slope: 0 to 15 percent
Landform: Ground moraine or small mountain valley
Vegetative classification: 86110, Lodgepole Pine Forest

Vitrandic Cryofluvents sandy-skeletal and similar soils

Composition: About 5 percent
Slope: 0 to 15 percent
Landform: Moraine or small mountain valley
Vegetative classification: 86110, Lodgepole Pine Forest

Typic Cryorthents loamy-skeletal, nonacid and similar soils

Composition: About 2 percent
Slope: 0 to 9 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- This map unit includes as much as 15 percent small (less than 2 hectares) meadows.

241—Canisrocks, 5 to 35 percent slopes, mountain valleys, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,250 to 10,605 feet (1,905 to 3,233 meters)
Mean annual precipitation: 37 to 61 inches (940 to 1,549 millimeters)
Mean annual air temperature: 35 to 35 degrees F (about 2 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—75 percent
Minor components—25 percent

Description of the Canisrocks Soil

Slope: 9 to 35 percent
Landform: Mountain slope or valley floor
Parent material: Alluvium and/or colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent coarse subangular gravel, 0 to 10 percent subrounded stones, and 0 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; stony slightly decomposed plant material
Oe—0 to 1 inch; stony slightly decomposed plant material
A—1 to 4 inches; loamy sand
Bw1—4 to 18 inches; stony sand
Bw2—18 to 28 inches; stony sand
C1—28 to 34 inches; stony sand
C2—34 to 60 inches; stony sand

Minor Components

Oxyaquic Cryorthents and similar soils

Composition: About 10 percent
Slope: 0 to 10 percent
Landform: Drainageway
Vegetative classification: None assigned

Rock outcrop

Composition: About 8 percent
Slope: 5 to 35 percent
Landform: Mountain valley
Vegetative classification: None assigned

Water

Composition: About 2 percent
Landform: Lake
Vegetative classification: None assigned

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 2 percent
Slope: 0 to 10 percent
Landform: Narrow (few meters) fringe around rock outcrop on mountainside
Vegetative classification: None assigned

Typic Cryorthents loamy-skeletal, nonacid and similar soils

Composition: About 2 percent

Slope: 5 to 9 percent
Landform: Valley floor
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore or mountain valley
Other vegetative classification: None assigned

Use and Management Considerations

- Compared with map unit 225, this map unit tends to have deeper and more extensive deposits of till, alluvium, and colluvium. Generally, this unit exhibits less glacial scouring and fewer rock outcrops. It also has somewhat more narrow canyons with steeper V-shaped sides; however, steep-sided, scoured canyons occur in map unit 225.
- Rock outcrop, alluvium, and thin till occur intermittently in valley bottoms. Till deposits do not have distinct morainal features.
- The soils tend to be cooler in the narrow, steep-sided canyons than in the more open valleys.
- Most valley sediments have been significantly reworked by fluvial activity. A good example is near Ireland Lake.

242—Rock outcrop-Canisrocks-Xeric Dystrocryepts complex, 0 to 35 percent slopes, mountain slopes, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park (fig. 11)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,705 to 11,335 feet (2,045 to 3,456 meters)
Mean annual precipitation: 33 to 63 inches (838 to 1,600 millimeters)
Mean annual air temperature: 37 to 50 degrees F (3 to 10 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—30 percent
Canisrocks soil—25 percent
Xeric Dystrocryepts—16 percent
Minor components—29 percent

Description of Rock Outcrop

Slope: 0 to 35 percent
Landform: Mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted

Figure 11.—Rock outcrop is typically scattered between areas of the Canisrocks soil and Xeric Dystrocryepts in map unit 242.

Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Canisrocks Soil

Slope: 9 to 35 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 10 to 20 percent subangular cobbles, 3 to 10 percent coarse subangular gravel, and 10 to 20 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; very stony slightly decomposed plant material
Oe—0 to 1 inch; very stony moderately decomposed plant material
Oa—1 to 1 inch; very stony highly decomposed plant material
A—1 to 7 inches; very stony loamy sand
Bw1—7 to 23 inches; extremely stony loamy sand
Bw2—23 to 32 inches; extremely cobbly loamy sand
C—32 to 60 inches; extremely stony loamy sand

Description of Xeric Dystrocryepts

Slope: 0 to 35 percent
Landform: Moraine, mountain slope, bedrock, or joints in mountainside
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 3 to 10 percent subrounded stones, 5 to 15 percent subangular cobbles, and 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.2 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85210, Jeffrey Pine-Fir Forest; 85310, Red Fir Forest

Typical profile

Oi—0 to 0 inches; stony slightly decomposed plant material
A1—0 to 5 inches; loamy sand
A2—5 to 20 inches; bouldery loamy sand
C1—20 to 35 inches; stony loamy sand
C2—35 to 47 inches; loamy sand
C3—47 to 60 inches; sand

Minor Components

Glacierpoint and similar soils

Composition: About 14 percent
Slope: 15 to 40 percent
Landform: Moraine, mountain slope, bedrock, or joints in mountainside
Vegetative classification: 85310, Red Fir Forest

Humic Dystrocryepts sandy-skeletal and similar soils

Composition: About 4 percent
Slope: 0 to 35 percent
Landform: Mountain slope
Vegetative classification: 85310, Red Fir Forest

Typic Cryorthents coarse-loamy, acid and similar soils

Composition: About 4 percent
Slope: 0 to 9 percent
Landform: Mountain valley
Vegetative classification: None assigned

Vitrandic Cryorthents sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 0 to 35 percent
Landform: Mountain slope or mountain valley
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Humic Lithic Dystroxerepts sandy and similar soils

Composition: About 1 percent
Slope: 0 to 10 percent
Landform: Backslope on mountain slope or narrow bands around rock outcrop in mountainside
Vegetative classification: 86110, Lodgepole Pine Forest

Lithic Cryorthents fragmental and similar soils

Composition: About 1 percent
Slope: 0 to 10 percent

Landform: Mountain slope
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- Thin deposits of till, colluvium, and alluvium occur in mountain valleys and ephemeral drainages.
- Slopes in about 10 percent of the map unit are steeper than 35 percent.
- The soils classify as frigid in burn areas and grade to frigid along the low-elevation margin of the map unit.
- Shallow soils (less than 50 centimeters to a lithic contact) that are near the low-elevation margin of the unit tend to be frigid.

244—Typic Cryorthents-Rubble land-Rock outcrop complex, 15 to 40 percent slopes, moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys, mountain canyons, or mountains
Elevation: 9,760 to 11,520 feet (2,976 to 3,512 meters)
Mean annual precipitation: 41 to 43 inches (1,041 to 1,092 millimeters)
Mean annual air temperature: 37 to 39 degrees F (3 to 4 degrees C)
Frost-free period: 15 to 45 days

Composition

Typic Cryorthents—45 percent
Rubble land—25 percent
Rock outcrop—16 percent
Minor components—14 percent

Description of Typic Cryorthents

Slope: 15 to 40 percent
Landform: Moraine
Parent material: Colluvium derived from granitoid and/or metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles, 2 to 10 percent subrounded stones, and 2 to 10 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low

Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Description of Rubble Land

Slope: 15 to 40 percent
Landform: Glacially scoured valley floor
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Rock Outcrop

Slope: 15 to 40 percent
Landform: Glacially scoured valley floor
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 7 percent
Slope: 0 to 10 percent
Landform: Bedrock dimples in moraine or narrow fringe around bedrock in moraine
Vegetative classification: None assigned

Water

Composition: About 6 percent
Landform: Lake
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Use and Management Considerations

- This map unit is small and sparsely vegetated. It fills the upper reaches of mountain valleys in the eastern part of the survey area, near the Sierra Crest.
- Rubble is entrained in moraines.
- The valley bottoms are generally bouldery, with little alluvium (about 5 percent).

245—Rock outcrop-Canisrocks-Xeric Dystrocryepts association, 0 to 35 percent slopes, mountain valleys, scoured, filled, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys, mountain canyons, or mountains
Elevation: 6,135 to 10,780 feet (1,870 to 3,286 meters)
Mean annual precipitation: 39 to 63 inches (991 to 1,600 millimeters)
Mean annual air temperature: 39 to 40 degrees F (about 4 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—30 percent
Canisrocks soil—22 percent
Xeric Dystrocryepts—20 percent
Minor components—28 percent

Description of Rock Outcrop

Slope: 0 to 35 percent
Landform: Scoured glacial-valley floor or toe of glacial-valley wall
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Canisrocks Soil

Slope: 9 to 35 percent
Landform: Flood plain or mountain slope
Parent material: Colluvium from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles, 2 to 10 percent subrounded boulders, and 2 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Description of Xeric Dystrocryepts

Slope: 0 to 35 percent
Landform: Lake terrace, lateral moraine, or stream terrace
Parent material: Alluvium and/or till derived from granitoid rock with some metasedimentary deposits
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 10 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.3 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

A—0 to 2 inches; sandy loam
BA—2 to 4 inches; sandy loam
Bw—4 to 11 inches; fine sandy loam
C—11 to 60 inches; very fine sandy loam

Minor Components

Humic Dystroxerepts sandy, frigid and similar soils

Composition: About 5 percent
Slope: 0 to 35 percent
Landform: Lake terrace, lateral moraine, or stream terrace
Vegetative classification: None assigned

Oxyaquic Cryofluvents sandy and similar soils

Composition: About 5 percent
Slope: 0 to 8 percent
Landform: Flood plain or wet meadows on mountain valley
Vegetative classification: 45120, Dry Montane Meadow

Oxyaquic Cryofluvents coarse-loamy and similar soils

Composition: About 5 percent
Slope: 0 to 8 percent
Landform: Flood plain or wet meadows on mountain valley
Vegetative classification: 45120, Dry Montane Meadow

Vitrandic Cryofluvents sandy over loamy and similar soils

Composition: About 4 percent
Slope: 0 to 35 percent
Landform: Flood plain or pond margins on mountain valley
Vegetative classification: 86110, Lodgepole Pine Forest

Typic Cryorthents coarse-loamy, acid and similar soils

Composition: About 3 percent
Slope: 0 to 9 percent
Landform: Flood plain
Vegetative classification: None assigned

Xeric Dystrocryepts loamy over sandy or sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 0 to 35 percent
Landform: Lake terrace, lateral moraine, or stream terrace
Vegetative classification: 86110, Lodgepole Pine Forest

Water

Composition: About 2 percent
Landform: Lake
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- The types of rock in this map unit are granitoid with 5 percent metasedimentary.
- Most valley sides have been glacially scoured, exposing bedrock.
- Valley bottoms exhibit intermittent glacially scoured rock outcrop and accumulations of till and alluvium, with minor amounts of colluvium and eolian deposits, mainly on small flood plains.
- Ground moraines exhibit little or no distinct form.
- Except for small wet meadows (assumed to be alluvial), flood plains, stream terraces, lake terraces, and glacial deposits cannot be separated at the selected scale of mapping.
- The soil temperature regime merges into frigid at the low elevations (less than 7,200 feet/less than 2,195 meters).

246—Rock outcrop, domes, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,235 to 9,690 feet (1,901 to 2,954 meters)
Mean annual precipitation: 33 to 57 inches (838 to 1,448 millimeters)
Mean annual air temperature: 46 to 46 degrees F (about 8 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—90 percent
Minor components—10 percent

Description of Rock Outcrop

Landform: Dome
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted

Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Typic Cryorthents sandy-skeletal and similar soils

Composition: About 8 percent
Slope: 5 to 30 percent
Landform: Feet of domes on mountain slope, bedrock fractures in mountain slope, or bedrock joints in mountain slope
Vegetative classification: None assigned

Lithic Dystrocryepts and similar soils

Composition: About 2 percent
Slope: 0 to 10 percent
Landform: Bedrock joints and fractures in mountain slope or bedrock dimples in mountain slope
Vegetative classification: None assigned

247—Canisrocks-Xeric Dystrocryepts association, 5 to 30 percent slopes, mountain valleys, moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,115 to 10,065 feet (1,864 to 3,069 meters)
Mean annual precipitation: 35 to 63 inches (889 to 1,600 millimeters)
Mean annual air temperature: 38 to 51 degrees F (3 to 10 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—20 percent
Xeric Dystrocryepts—20 percent
Minor components—60 percent

Description of the Canisrocks Soil

Slope: 9 to 30 percent
Landform: Moraine, mountainside, or stream terrace
Parent material: Alluvium and/or colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded boulders,

2 to 10 percent subrounded stones, 2 to 10 percent coarse subangular gravel, and 2 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.2 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85310, Red Fir Forest

Typical profile

Oi—0 to 2 inches; bouldery slightly decomposed plant material
A—2 to 8 inches; bouldery loamy coarse sand
Bw1—8 to 36 inches; bouldery loamy coarse sand
Bw2—36 to 45 inches; bouldery coarse sand
C—45 to 60 inches; very bouldery coarse sand

Description of Xeric Dystrocryepts

Slope: 5 to 30 percent
Landform: Moraine, mountainside, or stream terrace
Parent material: Alluvium and/or colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85310, Red Fir Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oa—1 to 2 inches; highly decomposed plant material
A1—2 to 10 inches; loamy sand
A2—10 to 21 inches; loamy sand
A3—21 to 31 inches; loamy sand
A4—31 to 42 inches; loamy sand

C1—42 to 58 inches; loamy sand
C2—58 to 60 inches; very gravelly loamy sand

Minor Components

Humic Dystrocryepts coarse-loamy and similar soils

Composition: About 11 percent
Slope: 5 to 30 percent
Landform: Moraine, mountain slope, or stream terrace
Vegetative classification: 86110, Lodgepole Pine Forest; 85310, Red Fir Forest

Oxyaquic Dystrocryepts sandy and similar soils

Composition: About 11 percent
Slope: 2 to 30 percent
Landform: Moraine, mountain slope, or valley floor
Vegetative classification: 85310, Red Fir Forest

Rock outcrop

Composition: About 11 percent
Slope: 5 to 30 percent
Landform: Moraine or mountainside
Vegetative classification: None assigned

Typic Cryorthents sandy and similar soils

Composition: About 11 percent
Slope: 5 to 9 percent
Landform: Floors on mountain valley
Vegetative classification: 86110, Lodgepole Pine Forest

Typic Dystrocryepts sandy and similar soils

Composition: About 3 percent
Slope: 5 to 30 percent
Landform: Floors on mountain valley
Vegetative classification: 86110, Lodgepole Pine Forest

Xeric Dystrocryepts sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 5 to 30 percent
Landform: Moraine, mountainside, or stream terrace
Vegetative classification: 86110, Lodgepole Pine Forest

Xeric Dystrocryepts coarse-loamy and similar soils

Composition: About 3 percent
Slope: 5 to 30 percent
Landform: Moraine, mountainside, or stream terrace
Vegetative classification: 85310, Red Fir Forest

Histic Cryaquepts sandy and similar soils

Composition: About 2 percent
Slope: 2 to 10 percent
Landform: Valley floor
Vegetative classification: 86110, Lodgepole Pine Forest

Typic Cryopsamments and similar soils

Composition: About 1 percent
Slope: 3 to 10 percent
Landform: Ground moraine or bottom on valley floor
Vegetative classification: 86110, Lodgepole Pine Forest

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore or mountain valley
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Lithic Cryopsamments and similar soils

Composition: About 1 percent
Slope: 5 to 30 percent
Landform: Moraine or area adjacent to rock outcrop on mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Vitrandic Dystrocryepts coarse-loamy and similar soils

Composition: About 1 percent
Slope: 5 to 30 percent
Landform: Moraine, mountainside, or stream terrace
Vegetative classification: 85310, Red Fir Forest

Use and Management Considerations

- Lateral and ground moraines often are indistinguishable at the 1:40,000 scale, at which this survey was made.
- Moraines occupy about 40 percent of the area in mountain valleys.
- Outwash, till, and recent alluvium occupy most of mountain valleys, with only about 5 percent exposed bedrock overall.
- Mountain valleys generally are forested by a dense cover of lodgepole pine.
- Mountain valley floors support small meadows.

248—Canisrocks-Rock outcrop-Glacierpoint complex, 30 to 70 percent slopes, mountain slopes, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,515 to 10,850 feet (1,987 to 3,308 meters)
Mean annual precipitation: 37 to 63 inches (940 to 1,600 millimeters)
Mean annual air temperature: 38 to 51 degrees F (3 to 10 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—35 percent

Rock outcrop—30 percent
Glacierpoint soil—15 percent
Minor components—20 percent

Description of the Canisrocks Soil

Slope: 30 to 70 percent
Landform: Mountain slope or structural bench
Parent material: Colluvium and/or residuum derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 15 percent subangular cobbles, 2 to 15 percent coarse subangular gravel, 0 to 5 percent subrounded boulders, and 2 to 15 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: 85310, Red Fir Forest; 86110, Lodgepole Pine Forest; 85120, Western White Pine Forest

Typical profile

Oi—0 to 1 inch; stony slightly decomposed plant material
Oe—1 to 2 inches; stony moderately decomposed plant material
Oa—2 to 2 inches; stony highly decomposed plant material
A1—2 to 5 inches; stony loamy coarse sand
A2—5 to 13 inches; stony loamy coarse sand
C1—13 to 32 inches; very stony coarse sand
C2—32 to 60 inches; very stony coarse sand

Description of Rock Outcrop

Slope: 30 to 70 percent
Landform: North-facing mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Glacierpoint Soil

Slope: 30 to 70 percent
Landform: Mountain slope, bedrock joints in mountainside, or structural bench
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 20 percent coarse subangular gravel, 2 to 20 percent subrounded boulders, 5 to 20 percent subrounded stones, and 5 to 20 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.1 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: 85210, Jeffrey Pine-Fir Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A1—1 to 4 inches; stony loamy sand
A2—4 to 16 inches; very stony loamy sand
Bw—16 to 27 inches; very stony loamy sand
C1—27 to 46 inches; very stony sand
C2—46 to 64 inches; very stony sand

Minor Components

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 5 percent
Slope: 0 to 10 percent
Landform: Mountain slope
Other vegetative classification: None assigned

Rubble land

Composition: About 5 percent
Slope: 30 to 70 percent
Landform: Mountain slope
Vegetative classification: None assigned

Xeric Dystrocryepts fragmental and similar soils

Composition: About 4 percent

Slope: 30 to 70 percent
Landform: Mountain slope
Vegetative classification: None assigned

Dystric Xerorthents sandy, frigid and similar soils

Composition: About 3 percent
Slope: 30 to 70 percent
Landform: Mountain slope
Vegetative classification: None assigned

Typic Dystroxerepts coarse-loamy, frigid and similar soils

Composition: About 3 percent
Slope: 30 to 70 percent
Landform: Mountain slope
Vegetative classification: 85300, Upper Montane Fir Forest

Use and Management Considerations

- This map unit includes areas with slopes that are less than 30 percent, typically on structural benches.
- The soil temperature regime grades to frigid at the lowest elevations.
- Till deposits are common on structural benches.
- Map units of lateral moraine often lie at the foot of the mountain slopes.

249—Rock outcrop-Canisrocks complex, 30 to 70 percent slopes, mountain slopes, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,275 to 11,485 feet (1,914 to 3,502 meters)
Mean annual precipitation: 37 to 63 inches (940 to 1,600 millimeters)
Mean annual air temperature: 36 to 40 degrees F (2 to 4 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—45 percent
Canisrocks soil—30 percent
Minor components—25 percent

Description of Rock Outcrop

Slope: 30 to 70 percent
Landform: Mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Canisrocks Soil

Slope: 30 to 70 percent
Landform: Nivational cirque, mountain slope, mountain valley, mountainside, or ridge
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 85310, Red Fir Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 3 inches; moderately decomposed plant material
Oa—3 to 4 inches; highly decomposed plant material
A1—4 to 11 inches; loamy coarse sand
A2—11 to 17 inches; loamy coarse sand
C1—17 to 37 inches; loamy coarse sand
C2—37 to 53 inches; very stony loamy coarse sand
C3—53 to 68 inches; cobbly loamy coarse sand

Minor Components

Vitrandic Cryorthents sandy-skeletal and similar soils

Composition: About 10 percent
Slope: 30 to 70 percent
Landform: Mountain slope, narrow mountain valley, or bedrock joints in mountainside
Vegetative classification: 85310, Red Fir Forest

Glacierpoint and similar soils

Composition: About 5 percent
Slope: 30 to 70 percent
Landform: Moraine, mountain slope, or bedrock joints in mountainside
Vegetative classification: None assigned

Humic Lithic Dystrocryepts sandy and similar soils

Composition: About 4 percent
Slope: 0 to 10 percent
Landform: Areas closely associated with rock outcrop on mountain slope
Vegetative classification: 85120, Western White Pine Forest; 86800, Mountain Hemlock Forest

Vitrandic Dystrocryepts sandy-skeletal and similar soils

Composition: About 4 percent
Slope: 30 to 70 percent
Landform: Moraine, mountain slope, or bedrock joints in mountainside
Vegetative classification: 86800, Mountain Hemlock Forest

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- The types of rock in this map unit are granitoid with minor (about 5 percent) amounts of metamorphic rock and mafic rock (most notably near Benson Lake).
- This map unit includes areas with slopes that are less than 30 percent (5 percent of map unit).
- Brush grows primarily in joints and on concave sites.
- Most of this map unit has been glacially scoured.
- Compared with map unit 268, bedrock in this unit is less strongly jointed and fractured.

250—Canisrocks-Xeric Dystrocryepts association, 5 to 40 percent slopes, mountain valleys, moraines, avalanches, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 8,510 to 10,285 feet (2,594 to 3,136 meters)
Mean annual precipitation: 31 to 45 inches (787 to 1,143 millimeters)
Mean annual air temperature: 37 to 39 degrees F (3 to 4 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—47 percent
Xeric Dystrocryepts—35 percent
Minor components—18 percent

Description of the Canisrocks Soil

Slope: 9 to 40 percent
Landform: Avalanche chute, moraine, or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent coarse subangular gravel, 0 to 10 percent subangular cobbles, and 0 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Description of Xeric Dystrocryepts

Slope: 5 to 40 percent
Landform: Ground moraine
Parent material: Till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subangular cobbles, 0 to 5 percent coarse subangular gravel, and 0 to 5 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 9 inches; very stony fine sandy loam
Bw1—9 to 19 inches; very stony sandy loam
Bw2—19 to 32 inches; extremely cobbly fine sandy loam
Cd—32 to 60 inches; extremely cobbly loamy coarse sand

Minor Components

Rubble land

Composition: About 10 percent
Slope: 5 to 40 percent
Landform: Backslope on moraine
Vegetative classification: None assigned

Oxyaquic Dystrocryepts loamy-skeletal and similar soils

Composition: About 4 percent
Slope: 5 to 40 percent
Landform: Ground moraine or bottom of mountain valley
Vegetative classification: 86110, Lodgepole Pine Forest

Typic Cryorthents coarse-loamy, acid and similar soils

Composition: About 3 percent
Slope: 5 to 9 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Landform: Mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Mountain valleys are dominated by glacial deposits.
- This map unit has significant amounts of colluvium from snow and debris avalanches.

251—Glacierpoint-Typic Cryorthents complex, 30 to 65 percent slopes, mountain slopes, lateral moraines, aprons, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,470 to 10,415 feet (1,974 to 3,176 meters)

Mean annual precipitation: 33 to 63 inches (838 to 1,600 millimeters)
Mean annual air temperature: 35 to 43 degrees F (2 to 6 degrees C)
Frost-free period: 15 to 45 days

Composition

Glacierpoint soil—30 percent
Typic Cryorthents—20 percent
Minor components—50 percent

Description of the Glacierpoint Soil

Slope: 30 to 65 percent
Landform: Lateral moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded boulders, 2 to 10 percent coarse subangular gravel, 2 to 10 percent subangular cobbles, and 2 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.1 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84240, Sierra White Fir Forest; 85310, Red Fir Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A1—1 to 4 inches; stony loamy sand
A2—4 to 16 inches; very stony loamy sand
Bw—16 to 27 inches; very stony loamy sand
C1—27 to 46 inches; very stony very fine sand
C2—46 to 64 inches; very stony very fine sand

Description of Typic Cryorthents

Slope: 30 to 65 percent
Landform: Backslope on ground moraine or backslope on mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded stones, 2 to 10 percent coarse subangular gravel, and 2 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.0 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84240, Sierra White Fir Forest; 85310, Red Fir Forest; 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; stony slightly decomposed plant material
A—0 to 4 inches; very stony sandy loam
AC—4 to 10 inches; very stony sandy loam
C1—10 to 16 inches; very stony sandy loam
C2—16 to 30 inches; very stony sandy loam
C3—30 to 60 inches; very stony sandy loam

Minor Components

Rubble land

Composition: About 10 percent
Slope: 30 to 65 percent
Landform: Lateral moraine or mountain slope
Vegetative classification: None assigned

Vitrandic Dystrocryepts loamy-skeletal and similar soils

Composition: About 10 percent
Slope: 30 to 65 percent
Landform: Backslope on ground moraine or backslope on mountain slope
Vegetative classification: 86800, Mountain Hemlock Forest; 86110, Lodgepole Pine Forest

Humic Dystrocryepts sandy-skeletal and similar soils

Composition: About 5 percent
Slope: 30 to 65 percent
Landform: Backslope on ground moraine or backslope on mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Oxyaquic Dystrocryepts sandy, Oxyaquic Dystrocryepts sandy-skeletal, and similar soils

Composition: About 5 percent
Slope: 30 to 65 percent
Landform: Avalanche chute, periglacial cirque, drainageway, moraine, or mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest; 85310, Red Fir Forest

Humic Lithic Dystrocryepts coarse-loamy and similar soils

Composition: About 3 percent
Slope: 0 to 10 percent

Landform: Morainal drainageway near rock outcrop on mountain slope
Vegetative classification: 76310, Riparian Woodland

Rock outcrop

Composition: About 3 percent
Slope: 30 to 65 percent
Landform: Mountain slope
Vegetative classification: None assigned

Typic Cryopsamments and similar soils

Composition: About 3 percent
Slope: 30 to 65 percent
Landform: Backslope on moraine
Vegetative classification: 85300, Upper Montane Fir Forest

Vitrandic Cryorthents sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 30 to 65 percent
Landform: Fan apron or mountain slope
Vegetative classification: 86800, Mountain Hemlock Forest

Xeric Dystrocryepts avalanche tracks, sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 40 to 65 percent
Landform: Avalanche tracks on mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- Compared with map unit 211, map unit 251 is steeper, more dissected by fluvial processes, and more marked by avalanche tracks.
- This map unit has an inclusion (about 2 percent) with slopes of more than 30 percent.
- A frigid soil temperature regime occurs at the low-elevation margin of this map unit.
- This map unit is subject to avalanches, especially on slopes that are about or more than 55 percent. In Virginia Canyon, avalanche tracks can comprise one-third to nearly one-half of very steep map unit delineations.

252—Rock outcrop-Canisrocks-Xeric Dystrocryepts complex, 5 to 45 percent slopes, moraines, mountain slopes, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park (fig. 12)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,955 to 10,740 feet (1,816 to 3,274 meters)
Mean annual precipitation: 33 to 65 inches (838 to 1,651 millimeters)
Mean annual air temperature: 41 to 48 degrees F (5 to 9 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—20 percent

Figure 12.—A trail to McGurk Meadow winds through map unit 252.

Canisrocks soil—15 percent
Xeric Dystrocryepts—15 percent
Minor components—50 percent

Description of Rock Outcrop

Slope: 5 to 45 percent
Landform: Mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Canisrocks Soil

Slope: 9 to 45 percent
Landform: Avalanche chute, moraine, mountain slope, or crests on ridge

Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles, 2 to 10 percent subrounded boulders, and 2 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Description of Xeric Dystrocryepts

Slope: 5 to 45 percent
Landform: Moraine, mountain slope, or bedrock joints in mountainside
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subrounded boulders, 2 to 10 percent subrounded stones, 2 to 10 percent subangular cobbles, and 2 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.0 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e

Other vegetative classification: 86110, Lodgepole Pine Forest; 84232, White Fir Mixed Coniferous Forest; 85310, Red Fir Forest

Typical profile

A1—0 to 3 inches; loamy sand
A2—3 to 15 inches; gravelly loamy sand
A3—15 to 35 inches; gravelly loamy sand
C1—35 to 47 inches; very stony loamy sand
C2—47 to 61 inches; very stony loamy sand

Minor Components

Glacierpoint and similar soils

Composition: About 10 percent
Slope: 0 to 35 percent
Landform: Moraine, mountain slope, or bedrock joints in mountainside
Vegetative classification: 86110, Lodgepole Pine Forest; 84232, White Fir Mixed Coniferous Forest; 85210, Jeffrey Pine-Fir Forest

Vitrandic Cryorthents sandy-skeletal and similar soils

Composition: About 5 percent
Slope: 0 to 35 percent
Landform: Moraine or mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Oxyaquic Dystrocryepts sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 2 to 35 percent
Landform: Moraine or small mountain valley
Vegetative classification: 86110, Lodgepole Pine Forest; 85120, Western White Pine Forest; 85310, Red Fir Forest

Vitrandic Dystrocryepts coarse-loamy and similar soils

Composition: About 3 percent
Slope: 9 to 35 percent
Landform: Moraine, mountain slope, or bedrock joints in mountainside
Vegetative classification: 86110, Lodgepole Pine Forest

Xeric Dystrocryepts loamy-skeletal and similar soils

Composition: About 3 percent
Slope: 0 to 35 percent
Landform: Moraine, mountain slope, or bedrock joints in mountainside
Vegetative classification: 85310, Red Fir Forest

Humic Lithic Dystrocryepts sandy and similar soils

Composition: About 2 percent
Slope: 0 to 10 percent
Landform: Mountain slope or bedrock dimples in mountainside
Vegetative classification: 86110, Lodgepole Pine Forest; 85120, Western White Pine Forest; 85310, Red Fir Forest

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 2 percent
Slope: 0 to 10 percent

Landform: Mountain slope
Vegetative classification: None assigned

Typic Cryopsamments and similar soils

Composition: About 2 percent
Slope: 0 to 15 percent
Landform: Mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Typic Cryorthents sandy and similar soils

Composition: About 2 percent
Slope: 0 to 35 percent
Landform: Avalanche chute, moraine, mountain slope, or crests on ridge
Vegetative classification: 86110, Lodgepole Pine Forest

Typic Cryorthents loamy-skeletal, nonacid and similar soils

Composition: About 2 percent
Slope: 0 to 35 percent
Landform: Avalanche chute, moraine, mountain slope, or crests on ridge
Vegetative classification: 85310, Red Fir Forest

Vitrandic Dystrocryepts sandy and similar soils

Composition: About 2 percent
Slope: 0 to 35 percent
Landform: Moraine, mountain slope, or bedrock joints in mountainside
Vegetative classification: 45210, Wet Subalpine and Alpine Meadow

Waterwheel and similar soils

Composition: About 2 percent
Slope: 10 to 35 percent
Landform: Mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Xeric Dystrocryepts fragmental and similar soils

Composition: About 2 percent
Slope: 0 to 35 percent
Landform: Moraine, mountain slope, or bedrock joints in mountainside
Vegetative classification: 85310, Red Fir Forest

Xeric Haplocryalfs coarse-loamy and similar soils

Composition: About 2 percent
Slope: 0 to 35 percent
Landform: Moraine
Vegetative classification: 85310, Red Fir Forest

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Lithic Cryopsamments and similar soils

Composition: About 1 percent
Slope: 0 to 35 percent
Landform: Mountain slope or crests on ridge
Vegetative classification: 86110, Lodgepole Pine Forest

Lithic Xeropsamments and similar soils

Composition: About 1 percent
Slope: 0 to 35 percent
Landform: Areas adjacent to rock outcrop on mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Lithic Xerorthents frigid and similar soils

Composition: About 1 percent
Slope: 0 to 35 percent
Landform: Areas adjacent to rock outcrop on mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Oxyaquic Dystrocryepts sandy and similar soils

Composition: About 1 percent
Slope: 0 to 35 percent
Landform: Moraine or small mountain valley
Vegetative classification: 45210, Wet Subalpine and Alpine Meadow

Oxyaquic Dystrocryepts coarse-loamy and similar soils

Composition: About 1 percent
Slope: 0 to 35 percent
Landform: Moraine or small mountain valley
Vegetative classification: 86200, Sierra Mixed Subalpine Coniferous Forest

Rubble land

Composition: About 1 percent
Slope: 0 to 35 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- Moraines in this map unit are mostly remnants of ground, lateral, and medial moraines that do not have readily distinguishable form because of long-term erosion. The remaining till commonly is thinner than that in more distinctive moraines (such as those in map unit 227), although thicknesses could not be measured for this survey. The moraines grade to mountain slopes, which are mantled with colluvium overlying residuum.
- Most areas of this map unit are covered in forests of lodgepole pine and red fir.
- This map unit includes soils with a frigid temperature regime at the low elevations.

253—Canisrocks-Glacierpoint-Humic Dystrocryepts complex, 15 to 55 percent slopes, lateral moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,895 to 10,130 feet (1,797 to 3,089 meters)
Mean annual precipitation: 31 to 61 inches (787 to 1,549 millimeters)
Mean annual air temperature: 44 to 44 degrees F (about 7 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—25 percent
Glacierpoint soil—18 percent
Humic Dystrocryepts—15 percent
Minor components—42 percent

Description of the Canisrocks Soil

Slope: 15 to 55 percent
Landform: Avalanche chute, lateral moraine, or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 15 percent coarse subangular gravel, 2 to 15 percent subangular cobbles, 0 to 5 percent subrounded boulders, and 2 to 15 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.9 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 85310, Red Fir Forest; 86800, Mountain Hemlock Forest

Typical profile

Oi—0 to 1 inch; stony slightly decomposed plant material
Oe—1 to 2 inches; stony moderately decomposed plant material
A1—2 to 3 inches; sandy loam
A2—3 to 11 inches; very cobbly loamy sand
A3—11 to 23 inches; very cobbly loamy sand
C1—23 to 35 inches; extremely bouldery loamy sand
C2—35 to 60 inches; extremely stony loamy sand

Description of the Glacierpoint Soil

Slope: 15 to 55 percent
Landform: Lateral moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 15 percent coarse subangular gravel, 2 to 15 percent subangular cobbles, 2 to 10 percent subrounded stones, and 0 to 10 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.1 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86800, Mountain Hemlock Forest; 86110, Lodgepole Pine Forest

Typical profile

Oa—0 to 0 inches; bouldery highly decomposed plant material
A1—0 to 4 inches; very stony fine sandy loam
A2—4 to 7 inches; very stony fine sandy loam
BA—7 to 11 inches; very bouldery sandy loam
Bw—11 to 19 inches; extremely bouldery coarse sandy loam
C—19 to 60 inches; extremely bouldery loamy coarse sand

Description of Humic Dystrocryepts

Slope: 15 to 55 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles, 2 to 10 percent subrounded stones, and 2 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.6 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 86800, Mountain Hemlock Forest; 85310, Red Fir Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
Oa—1 to 2 inches; highly decomposed plant material
A—2 to 16 inches; very stony sandy loam
Bdw—16 to 30 inches; extremely stony loamy sand
Cd—30 to 60 inches; extremely stony loamy sand

Minor Components

Vitrandic Dystrocryepts loamy-skeletal and similar soils

Composition: About 10 percent
Slope: 15 to 55 percent
Landform: Lateral moraine or mountain slope
Vegetative classification: 86800, Mountain Hemlock Forest

Xeric Dystrocryepts sandy and similar soils

Composition: About 8 percent
Slope: 15 to 55 percent
Landform: Lateral moraine, mountain slope, or small flood plains in mountain valley
Vegetative classification: 85310, Red Fir Forest; 86110, Lodgepole Pine Forest

Xeric Dystrocryepts coarse-loamy and similar soils

Composition: About 7 percent
Slope: 15 to 55 percent
Landform: Lateral moraine, mountain slope, or small flood plains on mountain valley
Vegetative classification: 84240, Sierra White Fir Forest

Oxyaquic Dystrocryepts loamy-skeletal and similar soils

Composition: About 5 percent
Slope: 2 to 55 percent
Landform: Lateral moraine or small mountain valley
Vegetative classification: 85210, Jeffrey Pine-Fir Forest

Vitrandic Cryorthents sandy-skeletal and similar soils

Composition: About 5 percent
Slope: 15 to 55 percent
Landform: Lateral moraine or mountain slope
Vegetative classification: 86800, Mountain Hemlock Forest

Typic Cryopsamments and similar soils

Composition: About 3 percent
Slope: 2 to 9 percent
Landform: Lateral moraine
Vegetative classification: 85310, Red Fir Forest

Craneflat and similar soils

Composition: About 2 percent
Slope: 15 to 55 percent

Landform: Moraine or mountain slope
Vegetative classification: 85110, Jeffrey Pine Forest

Xeric Dystrocryepts sandy-skeletal and similar soils

Composition: About 2 percent
Slope: 15 to 55 percent
Landform: Small flood plains on mountain valley
Vegetative classification: 86800, Mountain Hemlock Forest; 86110, Lodgepole Pine Forest

Use and Management Considerations

- Lateral moraines in this map unit are more distinct and less eroded than those in map unit 232.

256—Craneflat-Rock outcrop-Rubble land-Waterwheel association, 30 to 80 percent slopes, mountainflanks, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,795 to 8,775 feet (1,157 to 2,675 meters)
Mean annual precipitation: 33 to 49 inches (838 to 1,245 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Craneflat soil—25 percent
Rock outcrop—25 percent
Rubble land—20 percent
Waterwheel soil—20 percent
Minor components—10 percent

Description of the Craneflat Soil

Slope: 30 to 75 percent
Landform: Fan, mountain slope, aprons on mountainside, or mountainside
Parent material: Colluvium derived from granitoid rock with or without volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 3 to 10 percent subrounded stones, 3 to 10 percent subangular cobbles, and 3 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.0 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 71120, Black Oak Woodland

Typical profile

Oi—0 to 1 inch; stony slightly decomposed plant material
Oe—1 to 2 inches; stony moderately decomposed plant material
A1—2 to 7 inches; stony loamy sand
A2—7 to 13 inches; very stony loamy sand
C—13 to 60 inches; very stony loamy sand

Description of Rock Outcrop

Slope: 30 to 80 percent
Landform: Mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Rubble Land

Slope: 30 to 80 percent
Landform: Mountain slope or mountainside
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Waterwheel Soil

Slope: 30 to 60 percent
Landform: Fan, mountain slope, mountainside, or aprons on mountainside
Parent material: Colluvium derived from granitoid rock with or without volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 10 to 20 percent subrounded boulders, 10 to 25 percent subrounded stones, and 5 to 15 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 0.9 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: 71120, Black Oak Woodland; 81320, Canyon Live Oak Forest

Typical profile

Oi—0 to 1 inch; very bouldery slightly decomposed plant material
Oe—1 to 2 inches; very bouldery moderately decomposed plant material
Oa—2 to 2 inches; very bouldery highly decomposed plant material
A—2 to 6 inches; very stony loamy coarse sand
Bw1—6 to 14 inches; very stony loamy sand
Bw2—14 to 28 inches; very stony coarse sand
C—28 to 60 inches; extremely bouldery coarse sand

Minor Components

Badgerpass and similar soils

Composition: About 5 percent
Slope: 30 to 45 percent
Landform: Mountain slope, aprons on mountainside, or mountainside
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Humic Lithic Dystrocryepts loamy-skeletal and similar soils

Composition: About 5 percent
Slope: 0 to 10 percent
Landform: Bedrock benches on mountainside
Vegetative classification: 85110, Jeffrey Pine Forest

Use and Management Considerations

- Rock falls and debris avalanches occur in the steepest areas of the map unit.
- Rubble occurs as frost shatter on mountain flanks and as talus on aprons, avalanches, and fans.
- The soils grade into the mesic temperature regime at the low elevations.

257—Badgerpass-Oxyaquic Dystroxerepts association, 0 to 15 percent slopes, mountain valley floors, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park

Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,535 to 7,050 feet (1,688 to 2,149 meters)
Mean annual precipitation: 39 to 43 inches (991 to 1,092 millimeters)
Mean annual air temperature: 49 to 51 degrees F (9 to 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Badgerpass soil—55 percent
Oxyaquic Dystroxerepts—35 percent
Minor components—10 percent

Description of the Badgerpass Soil

Slope: 2 to 15 percent
Landform: Floors on mountain valley or terrace
Parent material: Alluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.4 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85110, Jeffrey Pine Forest; 84232, White Fir Mixed Coniferous Forest; 85200, Upper Montane Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 6 inches; loamy sand
A2—6 to 13 inches; loamy sand
Bw1—13 to 21 inches; loamy sand
Bw2—21 to 32 inches; gravelly loamy sand
C1—32 to 50 inches; loamy sand
C2—50 to 60 inches; cobbly loamy sand

Description of Oxyaquic Dystroxerepts

Slope: 0 to 15 percent
Landform: Floors on mountain valley or flood plains on mountain valley
Parent material: Alluvium and/or colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 3 percent coarse subangular gravel

Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 8.9 inches (high)

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 45100, Montane Meadow

Typical profile

A—0 to 11 inches; loam
Bw1—11 to 19 inches; loam
Bw2—19 to 32 inches; gravelly clay loam
C1—32 to 43 inches; loam
C2—43 to 60 inches; sandy clay loam

Minor Components

Histosols frigid and similar soils

Composition: About 5 percent
Landform: Mountain valley
Vegetative classification: None assigned

Oxyaquic Dystroxerepts coarse-loamy and similar soils

Composition: About 3 percent
Slope: 0 to 15 percent
Landform: Floors on mountain valley or flood plains on mountain valley
Vegetative classification: 45100, Montane Meadow

Rock outcrop

Composition: About 2 percent
Slope: 0 to 15 percent
Landform: Mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- This map unit is dominated by mountain meadows but also supports mixed conifer forests, most notably in Little Yosemite Valley (fig. 13).

258—Typic Dystroxerepts-Badgerpass-Dystric Xerorthents complex, 15 to 45 percent slopes, mountain slopes, moraines, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains

Figure 13.—Soil on Crane Flat has a dark colored A horizon, which indicates a high content of organic matter.

Elevation: 4,475 to 8,195 feet (1,364 to 2,498 meters)
Mean annual precipitation: 37 to 49 inches (940 to 1,245 millimeters)
Mean annual air temperature: 50 to 51 degrees F (about 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Typic Dystroxerepts—25 percent
Badgerpass soil—20 percent
Dystric Xerorthents—20 percent
Minor components—35 percent

Description of Typic Dystroxerepts

Slope: 15 to 45 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 7.9 inches (high)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None

Surface runoff: Low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
Oa—2 to 2 inches; highly decomposed plant material
A—2 to 3 inches; loamy coarse sand
AB—3 to 11 inches; fine sandy loam
Bw—11 to 26 inches; fine sandy loam
C1—26 to 43 inches; fine sandy loam
C2—43 to 60 inches; very bouldery fine sandy loam

Description of the Badgerpass Soil

Slope: 15 to 45 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.0 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85310, Red Fir Forest; 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 7 inches; loamy coarse sand
AC—7 to 18 inches; loamy coarse sand
C1—18 to 37 inches; sand
C2—37 to 55 inches; sand
C3—55 to 67 inches; gravelly coarse sand

Description of Dystric Xerorthents

Slope: 15 to 45 percent
Landform: Ephemeral drainageway, moraine, or mountain slope

Parent material: Colluvium and/or till and/or minor alluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.3 inches (very low)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; stony slightly decomposed plant material
Oe—1 to 2 inches; stony moderately decomposed plant material
Oa—2 to 3 inches; stony highly decomposed plant material
A—3 to 11 inches; stony loamy sand
Bw—11 to 24 inches; stony loamy fine sand
C1—24 to 38 inches; very stony loamy sand
C2—38 to 60 inches; very stony loamy fine sand

Minor Components

Dystric Xerorthents sandy and similar soils

Composition: About 11 percent
Slope: 15 to 45 percent
Landform: Ephemeral drainageway, moraine, or mountain slope
Vegetative classification: 85300, Upper Montane Fir Forest

Dystric Xeropsamments frigid and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent
Landform: Mountain slope
Vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typic Dystroxerepts loamy-skeletal, frigid and similar soils

Composition: About 5 percent
Slope: 15 to 45 percent
Landform: Moraine or mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Humic Dystroxerepts coarse-loamy, mesic and similar soils

Composition: About 3 percent
Slope: 15 to 45 percent
Landform: Moraine or mountain slope
Vegetative classification: 85110, Jeffrey Pine Forest

Nevadafalls and similar soils

Composition: About 3 percent
Slope: 15 to 45 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Rock outcrop

Composition: About 3 percent
Slope: 15 to 45 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- Moraines in this map unit do not have a definite form.
- This map unit includes soils with a mesic temperature regime at the low elevations.

260—Rock outcrop-Craneflat-Dystric Xerorthents complex, 30 to 65 percent slopes, mountain slopes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,600 to 7,790 feet (1,403 to 2,375 meters)
Mean annual precipitation: 35 to 53 inches (889 to 1,346 millimeters)
Mean annual air temperature: 48 to 48 degrees F (about 9 degrees C)
Frost-free period: 20 to 60 days

Composition

Rock outcrop—45 percent
Craneflat soil—25 percent
Dystric Xerorthents—20 percent
Minor components—10 percent

Description of Rock Outcrop

Slope: 30 to 65 percent
Landform: Mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Craneflat Soil

Slope: 30 to 65 percent
Landform: Mountain slope, benches on mountainside, or bedrock joints on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 14 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.3 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 2 inches; loamy sand
A2—2 to 4 inches; gravelly loamy sand
AC—4 to 13 inches; gravelly loamy sand
C1—13 to 19 inches; very channery loamy sand
C2—19 to 60 inches; extremely channery loamy sand

Description of Dystric Xerorthents

Slope: 30 to 65 percent
Landform: Mountain slope or aprons on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.1 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium

Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; sandy loam
AC—5 to 17 inches; sandy loam
C—17 to 60 inches; sandy loam

Minor Components

Rubble land

Composition: About 5 percent
Slope: 30 to 65 percent
Landform: Mountain slope
Vegetative classification: None assigned

Typic Xeropsamments frigid and similar soils

Composition: About 3 percent
Slope: 30 to 65 percent
Landform: Mountain slope, bedrock joints on mountainside, or bedrock benches on mountainside
Vegetative classification: 84232, White Fir Mixed Coniferous Forest

Humic Lithic Dystroxerepts coarse-loamy and similar soils

Composition: About 2 percent
Slope: 0 to 10 percent
Landform: Mountain slope or bedrock dimples on mountainside
Vegetative classification: 10500, Cliffs and Rock Outcrop

Use and Management Considerations

- The slope on bedrock benches and dimples and in some bedrock joints is more than 30 percent.

261—Dystric Xeropsamments-Typic Dystroxerepts-Badgerpass-Rock outcrop association, 5 to 35 percent slopes, mountain valleys, mountain slopes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,235 to 8,180 feet (1,596 to 2,494 meters)
Mean annual precipitation: 39 to 47 inches (991 to 1,194 millimeters)
Mean annual air temperature: 48 to 51 degrees F (9 to 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Dystric Xeropsamments—25 percent
Typic Dystroxerepts—25 percent
Badgerpass soil—15 percent
Rock outcrop—15 percent
Minor components—20 percent

Description of Dystric Xeropsamments

Slope: 5 to 35 percent
Landform: Mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.1 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85210, Jeffrey Pine-Fir Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A—0 to 6 inches; loamy sand
Bw1—6 to 18 inches; loamy sand
Bw2—18 to 25 inches; loamy sand
C1—25 to 41 inches; loamy sand
C2—41 to 60 inches; loamy sand

Description of Typic Dystroxerepts

Slope: 5 to 35 percent
Landform: Moraine, mountain slope, or mountain valley
Parent material: Colluvium and/or till and/or minor alluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent coarse subangular gravel and 2 to 5 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.1 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oe—0 to 0 inches; slightly decomposed plant material
Oa—0 to 1 inch; moderately decomposed plant material
A—1 to 3 inches; fine sandy loam
Bw1—3 to 8 inches; fine sandy loam
Bw2—8 to 20 inches; fine sandy loam
Bw3—20 to 31 inches; very cobbly fine sandy loam
Bw4—31 to 60 inches; very cobbly fine sandy loam

Description of the Badgerpass Soil

Slope: 5 to 35 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 14 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.5 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85210, Jeffrey Pine-Fir Forest

Typical profile

A—0 to 7 inches; gravelly loamy sand
Bw1—7 to 18 inches; gravelly loamy sand
Bw2—18 to 60 inches; gravelly loamy sand

Description of Rock Outcrop

Slope: 5 to 35 percent
Landform: Mountain slope or mountain valley

Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Dystric Xerorthents sandy, frigid and similar soils

Composition: About 10 percent
Slope: 5 to 35 percent
Landform: Mountain slope
Vegetative classification: 84240, Sierra White Fir Forest

Humic Lithic Dystroxerepts sandy and similar soils

Composition: About 5 percent
Slope: 0 to 10 percent
Landform: Areas close to rock outcrop on mountain slope or close to bedrock dimples in mountain slope
Vegetative classification: 84250, Big Tree Forest

Typic Dystroxerepts coarse-loamy, frigid and similar soils

Composition: About 4 percent
Slope: 5 to 35 percent
Landform: Moraine, mountain slope, or mountain valley
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Histosols frigid and similar soils

Composition: About 1 percent
Landform: Mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Colluvium on mountain footslopes and toeslopes extends into mountain valleys. There is no clear distinction between mountain slopes and mountain valleys at the scale of mapping (approximately 1:40,000) used in this survey.
- The majority of the mountain valley areas are forested. Small meadows (less than about 2 hectares) make up about 3 percent of the map unit (fig. 14).
- The soils grade to the cryic soil temperature regime at the high-elevation margin of the map unit.
- This map unit includes areas with slopes that are less than 35 percent (about 10 percent of map unit).
- The extent of rock outcrop ranges to about 35 percent in a few delineations, while several other small delineations in the west-central portion of the survey area have no rock outcrop.

Figure 14.—Mariposa Grove's 1,800-year-old Grizzly Giant is in an area of Dystric Xeropsamments-Typic Dystroxerepts-Badgerpass-Rock outcrop association, 5 to 35 percent slopes, mountain valleys, mountain slopes, frigid.

262—Humic Dystroxerepts-Dystric Xerorthents-Rock outcrop association, 30 to 70 percent slopes, mountain slopes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)

Landscape: Mountains
Elevation: 4,545 to 7,825 feet (1,386 to 2,385 meters)
Mean annual precipitation: 37 to 47 inches (940 to 1,194 millimeters)
Mean annual air temperature: 46 to 51 degrees F (8 to 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Humic Dystroxerepts—30 percent
Dystric Xerorthents—25 percent
Rock outcrop—20 percent
Minor components—25 percent

Description of Humic Dystroxerepts

Slope: 30 to 70 percent
Landform: Moraine, summits on mountain, or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 10 to 20 percent coarse subangular gravel, 10 to 20 percent subangular cobbles, 10 to 20 percent subrounded stones, and 10 to 20 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.8 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: 84210, Westside Ponderosa Pine Forest

Typical profile

Oi—0 to 0 inches; extremely bouldery slightly decomposed plant material
Oe—0 to 1 inch; extremely bouldery moderately decomposed plant material
A1—1 to 2 inches; extremely bouldery sandy loam
A2—2 to 5 inches; extremely bouldery sandy loam
Bw1—5 to 18 inches; extremely bouldery sandy loam
Bw2—18 to 60 inches; extremely bouldery sandy loam

Description of Dystric Xerorthents

Slope: 30 to 70 percent
Landform: Mountain slope, aprons on mountainside, or debris torrent tracks on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent coarse subangular gravel, 2 to 10 percent subrounded stones, and 2 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.3 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 85300, Upper Montane Fir Forest

Typical profile

Oi—0 to 1 inch; stony slightly decomposed plant material
Oe—1 to 2 inches; stony moderately decomposed plant material
Oa—2 to 3 inches; stony highly decomposed plant material
A—3 to 11 inches; stony loamy sand
Bw—11 to 24 inches; stony loamy fine sand
C1—24 to 38 inches; very stony loamy sand
C2—38 to 60 inches; very stony loamy fine sand

Description of Rock Outcrop

Slope: 30 to 70 percent
Landform: Moraine, mountain slope, or summits on mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Craneflat and similar soils

Composition: About 10 percent
Slope: 30 to 70 percent
Landform: Moraine, summits on mountain, or mountain slope
Vegetative classification: 84210, Westside Ponderosa Pine Forest

Humic Lithic Dystroxerepts loamy-skeletal and similar soils

Composition: About 10 percent
Slope: 0 to 10 percent
Landform: Summits on mountain, mountain slope, bedrock benches on mountainside, or bedrock dimples on mountainside
Vegetative classification: 84233, Douglas-fir Mixed Coniferous Forest

Rubble land

Composition: About 5 percent
Slope: 30 to 70 percent
Landform: Moraine, mountain, or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- This map unit includes areas with slopes of more than 30 percent (about 10 percent of map unit).

264—Crazymule-Canisrocks association, 0 to 20 percent slopes, lateral moraines, wet/dry meadows, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,665 to 9,315 feet (2,032 to 2,840 meters)
Mean annual precipitation: 33 to 49 inches (838 to 1,245 millimeters)
Mean annual air temperature: 37 to 48 degrees F (3 to 9 degrees C)
Frost-free period: 15 to 45 days

Composition

Crazymule soil—35 percent
Canisrocks soil—28 percent
Minor components—37 percent

Description of the Crazymule Soil

Slope: 5 to 20 percent
Landform: Moraine or dry meadows on moraine
Parent material: Till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 3 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted

Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest; 84232, White Fir Mixed Coniferous Forest; 85210, Jeffrey Pine-Fir Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oa—1 to 2 inches; highly decomposed plant material
A—2 to 12 inches; loamy fine sand
Bw1—12 to 22 inches; extremely stony fine sandy loam
Bw2—22 to 34 inches; cobbly fine sandy loam
C—34 to 60 inches; very gravelly loamy sand

Description of the Canisrocks Soil

Slope: 9 to 20 percent
Landform: Lateral moraine or dry meadows on moraine
Parent material: Till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded stones, 5 to 15 percent coarse subangular gravel, and 5 to 15 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.9 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 85210, Jeffrey Pine-Fir Forest; 85310, Red Fir Forest

Typical profile

Oi—0 to 1 inch; stony slightly decomposed plant material
Oe—1 to 2 inches; stony moderately decomposed plant material
A1—2 to 3 inches; sandy loam
A2—3 to 11 inches; cobbly sandy loam
A3—11 to 23 inches; very cobbly loamy sand
C1—23 to 35 inches; extremely bouldery loamy sand
C2—35 to 60 inches; extremely stony loamy sand

Minor Components

Humic Dystrocryepts sandy-skeletal and similar soils

Composition: About 10 percent
Slope: 0 to 20 percent

Landform: Moraine or dry meadows on moraine
Vegetative classification: 85210, Jeffrey Pine-Fir Forest

Histosols cryic and similar soils

Composition: About 5 percent
Slope: 0 to 20 percent
Landform: Lakeshore or mountain valley
Vegetative classification: None assigned

Oxyaquic Dystrocryepts sandy and similar soils

Composition: About 5 percent
Slope: 2 to 20 percent
Landform: Wet meadows on lateral moraine or lateral moraine
Vegetative classification: 85210, Jeffrey Pine-Fir Forest

Oxyaquic Dystrocryepts loamy-skeletal and similar soils

Composition: About 4 percent
Slope: 0 to 20 percent
Landform: Wet meadows on lateral moraine or lateral moraine
Vegetative classification: 85210, Jeffrey Pine-Fir Forest

Typic Cryaquents and similar soils

Composition: About 4 percent
Slope: 0 to 20 percent
Landform: Wet meadows on moraine or moraine
Vegetative classification: 85210, Jeffrey Pine-Fir Forest

Vitrandic Cryofluvents sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 0 to 20 percent
Landform: Moraine or meadows on moraine
Vegetative classification: 85110, Jeffrey Pine Forest

Xeric Dystrocryepts coarse-loamy and similar soils

Composition: About 3 percent
Slope: 0 to 20 percent
Landform: Dry meadows on moraine or moraine
Vegetative classification: 85210, Jeffrey Pine-Fir Forest; 84232, White Fir Mixed Coniferous Forest; 86110, Lodgepole Pine Forest

Typic Cryorthents coarse-loamy, acid and similar soils

Composition: About 2 percent
Slope: 0 to 9 percent
Landform: Dry meadows on moraine
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- The moraines have distinctive morainal form.
- The meadows in this map unit are elongated (“stringer”) meadows and brush fields

within moraines. They extend in the direction of glacial flow and occasionally contain ponds. They range in size from about 1 hectare to 20 hectares.
- Delineations of this map unit commonly are bordered on one or more sides by apparently younger morainal crests.

267—Rock outcrop-Typic Cryorthents-Xeric Dystrocryepts complex, 0 to 35 percent slopes, mountain slopes, joints, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,630 to 10,945 feet (2,021 to 3,337 meters)
Mean annual precipitation: 39 to 67 inches (991 to 1,702 millimeters)
Mean annual air temperature: 42 to 47 degrees F (5 to 8 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—40 percent
Typic Cryorthents—30 percent
Xeric Dystrocryepts—15 percent
Minor components—15 percent

Description of Rock Outcrop

Slope: 0 to 35 percent
Landform: Lateral moraine, mountain slope, or mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Typic Cryorthents

Slope: 0 to 35 percent
Landform: Lateral moraine, mountain slope, or bedrock joints and fractures in mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent coarse subangular gravel, 5 to 15 percent subangular cobbles, and 25 to 35 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.7 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: 38000, Montane and Alpine Scrub

Typical profile

A1—0 to 5 inches; gravelly coarse sand
A2—5 to 13 inches; very stony coarse sand
2C1—13 to 28 inches; extremely stony sandy loam
2C2—28 to 60 inches; extremely stony sandy loam

Description of Xeric Dystrocryepts

Slope: 0 to 35 percent
Landform: Moraine, meadows on moraine, or bedrock joints and fractures in mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85310, Red Fir Forest

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
Oa—2 to 4 inches; moderately decomposed plant material
A1—4 to 13 inches; loamy coarse sand
A2—13 to 20 inches; loamy coarse sand
A3—20 to 30 inches; coarse sand

AB—30 to 42 inches; coarse sand
Bw1—42 to 48 inches; loamy sand
Bw2—48 to 62 inches; loamy coarse sand
C1—62 to 78 inches; loamy coarse sand
C2—78 to 84 inches; cobbly coarse sandy loam

Minor Components

Glacierpoint and similar soils

Composition: About 5 percent
Slope: 0 to 35 percent
Landform: Moraine, meadows on mountainside, or bedrock joints and fractures in mountainside
Vegetative classification: 85310, Red Fir Forest

Humic Dystrocryepts sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 0 to 35 percent
Landform: Bedrock joints and fractures on mountainside
Vegetative classification: 85310, Red Fir Forest

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 3 percent
Slope: 0 to 10 percent
Landform: Mountain slope
Vegetative classification: None assigned

Lithic Dystrocryepts and similar soils

Composition: About 2 percent
Slope: 0 to 10 percent
Landform: Bedrock dimples on mountainside
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- The types of rocks in this map unit are intermediate granitoid with mafic delineations in the vicinity of Benson Lake, Tilden Lake, Twin Lakes, and Rancheria Mountain. Soils in areas of mafic rock are expected to have higher base saturation than soils in areas of igneous rock of intermediate composition.
- Mountain valleys contain alluvium and till.
- This map unit includes areas with slopes of more than 35 percent (5 percent of map unit).
- Small meadows (typically less than 2 hectares) are scattered throughout the map unit on level or gently sloping mountain slopes and in mountain valleys.
- Overall, this map unit is less glacially scoured than map unit 224.

Figure 15.—An area of map unit 268 that has 40 percent rock outcrop is in the background. An area of map unit 295 is in the foreground, and an area of map unit 289 is on the other side of the drainage system.

268—Rock outcrop-Canisrocks-Glacierpoint complex, 30 to 80 percent slopes, mountain slopes, joints, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park (fig. 15)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,405 to 11,890 feet (1,649 to 3,625 meters)
Mean annual precipitation: 33 to 63 inches (838 to 1,600 millimeters)
Mean annual air temperature: 36 to 47 degrees F (2 to 9 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—40 percent
Canisrocks soil—25 percent
Glacierpoint soil—20 percent
Minor components—15 percent

Description of Rock Outcrop

Slope: 30 to 80 percent
Landform: Joints and fractured bedrock in mountain slope

Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Canisrocks Soil

Slope: 30 to 80 percent
Landform: Mountain valley or bedrock fractures and joints in mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded stones, 2 to 10 percent subrounded boulders, and 2 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 86110, Lodgepole Pine Forest; 85110, Jeffrey Pine Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Description of the Glacierpoint Soil

Slope: 30 to 70 percent

Landform: Mountain slope, bedrock fractures and joints in mountainside, or bedrock benches on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 20 percent subrounded stones, 0 to 10 percent coarse subangular gravel, and 0 to 15 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.1 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 85110, Jeffrey Pine Forest; 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A1—1 to 4 inches; stony loamy sand
A2—4 to 16 inches; very stony loamy sand
Bw—16 to 27 inches; very stony loamy sand
C1—27 to 46 inches; very stony very fine sand
C2—46 to 64 inches; very stony very fine sand

Minor Components

Lithic Cryorthents sandy-skeletal and similar soils

Composition: About 4 percent
Slope: 0 to 10 percent
Landform: Bedrock benches on mountainside or areas on narrow fringes around rock outcrop on mountainside
Vegetative classification: None assigned

Oxyaquic Dystrocryepts coarse-loamy and similar soils

Composition: About 4 percent
Slope: 0 to 10 percent
Landform: Below springs on mountain slope or bedrock joints and fractures on mountainside
Vegetative classification: 85110, Jeffrey Pine Forest

Vitrandic Cryorthents sandy-skeletal and similar soils

Composition: About 4 percent
Slope: 30 to 80 percent
Landform: Mountain slope or bedrock joints and fractures on mountainside
Vegetative classification: None assigned

Lithic Dystrocryepts and similar soils

Composition: About 3 percent
Slope: 0 to 10 percent
Landform: Dimples and benches in bedrock on mountainside
Vegetative classification: None assigned

Use and Management Considerations

- This map unit includes areas with slopes that are less than 30 percent (5 percent of map unit).
- Joints in the northern portion of the survey area tend to be narrower and more closely spaced than those in the central portion of the survey area.
- Morainal remnants (10 percent of map unit) occur in wide joints (more than 20 meters) in the central portion of the survey area.
- The soils in the wider, less steep joints and fractures tend to be more strongly developed than those that formed in narrow, steep joints and fractures.
- Bedrock dimples are limited to the least steep bedrock surfaces.
- Compared to other map units that are marked by mountain flanks and that have comparable slopes (such as map unit 235), this map unit is less linear, has more topographic variation, and has more jointing. Because of these characteristics, this unit is less avalanche-prone, is more significant for ground-water recharge, and is more edaphically variable.

269—Canisrocks-Rock outcrop-Glacierpoint complex, 0 to 35 percent slopes, mountain slopes, moraines, joints, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,730 to 9,660 feet (2,052 to 2,946 meters)
Mean annual precipitation: 33 to 63 inches (838 to 1,600 millimeters)
Mean annual air temperature: 35 to 48 degrees F (2 to 9 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—20 percent
Rock outcrop—20 percent
Glacierpoint soil—15 percent
Minor components—45 percent

Description of the Canisrocks Soil

Slope: 9 to 35 percent
Landform: Moraine, bedrock joints on moraine, or mountain slope
Parent material: Colluvium and/or till and/or residuum derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 3 to 10 percent coarse gravel, 3 to 10 percent subrounded cobbles, and 3 to 15 percent subrounded stones

Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.5 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; stony slightly decomposed plant material
A1—0 to 2 inches; loamy coarse sand
A2—2 to 7 inches; loamy coarse sand
A3—7 to 20 inches; very bouldery loamy coarse sand
C—20 to 60 inches; extremely bouldery loamy sand

Description of Rock Outcrop

Slope: 0 to 35 percent
Landform: Moraine or mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Glacierpoint Soil

Slope: 0 to 35 percent
Landform: Lateral moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded boulders, 2 to 10 percent coarse subangular gravel, 2 to 10 percent subangular cobbles, and 2 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.1 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84240, Sierra White Fir Forest; 85310, Red Fir Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material
Oe—0 to 1 inch; bouldery moderately decomposed plant material
A1—1 to 4 inches; stony loamy sand
A2—4 to 16 inches; very stony loamy sand
Bw—16 to 27 inches; very stony loamy sand
C1—27 to 46 inches; very stony very fine sand
C2—46 to 64 inches; very stony very fine sand

Minor Components

Vitrandic Dystrocryepts coarse-loamy and similar soils

Composition: About 10 percent
Slope: 9 to 35 percent
Landform: Bedrock joints on moraine, moraine, or mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Crazymule and similar soils

Composition: About 5 percent
Slope: 5 to 35 percent
Landform: Moraine, bedrock joints in moraine, or mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Humic Dystrocryepts sandy and similar soils

Composition: About 5 percent
Slope: 0 to 35 percent
Landform: Bedrock joints on moraine or moraine
Vegetative classification: 85310, Red Fir Forest

Humic Dystrocryepts sandy-skeletal and similar soils

Composition: About 5 percent
Slope: 0 to 35 percent
Landform: Moraine or bedrock joints on moraine
Vegetative classification: 85310, Red Fir Forest

Typic Cryorthents sandy and similar soils

Composition: About 5 percent
Slope: 0 to 35 percent
Landform: Moraine, bedrock joints on moraine, or mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Typic Cryorthents coarse-loamy, acid and similar soils

Composition: About 5 percent
Slope: 0 to 35 percent
Landform: Moraine, bedrock joints on moraine, or mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Xeric Dystrocryepts coarse-loamy and similar soils

Composition: About 5 percent
Slope: 0 to 35 percent
Landform: Moraine, bedrock joints on moraine, or mountain slope
Vegetative classification: 86110, Lodgepole Pine Forest

Humic Lithic Dystrocryepts sandy and similar soils

Composition: About 3 percent
Slope: 0 to 10 percent
Landform: Bedrock dimples on mountainside
Vegetative classification: None assigned

Oxyaquic Dystrocryepts sandy-skeletal and similar soils

Composition: About 2 percent
Slope: 0 to 35 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- Much of this map unit has been glacially scoured.
- Till and minor alluvial and colluvial sediments fill bedrock joints and depressions.
- Slopes range from 35 percent to 55 percent in about 10 percent of the map unit.

270—Rock outcrop-Typic Cryorthents-Vitrandic Dystrocryepts complex, 0 to 65 percent slopes, metamorphic, mountain slopes, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 7,075 to 11,340 feet (2,157 to 3,457 meters)
Mean annual precipitation: 39 to 59 inches (991 to 1,499 millimeters)
Mean annual air temperature: 38 to 39 degrees F (3 to 4 degrees C)
Frost-free period: 15 to 45 days

Composition

Rock outcrop—35 percent
Typic Cryorthents—25 percent
Vitrandic Dystrocryepts—25 percent
Minor components—15 percent

Description of Rock Outcrop

Slope: 20 to 65 percent
Landform: Mountain slope

Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Typic Cryorthents

Slope: 20 to 65 percent
Landform: Mountain slope or spur
Parent material: Colluvium derived from metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 10 to 20 percent coarse subangular gravel, 10 to 20 percent subangular cobbles, and 10 to 20 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: 86200, Sierra Mixed Subalpine Coniferous Forest

Typical profile

Oi—0 to 0 inches; stony slightly decomposed plant material
Oe—0 to 1 inch; stony moderately decomposed plant material
A—1 to 4 inches; stony loamy sand
Bw1—4 to 18 inches; extremely stony loamy sand
Bw2—18 to 28 inches; extremely stony loamy sand
C1—28 to 34 inches; extremely stony loamy sand
C2—34 to 60 inches; extremely stony loamy sand

Description of Vitrandic Dystrocryepts

Slope: 20 to 65 percent
Landform: Cirque floor or mountain slope

Parent material: Colluvium derived from granitoid and/or metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent coarse subangular gravel, 0 to 10 percent subrounded stones, and 0 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.1 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 38110, Montane/Alpine Riparian Scrub

Typical profile

A1—0 to 3 inches; loamy sand
A2—3 to 4 inches; fine sand
A3—4 to 8 inches; cobbly loamy sand
Bw—8 to 17 inches; extremely stony sandy loam
C—17 to 60 inches; extremely stony loamy sand

Minor Components

Humic Lithic Dystrocryepts sandy and similar soils

Composition: About 4 percent
Slope: 0 to 10 percent
Landform: Mountain slope, rock benches on mountainside, or dimples in bedrock on mountainside
Vegetative classification: 86110, Lodgepole Pine Forest

Oxyaquic Cryorthents coarse-loamy over sandy and similar soils

Composition: About 4 percent
Slope: 0 to 10 percent
Landform: Basin floor, cirque, small mountain valley, or wet meadows on mountain valley
Vegetative classification: 45210, Wet Subalpine and Alpine Meadow

Rubble land

Composition: About 4 percent
Landform: Cirque or mountain slope
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore
Vegetative classification: None assigned

Inceptic Haplocryalfs and similar soils

Composition: About 1 percent
Slope: 2 to 12 percent
Landform: Cirque, channery surfaces on mountain slope, or mountain slope
Vegetative classification: 86120, Whitebark Pine Forest

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- The types of rock in this map unit are metamorphic, metasedimentary, and metavolcanic with lesser amounts of granitoid rock.
- Slopes in most of the map unit (about 75 percent) are steeper than 30 percent.
- Because of the wide range in slopes in this map unit, several small but distinct delineations with unusual conditions are combined into a single map unit.
- The slopes of cirque floors, small mountain valleys and basins, bench treads, and dimples are less than 20 percent.
- Foot and toe positions of cirque walls support about 10 percent rock rubble.
- This map unit has been glacially scoured.

271—Rock outcrop-Lithic Xerorthents-Waterwheel complex, 0 to 150 percent slopes, cliffs, ledges, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,080 to 7,660 feet (1,245 to 2,335 meters)
Mean annual precipitation: 35 to 45 inches (889 to 1,143 millimeters)
Mean annual air temperature: 49 to 51 degrees F (9 to 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Rock outcrop—60 percent
Lithic Xerorthents—15 percent
Waterwheel soil—15 percent
Minor components—10 percent

Description of Rock Outcrop

Slope: 0 to 150 percent
Landform: Mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Lithic Xerorthents

Slope: 0 to 150 percent
Landform: Rock ledges on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 55 to 65 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 7 inches
Available water capacity to a depth of 60 inches: About 0.2 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: None noted
Natural drainage class: Excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

A—0 to 3 inches; stony sand
C—3 to 7 inches; extremely paragravelly sand
R—7 to 60 inches; bedrock

Description of the Waterwheel Soil

Slope: 10 to 60 percent
Landform: Avalanche chute or rock ledges on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles, 10 to 25 percent subrounded stones, and 10 to 20 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 0.9 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted

Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: 71120, Black Oak Woodland; 81320, Canyon Live Oak Forest

Typical profile

Oi—0 to 1 inch; very bouldery slightly decomposed plant material
Oe—1 to 2 inches; very bouldery moderately decomposed plant material
Oa—2 to 2 inches; very bouldery highly decomposed plant material
A—2 to 6 inches; very stony loamy coarse sand
Bw1—6 to 14 inches; very stony loamy sand
Bw2—14 to 28 inches; very stony coarse sand
C—28 to 60 inches; extremely bouldery coarse sand

Minor Components

Humic Dystroxerepts sandy-skeletal, frigid and similar soils

Composition: About 5 percent
Slope: 0 to 150 percent
Landform: Rock ledges on mountainside
Vegetative classification: None assigned

Rubble land

Composition: About 5 percent
Slope: 0 to 150 percent
Landform: Mountainside
Vegetative classification: None assigned

Use and Management Considerations

- This map unit borders Yosemite Valley.
- Rock cliffs are nearly vertical. Slopes of avalanche tracks with soil typically are between about 50 and 80 percent. Most soils occur on rock ledges that have variable steepness.
- The soil temperature regime grades to mesic at the lowest elevations.

273—Nevadafalls-Waterwheel association, 0 to 35 percent slopes, moraines, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,230 to 7,755 feet (1,595 to 2,364 meters)
Mean annual precipitation: 39 to 45 inches (991 to 1,143 millimeters)
Mean annual air temperature: 49 to 49 degrees F (about 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Nevadafalls soil—55 percent

Waterwheel soil—30 percent
Minor components—15 percent

Description of the Nevadafalls Soil

Slope: 0 to 35 percent
Landform: Moraine
Parent material: Till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest; 85110, Jeffrey Pine Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A—0 to 6 inches; loamy coarse sand
Bw—6 to 17 inches; loamy coarse sand
C1—17 to 31 inches; very cobbly loamy coarse sand
C2—31 to 60 inches; very cobbly loamy coarse sand

Description of the Waterwheel Soil

Slope: 10 to 35 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.5 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
Oa—1 to 1 inch; highly decomposed plant material
A1—1 to 6 inches; cobbly loamy sand
A2—6 to 11 inches; cobbly loamy sand
C1—11 to 19 inches; very stony loamy sand
C2—19 to 60 inches; very stony loamy sand

Minor Components

Dystric Xerorthents coarse-loamy, acid and similar soils

Composition: About 10 percent
Slope: 0 to 35 percent
Landform: Moraine or mountain slope
Vegetative classification: 84232, White Fir Mixed Coniferous Forest

Rock outcrop

Composition: About 5 percent
Slope: 0 to 35 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- Compared with map unit 315, moraines in this map unit tend to be less distinct and have more eroded backslopes and gently sloping crests of lateral moraines. Moraines in map unit 315 generally are steeper and more distinct.
- Small meadows (less than about 1 hectare) occupy about 2 percent of the map unit.

274—Rock outcrop, domes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,470 to 7,685 feet (1,668 to 2,343 meters)
Mean annual precipitation: 35 to 47 inches (889 to 1,194 millimeters)
Mean annual air temperature: 49 to 51 degrees F (9 to 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Rock outcrop—85 percent
Minor components—15 percent

Description of Rock Outcrop

Landform: Dome
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Dystric Xerorthents sandy-skeletal, frigid and similar soils

Composition: About 10 percent
Slope: 5 to 30 percent
Landform: Mountain slope
Vegetative classification: None assigned

Humic Dystroxerepts sandy-skeletal, frigid and similar soils

Composition: About 5 percent
Slope: 5 to 30 percent
Landform: Mountain slope or bedrock joints on mountainside
Vegetative classification: None assigned

275—Oxyaquic Dystroxerepts-Dystric Xerorthents-Vitrandic Xerorthents-Rubble land complex, stony, 0 to 20 percent slopes, mountain valleys, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 2,120 to 6,015 feet (648 to 1,835 meters)
Mean annual precipitation: 33 to 45 inches (838 to 1,146 millimeters)
Mean annual air temperature: 41 to 53 degrees F (5 to 12 degrees C)
Frost-free period: 100 to 150 days

Composition

Oxyaquic Dystroxerepts—25 percent
Dystric Xerorthents—25 percent
Vitrandic Xerorthents—25 percent
Rubble land—15 percent
Minor components—10 percent

Description of Oxyaquic Dystroxerepts

Slope: 0 to 20 percent
Landform: Flood plain or terrace
Parent material: Alluvium derived from granitoid rock and minor volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.7 inches (low)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; bouldery slightly decomposed plant material
Oa—1 to 2 inches; bouldery highly decomposed plant material
A—2 to 9 inches; cobbly sandy loam
AB—9 to 19 inches; very gravelly sandy loam
Bw—19 to 34 inches; very gravelly coarse sandy loam
C1—34 to 46 inches; extremely cobbly coarse sandy loam
C2—46 to 60 inches; extremely stony coarse sandy loam

Description of Dystric Xerorthents

Slope: 0 to 20 percent
Landform: Mountainside or terrace
Parent material: Alluvium and/or colluvium derived from granitoid rock and volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles, 2 to 5 percent subrounded boulders, and 10 to 20 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 0.9 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; stony slightly decomposed plant material

Oe—1 to 2 inches; stony slightly decomposed plant material
Oa—2 to 2 inches; stony slightly decomposed plant material
A—2 to 6 inches; very stony loamy coarse sand
Bw1—6 to 14 inches; very stony loamy coarse sand
Bw2—14 to 28 inches; very stony loamy coarse sand
C—28 to 60 inches; extremely stony loamy coarse sand

Description of Vitrandic Xerorthents

Slope: 0 to 20 percent
Landform: Flood plain, mountain valley, or terrace
Parent material: Alluvium derived from granitoid rock and minor volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 10 to 20 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.3 inches (moderate)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

C—0 to 8 inches; fine sand
Ab—8 to 18 inches; fine sandy loam
2C—18 to 24 inches; fine sandy loam
3C1—24 to 35 inches; loamy sand
3C2—35 to 50 inches; loamy sand
3Ab—50 to 62 inches; loamy sand

Description of Rubble Land

Slope: 0 to 20 percent
Landform: Flood plain
Parent material: Alluvium derived from igneous rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Vitrandic Dystrudepts and similar soils

Composition: About 5 percent
Slope: 0 to 5 percent
Landform: Flood plain or terrace
Vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Histosols mesic and similar soils

Composition: About 3 percent
Slope: 0 to 2 percent
Landform: Mountain valley
Vegetative classification: None assigned

Riverwash

Composition: 2 percent
Slope: 0 to 2 percent
Landform: Channel, flood plain, or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- This map unit generally has narrow delineations (less than 200 meters wide); the delineations extend to nearly 1 kilometer wide in the Wawona area. The map unit is characterized by stony, bouldery flood plains and stream terraces that support scattered mixed conifer-pine with black oak (figs. 16 and 17). A few delineations, such as along lower Tenaya Creek, support denser forests of similar species.
- Most of the map unit, except areas on the highest terraces, is subject to heavy stream flow and flooding.
- Soils with an udic moisture regime occur on the flood plains.
- Cold air drainage and cold subsurface water flow can maintain a frigid soil temperature regime at the lowest points in deep shaded canyons.

276—Happyisles-Typic Dystroxerepts association, 0 to 15 percent slopes, mountain valley floors, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park (fig. 18)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,950 to 5,430 feet (1,205 to 1,655 meters)
Mean annual precipitation: 31 to 43 inches (787 to 1,092 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Happyisles soil—35 percent
Typic Dystroxerepts—35 percent
Minor components—30 percent

Figure 16.—A stony flood plain in an area of Oxyaquic Dystroxerepts-Dystric Xerorthents-Vitrandic Xerorthents-Rubble land complex, stony, 0 to 20 percent slopes, mountain valleys, mesic, along the South Fork of the Merced River.

Description of the Happyisles Soil

Slope: 0 to 9 percent
Landform: Flood plain or terrace
Parent material: Alluvium and/or colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 9 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.3 inches (moderate)

Selected hydrologic properties

Present annual flooding: Rare
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 3e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material

A1—3 to 7 inches; sandy loam
A2—7 to 13 inches; coarse sandy loam
A3—13 to 17 inches; sandy loam
A4—17 to 33 inches; sandy loam
C—33 to 60 inches; stratified loamy coarse sand to loamy sand

Description of Typic Dystroxerepts

Slope: 0 to 15 percent
Landform: Basin floor, flood plain, or terrace
Parent material: Alluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subangular cobbles, 5 to 15 percent subrounded stones, and 0 to 5 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

Figure 17.—The flood plain (in map unit 275) and the mountain slope below the talus slope (in map unit 277) are reflected in Mirror Lake.

Figure 18.—A riparian flood plain in map unit 276 merges into an area of map unit 296 (in the background).

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: None assigned

Typical profile

Oe—0 to 1 inch; stony slightly decomposed plant material
A1—1 to 19 inches; very stony sandy loam
A2—19 to 28 inches; very stony sandy loam
Bw1—28 to 33 inches; extremely cobbly coarse sandy loam
Bw2—33 to 50 inches; extremely cobbly sandy loam
C—50 to 60 inches; extremely cobbly loamy sand

Minor Components

Aquandic Humaquepts and similar soils

Composition: About 10 percent
Slope: 0 to 2 percent
Landform: Flood plain
Vegetative classification: None assigned

Oxyaquic Eutrudepts and similar soils

Composition: About 8 percent
Slope: 0 to 15 percent

Landform: Basin floor or valley floor on flood plain
Vegetative classification: 45110, Wet Montane Meadow

Cumulic Humaquepts mesic and similar soils

Composition: About 7 percent
Slope: 0 to 3 percent
Landform: Flood plain
Vegetative classification: None assigned

Histosols mesic and similar soils

Composition: About 5 percent
Slope: 0 to 3 percent
Landform: Mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Compared to map unit 275, valleys in this map unit tend to be broader (typically more than 0.5 kilometer) and flatter. They are occupied by mountain meadows or by forest-meadow associations. A few meadows that are less than 5 hectares in size are included in this map unit.
- This map unit has fewer surface stones and boulders, which indicates that flooding is less violent than in map unit 275; although areas positioned below mountain flanks can accumulate boulders from upslope rock falls and avalanches.

277—Tuolumne-Humic Dystroxerepts complex, 15 to 65 percent slopes, aprons, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 2,885 to 6,035 feet (881 to 1,841 meters)
Mean annual precipitation: 33 to 49 inches (838 to 1,245 millimeters)
Mean annual air temperature: 41 to 53 degrees F (5 to 12 degrees C)
Frost-free period: 100 to 150 days

Composition

Tuolumne soil—45 percent
Humic Dystroxerepts—35 percent
Minor components—20 percent

Description of the Tuolumne Soil

Slope: 15 to 65 percent
Landform: Fan, mountain slope, or talus slope
Parent material: Alluvium and/or colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 15 to 25 percent subrounded boulders and 15 to 25 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.2 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: 71120, Black Oak Woodland

Typical profile

Oi—0 to 1 inch; very bouldery slightly decomposed plant material
Oe—1 to 2 inches; very bouldery slightly decomposed plant material
A—2 to 5 inches; coarse sand
C—5 to 32 inches; very gravelly coarse sand
Ab—32 to 60 inches; extremely cobbly loamy coarse sand

Description of Humic Dystroxerepts

Slope: 15 to 65 percent
Landform: Fan or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subrounded stones, 2 to 10 percent subangular cobbles, and 5 to 15 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 0.9 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 71120, Black Oak Woodland

Typical profile

Oi—0 to 1 inch; bouldery slightly decomposed plant material
Oe—1 to 1 inch; bouldery moderately decomposed plant material
Oa—1 to 2 inches; bouldery highly decomposed plant material
A—2 to 15 inches; very cobbly loamy sand
C1—15 to 25 inches; extremely bouldery loamy sand
C2—25 to 60 inches; extremely cobbly loamy sand

Minor Components

Vitrandic Xerorthents sandy-skeletal and similar soils

Composition: About 14 percent
Slope: 15 to 65 percent
Landform: Fan, aprons on mountain, or mountain slope
Vegetative classification: 81500, Mixed, North Slope Forest

Rubble land

Composition: About 6 percent
Slope: 15 to 65 percent
Landform: Fan, mountain slope, or talus slope
Vegetative classification: None assigned

278—Rock outcrop-Tuolumne-Humic Dystroxerepts-Rubble land complex, 30 to 100 percent slopes, mountainflanks, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 2,145 to 6,525 feet (654 to 1,989 meters)
Mean annual precipitation: 33 to 49 inches (838 to 1,245 millimeters)
Mean annual air temperature: 44 to 45 degrees F (about 7 degrees C)
Frost-free period: 100 to 150 days

Composition

Rock outcrop—25 percent
Tuolumne soil—25 percent
Humic Dystroxerepts—20 percent
Rubble land—15 percent
Minor components—15 percent

Description of Rock Outcrop

Slope: 30 to 100 percent
Landform: Flanks on mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Tuolumne Soil

Slope: 30 to 70 percent
Landform: Mountain slope, mountainside, or aprons on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles, 5 to 15 percent coarse subangular gravel, 5 to 15 percent subrounded boulders, and 25 to 35 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.8 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: 71150, Interior Live Oak Woodland

Typical profile

A—0 to 2 inches; cobbly loamy coarse sand
AC—2 to 10 inches; very gravelly coarse sandy loam
C1—10 to 35 inches; very bouldery loamy coarse sand
C2—35 to 60 inches; gravelly coarse sand

Description of Humic Dystroxerepts

Slope: 30 to 100 percent
Landform: Mountain slope, bedrock joints in mountainside, aprons on mountainside, or mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 25 to 35 percent subrounded stones, 5 to 15 percent subrounded boulders, 5 to 15 percent subangular cobbles, and 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted

Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: 711,00, Oak Woodland; 81320, Canyon Live Oak Forest

Typical profile

Oi—0 to 1 inch; extremely gravelly slightly decomposed plant material
Oe—1 to 1 inch; extremely gravelly slightly decomposed plant material
A—1 to 10 inches; very gravelly loamy coarse sand
Bw—10 to 21 inches; very stony loamy coarse sand
C—21 to 60 inches; extremely bouldery loamy coarse sand

Description of Rubble Land

Slope: 30 to 100 percent
Landform: Avalanche chute or area below cliff
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Vitrandic Xerorthents sandy-skeletal and similar soils

Composition: About 10 percent
Slope: 30 to 100 percent
Landform: Mountain slope, aprons on mountainside, or mountainside
Vegetative classification: 81340, Black Oak Forest

Typic Xerorthents sandy-skeletal, mesic and similar soils

Composition: About 5 percent
Slope: 30 to 100 percent
Landform: Mountain slope, mountainside, or aprons on mountainside
Vegetative classification: 71100, Oak Woodland

Use and Management Considerations

- Mountain flanks are about 60 percent rock outcrop and rubble and about 40 percent soil-covered areas.
- Slopes that are more than about 55 percent are subject to debris avalanches and debris torrents.
- Rock falls can issue from cliffs and nearly vertical rock outcrop.

Figure 19.—A flood plain on a mountain valley floor in McGurk Meadow in an area of Canisrocks-Xeric Dystrocryepts complex, 15 to 45 percent slopes, mountain slopes, moraines, cryic.

279—Canisrocks-Xeric Dystrocryepts complex, 15 to 45 percent slopes, mountain slopes, moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park (fig. 19)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,400 to 10,000 feet (1,952 to 3,050 meters)
Mean annual precipitation: 35 to 51 inches (889 to 1,295 millimeters)
Mean annual air temperature: 42 to 49 degrees F (6 to 10 degrees C)
Frost-free period: 15 to 45 days

Composition

Canisrocks soil—40 percent
Xeric Dystrocryepts—15 percent
Minor components—45 percent

Description of the Canisrocks Soil

Slope: 15 to 40 percent
Landform: Moraine, mountain slope, or ephemeral draws on mountainside
Parent material: Alluvium and/or colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded boulders, 2 to 10 percent subangular cobbles, and 2 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.3 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85210, Jeffrey Pine-Fir Forest; 85310, Red Fir Forest

Typical profile

Oi—0 to 2 inches; bouldery slightly decomposed plant material
Oa—2 to 2 inches; bouldery highly decomposed plant material
A—2 to 11 inches; loamy sand
Bw—11 to 21 inches; very stony loamy sand
C1—21 to 29 inches; very stony loamy sand
C2—29 to 36 inches; very stony loamy sand
C3—36 to 60 inches; extremely stony loamy sand

Description of Xeric Dystrocryepts

Slope: 15 to 40 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded stones, 0 to 5 percent subangular cobbles, and 0 to 5 percent coarse subangular gravel
Restrictive feature: Dense material at a depth of 32 inches
Available water capacity to a depth of 60 inches: About 1.6 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; bouldery slightly decomposed plant material

Oe—0 to 1 inch; bouldery moderately decomposed plant material
A—1 to 4 inches; bouldery loamy sand
Bw1—4 to 18 inches; very bouldery sand
Bw2—18 to 28 inches; very bouldery sand
C1—28 to 34 inches; very bouldery sand
C2—34 to 60 inches; extremely bouldery sand

Minor Components

Humic Dystrocryepts loamy-skeletal and similar soils

Composition: About 14 percent
Slope: 15 to 40 percent
Landform: Moraine or mountain slope
Vegetative classification: 85310, Red Fir Forest

Xeric Dystrocryepts coarse-loamy and similar soils

Composition: About 6 percent
Slope: 15 to 40 percent
Landform: Moraine or mountain slope
Vegetative classification: 85310, Red Fir Forest

Oxyaquic Dystrocryepts loamy-skeletal and similar soils

Composition: About 5 percent
Slope: 15 to 40 percent
Landform: Moraine
Vegetative classification: None assigned

Rock outcrop

Composition: About 5 percent
Slope: 15 to 40 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Typic Cryopsamments and similar soils

Composition: About 5 percent
Slope: 15 to 40 percent
Landform: Ephemeral stream or moraine
Vegetative classification: 84232, White Fir Mixed Coniferous Forest

Xeric Dystrocryepts sandy and similar soils

Composition: About 5 percent
Slope: 15 to 40 percent
Landform: Moraine or mountain slope
Vegetative classification: 85310, Red Fir Forest

Vitrandic Dystrocryepts sandy-skeletal and similar soils

Composition: About 4 percent
Slope: 15 to 40 percent
Landform: Moraine or mountain slope
Vegetative classification: None assigned

Histosols cryic and similar soils

Composition: About 1 percent
Slope: 0 to 3 percent

Landform: Marsh
Vegetative classification: None assigned

Use and Management Considerations

- The moraines in this map unit are remnant lateral and ground moraines that have little or no distinct form, probably because of long-term geologic erosion. The remaining till commonly is thinner than that in more distinctive moraines (such as those in map unit 227), although thicknesses could not be measured for this survey. The moraines grade to mountain slopes, which are mantled with colluvium overlying residuum.
- Meadows that are less than about 2 hectares in size occur in concave positions.
- Soils with a frigid temperature regime occur at the lowest elevations in the map unit.

280—Typic Dystroxerepts-Humic Dystroxerepts-Rock outcrop association, 15 to 45 percent slopes, mountain slopes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,790 to 8,050 feet (1,461 to 2,454 meters)
Mean annual precipitation: 35 to 47 inches (889 to 1,194 millimeters)
Mean annual air temperature: 50 to 50 degrees F (about 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Typic Dystroxerepts—35 percent
Humic Dystroxerepts—30 percent
Rock outcrop—25 percent
Minor components—10 percent

Description of Typic Dystroxerepts

Slope: 15 to 45 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.5 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85110, Jeffrey Pine Forest; 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 4 inches; sandy loam
AB—4 to 8 inches; sandy loam
Bw1—8 to 15 inches; sandy loam
Bw2—15 to 24 inches; sandy loam
C1—24 to 36 inches; sandy loam
C2—36 to 60 inches; sandy loam

Description of Humic Dystroxerepts

Slope: 15 to 45 percent
Landform: Deposits ancient landslide, moraine, mountain slope, or bedrock joints on mountainside
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subangular cobbles and 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85110, Jeffrey Pine Forest

Typical profile

Oi—0 to 2 inches; cobbly slightly decomposed plant material
Oe—2 to 2 inches; cobbly moderately decomposed plant material
Oa—2 to 3 inches; cobbly highly decomposed plant material
A1—3 to 8 inches; gravelly loamy sand
A2—8 to 16 inches; gravelly loamy coarse sand
Bw—16 to 30 inches; very stony sandy loam
C—30 to 60 inches; very stony loamy sand

Description of Rock Outcrop

Slope: 15 to 45 percent
Landform: Moraine or mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Humic Lithic Dystroxerepts sandy and similar soils

Composition: About 10 percent
Slope: 0 to 10 percent
Landform: Mountain slope or summits on ridge
Vegetative classification: 85110, Jeffrey Pine Forest

282—Clarkslodge-Craneflat-Nevadafalls complex, 0 to 30 percent slopes, mountain slopes, hummocky, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,680 to 6,965 feet (1,427 to 2,124 meters)
Mean annual precipitation: 35 to 39 inches (889 to 991 millimeters)
Mean annual air temperature: 42 to 52 degrees F (6 to 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Clarkslodge soil—50 percent
Craneflat soil—25 percent
Nevadafalls soil—25 percent

Description of the Clarkslodge Soil

Slope: 0 to 25 percent
Landform: Bench, landslide complex, or mountain slope
Parent material: Colluvium and/or residuum derived from granitoid and metasedimentary rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subrounded stones and 0 to 10 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 6.8 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 6 inches; sandy loam
Bt1—6 to 19 inches; cobbly sandy loam
Bt2—19 to 34 inches; cobbly sandy loam
Cdt—34 to 60 inches; cobbly loam

Description of the Craneflat Soil

Slope: 15 to 30 percent
Landform: Ephemeral stream, landslide complex, or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel, 0 to 5 percent subangular cobbles, and 0 to 5 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 1 inch; moderately decomposed plant material
Oa—1 to 2 inches; highly decomposed plant material
A—2 to 4 inches; very stony sandy loam
Bw1—4 to 11 inches; very stony loamy sand
Bw2—11 to 22 inches; very stony loamy coarse sand
Bw3—22 to 30 inches; very stony loamy sand
Bw4—30 to 60 inches; very cobbly loamy coarse sand

Description of the Nevadafalls Soil

Slope: 15 to 45 percent
Landform: Ephemeral stream, landslide complex, or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A—0 to 6 inches; loamy sand
Bw—6 to 17 inches; loamy sand
C1—17 to 31 inches; very cobbly loamy sand
C2—31 to 60 inches; very cobbly loamy sand

Use and Management Considerations

- The types of rock in this map unit are intermediate to mafic granitoid with lesser amounts of metasedimentary rock near Hodgdon.
- Mountain slopes in this map unit are mantled by hummocky, deeply weathered deposits of ancient landslide debris. The landslides appear to have been of various types, including avalanches and structural bedrock failures as well as slump-earth flows in cohesive soils.
- This map unit is mapped near the southwestern border of the survey area, in the vicinities of Wawona and Hodgdon.
- The map unit delineations occur near contacts of contrasting types of granitoid bedrock, which generally are situated at different elevations downslope and upslope from each other. The downslope rock types on which this map unit occurs consist of more mafic biotite and hornblende diorite and granodiorite; the neighboring upslope rock masses are dominated by more felsic granitoid, quartz monzonite, and biotite granodiorite. Accordingly, the downslope rock types contain less silica and potassium feldspar and more magnesium, iron, and calcium-rich plagioclase feldspar, which render them more easily weathered and less stable. The upslope rock masses are richer in the resistant minerals quartz (silica) and potassium feldspar and poorer in easily weathered hornblende and plagioclase. These relationships favor the development of more mature soils, including Alfisols and Ultisols, from materials derived from the more weatherable rock and the development of less mature soils, including Entisols and Inceptisols, from products of the more resistant rock. Although the impact of bedrock relationships on soil development is significant, it is neither perfect nor readily apparent because of

complications caused by glaciations and erosion, as well as by differing geologic ages, uplift rates, and exposure durations.
- Bouldery ridges and drainages extend downslope through much of the map unit.
- Flat to gently sloping areas (about 0 to 15 percent slopes) occur dominantly on crests of debris blocks and bench treads.
- Mixed conifer forest covers most (about 80 percent) of the map unit; brush fields are concentrated on the steepest convex positions.
- Mixed conifer-pine forests in areas of this map unit were harvested before the establishment of the national park. Some evidence (such as erosion gullies from skid trails) of logging disturbance remains.

283—Waterwheel-Nevadafalls-Rock outcrop complex, 15 to 45 percent slopes, mountain slopes, landslides, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,130 to 7,220 feet (1,564 to 2,201 meters)
Mean annual precipitation: 37 to 39 inches (940 to 991 millimeters)
Mean annual air temperature: 50 to 50 degrees F (about 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Waterwheel soil—35 percent
Nevadafalls soil—30 percent
Rock outcrop—21 percent
Minor components—14 percent

Description of the Waterwheel Soil

Slope: 15 to 45 percent
Landform: Mountain slope or mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles and 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.2 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

A1—0 to 1 inch; very gravelly loamy sand
A2—1 to 7 inches; cobbly loamy sand
Bw—7 to 26 inches; very stony loamy sand
C—26 to 60 inches; very stony coarse sand

Description of the Nevadafalls Soil

Slope: 15 to 45 percent
Landform: Bench, landslide, or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84240, Sierra White Fir Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 6 inches; sandy loam
AB—6 to 11 inches; sandy loam
Bw—11 to 21 inches; sandy loam
C—21 to 60 inches; loamy sand

Description of Rock Outcrop

Slope: 15 to 45 percent
Landform: Mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Typic Haploxeralfs and similar soils

Composition: About 14 percent
Slope: 15 to 45 percent
Landform: Bench, landslide, or mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Use and Management Considerations

- This map unit is a complex of relatively stable mountain slopes and landslide complexes interspersed with rock outcrop. The landslides dominantly are relatively shallow erosional sections of ancient debris flows and torrents that channel to a common point, leaving an erosional surface that is wedge shaped when viewed from above. These slopes are subject to further attritional erosion. Although local depositions are included, surfaces in this map unit are more erosional and less depositional than those in map unit 282.

285—Waterwheel-Humic Dystroxerepts complex, 15 to 45 percent slopes, mountain slopes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,730 to 7,880 feet (1,442 to 2,403 meters)
Mean annual precipitation: 35 to 47 inches (889 to 1,194 millimeters)
Mean annual air temperature: 47 to 52 degrees F (8 to 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Waterwheel soil—30 percent
Humic Dystroxerepts—16 percent
Minor components—54 percent

Description of the Waterwheel Soil

Slope: 15 to 45 percent
Landform: Ancient landslide or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded stones, 0 to 5 percent coarse subangular gravel, 0 to 5 percent subrounded boulders, and 0 to 5 percent subangular cobbles

Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.2 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 37500, Montane Chaparral; 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A1—0 to 4 inches; coarse sandy loam
A2—4 to 8 inches; gravelly coarse sandy loam
C1—8 to 16 inches; very cobbly loamy sand
C2—16 to 60 inches; extremely bouldery sandy loam

Description of Humic Dystroxerepts

Slope: 15 to 45 percent
Landform: Ancient landslide, moraine, or mountain slope
Parent material: Colluvium and minor amounts of till from granitoid rock and minor amounts of metasedamentary rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subangular cobbles, 0 to 5 percent coarse subangular gravel, and 0 to 5 percent subangular stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest; 84240, Sierra White Fir Forest; 84230, Sierra Mixed Coniferous Forest; 85310, Red Fir Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 6 inches; loamy sand
A2—6 to 13 inches; loamy sand

AC—13 to 24 inches; loamy sand
C1—24 to 42 inches; sand
C2—42 to 55 inches; cobbly sand
C3—55 to 60 inches; sand

Minor Components

Humic Dystroxerepts sandy-skeletal, frigid and similar soils

Composition: About 14 percent
Slope: 15 to 45 percent
Landform: Ancient landslide, moraine, or mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest; 84232, White Fir Mixed Coniferous Forest

Humic Dystrudepts and similar soils

Composition: About 14 percent
Slope: 15 to 45 percent
Landform: Drainageway or mountain slope
Vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typic Dystroxerepts coarse-loamy, frigid and similar soils

Composition: About 14 percent
Slope: 15 to 45 percent
Landform: Moraine or mountain slope
Vegetative classification: 84240, Sierra White Fir Forest

Humic Dystroxerepts coarse-loamy, frigid and similar soils

Composition: About 7 percent
Slope: 15 to 45 percent
Landform: Ancient landslide, moraine, or mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest; 84231, Ponderosa Pine Mixed Coniferous Forest

Clarkslodge and similar soils

Composition: About 3 percent
Slope: 15 to 45 percent
Landform: Mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Cumulic Humaquepts frigid and similar soils

Composition: About 2 percent
Slope: 0 to 15 percent
Landform: Ephemeral stream or mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Use and Management Considerations

- The types of rock in this map unit are granitoid with minor inclusions (about 5 percent) of metasedimentary rock.
- Ancient landslides occur most notably in map unit delineations near the southwestern border of the survey area.
- The moraines are degraded and indistinct.
- The soils grade into the cryic temperature regime at the high elevations in the map unit and to the mesic temperature regime at the low elevations.
- The slope is greater than 45 percent or less than 15 percent in a few small areas.

286—Nevadafalls-Typic Dystroxerepts-Ultic Palexeralfs-Rock outcrop complex, 0 to 30 percent slopes, mountain slopes, landslides, moraines, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,995 to 6,995 feet (1,828 to 2,133 meters)
Mean annual precipitation: 39 to 41 inches (991 to 1,041 millimeters)
Mean annual air temperature: 49 to 49 degrees F (9 to 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Nevadafalls soil—26 percent
Typic Dystroxerepts—25 percent
Ultic Palexeralfs—20 percent
Rock outcrop—15 percent
Minor components—14 percent

Description of the Nevadafalls Soil

Slope: 0 to 30 percent
Landform: Landslide complex or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.2 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85300, Upper Montane Fir Forest

Typical profile

A—0 to 8 inches; gravelly loamy sand
Bw1—8 to 21 inches; sandy loam
Bw2—21 to 28 inches; sandy loam
C—28 to 60 inches; loamy sand

Description of Typic Dystroxerepts

Slope: 0 to 30 percent
Landform: Ancient landslide or mountain slope

Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
Oa—2 to 3 inches; highly decomposed plant material
A—3 to 16 inches; loamy sand
Bw1—16 to 25 inches; loamy sand
Bw2—25 to 35 inches; sandy loam
C—35 to 60 inches; loamy sand

Description of Ultic Palexeralfs

Slope: 0 to 30 percent
Landform: Deposits ancient landslide, moraine, or mountain slope
Parent material: Colluvium derived from granitoid rock and/or till derived from metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 5 percent subrounded boulders and 2 to 5 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 7.6 inches (high)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 9 inches; sandy loam
Bw—9 to 14 inches; sandy loam
Bt1—14 to 22 inches; loam
Bt2—22 to 32 inches; loam
Crt—32 to 60 inches; clay

Description of Rock Outcrop

Slope: 0 to 30 percent
Landform: Moraine, mountain slope, or mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Badgerpass and similar soils

Composition: About 14 percent
Slope: 0 to 30 percent
Landform: Landslide complex, moraine, or mountain slope
Vegetative classification: 84233, Douglas-fir Mixed Coniferous Forest

Use and Management Considerations

- The morainal deposits do not have distinct geomorphic form.

287—Badgerpass-Waterwheel association, 0 to 15 percent slopes, ridge crests, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 6,035 to 7,770 feet (1,840 to 2,369 meters)
Mean annual precipitation: 37 to 45 inches (940 to 1,143 millimeters)
Mean annual air temperature: 50 to 50 degrees F (about 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Badgerpass soil—55 percent
Waterwheel soil—40 percent
Minor components—5 percent

Description of the Badgerpass Soil

Slope: 0 to 15 percent
Landform: Crests on ridge
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84240, Sierra White Fir Forest

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 2 inches; moderately decomposed plant material
Oa—2 to 3 inches; highly decomposed plant material
A—3 to 11 inches; loamy sand
AC—11 to 25 inches; loamy sand
C—25 to 60 inches; cobbly loamy sand

Description of the Waterwheel Soil

Slope: 10 to 15 percent
Landform: Ridge or crests on ridge
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded boulders, 0 to 5 percent subrounded stones, 0 to 5 percent subangular cobbles, and 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.8 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted

Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 4 inches; loamy coarse sand
Bw1—4 to 11 inches; loamy coarse sand
Bw2—11 to 22 inches; loamy coarse sand
C1—22 to 29 inches; very stony loamy coarse sand
C2—29 to 60 inches; very stony coarse sand

Minor Components

Rock outcrop

Composition: About 5 percent
Slope: 0 to 15 percent
Landform: Ridge or crests on ridge
Vegetative classification: None assigned

288—Rock outcrop-Craneflat-Waterwheel association, 0 to 30 percent slopes, mountain slopes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,075 to 7,605 feet (1,548 to 2,319 meters)
Mean annual precipitation: 37 to 51 inches (940 to 1,295 millimeters)
Mean annual air temperature: 50 to 51 degrees F (10 to 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Rock outcrop—35 percent
Craneflat soil—20 percent
Waterwheel soil—20 percent
Minor components—25 percent

Description of Rock Outcrop

Slope: 0 to 30 percent
Landform: Mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Description of the Craneflat Soil

Slope: 0 to 30 percent
Landform: Moraine, mountain slope, bedrock joints on mountainside, or bedrock dimples in mountainside
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84240, Sierra White Fir Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 1 inch; moderately decomposed plant material
Oa—1 to 2 inches; highly decomposed plant material
A—2 to 4 inches; very stony sandy loam
Bw1—4 to 11 inches; very stony loamy sand
Bw2—11 to 22 inches; very stony loamy coarse sand
Bw3—22 to 30 inches; very stony loamy sand
Bw4—30 to 60 inches; cobbly loamy coarse sand

Description of the Waterwheel Soil

Slope: 10 to 30 percent
Landform: Drainageway or mountain slope
Parent material: Colluvium and/or alluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel, 0 to 5 percent subrounded boulders, 0 to 5 percent subangular cobbles, and 0 to 5 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.8 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 4 inches; loamy coarse sand
Bw1—4 to 11 inches; loamy coarse sand
Bw2—11 to 22 inches; loamy coarse sand
C1—22 to 29 inches; very stony loamy coarse sand
C2—29 to 60 inches; very stony coarse sand

Minor Components

Lithic Xerorthents mesic and similar soils

Composition: About 10 percent
Slope: 0 to 30 percent
Landform: Mountain slope
Vegetative classification: None assigned

Dystric Xeropsamments frigid and similar soils

Composition: About 5 percent
Slope: 0 to 30 percent
Landform: Mountain slope
Vegetative classification: None assigned

Oxyaquic Dystrudepts sandy-skeletal and similar soils

Composition: About 4 percent
Slope: 0 to 10 percent
Landform: Bedrock joints and dimples in mountainside
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Oxyaquic Dystrudepts coarse-loamy and similar soils

Composition: About 4 percent
Slope: 0 to 30 percent
Landform: Bedrock joints and dimples in mountainside
Vegetative classification: 86110, Lodgepole Pine Forest; 84230, Sierra Mixed Coniferous Forest

Histosols frigid and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore or marsh
Vegetative classification: None assigned

Water

Composition: About 1 percent
Landform: Lake
Vegetative classification: None assigned

Use and Management Considerations

- Most of this map unit has been glacially scoured.

289—Waterwheel-Craneflat complex, 35 to 70 percent slopes, mountain slopes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,930 to 8,170 feet (1,503 to 2,490 meters)
Mean annual precipitation: 33 to 47 inches (838 to 1,194 millimeters)
Mean annual air temperature: 45 to 50 degrees F (7 to 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Waterwheel soil—50 percent
Craneflat soil—30 percent
Minor components—20 percent

Description of the Waterwheel Soil

Slope: 35 to 60 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 10 to 20 percent coarse subangular gravel, 2 to 10 percent subangular stones, and 2 to 10 percent subrounded cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest; 84240, Sierra White Fir Forest; 81320, Canyon Live Oak Forest; 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; gravelly slightly decomposed plant material
A1—1 to 6 inches; cobbly loamy coarse sand
A2—6 to 15 inches; cobbly loamy coarse sand
Bw1—15 to 25 inches; very cobbly loamy sand
Bw2—25 to 36 inches; very stony loamy sand
C—36 to 60 inches; very stony loamy coarse sand

Description of the Craneflat Soil

Slope: 35 to 70 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded stones and 2 to 10 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.7 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 4 inches; moderately decomposed plant material
Oa—4 to 4 inches; highly decomposed plant material
A1—4 to 12 inches; very stony loamy sand
A2—12 to 23 inches; extremely stony loamy sand
Bw—23 to 28 inches; extremely stony loamy sand
C—28 to 60 inches; extremely stony sandy loam

Minor Components

Typic Dystroxerepts loamy-skeletal, frigid and similar soils

Composition: About 10 percent
Slope: 35 to 75 percent
Landform: Mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Humic Dystroxerepts coarse-loamy, mesic and similar soils

Composition: About 4 percent
Slope: 35 to 75 percent
Landform: Mountain slope
Vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Xeric Dystrocryepts sandy and similar soils

Composition: About 4 percent
Slope: 35 to 75 percent
Landform: Mountain slope
Vegetative classification: 84232, White Fir Mixed Coniferous Forest

Rock outcrop

Composition: About 2 percent
Slope: 35 to 75 percent
Landform: Mountainside
Vegetative classification: None assigned

Use and Management Considerations

- Slope surfaces are colluvial active and are subject to significant sheet erosion.
- This map unit includes areas with a mesic soil temperature regime at the low elevations and areas with a cryic temperature regime at the high elevations.
- Moraines in this map unit do not have definite form.
- Ancient, indistinct landslides (perhaps slump-earth flow) of uncertain origin, type, and extent may occur in this map unit, especially in delineations in the southwest part of the survey area.

290—Humic Dystroxerepts-Tuolumne-Typic Xerorthents-Ultic Haploxeralfs complex, 30 to 70 percent slopes, mountain slopes, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,710 to 6,050 feet (1,132 to 1,846 meters)
Mean annual precipitation: 33 to 41 inches (838 to 1,041 millimeters)
Mean annual air temperature: 49 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 100 to 150 days

Composition

Humic Dystroxerepts—40 percent
Tuolumne soil—30 percent
Typic Xerorthents—15 percent
Ultic Haploxeralfs—15 percent

Description of Humic Dystroxerepts

Slope: 30 to 70 percent
Landform: Ancient landslide, remnant moraine, or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.0 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 71120, Black Oak Woodland; 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A—0 to 9 inches; gravelly sandy loam
AC—9 to 20 inches; very stony sandy loam
C—20 to 60 inches; very stony sandy loam

Description of the Tuolumne Soil

Slope: 30 to 70 percent
Landform: Remnant moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded cobbles, 0 to 4 percent subrounded boulders, 2 to 10 percent coarse subangular gravel, and 2 to 10 percent subangular stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.7 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

A—0 to 3 inches; very cobbly loamy coarse sand
Bw1—3 to 7 inches; very cobbly loamy coarse sand
Bw2—7 to 12 inches; very cobbly loamy coarse sand
Bw3—12 to 24 inches; very cobbly loamy sand
Bw4—24 to 39 inches; extremely cobbly loamy sand
C1—39 to 46 inches; extremely stony loamy coarse sand
C2—46 to 60 inches; extremely stony loamy coarse sand

Description of Typic Xerorthents

Slope: 30 to 70 percent
Landform: Remnant moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.3 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

A—0 to 4 inches; sandy loam
AC—4 to 15 inches; parastony sandy loam
C—15 to 33 inches; extremely stony sandy loam
Cr—33 to 60 inches; soft weathered bedrock

Description of Ultic Haploxeralfs

Slope: 30 to 70 percent
Landform: Ancient landslide, remnant moraine, or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles, 2 to 80 percent subrounded boulders, and 2 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 8.4 inches (high)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84210, Westside Ponderosa Pine Forest

Typical profile

Oi—0 to 1 inch; bouldery slightly decomposed plant material
Oe—1 to 2 inches; bouldery slightly decomposed plant material
Oa—2 to 2 inches; bouldery slightly decomposed plant material
A1—2 to 6 inches; bouldery sandy loam
A2—6 to 12 inches; bouldery sandy loam
Bt1—12 to 30 inches; bouldery sandy clay loam
Bt2—30 to 41 inches; sandy clay loam
Ct—41 to 60 inches; sandy clay loam

Use and Management Considerations

- The drainage patterns are dominantly linear to divergent.
- Moraines in this map unit have little or no distinctive form because of long-term geologic erosion.

291—Ultic Haploxeralfs-Typic Dystroxerepts complex, 5 to 25 percent slopes, mountain footslopes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,225 to 6,900 feet (1,593 to 2,104 meters)
Mean annual precipitation: 35 to 45 inches (889 to 1,143 millimeters)
Mean annual air temperature: 49 to 49 degrees F (about 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Ultic Haploxeralfs—41 percent
Typic Dystroxerepts—31 percent
Minor components—28 percent

Description of Ultic Haploxeralfs

Slope: 5 to 25 percent
Landform: Ancient landslide, mountain slope, or stream terrace
Parent material: Colluvium with minor alluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.5 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest; 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
Oa—2 to 3 inches; highly decomposed plant material
A1—3 to 5 inches; coarse sandy loam
A2—5 to 12 inches; coarse sandy loam
BA—12 to 19 inches; coarse sandy loam
Bt1—19 to 22 inches; sandy loam
Bt2—22 to 41 inches; sandy loam
Bt3—41 to 57 inches; sandy loam
Bt4—57 to 61 inches; sandy loam

Description of Typic Dystroxerepts

Slope: 5 to 25 percent
Landform: Mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel and 0 to 5 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 7 inches; sandy loam
AB—7 to 16 inches; cobbly sandy loam
Bw1—16 to 29 inches; cobbly sandy loam
Bw2—29 to 39 inches; cobbly sandy loam
C—39 to 60 inches; cobbly sandy loam

Minor Components

Clarkslodge and similar soils

Composition: About 14 percent

Slope: 5 to 25 percent
Landform: Ancient landslide or mountain slope
Vegetative classification: 84232, White Fir Mixed Coniferous Forest

Dystric Xeropsamments frigid and similar soils

Composition: About 14 percent
Slope: 5 to 25 percent
Landform: Mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Use and Management Considerations

- Mountain footslopes extend upslope into lower backslopes and downslope into toeslopes.
- The majority of surfaces in this map unit are depositional.
- Ancient landslides occur in the southwestern portion of the survey area.
- Small (about less than 2 hectares) meadows make up about 1 percent of the map unit.
- Minor amounts of intermittent till occur under colluvial deposits.

292—Humic Dystroxerepts-Typic Haploxerults complex, 5 to 35 percent slopes, mountain footslopes, landslides, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,840 to 5,790 feet (1,171 to 1,765 meters)
Mean annual precipitation: 33 to 45 inches (838 to 1,143 millimeters)
Mean annual air temperature: 51 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 100 to 150 days

Composition

Humic Dystroxerepts—35 percent
Typic Haploxerults—30 percent
Minor components—35 percent

Description of Humic Dystroxerepts

Slope: 5 to 35 percent
Landform: Ancient landslide or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium

Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest; 84233, Douglas-fir Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 1 inch; moderately decomposed plant material
A1—1 to 3 inches; gravelly loamy sand
A2—3 to 4 inches; loamy sand
Bw1—4 to 7 inches; loamy sand
Bw2—7 to 11 inches; gravelly loamy sand
Bw3—11 to 19 inches; cobbly loamy sand
Bw4—19 to 31 inches; extremely stony loamy sand
C—31 to 60 inches; extremely stony loamy sand

Description of Typic Haploxerults

Slope: 5 to 35 percent
Landform: Ancient deposits landslide or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel, 0 to 5 percent subangular cobbles, and 0 to 5 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 8.4 inches (high)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84210, Westside Ponderosa Pine Forest; 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 4 inches; moderately decomposed plant material
A1—4 to 7 inches; gravelly coarse sandy loam
A2—7 to 9 inches; cobbly sandy loam
Bt1—9 to 15 inches; sandy clay loam
Bt2—15 to 22 inches; cobbly clay loam
Bt3—22 to 60 inches; stony clay loam

Minor Components

Humic Haploxerepts sandy-skeletal, mesic and similar soils

Composition: About 10 percent
Slope: 5 to 35 percent
Landform: Mountain slope
Vegetative classification: 84233, Douglas-fir Mixed Coniferous Forest

Typic Xerorthents sandy-skeletal, mesic and similar soils

Composition: About 10 percent
Slope: 5 to 35 percent
Landform: Drainageway or mountain slope
Vegetative classification: 84233, Douglas-fir Mixed Coniferous Forest

Ultic Haploxeralfs coarse-loamy, mesic and similar soils

Composition: About 10 percent
Slope: 5 to 35 percent
Landform: Ancient deposits landslide or mountain slope
Vegetative classification: 84250, Big Tree Forest

Dystric Xeropsamments mesic and similar soils

Composition: About 5 percent
Slope: 5 to 35 percent
Landform: Mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Use and Management Considerations

- The types of rock in this map unit are granitoid in the more southerly delineations and metasedimentary in the more northerly delineations.
- See map unit 282 for information regarding landslides.
- Mountain footslopes extend upslope into lower backslopes and downslope into toeslopes.
- In delineations generally south of the South Fork of the Tuolumne River, where granitoid rock dominates, numerous parallel ephemeral drainageways dissect ancient landslide deposits and footslopes into a complex, closely repeating system of concave channels and convex interfluves. North (as well as a bit south) of the South Fork of the Tuolumne River, where metasedimentary rock dominates, mountain slopes and ancient landslide deposits are smoother overall.
- This map unit includes short reaches of slopes that are steeper than 35 percent.
- Ultisols favor lower elevations, lower slope positions, and flatter slopes. Alfisols typically are upslope from Ultisols. Inceptisols and Entisols favor higher and steeper slope positions and drainageways.
- Minor amounts of volcanic ash occur intermittently in the Inceptisols and Entisols throughout much of the map unit.

293—Xeric Dystrocryepts-Vitrandic Dystrocryepts association, 0 to 25 percent slopes, mountain slopes, summits, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park (fig. 20)
Major land resource area: Sierra Nevada Mountains (22A)

Figure 20.—An area of Xeric Dystrocryepts-Vitrandic Dystrocryepts association, 0 to 25 percent slopes, mountain slopes, summits, cryic, west of Badger Pass ski area off the Glacier Point Road.

Landscape: Mountains
Elevation: 6,065 to 8,960 feet (1,850 to 2,732 meters)
Mean annual precipitation: 37 to 51 inches (940 to 1,295 millimeters)
Mean annual air temperature: 50 to 50 degrees F (about 10 degrees C)
Frost-free period: 15 to 45 days

Composition

Xeric Dystrocryepts—70 percent

Vitrandic Dystrocryepts—18 percent
Minor components—12 percent

Description of Xeric Dystrocryepts

Slope: 0 to 25 percent
Landform: Remnant moraine or mountain slope
Parent material: Colluvium and/or residuum and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85310, Red Fir Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A1—0 to 4 inches; loamy fine sand
A2—4 to 20 inches; loamy fine sand
A3—20 to 34 inches; loamy sand
C1—34 to 47 inches; stony loamy sand
C2—47 to 60 inches; stony loamy sand

Description of Vitrandic Dystrocryepts

Slope: 9 to 25 percent
Landform: Mountain slope or mountainside
Parent material: Colluvium and/or residuum weathered from granitoid rock and volcanic ash
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.5 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84240, Sierra White Fir Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A1—0 to 2 inches; sandy loam
A2—2 to 5 inches; sandy loam
Bw1—5 to 18 inches; sandy loam
Bw2—18 to 25 inches; sandy loam
C1—25 to 36 inches; very cobbly sandy loam
C2—36 to 60 inches; cobbly sandy loam

Minor Components

Humic Dystroxerepts sandy, frigid and similar soils

Composition: About 12 percent
Slope: 0 to 25 percent
Landform: Moraine or mountain slope
Vegetative classification: 84240, Sierra White Fir Forest

Use and Management Considerations

- The types of rock in this map unit are granitoid with metavolcanic rock on Rancheria Mountain and, in a few small delineations, easterly to the crests above Rogers Canyon.
- Soils grade into the frigid temperature regime at the low elevations in the map unit.
- Slopes and summits are capped intermittently by till of remnant moraines.
- Small (less than 2 hectares) meadows occupy about 2 percent of the map unit.

294—Waterwheel-Typic Dystroxerepts complex, 30 to 70 percent slopes, landslides, mountain slopes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park (fig. 21)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,830 to 6,940 feet (1,169 to 2,116 meters)
Mean annual precipitation: 35 to 43 inches (889 to 1,092 millimeters)
Mean annual air temperature: 49 to 51 degrees F (9 to 11 degrees C)
Frost-free period: 100 to 150 days

Composition

Waterwheel soil—65 percent
Typic Dystroxerepts—35 percent

Description of the Waterwheel Soil

Slope: 30 to 60 percent
Landform: Ancient landslide or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Figure 21.—An area of Waterwheel-Typic Dystroxerepts complex, 30 to 70 percent slopes, landslides, mountain slopes, frigid, along the Wawona-Mariposa Grove Trail.

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders, 0 to 5 percent subangular cobbles, and 0 to 5 percent coarse subangular gravel

Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest; 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
Oa—1 to 2 inches; highly decomposed plant material
A1—2 to 6 inches; loamy coarse sand
A2—6 to 11 inches; stony loamy coarse sand
C1—11 to 26 inches; extremely stony loamy sand
C2—26 to 60 inches; extremely stony loamy sand

Description of Typic Dystroxerepts

Slope: 30 to 70 percent
Landform: Ephemeral stream, ancient deposits landslide, or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded boulders, 0 to 5 percent subrounded stones, 0 to 5 percent subangular cobbles, and 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.7 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; stony slightly decomposed plant material
A1—1 to 5 inches; coarse sandy loam
A2—5 to 12 inches; coarse sandy loam

Bw—12 to 20 inches; cobbly coarse sandy loam
C1—20 to 28 inches; very stony coarse sandy loam
C2—28 to 49 inches; cobbly coarse sandy loam
Cr—49 to 60 inches; soft weathered bedrock

Use and Management Considerations

- The types of rock in this map unit are mainly granitoid; metasedimentary rock occurs between Hodgdon and Crane Flat.
- Ancient landslides dominantly occur as concave erosional scarps and upper backslopes and as smaller areas with somewhat convex depositions below.
- Mountain slopes and landslide scarps and backslopes commonly are dissected by a roughly covering pattern of concave channels and convex interfluves.
- The soil temperature regime grades to mesic at the low elevations in the map unit (especially on southerly aspects).

295—Craneflat-Typic Dystroxerepts complex, 15 to 45 percent slopes, landslides, mountain slopes, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park (fig. 22)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,645 to 6,935 feet (1,416 to 2,114 meters)
Mean annual precipitation: 35 to 43 inches (889 to 1,092 millimeters)
Mean annual air temperature: 51 to 51 degrees F (about 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Craneflat soil—25 percent
Typic Dystroxerepts—25 percent
Minor components—50 percent

Description of the Craneflat Soil

Slope: 15 to 45 percent
Landform: Landslide or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent coarse subangular gravel, 2 to 10 percent subangular cobbles, and 2 to 10 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted

Figure 22.—An area of Craneflat-Typic Dystroxerepts complex, 15 to 45 percent slopes, landslides, mountain slopes, frigid, near Glacier Point Road.

Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest; 84240, Sierra White Fir Forest; 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

A—0 to 5 inches; gravelly coarse sandy loam
Bw—5 to 19 inches; stony coarse sandy loam
C—19 to 60 inches; very stony coarse sandy loam

Description of Typic Dystroxerepts

Slope: 15 to 45 percent
Landform: Lower landslide or mountain slope
Parent material: Colluvium and minor residuum weathered from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel, 0 to 5 percent subangular cobbles, and 0 to 5 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 9 inches; sandy loam
Bw1—9 to 18 inches; cobbly sandy loam
Bw2—18 to 31 inches; cobbly sandy loam
C—31 to 60 inches; sandy loam

Minor Components

Badgerpass and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent
Landform: Landslide or mountain slope
Vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Nevadafalls and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent
Landform: Landslide or mountain slope
Vegetative classification: 84240, Sierra White Fir Forest

Ultic Haploxeralfs fine-loamy, frigid and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent

Landform: Landslide
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Vitrandic Dystroxerepts frigid and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent
Landform: Landslide or mountain slope
Vegetative classification: 84240, Sierra White Fir Forest

Humic Dystroxerepts sandy, mesic and similar soils

Composition: About 8 percent
Slope: 15 to 45 percent
Landform: Landslide or mountain slope
Vegetative classification: None assigned

Rock outcrop

Composition: About 2 percent
Slope: 15 to 45 percent
Landform: Landslide or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- See map unit 282 for information regarding landslides.
- Ancient landslides are overall concave erosional backslopes with depositions below. Compared with slopes in map unit 294, which are steeper and more erosional, slopes in this map unit are less steep and more depositional.
- Map unit 295 often lies upslope from map unit 292.
- The soil temperature regime grades to mesic at the low elevations in the map unit.

296—Ultic Palexeralfs-Humic Dystroxerepts complex, 10 to 35 percent slopes, mountain slopes, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,585 to 5,455 feet (1,094 to 1,663 meters)
Mean annual precipitation: 31 to 45 inches (787 to 1,143 millimeters)
Mean annual air temperature: 53 to 53 degrees F (11 to 12 degrees C)
Frost-free period: 100 to 150 days

Composition

Ultic Palexeralfs—20 percent
Humic Dystroxerepts—15 percent
Minor components—65 percent

Description of Ultic Palexeralfs

Slope: 10 to 35 percent
Landform: Ancient landslide or mountain slope
Parent material: Colluvim and/or residuum and/or till derived from metamorphic rock and/or granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 10.0 inches (high)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: 84210, Westside Ponderosa Pine Forest; 84232, White Fir Mixed Coniferous Forest; 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A1—3 to 6 inches; loam
A2—6 to 12 inches; loam
Bt1—12 to 23 inches; clay loam
Bt2—23 to 32 inches; silty clay loam
CBt—32 to 41 inches; silty clay loam
Ct—41 to 60 inches; clay loam

Description of Humic Dystroxerepts

Slope: 10 to 35 percent
Landform: Ancient landslide, moraine, or mountain slope
Parent material: Colluvium with minor till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.5 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest; 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material

Oe—1 to 3 inches; moderately decomposed plant material
A—3 to 6 inches; sandy loam
AB—6 to 17 inches; sandy loam
Bw1—17 to 22 inches; sandy loam
Bw2—22 to 28 inches; sandy loam
C1—28 to 37 inches; paracobbly fine sandy loam
C2—37 to 48 inches; sandy loam
C3—48 to 70 inches; loamy coarse sand
C4—70 to 86 inches; loamy sand
C5—86 to 106 inches; loamy fine sand

Minor Components

Dystric Xerorthents sandy-skeletal, mesic and similar soils

Composition: About 10 percent
Slope: 10 to 35 percent
Landform: Mountain slope
Vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Humic Dystroxerepts loamy-skeletal, mesic and similar soils

Composition: About 10 percent
Slope: 10 to 35 percent
Landform: Ancient landslide, moraine, or mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest; 84231, Ponderosa Pine Mixed Coniferous Forest

Ultic Haploxeralfs loamy-skeletal, mesic and similar soils

Composition: About 10 percent
Slope: 10 to 35 percent
Landform: Ancient landslide or mountain slope
Vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Ultic Palexeralfs coarse-loamy, mesic and similar soils

Composition: About 10 percent
Slope: 10 to 35 percent
Landform: Ancient landslide or mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Vitrandic Haploxerepts and similar soils

Composition: About 10 percent
Slope: 10 to 35 percent
Landform: Ancient landslide or mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Dystric Xeropsamments mesic and similar soils

Composition: About 5 percent
Slope: 10 to 35 percent
Landform: Mountain slope
Vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Rock outcrop

Composition: About 5 percent
Slope: 10 to 35 percent
Landform: Ancient landslide or mountain slope
Vegetative classification: None assigned

Typic Palexerults and similar soils

Composition: About 5 percent
Slope: 10 to 35 percent
Landform: Ancient landslide or mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Use and Management Considerations

- Mountain slopes comprise mid to upper backslopes, footslopes, and toeslopes.
- The glacial deposits have little or no morainal form.
- Compared to map unit 297, slopes in this map unit tend to be more heavily forested.

297—Typic Xerorthents-Rock outcrop-Typic Xeropsamments complex, 15 to 45 percent slopes, mountain slopes, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,935 to 6,255 feet (1,200 to 1,908 meters)
Mean annual precipitation: 33 to 43 inches (838 to 1,092 millimeters)
Mean annual air temperature: 51 to 51 degrees F (10 to 11 degrees C)
Frost-free period: 100 to 150 days

Composition

Typic Xerorthents—30 percent
Rock outcrop—25 percent
Typic Xeropsamments—25 percent
Minor components—20 percent

Description of Typic Xerorthents

Slope: 15 to 45 percent
Landform: Mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.5 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e

Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest; 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 1 inch; moderately decomposed plant material
A1—1 to 3 inches; loamy sand
A2—3 to 6 inches; loamy sand
Bw1—6 to 9 inches; cobbly loamy sand
Bw2—9 to 16 inches; gravelly loamy sand
Bw3—16 to 28 inches; cobbly loamy sand
Bw4—28 to 60 inches; very stony loamy sand

Description of Rock Outcrop

Slope: 15 to 45 percent
Landform: Mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Description of Typic Xeropsamments

Slope: 15 to 45 percent
Landform: Mountain slope or narrow mountain valley
Parent material: Alluvium and/or colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.7 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oa—1 to 1 inch; highly decomposed plant material
A1—1 to 3 inches; loamy sand
A2—3 to 7 inches; loamy sand
Bw1—7 to 12 inches; loamy sand
Bw2—12 to 17 inches; loamy sand
C1—17 to 21 inches; sand
C2—21 to 30 inches; paragravelly sand
C3—30 to 38 inches; gravelly sand
Cr—38 to 60 inches; soft weathered bedrock

Minor Components

Humic Dystroxerepts sandy-skeletal, mesic and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent
Landform: Ancient landslide or mountain slope
Vegetative classification: None assigned

Lithic Xerorthents mesic and similar soils

Composition: About 10 percent
Slope: 15 to 35 percent
Landform: Mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- The soil temperature regime grades to frigid at the high elevations in the map unit.

298—Tuolumne-Typic Dystroxerepts complex, 30 to 65 percent slopes, mountain slopes, landslides, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,355 to 5,680 feet (1,023 to 1,732 meters)
Mean annual precipitation: 33 to 41 inches (838 to 1,041 millimeters)
Mean annual air temperature: 51 to 52 degrees F (about 11 degrees C)
Frost-free period: 100 to 150 days

Composition

Tuolumne soil—41 percent
Typic Dystroxerepts—31 percent
Minor components—28 percent

Description of the Tuolumne Soil

Slope: 30 to 65 percent
Landform: Ephemeral stream, ancient landslide, or mountain slope
Parent material: Colluvium with minor alluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded stones, 0 to 5 percent subangular cobbles, 0 to 5 percent subrounded boulders, and 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest; 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
Oa—1 to 2 inches; highly decomposed plant material
A1—2 to 6 inches; loamy coarse sand
A2—6 to 11 inches; stony loamy coarse sand
C1—11 to 26 inches; extremely stony loamy sand
C2—26 to 60 inches; extremely stony loamy sand

Description of Typic Dystroxerepts

Slope: 30 to 65 percent
Landform: Ephemeral stream, ancient deposits landslide, or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subangular cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders, and 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.7 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; stony slightly decomposed plant material
A1—1 to 5 inches; coarse sandy loam
A2—5 to 12 inches; coarse sandy loam
Bw—12 to 20 inches; cobbly coarse sandy loam
C1—20 to 28 inches; very stony coarse sandy loam
C2—28 to 49 inches; cobbly coarse sandy loam
Cr—49 to 60 inches; soft weathered bedrock

Minor Components

Humults fine-loamy, mesic and similar soils

Composition: About 14 percent
Slope: 30 to 65 percent
Landform: Ancient deposits landslide or lower mountain slope
Vegetative classification: 84232, White Fir Mixed Coniferous Forest

Ultic Haploxeralfs fine-loamy, mesic and similar soils

Composition: About 14 percent
Slope: 30 to 65 percent
Landform: Ancient deposits landslide or lower backslopes on mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Use and Management Considerations

- The types of rock in this map unit are mainly granitoid; metasedimentary rock occurs in the northwestern delineations.
- This map unit is similar to other map units containing significant ancient landslides. It occurs most commonly near the contacts of contrasting types of bedrock along the southwestern edge of the survey area. See map unit 282 for more information.
- This map unit has landscapes that are similar to those in map unit 294, which is in the frigid soil temperature regime. Ancient landslides dominantly are concave erosional scarps and upper backslopes of debris avalanches and debris torrents, with a few poorly defined slumps. Smaller areas of somewhat convex, more gently sloping depositions occur downslope from the erosional surfaces.
- Mountain slopes and landslide scarps and backslopes commonly are dissected by a roughly converging pattern of concave channels and convex interfluves.

299—Humic Dystroxerepts-Ultic Haploxeralfs complex, 15 to 35 percent slopes, mountain slopes, moraines, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,055 to 5,890 feet (1,236 to 1,796 meters)
Mean annual precipitation: 37 to 45 inches (940 to 1,143 millimeters)
Mean annual air temperature: 53 to 53 degrees F (about 12 degrees C)
Frost-free period: 100 to 150 days

Composition

Humic Dystroxerepts—46 percent

Ultic Haploxeralfs—35 percent
Minor components—19 percent

Description of Humic Dystroxerepts

Slope: 15 to 35 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 10 to 35 percent subrounded stones, 0 to 5 percent subangular cobbles, and 0 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.8 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7s
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; very stony slightly decomposed plant material
Oe—1 to 1 inch; very stony moderately decomposed plant material
Oa—1 to 2 inches; very stony highly decomposed plant material
A—2 to 4 inches; very stony coarse sand
Bw1—4 to 11 inches; very stony coarse sand
Bw2—11 to 22 inches; very stony coarse sand
Bw3—22 to 30 inches; very stony loamy sand
Bw4—30 to 60 inches; cobbly coarse sand

Description of Ultic Haploxeralfs

Slope: 15 to 35 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or residuum and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subangular cobbles, 0 to 5 percent coarse subangular gravel, and 0 to 5 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted

Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 8 inches; stony sandy loam
Bw—8 to 17 inches; sandy loam
Bt1—17 to 28 inches; gravelly sandy loam
Bt2—28 to 47 inches; sandy loam
C—47 to 60 inches; sandy loam

Minor Components

Typic Dystroxerepts coarse-loamy, mesic and similar soils

Composition: About 14 percent
Slope: 15 to 35 percent
Landform: Mountain slope
Vegetative classification: None assigned

Rock outcrop

Composition: About 5 percent
Slope: 15 to 35 percent
Landform: Avalanche track or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- Morainal forms vary from distinct lateral moraines to indistinct drift deposits.

300—Typic Dystroxerepts-Ultic Haploxeralfs complex, 0 to 15 percent slopes, mountain slopes, moraines, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park (figs. 23 and 24)
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,985 to 5,655 feet (1,215 to 1,724 meters)
Mean annual precipitation: 35 to 41 inches (889 to 1,041 millimeters)
Mean annual air temperature: 49 to 51 degrees F (9 to 11 degrees C)
Frost-free period: 100 to 150 days

Composition

Typic Dystroxerepts—35 percent
Ultic Haploxeralfs—25 percent
Minor components—40 percent

Description of Typic Dystroxerepts

Slope: 0 to 15 percent

Figure 23.—Fire is used to reduce understory brush and downed trees in areas of Typic Dystroxerepts-Ultic Haploxeralfs complex, 0 to 15 percent slopes, mountain slopes, moraines, mesic, near Wawona.

Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted

Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.6 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted

Figure 24.—An area of Typic Dystroxerepts-Ultic Haploxeralfs complex, 0 to 15 percent slopes, mountain slopes, moraines, mesic, that has not had recent fire, near the junction of the Wawona Trail.

Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84210, Westside Ponderosa Pine Forest; 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; slightly decomposed plant material
A—2 to 2 inches; sandy loam
Bw—2 to 5 inches; gravelly sandy loam
Bt1—5 to 9 inches; sandy loam
Bt2—9 to 15 inches; gravelly sandy loam
Bt3—15 to 20 inches; sandy loam
Cr—20 to 30 inches; soft weathered bedrock

Description of Ultic Haploxeralfs

Slope: 0 to 15 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 6.5 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
Oa—2 to 2 inches; highly decomposed plant material
A—2 to 10 inches; cobbly sandy loam
Bw—10 to 19 inches; cobbly sandy loam
Bt—19 to 60 inches; cobbly sandy clay loam

Minor Components

Humic Dystroxerepts loamy-skeletal, mesic and similar soils

Composition: About 14 percent
Slope: 0 to 15 percent

Landform: Moraine or mountain slope
Vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Ultic Palexeralfs coarse-loamy, mesic and similar soils

Composition: About 14 percent
Slope: 0 to 15 percent
Landform: Moraine or mountain slope
Vegetative classification: 84210, Westside Ponderosa Pine Forest

Humults fine-loamy, mesic and similar soils

Composition: About 11 percent
Slope: 0 to 15 percent
Landform: Moraine or mountain slope
Vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Histosols mesic and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Marsh
Vegetative classification: None assigned

Use and Management Considerations

- Moraines dominantly consist of ancient till (pre-Tahoe), which commonly appears compacted (with increased density and penetration resistance) at a depth of about 30 to 100 centimeters.

301—Vitrandic Haploxerolls, coarse-loamy, 0 to 2 percent slopes, somewhat poorly drained, mesic

Setting

General location: El Capitan and Sentinel Meadows in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,950 to 3,960 feet (1,205 to 1,207 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Vitrandic Haploxerolls—90 percent
Minor components—10 percent

Description of Vitrandic Haploxerolls

Slope: 0 to 2 percent
Landform: Mountain valley or stable low stream terrace
Parent material: Alluvium derived from granitoid rock
Typical vegetation: Main tree species—ponderosa pine, incense cedar, and black oak

Selected properties and qualities

General features: This component is in very subtle, higher geomorphic positions that are just above the flood plain.

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 7.8 inches (high)

Selected hydrologic properties

Present annual flooding: Rare
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Somewhat poorly drained
Hydrologic soil group: C

California land use interpretive groups

Land capability classification (nonirrigated): 4w
Other vegetative classification: None assigned

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 4 inches; loam
A2—4 to 7 inches; loam
AB—7 to 11 inches; fine sandy loam
Bw—11 to 19 inches; fine sandy loam
C1—19 to 34 inches; sandy loam
C2—34 to 57 inches; fine sandy loam
C3—57 to 63 inches; fine sandy loam
C4—63 to 69 inches; coarse sand

Minor Components

Sentinel loam and similar soils

Composition: About 5 percent
Slope: 0 to 2 percent
Landform: Slightly higher positions on lake terrace or mountain valley
Vegetative classification: None assigned

Leidig fine sandy loam and similar soils

Composition: About 3 percent
Slope: 0 to 2 percent
Landform: Slightly lower positions on high flood plain or mountain valley
Vegetative classification: None assigned

Unnamed soils with sandy subsoils that occur randomly and similar soils

Composition: About 2 percent
Slope: 0 to 2 percent
Landform: Mountain valley or stream terrace
Vegetative classification: None assigned

Use and Management Considerations

- The high water table is a management concern.
- Flooding and deposition are management concerns.
- Soil disturbance and the subsequent loss of the organic surface layer are management concerns.

302—Typic Haploxerults-Ultic Haploxeralfs complex, 0 to 30 percent slopes, mountain slopes, hummocky, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,155 to 5,465 feet (1,267 to 1,667 meters)
Mean annual precipitation: 33 to 43 inches (838 to 1,092 millimeters)
Mean annual air temperature: 50 to 51 degrees F (10 to 11 degrees C)
Frost-free period: 100 to 150 days

Composition

Typic Haploxerults—45 percent
Ultic Haploxeralfs—41 percent
Minor components—14 percent

Description of Typic Haploxerults

Slope: 0 to 30 percent
Landform: Ancient landslide complex or mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 9.6 inches (high)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 2 inches; moderately decomposed plant material
Oa—2 to 3 inches; highly decomposed plant material
A—3 to 5 inches; loam
AB—5 to 12 inches; loam
Bt1—12 to 22 inches; clay loam
Bt2—22 to 60 inches; sandy clay loam

Description of Ultic Haploxeralfs

Slope: 0 to 30 percent
Landform: Landslide complex or mountain slope

Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 6.5 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
Oa—2 to 2 inches; highly decomposed plant material
A—2 to 10 inches; cobbly sandy loam
Bw—10 to 19 inches; cobbly sandy loam
Bt—19 to 60 inches; cobbly sandy clay loam

Minor Components

Happyisles and similar soils

Composition: About 14 percent
Slope: 0 to 9 percent
Landform: Ephemeral stream or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- Mountain slopes in this map unit are mantled by hummocky, deeply weathered deposits of ancient landslide debris.
- See map unit 282, which has soils in the frigid soil temperature regime, for more information.

303—Rock outcrop-Dystric Xeropsamments-Humic Dystroxerepts-Tuolumne complex, 30 to 65 percent slopes, mountain slopes, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,525 to 6,005 feet (1,075 to 1,831 meters)
Mean annual precipitation: 33 to 45 inches (838 to 1,143 millimeters)

Mean annual air temperature: 50 to 51 degrees F (about 10 degrees C)
Frost-free period: 100 to 150 days

Composition

Rock outcrop—30 percent
Dystric Xeropsamments—20 percent
Humic Dystroxerepts—20 percent
Tuolumne soil—20 percent
Minor components—10 percent

Description of Rock Outcrop

Slope: 30 to 65 percent
Landform: Mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Dystric Xeropsamments

Slope: 30 to 65 percent
Landform: Mountain slope, bedrock joints on mountainside, or benches on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 15 percent subrounded stones, 0 to 15 percent subrounded boulders, 2 to 10 percent coarse subangular gravel, and 2 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.1 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84210, Westside Ponderosa Pine Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
A1—1 to 3 inches; gravelly loamy sand
A2—3 to 5 inches; loamy sand
CA—5 to 14 inches; loamy sand
C1—14 to 28 inches; loamy sand
C2—28 to 37 inches; cobbly loamy sand
Cr—37 to 60 inches; soft weathered bedrock

Description of Humic Dystroxerepts

Slope: 30 to 65 percent
Landform: Remnant moraine, mountain slope, or bedrock joints and benches on mountainside
Parent material: Colluvium with minor till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles, 2 to 10 percent coarse subangular gravel, and 5 to 15 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.5 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 81320, Canyon Live Oak Forest; 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

Oe—0 to 1 inch; stony slightly decomposed plant material
A1—1 to 2 inches; cobbly loamy sand
A2—2 to 7 inches; very cobbly loamy sand
C1—7 to 13 inches; very cobbly loamy sand
C2—13 to 33 inches; extremely stony loamy sand
C3—33 to 60 inches; extremely stony loamy sand

Description of the Tuolumne Soil

Slope: 30 to 65 percent
Landform: Avalanche chute, ephemeral stream, mountain slope, or benches on mountainside
Parent material: Colluvium with minor alluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subrounded boulders,

5 to 15 percent subrounded stones, 2 to 10 percent subangular cobbles, and 2 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.1 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84210, Westside Ponderosa Pine Forest; 81500, Mixed, North Slope Forest

Typical profile

Oi—0 to 1 inch; bouldery slightly decomposed plant material
A—1 to 9 inches; very cobbly coarse sandy loam
Bw—9 to 21 inches; very cobbly loamy coarse sand
C1—21 to 29 inches; very stony loamy coarse sand
C2—29 to 44 inches; very cobbly loamy coarse sand
C3—44 to 60 inches; very cobbly loamy coarse sand

Minor Components

Dystric Xerorthents and similar soils

Composition: About 5 percent
Slope: 30 to 65 percent
Landform: Avalanche chute, ephemeral stream, mountain slope, or benches on mountainside
Vegetative classification: 81500, Mixed, North Slope Forest

Ultic Palexeralfs fine-loamy, mesic and similar soils

Composition: About 5 percent
Slope: 30 to 65 percent
Landform: Remnant moraine or mountain slope
Vegetative classification: 84210, Westside Ponderosa Pine Forest

304—Clarkslodge-Rock outcrop complex, 0 to 30 percent slopes, mountain slopes, metavolcanic, frigid/mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,885 to 6,755 feet (1,489 to 2,060 meters)
Mean annual precipitation: 35 to 45 inches (889 to 1,143 millimeters)
Mean annual air temperature: 49 to 50 degrees F (about 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Clarkslodge soil—60 percent
Rock outcrop—15 percent
Minor components—25 percent

Description of the Clarkslodge Soil

Slope: 0 to 30 percent
Landform: Remnant moraine or mountain slope
Parent material: Residuum and colluvium derived from granitoid and metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.7 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84250, Big Tree Forest; 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
Oa—1 to 1 inch; highly decomposed plant material
A—1 to 3 inches; coarse sandy loam
Bw—3 to 6 inches; coarse sandy loam
Bt1—6 to 12 inches; coarse sandy loam
Bt2—12 to 27 inches; coarse sandy loam
Bt3—27 to 35 inches; gravelly sandy loam
Ct—35 to 60 inches; gravelly sandy loam

Description of Rock Outcrop

Slope: 0 to 30 percent
Landform: Mountainside
Parent material: Metamorphic rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 12 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Humults coarse-loamy, frigid and similar soils

Composition: About 14 percent
Slope: 0 to 30 percent
Landform: Remnant moraine or mountain slope
Vegetative classification: 84250, Big Tree Forest

Typic Haploxerepts mesic and similar soils

Composition: About 11 percent
Slope: 0 to 30 percent
Landform: Mountain slope
Vegetative classification: 84210, Westside Ponderosa Pine Forest; 81500, Mixed, North Slope Forest

Use and Management Considerations

- The types of rock in this map unit are metavolcanic andesite and hornfels with minor amounts of intermediate granitoid rock.
- The soils in this map unit extend from mesic to frigid soil temperature regimes. Soils in the mesic temperature regime, which are inferred to be Entisols and Inceptisols, are associated with the andesitic lahars of the Relief Peak Formation (Trp) as mapped by Huber et al. *(8)*. Soils in the frigid temperature regime, which were described as Alfisols and Utisols, are associated with "metavolcanic rock, undivided" (Kmv) as mapped by Huber et al *(8)*. These relationships seem to suggest that soil development in this map unit is related more closely to parent material than to temperature regime. (Alfisols and Ultisols, which are more developed than Entisols and Inceptisols, occur on the cooler sites.)

305—Rock outcrop-Waterwheel-Dystric Xeropsamments association, 0 to 35 percent slopes, mountain valleys, scoured, valley fill, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys, mountain canyons, or mountains
Elevation: 4,935 to 6,640 feet (1,505 to 2,025 meters)
Mean annual precipitation: 39 to 51 inches (991 to 1,295 millimeters)
Mean annual air temperature: 49 to 49 degrees F (9 to 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Rock outcrop—50 percent
Waterwheel soil—18 percent
Dystric Xeropsamments—15 percent
Minor components—17 percent

Description of Rock Outcrop

Slope: 0 to 35 percent
Landform: Scoured glacial-valley floor or toe of glacial-valley wall
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent coarse subangular gravel and 2 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Waterwheel Soil

Slope: 10 to 35 percent
Landform: Mountain slope or aprons on mountainside
Parent material: Alluvium and/or colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent coarse subangular gravel and 5 to 15 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 0.8 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

A—0 to 3 inches; very gravelly sand
C—3 to 9 inches; extremely gravelly sand
Bw—9 to 11 inches; very gravelly sand
C´1—11 to 21 inches; extremely gravelly sand
C´2—21 to 60 inches; extremely gravelly sand

Description of Dystric Xeropsamments

Slope: 0 to 35 percent
Landform: Flood plain or terrace

Parent material: Alluvium and/or colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.1 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 85210, Jeffrey Pine-Fir Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A—0 to 6 inches; loamy sand
Bw1—6 to 18 inches; loamy sand
Bw2—18 to 25 inches; loamy sand
C1—25 to 41 inches; loamy sand
C2—41 to 60 inches; loamy sand

Minor Components

Water

Composition: About 6 percent
Landform: Lake
Vegetative classification: None assigned

Lithic Xerorthents frigid and similar soils

Composition: About 5 percent
Slope: 0 to 35 percent
Landform: Adjacent to rock outcrop valley floor
Vegetative classification: None assigned

Typic Haploxerepts frigid and similar soils

Composition: About 3 percent
Slope: 0 to 35 percent
Landform: Mountain slope, aprons on mountainside, or stream terrace
Vegetative classification: None assigned

Dystric Xerorthents sandy-skeletal, frigid and similar soils

Composition: About 2 percent
Slope: 0 to 10 percent
Landform: Gravel bar, flood plain, or terrace
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Histosols frigid and similar soils

Composition: About 1 percent

Slope: 0 to 8 percent
Landform: Lakeshore or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Most of this map unit has been glacially or fluvically scoured, leaving rock outcrop with intermittent deposits of alluvium, colluvium, and remnant till.
- The soils in this map unit were inferred by extrapolation from comparable components in other map units.

306—Typic Cryopsamments-Humic Dystrocryepts complex, 0 to 20 percent slopes, mountain toeslopes, moraines, cryic

Setting

General location: High-altitude alpine mountains in the eastern part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 7,380 to 8,680 feet (2,251 to 2,646 meters)
Mean annual precipitation: 45 to 49 inches (1,143 to 1,245 millimeters)
Mean annual air temperature: 39 to 40 degrees F (about 4 degrees C)
Frost-free period: 15 to 45 days

Composition

Typic Cryopsamments—50 percent
Humic Dystrocryepts—30 percent
Minor components—20 percent

Description of Typic Cryopsamments

Slope: 5 to 20 percent
Landform: Ephemeral stream, moraine, or mountainside
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
A1—1 to 4 inches; loamy coarse sand
A2—4 to 15 inches; loamy coarse sand
Bw—15 to 32 inches; loamy coarse sand
C1—32 to 43 inches; loamy coarse sand
C2—43 to 60 inches; gravelly loamy coarse sand

Description of Humic Dystrocryepts

Slope: 0 to 20 percent
Landform: Moraine or mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles and 2 to 4 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.7 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 86110, Lodgepole Pine Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A1—0 to 5 inches; loamy sand
A2—5 to 13 inches; loamy sand
Bw—13 to 23 inches; loamy sand
Cd—23 to 60 inches; cobbly loam

Minor Components

Oxyaquic Cryopsamments and similar soils

Composition: About 10 percent
Slope: 0 to 20 percent
Landform: Ephemeral stream, moraine, or mountain slope
Vegetative classification: 85310, Red Fir Forest

Rock outcrop

Composition: About 10 percent
Slope: 0 to 20 percent
Landform: Rock outcrop on mountainside
Vegetative classification: None assigned

Use and Management Considerations

- Mountain toes in this map unit include footslopes and lower backslopes.
- The soils commonly are mantled with 1 to 2 centimeters of sandy slope wash.

307—Rock outcrop-Dystric Xeropsamments-Dystric Xerorthents association, 0 to 35 percent slopes, mountain valleys, scoured, valley fill, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys, mountain canyons, or mountains
Elevation: 2,820 to 5,730 feet (860 to 1,748 meters)
Mean annual precipitation: 33 to 49 inches (838 to 1,245 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 20 to 150 days

Composition

Rock outcrop—40 percent
Dystric Xeropsamments—20 percent
Dystric Xerorthents—20 percent
Minor components—20 percent

Description of Rock Outcrop

Slope: 0 to 35 percent
Landform: Scoured glacial-valley floor or toe of glacial-valley wall
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles and 2 to 10 percent subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Dystric Xeropsamments

Slope: 0 to 35 percent
Landform: Flood plain or terrace
Parent material: Colluvium and/or minor alluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles,

2 to 10 percent coarse subangular gravel, 0 to 15 percent subrounded boulders, and 0 to 15 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.1 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84210, Westside Ponderosa Pine Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
A1—1 to 3 inches; gravelly loamy sand
A2—3 to 5 inches; loamy sand
CA—5 to 14 inches; loamy sand
C1—14 to 28 inches; loamy sand
C2—28 to 37 inches; cobbly loamy sand
Cr—37 to 60 inches; soft weathered bedrock

Description of Dystric Xerorthents

Slope: 10 to 35 percent
Landform: Gravel bar, flood plain, mountain slope, aprons on mountainside, or terrace
Parent material: Alluvium and/or colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent coarse subangular gravel and 5 to 15 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 0.8 inch (very low)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

A—0 to 3 inches; very gravelly sand
C—3 to 9 inches; extremely gravelly sand

Bw—9 to 11 inches; very gravelly sand
C1—11 to 21 inches; extremely gravelly sand
C2—21 to 60 inches; extremely gravelly sand

Minor Components

Lithic Xerorthents mesic and similar soils

Composition: About 10 percent
Slope: 0 to 35 percent
Landform: Adjacent to rock outcrop valley floor
Vegetative classification: None assigned

Typic Haploxerepts mesic and similar soils

Composition: About 9 percent
Slope: 0 to 35 percent
Landform: Mountain slope, aprons on mountainside, or stream terrace
Vegetative classification: None assigned

Histosols mesic and similar soils

Composition: About 1 percent
Slope: 0 to 2 percent
Landform: Mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Most of this map unit has been scoured, leaving rock outcrop with intermittent deposits of alluvium, colluvium, and remnant till.

309—Rock outcrop-Waterwheel-Typic Dystroxerepts association, 30 to 80 percent slopes, mountain slopes, joints, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,985 to 8,020 feet (1,520 to 2,445 meters)
Mean annual precipitation: 37 to 51 inches (940 to 1,295 millimeters)
Mean annual air temperature: 46 to 50 degrees F (8 to 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Rock outcrop—50 percent
Waterwheel soil—25 percent
Typic Dystroxerepts—20 percent
Minor components—5 percent

Description of Rock Outcrop

Slope: 30 to 80 percent
Landform: Mountain slope or mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: None assigned

Description of the Waterwheel Soil

Slope: 30 to 60 percent
Landform: Mountain slope or bedrock joints and fractures in mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles and 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84240, Sierra White Fir Forest

Typical profile

Oi—0 to 2 inches; cobbly slightly decomposed plant material
A1—2 to 7 inches; very cobbly sandy loam
A2—7 to 17 inches; very cobbly sandy loam
AC—17 to 31 inches; very cobbly sandy loam
C—31 to 60 inches; very cobbly sandy loam

Description of Typic Dystroxerepts

Slope: 35 to 75 percent
Landform: Mountain slope or joints on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles and 5 to 15 percent coarse subangular gravel

Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.3 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; cobbly slightly decomposed plant material
Oe—1 to 2 inches; cobbly moderately decomposed plant material
Oa—2 to 2 inches; cobbly highly decomposed plant material
A—2 to 3 inches; very cobbly sandy loam
Bw1—3 to 7 inches; very cobbly sandy loam
Bw2—7 to 27 inches; extremely stony sandy loam
Bw3—27 to 41 inches; extremely stony sandy loam
C—41 to 60 inches; extremely stony sandy loam

Minor Components

Oxyaquic Dystroxerepts sandy-skeletal and similar soils

Composition: About 5 percent
Slope: 30 to 80 percent
Landform: Joints on mountainside
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Use and Management Considerations

- The slope in joints is commonly more than 30 percent.
- The soils in this map unit were inferred by extrapolation from comparable components in other map units.

310—Rock outcrop-Humic Dystroxerepts-Humic Lithic Haploxerepts association, 30 to 100 percent slopes, mountain slopes, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,300 to 6,925 feet (1,006 to 2,111 meters)
Mean annual precipitation: 33 to 45 inches (838 to 1,143 millimeters)
Mean annual air temperature: 49 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 100 to 150 days

Composition

Rock outcrop—55 percent

Humic Dystroxerepts—25 percent
Humic Lithic Haploxerepts—20 percent

Description of Rock Outcrop

Slope: 30 to 100 percent
Landform: Mountain slope or mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Humic Dystroxerepts

Slope: 30 to 100 percent
Landform: Mountain slope or bedrock joints in mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles and 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.7 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 71120, Black Oak Woodland

Typical profile

Oe—0 to 0 inches; cobbly slightly decomposed plant material
Oa—0 to 1 inch; cobbly highly decomposed plant material
A1—1 to 4 inches; cobbly loamy sand
A2—4 to 8 inches; very cobbly loamy sand
C1—8 to 30 inches; very stony loamy sand
C2—30 to 39 inches; very stony loamy sand
C3—39 to 60 inches; extremely bouldery loamy sand

Description of Humic Lithic Haploxerepts

Slope: 30 to 40 percent
Landform: Areas adjacent to outcrop mountain slope, bedrock benches on mountainside, or bedrock dimples on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 5 percent subrounded stones and 2 to 5 percent subrounded boulders
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Available water capacity to a depth of 60 inches: About 0.7 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: Occasional
Surface runoff: Very high
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 71150, Interior Live Oak Woodland

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 2 inches; moderately decomposed plant material
Oa—2 to 2 inches; highly decomposed plant material
A1—2 to 10 inches; very gravelly loamy coarse sand
A2—10 to 20 inches; very bouldery fine sandy loam
R—20 to 60 inches; bedrock

Use and Management Considerations

- Bedrock benches, joints, and dimples may have slopes of more than 30 percent.
- Compared to other map units that are marked by mountain flanks and that have comparable slopes (such as map unit 278), this map unit is less linear, has greater topographic variation, and has more jointing. Because of these characteristics, this unit is less avalanche-prone, is more significant for ground-water recharge, and is more edaphically variable.

311—Rock outcrop-Humic Dystroxerepts-Humic Lithic Haploxerepts association, 0 to 30 percent slopes, joints, mountain slopes, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,480 to 5,875 feet (1,062 to 1,792 meters)
Mean annual precipitation: 33 to 43 inches (838 to 1,092 millimeters)

Mean annual air temperature: 49 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 100 to 150 days

Composition

Rock outcrop—45 percent
Humic Dystroxerepts—35 percent
Humic Lithic Haploxerepts—19 percent
Minor components—1 percent

Description of Rock Outcrop

Slope: 0 to 30 percent
Landform: Mountain slope or mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Humic Dystroxerepts

Slope: 0 to 30 percent
Landform: Mountain slope, bedrock joints in mountainside, or benches on mountainside
Parent material: Colluvium and/or residuum derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 15 to 25 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.4 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

A1—0 to 1 inch; very cobbly loamy sand

A2—1 to 11 inches; very cobbly loamy sand
C1—11 to 30 inches; very stony loamy sand
C2—30 to 60 inches; very cobbly loamy sand

Description of Humic Lithic Haploxerepts

Slope: 0 to 30 percent
Landform: Areas adjacent to outcrop mountain slope, bedrock benches on mountainside, or bedrock dimples on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 5 percent subrounded boulders and 2 to 5 percent subrounded stones
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Available water capacity to a depth of 60 inches: About 0.9 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: Occasional
Surface runoff: Very high
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 71150, Interior Live Oak Woodland

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 2 inches; moderately decomposed plant material
Oa—2 to 2 inches; highly decomposed plant material
A1—2 to 10 inches; very gravelly sandy loam
A2—10 to 20 inches; extremely bouldery sandy loam
R—20 to 60 inches; bedrock

Minor Components

Histosols mesic and similar soils

Composition: About 1 percent
Slope: 0 to 2 percent
Landform: Marsh or mountain valley
Vegetative classification: None assigned

313—Nevadafalls-Oxyaquic Dystrudepts complex, 5 to 30 percent slopes, mountain valleys, moraines, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains

Elevation: 4,430 to 7,350 feet (1,350 to 2,241 meters)
Mean annual precipitation: 37 to 45 inches (940 to 1,143 millimeters)
Mean annual air temperature: 49 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Nevadafalls soil—40 percent
Oxyaquic Dystrudepts—40 percent
Minor components—20 percent

Description of the Nevadafalls Soil

Slope: 5 to 30 percent
Landform: Moraine or stream terrace
Parent material: Till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest; 85110, Jeffrey Pine Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A—0 to 6 inches; loamy sand
Bw—6 to 17 inches; loamy sand
C1—17 to 31 inches; very cobbly loamy sand
C2—31 to 60 inches; very cobbly loamy sand

Description of Oxyaquic Dystrudepts

Slope: 5 to 30 percent
Landform: Flood plain or ground moraine
Parent material: Alluvium and/or colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.4 inches (moderate)

Selected hydrologic properties

Present annual flooding: Occasional

Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Moderately well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 81600, Mixed Riparian/Conifer Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A1—0 to 10 inches; sandy loam
A2—10 to 35 inches; sandy loam
A3—35 to 48 inches; sandy loam
C—48 to 61 inches; loamy coarse sand

Minor Components

Rock outcrop

Composition: About 8 percent
Slope: 5 to 30 percent
Landform: Flood plain or ground moraine
Vegetative classification: None assigned

Humic Dystroxerepts sandy, frigid and similar soils

Composition: About 5 percent
Slope: 5 to 30 percent
Landform: Moraine or stream terrace
Vegetative classification: 84232, White Fir Mixed Coniferous Forest; 85110, Jeffrey Pine Forest

Humic Lithic Dystroxerepts sandy and similar soils

Composition: About 4 percent
Slope: 0 to 10 percent
Landform: Adjacent to rock outcrop mountain valley
Vegetative classification: 84250, Big Tree Forest

Water

Composition: About 2 percent
Landform: Lake
Vegetative classification: None assigned

Histosols frigid and similar soils

Composition: About 1 percent
Slope: 0 to 8 percent
Landform: Lakeshore or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Mountain valleys in this map unit are occupied by moraines, flood plains, stream terraces, rock outcrop, and apron toes that extend into the valleys. The moraines dominantly are ground moraines (about 80 percent); a much smaller amount is lateral moraine toeslopes (about 20 percent).

- The map unit is dominated by dense to open mixed conifer forest interspersed with meadows and brush fields (about 15 percent of map unit).
- This map unit extends into the mesic soil temperature regime at the low elevations.

314—Badgerpass-Dystric Xeropsamments-Rock outcrop complex, 5 to 45 percent slopes, mountain slopes, moraines, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,955 to 7,405 feet (1,510 to 2,258 meters)
Mean annual precipitation: 35 to 47 inches (889 to 1,194 millimeters)
Mean annual air temperature: 49 to 50 degrees F (about 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Badgerpass soil—45 percent
Dystric Xeropsamments—35 percent
Rock outcrop—15 percent
Minor components—5 percent

Description of the Badgerpass Soil

Slope: 5 to 45 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.1 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 6 inches; loamy sand
A2—6 to 13 inches; loamy sand
AC—13 to 24 inches; loamy sand
C1—24 to 42 inches; sand

C2—42 to 55 inches; cobbly sand
C3—55 to 60 inches; sand

Description of Dystric Xeropsamments

Slope: 5 to 45 percent
Landform: Mountain slope, mountain valley, or ridge
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.4 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 4 inches; moderately decomposed plant material
Oa—4 to 4 inches; highly decomposed plant material
A1—4 to 9 inches; loamy sand
A2—9 to 25 inches; loamy sand
C1—25 to 30 inches; loamy sand
C2—30 to 60 inches; loamy fine sand

Description of Rock Outcrop

Slope: 5 to 45 percent
Landform: Moraine or mountain slope
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Humic Lithic Dystroxerepts sandy and similar soils

Composition: About 5 percent
Slope: 0 to 10 percent
Landform: Areas adjacent to rock outcrop mountain slope or bedrock dimples in mountainside
Vegetative classification: None assigned

Use and Management Considerations

- Moraines in this map unit are remnants of ground and lateral moraines that do not have readily distinguishable forms because of long-term geologic erosion. The remaining till commonly is thinner than that of the more distinctive moraines, although thicknesses could not be measured for this survey. The moraines grade to mountain slopes, which are mantled with colluvium overlying residuum.
- Soils in this map unit are about 60 percent covered with mixed conifer forests.
- Meadows and brush fields make up about 5 percent of this map unit.
- The slopes of land surfaces in the delineation southeast of Half Dome are more than 45 percent.

315—Nevadafalls-Dystric Xeropsamments complex, 15 to 45 percent slopes, lateral moraines, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,975 to 7,610 feet (1,518 to 2,320 meters)
Mean annual precipitation: 37 to 45 inches (940 to 1,143 millimeters)
Mean annual air temperature: 50 to 51 degrees F (about 10 degrees C)
Frost-free period: 20 to 60 days

Composition

Nevadafalls soil—60 percent
Dystric Xeropsamments—40 percent

Description of the Nevadafalls Soil

Slope: 15 to 45 percent
Landform: Ground moraine, lateral moraine, or mountain slope
Parent material: Colluvium with minor till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.3 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 2 inches; gravelly sandy loam
BA—2 to 14 inches; very bouldery sandy loam
Bw—14 to 35 inches; very bouldery sandy loam
C—35 to 60 inches; very bouldery sandy loam

Description of Dystric Xeropsamments

Slope: 15 to 45 percent
Landform: Moraine or crests on moraine
Parent material: Till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.5 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84232, White Fir Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A—0 to 7 inches; loamy sand
Bw1—7 to 16 inches; loamy sand
Bw2—16 to 26 inches; loamy sand
C—26 to 60 inches; cobbly loamy sand

Use and Management Considerations

- Moraines in this map unit exhibit a distinctive well defined form. This unit has sharper crests and somewhat steeper, less eroded backslopes than those in map unit 273.

316—Dystric Xerorthents-Rock outcrop-Rubble land complex, 30 to 80 percent slopes, mountainflanks, thermic

Setting

General location: None noted
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 2,035 to 4,890 feet (621 to 1,491 meters)
Mean annual precipitation: 33 to 47 inches (838 to 1,194 millimeters)
Mean annual air temperature: 47 to 55 degrees F (8 to 13 degrees C)
Frost-free period: 275 to 310 days

Composition

Dystric Xerorthents—40 percent
Rock outcrop—40 percent
Rubble land—20 percent

Description of Dystric Xerorthents

Slope: 30 to 80 percent
Landform: Mantled mountain slope or joints and aprons on mountainside
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 2 to 10 percent subangular cobbles and 2 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.3 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 37110, Northern Mixed Chaparral

Typical profile

A—0 to 4 inches; cobbly loamy coarse sand
Bw—4 to 13 inches; cobbly loamy coarse sand
BC—13 to 23 inches; very stony loamy coarse sand
C—23 to 35 inches; very stony loamy coarse sand
R—35 to 39 inches; bedrock

Description of Rock Outcrop

Slope: 30 to 80 percent

Landform: Mountain slope or mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of Rubble Land

Slope: 30 to 80 percent
Landform: Mountain slope or mountainside
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Use and Management Considerations

- Mountain flanks include cliffs and somewhat more gently sloping scoured rock outcrop, debris torrents and avalanches, and aprons.
- Rubble extends from aprons to the upper backslopes.
- Delineations in the Tuolumne River canyon below the Hetch Hetchy Reservoir are dominated (about 65 percent) by sparsely jointed, scoured rock outcrop. In contrast, delineations in the Merced River canyon near El Portal are characterized (about 20 percent) by rock outcrop, talus, landslides, and cliffs superimposed on mountain flanks, with aprons scattered intermittently along the toes. These mountain flanks commonly are dissected by closely spaced, roughly parallel downslope channels which were formed by fluvial-colluvial processes, including debris flowage.
- The major landscape components are mountain flanks (90 percent), rock outcrop (40 percent), and rubble in landslides (debris torrents and avalanches), talus below cliffs, and aprons (20 percent).

318—Typic Dystroxerepts-Humic Dystroxerepts complex, 0 to 20 percent slopes, ridge crests, frigid/mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,645 to 7,180 feet (1,416 to 2,189 meters)
Mean annual precipitation: 33 to 45 inches (838 to 1,143 millimeters)
Mean annual air temperature: 50 to 51 degrees F (10 to 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Typic Dystroxerepts—40 percent
Humic Dystroxerepts—36 percent
Minor components—24 percent

Description of the Typic Dystroxerepts

Slope: 0 to 20 percent
Landform: Ridge
Parent material: Colluvium and/or residuum derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

A—0 to 4 inches; sandy loam
Bw1—4 to 12 inches; sandy loam
Bw2—12 to 27 inches; sandy loam
Bw3—27 to 39 inches; sandy loam
Cr—39 to 57 inches; soft weathered bedrock

Description of Humic Dystroxerepts

Slope: 0 to 20 percent
Landform: Ridge
Parent material: Colluvium and/or residuum with minor till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 6.2 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oa—0 to 1 inch; highly decomposed plant material
A1—1 to 2 inches; loamy sand
A2—2 to 5 inches; sandy loam
Bw1—5 to 14 inches; sandy loam
Bw2—14 to 33 inches; sandy loam
CB—33 to 46 inches; sandy loam
Ct1—46 to 48 inches; sandy loam
Ct2—48 to 54 inches; fine sandy loam
Ct3—54 to 60 inches; fine sandy loam

Minor Components

Humults coarse-loamy, frigid and similar soils

Composition: About 14 percent
Slope: 0 to 20 percent
Landform: Ridge
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Humic Dystroxerepts sandy, frigid and similar soils

Composition: About 5 percent
Slope: 0 to 20 percent
Landform: Ridge
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Rock outcrop

Composition: About 5 percent
Slope: 0 to 20 percent
Landform: Ridge
Vegetative classification: None assigned

Use and Management Considerations

- The types of rock in this map unit are granitoid with minor amounts of metasedimentary parent materials in the vicinity of Crane Flat, near the western edge of the survey area.
- Because of their small areal extent, ridge crests in the frigid and mesic soil

temperature regimes are combined in this map unit; the frigid regime makes up 80 percent of the unit and the mesic regime makes up 20 percent. Soils in the mesic regime occur in two neighboring delineations: one slightly north of Hodgdon Meadow and the other along the divide between North Crane Creek and the South Fork of the Tuolumne River. Soils in the two temperature regimes are morphologically comparable.
- Most of this map unit has dense forest cover.

319—Humic Dystroxerepts-Typic Haploxerults-Inceptic Haploxeralfs complex, 30 to 65 percent slopes, mountain slopes, metamorphic, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 5,100 to 6,820 feet (1,555 to 2,080 meters)
Mean annual precipitation: 35 to 39 inches (889 to 991 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 20 to 60 days

Composition

Humic Dystroxerepts—30 percent
Typic Haploxerults—30 percent
Inceptic Haploxeralfs—25 percent
Minor components—15 percent

Description of Humic Dystroxerepts

Slope: 30 to 65 percent
Landform: Ancient scarps landslide or mountain slope
Parent material: Colluvium derived from metasedimentary rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent coarse subangular gravel, 10 to 20 percent subangular cobbles, and 5 to 15 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 1.3 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; very cobbly slightly decomposed plant material
Oe—0 to 1 inch; very cobbly moderately decomposed plant material
A1—1 to 5 inches; very cobbly loamy sand
A2—5 to 13 inches; extremely cobbly loamy sand
C1—13 to 20 inches; extremely stony loamy sand
C2—20 to 35 inches; extremely stony loamy sand
C3—35 to 60 inches; extremely stony loamy sand

Description of Typic Haploxerults

Slope: 30 to 65 percent
Landform: Ancient deposits landslide or mountain slope
Parent material: Colluvium and/or residuum derived from metasedimentary rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.6 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
Oa—1 to 2 inches; highly decomposed plant material
A1—2 to 5 inches; loamy coarse sand
A2—5 to 7 inches; loamy coarse sand
Bt1—7 to 12 inches; sandy loam
Bt2—12 to 20 inches; sandy loam
Bt3—20 to 31 inches; sandy loam
Bt4—31 to 46 inches; gravelly sandy loam
C1—46 to 53 inches; sand
C2—53 to 71 inches; sand

Description of Inceptic Haploxeralfs

Slope: 30 to 65 percent
Landform: Ancient deposits landslide or mountain slope
Parent material: Colluvium and/or residuum derived from metasedimentary rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subrounded stones,

10 to 20 percent subangular cobbles, and 10 to 20 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.2 inches (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

Oi—0 to 0 inches; very stony slightly decomposed plant material
Oe—0 to 1 inch; very stony moderately decomposed plant material
A1—1 to 4 inches; very cobbly fine sandy loam
A2—4 to 12 inches; very cobbly fine sandy loam
Bt—12 to 22 inches; very cobbly fine sandy loam
C1—22 to 30 inches; extremely cobbly fine sandy loam
C2—30 to 60 inches; extremely stony fine sandy loam

Minor Components

Humults coarse-loamy, frigid and similar soils

Composition: About 10 percent
Slope: 30 to 65 percent
Landform: Mountain slope or mountainside
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Humic Dystroxerepts loamy-skeletal, frigid and similar soils

Composition: About 5 percent
Slope: 30 to 65 percent
Landform: Ancient scarps landslide or mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- This map unit occurs near the western edge of the survey area, north of Crane Flat.
- Compared with map unit 328, slopes in this map unit are overall somewhat steeper, have more erosional than depositional surfaces, and have a greater tendency for attritional erosion.
- Nearly one-fourth of the map unit is dissected by ancient, stabilized erosion gullies that are covered by mixed conifer forests and dense manzanita stands.
- Soils in skeletal particle-size classes tend to occur on slopes that are steeper than those of soils not in skeletal particle-size classes.
- Forest cover increases significantly from the upper to the lower slopes in the map unit.

320—Half Dome-Humic Dystroxerepts-Rock outcrop complex, 30 to 60 percent slopes, mountain slopes, moraines, mesic

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 3,990 to 5,840 feet (1,216 to 1,782 meters)
Mean annual precipitation: 35 to 43 inches (889 to 1,092 millimeters)
Mean annual air temperature: 53 to 53 degrees F (about 12 degrees C)
Frost-free period: 100 to 150 days

Composition

Half Dome soil—40 percent
Humic Dystroxerepts—20 percent
Rock outcrop—20 percent
Minor components—20 percent

Description of the Half Dome Soil

Slope: 30 to 60 percent
Landform: Moraine, mountain slope, or joints and benches on mountainside
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 15 percent coarse subangular gravel, 2 to 20 percent subrounded stones, 0 to 30 percent subrounded boulders, and 0 to 5 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.1 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loamy sand
BA—4 to 10 inches; gravelly loamy sand
Bw—10 to 20 inches; very gravelly sandy loam
BC—20 to 47 inches; very gravelly sandy loam
C—47 to 61 inches; loamy coarse sand

Description of Humic Dystroxerepts

Slope: 30 to 60 percent
Landform: Moraine or mountain slope
Parent material: Colluvium and/or till derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 20 percent subrounded boulders, 2 to 10 percent coarse subangular gravel, 0 to 20 percent subangular cobbles, and 0 to 20 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.8 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Typical profile

Oe—0 to 0 inches; moderately decomposed plant material
A1—0 to 3 inches; gravelly loamy sand
A2—3 to 7 inches; gravelly loamy sand
Bw1—7 to 16 inches; gravelly loamy sand
Bw2—16 to 22 inches; very stony loamy sand
C1—22 to 35 inches; extremely stony coarse sandy loam
C2—35 to 60 inches; very gravelly coarse sandy loam

Description of Rock Outcrop

Slope: 30 to 60 percent
Landform: Rock outcrop on mountainside
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Tuolumne and similar soils

Composition: About 9 percent
Slope: 30 to 60 percent
Landform: Mountain slope or bedrock joints in mountainside
Vegetative classification: None assigned

Humic Dystroxerepts loamy-skeletal, mesic and similar soils

Composition: About 6 percent
Slope: 30 to 60 percent
Landform: Moraine or mountain slope
Vegetative classification: 84231, Ponderosa Pine Mixed Coniferous Forest

Humic Lithic Haploxerepts and similar soils

Composition: About 5 percent
Slope: 0 to 10 percent
Landform: Areas adjacent to rock outcrop mountain slope, bedrock dimples, or benches on mountainside
Vegetative classification: None assigned

Use and Management Considerations

- Overall drainage patterns are dominantly convergent.
- Moraines do not have any distinctive form. They consist of remnant till (possibly pre-Tahoe) smeared intermittently on mountain slopes throughout the map unit.
- Slopes greater than 30 percent occur in joints, on benches, on shoulders, and on summits.

321—Dystric Xeropsamments-Dystric Xerorthents association, 0 to 20 percent slopes, mountain valleys, thermic

Setting

General location: Lower elevations in the western part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Valleys
Elevation: 1,650 to 2,140 feet (504 to 653 meters)
Mean annual precipitation: 31 to 33 inches (787 to 838 millimeters)
Mean annual air temperature: 53 to 56 degrees F (12 to 13 degrees C)
Frost-free period: 275 to 310 days

Composition

Dystric Xeropsamments—50 percent
Dystric Xerorthents—40 percent
Minor components—10 percent

Description of Dystric Xeropsamments

Slope: 0 to 20 percent
Landform: Flood plain or river terrace
Parent material: Alluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent subangular cobbles and 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.7 inches (low)

Selected hydrologic properties

Present annual flooding: Rare
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: 71100, Oak Woodland

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A—0 to 8 inches; sand
C—8 to 21 inches; coarse sand
Ab—21 to 61 inches; stony loamy fine sand

Description of Dystric Xerorthents

Slope: 0 to 20 percent
Landform: Flood plain, aprons on mountain valley, or terrace
Parent material: Alluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles and 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 0.8 inch (very low)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typical profile

A—0 to 3 inches; very gravelly sand
C—3 to 9 inches; extremely gravelly sand
Bw—9 to 11 inches; very gravelly sand
C´1—11 to 21 inches; extremely gravelly sand
C´2—21 to 60 inches; extremely gravelly sand

Minor Components

Riverwash

Composition: About 10 percent
Slope: 0 to 5 percent
Landform: Flood plain or river
Vegetative classification: None assigned
General features: Riverwash occurs as areas of unstabilized sand, gravel, cobbles, or stones that are along the periphery of stream and river channels. These areas are flooded, washed, scoured, and reworked frequently by the Merced River. This component may be scoured or overwashed with new deposits of sand, gravel, cobbles, or stones in any year. In some areas the texture is stratified coarse sand to loamy fine sand with strata of gravel; in other areas the texture is freshly deposited gravel, cobbles, or stones.

Use and Management Considerations

- This map unit occurs along the Merced River in the vicinity of El Portal.
- The soil temperature regime of this map unit grades to a mesic soil temperature regime on the flood plain near the river.
- Colluvial aprons and alluvial fans spill into the valley from adjacent mountain slopes and tributary drainageways, respectively.

322—Typic Xerorthents, 45 to 100 percent slopes, mountain slopes, thermic

Setting

General location: Lower elevations in the western part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 1,790 to 4,350 feet (546 to 1,327 meters)
Mean annual precipitation: 31 to 33 inches (787 to 838 millimeters)
Mean annual air temperature: 49 to 58 degrees F (9 to 14 degrees C)
Frost-free period: 275 to 310 days

Composition

Typic Xerorthents—90 percent
Minor components—10 percent

Description of Typic Xerorthents

Slope: 45 to 100 percent
Landform: Mountain slope
Parent material: Colluvium derived from granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 3 to 15 percent subrounded boulders, 3 to 10 percent subrounded stones, and 3 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 2.7 inches (low)

Selected hydrologic properties

Present annual flooding: None

Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: 37110, Northern Mixed Chaparral

Typical profile

Oe—0 to 0 inches; bouldery slightly decomposed plant material
A—0 to 7 inches; gravelly sandy loam
Bw1—7 to 24 inches; cobbly loamy sand
Bw2—24 to 42 inches; extremely stony loamy coarse sand
C—42 to 60 inches; extremely stony coarse sand

Minor Components

Rock outcrop

Composition: About 10 percent
Slope: 45 to 100 percent
Landform: Mountain slope
Vegetative classification: None assigned

Use and Management Considerations

- The types of rock in this map unit are granitoid with some metasedimentary.
- Slopes dominantly are north-facing, linear to convex, lower backslopes, footslopes, and toeslopes that support brush foothill pine and canyon live oak.
- Slope surfaces dominantly are erosional to transitional and are highly susceptible to soil creep.

323—Ultic Haploxeralfs-Humic Dystroxerepts complex, bouldery, 10 to 35 percent slopes, mountain footslopes, thermic

Setting

General location: Lower elevations in the western part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 1,855 to 2,430 feet (566 to 742 meters)
Mean annual precipitation: 31 to 33 inches (800 to 838 millimeters)
Mean annual air temperature: 51 to 52 degrees F (about 11 degrees C)
Frost-free period: 275 to 310 days

Composition

Ultic Haploxeralfs—55 percent
Humic Dystroxerepts—45 percent

Description of Ultic Haploxeralfs

Slope: 10 to 35 percent
Landform: Mountain slope

Parent material: Colluvium and/or residuum derived from granitoid and/or metasedimentary rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subrounded boulders, 0 to 10 percent coarse subangular gravel, 0 to 10 percent subrounded stones, and 0 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.5 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 37110, Northern Mixed Chaparral

Typical profile

A—0 to 3 inches; sandy loam
Bt1—3 to 5 inches; sandy loam
Bt2—5 to 10 inches; sandy loam
Bt3—10 to 21 inches; sandy loam
Bt4—21 to 37 inches; very gravelly sandy loam
Bt5—37 to 60 inches; very cobbly sandy clay loam

Description of Humic Dystroxerepts

Slope: 10 to 35 percent
Landform: Ephemeral stream or mountain slope
Parent material: Colluvium derived from metasedimentary and/or granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent subrounded boulders, 0 to 10 percent coarse subangular gravel, 0 to 10 percent subrounded stones, and 0 to 10 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.3 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 37110, Northern Mixed Chaparral

Typical profile

Oi—0 to 1 inch; bouldery slightly decomposed plant material
Oe—1 to 2 inches; bouldery moderately decomposed plant material
Oa—2 to 2 inches; bouldery highly decomposed plant material
A—2 to 7 inches; gravelly sandy loam
Bw—7 to 15 inches; sandy loam
Cdt1—15 to 29 inches; sandy loam
Cdt2—29 to 60 inches; sandy loam

Use and Management Considerations

- The types of rock in this map unit are granitoid with metasedimentary.
- Slopes dominantly are south-facing, linear to concave (with some convex) lower backslopes, footslopes, and toeslopes that support intermingled open forest, grass, and brush communities.
- Slope surfaces dominantly are transitional to depositional. About half have received unsorted colluvium from upslope debris avalanches, which leave boulders scattered on the ground surface. The most stable sites, which tend to be convex with somewhat better sorted colluvium, have the most developed soils in the map unit.

324—Humic Haploxerepts-Rock outcrop-Ultic Haploxeralfs association, 45 to 100 percent slopes, metasedimentary, mountain slopes, thermic

Setting

General location: Lower elevations in the western part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 1,720 to 2,970 feet (524 to 907 meters)
Mean annual precipitation: 31 to 33 inches (787 to 838 millimeters)
Mean annual air temperature: 53 to 56 degrees F (12 to 13 degrees C)
Frost-free period: 275 to 310 days

Composition

Humic Haploxerepts—40 percent
Rock outcrop—35 percent
Ultic Haploxeralfs—25 percent

Description of Humic Haploxerepts

Slope: 45 to 100 percent
Landform: Mountain slope or aprons on mountainside
Parent material: Colluvium derived from metasedimentary rock and minor amounts of granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 10 percent coarse subangular gravel and 0 to 10 percent subangular cobbles

Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.3 inches (low)

Selected hydrologic properties

Present annual flooding: Very rare
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 71100, Oak Woodland

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
A—0 to 4 inches; very gravelly loam
Bw1—4 to 8 inches; very gravelly loam
Bw2—8 to 20 inches; extremely gravelly sandy loam
Bw3—20 to 30 inches; very gravelly loam
Bw4—30 to 60 inches; extremely gravelly fine sandy loam

Description of Rock Outcrop

Slope: 45 to 100 percent
Landform: Mountain slope or mountainside
Parent material: Exposed bedrock derived from metasedimentary rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: None assigned

Description of Ultic Haploxeralfs

Slope: 45 to 100 percent
Landform: Interfluve (ridge) position on mountain slope
Parent material: Colluvium and residuum derived from metasedimentary and granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 5 to 15 percent coarse subangular gravel and 10 to 20 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.1 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 7e
Other vegetative classification: 71410, Grey Pine-Oak Woodland

Typical profile

Oi—0 to 0 inches; cobbly slightly decomposed plant material
A—0 to 6 inches; very cobbly loam
Bt1—6 to 16 inches; very cobbly loam
Bt2—16 to 29 inches; very cobbly fine sandy loam
Bt3—29 to 60 inches; extremely cobbly loam

Use and Management Considerations

- The types of rock in this map unit are metasedimentary with minor amounts of intermediate and mafic granitoid.

325—Urban land, 0 to 45 percent slopes

Setting

General location: Lower elevations in the western part of Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 1,775 to 2,060 feet (542 to 628 meters)
Mean annual precipitation: 31 to 33 inches (787 to 838 millimeters)
Mean annual air temperature: 55 to 58 degrees F (13 to 14 degrees C)
Frost-free period: 275 to 310 days

Composition

Urban land—80 percent
Minor components—20 percent

Description of Urban Land

Slope: 0 to 45 percent
Landform: Urban areas
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Humic Haploxerepts loamy-skeletal, thermic and similar soils

Composition: About 10 percent
Slope: 0 to 45 percent
Landform: Ephemeral stream, fan apron, or mountain slope
Vegetative classification: 71100, Oak Woodland

Ultic Haploxeralfs loamy-skeletal, thermic and similar soils

Composition: About 10 percent
Slope: 0 to 45 percent
Landform: Ephemeral stream, fan apron, or mountain slope
Vegetative classification: 71410, Grey Pine-Oak Woodland

Use and Management Considerations

- Because this map unit is a National Park Service administrative area, no soils are described.

328—Clarkslodge-Ultic Palexeralfs complex, metasedimentary, 15 to 45 percent slopes, mountain slopes, landslides, frigid

Setting

General location: Mid-elevation areas in Yosemite National Park
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 4,985 to 7,030 feet (1,520 to 2,143 meters)
Mean annual precipitation: 35 to 41 inches (889 to 1,041 millimeters)
Mean annual air temperature: 51 to 52 degrees F (about 11 degrees C)
Frost-free period: 20 to 60 days

Composition

Clarkslodge soil—30 percent
Ultic Palexeralfs—15 percent
Minor components—55 percent

Description of the Clarkslodge Soil

Slope: 15 to 45 percent
Landform: Ancient landslide, mountain slope, or crests on ridge
Parent material: Colluvium and/or residuum derived from metasedimentary rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.4 inches (moderate)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84250, Big Tree Forest

Typical profile

Oi—0 to 0 inches; slightly decomposed plant material
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; fine sandy loam
Bt1—5 to 11 inches; cobbly fine sandy loam
Bt2—11 to 20 inches; cobbly fine sandy loam
Bt3—20 to 37 inches; very cobbly fine sandy loam
C—37 to 60 inches; very cobbly sandy loam

Description of Ultic Palexeralfs

Slope: 15 to 45 percent
Landform: Ancient landslide or mountain slope
Parent material: Colluvium derived from metasedimentary rock and/or residuum weathered from metasedimentary rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 8.1 inches (high)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: 84250, Big Tree Forest

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; loam
Bt1—4 to 13 inches; cobbly loam
Bt2—13 to 31 inches; loam
BCt—31 to 49 inches; loam
C—49 to 60 inches; loam

Minor Components

Humic Dystroxerepts loamy-skeletal, frigid and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent
Landform: Ephemeral stream, lower mountain slope, or small mountain valley
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Inceptic Haploxeralfs and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent
Landform: Nose slope on ridge
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Typic Haploxerults coarse-loamy and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent
Landform: Ancient landslide or lower mountain slope
Vegetative classification: 84230, Sierra Mixed Coniferous Forest

Ultic Palexeralfs coarse-loamy, frigid and similar soils

Composition: About 10 percent
Slope: 15 to 45 percent
Landform: Ancient landslide or mountain slope
Vegetative classification: 84250, Big Tree Forest

Andic Dystrudepts and similar soils

Composition: About 5 percent
Slope: 9 to 20 percent
Landform: Drainageway; minor extent on flood plains in small mountain valleys
Vegetative classification: 84250, Big Tree Forest

Humults loamy-skeletal, frigid and similar soils

Composition: About 5 percent
Slope: 15 to 45 percent
Landform: Ancient landslide or mountain slope
Vegetative classification: 84250, Big Tree Forest

Ultic Haploxeralfs fine-loamy, frigid and similar soils

Composition: About 5 percent
Slope: 15 to 45 percent
Landform: Ancient landslide, mountain slope, or crests on ridge
Vegetative classification: 85310, Red Fir Forest; 84250, Big Tree Forest

Use and Management Considerations

- The types of rock in this map unit are metasedimentary.
- Landslides do not have distinct form but are interpreted to be mostly ancient slump-earth flow failures.
- This map unit supports nearly closed-canopy forest throughout its delineations.

401—Sentinel loam, 0 to 2 percent slopes, mesic

Setting

General location: Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,950 to 3,995 feet (1,205 to 1,218 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Sentinel soil—90 percent
Minor components—10 percent

Description of the Sentinel Soil

Slope: 0 to 2 percent
Landform: Lake terrace or mountain valley
Parent material: Glaciolacustrine deposits derived from granitoid rock and some volcanic ash
Typical vegetation: Main tree species—ponderosa pine, incense cedar, black oak, Douglas-fir, and sugar pine; common understory plants—annual grasses and forbs

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 5 percent fine subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 6.0 inches (moderate)

Selected hydrologic properties

Present annual flooding: Rare
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 3e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 5 inches; sandy loam
A2—5 to 20 inches; sandy loam
A3—20 to 27 inches; loam
Bw—27 to 41 inches; fine sandy loam
C1—41 to 56 inches; sandy loam
C2—56 to 66 inches; loamy sand

Minor Components

Unnamed soils

Composition: About 5 percent
Slope: 0 to 2 percent

Landform: Lake terrace or mountain valley
Vegetative classification: None assigned

Vitrandic Haploxerolls sandy and similar soils

Composition: About 5 percent
Slope: 0 to 2 percent
Landform: Subtle depressional drainageway, lake terrace, or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Soil disturbance and the subsequent loss of the organic surface layer are management concerns.

412—Water-Riverwash complex, 0 to 1 percent slopes, mesic

Setting

General location: Merced River and Tenaya Creek in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,815 to 4,205 feet (1,163 to 1,282 meters)
Mean annual precipitation: 35 to 41 inches (889 to 1,041 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Water—85 percent
Riverwash—15 percent

Description of Water

Slope: 0 to 1 percent
Landform: Mountain valley or river
Typical vegetation: None assigned

Selected properties and qualities

General features: This component is a perennial water body that includes natural or manmade streams, rivers, lakes, ponds, and estuaries that in most years are covered with water at least during the period warm enough for plants to grow. Many areas, such as the Merced River, are covered with water throughout the year. The map unit polygon of this map unit is delineated according to the aerial imagery used during the compilation of maps. Water bodies that are very small or narrow are not delineated on the maps.
Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): Not calculated
Vegetative classification: None assigned

Description of Riverwash

Slope: 0 to 1 percent
Landform: Mountain valley or river
Typical vegetation: None assigned

Selected properties and qualities

General features: Riverwash occurs as areas of unstabilized sand, gravel, cobbles, or stones that are along the periphery of stream and river channels. These areas are flooded, washed, scoured, and reworked frequently by the Merced River. This component may be scoured or overwashed with new deposits of sand, gravel, cobbles, or stones in any year. In some areas the texture is stratified coarse sand to loamy fine sand with strata of gravel; in other areas the texture is freshly deposited gravel, cobbles, or stones.
Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: Medium
Current water table: Present
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

501—Happyisles complex, 1 to 5 percent slopes, mesic

Setting

General location: Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,880 to 4,095 feet (1,184 to 1,250 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Happyisles sandy loam—65 percent
Happyisles loamy fine sand, overwash—20 percent
Minor components—15 percent

Description of Happyisles sandy loam

Slope: 1 to 5 percent
Landform: Metastable alluvial fan or mountain valley
Parent material: Fan alluvium derived from granitoid rock
Typical vegetation: The dominant vegetation is mixed conifers; main tree species—ponderosa pine, incense cedar, and black oak; common understory plants—grasses, shrubs, and ferns

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 17 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.8 inches (low)

Selected hydrologic properties

Present annual flooding: Rare
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 2e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 7 inches; sandy loam
A2—7 to 13 inches; sandy loam
A3—13 to 17 inches; sandy loam
A4—17 to 33 inches; sandy loam
C—33 to 60 inches; stratified gravelly sand to fine sandy loam

Description of Happyisles loamy fine sand, overwash

Slope: 1 to 5 percent
Landform: Areas encroaching on soils from active alluvial fan or mountain valley
Parent material: Fan alluvium derived from granitoid rock
Typical vegetation: The dominant vegetation is mixed conifers; main tree species—ponderosa pine, incense cedar, and black oak; common understory plants—grasses, shrubs, and ferns; there is less understory because of disturbance and droughtiness from the recent overwash

Selected properties and qualities

General features: Flooding is from upland runoff moving laterally into the Yosemite Valley after high-intensity winter storms or snowmelt. The deposition of clean, angular, granitic sandy overwash occurs during periods of flooding.
Surface area covered by coarse fragments: 0 to 9 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.3 inches (moderate)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: Very low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 2e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 7 inches; loamy fine sand
A2—7 to 13 inches; coarse sandy loam
A3—13 to 17 inches; sandy loam
A4—17 to 33 inches; sandy loam
C1—33 to 41 inches; stratified loamy coarse sand to loamy sand
C2—41 to 62 inches; loamy sand

Minor Components

Mollic Xerofluvents and similar soils

Composition: About 6 percent
Slope: 1 to 5 percent
Landform: Alluvial fan, channel, or mountain valley
Vegetative classification: None assigned

Leidig fine sandy loam, occasionally flooded and similar soils

Composition: About 3 percent
Slope: 0 to 2 percent
Landform: Lower part of alluvial fan, high flood plain, or mountain valley
Vegetative classification: None assigned

Aquandic Humaquepts and similar soils

Composition: About 2 percent
Slope: 0 to 3 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Half Dome extremely stony sandy loam and similar soils

Composition: About 2 percent
Slope: 5 to 7 percent
Landform: Upper part of alluvial fan, mountain slope, or mountain valley
Vegetative classification: None assigned

Happyisles sandy loam, somewhat poorly drained and similar soils

Composition: About 2 percent
Slope: 0 to 3 percent
Landform: Lower part of alluvial fan or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Both major components are subject to flooding and deposition.
- Sloughing and the undercutting in areas of both major components occur where the map unit adjoins the river.
- There is an increase in flow intensity and channel cutting near some culverts and diverted drainage courses.

502—Happyisles sandy loam, 0 to 3 percent slopes, somewhat poorly drained, mesic

Setting

General location: Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,865 to 4,090 feet (1,180 to 1,247 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Happyisles soil—88 percent
Minor components—12 percent

Description of the Happyisles Soil

Slope: 0 to 3 percent
Landform: Distal apron of alluvial fan or mountain valley
Parent material: Fan alluvium derived from granitoid rock
Typical vegetation: The dominant vegetation is mixed conifers; main tree species—ponderosa pine, incense cedar, and black oak; common understory plants—grasses and ferns

Selected properties and qualities

General features: The flooding is from very high flood levels from the Merced River or upland runoff moving laterally into the Yosemite Valley after high-intensity winter storms or snowmelt where alluvial fans onlap flood plains.
Surface area covered by coarse fragments: 0 to 9 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.3 inches (moderate)

Selected hydrologic properties

Present annual flooding: Rare
Present annual ponding: None
Surface runoff: Very low
Current water table: Present
Natural drainage class: Somewhat poorly drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 3w
Other vegetative classification: None assigned

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 7 inches; sandy loam
A2—7 to 13 inches; coarse sandy loam
A3—13 to 17 inches; sandy loam
A4—17 to 33 inches; sandy loam
C1—33 to 41 inches; stratified gravelly sand to fine sandy loam
C2—41 to 62 inches; loamy sand

Minor Components

Happyisles sandy loam and similar soils

Composition: About 5 percent
Slope: 0 to 3 percent
Landform: Higher position on alluvial fan or mountain valley
Vegetative classification: None assigned

Leidig and similar soils

Composition: About 5 percent
Slope: 0 to 3 percent
Landform: Lower position on flood plain or mountain valley
Vegetative classification: None assigned

Aquandic Humaquepts and similar soils

Composition: About 2 percent
Slope: 0 to 3 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Flooding and deposition are management concerns.
- Sloughing and undercutting are concerns where this soil adjoins the river.
- Altering the natural drainage course with the use and placement of culverts increases flow intensity and channel cutting.

504—Mollic Xerofluvents, 1 to 5 percent slopes, frequently flooded, mesic

Setting

General location: Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,950 to 4,130 feet (1,205 to 1,259 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Mollic Xerofluvents—85 percent
Minor components—15 percent

Description of Mollic Xerofluvents

Slope: 1 to 5 percent
Landform: Active areas of alluvial fan, recent sediment bar and channel, or mountain valley
Parent material: Fan alluvium derived from granitoid rock
Typical vegetation: The dominant vegetation is mixed conifers; main tree species—ponderosa pine, incense cedar, and black oak; common understory plants—grasses and forbs; the understory is sparse because of soil disturbance and droughtiness

Selected properties and qualities

General features: The flooding is from upland runoff moving laterally into the Yosemite Valley after high-intensity winter storms or snowmelt. The deposition of clean, angular, granitic sandy overwash occurs during periods of flooding.
Surface area covered by coarse fragments: 0 to 12 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.8 inches (moderate)

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 3w
Other vegetative classification: None assigned

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; stratified gravelly sand to loam
C1—6 to 8 inches; stratified gravelly sand to loam
C2—8 to 12 inches; stratified gravelly sand to loam
C3—12 to 23 inches; stratified gravelly sand to loam
C4—23 to 29 inches; stratified gravelly sand to loam
C5—29 to 49 inches; stratified gravelly sand to loam
Ab1—49 to 54 inches; stratified gravelly sand to loam
Ab2—54 to 68 inches; stratified gravelly sand to loam

Minor Components

Happyisles loamy fine sand, overwash and similar soils

Composition: About 4 percent
Slope: 1 to 5 percent
Landform: Encroaching alluvial fan or mountain valley
Vegetative classification: None assigned

Half Dome extremely stony sandy loam and similar soils

Composition: About 3 percent
Slope: 5 to 7 percent
Landform: Higher position on alluvial fan, mountain slope, or mountain valley
Vegetative classification: None assigned

Happyisles sandy loam and similar soils

Composition: About 3 percent
Slope: 1 to 5 percent
Landform: Metastable alluvial fan or mountain valley
Vegetative classification: None assigned

Elcapitan fine sandy loam and similar soils

Composition: About 2 percent
Slope: 1 to 5 percent

Landform: Lower position of alluvial fan, intermediate flood plain, or mountain valley
Vegetative classification: None assigned

Mollic Xerofluvents coarse-loamy or sandy-skeletal and similar soils

Composition: About 2 percent
Slope: 1 to 5 percent
Landform: Alluvial fan or mountain valley
Vegetative classification: None assigned

Aquandic Humaquepts and similar soils

Composition: About 1 percent
Slope: 0 to 3 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Flooding and deposition are management concerns.
- Sloughing and undercutting are concerns where this soil adjoins the river.
- Altering the natural drainage course with the use and placement of culverts increases flow intensity and channel cutting.
- High amounts of sediment are deposited directly into the river where drainage has been altered and intensified.

510t—Rubble land-Lithnip-Rock outcrop association, 8 to 30 percent slopes, mountains, cryic

Setting

General location: None noted
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountains
Elevation: 8,995 to 12,000 feet (2,743 to 3,659 meters)
Mean annual precipitation: 35 to 55 inches (889 to 1,397 millimeters)
Mean annual air temperature: 36 to 39 degrees F (2 to 4 degrees C)
Frost-free period: 30 to 60 days

Composition

Rubble land—40 percent
Lithnip soil—20 percent
Rock outcrop—15 percent
Minor components—25 percent

Description of Rubble Land

Slope: 15 to 150 percent
Landform: Scree slope
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Lithnip Soil

Slope: 8 to 30 percent
Landform: Mountain
Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 2 percent stones and 50 to 70 percent coarse gravel
Restrictive feature: Bedrock (lithic) at a depth of 4 to 10 inches
Available water capacity to a depth of 60 inches: About 0.3 inch (very low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: None noted
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: D

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: 022XY012NV_2, BARREN SLOPE 30+" P.Z.

Typical profile

0 to 1 inch; extremely gravelly sandy loam
1 to 5 inches; very gravelly sandy loam
5 to 15 inches; bedrock

Description of Rock Outcrop

Slope: 15 to 150 percent
Landform: Mountain
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): Not calculated
Other vegetative classification: None assigned

Minor Components

Fishnooze cold and similar soils

Composition: About 10 percent
Slope: 8 to 50 percent
Landform: Mountain
Vegetative classification: None assigned

Typic Cryorthents and similar soils

Composition: About 4 percent
Slope: 15 to 50 percent
Landform: Mountain
Vegetative classification: None assigned

Dunderberg and similar soils

Composition: About 2 percent
Slope: 15 to 50 percent
Landform: Moraine
Vegetative classification: None assigned

Fishsnooze cool and similar soils

Composition: About 2 percent
Slope: 30 to 75 percent
Landform: Mountain
Vegetative classification: 022XY126NV_1, PIAL-PIFL WSG:0R3011

Thiefridge and similar soils

Composition: About 2 percent
Slope: 8 to 50 percent
Landform: Mountain
Vegetative classification: None assigned

Aspocket and similar soils

Composition: About 1 percent
Slope: 15 to 50 percent
Landform: Mountain
Vegetative classification: None assigned

Chutes

Composition: About 1 percent
Slope: 75 to 150 percent
Landform: Avalanche chute
Vegetative classification: None assigned

Glaciers

Composition: About 1 percent
Slope: 15 to 99 percent
Landform: Glacier
Vegetative classification: None assigned

Hopeval and similar soils

Composition: About 1 percent
Slope: 4 to 15 percent
Landform: Flood plain
Vegetative classification: None assigned

Typic Cryaquolls and similar soils

Composition: About 1 percent
Slope: 2 to 8 percent
Landform: Flood plain
Vegetative classification: None assigned

551—Happyisles-Half Dome complex, 5 to 15 percent slopes, mesic

Setting

General location: Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,870 to 4,365 feet (1,180 to 1,331 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Happyisles soil—50 percent
Half Dome soil—45 percent
Minor components—5 percent

Description of the Happyisles Soil

Slope: 5 to 9 percent
Landform: Seasonal drainageway, upper fan apron, or mountain valley
Parent material: Alluvium derived from granitoid rock
Typical vegetation: Main tree species—ponderosa pine, incense cedar, and black oak with maples in scattered groves; common understory plants—grasses, shrubs, and ferns

Selected properties and qualities

Surface area covered by coarse fragments: 0 to 25 percent subrounded stones, 0 to 10 percent coarse subangular gravel, 0 to 10 percent subangular cobbles, and 0 to 25 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.3 inches (moderate)

Selected hydrologic properties

Present annual flooding: Rare
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 3e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 7 inches; sandy loam
A2—7 to 13 inches; coarse sandy loam
A3—13 to 17 inches; sandy loam
A4—17 to 33 inches; sandy loam
C1—33 to 41 inches; stratified gravelly sand to fine sandy loam
C2—41 to 62 inches; loamy sand

Description of the Half Dome Soil

Slope: 5 to 15 percent
Landform: Seasonal drainageway, mountain slope, or mountain valley
Parent material: Colluvium derived from granitoid rock
Typical vegetation: Main tree species—ponderosa pine, Douglas-fir, incense cedar, and black oak with maples in scattered groves; common understory plants—mosses and ferns

Selected properties and qualities

General features: Boulders are transported onto this component primarily along seasonal drainageways or during avalanches or rockslides at the base of colluvial slopes.
Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles, 5 to 15 percent subrounded boulders, and 40 to 60 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: None assigned

Typical profile

A1—0 to 1 inch; extremely stony sandy loam
A2—1 to 19 inches; very cobbly sandy loam
AB—19 to 28 inches; very cobbly sandy loam
Bw1—28 to 33 inches; very cobbly coarse sandy loam
Bw2—33 to 50 inches; very cobbly loamy coarse sand
C—50 to 60 inches; very cobbly loamy sand

Minor Components

Mollic Xerofluvents at lower edge of map unit and similar soils

Composition: About 3 percent

Slope: 5 to 9 percent
Landform: Upper fan apron or mountain valley
Vegetative classification: None assigned

Aquandic Humaquepts and similar soils

Composition: About 1 percent
Slope: 0 to 3 percent
Landform: Flood plain or mountain valley
Vegetative classification: None assigned

Unnamed frequently flooded soils and similar soils

Composition: About 1 percent
Slope: 5 to 9 percent
Landform: Dissected drainageway, upper fan apron, or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- The coarse soil textures have high detachability.
- Soil disturbance and the subsequent loss of the organic surface layer are management concerns.
- The low water-holding capacity and compaction are management concerns.
- This map unit has active colluvial deposition of large rocks and stony surface textures.

552—Mollic Xerofluvents, 5 to 15 percent slopes, frequently flooded, mesic

Setting

General location: Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,920 to 4,230 feet (1,195 to 1,290 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Mollic Xerofluvents—85 percent
Minor components—15 percent

Description of Mollic Xerofluvents

Slope: 5 to 15 percent
Landform: Active alluvial fan, recent sediment bar and channel, or mountain valley
Parent material: Fan alluvium derived from granitoid rock
Typical vegetation: The dominant vegetation is mixed conifers; main tree species—ponderosa pine, incense cedar, and black oak; common understory plants—grasses and forbs; the understory is sparse because of soil disturbance and droughtiness

Selected properties and qualities

General features: The flooding is from runoff moving laterally into the Yosemite Valley

after high-intensity winter storms or snowmelt. The deposition of clean, angular, granitoid sandy overwash occurs during periods of flooding.
Surface area covered by coarse fragments: 0 to 9 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 5.8 inches (moderate)

Selected hydrologic properties

Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 4w
Other vegetative classification: None assigned

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; stratified gravelly sand to loam
C1—6 to 8 inches; stratified gravelly sand to loam
C2—8 to 12 inches; stratified gravelly sand to loam
C3—12 to 23 inches; stratified gravelly sand to loam
C4—23 to 29 inches; stratified gravelly sand to loam
C5—29 to 49 inches; stratified gravelly sand to loam
Ab1—49 to 54 inches; stratified gravelly sand to loam
Ab2—54 to 68 inches; stratified gravelly sand to loam

Minor Components

Mollic Xerofluvents in downslope areas of the map unit and similar soils

Composition: About 5 percent
Slope: 1 to 5 percent
Landform: Alluvial fan or mountain valley
Vegetative classification: None assigned

Rubble land

Composition: About 5 percent
Slope: 15 to 25 percent
Landform: Adjacent to steep cliff or mountain valley
Vegetative classification: None assigned

Half Dome in upslope areas of the map unit and similar soils

Composition: About 3 percent
Slope: 5 to 15 percent
Landform: Mountain slope or mountain valley
Vegetative classification: None assigned

Mollic Xerofluvents coarse-loamy or sandy-skeletal and similar soils

Composition: About 2 percent
Slope: 5 to 15 percent
Landform: Active alluvial fan that occurs randomly or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Flooding and deposition are management concerns.
- Areas of this map unit may have boulders on the surface.
- Where drainage has been altered and intensified, sediment deposition is increased.

590—Terric Haplosaprists, 0 to 3 percent slopes, mesic

Setting

General location: Adjacent to the Merced River in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,880 to 3,895 feet (1,184 to 1,188 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Terric Haplosaprists—85 percent
Minor components—15 percent

Description of Terric Haplosaprists

Slope: 0 to 3 percent
Landform: Low alluvial fan or mountain valley
Parent material: Organic material over fan alluvium derived from granitoid rock
Typical vegetation: Common understory plants—hydrophytic forbs

Selected properties and qualities

General features: Lateral drainageways carrying runoff from valley side slopes drain into areas of this map unit. The flooding is usually from high-intensity winter storms and spring runoff from snowmelt. Mineral strata overlie the soil with a high organic matter content.
Surface area covered by coarse fragments: 0 to 10 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 10.9 inches (very high)

Selected hydrologic properties

Present annual flooding: Occasional
Present annual ponding: None
Surface runoff: High
Current water table: Present
Natural drainage class: Very poorly drained
Hydrologic soil group: D

California land use interpretive groups

Land capability classification (nonirrigated): 6w
Other vegetative classification: None assigned

Typical profile

A—0 to 3 inches; mucky loam
C1—3 to 8 inches; gravelly sand
C2—8 to 12 inches; loamy fine sand
Oa—12 to 31 inches; muck

Ab1—31 to 35 inches; loam
Ab2—35 to 38 inches; sandy loam
Bgb—38 to 46 inches; loam
O´a—46 to 52 inches; muck
A´b—52 to 58 inches; sandy loam
B´gb—58 to 60 inches; loam

Minor Components

Aquandic Humaquepts and similar soils

Composition: About 10 percent
Slope: 0 to 3 percent
Landform: Alluvial fan in slightly higher position or mountain valley
Vegetative classification: None assigned

Happyisles sandy loam, somewhat poorly drained and similar soils

Composition: About 5 percent
Slope: 2 to 3 percent
Landform: Alluvial fan in upslope position or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- The soil acts like a mineral soil at the surface due to the overwash of mineral material, but it is highly organic in the subsoil.
- Channeling road drainage is a management concern.
- The undercutting of vertical streambanks is a management concern.
- The high water table is a management concern.

601—Half Dome complex, 25 to 60 percent slopes, mesic

Setting

General location: Base of the southern canyon wall in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,915 to 5,830 feet (1,194 to 1,778 meters)
Mean annual precipitation: 35 to 43 inches (889 to 1,092 millimeters)
Mean annual air temperature: 48 to 53 degrees F (9 to 12 degrees C)
Frost-free period: 100 to 150 days

Composition

Half Dome very bouldery—50 percent
Half Dome cobbly—45 percent
Minor components—5 percent

Description of Half Dome very bouldery

Slope: 25 to 45 percent
Landform: Unstable mountain slope or mountain valley
Parent material: Colluvium derived from granitoid rock
Typical vegetation: Main tree species—ponderosa pine, Douglas-fir, incense cedar, and black oak with maples in scattered groves; common understory plants—mosses and ferns

Selected properties and qualities

General features: This component is the oldest geomorphic surface on the side slopes.

Steep vertical debris slopes cross some areas of this map unit. Small channels are scoured throughout this unit during periods of high rainfall or snowmelt.
Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles, 5 to 15 percent subrounded stones, and 20 to 35 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.5 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: None assigned

Typical profile

Oi—0 to 3 inches; very bouldery slightly decomposed plant material
A1—3 to 5 inches; very bouldery sandy loam
A2—5 to 8 inches; gravelly sandy loam
Bw1—8 to 15 inches; cobbly sandy loam
Bw2—15 to 39 inches; very cobbly sandy loam
C—39 to 63 inches; very cobbly sandy loam

Description of Half Dome cobbly

Slope: 45 to 60 percent
Landform: Unstable mountain slope or mountain valley
Parent material: Colluvium derived from granitoid rock
Typical vegetation: Main tree species—ponderosa pine, Douglas-fir, and incense cedar

Selected properties and qualities

General features: This component is the oldest geomorphic surface on the side slopes. Steep vertical debris slopes cross some areas of this map unit. Small channels are scoured throughout this unit during periods of high rainfall or snowmelt.
Surface area covered by coarse fragments: 0 to 10 percent subrounded stones and 20 to 35 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.7 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6s
Other vegetative classification: None assigned

Typical profile

Oi—0 to 1 inch; stony slightly decomposed plant material
Oe—1 to 2 inches; stony slightly decomposed plant material
A1—2 to 10 inches; very cobbly sandy loam
A2—10 to 17 inches; very stony sandy loam
A3—17 to 29 inches; very stony sandy loam
Bw—29 to 60 inches; very stony sandy loam

Minor Components

Rubble land

Composition: About 5 percent
Slope: 25 to 60 percent
Landform: Adjacent to cliff or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- The coarse soil textures have high detachability.
- Soil disturbance and the subsequent loss of the organic surface layer are management concerns.
- The low water-holding capacity is a management concern.
- This map unit includes unstable debris chutes.
- This map unit has active colluvial deposition of large rocks and bouldery surface textures.

602—Half Dome extremely stony sandy loam, 10 to 25 percent slopes, mesic

Setting

General location: Base of the southern and northern canyon walls in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,790 to 4,270 feet (1,156 to 1,302 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 100 to 150 days

Composition

Half Dome soil—85 percent
Minor components—15 percent

Description of the Half Dome Soil

Slope: 10 to 25 percent
Landform: Unstable mountain slope or mountain valley
Parent material: Colluvium derived from granitoid rock
Typical vegetation: Main tree species—ponderosa pine, Douglas-fir, incense cedar, and black oak with maples in scattered groves; common understory plants—mosses and ferns

Selected properties and qualities

General features: This component is the oldest geomorphic surface on the side slopes.

Small channels are scoured throughout this map unit during periods of high rainfall or snowmelt.
Surface area covered by coarse fragments: 5 to 15 percent subangular cobbles, 25 to 35 percent subrounded stones, 5 to 15 percent subrounded boulders, and 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 4s
Other vegetative classification: None assigned

Typical profile

A1—0 to 1 inch; extremely stony sandy loam
A2—1 to 19 inches; very cobbly sandy loam
AB—19 to 28 inches; very cobbly sandy loam
Bw1—28 to 33 inches; very cobbly coarse sandy loam
Bw2—33 to 50 inches; very cobbly loamy coarse sand
C—50 to 60 inches; very cobbly loamy sand

Minor Components

Happyisles sandy loam and similar soils

Composition: About 8 percent
Slope: 7 to 9 percent
Landform: Alluvial fan or mountain valley
Vegetative classification: None assigned

Mollic Xerofluvents and similar soils

Composition: About 5 percent
Slope: 3 to 5 percent
Landform: Alluvial fan or mountain valley
Vegetative classification: None assigned

Rubble land

Composition: About 2 percent
Slope: 10 to 25 percent
Landform: Adjacent to cliff or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- The coarse soil textures have high detachability.
- Soil disturbance and the subsequent loss of the organic surface layer are management concerns.
- The very low water-holding capacity is a management concern.
- This map unit has unstable debris chutes.

- This map unit has active colluvial deposition of large rocks and bouldery surface textures.

610—Rubble land-Half Dome complex, 25 to 60 percent slopes, mesic

Setting

General location: Base of the southern canyon wall in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,850 to 6,290 feet (1,174 to 1,918 meters)
Mean annual precipitation: 35 to 41 inches (889 to 1,041 millimeters)
Mean annual air temperature: 48 to 53 degrees F (9 to 12 degrees C)
Frost-free period: 100 to 150 days

Composition

Rubble land—65 percent
Half Dome soil—30 percent
Minor components—5 percent

Description of Rubble Land

Slope: 25 to 60 percent
Landform: Adjacent to cliff or mountain valley
Parent material: Colluvium derived from granitoid rock
Typical vegetation: Little or no vegetation

Selected properties and qualities

General features: Rubble land consists of cobbles, stones, and boulders. Channels are scoured throughout this map unit during periods of high rainfall or snowmelt.
Surface area covered by coarse fragments: 25 to 100 percent subrounded stones, 15 to 100 percent subrounded boulders, and 20 to 100 percent subangular cobbles
Restrictive feature: Bedrock (lithic) at a depth of 40 inches
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Low
Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Half Dome Soil

Slope: 25 to 60 percent
Landform: Very unstable mountain slope or mountain valley
Parent material: Colluvium derived from granitoid rock
Typical vegetation: This soil is colder than the Half Dome soil occurring on south-facing slopes; the cooler temperature affects the vegetation; main tree species—black

oak, ponderosa pine, and incense cedar; common understory plants—mosses and ferns

Selected properties and qualities

General features: The colluvial mountain slopes are very active, and the soils on them are young and very bouldery. Channels are scoured throughout this map unit during periods of high rainfall or snowmelt.
Surface area covered by coarse fragments: 15 to 100 percent subrounded boulders, 20 to 100 percent subangular cobbles, and 25 to 100 percent subrounded stones
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.7 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 4s
Other vegetative classification: None assigned

Typical profile

Oi—0 to 1 inch; extremely bouldery slightly decomposed plant material
Oe—1 to 2 inches; extremely bouldery slightly decomposed plant material
A1—2 to 10 inches; very bouldery sandy loam
A2—10 to 17 inches; very cobbly sandy loam
A3—17 to 29 inches; very cobbly sandy loam
Bw—29 to 60 inches; very cobbly sandy loam

Minor Components

Unnamed soil that fills space between rock fragments and similar soils

Composition: About 3 percent
Slope: 25 to 60 percent
Landform: Very unstable mountain slope or mountain valley
Vegetative classification: None assigned

Rock outcrop

Composition: About 2 percent
Slope: 25 to 60 percent
Landform: Very unstable mountain slope or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- This map unit has active colluvial deposition of large boulders.
- The coarse soil textures have high detachability.
- The low water-holding capacity is a management concern.
- This map unit has unstable debris chutes and bouldery surface textures.

620—Half Dome complex, warm, 25 to 60 percent slopes, mesic

Setting

General location: Base of the northern canyon wall in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,880 to 5,870 feet (1,184 to 1,790 meters)
Mean annual precipitation: 35 to 43 inches (889 to 1,092 millimeters)
Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Half Dome extremely stony sandy loam, warm—50 percent
Half Dome very cobbly sandy loam, warm—43 percent
Minor components—7 percent

Description of Half Dome extremely stony sandy loam, warm

Slope: 25 to 40 percent
Landform: Unstable mountain slope or mountain valley
Parent material: Colluvium derived from granitoid rock
Typical vegetation: This soil is warmer than the Half Dome soil occurring on north-facing slopes, and the warmer temperature affects the vegetation; main tree species—canyon live oak, ponderosa pine, incense cedar, and black oak; common understory plants—mosses and ferns

Selected properties and qualities

General features: This component is the oldest geomorphic surface on the side slopes. Steep vertical debris slopes cross some areas of this map unit. Small channels are scoured throughout this unit during periods of high rainfall or snowmelt.
Surface area covered by coarse fragments: 5 to 15 percent subrounded boulders, 10 to 40 percent subrounded stones, and 20 to 35 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.9 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

A1—0 to 1 inch; extremely stony sandy loam
A2—1 to 19 inches; extremely stony sandy loam
AB—19 to 28 inches; very cobbly coarse sandy loam
Bw1—28 to 33 inches; very cobbly coarse sandy loam

Bw2—33 to 50 inches; very cobbly coarse sandy loam
C—50 to 60 inches; very cobbly loamy coarse sand

Description of Half Dome very cobbly sandy loam, warm

Slope: 45 to 60 percent
Landform: Unstable mountain slope or mountain valley
Parent material: Colluvium derived from granitoid rock
Typical vegetation: This soil is warmer than the Half Dome soil occurring on north-facing slopes, and the warmer temperature affects the vegetation; main tree species—canyon live oak, ponderosa pine, and incense cedar

Selected properties and qualities

General features: This component is the oldest geomorphic surface on the side slopes. Steep vertical debris slopes cross some areas of this map unit. Small channels are scoured throughout this unit during periods of high rainfall or snowmelt.
Surface area covered by coarse fragments: 0 to 25 percent subrounded boulders, 5 to 35 percent subrounded stones, and 5 to 15 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 3.7 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Typical profile

Oi—0 to 1 inch; very stony slightly decomposed plant material
Oe—1 to 2 inches; very stony slightly decomposed plant material
A1—2 to 10 inches; very cobbly sandy loam
A2—10 to 17 inches; extremely stony sandy loam
A3—17 to 29 inches; extremely stony sandy loam
Bw—29 to 60 inches; extremely stony sandy loam

Minor Components

Rubble land

Composition: About 5 percent
Slope: 25 to 60 percent
Landform: Base of cliff or mountain valley
Vegetative classification: None assigned

Aquandic Humaquepts and similar soils

Composition: About 2 percent
Slope: 0 to 3 percent
Landform: Alluvial fan in slightly higher positions or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- The coarse soil textures have high detachability.
- Soil disturbance and the subsequent loss of the organic surface layer are management concerns.
- The low water-holding capacity is a management concern.
- This map unit has unstable debris chutes.
- This map unit has active colluvial deposition of large rocks and stony surface textures.

630—Rubble land-Half Dome complex, warm, 25 to 60 percent slopes, mesic

Setting

General location: Base of the northern canyon wall in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,860 to 6,525 feet (1,177 to 1,989 meters)
Mean annual precipitation: 35 to 43 inches (889 to 1,092 millimeters)
Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Rubble land—65 percent
Half Dome soil—30 percent
Minor components—5 percent

Description of Rubble Land

Slope: 25 to 60 percent
Landform: Base of cliff or mountain valley
Parent material: Colluvium derived from granitoid rock
Typical vegetation: Little or no vegetation

Selected properties and qualities

General features: Rubble land consists of cobbles, stones, and large boulders. Channels are scoured throughout this map unit during periods of high rainfall or snowmelt.
Surface area covered by coarse fragments: 20 to 100 percent subrounded stones, 15 to 100 percent subrounded boulders, and 5 to 100 percent subangular cobbles
Restrictive feature: Bedrock (lithic) at a depth of 40 inches
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Description of the Half Dome Soil

Slope: 25 to 60 percent
Landform: Very unstable mountain slope or mountain valley

Parent material: Colluvium derived from granitoid rock
Typical vegetation: This soil is warmer than the Half Dome soil occurring on north-facing slopes, and the warmer temperature affects the vegetation; main tree species—canyon live oak, ponderosa pine, and incense cedar

Selected properties and qualities

General features: This soil is very active and young.
Surface area covered by coarse fragments: 10 to 100 percent subrounded boulders, 20 to 100 percent subrounded stones, and 5 to 100 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.4 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Medium
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: A

California land use interpretive groups

Land capability classification (nonirrigated): 6e
Other vegetative classification: None assigned

Typical profile

A1—0 to 1 inch; very bouldery sandy loam
A2—1 to 19 inches; very bouldery sandy loam
AB—19 to 28 inches; very cobbly coarse sandy loam
Bw1—28 to 33 inches; very cobbly coarse sandy loam
Bw2—33 to 50 inches; very cobbly loamy coarse sand
C—50 to 60 inches; very cobbly loamy sand

Minor Components

Unnamed soil that fills space between rock fragments and similar soils

Composition: About 3 percent
Slope: 25 to 60 percent
Landform: Very unstable mountain slope or mountain valley
Vegetative classification: None assigned

Rock outcrop

Composition: About 2 percent
Slope: 25 to 60 percent
Landform: Mountain slope or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- This map unit has active colluvial deposition of large boulders.
- The coarse soil textures have high detachability.
- Soil disturbance and the subsequent loss of the organic surface layer are management concerns.
- The low water-holding capacity is a management concern.
- This map unit has unstable debris chutes and bouldery surface textures.

701—Vitrandic Haploxerolls, coarse-loamy, 4 to 30 percent slopes, well drained, mesic

Setting

General location: Adjacent to the Merced River in Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,885 to 4,045 feet (1,185 to 1,234 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Vitrandic Haploxerolls—90 percent
Minor components—10 percent

Description of Vitrandic Haploxerolls

Slope: 4 to 30 percent
Landform: Terminal or lateral moraine or mountain valley
Parent material: Till derived from granitoid rock
Typical vegetation: Main tree species—ponderosa pine, Douglas-fir, incense cedar, canyon live oak, and black oak

Selected properties and qualities

General features: This component is among the oldest in the Yosemite Valley. The soil has little stratification and is fairly homogeneous, reflecting direct ice deposition and no water sorting.
Surface area covered by coarse fragments: 0 to 3 percent subrounded stones and 0 to 2 percent subrounded boulders
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 8.1 inches (high)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: None assigned

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; fine sandy loam
Bw1—3 to 12 inches; fine sandy loam
Bw2—12 to 16 inches; fine sandy loam
Bw3—16 to 24 inches; fine sandy loam
Bw4—24 to 36 inches; fine sandy loam
C1—36 to 50 inches; fine sandy loam
C2—50 to 60 inches; fine sandy loam

Minor Components

Happyisles sandy loam and similar soils

Composition: About 4 percent
Slope: 1 to 5 percent
Landform: Alluvial fan or mountain valley
Vegetative classification: None assigned

Happyisles sandy loam, moderately sloping and similar soils

Composition: About 2 percent
Slope: 5 to 9 percent
Landform: Alluvial fan or mountain valley
Vegetative classification: None assigned

Vitrandic Dystroxerepts mesic and similar soils

Composition: About 2 percent
Slope: 4 to 30 percent
Landform: Terminal or lateral moraine or mountain valley
Vegetative classification: None assigned

Half Dome extremely stony sandy loam and similar soils

Composition: About 1 percent
Slope: 5 to 15 percent
Landform: Mountain slope or mountain valley
Vegetative classification: None assigned

Happyisles loamy fine sand, overwash and similar soils

Composition: About 1 percent
Slope: 1 to 5 percent
Landform: Alluvial fan or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- Soil disturbance and the subsequent loss of the organic surface layer are management concerns.
- Because the soil profile has uniform texture, water movement is good.

702—Vitrandic Dystroxerepts, 4 to 30 percent slopes, mesic

Setting

General location: Adjacent to the Merced River in the Yosemite Valley
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 3,885 to 3,985 feet (1,184 to 1,215 meters)
Mean annual precipitation: 35 to 40 inches (889 to 1,016 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Vitrandic Dystroxerepts—90 percent
Minor components—10 percent

Description of Vitrandic Dystroxerepts

Slope: 4 to 30 percent
Landform: Deposits on moraine or mountain valley
Parent material: Stratified till derived from granitoid rock
Typical vegetation: Main tree species—ponderosa pine, Douglas-fir, and black oak

Selected properties and qualities

General features: This component is one of the older geomorphic surfaces in Yosemite Valley. The soil is highly stratified due to sorting by water.
Surface area covered by coarse fragments: 0 to 10 percent coarse subangular gravel and 14 to 25 percent subangular cobbles
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: About 4.7 inches (low)

Selected hydrologic properties

Present annual flooding: None
Present annual ponding: None
Surface runoff: Low
Current water table: None noted
Natural drainage class: Well drained
Hydrologic soil group: B

California land use interpretive groups

Land capability classification (nonirrigated): 4e
Other vegetative classification: None assigned

Typical profile

A—0 to 8 inches; cobbly coarse sandy loam
Bw1—8 to 30 inches; very cobbly coarse sandy loam
Bw2—30 to 50 inches; very cobbly coarse sandy loam
C—50 to 60 inches; very stony loamy coarse sand

Minor Components

Vitrandic Haploxerolls with a dark surface horizon more than 25 centimeters thick and similar soils

Composition: About 5 percent
Slope: 4 to 30 percent
Landform: Deposits on moraine or mountain valley
Vegetative classification: None assigned

Typic Dystroxerepts coarse-loamy, mesic and similar soils

Composition: About 3 percent
Slope: 4 to 30 percent
Landform: Deposits on moraine or mountain valley
Vegetative classification: None assigned

Unnamed soils

Composition: About 2 percent
Slope: 4 to 30 percent
Landform: Deposits on moraine or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- This map unit includes areas of fill material and building sites.
- Soil disturbance and the subsequent loss of the organic surface layer are management concerns.

900—Rock outcrop, mesic

Setting

General location: None noted
Major land resource area: Sierra Nevada Mountains (22A)
Landscape: Mountain valleys or canyons
Elevation: 4,190 to 7,735 feet (1,278 to 2,359 meters)
Mean annual precipitation: 37 to 43 inches (940 to 1,092 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 100 to 150 days

Composition

Rock outcrop—95 percent
Minor components—5 percent

Description of Rock Outcrop

Slope: 50 to 100 percent
Landform: Nearly vertical escarpment
Parent material: Granitoid rock
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Surface runoff: Very high
Current water table: None noted
Hydrologic soil group: D

California land use interpretive groups

Land capability classification (nonirrigated): 8
Other vegetative classification: None assigned

Minor Components

Rubble land

Composition: About 5 percent
Slope: 50 to 100 percent
Landform: Base of cliff or mountain valley
Vegetative classification: None assigned

Use and Management Considerations

- This map unit has excessive runoff downslope.
- This map unit has extremely steep escarpment walls.

DAM—Dam

Setting

General location: None noted
Major land resource area: Sierra Nevada Mountains (22A)

Composition

Dam—100 percent

Description of Dam

Slope: 0 to 100 percent
Landform: Floodway
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): Not calculated
Other vegetative classification: None assigned

W—Water

Setting

General location: None noted
Major land resource area: Sierra Nevada Mountains (22A)

Composition

Water—100 percent

Description of Water

Landform: None assigned
Typical vegetation: None assigned

Selected properties and qualities

Surface area covered by coarse fragments: None noted
Restrictive feature: None noted
Available water capacity to a depth of 60 inches: Very low

Selected hydrologic properties

Current water table: None noted
Hydrologic soil group: None noted

California land use interpretive groups

Land capability classification (nonirrigated): Not calculated
Other vegetative classification: None assigned

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one

limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for plants *(23)*. The soils are grouped according to their limitations for plants and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

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

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

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

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

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

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

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

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The capability classification of map units in this survey area is given in the section “Detailed Soil Map Units” and in table 5.

Major Land Resource Areas

The land capability classification system is further refined by designating the major land resource area (MLRA) of the soils. A major land resource area is a broad geographic area that has a distinct combination of climate, topography, vegetation, land use, and general type of farming *(20)*. All of the soil survey of Yosemite National

Park occurs in MLRA 22A—Sierra Nevada Mountains—which is one of these nationally designated areas.

MLRA 22A, Sierra Nevada Mountains.—This area consists of the higher elevations of the Sierra Nevada Mountains. It occurs a strongly asymmetric mountain range with a long, gentle western slope and a steep eastern escarpment. It is characterized by hilly to very steep mountain relief and occasional mountain valleys. It is 50 to 80 miles (80 to 130 kilometers) wide and runs in an approximately north-south direction for more than 400 miles (645 kilometers). The survey area ranges from approximately 1,654 to 13,066 feet (504 to 3,982 meters) in elevation, which almost covers the entire range of elevation in MLRA 22A.

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 data in the tables described under the heading "Soil Properties."

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 between the surface and a depth of 5 to 7 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 particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, 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 kinds 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.

Recreation

The soils of the survey area are rated in table 6, parts I and II, according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the table 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, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in table 6 can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas 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 ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds

Figure 25.—The Chilnualna Falls Trail meanders through map unit 292.

should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling (fig. 25). The ratings are based on the soil

Figure 26.—A golf course at Wawona in an area of map unit 276. An area of map unit 296 is on the mountain slope in the background.

properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

For *lawns, landscaping, and golf fairways,* the lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic (fig. 26). Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 7, parts I and II, show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, and shallow excavations.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

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 soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the

amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Construction Materials

Table 8, parts I, II, and III, give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

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 table 8, only the likelihood of finding material in suitable quantity 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 Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The numbers 0.00 to 0.07 indicate that the layer is a poor source. The numbers 0.75 to 1.00 indicate that the layer is a good source. The numbers 0.08 to 0.74 indicate the degree to which the layer is a likely source.

The soils are rated *good, fair,* or *poor* as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

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. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction;

available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, 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 whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Sanitary Facilities

Table 9, parts I and II, show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

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 soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, 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. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

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 ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best

cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

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 the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Water Management

Table 10 provides 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 and for embankments, dikes, and levees. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *No limitations* indicate that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Limitations* with ratings between 0 and 1 can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limitations* with a rating value of 1 indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

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. Embankments that have zoned construction (core and shell) are not considered. In this table, 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 greater 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.

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.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained 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 particle-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 are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 11 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given as a texture code for the standard terms used by the United States 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” (texture code L), for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly” (texture code G). Textural terms are defined in the Glossary. Texture codes are:

ASHY	Ashy
BR	Bedrock
BY	Bouldery
BY	Boulders
BYV	Very bouldery
BYX	Extremely bouldery
C	Clay
CB	Cobbly
CB	Cobbles
CBV	Very cobbly
CBX	Extremely cobbly
CEM	Cemented
CL	Clay loam
CN	Channery
CN	Channers
CNV	Very channery
CNX	Extremely channery
COP	Coprogenous

PCN	Parachanners
PCNV	Very parachannery
PCNX	Extremely parachannery
PEAT	Peat
PF	Permanently frozen
PFL	Paraflaggy
PFL	Paraflagstones
PFLV	Very paraflaggy
PFLX	Extremely paraflaggy
PG	Paragravel
PGR	Paragravelly
PGRV	Very paragravelly
PGRX	Extremely paragravelly
PST	Parastony
PST	Parastones
PSTV	Very parastony
PSTX	Extremely parastony
PT	Peaty
S	Sand
SC	Sandy clay
SCL	Sandy clay loam
SI	Silt
SIC	Silty clay
SICL	Silty clay loam
SIL	Silt loam
SL	Sandy loam
SPM	Slightly decomposed plant material
ST	Stony
ST	Stones
STV	Very stony
STX	Extremely stony
VFS	Very fine sand
VFSL	Very fine sandy loam
W	Water
WD	Woody

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-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, CL-ML.

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 particle-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 particle-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 generally omitted in the table.

Physical Properties

Table 12 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the 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.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and 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 earthmoving operations.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 12, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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 $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each 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. Depending on

soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in micrometers per second (um/sec), 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 soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. 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.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. 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. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 12, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for plants and soil organisms.

Erosion Properties

Erosion factors are shown in table 13 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

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 annual rate of soil erosion

by wind or water that can occur without affecting plant 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 susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 14 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the 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.

Cation-exchange capacity is the total amount of extractable bases 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. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil 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.

Physical and Chemical Analyses of Selected Soils

Soil samples for 114 pedons were analyzed by the Soil Survey Laboratory, United States Department of Agriculture, Natural Resources Conservation Service, Lincoln, Nebraska *(19)*. A list of laboratory sample pedon IDs, laboratory data pedon numbers, and site/pedon IDs referenced by map unit symbol is available in Appendix II. This list also indicates whether the pedon is typical for the official series or an example pedon for soils mapped at the family level or higher level as described in the section “Soil Series and Their Morphology.” This data is available as characterization data *(22)*. The data is also available online at http://ssldata.nrcs.usda.gov/.

Water Features

Table 15 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

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. (See figure 27.)

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly

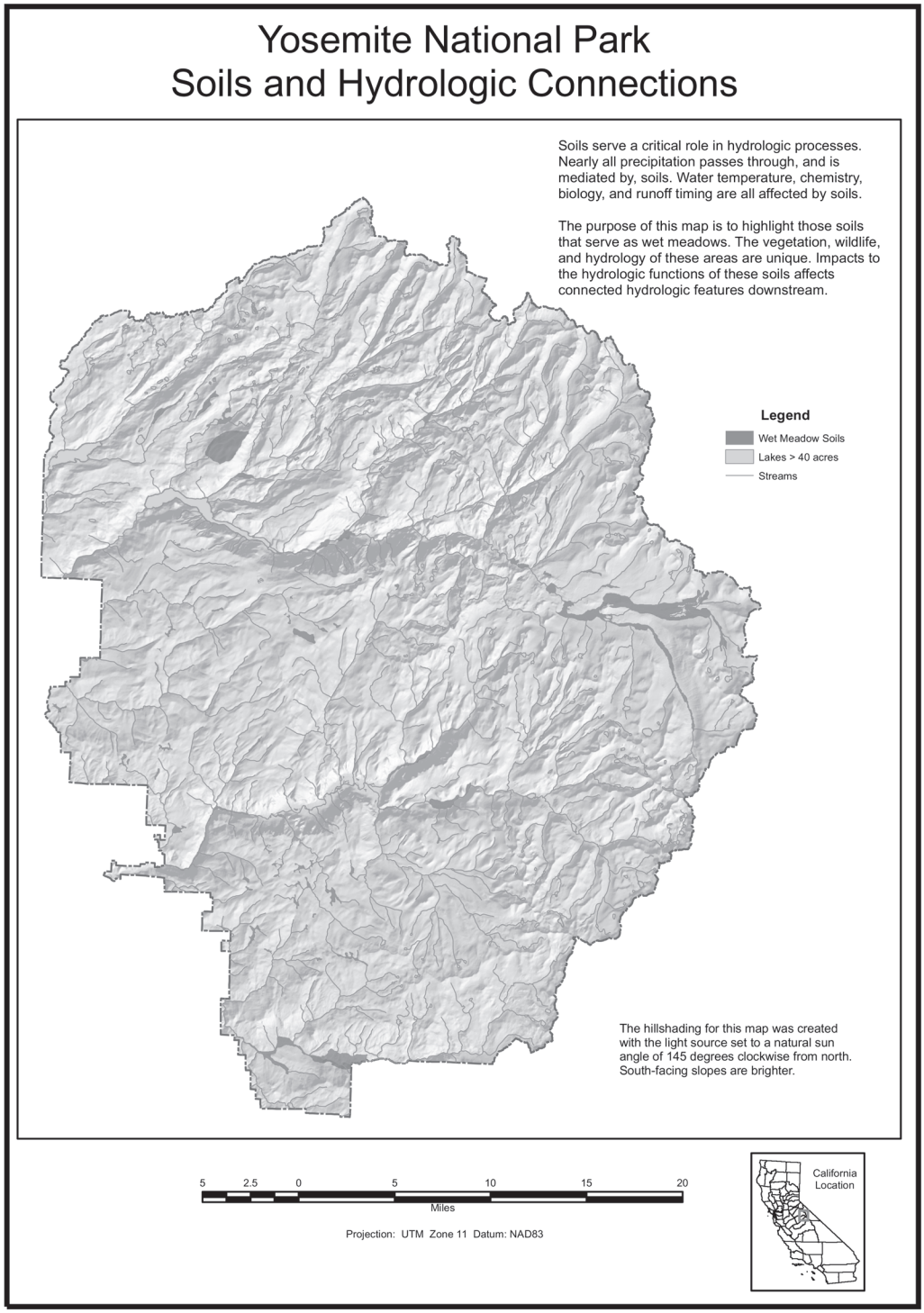

Figure 27

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.

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 15 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 15 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

Table 16 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for 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 to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes 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 or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete 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 also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(16, 18)*. 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 17 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 Entisol.

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 Orthent (*Orth*, meaning true or common, plus *ent*, from Entisol).

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 Cryorthents [*Cry*, meaning cold (cryic soil temperature regime), plus *orthent*, the suborder of the Entisols that commonly occurs].

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 *Typic* identifies the subgroup that typifies the great group. An example is Typic Cryorthents.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is sandy-skeletal, isotic Typic Cryorthents.

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.

Soils and Their Morphology

In this section, each soil series, family, or taxon above the family level recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each. A pedon, a small three-dimensional area of soil, that is typical of the series, family, or taxon above the family level in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil

Survey Manual" *(24)*. Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" *(16)* and in "Keys to Soil Taxonomy" *(18)*. Unless otherwise indicated, colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the series, family, or taxon above the family level.

Aquandic Humaquepts

Aquandic Humaquepts in the survey area consist of very deep, poorly drained and very poorly drained soils that formed in coarse textured stream alluvium from granitoid rock. These soils formed in abandoned river channels and oxbows of low flood plains. Slope is 0 to 2 percent. The soils are classified as coarse-silty over sandy or sandy-skeletal, isotic, nonacid, mesic Aquandic Humaquepts.

Typical Pedon

Aquandic Humaquepts, 0 to 2 percent slopes, mesic; Mariposa County, California; north side of Leidig Meadow, Yosemite Valley, Yosemite National Park; lat. 37 degrees 44 minutes 18.70 seconds N. and long. 119 degrees 36 minutes 7.45 seconds W.; UTM Zone 11, easting 270716.44 and northing 4179992.79; USGS Half Dome, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Aquandic Humaquepts in this survey area because of the highly variable nature of these soils.)

A1—0 to 8 inches (0 to 20 cm); grayish brown (2.5Y 5/2) mucky very fine sandy loam, 50 percent very dark grayish brown (2.5Y 3/2) and 50 percent very dark gray (5Y 3/1) moist; strong medium granular structure; soft, very friable, non-sticky, non-plastic; common very fine interstitial pores; many very fine and fine roots; few (1 percent) fine and medium distinct dark yellowish brown (10YR 4/6, moist) redoximorphic accumulations of iron; extremely acid (pH 4.1); clear smooth boundary. (Lab sample # 91P2327)

A2—8 to 18 inches (20 to 46 cm); dark grayish brown (2.5Y 4/2) mucky silt loam, 60 percent very dark gray (5Y 3/1) and 40 percent dark olive gray (5Y 3/2) moist; strong medium granular structure; common very fine and fine roots; common very fine interstitial pores; common (11 percent) fine distinct olive (5Y 4/4, moist) redoximorphic accumulations of iron; strongly acid (pH 4.5); clear smooth boundary. (Lab sample # 91P2328)

A3—18 to 26 inches (46 to 66 cm); gray (10YR 5/1) fine sandy loam, 90 percent very dark gray (5Y 3/1) and 10 percent olive (5Y 4/3) moist; massive; slightly hard, friable, non-sticky, non-plastic; common very fine and fine roots; common very fine interstitial pores; moderately acid (pH 5.3); clear smooth boundary.

C—26 to 68 inches (66 to 173 cm); 50 percent white (5Y 8/1) and 50 percent light gray (5Y 7/1) sand, 40 percent gray (5Y 5/1) and 40 percent greenish gray (5GY 6/1) moist; single grain; loose, non-sticky, non-plastic; many very fine interstitial pores; 10 percent dark greenish gray (5GY 4/1), 8 percent light gray (5Y 7/1), and 2 percent light olive brown (2.5Y 5/6, moist) redoximorphic accumulations of iron; moderately acid (pH 5.8).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

The mucky surface horizon has a base saturation (ammonium acetate) that is less than 20 percent. This horizon also contains 10 to 20 percent glass and aluminum plus one-half iron percent (ammonium oxalate) of 0.6 to 1.6. Sodium fluoride reaction is 8.5 to 10.5. Redoximorphic accumulations of iron occur in most horizons.

A horizon (upper part):
Hue—10YR, 2.5Y, or 5Y (dry and moist)
Value—4 or 5 (dry) and 2 to 4 (moist)
Chroma—1 or 2 (dry) and 1 to 6 (moist)
Texture—mucky fine sandy loam, mucky very fine sandy loam, or mucky silt loam
Clay content—2 to 9 percent
Rock fragment content—0 to 6 percent
Organic matter content—10 to 20 percent
Reaction—extremely acid to strongly acid

A horizon (lower part):
Hue—10YR, 5Y, or neutral (dry and moist)
Value—4 (dry) and 3 or 4 (moist)
Chroma—1 or 2 (dry) and 1 to 4 (moist)
Texture—fine sandy loam, very fine sandy loam, or silt loam
Clay content—2 to 6 percent
Organic matter content—3 to 7 percent
Reaction—extremely acid to strongly acid

C horizon:
Hue—2.5Y, 5Y, or 5GY (dry and moist)
Value—7 or 8 (dry) and 4 to 7 (moist)
Chroma—1 (dry) and 1 to 6 (moist)
Texture—coarse sand, sand, or loamy sand that has less than 15 percent fine sand or coarser material
Clay content—2 to 5 percent
Organic matter content—0 to 0.5 percent
Gravel content—0 to 10 percent
Reaction—moderately acid

Additional characterization data for this Aquandic Humaquepts example pedon, National Soil Survey Laboratory lab data pedon number 91P0404 (Pedon ID: 90CA043013), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Badgerpass Series

The Badgerpass series consists of very deep, somewhat excessively drained soils that formed in colluvium, alluvium, and/or till from granitoid rock. These soils are on mountain slopes, on moraines, in mountain valleys, and on ridges. Slope is 0 to 45 percent. The soils are classified as sandy, isotic, frigid Humic Dystroxerepts.

Typical Pedon

Typic Dystroxerepts-Badgerpass-Dystric Xerorthents complex, 15 to 45 percent slopes, mountain slopes, moraines, frigid; Mariposa County, California; Tamarack Creek/Merced River, 2 miles east of Gin Flat on Tioga Road Burn Area, 200 feet east and 100 feet north of the southwest corner of section 2, T. 2 S., R. 20 E., Mount Diablo Base and Meridian; lat. 37 degrees 46 minutes 54.4 seconds N. and long. 119 degrees 44 minutes 27.4 seconds W.; USGS Tamarack Flat, California Quadrangle, NAD 83:

Oi—0 to 2 inches, (0 to 4 cm); slightly decomposed plant material; 1 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size. (0 to 4 cm thick)
A—2 to 7 inches, (4 to 18 cm); very dark grayish brown (10YR 3/2) loamy coarse sand, very dark brown (10YR 2/2) moist; weak medium subangular blocky and weak medium granular structure; soft, very friable, non-sticky, non-plastic;

common fine and very fine and few coarse and medium roots; 5 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; neutral (pH 6.6); abrupt irregular boundary. (Lab sample # 97P00881)

AC—7 to 18 inches, (18 to 46 cm); brown (10YR 5/3) loamy coarse sand, dark brown (10YR 3/3) moist; weak medium granular and subangular blocky structure; soft, very friable, non-sticky, non-plastic; common medium, fine, and very fine and few coarse roots; 8 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; slightly acid (pH 6.3); clear smooth boundary. (Lab sample # 97P00882)

C1—18 to 37 inches, (46 to 95 cm); light olive brown (2.5Y 5/3) coarse sand, dark olive brown (2.5Y 3/3) moist; weak coarse subangular blocky structure; loose, non-sticky, non-plastic; common fine and very fine and few medium and coarse roots; 8 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; moderately acid (pH 6.0); gradual smooth boundary. (Lab sample # 97P00883)

C2—37 to 55 inches, (95 to 139 cm); light yellowish brown (2.5Y 6/3) coarse sand, olive brown (2.5Y 4/3) moist; weak coarse subangular blocky structure; loose, non-sticky, non-plastic; few fine, medium, and very fine roots; 8 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5); abrupt irregular boundary.

C3—55 to 67 inches, (139 to 169 cm); light gray (2.5Y 7/2) gravelly coarse sand, grayish brown (2.5Y 5/2) moist; weak coarse subangular blocky structure; loose, non-sticky, non-plastic; few fine, medium, and very fine roots; 25 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5).

Range in Characteristics

The mean annual soil temperature is less than 8.0 degrees C (46.4 degrees F). The particle-size control section has 0.4 to 4 percent clay and 75 to 98 percent sand. Rock fragment content is 0 to 40 percent, by volume. The particle-size control section, by weighted average, has less than 35 percent fragments. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 14 percent. The soil has an umbric epipedon.

A horizon:

Hue—10YR (dry and moist)
Value—3 to 6 (dry) and 2 to 4 (moist)
Chroma—3 to 5 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, or loamy sand
Clay content—0.5 to 4 percent
Rock fragment content—0 to 25 percent
Organic matter content—2 to 10 percent
Reaction—very strongly acid to moderately acid

AC horizon:

Hue—10YR (dry and moist)
Value—4 or 5 (dry) and 3 or 4 (moist)
Chroma—3 to 5 (dry) and 2 or 3 (moist)
Texture of the fine-earth fraction—coarse sand, sand, loamy coarse sand, or loamy sand
Clay content—0.5 to 4 percent
Rock fragment content—0 to 15 percent
Organic matter content—3 to 5 percent
Reaction—strongly acid or moderately acid

Other characteristics—some pedons do not have an AC horizon; a Bw horizon occurs in some pedons

C horizon:
Hue—10YR, 5Y, or 2.5Y (dry and moist)
Value—5 to 7 (dry) and 3 to 5 (moist)
Chroma—2 to 4 (dry) and 2 or 3 (moist)
Texture of the fine-earth fraction—coarse sand, sand, loamy coarse sand, or loamy sand
Clay content—0.4 to 4 percent
Rock fragment content—0 to 40 percent
Organic matter content—0.2 to 5 percent
Reaction—very strongly acid to slightly acid

Additional characterization data for this Badgerpass typical pedon, National Soil Survey Laboratory lab data pedon number 97P0131 (Pedon ID: 96CA043002), and for pedon numbers 01N0151 (01CA109014) and 02N0612 (01CA043001) are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Canisrocks Series

The Canisrocks series consists of very deep, somewhat excessively drained soils that formed in colluvium from granitoid rock. These soils are on mountain slopes, on mountainsides, on moraines, on cirques, in avalanche chutes, in small mountain valleys, on small mountain benches, and on colluvial aprons. Slope is 9 to 80 percent. The soils are classified as sandy-skeletal, isotic Typic Cryorthents.

Typical Pedon

Rock outcrop-Canisrocks-Xeric Dystrocryepts complex, 5 to 45 percent slopes, moraines, mountain slopes, cryic; Tuolumne County, California; Middle Tuolumne River Drainage, approximately 700 feet (213.4 meters) southwest of Lukens Lake in Yosemite National Park, approximately 925 feet (281.9 meters) east and 3,700 feet (1,127.8 meters) north of the southwest corner of section 13, T. 1 S., R. 21 E., Mount Diablo Base and Meridian; lat. 37 degrees 51 minutes 30.5 seconds N. and long. 119 degrees 37 minutes 12.2 seconds W.; USGS Hetch Hetchy Reservoir, California Quadrangle, NAD 83:

Oi—0 to 0 inches, (0 to 1 cm); bouldery slightly decomposed plant material; 5 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size, 5 percent subrounded very strongly cemented granodiorite fragments 250 to 600 mm in size, and 5 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size.

Oe—0 to 1 inch, (1 to 2 cm); bouldery moderately decomposed plant material; 5 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 5 percent subrounded very strongly cemented granodiorite fragments 250 to 600 mm in size, and 5 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size.

A—1 to 4 inches, (2 to 10 cm); grayish brown (10YR 5/2) bouldery loamy sand, very dark gray (10YR 3/1) moist; single grain and weak very fine granular structure; soft, very friable, non-sticky, non-plastic; few fine and many very fine roots; 4 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size and 20 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size; strongly acid (pH 5.2); abrupt smooth boundary. (Lab sample # 97P00872)

Bw1—4 to 18 inches, (10 to 45 cm); light yellowish brown (2.5Y 6/3) very bouldery sand, brown (10YR 4/3) moist; single grain and weak very fine granular structure; soft, very friable, non-sticky, non-plastic; common fine and medium, few coarse and very coarse, and many very fine roots; 5 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size, 5 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size, 10 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, and 20 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size; strongly acid (pH 5.1); abrupt smooth boundary. (Lab sample # 97P00873)

Bw2—18 to 28 inches, (45 to 71 cm); light yellowish brown (2.5Y 6/4) very bouldery sand, dark yellowish brown (10YR 4/4) moist; weak very fine granular structure; soft, very friable, non-sticky, non-plastic; few fine, common medium, few coarse and very coarse, and many very fine roots; 7 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size, 10 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size, 20 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, and 20 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size; strongly acid (pH 5.1); clear smooth boundary. (Lab sample # 97P00874)

BC—28 to 34 inches, (71 to 87 cm); light yellowish brown (2.5Y 6/4) very bouldery sand, olive brown (2.5Y 4/4) moist; single grain and weak very fine granular structure; soft, very friable, non-sticky, non-plastic; few fine, medium, and coarse and common very fine roots; 7 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size, 20 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size, and 20 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size; strongly acid (pH 5.4); clear smooth boundary. (Lab sample # 97P00875)

C—34 to 60 inches, (87 to 152 cm); light gray (2.5Y 7/2) extremely bouldery sand, olive brown (2.5Y 4/3) moist; single grain and weak very fine granular structure; loose, non-sticky, non-plastic; few fine and medium and common very fine roots; 12 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size, 15 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 15 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size, and 20 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size; strongly acid (pH 5.2). (Lab sample # 97P00876)

Range in Characteristics

The mean annual soil temperature is about 4.5 degrees C. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 85 percent.

A horizon:

Hue—10YR or 2.5Y
Value—5 to 7 (dry) and 2 to 4 (moist)
Chroma—1 to 6 (dry) and 1 to 4 (moist)
Texture of the fine-earth fraction—coarse sand, sand, fine sand, loamy coarse sand, loamy sand, loamy fine sand, or sandy loam
Clay content—0.2 to 6 percent
Rock fragment content—2 to 70 percent
Organic matter content—1 to 10 percent
Reaction—extremely acid to moderately acid
Other characteristics—some pedons have an AC horizon

Bw and BC horizons:

Hue—10YR or 2.5Y (dry) and 7.5YR or 10YR (moist)
Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—3 to 6 (dry) and 3 or 4 (moist)
Texture of the fine-earth fraction—coarse sand, sand, loamy coarse sand, loamy sand, or loamy fine sand
Clay content—0.5 to 6.0 percent
Rock fragment content—8 to 80 percent
Organic matter content—0.5 to 6 percent
Reaction—very strongly acid to moderately acid
Other characteristics—some pedons do not have a Bw or BC horizon

C horizon:

Hue—10YR or 2.5Y
Value—5 to 7 (dry) and 3 to 6 (moist)
Chroma—2 to 6 (dry) and 1 to 5 (moist)
Texture of the fine-earth fraction—coarse sand, sand, fine sand, loamy coarse sand, loamy sand, or loamy fine sand
Clay content—0.2 to 6 percent
Rock fragment content—8 to 85 percent
Organic matter content—0.2 to 4 percent
Reaction—extremely acid to moderately acid
Other characteristics—some pedons have a Cd horizon

Additional characterization data for this Canisrocks typical pedon, National Soil Survey Laboratory lab data pedon number 97P0129 (Pedon ID: 96CA109013), and for pedon number 97P0121 (Pedon ID: 96CA109005) are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Clarkslodge Series

The Clarkslodge series consists of very deep, well drained soils that formed in colluvium and/or residuum from granitoid and metamorphic rock. These soils are on ancient landslides, moraines, and mountain slopes. Slope is 0 to 45 percent. The soils are classified as coarse-loamy, isotic, frigid Ultic Haploxeralfs.

Typical Pedon

Clarkslodge-Typic Haploxerepts-Rock outcrop complex, 0 to 30 percent slopes, mountain slopes, metavolcanic, frigid/mesic; Mariposa County, California; inside Mariposa Grove of Giant Sequoias, approximately 1,000 feet (304.8 meters) west of the Clothespin Tree and 250 feet (76.2 meters) south of the Mariposa Grove Road in Yosemite National Park; Public Land Survey System, with sections unavailable, T. 5 S., R. 22 E.; lat. 37 degrees 30 minutes 38.9 seconds N. and long. 119 degrees 36 minutes 21.8 seconds W.; USGS Mariposa Grove, California Quadrangle, NAD 83:

Oi—0 to 0 inches, (0 to 1 cm); slightly decomposed plant material; 2 percent subangular very strongly cemented granitoid and/or metamorphic rock fragments 2 to 75 mm in size.
Oe—0 to 1 inch, (1 to 2 cm); moderately decomposed plant material; 2 percent subangular very strongly cemented granitoid and/or metamorphic rock fragments 2 to 75 mm in size.
Oa—1 to 1 inch, (2 to 3 cm); highly decomposed plant material; 2 percent subangular very strongly cemented granitoid and/or metamorphic rock fragments 2 to 75 mm in size.
A—1 to 3 inches, (3 to 8 cm); brown (10YR 4/3) coarse sandy loam, black (10YR 2/1)

moist; strong very coarse granular, moderate coarse granular, and weak fine granular structure; slightly hard, very friable, non-sticky, non-plastic; common fine and very fine roots; 13 percent subangular very strongly cemented granitoid and/or metamorphic rock fragments 2 to 75 mm in size; neutral (pH 7.1); clear smooth boundary. (Lab sample # 98P01167)

Bw—3 to 6 inches, (8 to 15 cm); brown (10YR 4/3) coarse sandy loam, very dark brown (7.5YR 2/2) moist; weak coarse, very fine, and fine granular structure; slightly hard, very friable, slightly sticky, non-plastic; common fine and many very fine roots; 14 percent subangular very strongly cemented granitoid and/or metamorphic rock fragments 2 to 75 mm in size; neutral (pH 7.0); distinct wavy boundary. (Lab sample # 98P01168)

Bt1—6 to 12 inches, (15 to 31 cm); brown (7.5YR 5/4) coarse sandy loam, brown (7.5YR 4/3) moist; moderate medium and weak fine subangular blocky structure; slightly hard, very friable, slightly sticky, non-plastic; common fine, medium, and very coarse and many very fine roots; 7 percent subangular very strongly cemented granitoid and/or metamorphic rock fragments 2 to 75 mm in size; slightly acid (pH 6.4); gradual wavy boundary. (Lab sample # 98P01169)

Bt2—12 to 27 inches, (31 to 69 cm); brown (7.5YR 5/4) coarse sandy loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky and weak fine subangular blocky structure; slightly hard, very friable, slightly sticky, non-plastic; common fine, medium, coarse, and very fine roots; 13 percent subangular very strongly cemented granitoid and/or metamorphic rock fragments 2 to 75 mm in size; slightly acid (pH 6.2); gradual wavy boundary. (Lab sample # 98P01170)

Bt3—27 to 35 inches, (69 to 89 cm); reddish yellow (7.5YR 6/6) gravelly sandy loam, brown (7.5YR 4/4) moist; moderate fine and weak very fine subangular blocky structure; slightly hard, very friable, slightly sticky, non-plastic; few fine, common medium, and few very fine roots; 17 percent subangular very strongly cemented granitoid and/or metamorphic rock fragments 2 to 75 mm in size; slightly acid (pH 6.3); gradual wavy boundary. (Lab sample # 98P01171)

C—35 to 60 inches, (89 to 152 cm); light yellowish brown (10YR 6/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; moderately hard, friable, slightly sticky, non-plastic; few coarse and very fine roots; 5 percent subangular very strongly cemented granitoid and/or metamorphic fragments 75 to 250 mm in size and 13 percent subangular very strongly cemented granitoid and/or metamorphic rock fragments 2 to 75 mm in size; slightly acid (pH 6.2). (Lab sample # 98P01172)

Range in Characteristics

The mean annual soil temperature is less than 8.0 degrees C (46.4 degrees F). The particle-size control section has 8 to 27 percent clay and 35 to 75 percent sand. Rock fragment content is 0 to 65 percent, by volume. The particle-size control section, by weighted average, has less than 35 percent rock fragments. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 10 percent.

A horizon:

Hue—10YR (dry and moist)
Value—4 to 6 (dry) and 2 or 3 (moist)
Chroma—2 to 4 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—loamy sand, coarse sandy loam, sandy loam, fine sandy loam, loam, or silt loam
Clay content—4 to 18 percent
Rock fragment content—0 to 20 percent
Organic matter content—5 to 35 percent
Reaction—very strongly acid to neutral

Bw horizon:
Hue—10YR (dry and moist)
Value—4 to 6 (dry) and 2 to 4 (moist)
Chroma—3 to 6 (dry) and 3 or 4 (moist)
Texture of the fine-earth fraction—loamy sand, coarse sandy loam, or sandy loam
Clay content—4 to 18 percent
Rock fragment content—10 to 20 percent
Organic matter content—2 to 5 percent
Reaction—slightly acid or neutral
Other characteristics—some pedons do not have a Bw horizon

Bt horizon:
Hue—10YR or 7.5YR (dry and moist)
Value—4 to 7 (dry) and 3 to 6 (moist)
Chroma—3 to 6 (dry) and 2 to 6 (moist)
Texture of the fine-earth fraction—coarse sandy loam, sandy loam, fine sandy loam, loam, or silt loam
Clay content—5 to 27 percent
Rock fragment content—5 to 65 percent
Organic matter content—0.2 to 5 percent
Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have a BC horizon

C horizon:
Hue—10YR or 2.5Y (dry and moist)
Value—6 to 8 (dry) and 5 or 6 (moist)
Chroma—3 to 6
Texture of the fine-earth fraction—sandy loam, fine sandy loam, or loam
Clay content—8 to 27 percent
Rock fragment content—25 to 45 percent
Organic matter content—0.1 to 0.75 percent
Reaction—moderately acid or slightly acid

Additional characterization data for this Clarkslodge typical pedon, National Soil Survey Laboratory lab data pedon number 98O0134 (Pedon ID: 97CA043002), and for pedon number 98P0192 (Pedon ID: 97CA043010) are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Craneflat Series

The Craneflat series consists of very deep, somewhat excessively drained soils that formed in colluvium or till from granitoid rock. These soils are on mountainsides, mountain slopes, mountain summits, moraines, landslides, and aprons. Slope is 0 to 75 percent. The soils are classified as sandy-skeletal, isotic, frigid Humic Dystroxerepts.

Typical Pedon

Clarkslodge-Craneflat-Nevadafalls complex, 0 to 30 percent slopes, mountain slopes, hummocky, frigid; Mariposa County, California; approximately 1,000 feet (304.9 meters) east of Wawona Road on a slope above Bishop Creek, approximately 790 feet (240.9 meters) east and 2,450 feet (747.0 meters) south of the northwest corner of section 4, T. 4 S., R. 21 E., Mount Diablo Base and Meridian; lat. 37 degrees 36 minutes 55.3 seconds N. and long. 119 degrees 41 minutes 5.6 seconds W.; USGS Wawona, California Quadrangle, NAD 83:

Oi—0 to 1 inch, (0 to 2 cm); slightly decomposed plant material; 1 percent subangular very strongly cemented granitoid rock fragments 2 to 76 mm in size.

Oe—1 to 1 inch, (2 to 3 cm); moderately decomposed plant material; 1 percent subangular very strongly cemented granitoid rock fragments 2 to 76 mm in size.

Oa—1 to 2 inches, (3 to 5 cm); highly decomposed plant material; 1 percent subangular very strongly cemented granitoid rock fragments 2 to 76 mm in size.

A—2 to 4 inches, (5 to 11 cm); brown (10YR 5/3) very stony sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; loose, non-sticky, non-plastic; few fine and many very fine roots; 3 percent subangular very strongly cemented granitic rock fragments 75 to 250 mm in size, 7 percent subangular very strongly cemented granitic rock fragments 2 to 75 mm in size, and 30 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size; slightly acid (pH 6.3); clear smooth boundary. (Lab sample # 98P01196)

Bw1—4 to 11 inches, (11 to 28 cm); brown (10YR 4/3) very stony loamy sand, dark brown (10YR 3/3) moist; weak medium granular and weak fine granular structure; soft, very friable, non-sticky, non-plastic; few fine and common very fine roots; 3 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 35 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size; slightly acid (pH 6.4); gradual wavy boundary. (Lab sample # 98P01197)

Bw2—11 to 22 inches, (28 to 57 cm); brown (10YR 4/3) very stony loamy coarse sand, dark brown (10YR 3/3) moist; moderate coarse granular, weak fine granular, and weak very fine granular structure; soft, very friable, non-sticky, non-plastic; few fine and common medium coarse and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 25 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size; slightly acid (pH 6.1); gradual wavy boundary. (Lab sample # 98P01198)

Bw3—22 to 30 inches, (57 to 75 cm); yellowish brown (10YR 5/4) very stony loamy sand, brown (10YR 4/3) moist; weak medium subangular blocky, weak fine subangular blocky, and weak very fine subangular blocky structure; soft, very friable, non-sticky, non-plastic; few fine and common medium coarse, very coarse, and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 25 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size; very moderately acid (pH 5.8); gradual wavy boundary. (Lab sample # 98P01199)

Bw4—30 to 60 inches, (75 to 152 cm); yellowish brown (10YR 5/4) very cobbly loamy coarse sand, brown (10YR 4/3) moist; single grain and weak medium subangular blocky, weak fine subangular blocky, and weak very fine granular structure; slightly hard, friable, non-sticky, non-plastic; few fine and common medium roots; 15 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size and 20 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; moderately acid (pH 5.8). (Lab sample # 98P01200)

Range in Characteristics

The mean annual soil temperature is less than 8.0 degrees C (46.4 degrees F). The particle-size control section has 0.5 to 7 percent clay and 70 to 85 percent sand. Rock fragment content is 0 to 60 percent, by volume. The particle-size control section, by weighted average, has 35 percent or more rock fragments. The soil has an umbric epipedon and/or cambic horizon. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 85 percent.

A horizon:
Hue—10YR (dry) and 10YR or 2.5Y (moist)
Value—3 to 5 (dry) and 2 or 3 (moist)
Chroma—2 to 4
Texture of the fine-earth fraction—loamy sand, loamy fine sand, coarse sandy loam, or sandy loam
Clay content—0.5 to 7 percent
Rock fragment content—5 to 75 percent
Organic matter content—2 to 30 percent
Reaction—extremely acid to slightly acid
Other characteristics—some pedons have an AC horizon

Bw horizon:
Hue—10YR (dry and moist)
Value—3 or 4 (dry) and 4 to 6 (moist)
Chroma—2 to 6
Texture of the fine-earth fraction—sand, loamy coarse sand, loamy sand, coarse sandy loam, or sandy loam
Clay content—0.5 to 7 percent
Rock fragment content—15 to 85 percent
Organic matter content—0.2 to 6 percent
Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have a BC horizon and/or a C horizon

Additional characterization data for this Craneflat typical pedon, National Soil Survey Laboratory lab data pedon number 98P0190 (Pedon ID: 97CA043008), and for pedon number 01N0152 (Pedon ID: 00CA109015) are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Crazymule Series

The Crazymule series consists of soils that are moderately deep to a dense physical, root-restricting horizon. These soils are somewhat excessively drained and formed in colluvium, residuum, and/or till from granitoid rock. They are on moraines, mountain slopes, colluvial aprons, and joints and/or fractures in bedrock. Slope is 5 to 35 percent. The soils are classified as loamy-skeletal, isotic Xeric Dystrocryepts.

Typical Pedon

Rock outcrop-Crazymule-Vitrandic Cryorthents association, 0 to 45 percent slopes, joints, fractures, scoured, cryic; Mariposa County, California; approximately 4,800 feet east of the summit of Moraine Mountain, section 15, T. 4 S., R. 23 E., Mount Diablo Base and Meridian; lat. 37 degrees 35 minutes 36.5 seconds N. and long. 119 degrees 26 minutes 17.5 seconds W.; USGS Sing Peak, California Quadrangle, NAD 83:

Oi—0 to 0 inch, (0 to 1 cm); gravelly slightly decomposed plant material; 30 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size.
A—0 to 5 inches, (1 to 13 cm); dark grayish brown (2.5Y 4/2) gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; very friable, non-sticky, non-plastic; few coarse, common medium, and many fine and very fine roots. 15 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.2); clear smooth boundary.
Bw1—5 to 22 inches, (13 to 55 cm); light olive brown (2.5Y 5/3) very bouldery sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; very friable, non-sticky, non-plastic; few coarse and medium and common fine and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to

250 mm in size, 15 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 20 percent subrounded very strongly cemented granitoid rock fragments 600 to 3000 mm in size; strongly acid (pH 5.2); clear smooth boundary.

Bw2—22 to 35 inches, (55 to 90 cm); yellowish brown (10YR 5/6) very bouldery sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; very friable, non-sticky, non-plastic; few medium, many fine, and common very fine roots; 10 percent subrounded very strongly cemented granitoid rock fragments 600 to 3000 mm in size, 15 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 20 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size; strongly acid (pH 5.2); gradual wavy boundary.

Cd—35 to 60 inches, (90 to 152 cm); pale brown (10YR 6/3) cobbly fine sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly rigid, non-sticky, non-plastic; few medium and common fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size and 10 percent subangular very strongly cemented granitoid rock fragments 2 to 76 mm in size; very strongly acid (pH 5.0).

Range in Characteristics

Depth to a densic horizon that is a physical root-restricting layer ranges from 21 inches (53 centimeters) to 35 inches (89 centimeters). The mean annual soil temperature is about 4.5 degrees C (40 degrees F). The particle-size control section has 2 to 8 percent clay and 60 to 90 percent sand. Rock fragment content is 0 to 90 percent, by volume. The particle-size control section, by weighted average, has 35 percent or more rock fragments. The soil has an umbric epipedon and/or cambic horizon. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 40 percent.

A horizon:

Hue—10YR or 2.5Y (dry and moist)
Value—4 to 7 (dry) and 2 or 3 (moist)
Chroma—1 to 3
Texture of the fine-earth fraction—loamy sand, loamy fine sand, sandy loam, or fine sandy loam
Clay content—1 to 6 percent
Rock fragment content—0 to 40 percent
Organic matter content—2 to 12 percent
Reaction—very strongly acid to slightly acid

Bw horizon (if it occurs):

Hue—10YR (dry and moist)
Value—5 to 7 (dry) and 3 to 5 (moist)
Chroma—3 to 6 (dry) and 3 to 5 (moist)
Texture of the fine-earth fraction—loamy sand, loamy fine sand, coarse sandy loam, sandy loam, or fine sandy loam
Clay content—2 to 8 percent
Rock fragment content—0 to 90 percent
Organic matter content—0.75 to 7 percent
Reaction—very strongly acid to slightly acid

Cd horizon:

Hue—10YR or 2.5YR (dry and moist)
Value—5 to 7 (dry) and 3 to 5 (moist)
Chroma—1 to 6

Texture of the fine-earth fraction—loamy fine sand, coarse sandy loam, sandy loam, or loam
Clay content—2 to 16 percent
Rock fragment content—5 to 70 percent
Organic matter content—0.20 to 1 percent
Reaction—very strongly acid to moderately acid
Other characteristics—some pedons have a C horizon above the Cd horizon

Dystric Xeropsamments

Dystric Xeropsamments in the survey area consist of very deep somewhat excessively drained soils on moraines, mountain slopes, mountainsides, terraces, and flood plains and in mountain valleys. These soils formed in colluvium, alluvium, and/or till derived from granitoid rock. Slope is 0 to 65 percent. The soils are classified as isotic, frigid Dystric Xeropsamments.

Typical Pedon

Dystric Xeropsamments-Typic Dystroxerepts-Badgerpass-Rock outcrop association, 5 to 35 percent slopes, mountain valleys, mountain slopes, frigid; Mariposa County, California; near Illilouette Creek, approximately 7,800 feet (2,377.4 meters) east-northeast of Mono Meadows, approximately 1,000 feet (304.8 meters) north and 1,100 feet (335.3 meters) east of the southwest corner of section 10, T. 3 S., R 22 E., Mount Diablo Base and Meridian; lat. 37 degrees 41 minutes 03.1 seconds N. and long. 119 degrees 33 minutes 07.7 seconds W.; USGS Half Dome, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Dystric Xeropsamments in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inch, (0 to 1 cm); slightly decomposed plant material; 2 percent subangular very strongly cemented granitic rock fragments 2 to 75 mm in size.
A—0 to 6 inches, (1 to 14 cm); dark yellowish brown (10YR 4/4) loamy sand, dark brown (7.5YR 3/2) moist; weak coarse subangular blocky structure; very friable, non-sticky, non-plastic; common medium and fine and many very fine roots; 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.1); abrupt smooth boundary.
Bw1—6 to 18 inches, (14 to 45 cm); brown (7.5YR 5/4) loamy sand, dark brown (7.5YR 3/3) moist; weak fine subangular blocky and weak medium subangular blocky structure; very friable, non-sticky, non-plastic; common coarse, medium, and fine and few very coarse and very fine roots; 7 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.1); clear smooth boundary.
Bw2—18 to 25 inches, (45 to 63 cm); yellowish brown (10YR 5/6) loamy sand, brown (7.5YR 4/4) moist; single grain; very friable, non-sticky, non-plastic; few very coarse, coarse, medium, fine, and very fine roots; 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.1); gradual smooth boundary.
C1—25 to 41 inches, (63 to 105 cm); brownish yellow (10YR 6/6) loamy sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, non-sticky, non-plastic; few coarse, medium, fine, and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.1); gradual smooth boundary.
C2—41 to 60 inches, (105 to 152 cm); light yellowish brown (10YR 6/4) loamy fine sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, non-sticky, non-plastic; few very coarse, coarse, medium, fine, and very fine roots; 10 percent

subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.1).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Several similar family level categories are therefore included with the concept of this component, such as isotic, thermic Dystric Xeropsamments and isotic, mesic Dystric Xeropsamments.

The particle-size control section has less than 35 percent weighted average rock fragments, by volume, and 0.5 to 6 percent clay. This soil does not have an umbric epipedon or a cambic horizon. Rock fragment content is 0 to 35 percent in the mineral soil and 0 to 50 percent in the O horizons. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 50 percent. Pedons with a Cr horizon are moderately deep.

A horizon:

Hue—10YR or 7.5YR (dry and moist)
Value—3 to 6 (dry) and 2 or 3 (moist)
Chroma—2 to 4 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—sand, loamy sand, loamy fine sand, or sandy loam
Rock fragment content—0 to 25 percent
Organic matter content—2 to 10 percent
Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have an Ab horizon

Bw horizon (if it occurs):

Hue—7.5YR or 10YR (dry and moist)
Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—4 to 6 (dry) and 3 or 4 (moist)
Texture of the fine-earth fraction—loamy sand
Rock fragment content—0 to 20 percent
Organic matter content—1 to 5 percent
Reaction—strongly acid or moderately acid

C horizon:

Hue—10YR (dry and moist)
Value—6 (dry) and 4 (moist)
Chroma—3 to 6 (dry) and 3 or 4 (moist)
Texture of the fine-earth fraction—coarse sand, sand, loamy sand, loamy fine sand, or sandy loam
Rock fragment content—0 to 35 percent
Organic matter content—0.2 to 4 percent
Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have a CA or Cr horizon

Dystric Xerorthents

Dystric Xerorthents in the survey area consist of very deep, somewhat excessively drained soils that formed in colluvium, alluvium, and/or till from granitoid and/or metamorphic rock. These soils are on mountain slopes, on moraines, in drainageways, on terraces, and in mountain valleys. Slope is 0 to 80 percent. The soils are classified as sandy-skeletal, isotic, frigid Dystric Xerorthents.

Typical Pedon

Typic Dystroxerepts-Badgerpass-Dystric Xerorthents complex, 15 to 45 percent slopes, mountain slopes, moraines, frigid; Tuolumne County, California; in the Grand Canyon of the Tuolumne River, approximately 2,000 feet (609.6 meters) east of the footbridges in Pate Valley; complete Public Land Survey System unavailable; T. 1 N., R. 22 E., Mount Diablo Base and Meridian; lat. 37 degrees 55 minutes 54.7 seconds N. and long. 119 degrees 35 minutes 12.0 seconds N.; USGS Ten Lakes, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Dystric Xerorthents in this survey area because of the highly variable nature of these soils.)

Oi—0 to 1 inch, (0 to 2 cm); stony slightly decomposed plant material; 5 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size.

Oe—1 to 2 inches, (2 to 5 cm); stony moderately decomposed plant material; 5 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size.

Oa—2 to 3 inches, (5 to 7 cm); stony highly decomposed plant material; 5 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size.

A—3 to 11 inches, (7 to 27 cm); yellowish brown (10YR 5/4) stony loamy sand, dark brown (7.5YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; many fine, medium, and very fine roots; 5 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 15 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; very strongly acid (pH 5.0); clear smooth boundary.

Bw—11 to 24 inches, (27 to 62 cm); yellowish brown (10YR 5/4) stony loamy fine sand, dark brown (7.5YR 3/3) moist; weak fine subangular blocky, weak medium subangular blocky, and moderate coarse subangular blocky structure; soft, friable, non-sticky, non-plastic; common very coarse, coarse, and very fine and many fine and medium roots; 5 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 5 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size, and 15 percent subangular very strongly cemented granodiorite fragments 2 to 76 mm in size; very strongly acid (pH 5.0); abrupt wavy boundary.

C1—24 to 38 inches, (62 to 97 cm); light yellowish brown (10YR 6/4) very stony loamy sand, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, non-sticky, non-plastic; few coarse and common medium and fine roots; 10 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 15 percent subangular very strongly cemented granodiorite fragments 2 to 76 mm in size, and 15 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size; very strongly acid (pH 5.0); clear wavy boundary.

C2—38 to 60 inches, (97 to 152 cm); light yellowish brown (10YR 6/4) very stony loamy fine sand, yellowish brown (10YR 5/4) moist; massive; soft, very friable, non-sticky, non-plastic; few fine and common medium roots; 10 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size, 10 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, and 15 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; very strongly acid (pH 5.0).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level categories are therefore included with the concept of this component, such as coarse-loamy, isotic, nonacid, frigid Dystric Xerorthents; sandy, isotic, frigid Dystric

Xerorthents; sandy-skeletal, isotic, mesic Dystric Xerorthents; and sandy-skeletal, isotic, thermic Dystric Xerorthents.

Dystric Xerorthents do not have a cambic horizon or an umbric epipedon. The clay content of the particle-size control section is 0.5 to 8 percent. Base saturation (by ammonium acetate) is less than 60 percent in all horizons at a depth between 25 and 75 centimeters. Rock fragment content is 0 to 80 percent, by volume. Some pedons have one or more O horizons. The content of surface rock fragments is 0 to 80 percent.

A horizon:

Hue—10YR or 2.5Y (dry) and 10YR or 7.5YR (moist)
Value—3 to 5 (dry) and 2 to 4 (moist)
Chroma—2 to 4 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, loamy sand, or sandy loam
Rock fragment content—0 to 60 percent
Organic matter content—2 to 12 percent
Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have an AC horizon

Bw horizon (if it occurs):

Hue—10YR or 2.5Y (dry) and 7.5YR, 10YR, or 2.5Y (moist)
Value—5 to 7 (dry) and 4 to 6 (moist)
Chroma—3 or 4 (dry) and 3 to 6 (moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, or loamy fine sand
Rock fragment content—14 to 60 percent
Organic matter content—0.5 to 6 percent
Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have a BC horizon

C horizon:

Hue—10YR (dry and moist)
Value—5 to 7 (dry) and 3 to 6 (moist)
Chroma—3 or 4 (dry) and 2 to 6 (moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, loamy sand, loamy fine sand, or sandy loam
Rock fragment content—0 to 80 percent
Organic matter content—0.2 to 3 percent
Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have a C´ horizon

Elcapitan Series

The Elcapitan series consists of very deep, somewhat poorly drained soils on intermediate flood plains. These soils formed in alluvium weathered from granitoid rock. Slope is 0 to 2 percent. The soils are classified as coarse-loamy, isotic, mesic Vitrandic Dystroxerepts.

Typical Pedon

Elcapitan fine sandy loam, 0 to 2 percent slopes, mesic; Mariposa County, California; 900 feet (274.3 meters) northwest of Sentinel Chapel, Sentinel Meadow, Yosemite National Park, Yosemite Valley; lat. 37 degrees 44 minutes 29 seconds N. and long. 119 degrees 35 minutes 37 seconds W.; UTM Zone 11, easting 271479.64 and northing 4180284.21; USGS Half Dome, California Quadrangle, NAD 83:

Oi—0 to 1 inch, (0 to 3 cm); slightly decomposed organic material.

A—1 to 7 inches, (3 to 18 cm); stratified grayish brown (10YR 5/2), light brownish gray (10YR 6/2), and brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2), brown (10YR 4/3), and dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, non-sticky, non-plastic; many very fine roots; moderately acid (pH 5.8); abrupt smooth boundary.

2Ab1—7 to 12 inches, (18 to 31 cm); dark grayish brown (10YR 4/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky, non-plastic; weakly smeary; many very fine roots; moderately acid (pH 5.8); clear smooth boundary.

2Ab2—12 to 20 inches, (31 to 51 cm); dark grayish brown (10YR 4/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; very dark brown (10YR 2/2) coatings on faces of peds; moderate coarse subangular blocky structure; slightly hard, friable, slightly sticky, non-plastic; weakly smeary; common very fine roots; moderately acid (pH 5.8); clear smooth boundary.

2Ab3—20 to 31 inches, (51 to 79 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; massive; slightly hard, friable, slightly sticky, non-plastic; weakly smeary; few very fine roots; moderately acid (pH 5.8); clear smooth boundary.

2Ab4—31 to 38 inches, (79 to 97 cm); grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, non-sticky, non-plastic; few very fine roots; charcoal; moderately acid (pH 5.8); abrupt smooth boundary.

3C—38 to 44 inches, (97 to 112 cm); stratified light brownish gray (10YR 6/2) loamy sand and very pale brown (10YR 8/1) sand, very dark grayish brown (10YR 3/2) and light brownish gray (10YR 6/2) moist; common medium distinct strong brown (7.5YR 4/6, moist) masses of iron accumulation; massive; soft, very friable, non-sticky, non-plastic and loose, non-sticky, non-plastic; moderately acid (pH 5.8); abrupt smooth boundary.

3A´b—44 to 47 inches, (112 to 120 cm); brown (10YR 5/3) loamy sand, dark brown (10YR 3/3) moist; massive; loose, non-sticky, non-plastic; moderately acid (pH 5.8); abrupt smooth boundary.

3C´—47 to 53 inches, (120 to 135 cm); very pale brown (10YR 8/1), light gray (10YR 7/2), and black (10YR 2/1) coarse sand, 45 percent light brownish gray (10YR 6/2), 45 percent grayish brown (10YR 5/2) and 10 percent black (10YR 2/1) moist; massive; loose, non-sticky, non-plastic; moderately acid (pH 5.8); abrupt smooth boundary.

3A´´b1—53 to 58 inches, (135 to 148 cm); grayish brown (10YR 5/2) loamy coarse sand, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, non-sticky, non-plastic; moderately acid (pH 5.8); abrupt smooth boundary.

3A´´b2—58 to 60 inches, (148 to 152 cm); white (10YR 8/2) and very pale brown (10YR 7/3) loamy sand, 85 percent light gray (10YR 7/2) and 15 percent grayish brown (10YR 5/2) moist; massive; soft, very friable, non-sticky, non-plastic; moderately acid (pH 5.8).

Range in Characteristics

Depth of the solum is more than 60 inches. The mean annual soil temperature is 52 degrees F (11.1 degrees C) to 56 degrees F (13.3 degrees C). The soil temperature exceeds 41 degrees F (5 degrees C) from March through November and exceeds 47 degrees F (8.3 degrees C) from mid April through October. The difference between mean winter and mean summer soil temperatures is about 28 degrees F. The soil moisture control section is dry in all parts from early July to early November (140-160 days) and is moist in all parts from December to mid May. Base saturation is less than 50 percent. Rock fragment content is 0 to 3 percent.

A horizon:
Hue—10YR (dry and moist)
Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—2 or 3 (dry and moist)
Texture—stratified sandy loamy to mucky loam
Clay content—2 to 18 percent
Organic matter content—1 to 5 percent
Reaction—moderately acid

2Ab horizon:
Hue—10YR (dry and moist)
Value—4 to 8 (dry) and 2 to 7 (moist)
Chroma—2 to 3 (dry) and 2 (moist)
Texture—stratified sandy loam to mucky loam
Clay content—2 to 18 percent
Organic matter content—1.5 to 5 percent
Reaction—moderately acid

3C horizon:
Hue—10YR or 7.5Y (dry and moist)
Value—2 to 8 (dry) and 2 to 6 (moist)
Chroma—1 to 2 (dry) and 1 to 6 (moist)
Texture—stratified sand to loam
Clay content—2 to 18 percent
Organic matter content—1 to 5 percent
Reaction—moderately acid

Fishsnooze Series

The Fishsnooze series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from andesite, tuff, and tuff-breccia. These soils are on mountains. Slope is 8 to 50 percent. The soils are classified as loamy-skeletal, isotic Xeric Dystrocryepts.

Typical Pedon

Fishsnooze very gravelly peaty coarse sandy loam; Alpine County, California; in the Toiyabe National Forest, about 1.5 miles northwest of Lost Lakes, about 2,250 feet south and 150 feet east of the northwest corner of section 36, T. 10 N., R. 18 E.; lat. 38 degrees 40 minutes 11.7 seconds N. and long. 119 degrees 57 minutes 39.0 seconds W.; USGS Carson Pass, California Quadrangle, NAD 27:

A1—0 to 1 inch, (0 to 3 cm); dark grayish brown (10YR 4/2) very gravelly peaty coarse sandy loam, very dark brown (10YR 2/2) moist; moderate medium platy structure; soft, very friable, slightly sticky, non-plastic; common fine interstitial pores; 35 percent gravel and 5 percent cobbles; common very fine and fine roots; very strongly acid (pH 5.0); abrupt wavy boundary.
A2—1 to 9 inches, (3 to 23 cm); brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; common very fine and fine and many medium and coarse roots; common very fine interstitial and tubular pores; 45 percent gravel; very strongly acid (pH 5.0); clear wavy boundary.
A3—9 to 13 inches, (23 to 33 cm); brown (10YR 5/3) extremely gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; common very fine and many medium and coarse roots; common very fine interstitial and tubular pores; 50

percent gravel and 15 percent cobbles; very strongly acid (pH 5.0); clear wavy boundary.

Bw—13 to 35 inches, (33 to 89 cm); brown (10YR 5/3) extremely cobbly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; common very fine and many fine to coarse roots; common very fine interstitial and tubular pores; 45 percent gravel and 40 percent cobbles; very strongly acid (pH 5.0); clear wavy boundary.

R—35 inches; hard andesite.

Range in Characteristics

This soil is usually moist in the moisture control section in fall, winter, and spring. It is usually dry from July through early October. The moisture regime is xeric. The mean annual soil temperature is 40 to 44 degrees F; the mean summer soil temperature is 44 to 47 degrees F. The thickness of the umbric epipedon is 7 to 16 inches. Depth to a lithic content is 20 to 40 inches. Sodium fluoride pH is 10.0 to 11.5.

In the particle-size control section, the clay content averages 12 to 18 percent and the content of rock fragments (dominantly gravel and cobbles) averages 60 to 80 percent. Lithology of fragments is andesite, tuff, or tuff-breccia.

The soil surface is covered with 2 inches (5 centimeters) of undecomposed forest duff along with 35 percent gravel and 5 percent cobbles.

A1 horizon:

Organic matter content—10 to 18 percent
Reaction—very strongly acid or strongly acid
Other features—some pedons have an A1 horizon with less than 10 percent organic matter and do not have the peaty texture modifier

A2 and A3 horizons:

Hue—10YR or 7.5YR (dry and moist)
Value—4 or 5 (dry) and (2 or 3 moist)
Chroma—2 or 3 (dry and moist)
Texture—extremely gravelly coarse sandy loam, extremely gravelly sandy loam, or very gravelly coarse sandy loam.
Organic matter content—2 to 10 percent
Reaction—very strongly acid or strongly acid

Bw horizon:

Hue—10YR or 7.5YR (dry and moist)
Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—3 or 4 (dry and moist)
Texture—extremely cobbly coarse sandy loam or extremely gravelly sandy loam
Clay content—12 to 18 percent
Rock fragment content—60 to 85 percent
Reaction—very strongly acid or strongly acid

Fluvaquents

Fluvaquents in the survey area consist of very poorly drained soils in channel bar deposits of low flood plains. These soils are very deep. They formed in coarse textured alluvium derived from granitoid rocks. Slope is 0 to 2 percent. The soils are classified as isotic, mesic Fluvaquents.

Typical Pedon

Oxyaquic Xerofluvents-Riverwash-Fluvaquents association, 0 to 2 percent slopes,

mesic; Mariposa County, California; south of the Merced River, Yosemite National Park, Yosemite Valley; lat. 37 degrees 43 minutes 25 seconds N. and long. 119 degrees 37 minutes 31 seconds W.; UTM Zone 11, easting 268566.68 and northing 4178393.85; USGS Half Dome, California Quadrangle, NAD 83. (This pedon is not completely representative of the Fluvaquents in this survey area because of the highly variable nature of these soils.)

A1—0 to 1 inch, (0 to 3 cm); gray (10YR 6/1) sandy loam, very dark gray (10YR 3/1) moist; weak very fine granular structure; soft, very friable, non-sticky, non-plastic; common very fine roots; many very fine interstitial pores; moderately acid (pH 5.8); abrupt smooth boundary.

A2—1 to 4 inches, (3 to 10 cm); gray (10YR 5/1) fine sandy loam, black (10YR 2/1) moist; weak very fine subangular blocky structure; soft, very friable, non-sticky, non-plastic; common very fine roots; common very fine interstitial pores; common fine distinct dark brown (7.5YR 4/4, moist) redoximorphic accumulations of iron; moderately acid (pH 5.8); clear smooth boundary.

C—4 to 6 inches, (10 to 15 cm); very pale brown (10YR 7/3) loamy fine sand, pale brown (10YR 6/3) moist; massive; loose, non-sticky, non-plastic; few very fine roots; many very fine interstitial pores; common fine distinct dark brown (7.5YR 4/4, moist) redoximorphic accumulations of iron; moderately acid (pH 5.8); abrupt smooth boundary.

Ab—6 to 10 inches, (15 to 25 cm); gray (10YR 6/1) fine sandy loam, very dark gray (10YR 3/1) moist; massive; soft, very friable, non-sticky, non-plastic; common very fine interstitial pores; common fine distinct dark brown (7.5YR 4/4, moist) redoximorphic accumulations of iron; moderately acid (pH 5.8); clear smooth boundary.

C´—10 to 60 inches, (25 to 152.4 cm); light gray (10YR 7/1) stratified coarse sand to fine sandy loam with mottled or gleyed colors; moderately acid (pH 5.8).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

Textures and colors are highly variable. The soil is highly stratified with thin strata of coarse sand, loamy coarse sand, fine sandy loam, or sandy loam. A water table occurs within 20 inches (50.8 centimeters) of the surface throughout the year. Rock fragment content is 0 to 14 percent. Redoximorphic accumulations of iron typically occur below the upper part of the A horizon.

A horizon:

Hue—10YR or 7.5YR (dry and moist)
Value—5 or 6 (dry) and 2 to 4 (moist)
Chroma—2 (dry and moist)
Texture—stratified coarse sand to sandy loam
Clay content—2 to 6 percent
Organic matter content—4 to 9 percent
Reaction—moderately acid

C horizon:

Hue—10YR or 7.5Y (dry and moist)
Value—7 (dry) and 4 to 6 (moist)
Chroma—3 (dry) and 3 to 4 (moist)
Texture—stratified coarse sand to sandy loam
Clay content—2 to 5 percent
Organic matter content—0.25 to 4 percent
Reaction—moderately acid

Ab horizon:
Hue—10YR or 7.5 (dry and moist)
Value—7 (dry and moist)
Chroma—1 (dry and moist)
Texture—stratified coarse sand to sandy loam
Clay content—2 to 5 percent
Organic matter content—0.5 to 1.5 percent
Reaction—moderately acid

Glacierpoint Series

The Glacierpoint series consists of very deep, somewhat excessively drained soils that formed in colluvium and/or till derived from granitoid rock. These soils are on the slopes of mountains and moraines, on bedrock benches, and on joints and fractures in bedrock. Slope is 0 to 70 percent. The soils are classified as sandy-skeletal, isotic Xeric Dystrocryepts.

Typical Pedon

Glacierpoint-Typic Cryorthents complex, 30 to 65 percent slopes, mountain slopes, lateral moraines, aprons, cryic; Mariposa County, California; about 0.75 mile southwest of Ostrander Rocks, north of Mono Meadow off Glacier Point Road; approximately 3,200 feet (975.4 meters) east and 1,000 feet (305.0 meters) north of the southwest corner of section 7, T. 3 S., R. 22 E., Mount Diablo Base and Meridian; lat. 37 degrees 41 minutes 0.1 second north and long. 119 degrees 36 minutes 1.3 seconds W.; USGS Half Dome, California Quadrangle, NAD 83:

Oi—0 to 1 inch, (0 to 2 cm); stony slightly decomposed plant material; 2 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, 3 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 13 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size.

Oe—1 to 1 inch, (2 to 3 cm); stony moderately decomposed plant material; 2 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, 3 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 13 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size.

A1—1 to 4 inches, (3 to 11 cm); grayish brown (10YR 5/2) stony loamy sand, very dark brown (10YR 2/2) moist; weak very fine granular and weak medium subangular blocky structure; soft, loose, non-sticky, non-plastic; many very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, 8 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 20 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size; moderately acid (pH 5.8); clear wavy boundary.

A2—4 to 16 inches, (11 to 41 cm); brown (10YR 5/3) very stony loamy sand, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky, weak very fine granular, and weak coarse subangular blocky structure; soft, very friable, non-sticky, non-plastic; few fine, common medium, and many very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 25 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size; strongly acid (pH 5.5); gradual wavy boundary.

Bw—16 to 27 inches, (41 to 69 cm); brown (10YR 5/3) very stony loamy sand, dark

brown (10YR 3/3) moist; weak coarse subangular blocky, weak very fine granular, and weak medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; common fine, few medium, coarse, and very coarse and common very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 25 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size; strongly acid (pH 5.5); abrupt irregular boundary.

C1—27 to 46 inches, (69 to 118 cm); light yellowish brown (2.5Y 6/3) very stony very fine sand, dark grayish brown (2.5Y 4/2) moist; weak very fine granular and weak medium granular structure; soft, loose, non-sticky, non-plastic; few medium coarse and common very fine, fine, and very coarse roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, and 20 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0); gradual smooth boundary.

C2—46 to 64 inches, (118 to 163 cm); light yellowish brown (2.5Y 6/3) gravelly very fine sand, dark grayish brown (2.5Y 4/2) moist; single grain and weak very fine granular structure; loose, non-sticky, non-plastic; few medium, very coarse, and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, 7 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, and 15 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0).

Range in Characteristics

The mean annual soil temperature is about 4.5 degress C (40 degrees F). The particle-size control section has 0.5 to 6 percent clay and 65 to 90 percent sand. Rock fragment content is 0 to 80 percent, by volume. The particle-size control section, by weighted average, has 35 percent or more rock fragments. The content of surface rock fragments is 0 to 80 percent. The soil has an umbric epipedon and/or a cambic horizon. Some pedons may have one or all of the Oi, Oe, and Oa horizons.

A horizon:

Hue—10YR or 2.5Y (dry) and 10YR (moist)
Value—4 or 5 (dry) and 2 or 3 (moist)
Chroma—1 to 3
Texture of the fine-earth fraction—sand, loamy sand, loamy fine sand, sandy loam, or fine sandy loam
Clay content—0.5 to 6 percent
Rock fragment content—0 to 80 percent
Organic matter content—6 to 10 percent
Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have an AC horizon

Bw horizon:

Hue—10YR
Value—2 to 4 (moist) and 4 to 6 (dry)
Chroma—2 to 4 (moist) and 3 to 6 (dry)
Texture of the fine-earth fraction—sand, loamy sand, loamy fine sand, coarse sandy loam, or sandy loam
Clay content—0.5 to 6 percent
Rock fragment content—20 to 75 percent
Organic matter content—0.75 to 4 percent

Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have a BA or BC horizon

C horizon:
Hue—10YR or 2.5Y
Value—3 to 5 (moist) and 5 to 7 (dry)
Chroma—2 to 4 (moist) and 3 to 4 (dry)
Texture of the fine-earth fraction—sand, fine sand, very fine sand, loamy coarse sand, or loamy sand
Clay content—0.5 to 6 percent
Rock fragment content—15 to 90 percent
Organic matter content—0.2 to 3 percent
Reaction—very strongly acid to slightly acid

Additional characterization data for this Glacierpoint series, National Soil Survey Laboratory lab data pedon number 97P0120 (Pedon ID: 96CA109004), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Half Dome Series

The Half Dome series consists of very deep, well drained soils on mountain side slopes. These soils formed in colluvium weathered from granitoid rock. Slope is 5 to 60 percent. The soils are classified as loamy-skeletal, isotic, mesic Typic Dystroxerepts.

Typical Pedon

Half Dome complex, 25 to 60 percent slopes, mesic; Mariposa County, California; directly northeast of Sentinel Creek, up Four Mile Trail, Yosemite National Park; lat. 37 degrees 43 minutes 49 seconds N. and long. 119 degrees 35 minutes 56 seconds W.; USGS, Half Dome, California Quadrangle, NAD 83. (The soil surface is partially covered with 30 percent boulders and 10 percent stones and cobbles.)

Oi—0 to 3 inches, (0 to 8 cm); litter of leaves, needles, and twigs.
A1—3 to 5 inches, (8 to 13 cm); grayish brown (10YR 5/2) very bouldery sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure parting to weak medium granular; soft, very friable, non-sticky, slightly plastic; few medium and common very fine and fine roots; 5 percent gravel; slightly acid (pH 6.5); clear wavy boundary.
A2—5 to 8 inches, (13 to 21 cm); brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) and very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure parting to weak medium granular; soft, very friable, non-sticky, slightly plastic; few medium and common very fine and fine roots; 15 percent gravel; slightly acid (pH 6.2); gradual wavy boundary.
Bw1—8 to 15 inches, (21 to 38 cm); variegated yellowish brown (10YR 5/4) and light yellowish brown (10YR 6/4) cobbly sandy loam, dark brown (10YR 3/3) and dark yellowish brown (10YR 3/4) moist; weak medium and coarse subangular blocky structure; soft, very friable, non-sticky, slightly plastic; common very fine, fine, medium, and coarse roots; 15 percent gravel and 10 percent cobbles; moderately acid (pH 5.9); gradual wavy boundary.
Bw2—15 to 31 inches, (38 to 99 cm); light yellowish brown (2.5Y 6/4) very cobbly sandy loam, variegated dark yellowish brown (10YR 4/4) and brown (10YR 4/3) moist; weak coarse subangular blocky structure; soft, very friable, non-sticky, slightly plastic; common very fine, fine, medium, and coarse roots; 15 percent gravel, 20 percent cobbles, and 5 percent stones; moderately acid (pH 5.9); gradual boundary.

C—31 to 63 inches, (99 to 160 cm); pale yellow (2.5Y 7/4) very cobbly sandy loam, olive brown (2.5Y 4/4) moist; single grain; soft, very friable, non-sticky, non-plastic; 15 percent gravel, 20 percent cobbles, and 5 percent stones; moderately acid (pH 6.0).

Range in Characteristics

Depth of the solum ranges from 15 inches (38 centimeters) to 35 inches (89 centimeters). The mean annual soil temperature is 52 to 56 degrees F (11.1 to 13.3 degrees C). North-facing slopes have cooler soil temperatures, and south-facing slopes have warmer temperatures. The soil temperature exceeds 41 degrees F (5 degrees C) from March through November and exceeds 47 degrees F (8.3 degrees C) from mid April through October. The difference between mean winter and mean summer soil temperatures is about 28 degrees F. The soil moisture control section is dry in all parts from early July to early November (140-160 days) and is moist in all parts from December to mid May. Base saturation is less than 60 percent.

A horizon:

Hue—10YR (dry and moist)
Value—5 (dry) and 3 (moist)
Chroma—2 or 3 (dry and moist)
Texture of the fine-earth fraction—loamy coarse sand, loamy sand, coarse sandy loam, or sandy loam
Clay content—2 to 12 percent
Rock fragment content—10 to 100 percent
Organic matter content—0 to 10 percent in the upper 6 inches (15 cm); commonly 1 to 3 percent
Reaction—moderately acid to neutral
Other characteristics—some pedons have an AB or BA horizon

Bw horizon:

Hue—10YR (dry and moist)
Value—5 or 6 (dry) and 2 or 3 (moist)
Chroma—3 or 4 (dry and moist)
Texture of the fine-earth fraction—loamy coarse sand, loamy sand, or coarse sandy loam
Clay content—2 to 12 percent
Rock fragment content—10 to 95 percent
Organic matter content—0 to 4 percent
Reaction—moderately acid to neutral

C horizon:

Hue—10YR (dry and moist)
Value—5 (dry) and 3 (moist)
Chroma—4 to 6 (dry) and 3 or 4 (moist)
Texture of the fine-earth fraction—loamy coarse sand, loamy sand, or sandy loam
Clay content—1 to 12 percent
Rock fragment content—5 to 85 percent
Organic matter content—less than 1 percent
Reaction—moderately acid to neutral

Happyisles Series

The Happyisles series consists of well drained to somewhat poorly drained soils on alluvial fans formed from granitoid rock. Slope is 0 to 9 percent. These soils are classified as coarse-loamy, isotic, mesic Humic Dystroxerepts.

Typical Pedon

Happyisles complex, 1 to 5 percent slopes, mesic; Mariposa County, California; at the lower edge of Eagle Creek, about 100 feet (30.5 meters) southeast of Northside Drive, Yosemite National Park, Yosemite Valley; lat. 37 degrees 43 minutes 48 seconds N. and long. 119 degrees 36 minutes 43 seconds W.; UTM Zone 11, easting 269819.29 and northing 4179061.66; USGS Half Dome, California Quadrangle, NAD 83:

Oi—0 to 3 inches, (0 to 8 cm); slightly decomposed organic material.
A1—3 to 7 inches, (8 to 18 cm); dark grayish brown (2.5Y 4/2) sandy loam, variegated black (10YR 2/1) and very dark gray (10YR 3/1) moist; moderate medium subangular blocky and weak fine granular structure; soft, very friable, non-sticky, non-plastic; common fine roots; common very fine interstitial pores; 5 percent gravel; moderately acid (pH 6.7); clear smooth boundary.
A2—7 to 13 inches, (18 to 33 cm); variegated black (2.5Y 2/2) and dark grayish brown (2.5Y 4/2) sandy loam, variegated black (10YR 2/1) and very dark gray (10YR 3/1) moist; strong fine and medium subangular blocky structure; soft, friable, non-sticky, non-plastic; common fine roots; common very fine interstitial pores; 8 percent gravel; slightly acid (pH 6.1); clear smooth boundary.
A3—13 to 17 inches, (33 to 43 cm); variegated light olive brown (2.5Y 5/3) and dark grayish brown (2.5Y 4/2) sandy loam, variegated very dark grayish brown (2.5Y 3/2) and very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; loose, very friable, non-sticky, non-plastic; common fine roots; common very fine interstitial pores; less than 5 percent gravel; slightly acid (pH 6.1); clear wavy boundary.
A4—17 to 33 inches, (43 to 84 cm); variegated light olive brown (2.5Y 5/3) sandy loam, very dark grayish brown (2.5Y 3/2) moist; single grain; loose, very friable, non-sticky, non-plastic; few fine roots; common very fine interstitial pores; 5 percent gravel; slightly acid (pH 6.1); gradual wavy boundary.
C—33 to 58 inches, (84 to 152 cm); light olive brown (2.5Y 5/3) stratified loamy sand and loamy coarse sand, variegated very dark grayish brown (2.5Y 3/2) and dark yellowish brown (10YR 3/4) moist; single grain; loose, non-sticky, non-plastic; no roots; many very fine and fine interstitial pores; 10 percent gravel; slightly acid (pH 6.1).

Range in Characteristics

A horizon:

Hue—10YR or 2.5Y (dry and moist)
Value—2 to 7 (dry) and 2 to 5 (moist)
Chroma—1 or 2 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—sand, loamy fine sand, coarse sandy loam, sandy loam, or fine sandy loam
Rock fragment content—0 to 17 percent
Clay content—3 to 17 percent
Organic matter content—0.5 to 4 percent
Reaction—moderately acid to neutral

C horizon:

Hue—10YR, 2.5Y, or 7.5R (dry and moist)
Value—2 to 4 (dry) and 2 to 5 (moist)
Chroma—2 to 4 (dry) and 1 to 4 (moist)
Texture—stratified sand to fine sandy loam
Rock fragment content—0 to 20 percent
Clay content—3 to 12 percent
Organic matter content—0.25 to 0.75 percent
Reaction—moderately acid or slightly acid

Humic Dystroxerepts

Humic Dystroxerepts in the survey area consist of very deep, well drained to excessively well drained soils that formed in colluvium, residuum, and/or till from metamorphic and granitoid rock. These soils are on mountain slopes, moraines, mountainsides, landslides, and ridges. Slope is 0 to 100 percent. The soils are classified as sandy-skeletal, isotic, frigid Humic Dystroxerepts.

Typical Pedon

Humic Dystroxerepts-Typic Haploxerults-Inceptic Haploxeralfs complex, 30 to 65 percent slopes, mountain slopes, metamorphic, frigid; Mariposa County, California; approximately 4,000 feet (1,219.2 meters) northwest of Crane Flat Lookout and 1,000 feet (304.8 meters) north of Big Oak Flat Road on a slope above Moss Creek, about 650 feet (198.1 meters) east and 1,000 feet (304.8 meters) south of the northwest corner of section 13, T. 2 S., R. 19 E., Mount Diablo Base and Meridian; lat. 37 degrees 45 minutes 56.6 seconds N. and long. 119 degrees 49 minutes 54.6 seconds W.; USGS Ackerson Mountain, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Humic Dystroxerepts in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inches, (0 to 1 cm); very stony slightly decomposed plant material; 10 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size, 10 percent very strongly cemented subangular metamorphic rock fragments 75 to 250 mm in size, and 15 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size.

Oe—0 to 1 inch, (1 to 2 cm); very stony moderately decomposed plant material; 10 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size, and 15 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size.

A1—1 to 5 inches, (2 to 12 cm); dark grayish brown (10YR 4/2) very cobbly loamy sand, very dark brown (10YR 2/2) moist; weak very fine granular structure; few medium and fine and many very fine roots; 10 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size, 15 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size, and 25 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in size; moderately acid (pH 5.6); clear irregular boundary. (Lab sample # 98P01242)

A2—5 to 13 inches, (12 to 32 cm); brown (10YR 4/3) very cobbly loamy sand, very dark brown (10YR 2/2) moist; weak very fine granular structure; loose, non-sticky, non-plastic; common medium and many very fine roots; 10 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size, 25 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in size, and 25 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size; moderately acid (pH 5.6); clear irregular boundary. (Lab sample # 98P01243)

C1—13 to 20 inches, (32 to 52 cm); light olive brown (2.5Y 5/4) extremely stony loamy sand, dark brown (10YR 3/3) moist; single grain; loose, non-sticky, non-plastic; few fine, common medium, and many very fine roots; 10 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in size, 20 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size, and 30 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size; strongly acid (pH 5.4); gradual irregular boundary. (Lab sample # 98P01244)

C2—20 to 35 inches, (52 to 89 cm); light yellowish brown (10YR 6/4) extremely stony

loamy sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, non-sticky, non-plastic; few coarse and fine, common medium, and many very fine roots; 10 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size, and 45 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size; strongly acid (pH 5.1); clear irregular boundary. (Lab sample # 98P01245)

C3—35 to 60 inches, (89 to 152 cm); light yellowish brown (2.5Y 6/4) extremely stony loamy sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, non-sticky, non-plastic; few very coarse, coarse, medium, and very fine roots; 5 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size, 5 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in size, and 70 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size; strongly acid (pH 5.2). (Lab sample # 98P01246)

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level categories are therefore included with the concept of this component, such as loamy-skeletal, isotic Humic Dystrocryepts; sandy-skeletal, isotic Humic Dystrocryepts; coarse-loamy, isotic, frigid Humic Dystroxerepts; coarse-loamy, isotic, mesic Humic Dystroxerepts; coarse-loamy, isotic, thermic Humic Dystroxerepts; loamy-skeletal, isotic, frigid Humic Dystroxerepts; sandy, isotic frigid Humic Dystroxerepts; and sandy-skeletal, isotic, mesic Humic Dystroxerepts.

The soil has an umbric epipedon and/or a cambic horizon. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 80 percent.

A horizon:

Hue—10YR or 2.5Y (dry and moist)
Value—3 to 5 (dry) and 2 or 3 (moist)
Chroma—1 to 5 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—coarse sand, fine sand, loamy coarse sand, loamy sand, sandy loam, or fine sandy loam
Clay content—0.5 to 10 percent
Rock fragment content—0 to 80 percent
Organic matter content—2 to 12 percent
Reaction—very strongly acid to neutral
Other characteristics—some pedons have an AB and/or AC horizon

Bw horizon (if it occurs):

Hue—10YR or 2.5Y (dry and moist)
Value—4 to 7 (dry) and 3 to 5 (moist)
Chroma—2 to 4 (dry and moist)
Texture of the fine-earth fraction—coarse sand, loamy coarse sand, loamy sand, sandy loam, or fine sandy loam
Clay content—0.5 to 14 percent
Rock fragment content—0 to 90 percent
Organic matter content—0.2 to 8 percent
Reaction—very strongly acid or neutral

C horizon:

Hue—10YR or 2.5Y (dry and moist)
Value—3 to 7 (dry) and 2 to 6 (moist)
Chroma—2 to 6 (dry) and 2 to 4 (moist)

Texture of the fine-earth fraction—coarse sand, sand, loamy coarse sand, loamy sand, loamy fine sand, coarse sandy loam, sandy loam, or fine sandy loam
Clay content—0.5 to 14 percent
Rock fragment content—0 to 90 percent
Organic matter content—0.20 to 5 percent
Reaction—very strongly acid to neutral
Other characteristics—some pedons have a moderately deep Cd or a Ct horizon

Additional characterization data for this Humic Dystroxerepts example pedon, National Soil Survey Laboratory lab data pedon number 98P0199 (Pedon ID: 97CA043017), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Humic Haploxerepts

Humic Haploxerepts in the survey area consist of very deep, well drained soils that formed in colluvium from metamorphic and small amounts of granodiorite rock. These soils are on mountain slopes. Slope is 45 to 100 percent. The soils are classified as loamy-skeletal, isotic, thermic Humic Haploxerepts.

Typical Pedon

Humic Haploxerepts-Rock outcrop-Ultic Haploxeralfs association, 45 to 100 percent slopes, metasedimentary, mountain slopes, thermic; Mariposa County, California; El Portal, Rancheria Flat, approximately 150 feet (45.7 meters) east and 2,800 feet (853.4 meters) north from the southwest corner of section 16, T. 3 S., R. 20 E., Mount Diablo Base and Meridian; lat. 37 degrees 40 minutes 14.0 seconds N. and long. 119 degrees 48 minutes 35.1 seconds W.; USGS El Portal, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Humic Haploxerepts in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inches, (0 to 1 cm); slightly decomposed plant material; 1 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size.

A—0 to 4 inches, (1 to 9 cm); dark grayish brown (10YR 4/2) very gravelly loam, very dark gray (10YR 3/1) moist; moderate coarse subangular blocky and weak very fine granular structure; slightly hard, loose, slightly sticky, slightly plastic; many very fine roots; 10 percent subangular very strongly cemented gneiss fragments 75 to 250 mm in size and 25 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size; moderately acid (pH 6.0); abrupt smooth boundary. (Lab sample # 02N03120)

Bw1—4 to 8 inches, (9 to 20 cm); brown (10YR 4/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; moderately hard, very friable, moderately sticky, moderately plastic; few fine and many very fine roots; 15 percent subangular very strongly cemented gneiss fragments 75 to 250 mm in size and 35 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size; slightly acid (pH 6.1); gradual wavy boundary. (Lab sample # 02N03121)

Bw2—8 to 20 inches, (20 to 52 cm); brown (10YR 4/3) extremely gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular and moderate coarse subangular blocky structure; slightly hard, very friable, moderately sticky, moderately plastic; few coarse, medium, and fine and many very fine roots; 20 percent subangular very strongly cemented gneiss fragments 75 to 250 mm in size and 45 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size; slightly acid (pH 6.2); gradual wavy boundary. (Lab sample # 02N03122)

Bw3—20 to 30 inches, (52 to 77 cm); brown (10YR 4/3) very gravelly loam, very dark

grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, moderately sticky, moderately plastic; few fine, few medium, few coarse, medium, and fine, and many very fine roots; 15 percent subangular very strongly cemented gneiss fragments 75 to 250 mm in size and 40 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size; slightly acid (pH 6.2); gradual wavy boundary. (Lab sample # 02N03123)

Bw4—30 to 60 inches, (77 to 152 cm); 50 percent dark grayish brown (2.5Y 4/2) and 50 percent dark grayish brown (10YR 4/2) extremely gravelly fine sandy loam, 50 percent very dark grayish brown (10YR 3/2) and 50 percent dark olive brown (2.5Y 2.5/2) moist; moderate medium subangular blocky and moderate very fine granular structure; soft, loose, moderately sticky, moderately plastic; few fine and common very fine roots; 10 percent subangular very strongly cemented gneiss fragments 250 to 600 mm in size, 15 percent subangular very strongly cemented gneiss fragments 75 to 250 mm in size, and 41 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size; slightly acid (pH 6.1). (Lab sample # 02N03124)

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 40 percent.

A horizon:

Hue—10YR (dry and moist)
Value—4 (dry) and 3 (moist)
Chroma—2 (dry) and 1 (moist)
Texture of the fine-earth fraction—sandy loam or loam
Clay content—6 to 12 percent
Rock fragment content—25 to 45 percent
Organic matter content—5 to 9 percent
Reaction—moderately acid or slightly acid

Bw horizon:

Hue—10YR (dry and moist)
Value—4 (dry) and 3 (moist)
Chroma—2 or 3 (dry) and 2 (moist)
Texture of the fine-earth fraction—sandy loam, loam, sandy clay loam, or fine sandy loam
Clay content—6 to 12 percent
Rock fragment content—40 to 80 percent
Organic matter content—0.2 to 4 percent
Reaction—moderately acid or slightly acid

Additional characterization data for this Humic Haploxerepts example pedon, National Soil Survey Laboratory lab data pedon number 02N0621 (Pedon ID: 01CA043010), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Humic Lithic Haploxerepts

Humic Lithic Haploxerepts in the survey area consist of shallow, moderately well drained soils that formed in colluvium from granitoid rock. These soils are on mountainsides and mountain slopes. Slope is 0 to 40 percent. The soils are classified as loamy-skeletal, isotic, mesic Humic Lithic Haploxerepts.

Typical Pedon

Rock outcrop-Humic Dystroxerepts-Humic Lithic Dystroxerepts association, 30 to 100 percent slopes, mountain slopes, mesic; Tuolumne County, California; Yosemite National Park, approximately 10,560 feet (3,218.7 meters) south on the road from O'Shaughnessy Dam and 1,320 feet (402.3 meters) south-southeast to the site, approximately 650 feet (198.1 meters) north and 1,500 feet (457.2 meters) west of the southeast corner of section 20, T. 1 N., R. 20 E., Mount Diablo Base and Meridian; lat. 37 degrees 55 minutes 29 seconds N. and long. 119 degrees 47 minutes 53.8 seconds W.; USGS Lake Eleanor, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Humic Lithic Haploxerepts in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inches, (0 to 1 cm); cobbly slightly decomposed plant material; 5 percent subrounded very strongly cemented 600- to 3000-mm-in-size and 5 percent subrounded very strongly cemented 250- to 600-mm-in-size granodiorite fragments.

Oa—0 to 2 inches, (1 to 4 cm); cobbly highly decomposed plant material; 5 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size and 5 percent subrounded very strongly cemented granodiorite fragments 250 to 600 mm in size.

Oe—2 to 2 inches, (4 to 6 cm); cobbly moderately decomposed plant material; 5 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size and 5 percent subrounded very strongly cemented granodiorite fragments 250 to 600 mm in size.

A1—2 to 10 inches, (6 to 26 cm); dark grayish brown (10YR 4/2) very gravelly loamy coarse sand, black (10YR 2/1) moist; weak very fine granular and weak medium granular structure; soft, very friable, non-sticky, non-plastic; common fine and many very fine roots; 5 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 7 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size, 8 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size, and 20 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; slightly acid (pH 6.1); abrupt smooth boundary. (Lab sample # 99P01620)

A2—10 to 22 inches, (26 to 56 cm); brown (10YR 4/3) very bouldery fine sandy loam, very dark brown (10YR 2/2) moist; weak very fine granular and weak medium granular structure; soft, very friable, non-sticky, non-plastic; few fine, common medium and fine, and many coarse roots; 10 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size, 20 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size, and 20 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; slightly acid (pH 6.5). (Lab sample # 99P01621)

R—22 to 60 inches, (56 to 152 cm); granitoid bedrock.

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

Humic Lithic Haploxerepts have an umbric epipedon and a lithic contact. The content of surface rock fragments is 2 to 5 percent. Organic matter content increases in the A2 horizon.

A horizon:

Hue—10YR (dry and moist)
Value—3 or 4 (dry) and 2 (moist)
Chroma—2 or 3 (dry) and 1 or 2 (moist)

Texture of the fine-earth fraction—loamy coarse sand, sandy loam, or fine sandy loam
Clay content—2 to 20 percent
Rock fragment content—27 to 80 percent
Organic matter content—5 to 14 percent
Reaction—very strongly acid to slightly acid

Additional characterization data for this Humic Lithic Haploxerepts example pedon, National Soil Survey Laboratory lab data pedon number 99P0319 (Pedon ID: 99CA109007), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Inceptic Haploxeralfs

Inceptic Haploxeralfs in the survey area consist of very deep, well drained to somewhat excessively drained soils that formed in colluvium from mixed metamorphic rock. These soils are on ancient landslides and mountain slopes. Slope is 30 to 65 percent. The soils are classified as loamy-skeletal, isotic, frigid Inceptic Haploxeralfs.

Typical Pedon

Humic Dystroxerepts-Typic Haploxerults-Inceptic Haploxeralfs complex, 30 to 65 percent slopes, mountain slopes, metamorphic, frigid; Tuolumne County, California; approximately 7,000 feet (2,133.6 meters) west of Tuolumne Grove, approximately 1,250 feet (381.0 meters) north and 600 feet (182.9 meters) east the southwest corner of section 12, T. 2 S., R. 19 E., Mount Diablo Base and Meridian; lat. 37 degrees 46 minutes 8.8 seconds N. and long. 119 degrees 48 minutes 24.1 seconds W.; USGS Ackerson Mountain, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Inceptic Haploxeralfs in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inches, (0 to 1 cm); very stony slightly decomposed plant material; 20 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size and 20 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size.

Oe—0 to 1 inch, (1 to 3 cm); very stony slightly decomposed plant material; 20 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size and 20 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size.

A1—1 to 4 inches, (3 to 9 cm); brown (10YR 4/3) very cobbly fine sandy loam, very dark brown (7.5YR 2/2) moist; weak very fine granular structure; loose, non-sticky, non-plastic; few fine and many very fine roots; 20 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size and 20 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in sizes; strongly acid (pH 5.5); clear irregular boundary.

A2—4 to 12 inches, (9 to 31 cm); dark yellowish brown (10YR 4/4) very cobbly fine sandy loam, dark brown (7.5YR 3/3) moist; weak very fine granular and moderate fine subangular blocky structure; soft, very friable, non-sticky, non-plastic; common fine and medium, few coarse, and many very fine roots; 5 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size, 20 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size, and 20 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in size; strongly acid (pH 5.5); clear wavy boundary.

Bt—12 to 22 inches, (31 to 55 cm); strong brown (7.5YR 4/6) very cobbly fine sandy loam, reddish brown (5YR 4/4) moist; weak very fine granular and moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, non-plastic;

common fine and very fine and few medium and very coarse roots; 5 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size, 20 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size, and 25 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in size; very strongly acid (pH 5.0); clear irregular boundary.

C1—22 to 30 inches, (55 to 76 cm); yellowish brown (10YR 5/6) extremely cobbly fine sandy loam, strong brown (7.5YR 4/6) moist; weak very fine granular and weak fine subangular blocky structure; soft, very friable, slightly sticky, non-plastic; common very coarse and fine and few coarse and very fine roots; 10 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size, 25 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in size, and 30 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0); gradual irregular boundary.

C2—30 to 60 inches, (76 to 152 cm); yellowish brown (10YR 5/6) extremely stony fine sandy loam, strong brown (7.5YR 4/6) moist; weak very fine granular structure; loose, slightly sticky, non-plastic; few fine roots; 25 percent subangular very strongly cemented metamorphic rock fragments 250 to 600 mm in size, 30 percent subangular very strongly cemented metamorphic rock fragments 75 to 250 mm in size, and 35 percent subangular very strongly cemented metamorphic rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

Inceptic Haploxeralfs have an argillic horizon that is less than 35 centimeters thick. Total rock fragment content, by volume, is 0 to 95 percent. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 40 percent.

A horizon:

Hue—10YR (dry) and 7.5YR (moist)
Value—4 (dry) and 2 or 3 (moist)
Chroma—2 to 4 (dry) and 2 or 3 (moist)
Texture of the fine-earth fraction—fine sandy loam
Clay content—1 to 6 percent
Rock fragment content—30 to 60 percent
Organic matter content—3 to 9 percent
Reaction—strongly acid or moderately acid

Bt horizon:

Hue—7.5YR (dry) and 5YR (moist)
Value—4 (dry and moist)
Chroma—6 (dry) and 4 to 6 (moist)
Texture of the fine-earth fraction—fine sandy loam
Clay content—1 to 6 percent
Rock fragment content—40 to 65 percent
Organic matter content—2 to 4 percent
Reaction—very strongly acid or moderately acid

C horizon:

Hue—10YR (dry) and 7.5YR (moist)
Value—5 (dry) and 4 (moist)
Chroma—6 (dry and moist)
Texture of the fine-earth fraction—fine sandy loam
Clay content—1 to 6 percent

Rock fragment content—50 to 95 percent
Organic matter content—0.2 to 3 percent
Reaction—very strongly acid or moderately acid

Jobsis Series

The Jobsis series consists of shallow, somewhat excessively drained soils that formed in colluvium and residuum derived from granitoid rock. These soils are on mountains. Slope is 8 to 75 percent. The soils are classified as sandy-skeletal, mixed, shallow Typic Cryorthents.

Typical Pedon

Jobsis very gravelly loamy coarse sand; Alpine County, California; in the Toiyabe National Forest, about 1 mile southeast of Hawkins Peak, about 2,200 feet north and 1,825 feet east of the southwest corner of section 11, T. 10 N., R. 19 E.; lat. 38 degrees 43 minutes 34.9 seconds N. and long. 119 degrees 51 minutes 42.0 seconds W.; Markleeville, California Quadrangle, NAD 27:

A1—0 to 1 inch, (0 to 3 cm); dark grayish brown (10YR 4/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, non-sticky, non-plastic; few very fine roots; many very fine interstitial pores; 50 percent gravel and 5 percent boulders; strongly acid (pH 5.0); clear wavy boundary.
A2—1 to 5 inches, (3 to 13 cm); grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; many very fine, common fine, common medium, and common coarse roots; many very fine interstitial pores; 50 percent gravel and 5 percent boulders; strongly acid (pH 5.0); clear wavy boundary.
Bw1—5 to 9 inches, (13 to 23 cm); pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; many very fine, common fine, common medium, and common coarse roots; many very fine interstitial pores; 55 percent gravel; strongly acid (pH 5.0); clear wavy boundary.
Bw2—9 to 12 inches, (23 to 30 cm); pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; common very fine, common fine, common medium, and common coarse roots; many very fine interstitial pores; 50 percent gravel; strongly acid (pH 5.0); clear wavy boundary.
Bw3—12 to 17 inches, (30 to 43 cm); pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, non-sticky, non-plastic; common very fine and few fine roots; many very fine interstitial and tubular pores; 45 percent gravel; strongly acid (pH 5.0); clear wavy boundary.
2C—17 to 20 inches, (43 to 50 cm); pale brown (10YR 6/3) very gravelly coarse sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, non-sticky, non-plastic; few very fine and few fine roots; many very fine interstitial pores; 50 percent gravel; strongly acid (pH 5.0); clear wavy boundary.
2Cr—20 to 30 inches, (50 to 76 cm); soft weathered granodiorite.

Range in Characteristics

The soil is usually moist in the moisture control section in fall, winter, and spring. It is usually dry from July through early October. The moisture regime is xeric. The mean annual soil temperature is 35 to 40 degrees F; and the mean summer soil temperature

is 44 to 47 degrees F. The thickness of the ochric epipedon is 3 to 9 inches. Depth to a paralithic content is 10 to 20 inches. The paralithic materials below the contact are weathered granitoid rock such as granodiorite.

In the particle-size control section, the clay content averages less than 10 percent and the content of rock fragments (mainly fine gravel) averages 35 to 60 percent. Lithology of fragments are granitoid rocks such as granodiorite.

The soil surface is covered with 25 percent gravel, 5 percent stones, and 15 percent boulders.

A horizon:

Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—2 or 3 (dry and moist)
Organic matter content—1 to 3 percent
Reaction—very strongly acid or strongly acid

Bw and 2C horizons:

Chroma—3 or 4 (dry and moist)
Texture—very gravelly loamy coarse sand or very gravelly coarse sand
Clay content—4 to 10 percent
Rock fragment content—35 to 60 percent, mainly fine (2 to 5 mm diameter) gravel
Reaction—very strongly acid or strongly acid

Leidig Series

The Leidig series consists of very deep, somewhat poorly drained soils on high flood plains. These soils formed in alluvium weathered from granitoid rock. Slope is 0 to 2 percent. The soils are classified as coarse-loamy, isotic, mesic Vitrandic Dystroxerepts.

Typical Pedon

Leidig fine sandy loam, 0 to 2 percent slopes, occasionally flooded, mesic; Mariposa County, California; half way between a microhigh bar position and a microlow channel position on a 4 to 6 percent slope (downstream gradient slopes are 0 to 2 percent), 550 feet (167.6 meters) northwest of Sentinel Chapel, Sentinel Meadow, Yosemite National Park; lat. 37 degrees 44 minutes 28 seconds N. and long. 119 degrees 35 minutes 35 seconds W.; UTM Zone 11, easting 271528.00 and northing 4180256.77; USGS Half Dome, California Quadrangle, NAD 83:

Oi—0 to 1 inch, (0 to 3 cm); slightly decomposed organic material.
A—1 to 7 inches, (3 to 18 cm); dark grayish brown (10YR 4/2) fine sandy loam, very dark brown (10YR 2/2) moist; strong fine granular structure; soft, very friable, non-sticky, non-plastic; many very fine roots; common very fine interstitial pores; strongly acid (pH 5.5); clear smooth boundary.
2Ab1—7 to 16 inches, (18 to 41 cm); dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; strong medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; weakly smeary; few fine roots; common very fine interstitial pores; strongly acid (pH 5.5); clear smooth boundary.
2Ab2—16 to 23 inches, (41 to 58 cm); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate coarse and medium angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; weakly smeary; common very fine roots; common very fine interstitial pores; moderately acid (pH 5.8); clear smooth boundary.
2Ab3—23 to 30 inches, (58 to 76 cm); brown (10YR 5/3) and dark grayish brown (10YR 4/2) very fine sandy loam, 90 percent dark brown (10YR 3/3) and 10 percent very dark brown (10YR 2/2) moist; moderate coarse angular blocky

structure; slightly hard, friable, slightly sticky, non-plastic; weakly smeary; few very fine roots; common very fine interstitial pores; strongly acid (pH 5.5); clear smooth boundary.

2Ab4—30 to 34 inches, (76 to 86 cm); brown (10YR 5/3) and dark grayish brown (10YR 4/2) very fine sandy loam, 90 percent dark brown (10YR 3/3) and 10 percent very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, non-plastic; weakly smeary; few very fine roots; common very fine interstitial pores; strongly acid (pH 5.3); clear smooth boundary.

2Ab5—34 to 42 inches, (86 to 107 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak medium angular blocky structure; soft, friable, non-sticky, non-plastic; weakly smeary; common very fine interstitial pores; common fine faint dark brown (7.5YR 3/4, moist) redoximorphic iron accumulations; strongly acid (pH 5.3); gradual smooth boundary.

2Ab6—42 to 46 inches, (107 to 117 cm); light brownish gray (10YR 6/2) and grayish brown (10YR 5/2) fine sandy loam, 60 percent dark grayish brown (10YR 4/2) and 10 percent very dark grayish brown (10YR 3/2) moist; weak medium angular blocky structure; soft, friable, non-sticky, non-plastic; weakly smeary; common very fine interstitial pores; 30 percent common fine and medium faint dark brown (7.5YR 3/4, moist) redoximorphic iron accumulations; strongly acid (pH 5.3); clear smooth boundary.

3Ab1—46 to 52 inches, (117 to 132 cm); pale brown (10YR 6/3), light brownish gray (10YR 6/2), and grayish brown (10YR 5/2) sandy loam, 60 percent dark grayish brown (10YR 4/2), 10 percent dark gray (10YR 4/1), and 10 percent very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, friable, non-sticky, non-plastic; common very fine interstitial pores; 20 percent common fine and medium faint dark drown (7.5YR 3/4, moist) redoximorphic iron accumulations; strongly acid (pH 5.3); clear smooth boundary.

3Ab2—52 to 58 inches, (132 to 148 cm); light brownish gray (10YR 6/2) and pale brown (10YR 6/3) fine sandy loam, 40 percent dark gray (10YR 4/1) and 40 percent dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; soft, friable, non-sticky, non-plastic; common very fine interstitial pores; 20 percent common fine and medium faint dark brown (7.5YR 3/4, moist) redoximorphic iron accumulations; strongly acid (pH 5.3); abrupt smooth boundary.

C—58 to 60 inches, (148 to 152 cm); light gray (10YR 7/2) and pale brown (10YR 6/3) loamy sand, 60 percent grayish brown (10YR 5/2) and 20 percent brown (10YR 4/3) moist; massive; soft, very friable, non-sticky, non-plastic; many very fine interstitial pores; 20 percent few medium distinct dark brown (7.5YR 4/4, moist) redoximorphic iron accumulations; strongly acid (pH 5.3).

Range in Characteristics

Depth of the solum is more than 50 inches (127 centimeters). The mean annual soil temperature is 52 to 56 degrees F (11.1 to 13.3 degrees C). The soil temperature exceeds 41 degrees F (5 degrees C) from March through November and exceeds 47 degrees F (8.3 degrees C) from mid April through October. The difference between mean winter and mean summer soil temperatures is about 28 degrees F. The soil moisture control section is dry in all parts from early July to early November (140-160 days) and is moist in all parts from December to mid May. Base saturation is less than 50 percent. Clay content is 0 to 18 percent.

Overwash horizon (if it occurs):

Hue—10YR (dry and moist)
Value—4 or 5 (dry) and 2 or 3 (moist)
Chroma—2 (dry and moist)

Texture—sandy loam or fine sandy loam
Organic matter content—0 to 5 percent
Reaction—moderately acid or strongly acid
Base saturation—less than 50 percent

A horizon:
Hue—10YR or 7.5R
Value—4 (dry) and 2 (moist)
Chroma—2 (dry and moist)
Texture—sandy loam, fine sandy loam, very fine sandy loam, or loam
Organic matter content—2 to 8 percent
Reaction—moderately acid or strongly acid

2Ab horizon:
Hue—10YR
Value—4 to 6 (dry) and 2 to 4 (moist)
Chroma—2 or 3 (dry) and 2 to 4 (moist)
Texture—sandy loam, fine sandy loam, very fine sandy loam, or loam
Organic matter content—0 to 8 percent; at least 1 percent above the 2Ab5 horizon
Reaction—moderately acid or strongly acid

3Ab horizon:
Hue—10YR
Value—6 (dry) and 3 or 4 (moist)
Chroma—2 or 3 (dry) and 1 to 4 (moist)
Texture—loamy sand, sandy loam, fine sandy loam, or very fine sandy loam
Organic matter content—0 to 1 percent
Reaction—moderately acid or strongly acid

C horizon:
Hue—10YR or 7.5Y
Value—6 or 7 (dry) and 4 or 5 (moist)
Chroma—2 or 3 (dry) and 2 to 4 (moist)
Texture—very fine sandy loam, loam, sandy loam, or fine sandy loam
Organic matter content—0 to 4 percent
Reaction—strongly acid

Lithic Xerorthents

Lithic Xerorthents in the survey area consist of shallow, moderately well drained soils that formed in colluvium from granitoid rock. These soils are on mountainsides. Slope is 0 to 150 percent. The soils are classified as sandy-skeletal, isotic, frigid Lithic Xerorthents.

Typical Pedon

Rock outcrop-Lithic Xerorthents-Waterwheel, complex, 0 to 150 percent slopes, cliffs, ledges, frigid; Mariposa County, California; along the road to Tamarack Creek Campground, Upper Merced Watershed, approximately 1,400 feet (426.7 meters) west and 1,000 feet (304.8 meters) south of the northeast corner of section 23, T. 1 S., R. 21 E., Mount Diablo Base and Meridian; lat. 37 degrees 50 minutes 44.4 seconds N. and long. 119 degrees 37 minutes 39.4 seconds W.; USGS Tamarack Flat, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Lithic Xerorthents is this survey area because of the highly variable nature of these soils.)

A—0 to 3 inches, (0 to 8 cm); light olive brown (2.5Y 5/3) very gravelly sand, very dark grayish brown (2.5Y 3/2) moist; single grain; soft, loose, non-sticky, non-plastic;

few medium and fine and many very fine roots; 50 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; very strongly acid (pH 5.0); abrupt smooth boundary.

C—3 to 7 inches, (8 to 17 cm); light olive brown (2.5Y 5/3) extremely gravelly sand, very dark grayish brown (2.5Y 3/2) moist; single grain; non-sticky, non-plastic; few medium and fine and common very fine roots; 75 percent subangular very weakly cemented granodiorite rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0); abrupt smooth boundary.

R—7 inches, (17 cm); very strongly cemented granodiorite bedrock.

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

Lithic Xerorthents have an ochric epipedon. The particle-size control section has 0.5 to 2.0 percent clay and at least 90 percent sand. The content of surface rock fragments is 55 to 65 percent.

A horizon:

Hue—2.5Y (dry and moist)
Value—5 (dry) and 3 (moist)
Chroma—3 (dry) and 2 (moist)
Texture of the fine-earth fraction—sand
Clay content—0.5 to 2 percent
Rock fragment content—45 to 55 percent
Organic matter content—3 to 7 percent
Reaction—very strongly acid or strongly acid

C horizon:

Hue—2.5Y (dry and moist)
Value—5 (dry) and 3 (moist)
Chroma—3 (dry) and 2 (moist)
Texture of the fine-earth fraction—sand
Clay content—0.5 to 2 percent
Rock fragment content—50 to 90 percent
Organic matter content—0.2 to 3 percent
Reaction—very strongly acid or strongly acid

Lithnip Series

The Lithnip series consists of very shallow, well drained soils that formed in residuum and colluvium derived from tuff, tuff-breccia, and andesite. Lithnip soils are on mountains. Slope is 8 to 75 percent. The soils are classified as loamy-skeletal, isotic, nonacid Lithic Cryorthents.

Typical Pedon

Lithnip extremely gravelly sandy loam; Alpine County, California; in the Toiyabe National Forest about 0.9 mile northeast of The Nipple peak, about 750 feet south and 1,250 feet west of the northeast corner of section 7, T. 9 N., R. 19 E.; lat. 38 degrees 39 minutes 10.0 seconds N. and long. 119 degrees 55 minutes 41.6 seconds W.; Carson Pass, California Quadrangle, NAD 27:

A—0 to 2 inches, (0 to 5 cm); light yellowish brown (10YR 6/4) extremely gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, non-sticky, non-plastic; few very fine roots; common

very fine interstitial pores; 70 percent gravel; neutral (pH 6.7); clear wavy boundary.
C—2 to 5 inches, (5 to 13 cm); light yellowish brown (10YR 6/4) very gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; massive; slightly hard, very friable, non-sticky, non-plastic; few very fine roots; common very fine interstitial pores; 55 percent gravel; neutral (pH 6.7); abrupt wavy boundary.
R—5 to 15 inches, (13 to 38 cm); hard tuff.

Range in Characteristics

The soil is usually moist in the moisture control section in fall, winter, and spring. It is usually dry from July through early October. The moisture regime is xeric. The mean annual soil temperature is 44 to 47 degrees F, and the mean summer soil temperature is 54 to 59 degrees F. The depth to a lithic contact is 4 to 10 inches. Sodium fluoride pH is 8.5 to 10.0.

In the control section, the clay content averages 12 to 18 percent and the content of rock fragments (dominantly gravel) averages 60 to 80 percent. Lithology of fragments is volcanic rocks such as tuff, tuff-breccia, and andesite.

The soil surface is covered with 60 percent gravel and less than 1 percent stones.

A horizon:
Hue—10YR or 7.5YR (dry and moist)
Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—2 to 4 (dry and moist)
Organic matter content—1 or 2 percent
Clay content—10 to 18 percent
Rock fragment content—60 to 80 percent, dominantly gravel
Reaction—slightly acid or neutral

C horizon:
Hue—10YR or 7.5YR (dry and moist)
Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—3 or 4 (dry and moist)
Texture—very gravelly sandy loam or extremely gravelly sandy loam
Clay content—12 to 18 percent
Rock fragment content—50 to 80 percent
Reaction—slightly acid or neutral

Marmotland Series

The Marmotland series consists of very deep, moderately well drained or well drained soils that formed in alluvium and/or till from granitoid rock. These soils are on ground moraines and mountain valley floors. Slope is 0 to 15 percent. The soils are classified as coarse-loamy, isotic, Vitrandic Dystrocryepts.

Typical Pedon

Marmotland-Oxyaquic Dystrocryepts-Xeric Dystrocryepts complex, 0 to 15 percent slopes, mountain valley floors, cryic; Tuolumne County, California; Tuolumne Meadows, 200 feet (61.0 meters) northwest of Puppy Dome, approximately 1,000 feet (304.8 meters) north and 1,400 feet (426.7 meters) east of the southwest corner of section 4, T. 1 S., R. 24 E., Mount Diablo Base and Meridian; lat. 37 degrees 52 minutes 28.5 seconds N. and long. 119 degrees 20 minutes 38.8 seconds W.; USGS Tioga Pass, California Quadrangle, NAD 83:

Oi—0 to 0 inches, (0 to 1 cm); slightly decomposed plant material.
A1—0 to 11 inches, (1 to 29 cm); brown (10YR 5/3) fine sandy loam, very dark grayish

brown (10YR 3/2) moist; weak fine granular and weak medium subangular blocky structure; very friable, slightly sticky, slightly plastic; common fine and very fine and few medium roots; 5 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.1); clear smooth boundary. (Lab sample # 01N01007)

A2—11 to 19 inches, (29 to 47 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; very friable, slightly sticky, slightly plastic; common fine and very fine and few medium, coarse, and very coarse roots; 5 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.2); clear smooth boundary. (Lab sample # 01N01008)

Bt1—19 to 36 inches, (47 to 91 cm); light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak coarse subangular blocky structure; very friable, slightly sticky, slightly plastic; few fine and common very fine roots; 3 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; moderately acid (pH 5.7); abrupt irregular boundary. (Lab sample # 01N01009)

Bt2—36 to 48 inches, (91 to 121 cm); very pale brown (10YR 7/4) sandy loam, dark yellowish brown (10YR 4/6) moist; weak coarse subangular blocky structure; very friable, slightly sticky, slightly plastic; few fine roots; 3 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; moderately acid (pH 5.9); abrupt irregular boundary. (Lab sample # 01N01010)

C—48 to 60 inches, (121 to 153 cm); 60 percent gray (2.5Y 6/1) ashy sandy loam, moist; massive; very friable, slightly sticky, slightly plastic; 40 percent yellowish red (5YR 4/6), strong brown (7.5YR 5/8), and dark red (2.5YR 3/6) redoximorphic features; 3 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; moderately acid (pH 5.9).

Range in Characteristics

The mean annual soil temperature is about 4.5 degrees C (40 degrees F). The particle-size control section has 2 to 9 percent clay and 50 to 70 percent sand. It has less than 35 percent rock fragments and 15 percent or more, by weight, particles with a diameter of 0.1 to 75 millimeters (fine sand or coarser, including rock fragments as much as 7.5 centimeters in diameter). This soil has an umbric epipedon and/or a cambic horizon. Some pedons may not have volcanic ash. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 5 percent.

A horizon:

Hue—10YR
Value—4 or 5 (dry) and 2 or 3 (moist)
Chroma—3 or 4 (dry) and 2 or 3 (moist)
Texture of the fine-earth fraction—sandy loam, fine sandy loam, or loam
Clay content—2 to 6 percent
Rock fragment content—0 to 20 percent
Organic matter content—2 to 11 percent
Reaction—very strongly acid or strongly acid

Bt horizon:

Hue—10YR or 2.5Y (dry) and 7.5YR or 10YR (moist)
Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—3 to 6 (dry) and 3 or 4 (moist)
Texture of the fine-earth fraction—sandy loam, fine sandy loam, or loam
Clay content—3 to 9 percent
Rock fragment content—0 to 25 percent

Organic matter content—0.5 to 6 percent
Reaction—very strongly acid to moderately acid

C or Ct horizon:
Hue—10YR or 2.5YR (dry and moist)
Value—5 to 7 (dry) and 3 to 6 (moist)
Chroma—2 to 6 (dry) and 1 to 5 (moist)
Redoximorphic features—hue of 5YR, 2.5YR, or 7.5YR, value of 3 to 6, and chroma of 6 to 8
Texture of the fine-earth fraction—ashy sandy loam or sandy loam
Clay content—3 to 9 percent
Rock fragment content—0 to 45 percent
Organic matter content—0.2 to 1 percent
Reaction—very strongly acid to moderately acid

Additional characterization data for this Marmotland typical pedon, National Soil Survey Laboratory lab data pedon number 01N0148 (Pedon ID: 00CA109012), and for pedon numbers 98P0214 (Pedon ID: 97CA109013) and 98P0202 (Pedon ID: 97CA109001) are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Mollic Xerofluvents

Mollic Xerofluvents in the survey area consist of very deep, well drained soils on alluvial fans. These soils formed from granitoid rocks. Slope is 1 to 5 percent. The soils are classified as isotic, mesic Mollic Xerofluvents.

Typical Pedon

Mollic Xerofluvents, 1 to 5 percent slopes, frequently flooded, mesic; Mariposa County, California; about 600 feet north-northwest from the intersection of Northside Drive and the El Capitan picnic area road, Yosemite National Park, Yosemite Valley; lat. 37 degrees 43 minutes 39 seconds N. and long. 119 degrees 37 minutes 12 seconds W.; UTM Zone11, easting 269099.22 and northing 4178825.12; USGS Half Dome, California Quadrangle, NAD 83. (This pedon is not completely representative of the Mollic Xerofluvents in this survey area because of the highly variable nature of these soils.)

Oi—0 to 2 inches, (0 to 5 cm); slightly decomposed leaf litter.
A1—2 to 6 inches, (5 to 15 cm); grayish brown (10YR 5/2) loam, very dark gray (10YR 3/1) moist; moderate medium subangular blocky structure parting to moderate medium granular; hard, very friable, slightly sticky, slightly plastic; common very fine roots; many very fine interstitial and few fine tubular pores; strongly acid (pH 5.3); abrupt wavy boundary.
C1—6 to 8 inches, (15 to 20 cm); white (10YR 8/1) and very pale brown (10YR 8/3) sand, grayish brown (10YR 5/2) moist; single grain; loose, non-sticky, non-plastic; common fine and few coarse roots; many very fine interstitial pores; strongly acid (pH 5.6); abrupt wavy boundary.
C2—8 to 12 inches, (20 to 30 cm); 60 percent light gray (2.5Y 7/2) and 40 percent pale yellow (2.5Y 7/4) loam, 60 percent dark grayish brown (2.5Y 4/2) and 40 percent olive brown (2.5Y 4/4) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; common very fine, medium, and coarse roots; common very fine interstitial and tubular pores; strongly acid (pH 5.3); abrupt wavy boundary.
C3—12 to 23 inches, (30 to 58 cm); 60 percent white (10YR 8/1) and 40 percent black (10YR 2/1) gravelly sand, 60 percent dark gray (10YR 4/1) and 40 percent black (10YR 2/1) moist; single grain; loose, non-sticky, non-plastic; few fine, medium,

and coarse roots; common very fine interstitial pores; platy strata with weak iron cementation; 15 percent angular pebbles; moderately acid (pH 5.3); abrupt wavy boundary.

C4—23 to 29 inches, (58 to 73 cm); 50 percent light gray (10YR 7/1), 40 percent light yellowish brown (2.5Y 6/4), and 10 percent light olive brown (2.5Y 5/6) loamy fine sand, 50 percent dark gray (10YR 4/1), 40 percent olive brown (2.5Y 4/4), and 10 percent light olive brown (2.5Y 5/6) moist; strong medium platy structure; slightly hard, friable, non-sticky, non-plastic; few medium and coarse roots; common very fine interstitial pores; platy strata that are weakly iron cemented; strongly acid (pH 5.3); abrupt wavy boundary.

C5—29 to 49 inches, (73 to 124 cm); 50 percent white (10YR 8/1) and 50 percent black (10YR 2/1) gravelly sand, 60 percent dark gray (10YR 4/1) and 40 percent black (10YR 2/1) moist; strong thin and medium platy structure; slightly hard, very friable, non-sticky, non-plastic; platy strata that are weakly iron cemented; 15 percent angular pebbles; strongly acid (pH 5.3); abrupt wavy boundary.

Ab1—49 to 54 inches, (124 to 137 cm); dark gray (10YR 4/1) sandy loam, black (10YR 2/1) moist; massive; soft, friable, non-sticky, non-plastic; common very fine interstitial pores; strongly acid (pH 5.3); clear wavy boundary.

Ab2—54 to 68 inches, (137 to 173 cm); grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; massive; soft, friable, non-sticky, non-plastic; common very fine interstitial pores; 20 percent angular pebbles; strongly acid (pH 5.3).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

Textures and colors are highly variable. The soil is highly stratified. The weighted average of the 10-inch- to 100-inch-zone (25-centimeter- to 39-centimeter-zone) is 3 to 10 percent clay and more than 80 percent sand. The surface soil has a thin dark layer due to additional organic matter.

A horizon:

Hue—10YR (dry and moist)
Value—5 (dry) and 3 (moist)
Chroma—2 (dry) and 1 (moist)
Texture—stratified gravelly sand to loam
Clay content—3 to 18 percent
Rock fragment content—0 to 12 percent
Organic matter content—5 to 9 percent
Reaction—strongly acid

C horizon:

Hue—10YR or 2.5Y (dry and moist)
Value—2 to 8 (dry) and 2 to 5 (moist)
Chroma—1 to 6 (dry and moist)
Texture—stratified gravelly sand to loam
Clay content—3 to 18 percent
Rock fragment content—0 to 29 percent
Organic matter content—0 to 3 percent
Reaction—strongly acid or moderately acid

Ab horizon:

Hue—10YR (dry and moist)
Value—4 or 5 (dry) and 2 or 3 (moist)
Chroma—1 or 2 (dry and moist)

Texture—stratified gravelly sand to loam
Clay content—6 to 12 percent
Rock fragment content—7 to 28 percent
Organic matter content—1 to 5 percent
Reaction—strongly acid

Nevadafalls Series

The Nevadafalls series consists of very deep, somewhat excessively drained soils that formed in colluvium or till derived from granitoid rock. These soils are on moraines, mountain slopes, landslides, bedrock benches, and stream terraces. Slope is 0 to 45 percent. The soils are classified as coarse-loamy, isotic, frigid Humic Dystroxerepts.

Typical Pedon

Nevadafalls-Waterwheel association, 0 to 35 percent slopes, moraines, frigid; Tuolumne County, California; approximately 650 feet (198.1 meters) northwest of Cottonwood Creek, 2,700 feet (823.0 meters) north of Cottonwood Meadow, approximately 2,000 feet (609.6 meters) east and 1,600 feet (487.7 meters) south of the northwest corner of section 33, T. 1 N., R. 20 E., Mount Diablo Base and Meridian; lat. 37 degrees 54 minutes 8.0 seconds N. and long. 119 degrees 47 minutes 02.2 seconds W.; USGS Lake Eleanor, California Quadrangle, NAD 83:

Oi—0 to 0 inches, (0 to 1 cm); slightly decomposed plant material; 1 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size.

A—0 to 6 inches, (1 to 14 cm); brown (10YR 4/3) loamy coarse sand, very dark grayish brown (10YR 3/2) moist; moderate coarse and medium subangular blocky structure; very friable, non-sticky, non-plastic; few medium and fine and many very fine roots; 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; slightly acid (pH 6.1); abrupt smooth boundary. (Lab sample # 01N00988)

Bw—6 to 17 inches, (14 to 43 cm); brown (10YR 5/3) loamy coarse sand, dark brown (10YR 3/3) moist; weak fine, medium, and coarse subangular blocky structure; very friable, non-sticky, non-plastic; few medium, common coarse and fine, and many very fine roots; 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; moderately acid (pH 5.8); gradual smooth boundary. (Lab sample # 01N00989)

C1—17 to 31 inches, (43 to 79 cm); yellowish brown (10YR 5/4) very cobbly loamy coarse sand, brown (10YR 4/3) moist; weak very fine granular structure; very friable, non-sticky, non-plastic; few very coarse and very fine and common coarse medium roots; 5 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, 15 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 15 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size; moderately acid (pH 5.6); gradual smooth boundary. (Lab sample # 01N00990)

C2—31 to 60 inches, (79 to 152 cm); light yellowish brown (10YR 6/4) very cobbly loamy coarse sand, dark yellowish brown (10YR 4/4) moist; single grain; very friable, non-sticky, non-plastic; common coarse and medium and few very coarse, fine, and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, 15 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, and 20 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5). (Lab sample # 01N00991)

Range in Characteristics

The mean annual soil temperature is less than 8.0 degrees C (46.4 degrees F). The particle-size control section has 1 to 12 percent clay and 60 to 85 percent sand. Rock fragment content is 2 to 70 percent, by volume. The soil has an umbric epipedon and/or a cambic horizon. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 5 percent.

A horizon:
- Hue—10YR or 7.5YR (dry and moist)
- Value—3 to 5 (dry) and 2 or 3 (moist)
- Chroma—2 to 4 (dry) and 1 or 2 (moist)
- Texture of the fine-earth fraction—loamy coarse sand, loamy sand, loamy fine sand, or sandy loam
- Clay content—1 to 6 percent
- Rock fragment content—2 to 25 percent
- Organic matter content—3 to 10 percent
- Reaction—strongly acid to slightly acid
- Other characteristics—some pedons have an AB or a BA horizon

Bw horizon:
- Hue—10YR or 7.5YR (dry and moist)
- Value—3 to 5 (dry) and 3 or 4 (moist)
- Chroma—3 or 4 (dry) and 2 or 3 (moist)
- Texture of the fine-earth fraction—loamy coarse sand, loamy sand, loamy fine sand, or sandy loam
- Clay content—1 to 12 percent
- Rock fragment content—2 to 60 percent
- Organic matter content—1 to 6 percent
- Reaction—strongly acid to slightly acid

C horizon:
- Hue—10YR or 7.5YR (dry and moist)
- Value—5 or 6 (dry) and 3 or 4 (moist)
- Chroma—3 or 4 (dry) and 2 to 4 (moist)
- Texture of the fine-earth fraction—loamy coarse sand, loamy sand, or sandy loam
- Clay content—1 to 6 percent
- Rock fragment content—2 to 70 percent
- Organic matter content—0.20 to 1.5 percent
- Reaction—strongly acid to slightly acid
- Other characteristics—some pedons do not have a C horizon

Additional characterization data for this Nevadafalls typical pedon, National Soil Survey Laboratory lab data pedon number 01N0143 (Pedon ID: 00CA109008), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Oxyaquic Cryorthents

Oxyaquic Cryorthents in the survey area consist of very deep, moderately well drained soils that formed in till from granitoid rock. These soils are in drainageways and on ground moraines. Slope is 0 to 8 percent. The soils are classified as coarse-loamy, isotic, nonacid Oxyaquic Cryorthents.

Typical Pedon

Oxyaquic Cryorthents-Canisrock complex, 0 to 15 percent slopes, ground moraines, wet/dry, cryic; Tuolumne County, California; approximately 2,900 feet (883.9 meters)

northeast of Gaylor Peak, approximately 1,100 feet (335.3 meters) north and 1,500 feet (457.2 meters) west of the southeast corner of section 25, T. 1 N., R. 24 E., Mount Diablo Base and Meridian; lat. 37 degrees 54 minutes 54.2 seconds N. and long. 119 degrees 36 minutes 23 seconds W.; USGS Tioga Pass, California Quadrangle NAD 83. (This pedon is representative but not completely typical of the Oxyaquic Cryorthents in this survey area because of the highly variable nature of these soils.)

A1—0 to 3 inches, (0 to 8 cm); light yellowish brown (2.5Y 6/3) sandy loam, dark brown (10YR 3/3) moist; massive; very friable, non-sticky, non-plastic; many fine and very fine and common medium roots; 2 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; moderately acid (pH 5.8); clear smooth boundary.

A2—3 to 13 inches, (8 to 32 cm); light yellowish brown (2.5Y 6/3) sandy loam, brown (10YR 4/3) moist; massive; very friable, non-sticky, non-plastic; common medium, fine, and very fine roots; 2 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; moderately acid (pH 6.0); abrupt smooth boundary.

2C1—13 to 18 inches, (32 to 46 cm); pale yellow (2.5Y 7/4) sandy loam, dark yellowish brown (10YR 4/6) moist; massive; very friable, non-sticky, non-plastic; common fine, medium, and very fine roots; 5 percent subangular very strongly cemented granodiorite fragments 76 to 250 mm in size and 5 percent subangular very strongly cemented granodiorite fragments 2 to 76 mm in size; moderately acid (pH 6.0); clear wavy boundary.

2C2—18 to 30 inches, (46 to 75 cm); pale yellow (2.5Y 7/3) loamy coarse sand, light olive brown (2.5Y 5/3) moist; massive; very friable, non-sticky, non-plastic; few fine and common very fine roots; 1 percent reddish yellow (7.5YR 6/8) and 30 percent yellowish brown (10YR 5/4) redoximorphic accumulations of iron; 2 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 7 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; moderately acid (pH 6.0); abrupt wavy boundary.

2C3—30 to 43 inches, (75 to 110 cm); light gray (2.5Y 7/2) coarse sand, light olive brown (2.5Y 5/3) moist; massive; loose, non-sticky, non-plastic; 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; moderately acid (pH 6.0).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

Oxyaquic Cryorthents are saturated with water in one or more layers within 100 centimeters of the mineral soil surface in normal years for either or both 20 or more consecutive days or 30 or more cumulative days. The particle-size control section has less than 35 percent, by weighted average, rock fragments. The content of surface rock fragments is 0 to 30 percent. Redoximorphic accumulation of iron commonly occurs in the lower part of the 2C horizon.

A horizon:

Hue—2.5Y (dry) and 10YR (moist)
Value—6 (dry) and 3 or 4 (moist)
Chroma—3 (dry and moist)
Texture of the fine-earth fraction—sandy loam
Clay content—2 to 6 percent
Rock fragment content—0 to 35 percent
Organic matter content—3 to 9 percent
Reaction—moderately acid or slightly acid

2C horizon:

Hue—2.5Y (dry) or 10YR (moist)

Value—7 (dry) and 4 or 5 (moist)
Chroma—2 to 4 (dry) and 3 to 6 (moist)
Texture of the fine-earth fraction—coarse sand, loamy coarse sand, or sandy loam
Clay content—0.2 to 8 percent
Rock fragment content—0 to 40 percent
Organic matter content—0.2 to 3 percent
Reaction—moderately acid or slightly acid

Oxyaquic Dystrocryepts

Oxyaquic Dystrocryepts in the survey area consist of very deep, moderately well drained soils that formed in colluvium, till, and/or alluvium from granitoid and a small percentage of metamorphic rock. These soils are on mountain slopes, in avalanche chutes, on mountain valleys, on flood plains, and in mountain canyons. Slope is 0 to 45 percent. The soils are classified as coarse-loamy, isotic, Oxyaquic Dystrocryepts.

Typical Pedon

Marmotland-Oxyaquic Dystrocryepts association, 0 to 8 percent slopes, mountain valleys, ground moraines, fluted, cryic; Tuolumne County, California; approximately 700 feet (213.4 meters) south of the John Muir Trail and 1,100 feet (335.3 meters) east of the Unicorn Creek Trail, approximately 450 feet (137.2 meters) west and 2,150 feet (655.3 meters) south of the northeast corner of section 8, T. 1 S., R. 24 E., Mount Diablo Base and Meridian; lat. 37 degrees 52 minutes 2.7 seconds N. and long. 119 degrees 21 minutes 4.8 seconds W.; USGS Vogelsang Peak, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Oxyaquic Dystrocryepts in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inches, (0 to 1 cm); slightly decomposed plant material; 1 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size.
Oa—0 to 2 inches, (1 to 4 cm); highly decomposed plant material; 1 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size.
A1—2 to 5 inches, (4 to 13 cm); brown (10YR 5/3) sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular and moderate coarse granular structure; very friable, non-sticky, non-plastic; few very coarse, coarse, and medium and common very fine roots; 7 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; very strongly acid (pH 4.8); clear wavy boundary. (Lab sample # 98P01846)
A2—5 to 12 inches, (13 to 30 cm); brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/3) moist; weak medium granular and weak coarse granular structure; friable, non-sticky, non-plastic; few coarse and medium and common fine, very coarse, and very fine roots; 4 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size and 5 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size; extremely acid (pH 4.4); gradual irregular boundary. (Lab sample # 98P01847)
Bw—12 to 19 inches, (30 to 48 cm); strong brown (7.5YR 4/6) cobbly sandy loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky and weak coarse granular structure; friable, non-sticky, non-plastic; few fine and medium and common very fine roots; 5 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size and 20 percent subangular very strongly cemented 75 to 250 mm in size; strongly acid (pH 5.3); gradual irregular boundary. (Lab sample # 98P01848)
C1—19 to 28 inches, (48 to 70 cm); 5 percent light gray (2.5Y 7/1) and 95 percent yellowish brown (10YR 5/4) gravelly coarse sandy loam, 5 percent gray (10YR 6/1) and 95 percent dark yellowish brown (10YR 4/4) moist; weak medium

subangular blocky and weak coarse granular structure; very friable, non-sticky, non-plastic; few fine and very fine roots; 30 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.4); gradual wavy boundary. (Lab sample # 98P01849)

C2—28 to 60 inches, (70 to 152 cm); light gray (2.5Y 7/1) very gravelly sandy loam, gray (10YR 6/1) moist; massive; friable, non-sticky, non-plastic; few very fine roots; 35 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.1). (Lab sample # 98P01850)

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level categories are therefore included with the concept of this component, such as loamy-skeletal, isotic Oxyaquic Dystrocryepts and sandy, isotic Oxyaquic Dystrocryepts.

Oxyaquic Dystrocryepts are saturated with water in one or more layers within 100 centimeters of the mineral soil surface in normal years for either or both 20 or more consecutive days or 30 or more cumulative days. They have an umbric epipedon and/or a cambic horizon. The mean annual soil temperature is about 4.5 degrees C. The mean summer soil temperature is about 8.5 degrees C. The mean winter soil temperature is about 1.5 degrees C. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 15 percent.

A horizon:

Hue—7.5YR or 10YR (dry and moist)
Value—4 or 5 (dry) and 2 or 3 (moist)
Chroma—2 to 4 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—coarse sand, loamy coarse sand, loamy sand, or sandy loam
Rock fragment content—0 to 30 percent
Clay content—0.5 to 10 percent
Organic matter content—1 to 10 percent
Reaction—extremely acid to moderately acid
Other characteristics—some pedons have an AB horizon

Bw horizon:

Hue—2.5YR, 5YR, 7.5YR, or 10YR (dry and moist)
Value—4 to 6 (dry) and 3 or 4 (moist)
Chroma—4 to 6 (dry and moist)
Texture of the fine-earth fraction—coarse sand, loamy coarse sand, loamy fine sand, or sandy loam
Rock fragment content—3 to 35 percent
Clay content—0.5 to 6 percent
Organic matter content—0.5 to 6 percent
Reaction—extremely acid to moderately acid

Bt horizon (if it occurs):

Hue—10YR (dry and moist)
Value—6 (dry) and 3 (moist)
Chroma—3 or 4 (dry) and 2 to 4 (moist)
Texture of the fine-earth fraction—sandy loam
Rock fragment content—0 to 34 percent
Clay content—2 to 10 percent
Organic matter content—2 to 7 percent
Reaction—extremely acid to strongly acid

C horizon:

Hue—2.5YR, 5YR, 7.5YR, 10YR, or 2.5Y (dry and moist)
Value—4 to 7 (dry) and 3 to 6 (moist)
Chroma—1 to 6 (dry) and 3 to 6 (moist)
Texture of the fine-earth fraction—coarse sand, loamy coarse sand, loamy sand, coarse sandy loam, or sandy loam
Rock fragment content—5 to 80 percent
Clay content—0.5 to 6 percent
Organic matter content—0.20 to 2.5 percent
Reaction—extremely acid to moderately acid
Other characteristics—some pedons have a Ct horizon

Additional characterization data for this Oxyaquic Dystrocryepts example pedon, National Soil Survey Laboratory lab data pedon number 98P0303 (Pedon ID: 97CA109017), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Oxyaquic Dystroxerepts

Oxyaquic Dystroxerepts in the survey area consist of very deep, moderately well drained soils that formed in colluvium and/or alluvium from granitoid rock and volcanic ash. These soils are on mountain valleys, ground moraines, flood plains, and terraces. Slope is 0 to 30 percent. The soils are classified as fine-loamy, isotic, frigid Oxyaquic Dystroxerepts.

Typical Pedon

Badgerpass-Oxyaquic Dystroxerepts association, 0 to 15 percent slopes, mountain valley floors, frigid; Mariposa County, California; approximately 6,600 feet (2,011.7 meters) east of Elevenmile Meadow and 1,300 feet south of Strawberry Creek, approximately 1,450 feet (442.0 meters) south and 2,650 feet (807.7 meters) west of the northeast corner of section 33., T. 3 S., R. 21 E., Mount Diablo Base and Meridian; lat. 37 degrees 37 minutes 58.1 seconds N. and long. 119 degrees 40 minutes 33.6 seconds W.; USGS El Capitan, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Oxyaquic Dystroxerepts in this survey area because of the highly variable nature of these soils.)

A—0 to 11 inches, (0 to 28 cm); grayish brown (10YR 5/2) loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; slightly sticky, slightly plastic; common fine, few medium, and many very fine roots; 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.5); gradual wavy boundary.

Bw1—11 to 19 inches, (28 to 47 cm); light gray (10YR 7/2) loam, 10 percent reddish brown (5YR 4/4) and 90 percent dark grayish brown (10YR 4/2) moist; massive; friable, moderately sticky, moderately plastic; few fine and very fine roots; 10 percent fine distinct dark grayish brown (10YR 4/2, moist) redoximorphic accumulations of iron; 7 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.5); clear wavy boundary.

Bw2—19 to 32 inches, (47 to 81 cm); pale yellow (2.5Y 7/3) gravelly clay loam, 30 percent strong brown (7.5YR 4/6) and 70 percent dark gray (5Y 4/1) moist; massive; friable, slightly sticky, moderately plastic; few very fine roots; 30 percent fine distinct strong brown (7.5YR 4/6, moist) redoximorphic accumulations of iron; 18 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.5); clear wavy boundary.

C1—32 to 43 inches, (81 to 108 cm); light gray (5Y 7/1) loam, 2 percent strong brown (7.5YR 5/8), 15 percent strong brown (7.5YR 4/6), and 83 percent gray (5Y 6/1) moist; massive; friable, slightly sticky, moderately plastic; 2 percent fine distinct strong brown (7.5YR 5/8) and 15 percent fine distinct strong brown (7.5YR 4/6, moist) redoximorphic accumulations of iron; strongly acid (pH 5.5); clear wavy boundary.
C2—43 to 60 inches, (108 to 152 cm); light gray (5Y 7/2) sandy clay loam, gray (5Y 6/1) moist; massive; friable, slightly sticky, moderately plastic; strongly acid (pH 5.5).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level categories are therefore included with the concept of this component, such as coarse-loamy, isotic, frigid Oxyaquic Dystrudepts and loamy-skeletal, isotic, mesic Oxyaquic Dystroxerepts.

Oxyaquic Dystroxerepts are saturated with water in one or more layers within 100 centimeters of the mineral soil surface in normal years for either or both 20 or more consecutive days or 30 or more cumulative days. They have an umbric epipedon and/or a cambic horizon. Some pedons have one or more O horizons. The content of surface rock fragments is 0 to 10 percent.

A horizon:

Hue—10YR and 7.5YR (dry and moist)
Value—5 (dry) and 2 or 3 (moist)
Chroma—2 to 4 (dry) and 2 or 3 (moist)
Texture of the fine-earth fraction—loamy sand, sandy loam, or loam
Clay content—2 to 18 percent
Rock fragment content—0 to 35 percent
Organic matter content—2 to 10 percent
Reaction—strongly acid or moderately acid

Bw horizon:

Hue—10YR or 2.5Y (dry) and 5YR, 7.5YR, 10YR, or 5Y (moist)
Value—6 or 7 (dry) and 3 or 4 (moist)
Chroma—2 or 4 (dry) and 1 to 6 (moist)
Texture of the fine-earth fraction—loamy sand, coarse sandy loam, sandy loam, loam, or clay loam
Clay content—1 to 35 percent
Rock fragment content—5 to 60 percent
Organic matter content—2 to 7 percent
Reaction—strongly acid or moderately acid

C horizon:

Hue—2.5Y or 5Y (dry) and 2.5Y, 5Y, 7.5YR, or 10YR (moist)
Value—6 or 7 (dry) and 4 to 6 (moist)
Chroma—1 to 6 (dry) and 1 to 8 (moist)
Texture of the fine-earth fraction—loamy coarse sand, loamy sand, coarse sandy loam, sandy loam, sandy clay loam, or loam
Clay content—1 to 30 percent
Rock fragment content—0 to 85 percent
Organic matter content—0.20 to 1.5 percent
Reaction—strongly acid or moderately acid

Oxyaquic Xerofluvents

Oxyaquic Xerofluvents in the survey area consist of very deep, somewhat poorly drained soils in the channel bar or natural levee position of low flood plains. These soils formed in coarse textured alluvium from granitoid rock. Slope is 0 to 4 percent. The soils are classified as isotic, mesic Oxyaquic Xerofluvents.

Typical Pedon

Oxyaquic Xerofluvents-Riverwash-Fluvaquents association, 0 to 2 percent slopes, mesic; Mariposa County, California; 75 feet (22.9 meters) east of the Merced River, Yosemite National Park, Yosemite Valley; lat. 37 degrees 44 minutes 27 seconds N. and long. 119 degrees 35 minutes 38 seconds W.; UTM Zone 11, easting 271440.44 and northing 4180298.59; USGS Half Dome, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Oxyaquic Xerofluvents in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0.5 inch, (0 to 1 cm); slightly decomposed lodgepole pine needles.
A1—0.5 inch to 2 inches, (1 to 4 cm); brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, non-sticky, non-plastic; common very fine roots; many very fine interstitial pores; moderately acid (pH 5.8); abrupt broken boundary.
A2—2 to 4 inches, (4 to 11 cm); brown (10YR 5/3) loamy coarse sand, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, non-sticky, non-plastic; many very fine and common fine roots; many very fine interstitial pores; moderately acid (pH 5.8); clear irregular boundary.
A3—4 to 10 inches, (11 to 26 cm); brown (10YR 5/3) loamy sand, dark brown (10YR 3/3) moist; massive; soft, very friable, non-sticky, non-plastic; many very fine and few fine roots; many very fine interstitial pores; moderately acid (pH 5.8); clear wavy boundary.
C1—10 to 17 inches, (26 to 44 cm); pale brown (10YR 6/3) coarse sand, dark yellowish brown (10YR 3/4) moist; single grain; loose, non-sticky, non-plastic; common coarse roots; many fine and common fine interstitial pores; moderately acid (pH 5.8); clear smooth boundary.
C2—17 to 28 inches, (44 to 72 cm); pale brown (10YR 6/3) sand, dark yellowish brown (10YR 3/4) moist; single grain; loose, non-sticky, non-plastic; many coarse roots; many very fine interstitial pores; moderately acid (pH 5.8); clear smooth boundary.
C3—28 to 39 inches, (72 to 100 cm); pale brown (10YR 6/3) sand and loamy fine sand, dark yellowish brown (10YR 3/4) moist; single grain; loose, non-sticky, non-plastic; few coarse roots; many very fine interstitial pores; few fine faint redoximorphic accumulations of iron, dark yellowish brown (10YR 4/4) moist; moderately acid (pH 5.8); clear smooth boundary.
C4—39 to 43 inches, (100 to 110 cm); light gray (10YR 7/2) sand, brown (10YR 4/3) and yellowish brown (10YR 5/6) moist; single grain; loose, non-sticky, non-plastic; many very fine and few fine interstitial pores; moderately acid (pH 5.8); clear smooth boundary.
C5—43 to 57 inches, (110 to 145 cm); light gray (10YR 7/2) coarse sand, brown (10YR 4/3) and yellowish brown (10YR 5/6) moist; single grain; loose, non-sticky, non-plastic; many very fine and few fine interstitial pores; moderately acid (pH 5.8); clear smooth boundary.
Ab—57 to 60 inches, (145 to 153 cm); brown (10YR 5/3) sand, very dark grayish brown (10YR 3/2) moist; common medium distinct strong brown (7.5YR 5/6, moist) mottles; single grain; loose, non-sticky, non-plastic; many very fine interstitial

pores; redoximorphic accumulations of iron at upper boundary; moderately acid (pH 5.8).

Range in Characteristics

This map unit component is represented at a taxonomic level higher that series because of the variability of the landscape at the scale of mapping.

Textures and colors are highly variable. The soil is highly stratified with thin strata. Redoximorphic accumulations of iron occur in some part of the C and Ab horizons.

A horizon:

Hue—10YR (dry and moist)
Value—5 (dry) and 3 (moist)
Chroma—3 (dry) and 2 or 3 (moist)
Texture of the fine-earth fraction—coarse sand, sand, loamy coarse sand, loamy sand, loamy fine sand, or fine sandy loam
Rock fragment content—0 to 15 percent
Clay content—1 to 10 percent
Organic matter content—2 to 9 percent
Reaction—moderately acid

C horizon:

Hue—10YR (dry and moist)
Value—6 or 7 (dry) and 3 to 5 (moist)
Chroma—2 or 3 (dry) and 3 or 4 (moist)
Texture—stratified gravelly sand to fine sandy loam
Rock fragment content—0 to 15 percent
Clay content—1 to 10 percent
Organic matter content—0.25 to 3 percent
Reaction—moderately acid

Ab horizon:

Hue—10YR or 7.5YR (dry and moist)
Value—5 (dry) and 3 (moist)
Chroma—3 (dry) and 2 to 6 (moist)
Texture—stratified gravelly sand to fine sandy loam
Rock fragment content—0 to 15 percent
Clay content—1 to 10 percent
Organic matter content—5 to 9 percent
Reaction—moderately acid

Riverwash

Riverwash consists of very deep, frequently flooded areas that are reworked by stream flow. Vegetation does not have time to become established because of the erosion and deposition. The material is gravelly, cobbly, or stony and commonly is very stratified sand to loamy fine sand primarily from granitoid rock sources. The areas are unstable.

Rock Outcrop

Rock outcrop consists of barren or nearly barren areas of exposed bedrock dominantly from granitoid rock. Vegetation is sparse. A few conifer trees grow in fractures of rock outcrop in some areas.

Rubble Land

Rubble land consists of small barren areas of colluvium below canyon walls at the edge of mountain valleys and moraines. The colluvium is 90 percent or more loose cobbles, stones, and boulders. The rocks are typically from granitoid sources.

Sentinel Series

The Sentinel series consists of very deep, well drained soils that formed in glaciolacustrine sediments weathered from granitoid rock and some volcanic ash. Slope is 0 to 2 percent. These soils are classified as coarse-loamy, isotic, mesic Vitrandic Dystroxerepts.

Typical Pedon

Sentinel loam, 0 to 2 percent slopes, mesic; Mariposa County, California; Yosemite Valley, about 200 yards northeast of the intersection of Southside Drive and the road north to El Capitan Bridge; lat. 37 degrees 43 minutes 18 seconds N. and long. 119 degrees 37 minutes 40 seconds W.; UTM Zone 11, easting 268392.21 and northing 4178194.56; USGS El Capitan, California Quadrangle, NAD 83:

Oi—0 to 1 inch, (0 to 3 cm); decomposing litter layer.
A1—1 to 5 inches, (3 to 13 cm); grayish brown (2.5Y 5/2) loam, dark brown (10YR 3/3) moist; strong fine granular structure; slightly hard, very friable, non-sticky, slightly plastic; moderately smeary; slightly acid (pH 6.5); clear smooth boundary.
A2—5 to 20 inches, (13 to 51 cm); brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, very friable, non-sticky, slightly plastic; moderately smeary; moderately acid (pH 5.8); clear smooth boundary.
A3—20 to 27 inches, (51 to 69 cm); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, very friable, non-sticky, slightly plastic; moderately smeary; moderately acid (pH 5.9); clear smooth boundary.
Bw—27 to 41 inches, (69 to 105 cm); light yellowish brown (10YR 6/4) loam, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; moderately smeary; few very fine sand or silt coatings on ped surfaces; moderately acid (pH 5.9); clear smooth boundary.
C1—41 to 56 inches, (105 to 143 cm); light yellowish brown (2.5Y 6/4) sandy loam, olive brown (2.5Y 4/4) moist; massive; slightly hard, very friable, non-sticky, slightly plastic; moderately smeary; slightly acid (pH 6.2); clear smooth boundary.
C2—55 to 66 inches, (143 to 168 cm); pale yellow (2.5Y 7/4) loamy sand, olive brown (2.5Y 4/4) moist; single grain; loose, non-sticky, non-plastic; slightly acid (pH 6.2).

Range in Characteristics

Thickness of the solum is 25 to 45 inches (63 to 114 centimeters). The mean annual soil temperature is 52 to 56 degrees F (11.1 to 13.3 degrees C). The soil temperature exceeds 41 degrees F (5 degrees C) from March through November and exceeds 47 degrees F (8.3 degrees C) from mid April through October. The difference between mean winter and mean summer soil temperatures is about 28 degrees F. The soil moisture control section is dry in all parts from early July to early November (140-160 days) and is moist in all parts from December to mid May. Fine gravel content is 0 to 5 percent. The sand fraction contains 5 to 20 percent volcanic glass and has other vitrandic properties. Reaction by sodium fluoride is 9.3 to 10.5. Base saturation by ammonium acetate is 50 to 70 percent in the upper part of the A horizon and decreases to 40 to 50 percent in the lower part of the A horizon. It is 35 to 45 percent in the Bw and C horizons.

A horizon:
Hue—10YR or 2.5Y (dry and moist)
Value—8 (dry) and 3 (moist)
Chroma—2 or 6 (dry and moist)
Texture—sandy loam, fine sandy loam, or loam
Clay content—3 to 12 percent
Organic matter content—1 to 8 percent
Reaction—moderately acid or slightly acid

Bw horizon:
Hue—10YR or 2.5Y (dry and moist)
Value—6 (dry) and 3 or 4 (moist)
Chroma—3 or 4 (dry and moist)
Texture—sandy loam, fine sandy loam, or loam
Clay content—3 to 10 percent
Organic matter content—0.5 to 2 percent
Reaction—moderately acid or slightly acid

C horizon:
Hue—2.5Y (dry and moist)
Value—6 or 7 (dry) and 4 (moist)
Chroma—4 (dry and moist)
Texture—sandy loam or loamy sand
Clay content—3 to 10 percent
Organic matter content—0 to 1.5 percent
Reaction—moderately acid or slightly acid

Terric Haplosaprists

Terric Haplosaprists in the survey area consist of deep, very poorly drained soils on low alluvial fans. These soils formed in mineral soils with thick layers of organic materials above the mineral soil. Slope is 0 to 3 percent. The soils are classified as isotic, euic, mesic Terric Haplosaprists.

Typical Pedon

Terric Haplosaprists, 0 to 3 percent slopes, mesic; Mariposa County, California; Bridalveil Meadow, Yosemite National Park, Yosemite Valley; lat. 37 degrees 43 minutes 2 seconds N. and long. 119 degrees 39 minutes 37 seconds W.; UTM Zone 11, easting 265520.41 and northing 4177757.42; USGS El Capitan, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Terric Haplosaprists in this survey area because of the highly variable nature of these soils.)

A—0 to 3 inches, (0 to 8 cm); very dark gray (10YR 3/1) mucky loam, black (10YR 2/1) moist; moderate fine and medium granular structure; soft, very friable, slightly sticky, slightly plastic; strongly acid (pH 5.3); abrupt smooth boundary.
C1—3 to 8 inches, (8 to 20 cm); very pale brown (10YR 7/3) gravelly sand, pale brown (10YR 6/3) moist; single grain; loose, non-sticky, non-plastic; strongly acid (pH 5.3); abrupt smooth boundary.
C2—8 to 12 inches, (20 to 30 cm); light gray (10YR 7/2) loamy fine sand, light brownish gray (10YR 6/2) and black (10YR 2/1) moist; massive; soft, very friable, non-sticky, non-plastic; strongly acid (pH 5.3) abrupt smooth boundary.
Oa—12 to 31 inches, (30 to 79 cm); very dark gray (N 3/0) muck, black (N 2/0) moist; 15 percent unrubbed fibers and 2 percent rubbed fibers; massive; soft; strongly acid (pH 5.3); clear smooth boundary.

Ab1—31 to 35 inches, (79 to 89 cm); gray (10YR 5/1) loam, very dark gray (10YR 3/1) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; strongly acid (pH 5.3); abrupt smooth boundary.

Ab2—35 to 38 inches, (89 to 97 cm); gray (10YR 5/1) sandy loam, very dark gray (10YR 3/1) moist; massive; soft, friable, slightly sticky, slightly plastic; strongly acid (pH 5.3); abrupt smooth boundary.

Bgb—38 to 46 inches, (97 to 117 cm); 40 percent light gray (5Y 6/1), 30 percent greenish gray (5GY 6/1), 30 percent gray (N 5/0), and 5 percent light greenish gray (5GY 7/1) loam, 40 percent gray (5Y 5/1), 30 percent greenish gray (5GY 5/1), 20 percent dark gray (N 4/0), and 5 percent greenish gray (5GY 6/1) moist; massive; soft, friable, slightly sticky, slightly plastic; strongly acid (pH 5.3); abrupt smooth boundary.

O´a—46 to 52 inches, (117 to 132 cm); very dark gray (N 3/0) muck, black (N 2/0) moist; 20 percent unrubbed fibers and 3 percent rubbed fibers; massive; soft; strongly acid (pH 5.3); clear smooth boundary.

A´b—52 to 58 inches, (132 to 147 cm); dark gray (N 4/0) sandy loam, very dark gray (N 3/0) moist; massive; soft, friable, slightly sticky, non-plastic; strongly acid (pH 5.3); clear smooth boundary.

B´gb—58 to 62 inches, (147 to 152 cm); 80 percent dark gray (10YR 4/1) and 20 percent gray (5Y 6/1) sandy loam, 80 percent very dark gray (10YR 3/1) and 20 percent dark gray (5Y 4/1) moist; massive; soft, friable, slightly sticky, non-plastic; strongly acid (pH 5.3).

Range in Characteristics

The overwash layer is less than 16 inches thick. Organic matter content of the O horizons is 35 to 55 percent. The rubbed fiber content is 2 to 10 percent. The O horizon is at least 16 inches (41 centimeters) thick. Thin mineral horizons occur. Mineral soil material that is 12 inches (30.5 centimeters) or more thick occurs between a depth of 16 to 53 inches (41 to 135 centimeters).

A horizon:

Hue—10YR (dry and moist)
Value—3 (dry) and 2 (moist)
Chroma—1 (dry and moist)
Texture—sandy loam, mucky loam, or loam
Clay content—12 to 18 percent
Rock fragment content—0 to 9 percent
Organic matter content—8 to 14 percent
Reaction—strongly acid

C horizon:

Hue—10YR (dry and moist)
Value—7 (dry) and 2 to 6 (moist)
Chroma—2 or 3 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—sand or loamy fine sand
Clay content—3 to 6 percent
Rock fragment content—0 to 23 percent
Organic matter content—1 to 7 percent
Reaction—strongly acid

Oa and O´a horizons:

Hue—neutral (dry and moist)
Value—3 (dry) and 2 (moist)
Chroma—0 (dry and moist)
Texture—muck
Clay content—0 to 7 percent

Rock fragment content—0 to 3 percent
Organic matter content—35 to 55 percent
Reaction—strongly acid

Ab and A´b horizons:
Hue—neutral or 10YR (dry and moist)
Value—4 or 5 (dry) and 3 (moist)
Chroma—0 or 1 (dry and moist)
Texture—sandy loam, mucky loam, or loam
Clay content—10 to 20 percent
Rock fragment content—0 to 9 percent
Organic matter content—3 to 9 percent
Reaction—strongly acid

Bgb and B´gb horizons:
Hue—10YR, 5Y, or 5GY or neutral
Value—4 to 7 (dry) and 3 to 6 (moist)
Chroma—0 or 1 (dry and moist)
Texture—sandy loam or loam
Clay content—7 to 20 percent
Rock fragment content—0 to 3 percent
Organic matter content—2 to 7 percent
Reaction—strongly acid

Tuolumne Series

The Tuolumne series consists of very deep, somewhat excessively drained soils that formed in colluvium, alluvium, and/or till from granitoid rock. These soils are on alluvial fans, mountain slopes, mountainsides, talus slopes, colluvial aprons, moraines, ancient landslides, avalanche chutes, bedrock benches, and bedrock joints. Slope is 15 to 70 percent. The soils are classified as sandy-skeletal, isotic, mesic Dystric Xerorthents.

Typical Pedon

Rock outcrop-Tuolumne-Humic Dystroxerepts-Rubble land complex, 30 to 100 percent slopes, mountainflanks, mesic; Tuolumne County, California; about 3,960 feet (1,207.0 meters) south-southeast of O'Shaughnessy Dam, approximately 2,590 feet (789.4 meters) east and 1,040 feet (317.0 meters) north of the southwest corner of section 16, T. 1 N., R. 20 E., Mount Diablo Base and Meridian; lat. 37 degrees 56 minutes 27.7 seconds N. and long. 119 degrees 46 minutes 56.5 seconds W.; USGS Lake Eleanor, California Quadrangle, NAD 83:

A—0 to 2 inches, (0 to 6 cm); dark grayish brown (2.5Y 4/2) cobbly loamy coarse sand, black (10YR 2/1) moist; weak very fine granular structure; soft, friable, non-sticky, non-plastic; common very coarse, coarse, medium, and fine and many very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, 10 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, and 17 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; slightly alkaline (pH 7.4); abrupt smooth boundary. (Lab sample # 99P01595)
AC—2 to 10 inches, (6 to 25 cm); light yellowish brown (2.5Y 6/3) very gravelly coarse sandy loam, dark grayish brown (10YR 4/2) moist; weak very fine granular structure; soft, friable, non-sticky, non-plastic; many very coarse, coarse, and very fine and common medium and fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, 7 percent subangular

very strongly cemented granitoid rock fragments 75 to 250 mm in size, and 30 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; neutral (pH 6.7); clear smooth boundary. (Lab sample # 99P01596)

C1—10 to 35 inches, (25 to 90 cm); light yellowish brown (2.5Y 6/3) very bouldery loamy coarse sand, brown (10YR 4/3) moist; weak very fine granular structure; soft, friable, non-sticky, non-plastic; many very coarse, coarse, and very fine and common fine and medium roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, 7 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, 15 percent subrounded very strongly cemented granitoid rock fragments 600 to 3000 mm in size, and 30 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; moderately acid (pH 6.0); gradual smooth boundary. (Lab sample # 99P01597)

C2—35 to 60 inches, (90 to 152 cm); light yellowish brown (2.5Y 6/4) gravelly coarse sand, brown (10YR 4/3) moist; single grain; soft, very friable, non-sticky, non-plastic; common coarse, medium, fine, and very fine roots; 5 percent subrounded very strongly cemented granitoid rock fragments 600 to 3000 mm in size, 5 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, 5 percent subangular very strongly cemented granitoid rock fragments 76 to 250 mm in size, and 17 percent subangular very strongly cemented granitoid rock fragments 2 to 76 mm in size; very strongly acid (pH 5.0). (Lab sample # 99P01598)

Range in Characteristics

The mean annual soil temperature is about 12 degrees C (54 degrees F). The particle-size control section has 0.5 to 6.0 percent clay and 65 to 95 percent sand. Rock fragment content is 0 to 85 percent, by volume. The particle-size control section, by weighted average, has 35 percent or more rock fragments. Some pedons have one or more O horizons. Surface rock fragments are 0 to 80 percent.

A horizon:

Hue—10YR (dry and moist)
Value—3 to 6 (dry) and 1 to 4 (moist)
Chroma—2 to 4 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—coarse sand, loamy coarse sand, loamy sand, coarse sandy loam, or sandy loam
Clay content—0.5 to 6 percent
Rock fragment content—7 to 50 percent
Organic matter content—0.5 to 10 percent
Reaction—very strongly acid to slightly alkaline
Other characteristics—some pedons have an Ab horizon

AC horizon:

Hue—10YR or 2.5Y (dry and moist)
Value—6 or 7 (dry) and 4 or 5 (moist)
Chroma—3 or 4 (dry) and 2 or 3 (moist)
Texture of the fine-earth fraction—coarse sandy loam or sandy loam
Clay content—2 to 4 percent
Rock fragment content—32 to 60 percent
Organic matter content—1 to 3 percent
Reaction—slightly acid or neutral

Bw horizon (if it occurs):

Hue—10YR or 2.5Y (dry and moist)
Value—6 or 7 (dry) and 4 or 5 (moist)
Chroma—3 or 4 (dry) and 2 or 3 (moist)

Texture of the fine-earth fraction—loamy coarse sand or loamy sand
Clay content—0.5 to 5 percent
Rock fragment content—22 to 75 percent
Organic matter content—1 to 8 percent
Reaction—very strongly acid to moderately acid

C horizon:
Hue—10YR or 2.5Y (dry and moist)
Value—5 to 7 (dry) and 4 to 6 (moist)
Chroma—2 to 6 (dry) and 2 to 4 (moist)
Texture of the fine-earth fraction—coarse sand, loamy coarse sand, or loamy sand
Clay content—0.1 to 5 percent
Rock fragment content—25 to 90 percent
Organic matter content—0.2 to 3 percent
Reaction—very strongly acid to neutral

Additional characterization data for this Tuolumne typical pedon, National Soil Survey Laboratory lab data pedon number 99P0314 (Pedon ID: 99CA109006), and for pedon numbers 00P0789 (Pedon ID: 00CA043003), 00P0786 (Pedon ID: 00CA109007), and 02N0615 (Pedon ID: 01CA043004) are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Typic Cryaquents

Typic Cryaquents in the survey area consist of very deep, somewhat poorly drained soils that formed in till and/or colluvium from granitoid rock. These soils are on moraines and colluvial aprons. Slope is 5 to 30 percent. The soils are classified as sandy-skeletal, isotic, Typic Cryaquents.

Typical Pedon

Canisrocks-Typic Cryaquents complex, 5 to 30 percent slopes, lateral moraines, aprons, wet/dry, cryic; Tuolumne County, California; approximately 6,550 feet (1,996.4 meters) north-northwest of Mammoth Peak; complete Public Land Survey System unavailable; T. 1 S., R. 24 E., Mount Diablo Base and Meridian; lat. 37 degrees 52 minutes 16.4 seconds N. and long. 119 degrees 16 minutes 29.3 seconds W.; USGS Vogelsang Peak, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Typic Cryaquents in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inches, (0 to 1 cm); bouldery slightly decomposed plant material; 7 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size and 8 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size.

Oe—0 to 1 inch, (1 to 2 cm); bouldery moderately decomposed plant material; 7 percent subrounded very strongly cemented granodiorite fragments 600 to 3000 mm in size and 8 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size.

A1—1 to 3 inches, (2 to 7 cm); gray (2.5Y 5/1) very fine sandy loam, very dark gray (10YR 3/1) moist; weak very fine subangular blocky structure; soft, very friable, non-sticky, non-plastic; common coarse, medium, and fine and many very fine roots; 2 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size and 8 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size; strongly acid (pH 5.5); abrupt smooth boundary.

A2—3 to 9 inches, (7 to 24 cm); light gray (2.5Y 7/1) very stony loamy very fine sand, very dark grayish brown (2.5Y 3/2) moist; weak medium subangular blocky structure; slightly hard, very friable, non-sticky, non-plastic; few very coarse,

medium, and fine and common coarse and very fine roots; 2 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granodiorite fragments 2 to 76 mm in size, and 30 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size; strongly acid (pH 5.5); clear wavy boundary.

C1—9 to 17 inches, (24 to 44 cm); light olive brown (2.5Y 5/3) very stony loamy sand, very dark grayish brown (10YR 3/2) moist; massive; loose, non-sticky, non-plastic; few coarse and fine and common very fine roots; 3 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 13 percent subangular very strongly cemented granodiorite fragments 2 to 76 mm in size, and 30 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size; strongly acid (pH 5.5); clear wavy boundary.

C2—17 to 60 inches, (44 to 152 cm); light yellowish brown (2.5Y 6/3) very stony loamy sand, dark grayish brown (10YR 4/2) moist; massive; loose, non-sticky, non-plastic; few very fine roots; 5 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size, and 30 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size; strongly acid (pH 5.5).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

The content of surface rock fragments is 2 to 45 percent.

A horizon:

Hue—2.5Y (dry) and 2.5Y or 10YR (moist)
Value—5 to 7 (dry) and 3 (moist)
Chroma—1 (dry) and 1 or 2 (moist)
Texture of the fine-earth fraction—loamy very fine sand, sandy loam, or very fine sandy loam
Clay content—1 to 5 percent
Rock fragment content—5 to 65 percent
Organic matter content—6 to 15 percent
Reaction—strongly acid or moderately acid

C horizon:

Hue—2.5Y (dry) and 10YR (moist)
Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—3 (dry) and 2 (moist)
Texture of the fine-earth fraction—sand or loamy sand
Clay content—1 to 7 percent
Rock fragment content—5 to 65 percent
Organic matter content—0.1 to 2.0 percent
Reaction—strongly acid or moderately acid

Typic Cryopsamments

Typic Cryopsamments in the survey area consists of very deep somewhat excessively drained soils that formed in till and/or colluvium from granitoid rock. These soils are on moraines and colluvial aprons. Slope is 5 to 30 percent. The soils are classified as isotic Typic Cryopsamments.

Typical Pedon

Typic Cryopsamments-Humic Dystrocryepts complex, 0 to 20 percent slopes,

mountain toeslopes, moraines, cryic; Mariposa County, California; Porcupine Creek Drainage, near the Merced River, approximately 3,960 feet north of the Porcupine Flat Campground, approximately 700 feet west and 300 feet north of the southwest corner of section 28, T. 1 S., R. 22 E., Mount Diablo Base and Meridian; lat. 37 degrees 49 minutes 10.3 seconds N. and long. 119 degrees 33 minutes 55.7 seconds W.; USGS Yosemite Falls, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Typic Cryopsamments in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inches, (0 to 1 cm); slightly decomposed plant material.
Oe—0 to 1 inch, (1 to 2 cm); moderately decomposed plant material.
A1—1 to 4 inches, (2 to 11 cm); dark yellowish brown (10YR 4/4) loamy coarse sand, dark brown (10YR 3/3) moist; weak medium granular structure; soft, very friable, non-sticky, non-plastic; few coarse, medium, and fine and many very fine roots; 8 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; very stongly acid (pH 4.8); abrupt smooth boundary. (Lab sample # 97P00877)
A2—4 to 15 inches, (11 to 37 cm); brown (10YR 5/3) loamy coarse sand, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, very friable, non-sticky, non-plastic; few very coarse and coarse, common medium and fine, and many very fine roots; 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; very strongly acid (pH 5.0); clear smooth boundary. (Lab sample # 97P00878)
Bw—15 to 32 inches, (37 to 82 cm); light yellowish brown (10YR 6/4) loamy coarse sand, dark yellowish brown (10YR 4/4) moist; moderate fine granular and moderate medium granular structure; soft, very friable, non-sticky, non-plastic; few very coarse, coarse, medium, and fine and common very fine roots; 6 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.3); clear smooth boundary. (Lab sample # 97P00879)
C1—32 to 43 inches, (82 to 109 cm); light brown (7.5YR 6/4) loamy coarse sand, light yellowish brown (10YR 6/4) moist; weak fine granular structure; soft, very friable, non-sticky, non-plastic; few fine and few very fine roots; 5 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 7 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.4); clear smooth boundary. (Lab sample # 97P00880)
C2—43 to 60 inches, (109 to 152 cm); pale yellow (2.5Y 7/4) gravelly loamy coarse sand, light olive brown (2.5Y 5/3) moist; weak fine granular structure; soft, very friable, non-sticky, non-plastic; few fine roots; 5 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 20 percent subangular very strongly cemented granodiorite fragments 2 to 76 mm in size; strongly acid (pH 5.4).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level categories are therefore included with the concept of this component, such as isotic, mesic Typic Xeropsamments.

The particle-size control section has less than 35 percent rock fragments (by volume), a texture coarser than loamy fine sand in all layers, and 0.5 to 6.0 percent clay. The content of surface rock fragments is 0 to 5 percent.

A horizon:

Hue—2.5Y or 10YR (dry) and 10YR (moist)
Value—4 or 5 (dry) and 3 (moist)
Chroma—2 to 4 (dry and moist)

Texture of the fine-earth fraction—loamy coarse sand or loamy sand
Rock fragment content—2 to 20 percent
Organic matter content—2 to 10 percent
Reaction—very strongly acid to moderately acid

Bw horizon:
Hue—10YR (dry and moist)
Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—4 (dry and moist)
Texture of the fine-earth fraction—loamy coarse sand or loamy sand
Rock fragment content—0 to 10 percent
Organic matter content—0.75 to 5 percent
Reaction—very strongly acid to moderately acid

C horizon:
Hue—7.5YR, 10YR, or 2.5Y (dry and moist)
Value—6 or 7 (dry) and 4 to 6 (moist)
Chroma—2 to 4 (dry and moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, or loamy sand
Rock fragment content—5 to 35 percent
Organic matter content—0.2 to 3 percent
Reaction—very strongly acid to moderately acid

Additional characterization data for this Typic Cryopsamments example pedon, National Soil Survey Laboratory lab data pedon number 97P0130 (Pedon ID: 96CA043001), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Typic Cryorthents

Typic Cryorthents in the survey area consist of very deep, somewhat excessively drained soils on periglacial cirques, fan aprons, mountain crests, mountain slopes, moraines, flood plains, and mountainsides and in small mountain valleys. These soils formed in colluvium, alluvium, and or/till derived from granitoid and/or metamorphic rock. Slope is 0 to 80 percent. The soils are classified as loamy-skeletal, isotic, acid Typic Cryorthents.

Typical Pedon

Glacierpoint-Typic Cryorthents complex, 30 to 65 percent slopes, mountain slopes, lateral moraines, aprons, cryic; Mariposa County, California; approximately 5,000 feet (1,524 meters) north-northwest of the summit of Tuolumne Peak, approximately 700 feet (213.4 meters) east of the South Fork of Cathedral Creek, approximately 900 feet (274.3 meters) south and 700 feet (213.4 meters) west of the northeast corner of section 1, T. 1 S., R. 22 E., Mount Diablo Base and Meridian; lat. 37 degrees 53 minutes 11.4 seconds N. and long. 119 degrees 29 minutes 40.6 seconds W.; USGS Falls Ridge, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Typic Cryorthents in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inches, (0 to 1 cm); stony slightly decomposed plant material; 5 percent subangular very strongly cemented granitic rock fragments 75 to 250 mm and 250 to 600 mm in size and 7 percent very strongly cemented granitic rock fragments 2 to 75 mm in size; abrupt smooth boundary.
A—0 to 4 inches, (1 to 9 cm); light olive brown (2.5Y 5/3) very stony sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; very friable, non-sticky, non-plastic; few fine, medium, and coarse and

many very fine roots; 10 percent subangular very strongly cemented granitic rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granitic rock fragments 250 to 600 mm in size, and 15 percent subangular very strongly cemented granitic rock fragments 2 to 75 mm in size; strongly acid (pH 5.3); clear smooth boundary.

AC—4 to 10 inches, (9 to 25 cm); yellowish brown (10YR 5/4) very stony sandy loam, dark brown (10YR 3/3) moist; weak very fine granular structure; very friable, slightly sticky, non-plastic; few fine and coarse, common medium and very coarse, and many very fine roots; 10 percent subangular very strongly cemented granitic rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granitic rock fragments 250 to 600 mm in size, and 15 percent subangular very strongly cemented granitic rock fragments 2 to 75 mm in size; strongly acid (pH 5.3); clear wavy boundary.

C1—10 to 16 inches, (25 to 41 cm); light yellowish brown (10YR 6/4) very stony sandy loam, brown (10YR 4/3) moist; weak very fine granular structure; very friable, slightly sticky, non-plastic; few fine and coarse, common medium and very coarse, and many very fine roots; 10 percent subangular very strongly cemented granitic rock fragments 250 to 600 mm in size, 15 percent subangular very strongly cemented granitic rock fragments 2 to 75 mm in size, and 15 percent subangular very strongly cemented granitic rock fragments 75 to 250 mm in size; strongly acid (pH 5.3); clear wavy boundary.

C2—16 to 30 inches, (41 to 76 cm); light yellowish brown (2.5Y 6/4) very stony sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky and moderate medium granular structure; very friable, slightly sticky, non-plastic; few very fine, fine, medium, coarse, and very coarse roots; 10 percent subangular very strongly cemented granitic rock fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granitic rock fragments 250 to 600 mm in size, and 15 percent subangular very strongly cemented granitic rock fragments 2 to 75 mm in size; strongly acid (pH 5.3); clear wavy boundary.

C3—30 to 60 inches, (76 to 152 cm); light yellowish brown (2.5Y 6/4) very stony sandy loam, dark yellowish brown (10YR 4/4) moist; massive; very friable, non-sticky, non-plastic; few fine and coarse roots; 5 percent subangular very strongly cemented granitic rock fragments 250 to 600 mm in size, 10 percent subangular very strongly cemented granitic rock fragments 75 to 250 mm in size, and 20 percent subangular very strongly cemented granitic rock fragments 2 to 75 mm in size; strongly acid (pH 5.3).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Several similar family level categories are therefore included with the concept of this component, such as loamy-skeletal, isotic, nonacid Typic Cryorthents and sandy-skeletal, isotic Typic Cryorthents.

The mean annual soil temperature is about 4.5 degrees C. The mean summer soil temperature is about 8.5 degrees C. The mean winter soil temperature is about 1.5 degrees C. Typic Cryorthents do not have a cambic horizon and/or an umbric epipedon. The particle-size control section has 0.5 to 10.0 percent clay. Rock fragment content is 0 to 85 percent, by volume. The particle-size control section, by weighted average, has 35 percent or more rock fragments. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 90 percent. Pedons with a Bw horizon have textures that are coarser than loamy fine sand.

A horizon:

Hue—10YR or 2.5Y (dry and moist)

Value—5 to 7 (dry) and 2 to 4 (moist)

Chroma—1 to 6 (dry) and 1 to 4 (moist)
Texture of the fine-earth fraction—coarse sand, sand, loamy coarse sand, loamy fine sand, loamy sand, sandy loam, fine sandy loam, or loam
Organic matter content—1 to 9 percent
Reaction—very strongly acid or strongly acid
Other characteristics—some pedons have an AC horizon

Bw horizon (if it occurs):
Hue—10YR or 2.5Y (dry and moist)
Value—5 to 7 (dry) and 3 or 4 (moist)
Chroma—1 to 6 (dry) and 2 to 4 (moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, or loamy sand
Organic matter content—0.5 to 7 percent
Reaction—very strongly acid or strongly acid

C horizon:
Hue—10YR or 2.5YR (dry and moist)
Value—5 to 7 (dry) and 3 to 6 (moist)
Chroma—2 to 6 (dry) and 1 to 5 (moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, loamy sand, sandy loam, or fine sandy loam
Organic matter content—0.2 to 2 percent
Reaction—very strongly acid or strongly acid
Other characteristics—some pedons have a moderately deep Cd horizon

Typic Dystroxerepts

Typic Dystroxerepts in the survey area consist of very deep, well drained to somewhat excessively drained soils that formed in colluvium, alluvium, and/or till from granitoid and/or metamorphic rock. These soils are on mountain slopes, moraines, flood plains, landslides, and terraces and in mountain valleys. Slope is 0 to 70 percent. The soils are classified as coarse-loamy, isotic, frigid Typic Dystroxerepts.

Typical Pedon

Typic Dystroxerepts-Humic Dystroxerepts-Rock outcrop association, 15 to 45 percent slopes, mountain slopes, frigid; Mariposa County, California; approximately 500 feet (152.4 meters) west of Rail Creek and 400 feet (121.9 meters) north of Wawona Road, approximately 2,150 feet (655.3 meters) north and 250 feet (76.2 meters) west of the southeast corner of section 29, T. 3 S., R. 21 E., Mount Diablo Base and Meridian; lat. 37 degrees 38 minutes 34.5 seconds N. and long. 119 degrees 47 minutes 2.2 seconds N.; USGS El Capitan, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Typic Dystroxerepts in this survey area because of the highly variable nature of these soils.)

Oi—0 to 1 inch, (0 to 2 cm); slightly decomposed plant material; 1 percent subrounded very strongly cemented granitoid rock fragments 250 to 600 mm in size.
Oe—1 to 2 inches, (2 to 4 cm); moderately decomposed plant material; 1 percent subrounded very strongly cemented granitoid rock fragments 250 to 600 mm in size.
A—2 to 4 inches, (4 to 10 cm); grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; strong coarse granular and strong fine subangular blocky structure; slightly hard, very friable, non-sticky, non-plastic; few fine and many very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5); abrupt wavy boundary.
AB—4 to 8 inches, (10 to 20 cm); brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; moderate coarse angular blocky and moderate coarse subangular blocky

structure; slightly hard, very friable, non-sticky, slightly plastic; few coarse, fine, and very fine, common fine and medium, and many very fine roots; 2 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size and 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size; strongly acid (pH 5.5); abrupt wavy boundary.

Bw1—8 to 15 inches, (20 to 37 cm); yellowish brown (10YR 5/4) sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky and moderate coarse subangular blocky structure; slightly hard, friable, non-sticky, slightly plastic; common very coarse and many coarse, medium, fine, and very fine roots; 3 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5); abrupt wavy boundary.

Bw2—15 to 24 inches, (37 to 60 cm); yellowish brown (10YR 5/4) sandy loam, brown (10YR 5/3) moist; moderate coarse, moderate medium, and moderate fine subangular blocky structure; soft, very friable, non-sticky, slightly plastic; many very coarse, medium, fine, and very fine and common fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5); abrupt wavy boundary.

C1—24 to 36 inches, (60 to 92 cm); pale brown (10YR 6/3) sandy loam, yellowish brown (10YR 5/4) moist; strong medium subangular blocky structure; slightly hard, very friable, non-sticky, slightly plastic; few very coarse, coarse, medium, fine, and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5); gradual smooth boundary.

C2—36 to 60 inches, (92 to 152 cm); pale brown (10YR 6/3) sandy loam, yellowish brown (10YR 5/4) moist; soft, very friable, non-sticky, slightly plastic; few fine and medium roots; 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level and levels above family categories are therefore included with the concept of this component, such as coarse-loamy, isotic, mesic Typic Dystroxerepts; loamy-skeletal, isotic, frigid Typic Dystroxerepts; loamy-skeletal, isotic, mesic Typic Dystroxerepts; sandy, isotic, frigid Typic Dystroxerepts; and sandy-skeletal, isotic, frigid Typic Dystroxerepts.

Typic Dystroxerepts have an umbric epipedon and/or a cambic horizon. Some pedons do not have one or more O horizons. The content of surface rock fragments is 0 to 30 percent.

A horizon:

Hue—7.5YR or 10YR (dry and moist)
Value—4 or 5 (dry) and 2 to 4 (moist)
Chroma—2 or 3 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—loamy coarse sand, loamy sand, coarse sandy loam, sandy loam, or fine sandy loam
Clay content—1 to 12 percent
Rock fragment content—0 to 55 percent
Organic matter content—2 to 18 percent
Reaction—very strongly acid to neutral
Other characteristics—some pedons do not have an AB horizon

AB and Bw horizons (if they occur):

Hue—7.5YR or 10YR (dry and moist)
Value—4 to 6 (dry) and 4 or 5 (moist)
Chroma—3 or 4 (dry) and 2 to 5 (moist)

Texture of the fine-earth fraction—loamy coarse sand, loamy sand, coarse sandy loam, sandy loam, or fine sandy loam
Clay content—2 to 14 percent
Rock fragment content—0 to 85 percent
Organic matter content—0.2 to 9 percent
Reaction—very strongly acid to neutral
Other characteristics—some pedons have a Bt horizon

C horizon:
Hue—7.5YR or 10YR
Value—5 to 7 (dry) and 4 to 6 (moist)
Chroma—2 to 6 (dry and moist)
Texture of the fine-earth fraction—loamy coarse sand, loamy sand, coarse sandy loam, sandy loam, or fine sandy loam
Clay content—1 to 12 percent
Rock fragment content—0 to 85 percent
Organic matter content—0.2 to 1.75 percent
Reaction—strongly acid to neutral
Other characteristics—some pedons have a moderately deep Cr horizon

Typic Haploxerults

Typic Haploxerults in the survey area consist of very deep, well drained soils that formed in colluvium and/or residuum from granitoid and/or metamorphic rock. These soils are on mountain slopes and ancient landslides. Slope is 0 to 65 percent. The soils are classified as fine-loamy, isotic, mesic Typic Haploxerults.

Typical Pedon

Humic Dystroxerepts-Typic Haploxerults complex, 5 to 35 percent slopes, mountain footslopes, landslides, mesic; Tuolumne County, California; midway between Hodgdon Meadow and Tuolumne Grove on the road to the Sequoia Grove, approximately 800 feet (243.8 meters) south and 2,700 feet (823.0 meters) east of the northwest corner of section 12, T. 2 S., R. 19 E., Mount Diablo Base and Meridian; lat. 37 degrees 46 minutes 50.1 seconds N. and long. 119 degrees 49 minutes 25.3 seconds W.; USGS Ackerson Mountain, California Quadrangle NAD 83. (This pedon is representative but not completely typical of the Typic Haploxerults in this survey area because of the highly variable nature of these soils.)

Oi—0 to 2 inches, (0 to 5 cm); slightly decomposed plant material; 1 percent subangular very strongly cemented granitoid fragments 2 to 75 mm in size.
Oe—2 to 4 inches, (5 to 9 cm); moderately decomposed plant material; 1 percent subangular very strongly cemented granitoid fragments 2 to 75 mm in size.
A1—4 to 7 inches, (9 to 17 cm); yellowish brown (10YR 5/4) gravelly coarse sandy loam, dark brown (7.5YR 3/2) moist; moderate medium granular and moderate fine granular structure; loose, non-sticky, non-plastic; few fine and many very fine roots; 2 percent subangular very strongly cemented granitoid fragments 250 to 600 mm in size, 5 percent subangular very strongly cemented granitoid fragments 75 to 250 mm in size, and 15 percent subangular very strongly cemented granitoid fragments 2 to 75 mm in size; strongly acid (pH 5.5); clear wavy boundary.
A2—7 to 10 inches, (17 to 24 cm); yellowish brown (10YR 5/4) cobbly sandy loam, dark brown (7.5YR 3/3) moist; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky, non-plastic; few fine and common very fine roots; 2 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, and 10 percent subangular very strongly

cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5); clear wavy boundary.

Bt1—10 to 16 inches, (24 to 40 cm); brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; massive; moderately hard, firm, moderately sticky, moderately plastic; few medium, fine, and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5); clear smooth boundary.

Bt2—16 to 23 inches, (40 to 56 cm); strong brown (7.5YR 4/6) cobbly clay loam, yellowish red (5YR 4/6) moist; massive; hard, firm, moderately sticky, moderately plastic; few medium and very fine roots; 3 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, 4 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, and 10 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size; strongly acid (pH 5.5); gradual smooth boundary.

Bt3—23 to 60 inches, (56 to 152 cm); yellowish red (5YR 5/6) stony clay loam, yellowish red (5YR 4/6) moist; massive; hard, firm, moderately sticky, moderately plastic; 2 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, and 10 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size; strongly acid (pH 5.5).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level categories are therefore included with the concept of this component, such as coarse-loamy, isotic, frigid Typic Haploxerults.

Typic Haploxerults have less than 35 percent base saturation (by sum of cations) at 125 centimeters below the upper boundary of the argillic horizon. The particle-size control section averages less than 35 percent clay. The content of surface rock fragments is 0 to 5 percent.

A horizon:

Hue—10YR or 2.5Y (dry) and 10YR or 7.5YR (moist)
Value—4 or 5 (dry) and 3 or 4 (moist)
Chroma—3 or 4 (dry) and 2 or 3 (moist)
Texture of the fine-earth fraction—loamy coarse sand, coarse sandy loam, sandy loam, or loam
Clay content—0.5 to 18 percent
Rock fragment content—0 to 35 percent
Organic matter content—6 to 10 percent
Reaction—extremely acid to slightly acid
Other characteristics—some pedons have an AB horizon

Bt horizon:

Hue—5YR, 7.5YR, or 10YR (dry and moist)
Value—4 to 7 (dry) and 4 to 6 (moist)
Chroma—4 to 8 (dry) and 3 to 8 (moist)
Texture of the fine-earth fraction—sandy loam, loam, sandy clay loam, or clay loam
Clay content—6 to 40 percent
Rock fragment content—0 to 35 percent
Organic matter content—0.2 to 4 percent
Reaction—extremely acid to moderately acid
Other characteristics—some pedons have a C horizon

Typic Xerorthents

Typic Xerorthents in the survey area consist of moderately deep or very deep, somewhat excessively drained soils on moraines and mountain slopes. These soils formed in colluvium from granitoid rock. Slope is 0 to 100 percent. The soils are classified as sandy-skeletal, isotic, thermic Typic Xerorthents.

Typical Pedon

Typic Xerorthents, 45 to 100 percent slopes, mountain slopes, thermic; Mariposa County, California; on a steep slope south of the Highway 140 bridge over the Merced River, 1,500 feet (457.2 meters) north and 1,000 feet (304.8 meters) east of the southwest corner of section 17, T. 3 S., R. 20 E., Mount Diablo Base and Meridian; lat. 37 degrees 40 minutes 16.9 seconds N. and long. 119 degrees 46 minutes 37.1 seconds W.; USGS El Portal, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Typic Xerorthents in this survey area because of the highly variable nature of these soils.)

Oe—0 to 0 inches, (0 to 1 cm); bouldery moderately decomposed plant material.

A—0 to 7 inches, (1 to 18 cm); brown (10YR 5/3) gravelly sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky and moderate medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; common fine and many very fine roots; 15 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; neutral (pH 6.6); clear irregular boundary. (Lab sample # 99P01599)

Bw1—7 to 24 inches, (18 to 61 cm); brown (10YR 5/3) cobbly loamy sand, light yellowish brown (10YR 6/4) moist; moderate fine and medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; common coarse, medium, fine, and very fine roots; 10 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 11 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; moderately acid (pH 5.9); gradual wavy boundary. (Lab sample # 99P01600)

Bw2—24 to 42 inches, (61 to 106 cm); yellowish brown (10YR 5/4) extremely stony loamy coarse sand, dark yellowish brown (10YR 4/6) moist; moderate fine and medium subangular blocky structure; soft, very friable, non-sticky, non-plastic; common very coarse, coarse, medium, fine, and very fine roots; 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size, 10 percent subangular very strongly cemented granodiorite fragments 76 to 250 mm in size, and 50 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size; moderately acid (pH 6.0); gradual wavy boundary. (Lab sample # 99P01601)

C—42 inches, (106 cm); yellowish brown (10YR 5/4) extremely stony coarse sand, dark yellowish brown (10YR 4/6) moist; massive; very friable, non-sticky, non-plastic; few coarse, fine, and very fine roots; 10 percent very strongly cemented granodiorite fragments 2 to 75 mm in size and 50 percent very strongly cemented granodiorite fragments 75 to 250 mm in size; moderately acid (pH 6.0). (Lab sample # 99P01602)

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Several similar family level categories are therefore included with the concept of this component, such as loamy-skeletal, isotic, nonacid, mesic Typic Xerorthents and sandy-skeletal, isotic, mesic Typic Xerorthents.

Typic Xerorthents do not have a cambic horizon and/or an umbric epipedon. Some pedons do not have one or more O horizons. The content of surface rock fragments is

0 to 40 percent. Pedons with a Bw horizon have textures that are coarser than loamy fine sand.

A horizon:
- Hue—10YR (dry and moist)
- Value—4 to 6 (dry) and 3 or 4 (moist)
- Chroma—2 or 3 (dry) and 1 to 3 (moist)
- Texture of the fine-earth fraction—loamy coarse sand, loamy sand, coarse sandy loam, or sandy loam
- Clay content—2 to 9 percent
- Rock fragment content—5 to 20 percent
- Organic matter content—5 to 9 percent
- Reaction—very strongly acid to neutral

Bw horizon (if it occurs):
- Hue—10YR (dry and moist)
- Value—4 to 6 (dry) and 3 to 6 (moist)
- Chroma—2 to 4 (dry) and 4 to 6 (moist)
- Texture of the fine-earth fraction—loamy coarse sand or loamy sand
- Clay content—2 to 9 percent
- Rock fragment content—7 to 65 percent
- Organic matter content—0.2 to 4 percent
- Reaction—very strongly acid to neutral

C horizon:
- Hue—10YR (dry and moist)
- Value—6 or 7 (dry) and 4 or 5 (moist)
- Chroma—3 to 5 (dry) and 3 to 6 (moist)
- Texture of the fine-earth fraction—sand or sandy loam
- Rock fragment content—50 to 85 percent
- Organic matter content—0.1 to 0.75 percent
- Reaction—strongly acid to neutral
- Other characteristics—some pedons have a moderately deep Cr horizon

Additional characterization data for this Typic Xerorthents example pedon, National Soil Survey Laboratory lab data pedon number 99P0315 (Pedon ID: 99CA043001), and for pedon numbers 98P0196 (Pedon ID: 97CA043014) and 99P0321 (Pedon ID: 99CA043002) are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Ultic Haploxeralfs

Ultic Haploxeralfs in the survey area consist of very deep, well drained or somewhat excessively drained soils that formed in colluvium, till, and/or residuum dominantly from granitoid and/or metamorphic rock. These soils are on mountain slopes, moraines, and ancient landslides. Slope is 0 to 100 percent. The soils are classified as coarse-loamy, isotic, mesic Ultic Haploxeralfs.

Typical Pedon

Humic Dystroxerepts-Ultic Haploxeralfs complex, 15 to 35 percent slopes, mountain slopes, moraines, mesic; Mariposa County, California; approximately 1,320 feet (402.3 meters) south of the Wawona River, above the South Fork of the Merced River, approximately 2,000 feet (609.6 meters) north and 1,200 feet (365.8 meters) west of the southeast corner of section 35, T. 4 S., R. 21 E., Mount Diablo Base and Meridian; lat. 37 degrees 32 minutes 32.4 seconds N. and long. 119 degrees 38 minutes 8.0 seconds W.; USGS Wawona, California Quadrangle, NAD 83. (This pedon is

representative but not completely typical of the Ultic Haploxeralfs in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inches, (0 to 1 cm); slightly decomposed plant material; 1 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 2 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size.

Oe—0 to 1 inch, (1 to 2 cm); moderately decomposed plant material; 1 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 2 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size.

A—1 to 8 inches, (2 to 20 cm); yellowish brown (10YR 5/4) stony sandy loam, dark brown (10YR 3/3) moist; moderate fine granular and moderate medium subangular blocky structure; friable, non-sticky, slightly plastic; few coarse, common medium, and many fine and very fine roots; 3 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 5 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size, and 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.5); clear wavy boundary.

Bw—8 to 17 inches, (20 to 42 cm); yellowish brown (10YR 5/4) sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very coarse, coarse, and very fine and common fine and medium roots; 4 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.5); clear wavy boundary.

Bt1—17 to 28 inches, (42 to 70 cm); yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very coarse and coarse medium and fine roots; 1 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 5 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size, and 15 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.5); gradual wavy boundary.

Bt2—28 to 48 inches, (70 to 122 cm); yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist, moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few coarse fine and common medium roots; 2 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.5); gradual wavy boundary.

C—48 to 60 inches, (122 to 152 cm); light yellowish brown (10YR 6/4) sandy loam, yellowish brown (10YR 5/4) moist; massive; friable, slightly sticky, slightly plastic; 7 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.5).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Several similar family level categories are therefore included with the concept of this component, such as coarse-loamy, isotic, frigid Ultic Haploxeralfs; coarse-loamy, isotic, thermic Ultic Haploxeralfs; fine-loamy, isotic, mesic Ultic Haploxeralfs; and loamy-skeletal, isotic, thermic Ultic Haploxeralfs.

Some pedons have one or more O horizons. The content of surface rock fragments is 0 to 100 percent.

A horizon:
- Hue—10YR or 7.5YR (dry and moist)
- Value—4 or 5 (dry) and 2 to 4 (moist)
- Chroma—3 or 4 (dry) and 2 or 3 (moist)
- Texture of the fine-earth fraction—sandy loam, loam, or sandy clay loam
- Clay content—3 to 20 percent
- Rock fragment content—0 to 60 percent
- Organic matter content—2 to 10 percent
- Reaction—strongly acid to neutral

Bw horizon (if it occurs):
- Hue—10YR or 7.5YR (dry and moist)
- Value—5 or 6 (dry) and 3 to 5 (moist)
- Chroma—3 to 6 (dry) and 3 or 4 (moist)
- Texture of the fine-earth fraction—sandy loam, loam, or sandy clay loam
- Clay content—3 to 20 percent
- Rock fragment content—4 to 40 percent
- Organic matter content—1 to 5 percent
- Reaction—strongly acid to slightly acid

Bt horizon:
- Hue—10YR or 7.5YR (dry and moist)
- Value—4 to 6 (dry) and 3 to 5 (moist)
- Chroma—3 to 6 (dry) and 3 or 4 (moist)
- Texture of the fine-earth fraction—sandy loam, fine sandy loam, loam, or sandy clay loam
- Clay content—5 to 27 percent
- Rock fragment content—0 to 70 percent
- Organic matter content—0.2 to 7 percent
- Reaction—strongly acid to neutral

C horizon:
- Hue—10YR or 2.5YR (dry and moist)
- Value—4 to 8 (dry) and 3 to 6 (moist)
- Chroma—4 to 8 (dry) and 2 to 6 (moist)
- Texture of the fine-earth fraction—sandy loam, loam, or sandy clay loam
- Clay content—3 to 20 percent
- Rock fragment content—2 to 15 percent
- Organic matter content—0.20 to 0.75 percent
- Reaction—strongly acid or moderately acid
- Other characteristics—some pedons have a Ct horizon that is very bouldery sandy clay loam

Additional characterization data for Ultic Haploxeralfs example pedons, National Soil Survey Laboratory lab data pedon number 98P0193 (Pedon ID: 97CA043011) and lab data pedon number 99P0316 (Pedon ID: 99CA109002), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Ultic Palexeralfs

Ultic Palexeralfs in the survey area consist of very deep, well drained soils that formed in colluvium and/or residuum from metamorphic rock. These soils are on

mountain slopes and ancient landslides. Slope is 0 to 45 percent. The soils are classified as fine-loamy, isotic, frigid Ultic Palexeralfs.

Typical Pedon

Clarkslodge-Ultic Palexeralfs complex, metasedimentary, 15 to 45 percent slopes, mountain slopes, landslides, frigid; Tuolumne County, California; in the upper Tuolumne Grove of Giant Sequoias, approximately 400 feet (121.9 meters) northwest of the Tunnel Tree, approximately 2,320 feet (707.1 meters) east and 600 feet (182.9 meters) north of the southwest corner of section 7, T. 2 S., R. 20 E., Mount Diablo Base and Meridian; lat. 37 degrees 46 minutes 8.8 seconds N. and long. 119 degrees 49 minutes 54.6 seconds W.; USGS Ackerson Mountain, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Ultic Palexeralfs in this survey area because of the highly variable nature of these soils.)

Oi—0 to 1 inch, (0 to 2 cm); slightly decomposed plant material; 3 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size.

A—1 to 4 inches, (2 to 9 cm); dark grayish brown (10YR 4/2) loam, dark brown (7.5YR 3/2) moist; moderate medium granular and moderate very coarse platy structure; very friable, non-sticky, non-plastic; few very coarse, medium, and fine and common very fine roots; 5 percent subangular very strongly cemented gneiss fragments 75 to 250 mm in size and 5 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size; slightly acid (pH 6.2); clear smooth boundary. (Lab sample # 98P01267)

Bt1—4 to 13 inches, (9 to 34 cm); yellowish brown (10YR 5/4) cobbly loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very coarse, coarse, medium, and fine and common very fine roots; 35 percent distinct clay films on faces of peds and in pores; 5 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size and 10 percent subangular very strongly cemented gneiss fragments 75 to 250 mm in size; slightly acid (pH 6.1); gradual wavy boundary. (Lab sample # 98P02168)

Bt2—13 to 31 inches, (34 to 80 cm); light yellowish brown (2.5Y 6/4) loam, light olive brown (2.5Y 5/3) moist; moderate medium and coarse subangular blocky structure; very friable, slightly sticky, slightly plastic; many very coarse, common coarse and medium, and few very fine and fine roots; 5 percent distinct clay bridges between sand grains and 40 percent prominent clay films on faces of peds and in pores; 2 percent subangular very strongly cemented gneiss fragments 75 to 250 mm in size, 4 percent subangular very strongly cemented gneiss fragments 250 to 600 mm in size, and 5 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size; strongly acid (pH 5.3); gradual wavy boundary. (Lab sample # 98P02169)

BCt—31 to 49 inches, (80 to 125 cm); 50 percent light yellowish brown (2.5Y 6/4) and 50 percent reddish yellow (7.5YR 6/8) loam, 50 percent yellowish brown (10YR 5/4) and 50 percent strong brown (7.5YR 5/6) moist; moderate coarse subangular blocky structure; very friable, slightly sticky, slightly plastic; few coarse, medium, fine, and very fine roots; 5 percent faint clay bridges between sand grains and 30 percent distinct clay films on faces of peds and in pores; 2 percent subangular very strongly cemented gneiss fragments 75 to 250 mm in size and 5 percent subangular very strongly cemented gneiss fragments 2 to 75 mm in size; strongly acid (pH 5.2); clear smooth boundary. (Lab sample # 98P02170)

C—49 to 63 inches, (125 to 159 cm); 50 percent brownish yellow (10YR 6/6) and 50 percent reddish yellow (7.5YR 6/8) loam, 50 percent strong brown (7.5YR 5/6) and 50 percent yellowish brown (10YR 5/4) moist; moderate fine subangular blocky structure; very friable, slightly sticky, slightly plastic; few fine roots; 2 percent subangular very strongly cemented gneiss fragments 76 to 250 mm in size and 5

percent subangular very strongly cemented gneiss fragments 2 to 76 mm in size; strongly acid (pH 5.3). (Lab sample # 98P02171)

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level categories are therefore included with the concept of this component, such as fine-loamy, isotic, mesic Ultic Palexeralfs.

Some pedons have one or more O horizons. The content of surface rock fragments is 0 to 5 percent.

A horizon:

Hue—10YR or 7.5YR (dry and moist)
Value—4 or 5 and 3 or 4 (moist)
Chroma—2 to 4 (dry and moist)
Texture of the fine-earth fraction—loamy fine sand, sandy loam, fine sandy loam, or loam
Clay content—4 to 25 percent
Rock fragment content—0 to 16 percent
Organic matter content—6 to 34 percent
Reaction—strongly acid to neutral

Bt horizon:

Hue—5YR, 10YR, 7.5YR, or 2.5Y (dry and moist)
Value—4 to 8 (dry) and 3 to 6 (moist)
Chroma—4 to 6 (dry) and 2 to 6 (moist)
Texture of the fine-earth fraction—fine sandy loam, loam, sandy clay loam, clay loam, or silty clay loam
Clay content—12 to 40 percent
Average clay content—18 to 35 percent
Rock fragment content—0 to 26 percent
Organic matter content—0.5 to 5 percent
Reaction—strongly acid to neutral
Other characteristics—some pedons have a Bw horizon

BCt or CBt horizon:

Hue—7.5YR, 10YR or 2.5Y (dry and moist)
Value—3 to 8 (dry) and 4 to 6 (moist)
Chroma—3 to 8 (dry) and 4 to 6 (moist)
Texture of the fine-earth fraction—fine sandy loam, loam, clay loam, or silty clay loam
Clay content—12 to 40 percent
Rock fragment content—0 to 15
Organic matter content—0 to 3 percent
Reaction—strongly acid to neutral

C horizon:

Hue—7.5YR, 10YR or 2.5Y (dry and moist)
Value—3 to 8 (dry) and 4 to 6 (moist)
Chroma—3 to 8 (dry) and 4 to 6 (moist)
Texture of the fine-earth fraction—fine sandy loam or loam
Clay content—12 to 25 percent
Rock fragment content—0 to 15 percent
Organic matter content—0 to 0.2 percent
Reaction—strongly acid to neutral
Other characteristics—some pedons have a moderately deep Crt or a Ct horizon

Additional characterization data for this Ultic Palexeralfs example pedon, National Soil Survey Laboratory lab data pedon number 98P0204 (Pedon ID: 97CA109003), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Vitrandic Cryorthents

Vitrandic Cryorthents in the survey area consist of shallow or moderately deep, somewhat excessively drained soils that formed in colluvium, residuum, and/or till from granitoid rock. These soils are on moraines and mountain slopes. Slope is 0 to 45 percent. The soils are classified as sandy-skeletal, isotic, shallow Vitrandic Cryorthents.

Typical Pedon

Canisrocks-Glacierpoint-Vitrandic Cryorthents complex, bouldery, 5 to 20 percent slopes, ground moraines, cryic; Tuolumne County, California; moraine flat; complete Public Land Survey System unavailable; T. 1 N., R. 24 E., Mount Diablo Base and Meridian; lat. 37 degrees 54 minutes 27.2 seconds N. and long. 119 degrees 18 minutes 29.1 seconds W.; USGS Tioga Pass, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Vitrandic Cryorthents in this area because of the highly variable nature of these soils.)

A—0 to 1 inch, (0 to 2 cm); grayish brown (2.5Y 5/2) loamy sand, very dark grayish brown (2.5Y 3/2) moist; single grain; loose, non-sticky, non-plastic; 2 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; very strongly acid (pH 4.5); abrupt wavy boundary. (Lab sample # 00P04900)

Bw1—1 to 6 inches, (2 to 15 cm); yellowish brown (10YR 5/4) loamy coarse sand, brown (10YR 4/3) moist; weak very fine granular structure; loose, non-sticky, non-plastic; many very fine roots; 1 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; very strongly acid (pH 5.0); gradual wavy boundary. (Lab sample # 00P04901)

Bw2—6 to 12 inches, (15 to 30 cm); light yellowish brown (10YR 6/4) loamy sand, dark yellowish brown (10YR 4/4) moist; weak very fine granular structure; loose, non-sticky, non-plastic; few fine and common very fine roots; 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.2); abrupt wavy boundary. (Lab sample # 00P04902)

Cd—12 to 60 inches, (30 to 152 cm); light gray (2.5Y 7/2) very gravelly sandy loam, light olive brown (2.5Y 5/3) moist; massive; firm, non-sticky, non-plastic; few very fine roots around fragments; 1 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 40 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.2). (Lab sample # 00P04903)

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level categories are therefore included with the concept of this component, such as sandy, isotic Vitrandic Cryorthents.

The content of surface rock fragments is 0 to 40 percent.

A horizon:

Hue—10YR or 2.5Y (dry and moist)
Value—4 or 5 (dry) and 2 to 5 (moist)
Chroma—1 to 3 (dry) and 1 or 2 (moist)

Texture of the fine-earth fraction—loamy sand, loamy fine sand, or loamy very fine sand
Clay content—0.5 to 5 percent
Rock fragment content—0 to 10 percent
Organic matter content—3 to 9 percent
Reaction—extremely acid to strongly acid

Bw horizon:
Hue—10YR (dry and moist)
Value—5 or 6 and 3 or 4 (moist)
Chroma—4 (dry) and 3 or 4 (moist)
Texture of the fine-earth fraction—loamy coarse sand or loamy sand
Clay content—0.5 to 5 percent
Rock fragment content—5 to 25 percent
Organic matter content—1 to 7 percent
Reaction—very strongly acid or strongly acid

Cd horizon:
Hue—10YR or 2.5Y (dry and moist)
Value—5 to 8 (dry) and 2 to 6 (moist)
Chroma—1 to 6 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—loamy sand to sandy loam
Clay content—0.2 to 5 percent
Rock fragment content—23 to 60 percent
Organic matter content—0.2 to 1.5 percent
Reaction—very strongly acid or strongly acid
Other characteristics—some moderately deep pedons have a C horizon over an R horizon

Additional characterization data for this Vitrandic Cryorthents example pedon, National Soil Survey Laboratory lab data pedon number 00P0780 (Pedon ID: 00CA109001), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Vitrandic Dystrocryepts

Vitrandic Dystrocryepts in the survey area consist of very deep, somewhat excessively drained soils that formed in colluvium, residuum, and/or till from granitoid and/or metamorphic rock. These soils are on moraines, on mountain slopes, in mountain valleys, and on cirque floors. Slope is 2 to 65 percent. The soils are classified as sandy, isotic Vitrandic Dystrocryepts.

Typical Pedon

Canisrocks-Glacierpoint-Vitrandic Dystrocryepts complex, bouldery, 20 to 45 percent slopes, medial moraines, cryic; Tuolumne County, California; approximately 2,000 feet (609.6 meters) south of Tioga Road and 3,000 feet (914.4 meters) south-southwest of the borrow pit, 3,800 feet (1,158.2 meters) west and 400 feet (121.9 meters) north of the southeast corner of section 2, T. 1 S., R. 24 E., Mount Diablo Base and Meridian; lat. 37 degrees 52 minutes 29 seconds N. and long. 119 degrees 18 minutes 28.9 seconds E.; USGS Tioga Pass, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Vitrandic Dystrocryepts in this survey area because of the highly variable nature of these soils.)

Oi—0 to 0 inches, (0 to 1 cm); slightly decomposed plant material; 3 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size.

Oe—0 to 1 inch, (1 to 2 cm); moderately decomposed plant material; 3 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size.

A1—1 to 11 inches, (2 to 29 cm); grayish brown (10YR 5/2) loamy sand, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; very friable, non-sticky, non-plastic; few very coarse, coarse, medium, and fine and common very fine roots; 5 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.2); gradual wavy boundary. (Lab sample # 98P01325)

A2—11 to 17 inches, (29 to 44 cm); light olive brown (2.5Y 5/3) sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; very friable, non-sticky, non-plastic; few coarse, medium, fine, and very fine roots; 7 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.3); clear irregular boundary. (Lab sample # 98P01326)

Bw—17 to 25 inches, (44 to 63 cm); light yellowish brown (2.5Y 6/3) cobbly loamy sand, dark yellowish brown (10YR 3/4) moist; moderate medium and moderate fine subangular blocky structure; friable, non-sticky, non-plastic; few fine and very fine roots; 7 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size and 8 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size; strongly acid (pH 5.4); clear smooth boundary. (Lab sample # 98P01327)

BC—25 to 37 inches, (63 to 93 cm); light yellowish brown (2.5Y 6/4) stony loamy coarse sand, light olive brown (2.5Y 5/4) moist; moderate medium subangular blocky structure; very friable, non-sticky, non-plastic; few fine and very fine roots; 5 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size, 10 percent subangular very strongly cemented granodiorite fragments 250 to 600 mm in size, and 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; moderately acid (pH 5.6); abrupt wavy boundary. (Lab sample # 98P01238)

C—37 to 60 inches, (93 to 152 cm); light gray (10YR 7/1) cobbly loamy coarse sand, grayish brown (2.5Y 5/2) moist; single grain; loose, non-sticky, non-plastic; 7 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 15 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.4). (Lab sample # 09P03129)

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level categories are therefore included with the concept of this component, such as loamy-skeletal, isotic Vitrandic Dystrocryepts; coarse-loamy, isotic Vitrandic Dystrocryepts; and coarse-loamy, isotic Vitrandic Eutrocryepts.

Vitrandic Dystrocryepts have an umbric epipedon and/or a cambic horizon. The content of surface rock fragments is 0 to 30 percent.

The Vitrandic Eutrocryepts included with the concept of this component have a higher base saturation than Vitrandic Dystrocryepts. The base saturation is 60 percent or more in one or more horizons at a depth between 25 and 75 centimeters from the mineral soil surface or directly above a root-limiting layer if at a shallower depth.

A horizon:

Hue—10YR or 2.5Y (dry and moist)
Value—3 to 7 (dry) and 2 to 6 (moist)
Chroma—1 to 4 (dry) and 1 or 6 (moist)
Texture of the fine-earth fraction—loamy sand, fine sand, sandy loam, fine sandy loam, or very fine sandy loam
Clay content—0.5 to 9 percent
Rock fragment content—0 to 70 percent

Organic matter content—3 to 16 percent
Reaction—very strongly acid to slightly acid

Bw horizon:
Hue—10YR (dry and moist)
Value—4 to 6 (dry) and 3 to 5 (moist)
Chroma—3 to 6 (dry and moist)
Texture of the fine-earth fraction—loamy sand, fine sand, sandy loam, or fine sandy loam
Clay content—0.2 to 9 percent
Rock fragment content—0 to 90 percent
Organic matter content—0.5 to 5 percent
Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have a Bt horizon

BC horizon (if it occurs):
Hue—2.5Y (dry and moist)
Value—6 (dry) and 5 (moist)
Chroma—4 (dry and moist)
Texture of the fine-earth fraction—loamy coarse sand or loamy sand
Clay content—0.5 to 4 percent
Rock fragment content—10 to 40 percent
Organic matter content—0.5 to 1.0 percent
Reaction—very strongly acid to slightly acid
Other characteristics—some pedons have a CB horizon

C horizon:
Hue—10YR (dry) and 10YR or 2.5Y (moist)
Value—6 or 7 (dry) and 4 or 5 (moist)
Chroma—6 or 7 (dry) and 2 to 4 (moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, loamy sand, fine sand, coarse sandy loam, sandy loam, or fine sandy loam
Clay content—0.5 to 12 percent
Rock fragment content—5 to 90 percent
Organic matter content—0.1 to 1.25 percent
Reaction—very strongly acid to neutral

Additional characterization data for this Vitrandic Dystrocryepts example pedon, National Soil Survey Laboratory lab data pedon number 98P0216 (Pedon ID: 97CA109015), and for Vitrandic Eutrocryepts, National Soil Survey Laboratory lab data pedon number 98P0206 (Pedon ID: 97CA109005), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Vitrandic Dystroxerepts

Vitrandic Dystroxerepts in the survey area consist of very deep, well drained soils on ground moraine deposits of coarse and moderately coarse stratified glacial till from granitoid rock. Slope is 4 to 30 percent. These soils are classified as loamy-skeletal, isotic, mesic Vitrandic Dystroxerepts

Typical Pedon

Vitrandic Dystroxerepts, 4 to 30 percent slopes, mesic; Mariposa County, California; about half way between Bridalveil Meadow and El Capitan Meadow, Yosemite National Park, Yosemite Valley; lat. 37 degrees 43 minutes 18 seconds N. and long. 119 degrees 38 minutes 55 seconds W.; UTM Zone 11, easting 266555.43 and northing 4178224.62; USGS El Capitan, California Quadrangle, NAD 83. (This pedon is

representative but not completely typical of the Vitrandic Dystroxerepts in this survey area because of the highly variable nature of these soils.)

A—0 to 8 inches, (0 to 20 cm); grayish brown (10YR 5/2) cobbly coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; moderately acid (pH 5.8); abrupt smooth boundary.
Bw1—8 to 30 inches, (20 to 76 cm); light yellowish brown (10YR 6/4) very cobbly coarse sandy loam, dark brown (10YR 3/3) and brown (10YR 4/3) moist; weak medium subangular blocky structure; common thin clay films bridging mineral grains and lining pores; slightly acid (pH 6.1); abrupt smooth boundary.
Bw2—30 to 50 inches, (76 to 127 cm); light yellowish brown (2.5Y 6/4) very stony loamy coarse sand, dark yellowish brown (10YR 4/4 and 4/6) moist; weak fine granular structure; common thin clay films bridging mineral grains and lining pores; slightly acid (pH 6.1); clear smooth boundary.
C—50 to 60 inches, (127 to 152 cm); pale yellow (2.5Y 7/3) very stony loamy coarse sand, light olive brown (2.5Y 5/4) and yellowish brown (10YR 5/8) moist; massive; slightly acid (pH 6.3).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

The surface horizon has a base saturation (ammonium acetate) of 50 to 75 percent. The upper 30 inches of the soil (76 centimeters) has 5 to 10 percent glass and has other vitrandic properties. Sodium fluoride reaction is 8.5 to 10.5. The soil is highly stratified.

A horizon:
Hue—10YR (dry and moist)
Value—5 (dry) and 2 (moist)
Chroma—2 (dry and moist)
Texture of the fine-earth fraction—coarse sandy loam
Clay content—5 to 10 percent
Rock fragment content—14 to 35 percent
Organic matter content—5 to 9 percent
Reaction—moderately acid

Bw horizon:
Hue—10YR or 2.5Y (dry and moist)
Value—6 (dry) and 4 (moist)
Chroma—4 (dry) and 4 to 6 (moist)
Texture of the fine-earth fraction—loamy coarse sand or coarse sandy loam
Clay content—5 to 10 percent
Rock fragment content—34 to 57 percent
Organic matter content—0.5 to 3 percent
Reaction—moderately acid

C horizon:
Hue—10YR or 2.5Y (dry and moist)
Value—7 (dry) and 5 (moist)
Chroma—3 (dry) and 4 to 8 (moist)
Texture of the fine-earth fraction—loamy coarse sand
Clay content—5 to 10 percent
Rock fragment content—34 to 55 percent
Organic matter content—0.5 to 3 percent
Reaction—slightly acid

Vitrandic Haploxerolls, sandy

Vitrandic Haploxerolls, sandy, in the survey area consist of very deep, moderately well drained soils on point bars of intermediate flood plains that formed in coarse textured stream alluvium from granitoid rock. Slope is 0 to 3 percent. These soils are classified as sandy, isotic, mesic Vitrandic Haploxerolls.

Typical Pedon

Vitrandic Haploxerolls, sandy, 0 to 3 percent slopes, mesic; Mariposa County, California; Leidig Meadow, Yosemite National Park, Yosemite Valley; lat. 37 degrees 44 minutes 17 seconds N. and long. 119 degrees 36 minutes 8 seconds W.; UTM Zone 11, easting 270701.41 and northing 4179948.35; USGS Half Dome, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Vitrandic Haploxerolls, sandy, in this survey area because of the highly variable nature of these soils.)

A—0 to 2 inches, (0 to 5 cm); brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, non-sticky, non-plastic; weekly smeary; few very fine roots; common very fine interstitial pores; moderately acid (pH 5.8); abrupt broken boundary.

C—2 to 3 inches, (5 to 8 cm); 70 percent pale brown (10YR 6/3) and 30 percent grayish brown (10YR 5/2) sand, very dark grayish brown (10YR 3/2) moist; single grain; loose, non-sticky, non-plastic; common very fine roots; common very fine interstitial pores; moderately acid (pH 5.8); abrupt broken boundary.

A´1—3 to 5 inches, (8 to 13 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; massive; soft, very friable, non-sticky, non-plastic; common very fine roots; common very fine interstitial pores; moderately acid (pH 5.8); abrupt smooth boundary.

A´2—5 to 13 inches, (13 to 33 cm); brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, non-sticky, non-plastic; weakly smeary; few very fine roots; common very fine interstitial pores; moderately acid (pH 5.8); abrupt irregular boundary.

A´3—13 to 18 inches, (33 to 46 cm); pale brown (10YR 6/3) loamy sand, dark brown (10YR 3/3) moist; massive; soft, very friable, non-sticky, non-plastic; no roots; many very fine interstitial pores; moderately acid (pH 5.8); abrupt smooth boundary.

C´1—18 to 24 inches, (46 to 61 cm); 60 percent very pale brown (10YR 8/2), 39 percent pale brown (10YR 6/3), and 1 percent dark yellowish brown (10Y 5/6) gravelly coarse sand, 60 percent pale brown (10YR 6/3), 39 percent yellowish brown (10YR 5/4), and 1 percent dark yellowish brown (10YR 4/6) moist; single grain; loose, non-sticky, non-plastic; no roots; many very fine interstitial pores; moderately acid (pH 5.8); abrupt smooth boundary.

C´2—24 to 28 inches, (61 to 71 cm); 60 percent very pale brown (10YR 8/2), 39 percent pale brown (10YR 6/3), and 1 percent yellowish brown (10YR 5/6) sand, 60 percent pale brown (10YR 6/3) and 40 percent dark yellowish brown (10YR 4/6) moist; single grain; loose, non-sticky, non-plastic; no roots; many very fine interstitial pores; moderately acid (pH 5.8); abrupt smooth boundary.

C´3—28 to 32 inches, (71 to 81 cm); 80 percent very pale brown (10YR 8/2), 10 percent very pale brown (10YR 7/3), 9 percent black (N 2/0), and 1 percent yellowish brown (10YR 5/6) gravelly coarse sand, 80 percent pale brown (10YR 6/3), 10 percent brown (10YR 5/3), 9 percent black (N 2/0), and 1 percent dark yellowish brown (10YR 4/6) moist; single grain; loose, non-sticky, non-plastic; no roots; many very fine interstitial pores; moderately acid (pH 5.8); abrupt smooth boundary.

C´4—32 to 60 inches, (81 to 152 cm); very pale brown (10YR 8/2) sand, pale brown

(10YR 6/3) moist; single grain; loose, non-sticky, non-plastic; no roots; many very fine interstitial pores; moderately acid (pH 5.8).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

The upper 10 inches (25 centimeters) has a base saturation (ammonium acetate) that is 50 to 75 percent.

A horizon:

Hue—10YR (dry and moist)
Value—5 (dry) and 3 (moist)
Chroma—3 (dry) and 2 (moist)
Texture—fine sandy loam or loamy fine sand
Clay content—3 to 7 percent
Organic matter content—2 to 8 percent
Reaction—moderately acid

C horizon:

Hue—10YR (dry and moist)
Value—5 or 6 (dry) and 3 (moist)
Chroma—2 or 3 (dry) and 2 (moist)
Texture—stratified gravelly coarse sand to sand
Clay content—1 to 5 percent
Rock fragment content—0 to 20 percent
Organic matter content—0.5 to 1.5 percent
Reaction—moderately acid

A´ horizon:

Hue—10YR (dry and moist)
Value—5 or 6 (dry) and 3 (moist)
Chroma—3 (dry and moist)
Texture—fine sandy loam or loamy fine sand
Clay content—2 to 7 percent
Rock fragment content—0 to 12 percent
Organic matter content—1 to 8 percent
Reaction—moderately acid

C´ horizon:

Hue—10YR or neutral (dry and moist)
Value—2 to 8 (dry) and 2 to 6 (moist)
Chroma—0 or 6 (dry and moist)
Texture—stratified gravelly coarse sand to sand
Clay content—1 to 5 percent
Rock fragment content—0 to 20 percent
Organic matter content—0.2 to 1.5 percent
Reaction—moderately acid

Vitrandic Haploxerolls, coarse-loamy, somewhat poorly drained

Vitrandic Haploxerolls, coarse-loamy, somewhat poorly drained, in the survey area consist of very deep, somewhat poorly drained soils that formed in coarse textured stream alluvium from granitoid rock. Slope is 0 to 2 percent. The soils are classified as coarse-loamy, isotic, mesic Vitrandic Haploxerolls.

Typical Pedon

Vitrandic Haploxerolls, coarse-loamy, 0 to 2 percent slopes, somewhat poorly drained, mesic; Mariposa County, California; El Capitan Meadow, Yosemite National Park, Yosemite Valley; lat. 37 degrees 43 minutes 24 seconds N. and long. 119 degrees 38 minutes 8 seconds W.; UTM Zone 11, easting 267719.18 and northing 4178372.95; USGS El Capitan, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Vitrandic Haploxerolls, coarse-loamy, somewhat poorly drained, in this survey area because of the highly variable nature of these soils.)

Oi—0 to 1 inch, (0 to 3 cm); slightly decomposed leaf litter.

A1—1 to 4 inches, (3 to 11 cm); dark grayish brown (10YR 4/2) loam, black (10YR 2/1) moist; strongly very fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; weakly smeary; common very fine, fine, and medium roots; common fine, medium, and coarse interstitial pores; moderately acid (pH 6.0); clear smooth boundary.

A2—4 to 7 inches, (11 to 18 cm); dark grayish brown (10YR 4/2) loam, very dark gray (10YR 3/1) moist; strong very fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; weakly smeary; common very fine roots; common fine, medium, and coarse interstitial pores; moderately acid (pH 6.0); clear smooth boundary.

AB—7 to 11 inches, (18 to 28 cm); brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure parting to strong fine and medium granular; slightly hard, friable, non-sticky, non-plastic; weakly smeary; common very fine, fine, and medium roots; common fine, medium, and coarse interstitial pores; moderately acid (pH 6.0); clear smooth boundary.

Bw—11 to 19 inches, (28 to 49 cm); light yellowish brown (10YR 6/4) fine sandy loam, very dark grayish brown (10YR 3/2) moist; common fine structure parting to moderate fine and medium granular; soft, very friable, non-sticky, non-plastic; weakly smeary; common very fine, fine, and medium roots; common very fine and fine interstitial and few very fine tubular pores; slightly acid (pH 6.3); clear smooth boundary.

C1—19 to 34 inches, (49 to 87 cm); light yellowish brown (10YR 6/4) fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky, slightly plastic; common very fine, fine, and medium roots; common very fine and fine interstitial and few fine tubular pores; common fine distinct dark yellowish brown (10YR 3/6) and yellowish brown (10YR 5/6) moist redoximorphic accumulations of iron; slightly acid (pH 6.4); clear smooth boundary.

C2—34 to 57 inches, (87 to 145 cm); light yellowish brown (10YR 6/4) fine sandy loam, 60 percent brown (10YR 5/3) and 40 percent pale brown (10YR 6/3) moist; massive; soft, very friable, non-sticky, non-plastic; common very fine interstitial pores; many medium distinct dark yellowish brown (10YR 3/4) and yellowish brown (10YR 5/6) moist redoximorphic accumulations of iron; slightly acid (pH 6.3); clear smooth boundary.

C3—57 to 63 inches, (145 to 160 cm); light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, non-sticky, non-plastic; common very interstitial pores; common medium faint dark yellowish brown (10YR 3/4) moist redoximorphic accumulations of iron; slightly acid (pH 6.4); clear smooth boundary.

C4—63 to 69 inches, (160 to 176 cm); 80 percent light yellowish brown (10YR 6/4) and 20 percent pale brown (10YR 6/3) coarse sand, 80 percent brown (10YR 4/3) and 20 percent dark brown (10YR 3/3) moist; single grain; loose, non-sticky, non-plastic; many very fine interstitial pores; common fine distinct dark yellowish brown

(10YR 3/4) and yellowish brown (10YR 5/6) moist redoximorphic accumulations of iron; slightly acid (pH 6.4).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

A horizon:
Hue—10YR (dry and moist)
Value—3 or 4 (dry) and 2 or 3 (moist)
Chroma—2 (dry) and 1 (moist)
Texture—loam
Clay content—5 to 18 percent
Organic matter content—6 to 11 percent
Reaction—moderately acid or slightly acid
Other characteristics—some pedons do not have an AB horizon

AB and Bw horizons:
Hue—10YR (dry and moist)
Value—5 or 6 (dry) and 3 (moist)
Chroma—4 (dry) and 2 (moist)
Texture—sandy loam, fine sandy loam, or loam
Clay content—5 to 18 percent
Organic matter content—1 to 3 percent
Reaction—moderately acid or slightly acid

C horizon:
Hue—10YR (dry and moist)
Value—6 (dry) and 3 to 5 (moist)
Chroma—4 (dry) and 3 to 6 (moist)
Texture—coarse sand, sandy loam, fine sandy loam, or loam
Clay content—2 to 18 percent
Organic matter content—0 to 0.75 percent
Reaction—moderately acid or slightly acid

Vitrandic Haploxerolls, coarse-loamy, well drained

Vitrandic Haploxerolls, coarse-loamy, well drained, in the survey area consist of very deep, well drained soils in till from terminal or lateral moraine deposits. These soils formed in moderately coarse, unstratified till from granitoid rock. Slope is 4 to 30 percent. The soils are classified as coarse-loamy, isotic, mesic Vitrandic Haploxerolls.

Typical Pedon

Vitrandic Haploxerolls, coarse-loamy, 4 to 30 percent slopes, well drained, mesic; Mariposa County, California; Bridalveil Moraine, Yosemite National Park, Yosemite Valley; lat. 37 degrees 43 minutes 4 seconds N. and long. 119 degrees 39 minutes 26 seconds W.; UTM Zone 11, easting 265788.31 and northing 4177816.23; USGS El Capitan, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Vitrandic Haploxerolls, coarse-loamy, well drained, in this survey area because of the highly variable nature of these soils.)

Oi—0 to 1 inch, (0 to 3 cm); undecomposed leaf litter from conifer and oaks.
A—1 to 3 inches, (3 to 8 cm); grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; moderately acid (pH 5.8); abrupt smooth boundary.

Bw1—3 to 9 inches, (8 to 30 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; moderately acid (pH 5.8); clear smooth boundary.
Bw2—9 to 16 inches, (30 to 41 cm); 80 percent light yellowish brown (10YR 6/4) and 20 percent brownish yellow (10YR 6/6) fine sandy loam, 70 percent dark yellowish brown (10YR 4/4) and 30 percent dark yellowish brown (10YR 4/6) moist; weak fine subangular blocky structure; slightly acid (pH 6.2); clear smooth boundary.
Bw3—16 to 24 inches, (41 to 61 cm); 80 percent light yellowish brown (10YR 6/4) and 20 percent brownish yellow (10YR 6/8) fine sandy loam, 80 percent dark yellowish brown (10YR 4/4) and 20 percent dark yellowish brown (10YR 4/6) moist; massive; moderately acid (pH 5.8); clear smooth boundary.
Bw4—24 to 36 inches, (61 to 91 cm); 80 percent light yellowish brown (10YR 6/4) and 20 percent olive yellow (2.5Y 6/8) fine sandy loam, 80 percent dark yellowish brown (10YR 4/4) and 20 percent yellowish brown (10YR 5/8) moist; massive; moderately acid (pH 5.8); clear wavy boundary.
C1—36 to 50 inches, (91 to 127 cm); light yellowish brown (2.5Y 6/4) fine sandy loam, olive brown (2.5R 4/4) moist; massive; moderately acid (pH 5.8); clear wavy boundary.
C2—50 to 60 inches, (127 to 152 cm); pale yellow (2.5Y 7/4) fine sandy loam, light olive brown (2.5Y 5/4) moist; massive; moderately acid (pH 5.8).

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

The upper 10 inches (25 centimeters) of the soil has a base saturation (ammonium acetate) of 50 to 75 percent. The upper 30 inches (76 centimeters) contains 5 to 10 percent glass and has other vitrandic properties. Sodium fluoride reaction is 8.5 to 10 percent. The soil has very little stratification.

A horizon:

Hue—10YR (dry and moist)
Value—5 (dry) and 3 (moist)
Chroma—2 (dry and moist)
Texture—fine sandy loam
Clay content—5 to 15 percent
Rock fragment content—0 to 12 percent
Organic matter content—2 to 8 percent
Reaction—moderately acid

Bw horizon:

Hue—10YR or 2.5Y (dry and moist)
Value—5 or 6 (dry) and 3 to 5 (moist)
Chroma—3 to 8 (dry and moist)
Texture—coarse sandy loam, sandy loam, or fine sandy loam
Clay content—5 to 15 percent
Rock fragment content—0 to 5 percent
Organic matter content—0.5 to 4 percent
Reaction—moderately acid or slightly acid

C horizon:

Hue—2.5Y or 2.5R (dry and moist)
Value—6 or 7 (dry) and 4 or 5 (moist)
Chroma—4 (dry and moist)
Texture—loam or fine sandy loam
Clay content—5 to 15 percent
Rock fragment content—0 to 5 percent

Organic matter content—0.1 to 0.75 percent
Reaction—moderately acid

Vitrandic Xerorthents

Vitrandic Xerorthents in the survey area consist of very deep, somewhat excessively drained soils that formed in alluvium from granitoid and minor volcanic ash. These soils are on flood plains and terraces in mountain valleys. Slope is 0 to 20 percent. The soils are classified as coarse-loamy, isotic, nonacid, mesic Vitrandic Xerorthents.

Typical Pedon

Oxyaquic Xerorthents-Dystric Xerorthents-Vitrandic Xerorthents-Rubble land complex, stony, 0 to 20 percent slopes, mountain valleys, mesic; Tuolumne County, California; Tuolumne Canyon, Pate Valley; complete Public Land Survey System unavailable; T. 1 N., R. 22 E., Mount Diablo Base and Meridian; lat. 37 degrees 55 minutes 42.8 seconds N. and long. 119 degrees 36 minutes 06.6 seconds W.; USGS Ten Lakes, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Vitrandic Xerorthents is this survey area because of the highly variable nature of these soils.)

C—0 to 8 inches, (0 to 20 cm); light brownish gray (2.5Y 6/2) fine sand, dark grayish brown (2.5Y 4/2) moist; single grain; loose, very friable, non-sticky, non-plastic; many very fine roots; very strongly acid (pH 5.0); abrupt smooth boundary. (Lab sample # 00P04923)

Ab—8 to 18 inches, (20 to 45 cm); dark grayish brown (2.5Y 4/2) fine sandy loam, very dark gray (10YR 3/1) moist; single grain; loose, very friable, non-sticky, non-plastic; many very fine roots; very strongly acid (pH 4.7); abrupt smooth boundary. (Lab sample # 00P04923)

2C—18 to 31 inches, (45 to 61 cm); grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; single grain; loose, very friable, non-sticky, non-plastic; few coarse, medium, and fine and many very fine roots; very strongly acid (pH 5.0); abrupt smooth boundary. (Lab sample # 00P04923)

3C1—31 to 35 inches, (61 to 88 cm); dark grayish brown (2.5Y 4/2) loamy sand, very dark gray (10YR 3/1) moist; massive; loose, friable, non-sticky, non-plastic; common coarse, medium, fine, and very fine and few very coarse roots; 2 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; very strongly acid (pH 4.9); clear wavy boundary. (Lab sample # 00P04924)

3C2—35 to 50 inches, (88 to 128 cm); light gray (10YR 7/2) and grayish brown (2.5Y 5/2) loamy sand, light brownish gray (10YR 6/2) and very dark grayish brown (2.5Y 3/2) moist; massive; loose, friable, non-sticky, non-plastic; few coarse, medium, and fine and common very fine roots; 1 percent subangular very strongly cemented granodiorite rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0); abrupt smooth boundary. (Lab sample # 00P04925)

3Ab—50 to 62 inches, (128 to 158 cm); pale brown (10YR 6/3) loamy sand, very dark grayish brown (10YR 3/2) moist; massive; loose, very friable, non-sticky, non-plastic; 2 percent subangular very strongly cemented granodiorite rock fragments 2 to 75 mm in size; very strongly acid (pH 5.1). (Lab sample # 00P04928)

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping.

The content of surface rock fragments is 10 to 20 percent. Clay content is 0 to 4 percent.

C horizon:
Hue—2.5Y (dry and moist)
Value—6 (dry) and 4 (moist)
Chroma—2 (dry and moist)
Texture of the fine-earth fraction—sand or fine sand
Rock fragment content—0 to 20 percent
Organic matter content—3 to 7 percent
Reaction—very strongly acid to moderately acid

Ab horizon:
Hue—10YR or 2.5Y (dry and moist)
Value—4 to 6 (dry) and 3 (moist)
Chroma—2 or 3 (dry) and 1 or 2 (moist)
Texture of the fine-earth fraction—fine sandy loam or very fine sandy loam
Rock fragment content—0 to 20 percent
Organic matter content—2 to 6 percent
Reaction—very strongly acid to moderately acid

2C horizon:
Hue—10YR or 2.5Y (dry and moist)
Value—5 to 7 (dry) and 3 to 6 (moist)
Chroma—2 (dry and moist)
Texture of the fine-earth fraction—fine sand or fine sandy loam
Rock fragment content—0 to 5 percent
Organic matter content—1 to 3 percent
Reaction—very strongly acid to moderately acid

3C horizon:
Hue—10YR (dry and moist)
Value—5 (dry) and 3 (moist)
Chroma—3 or 4 (dry) and 2 or 3 (moist)
Texture of the fine-earth fraction—fine sand, loamy sand, or fine sandy loam
Rock fragment content—0 to 5 percent
Organic matter content—1 to 3 percent
Reaction—very strongly acid to moderately acid

3Ab horizon:
Hue—10YR (dry and moist)
Value—6 (dry) and 3 (moist)
Chroma—3 or 4 (dry) and 2 or 3 (moist)
Texture of the fine-earth fraction—fine sand, loamy sand, or fine sandy loam
Rock fragment content—0 to 5 percent
Organic matter content—1 to 3 percent
Reaction—very strongly acid to moderately acid

Additional characterization data for this Vitrandic Xerorthents example pedon, National Soil Survey Laboratory lab data pedon number 00P0785 (Pedon ID: 00CA109006), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Waterwheel Series

The Waterwheel series consists of very deep, somewhat excessively drained or excessively drained soils that formed in alluvium, colluvium, and/or till from granitoid rock. These soils are on alluvial fans, on mountain slopes, on colluvial aprons, on moraines, on ancient landslides, in drainageways, on gravel bars, on terraces, on flood

plains, and in joints and fractures in bedrock. Slope is 10 to 60 percent. The soils are classified as sandy-skeletal, isotic, frigid Dystric Xerorthents.

Typical Pedon

Craneflat-Rock outcrop-Rubble land-Waterwheel association, 30 to 80 percent slopes, mountainflanks, frigid; Tuolumne County, California; about 0.5 mile west of Return Creek in the Grand Canyon of the Tuolumne River; section 17, T. 1 N., R. 23 E., Mount Diablo Base and Meridian; lat. 37 degrees 56 minutes 5 seconds N. and long. 119 degrees 28 minutes 22 seconds W.; USGS Falls Ridge, California Quadrangle, NAD 83:

Oi—0 to 1 inch, (0 to 2 cm); very bouldery slightly decomposed plant material; 15 percent subrounded very strongly cemented granitoid rock fragments 600 to 3000 mm in size and 20 percent subrounded very strongly cemented granitoid rock fragments 250 to 600 mm in size.

Oe—1 to 2 inches, (2 to 4 cm); very bouldery moderately decomposed plant material; 15 percent subrounded very strongly cemented granitoid rock fragments 600 to 3000 mm in size and 20 percent subrounded very strongly cemented granitoid rock fragments 250 to 600 mm in size.

Oa—2 to 2 inches, (4 to 6 cm); very bouldery highly decomposed plant material; 15 percent subrounded very strongly cemented granitoid rock fragments 600 to 3000 mm in size and 20 percent subrounded very strongly cemented granitoid rock fragments 250 to 600 mm in size.

A—2 to 6 inches, (6 to 15 cm); very dark grayish brown (10YR 3/2) cobbly loamy coarse sand, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; very friable, non-sticky, non-plastic; few coarse and medium, common fine, and many very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size and 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; moderately acid (pH 6.0); abrupt wavy boundary. (Lab sample # 01N01011)

Bw1—6 to 14 inches, (15 to 36 cm); pale brown (10YR 6/3) very stony loamy sand, brown (10YR 4/3) moist; moderate coarse and moderate medium subangular blocky structure; slightly hard, very friable, non-sticky, non-plastic; few very coarse and coarse and common medium, fine, and very fine roots; 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, 15 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, and 20 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size; moderately acid (pH 5.9); abrupt wavy boundary. (Lab sample # 01N01012)

Bw2—14 to 28 inches, (36 to 71 cm); brown (10YR 5/3) extremely stony coarse sand, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; loose, very friable, non-sticky, non-plastic; few coarse, medium, fine, and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 600 to 3000 mm in size, 15 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size, 15 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, and 20 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size; moderately acid (pH 5.9); clear wavy boundary. (Lab sample # 01N01013)

C—28 to 60 inches, (71 to 152 cm); light yellowish brown (10YR 6/4) extremely bouldery coarse sand, dark grayish brown (10YR 4/2) moist; massive; loose, non-sticky, non-plastic; few fine roots; 10 percent subrounded very strongly cemented granitoid rock fragments 600 to 3000 mm in size, 15 percent subangular very strongly cemented granitoid rock fragments 250 to 600 mm in size, 25

percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size, and 30 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; slightly acid (pH 6.1). (Lab sample # 01N01014)

Range in Characteristics

The mean annual soil temperature is less than 8.0 degrees C (46.4 degrees F). The particle-size control section has 0.5 to 10.0 percent clay and 65 to 97 percent sand. Rock fragment content is 0 to 90 percent, by volume. The particle-size control section, by weighted average, has 35 percent or more rock fragments. Some pedons do not have one or more O horizons. The content of surface rock fragments is 2 to 60 percent.

A horizon:

Hue—10YR (dry and moist)
Value—3 to 6 (dry) and 1 to 4 (moist)
Chroma—1 to 4 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, loamy sand, coarse sandy loam, or sandy loam
Clay content—0.5 to 10 percent
Rock fragment content—0 to 60 percent
Organic matter content—2 to 12 percent
Reaction—very strongly acid to neutral
Other characteristics—some pedons have an AC horizon

Bw horizon (if it occurs):

Hue—10YR (dry and moist)
Value—3 or 4 (dry) and 3 or 4 (moist)
Chroma—3 to 6 (dry) and 2 to 4 (moist)
Texture of the fine-earth fraction—coarse sand, sand, loamy coarse sand, or loamy sand
Clay content—0.5 to 6 percent
Rock fragment content—0 to 75 percent
Organic matter content—0.5 to 6 percent
Reaction—very strongly acid to neutral
Other characteristics—some pedons have a BC horizon

C horizon:

Hue—10YR (dry and moist)
Value—5 to 8 (dry) and 3 to 5 (moist)
Chroma—3 or 4 (dry) and 2 to 4 (moist)
Texture of the fine-earth fraction—coarse sand, sand, loamy coarse sand, loamy sand, or sandy loam
Clay content—0.5 to 10 percent
Rock fragment content—0 to 90 percent
Organic matter content—generally 0.2 to 3.0 percent; 0.2 to 8.0 percent for soil having a C horizon above a Bw horizon
Reaction—very strongly acid to neutral

Additional characterization data for this Waterwheel typical pedon, National Soil Survey Laboratory lab data pedon number 01N0149 (Pedon ID: 00CA109013), and for pedon numbers 99P0317 (Pedon ID: 99CA109004) and 00P078 (Pedon ID: 00CA043002) are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Whittell Series

The Whittell series consists of moderately deep, excessively drained soils that formed in colluvium over residuum derived from granodiorite. The Whittell soils are on the upper third of mountainflanks. Slope is 8 to 75 percent. The soils are classified as sandy-skeletal, mixed Typic Cryorthents.

Typical Pedon

Whittell very cobbly loamy coarse sand; Mono County, California; in the Toiyabe National Forest, about 3 miles north of Twin Lakes; about 100 feet north and 350 feet west of the southeast corner of section 18, T. 4 N., R. 24 E.; lat. 38 degrees 11 minutes 49.6 seconds N. and long. 119 degrees 21 minutes 37.2 seconds W.; Twin Lakes, California Quadrangle, NAD 27:

Oi—0 to 1 inch, (0 to 1 cm); slightly decomposed plant material.
A—1 to 7 inches, (1 to 18 cm); dark grayish brown (10YR 4/2) very cobbly loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, non-sticky, non-plastic; many very fine, fine, medium, coarse, and very coarse roots throughout; 25 percent gravel, 25 percent cobbles, and 5 percent stones; strongly acid (pH 5.4); clear smooth boundary.
Bw1—7 to 25 inches, (18 to 64 cm); pale brown (10YR 6/3) very stony loamy coarse sand, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, non-sticky, non-plastic; common very fine and fine and many medium, coarse, and very coarse roots throughout; 25 percent gravel, 15 percent cobbles, and 15 percent stones; strongly acid (pH 5.4); clear smooth boundary.
Bw2—25 to 39 inches, (64 to 99 cm); pale brown (10YR 6/3) extremely stony loamy coarse sand, dark brown (10YR 4/3) moist; single grain; loose, non-sticky, non-plastic; few very fine and common fine, medium, and coarse roots throughout; 25 percent gravel, 15 percent cobbles, and 25 percent stones; strongly acid (pH 5.4); clear wavy boundary.
Cr—39 to 42 inches, (99 to 107 cm); moderately cemented granodiorite bedrock.

Range in Characteristics

The soil is usually moist in the moisture control section in fall, winter, and spring. It is usually dry from July through early October. The moisture regime is xeric. The mean annual soil temperature is 35 to 41 degrees F, and the mean summer soil temperature is 44 to 47 degrees F. The thickness of the ochric epipedon is 3 to 9 inches. Depth to a paralithic contact is 20 to 40 inches. The paralithic materials below the contact are weathered granitoid rock such as granodiorite.

In the particle-size control section, the clay content averages 1 to 8 percent and the content of rock fragments averages 35 to 85 percent. Lithology of the fragments is granitoid rocks such as granodiorite.

The surface is covered with 15 percent gravel, 10 percent cobbles, 15 percent stones, and 10 percent boulders.

A horizon:

Value—4 to 5 (dry) and 2 or 3 (moist)
Chroma—2 or 3 (dry and moist)
Organic matter content—1 to 4 percent
Reaction—Strongly acid to slightly acid

Bw horizon:

Value—4 to 6 (dry) and 3 to 5 (moist)
Chroma—3 or 4 (dry and moist)

Texture—loamy coarse sand
Clay content—1 to 8 percent
Rock fragment content—35 to 85 percent
Reaction—strongly acid to slightly acid

C horizon:
Hue—2.5Y or 10YR (dry and moist)
Value—5 or 6 (dry) and 3 or 4 (moist)
Chroma—3 to 6 (dry and moist)
Texture—loamy coarse sand
Clay content—1 to 8 percent
Rock fragment content—35 to 85 percent
Reaction—strongly acid to slightly acid

Xeric Dystrocryepts

Xeric Dystrocryepts in the survey area consist of very deep, somewhat excessively drained soils that formed in colluvium, till, and/or alluvium from granitoid or metamorphic rock. These soils are on mountain slopes, moraines, glacial valley floors, and stream terraces. Slope is 0 to 80 percent. The soils are classified as sandy, isotic, Xeric Dystrocryepts.

Typical Pedon

Rock outcrop-Typic Cryorthents-Xeric Dystrocryepts complex, 0 to 35 percent slopes, mountain slopes, joints, cryic; Tuolumne County, California; approximately 2,900 feet (883.9 meters) north-northwest of USGS Benchmark 7609, next to Tioga Road, approximately 2,000 feet (609.6 meters) north and 1,200 feet (365.8 meters) west of the southeast corner of section 19, T. 1 S., R. 21 E., Mount Diablo Base and Meridian; lat. 37 degrees 50 minutes 23.3 seconds N. and long. 119 degrees 42 minutes 6.1 seconds W.; USGS Tamarack Flat, California Quadrangle, NAD 83. (This pedon is representative but not completely typical of the Xeric Dystrocryepts in this survey area because of the highly variable nature of these soils.)

Oi—0 to 2 inches, (0 to 6 cm); slightly decomposed plant material; abrupt smooth boundary.
Oe—2 to 4 inches, (6 to 11 cm); moderately decomposed plant material; abrupt smooth boundary.
A1—4 to 13 inches, (11 to 33 cm); grayish brown (2.5Y 5/2) loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; loose, very friable, non-sticky, non-plastic; few medium, coarse, and very coarse, common fine, and many very fine roots; 7 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0); abrupt smooth boundary. (Lab sample # 97P00856)
A2—13 to 20 inches, (33 to 52 cm); light olive brown (2.5Y 5/3) loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; loose, very friable, non-sticky, non-plastic; few coarse and very coarse, common medium, and many fine and very fine roots; 7 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0); clear smooth boundary. (Lab sample # 97P00857)
A3—20 to 30 inches, (52 to 77 cm); light olive brown (2.5Y 5/4) coarse sand, brown (10YR 4/3) moist; weak very fine granular structure; loose, very friable, non-sticky, non-plastic; few very coarse, common coarse, and many medium, fine, and very fine roots; 7 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0); clear smooth boundary. (Lab sample # 97P00858)

AB—30 to 42 inches, (77 to 106 cm); brown (10YR 5/3) coarse sand, dark brown (10YR 3/3) moist; weak very fine granular structure; loose, very friable, non-sticky, non-plastic; few very coarse and common very fine, medium, and coarse roots; 5 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0); clear smooth boundary. (Lab sample # 97P00859)

Bw1—42 to 48 inches, (106 to 122 cm); yellowish brown (10YR 5/4) loamy sand, dark brown (7.5YR 3/3) moist; moderate very fine granular and moderate medium granular structure; soft, very friable, non-sticky, non-plastic; common very coarse, coarse, medium, fine, and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0); clear smooth boundary. (Lab sample # 97P00860)

Bw2—48 to 62 inches, (122 to 157 cm); brownish yellow (10YR 6/6) loamy coarse sand, brown (7.5YR 4/4) moist; moderate medium and moderate very fine granular structure; soft, very friable, non-sticky, non-plastic; common very coarse, coarse, medium, and very fine and few fine roots; 10 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5); clear smooth boundary. (Lab sample # 97P00861)

C1—62 to 78 inches, (157 to 199 cm); yellow (10YR 7/6) loamy coarse sand, dark yellowish brown (10YR 4/6) moist; moderate fine granular structure; soft, very friable, non-sticky, non-plastic; common fine and medium and few coarse and very fine roots; 5 percent subangular very strongly cemented granitoid rock fragments 75 to 250 mm in size and 7 percent subangular very strongly cemented granitoid rock fragments 2 to 75 mm in size; strongly acid (pH 5.5); abrupt smooth boundary. (Lab sample # 97P00862)

C2—78 to 84 inches, (199 to 213 cm); pale yellow (2.5Y 8/4) cobbly coarse sandy loam, brownish yellow (10YR 6/6) moist; moderate fine granular structure; soft, friable, slightly sticky, non-plastic; few fine and medium roots; 10 percent subangular very strongly cemented granodiorite fragments 75 to 250 mm in size and 10 percent subangular very strongly cemented granodiorite fragments 2 to 75 mm in size; strongly acid (pH 5.5). (Lab sample # 97P00863)

Range in Characteristics

This map unit component is represented at a taxonomic level higher than series because of the variability of the landscape at the scale of mapping. Similar family level categories are therefore included with the concept of this component, such as coarse-loamy, isotic Xeric Dystrocryepts; loamy-skeletal, isotic Xeric Dystrocryepts; and sandy-skeletal, isotic Xeric Dystrocryepts.

The mean annual soil temperature is about 4.5 degrees C. The mean summer soil temperature is about 8.5 degrees C. The mean winter soil temperature is about 1.5 degrees C. Xeric Dystrocryepts have an umbric epipedon and/or a cambic horizon. Some pedons do not have one or more O horizons.

A and AB horizons:

Hue—10YR or 2.5Y (dry and moist)
Value—4 or 5 (dry) and 2 to 4 (moist)
Chroma—2 to 4 (dry) and 1 to 3 (moist)
Texture of the fine-earth fraction—sand, coarse sand, loamy coarse sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, or very fine sandy loam
Clay content—0.5 to 12 percent
Organic matter content—0.5 to 12 percent
Rock fragment content—0 to 60 percent
Reaction—very strongly acid to moderately acid
Other characteristics—some pedons have an AB or a BA horizon

Bw horizon (if it occurs):
Hue—10YR or 7.5YR (dry and moist)
Value—3 to 6 (dry) and 2 to 4 (moist)
Chroma—3 to 6 (dry) and 3 or 4 (moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, or very fine sandy loam
Clay content—0.5 to 12 percent
Organic matter content—0.5 to 6 percent
Reaction—very strongly acid to moderately acid

C horizon:
Hue—10YR or 2.5YR (dry and moist)
Value—4 to 8 (dry) and 3 to 6 (moist)
Chroma—4 to 8 (dry) and 2 to 6 (moist)
Texture of the fine-earth fraction—sand, loamy coarse sand, loamy sand, loamy fine sand, coarse sandy loam, or sandy loam
Clay content—0.5 to 8 percent
Organic matter content—0.1 to 2 percent
Reaction—extremely acid to moderately acid
Other characteristics—some pedons have a moderately deep Cd horizon

Additional characterization data for this Xeric Dystrocryepts example pedon, National Soil Survey Laboratory lab data pedon number 97P0126 (Pedon ID: 96CA109010), are available from the National Soil Survey Laboratory at the National Soil Survey Center in Lincoln, Nebraska.

Formation of the Soils

The following discussion should help users of this survey understand and appreciate the key conditions and processes that created the soils of Yosemite National Park. It can help to make the maps, descriptions, and interpretations more meaningful and to give the reader an improved understanding and appreciation of soil complexities and relationships.

Soil is a dynamic three-dimensional body consisting of mineral material, living organisms and decomposing organic matter, air, and water, which contains a myriad of suspended and dissolved substances. Soil forms from parent material which is acted upon by various processes, namely, additions, losses, transfers, and transformations of matter and energy *(14)*.

Common additions include water and entrained nutrients from rainfall, snowmelt, or subsurface flow; gases, including oxygen, from the above-ground atmosphere; organic matter from plants and animals; soil eroded from higher elevations or blown in by the wind; volcanic ash from local or distant eruptions; energy from the sun and fire; and contaminants primarily from human activity.

Losses include water lost to the atmosphere (as a result of evaporation and transpiration) and to deep in the soil (as a result of percolation); gases, notably carbon dioxide and methane, lost to the above-ground atmosphere; organic matter lost as a result of decomposition, fire, or harvesting; soil lost through erosion; and energy that escapes primarily by convection and radiation.

Transfers, initiated primarily by biological activity, gravity, and energy gradients, redistribute soil solutions, nutrients and contaminants, gases, organic matter, fine mineral material (especially clay), and energy vertically and laterally throughout the soil.

Transformations can be physical, chemical, or biological. They include rock and mineral weathering, which disintegrates rocks into smaller fragments (fig. 28) and decomposes primary minerals into clay minerals. Transformation also include organic matter decomposition and other biogeochemical processes that are vital for cycling nutrients and maintaining ecosystems. In the western North American forests, fire is an important agent of transformation.

Factors of Soil Formation

Soil is created by the interaction of the soil processes with the five soil-forming factors—climate, parent material, topography, living organisms, and time. Fire is an additional factor that contributes to soil formation as well as to its degradation in much of the western United States, including Yosemite National Park.

Climate

Climate affects soil formation through the impact of temperature and precipitation on soil parent materials and on existing soil. Generally, cool climates having significant temperature fluctuations promote physical disintegration of rocks but retard chemical decomposition of constituent minerals. In contrast, warm climates promote less physical disintegration but enhance chemical decomposition. In either case, little

Figure 28.—Exfoliation, an example of physical weathering, affects the formation of Half Dome soils.

weathering takes place without water. High precipitation contributes to faster weathering overall than low precipitation. As a result, weathering tends to be the least intense under cool, dry climates and the most intense under warm, moist climates.

Overall, Yosemite National Park has a Mediterranean climate, which is characterized by warm, dry summers and cool to cold, moist winters. Although the Park lies within this climatic zone, its high elevations in a midlatitude position result in significant climatic variation. The variation is reflected in soil temperature regimes, which range from thermic to cryic, and in the degree of soil development, which is exemplified by soils ranging from Entisols to Ultisols.

Within the narrow zone of low elevation, thermic regions, where precipitation is relatively low, weathering and soil development increase as elevation and effective precipitation increase. Above this zone, where precipitation increases but temperatures decrease from mesic to cryic regimes, weathering and soil development decrease as elevation increases. Thus, the most intensely developed soils, Ultisols and Alfisols, occur in the region of optimum temperature and precipitation, where the amount of biological productivity also is high. This region extends approximately from the upper thermic to upper mesic zones, although Alfisols can extend into the lower frigid zone. (This trend is exacerbated by variations in rock type and soil parent materials. See the following section on soil parent materials for further discussion.)

As elevation increases, temperature generally decreases and precipitation generally increases, although these trends can be counteracted by variations in local relief, slope aspect, and slope steepness. Fluctuations in temperature and moisture affect the rate of organic matter accumulation and decomposition as well as mineral weathering.

A typical sequence of temperature and moisture in the frigid and cryic zones above

about 6,000 feet elevation, where snow normally remains for the full winter season, is as follows:

1. Autumn rains begin to wet the soil, abruptly and dramatically decreasing soil temperatures.
2. Atmospheric and soil temperatures become too cold for plant growth, and snow falls before the ground can freeze to a significant depth.
3. Precipitation is stored in the form of snow, and under the snow soil temperatures gradually cool to within a few degrees above freezing.
4. As snow begins to melt in spring, soil temperatures reach their minimum. Water from melting snow combines with spring rains to produce a period of maximum soil moisture recharge, leaching, ground-water recharge, and stream flow. In some years, spring rains and elevated atmospheric temperatures result in rapid snowmelt and high rates of surface runoff.
5. When the last snow melts on a site, soil temperatures rise rapidly and plant growth begins to surge.
6. As surface and subsurface runoff continues and plants increasingly draw stored soil moisture, soil moisture stores are depleted. Starting at the surface, soils become increasingly water repellent (i.e., hydrophobic).
7. As stored soil moisture is depleted, plant growth declines, reaching a minimum in mid-summer. Unprotected, coarse textured soils become highly susceptible to sheet and rill erosion by occasional summer rains as soil hydrophobicity reaches its maximum. Optimum conditions are created for erratic wildfires that further warm and dry the soil while rapidly oxidizing organic materials.
8. These conditions persist until the next autumn rains.

Parent Material

Parent material is the stuff from which soil forms. Although parent material can be organic or inorganic, less than 1 percent of the soils (classified as Histosols) in Yosemite National Park formed from organic deposits. These occur mostly in Yosemite Valley and in a few scattered willow bogs and wet meadows where organic matter accumulation significantly exceeds decomposition.

Inorganic parent materials can be either residual material the soil formed by the direct weathering of bedrock in place) or transported material (the soil formed in an unconsolidated deposit laid down by gravity, ice, flowing water, still water, or wind). Respectively, these transported material deposits are called colluvium, till, alluvium, lacustrine, and aeolian deposits. By far, most soils in the park—probably 90 percent or more—formed from transported parent materials, either as distinct deposits or in various combinations. Where these deposits thinly overlie bedrock, the weathered residuum can significantly influence the resulting soil, especially where weathering is most intense at elevations below about 4,500 feet.

Geologically, the park is dominated by various types of granitoid rocks, which were uplifted through older expanses of metamorphic rock. The metamorphic bodies, dominated by low-grade schist, hornfels, and gneiss, occur most extensively along the westerly low-elevation and easterly high-elevation fringes of the park. In addition, volcanic rock types occur in a few small isolated bodies.

The granitoid rock masses are divided by an extensive system of bedrock joints. At the broadest scale these joints establish the orientation of major geologic features, including the face of Half Dome. At a smaller scale they create deep, nearly vertical gaps in rock outcrops *(6)*. These gaps promote weathering of the rock, and they collect water and eroded soil from upslope, as well as dust, pollen, and seeds. As a result, bedrock joints typically are filled with deep soils, and they serve important ecologic and hydrologic functions. Figure 29 illustrates a pattern of ecosystems developed in

Figure 29.—Bedrock joints establish a pattern of ecosystem and soil development.

bedrock joints, and figure 30 shows the distribution of map units having significant bedrock joints.

Although purely residual soils are rare, rock type still significantly influences the distribution and properties of inorganic soils because of the presence of rock detritus in transported parent materials. These influences are best exemplified by the granitoid rock types, which underlie most of the survey area. These rocks range from more felsic, quartz-rich granite and quartz monzonite, to quartz diorite and granodiorite to more mafic (i.e., magnesium- and iron-rich), quartz-poor diorite. These rock types occur in an indistinct but significant elevational arrangement; the less dense, felsic rock types generally occur at the higher elevations, and the denser, mafic rock types occur at the lower elevations.

The above trends significantly affect soil formation for several reasons. Felsic minerals tend to be far more resistant to chemical weathering than mafic minerals, and felsic minerals tend to be poorer in potential plant nutrients than mafic minerals. Although all granitoid rocks in the park produce coarse textured soils in the early stages of weathering, soils from felsic rocks typically contain the highest gravel content as well as the coarsest textures. These coarse textures result in a high rate of permeability, a low surface area, and low nutrient retention in the soils.

Good examples of contrasting soils formed from contrasting granitoid parent materials and at contrasting elevations are those of the Canisrocks series. These soils include sandy-skeletal, isotic Typic Cryorthents that extend across several map units at the high elevations and fine-loamy, isotic, mesic Typic Haploxerults in map unit 302, at low elevations.

Other examples that occur within a narrow elevational range and are too intricately distributed to be mapped separately at the 1:40,000 scale occur near the southwestern border of the survey area, in the vicinities of Wawona and Hodgdon.

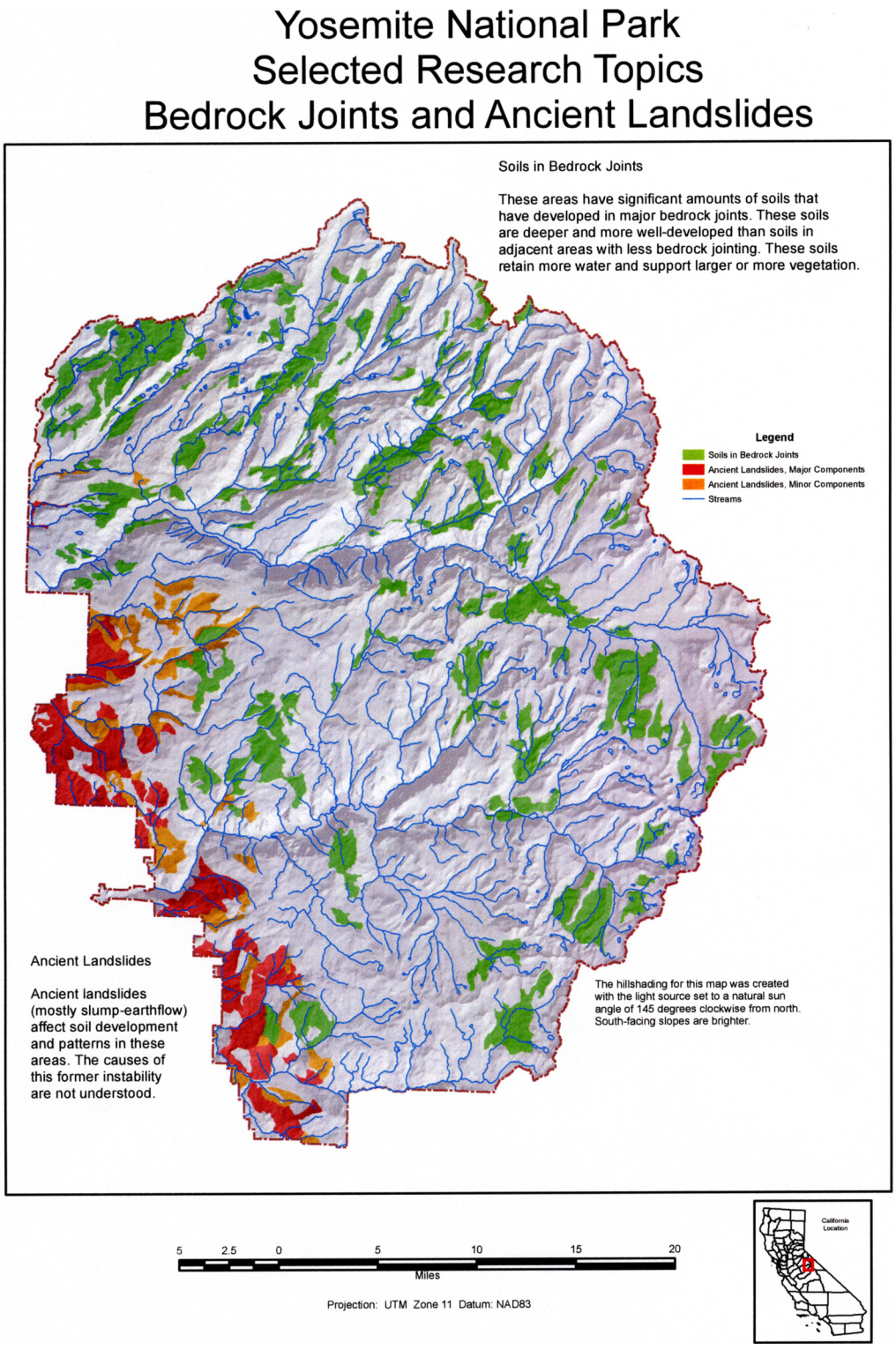

Figure 30.—Bedrock joints and ancient landslides affect soil development.

Delineations of map unit 282 (Clarkslodge-Craneflat-Nevadafalls complex, 0 to 30 percent slopes, mountain slopes, hummocky, frigid) occur near contacts of contrasting granitoid bedrocks that generally are situated downslope and upslope from each other. The downslope rock types consist of more mafic biotite and hornblende diorite and granodiorite. The neighboring upslope rock masses are dominated by more felsic quartz monzonite and biotite granodiorite. Accordingly, the downslope rock types contain less silica and potassium feldspar and more magnesium, iron, and calcium-rich plagioclase, which render them more easily weathered and less stable on the landscape. The upslope rock masses are richer in the resistant minerals quartz and potassium feldspar and poorer in the easily weathered hornblende and plagioclase. These relationships favor the development of more mature soils, including Alfisols (e.g., Clarkslodge series) and Ultisols from materials derived from the more weatherable rock. Less mature soils, including Inceptisols (e.g., Nevadafalls and Craneflat series) and Entisols develop from products of the more resistant rock.

The most widespread parent materials in the park are colluvium and till derived from granitoid rock. Colluvium occurs primarily on mountain flanks and mountain slopes and in colluvial aprons but it also commonly occurs as a mantle overlying till. Some of the most significant colluvial deposits occur in a roughly northwest- to southeast-trending arrangement of large, apparently ancient landslides in the southwestern portion of the survey area. (See figure 30.) Many of these landslides are a mix of materials derived from granitoid and metamorphic rock types.

Till deposits dominantly fall into one of three broad age classes: pre-Tahoe, Tahoe, and Tioga *(8)*. Younger deposits sometimes overlap older deposits, and identification often is uncertain. Pre-Tahoe glaciation, which climaxed about 1 million years ago, extends to the lowest elevations. Its till is characterized by few surface boulders, the least distinct morainal features, and the greatest soil development. These glacially deposited forms are the most difficult to recognize in remotely sensed images and on the ground. Tahoe glaciation peaked about 100,000 years before ago. Its till tends to occur at mid-elevations and is characterized by less weathering and the disappearance of surface boulders, more distinct morainal features, and perhaps less soil development than the pre-Tahoe till. Tioga glaciation, which culminated about 20,000 years ago, left mostly high-elevation moraines that remain distinct and are characterized by somewhat sharp features, numerous surface boulders, and weak soil development. Soil compaction, presumably caused by the overlying ice, is notable a few tens of centimeters below the surface in many ground moraines.

Alluvium, throughout most of the park, is limited to narrow, thin deposits along streams and to somewhat wider, thicker accumulations in a dozen or so small mountain basins. Notable exceptions where considerable alluvium has accumulated include Yosemite Valley, Tuolumne Meadow, and sections of the Grand Canyon of the Tuolumne. These larger valleys and basins also have collected the most recognizable deposits of glaciolacustrine sediments and volcanic ash.

Some of the most dramatic effects of combined landscape-shaping forces can be seen in Yosemite Valley. Huge valley glaciers scoured the mountain flanks, leaving behind sheer cliffs; freezing and thawing loosened rock masses, some the size of school buses, and earthquakes sent them crashing to the valley floor; and floodwaters of the Merced River have alternately gouged channels, tumbled boulders, and dumped sediment. All of these forces, whether released in ferocity or relative serenity, have shaped the land and prepared it for soil development.

Topography

At a position on the landscape, topography is expressed by slope steepness, aspect, and shape; across a sector of the landscape, it is characterized by variations in these attributes as well as by variation in elevation (i.e., relief). Each of these spatial

attributes can vary over short distances. The degree of variation contributes to localized differences in soil formation and properties.

Topography affects soil development and morphology through its influence on water runoff, erosion, internal drainage and aeration, exposure to sun and wind and the attendant energy fluxes, and biological activity, including vegetative development *(9)*.

If the other soil-forming factors are similar, soil development and depth are greater on horizontal to gently sloping sites, where water and sediments collect, than on steep mountain slopes, where water runoff and soil erosion typically are greater. Soil textures and particle-size classes also can vary. For example, soils on flatter alluvial deposits, where the energy of flowing water has dissipated, tend to have fewer and smaller coarse fragments than soils in steeper areas of alluvium. This trend can be seen in Yosemite Valley where the coarse-loamy Happyisles soils are downslope from the skeletal Half Dome soils.

Slope aspect can significantly influence soil formation through its effect on the amount of solar insolation received at a site. Compared to northerly facing slopes, southerly facing slopes receive more direct sunlight, making them warmer and generally drier at the surface (but not necessarily at depth) than northerly facing slopes. In most cases, northerly facing slopes experience greater soil development than southerly slopes because of more effective water utilization by plants and lower organisms and by more intense chemical reactions such as weathering. These relationships are well demonstrated by the elevational differences of the various soil temperature regimes; cooler soils extend to lower elevations on north-facing slopes than on south-facing slopes. These tendencies sometimes are reversed at high elevations where temperature rather than moisture is the limiting factor. In these cases, southerly aspects can support greater soil and plant development.

Slope shape can be significant because convex slopes tend to be more erosional in comparison to concave slopes which are commonly depositional. Although water and soil accumulation and soil development are more favorable on concave slopes, natural convex surfaces can be more stable and less disturbed than concave surfaces and thus more mature soils may form on convex surfaces.

Topographic variations typically create mesoclimates and microclimates that can override broader climatic and geomorphic trends. These variations largely account for the high number of map unit complexes in this survey.

Living Organisms

The activities of living organisms—macroflora, soil macrofauna, microorganisms, and, to a lesser extent, humans—contribute to soil development, morphology, functioning, and degradation.

Higher plants enhance soil formation in many ways, most notably by adding organic matter, promoting rock and mineral weathering, influencing environmental energy exchanges, and protecting the ground surface. Soils, in turn, strongly influence the distribution and vigor of plant communities as well as the individuals within a community. In this soil survey, vegetation types were recorded during field mapping and classified according to criteria in “Preliminary Description of Terrestrial Natural Communities of California” *(5)*. The database PLANTS (available online at http://plants.usda.gov) was used for additional plant identification *(17)*.

The organic matter added to soil from plant roots and shoots serves as a carbon, energy, and nutrient source for heterotrophic soil organisms, including mammals, mollusks, arthropods, fungi, and heterotrophic bacteria. These organisms, in turn, conduct processes necessary for continued ecosystem functioning. The organic matter decomposes to humus, which increases the soil’s water and nutrient-holding capacity, and gently glues small inorganic particles into structural aggregates, thus improving erosion resistance and enhancing gas exchange with the above-ground

atmosphere. Field and laboratory data gathered during this survey clearly demonstrate the vital importance of soil humus to ecosystem functioning and resilience. Especially at mid to high elevations in the survey area, soil humus far exceeds the soil's solid inorganic fraction in sustaining chemical and biological functioning of the ecosystems.

Growing roots contribute to physical and chemical weathering by prying apart rocks and releasing carbon dioxide, which reacts with water to form carbonic acid, a weak but common acid in soils and an important contributor to mineral weathering. Roots capture nutrients released by mineral weathering, thus feeding the plant and preventing the nutrients from leaching to ground water and surface water. Carbon dioxide from roots also feeds the autotrophic bacteria that maintain nutrient cycling.

When large roots die, channels of new life are created in their stead. Primary and secondary decomposers colonize the old roots, creating humus and cycling nutrients. The old root channels become conduits for water movement, gas exchange, and biological commerce. Eventually, soil from surrounding areas is mixed in, and new features called krotovinas are created. Young rootlets nudge their way into the krotovinas and life of the soil goes on.

Above ground, plant cover moderates soil temperatures by shading warm sites and insulating cool sites. A good example of the effect of forest cover removal on soil temperature can be seen in an area that was burned on southwesterly facing slopes above Big Oak Flat Road. A comparison of data collected from this area and from comparable unburned sites suggests that the soil temperature regime warmed from frigid to mesic, apparently as a result of canopy removal by the fire. By the completion of this survey, the change had persisted for 15 years.

Under ordinary conditions, trees and other plants protect soil from disturbance by water and wind erosion; but when trees fall, as during strong winds, the dislodgement of root masses throws soil into the air, creating a small crater and mixing soil. During the natural life of a forest, this process can lead to considerable soil diversity.

Soil macrofauna, including insects, slugs and snails, worms, rodents, and other burrowing animals, are important primary decomposers of organic matter. In addition, their activities aerate the soil and promote water infiltration and percolation. Channels excavated by burrowing creatures, ranging from small to large, fill in with soil, feces, and organic matter from above, creating new nutrient-rich krotovinas. Observations made during this survey suggest that the greatest biological activity in subsoils takes place in krotovinas. Clearly, the properties and full contribution of these features to ecosystem functioning deserves concentrated scientific research.

Unlike macroorganisms, microorganisms and their activities cannot be observed during the normal course of a soil survey; nonetheless they are known to contribute to soil formation and ecosystem functioning in an untold number of ways. Bacteria are vital to biogeochemical processes, including the cycling of carbon, nitrogen, and other nutrients. Autotrophic bacteria, for example, absorb carbon dioxide, ammonia, methane, and other gases released by heterotrophs during decomposition.

Nitrogen-fixing bacteria and other microbial nitrogen fixers convert gaseous nitrogen (N_2) from the soil atmosphere into ammonia (NH_3), which can be used to make amino acids, proteins, and other nitrogenous compounds. A portion of the ammonia converts to ammonium ions (NH_4+), which can be utilized by plants to make their own proteins. When organisms die, the decay process called ammonification releases ammonia and ammonium back into the soil where it can be cycled to other organisms, including a different group of bacteria called nitrifiers. Nitrifiers convert ammonia to nitrate (NO_3-), which is highly soluble and mobile in the soil. Nitrate can be cycled back into plants, or in some cases leached to greater depth. Ammonification and nitrification operate on animal and human wastes deposited on and in the soil.

When fire strikes, organic materials, including proteins, are rapidly oxidized and nitrogen goes up in the smoke. On intensively burned, nitrogen-depleted sites, plants

that support symbiotic nitrogen-fixing organisms on their roots are among the first to recolonize and begin nature's refertilization process.

These microbial processes, which are at the core of the nitrogen cycle, are some of the most important in nature and contribute greatly to soil formation. They are particularly vital because the atmosphere is the ultimate source of nitrogen; no nitrogen is derived from the weathering of minerals and rocks.

People have greatly altered some soils in the developed areas of the park. Evidence of human activity is readily observable along trails and around campsites in the backcountry. The damaging impacts range from soil obliteration through the construction of roads and buildings to mild erosion and compaction by foot traffic. In contrast, some park-initiated rehabilitation and restoration projects have enhanced soil development. These types of corrective efforts normally require significant inputs of labor and resources, most of which must be obtained from other areas.

Apart from these localized impacts, people have had little intensive influence on either development or destruction of the park soils. Nonetheless, on an extensive scale, the use of fire by Native Americans and later attempts at fire exclusion by Euroamericans have had an unmeasurable influence on soils throughout most of the park. Although charcoal and other evidence of past fires were observed in many soils, this survey did not properly judge the specific consequences of these practices.

Human activities outside the park that contribute to air pollution, acid precipitation, and atmospheric warming are expected to have insidious effects on the park soils. Although these effects were not properly evaluated or predicted in this survey, most soils in the park probably are susceptible because of the weak buffering capacity of the coarse textures.

Time

Like all living things, soils go through stages of growth and decline from infancy to old age and some soils "age" faster than others. As a soil advances in its degree of development, or maturity, the conditions and processes that control the rate of aging have a greater effect than the simple passage of time. As a soil grows older, it can pass through a peak of productivity and eventually reach a degenerated state from which it might recycle back to infancy. This progression is uncommon among living things.

Time as a soil-forming factor is determined not only by centuries or millennia since parent materials were exposed to pedogenic processes but also by the other soil-forming factors and their interactions. Thus, a soil formed in resistant parent material or in an unfavorable climate might be old in years but immature in development. Another soil in the same region that is younger in chronological age may be more developed if it formed from an easily weathered parent material or under more favorable climatic conditions.

Influences of time as a soil-forming factor are well demonstrated in the park. Beginning in Yosemite Valley, one can identify Entisols, which have only weakly developed pedogenic horizons, on recently deposited alluvium of low flood plains. Somewhat more developed Inceptisols and Mollisols occur on the alluvium of older, higher flood plains and terraces.

The valley also contains examples of neighboring soils having similar chronological ages but different degrees of development because of contrasting parent materials and topography. For example, some soils on sloping, coarse textured alluvial fans and colluvial aprons are less developed than nearby soils on flatter, finer textured flood plains of comparable chronological age.

Outside the valley, other contrasts can be made with Entisols and some Inceptisols that formed on younger, Tioga till and Inceptisols and occasional Alfisols that formed

on older, pre-Tahoe till. Many soils at the high elevations show only weak horizonation, even after 10,000 years or more of development. In addition, time-elevation-parent material interactions are well illustrated at low elevations near the contact zone of granitoid and metamorphic rock types in the southwestern portion of the park.

As suggested above, a soil's "age" can be reflected in its taxonomic classification, which might fall somewhere in the following sequence of increasingly mature soil orders: Entisol, Inceptisol, Mollisol, Alfisol, Ultisol, and Oxisol. The majority of soils in the park are Entisols and Inceptisols, and a few have matured to Ultisol. None approach the degenerative stage common in Oxisols, which form in warm, humid climates.

Fire

Although forest fires occur throughout the country's western forestlands, including Yosemite National Park, fire is not commonly regarded as a soil-forming factor. Nonetheless, fires function as a soil-forming factor by significantly altering the soil's physical, chemical, and biological properties. The heat from fires cracks and exfoliates rocks by rapidly expanding trapped water vapor. The exfoliation process increases the amount of rock surface exposed to other weathering agents.

Fires also cause a rapid and dramatic pH increase in topsoil. This increased alkalinity, or decreased acidity, can be three pH units in surface and near-surface soils, which means that the alkalinity increases 1,000-fold. This increase generates significant solubility changes in metallic elements, rendering some more available to plants and microbes and others less available.

Fire also increases the solubility of silica and alumina, which stimulates the weathering of silicate minerals. Basic ions gradually leach to greater depths in the years following fire, and residual effects can persist for a decade or more.

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Glossary

AASHTO classification. A system for classifying soils specifically for geotechnical engineering purposes that is related to highway and airfield construction. It is based on particle-size distribution and Atterberg limits.

AASHTO group index (GI) number. An empirical index number used to evaluate clayey and silty clay material.

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. A general term for loose, relatively permeable material deposited during the downwasting of nearly static glacial ice. The material is either contained within the glacier or accumulated on the surface of the glacier.

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.

Alluvial fan. A low, outspread mass of loose material and/or rock material washed down the sides of mountains and hills. It commonly has gentle slopes and is shaped like an open fan or a segment of a cone. It is deposited by a stream at the place where the stream issues from a narrow mountain valley or where a tributary stream is near or at its junction with the main stream. An alluvial fan is steepest near its apex that points upstream, and it slopes gently and convexly outward with a gradual decrease in gradient.

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.

Apron. An extensive blanket-like deposit of unconsolidated material at the base of a mountain or in front of a glacier, such as a bajada or an outwash plain.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aridic moisture regime. Soils that have an aridic moisture regime are dry for at least one-half of the year. They commonly occur in areas that have an aridic climate. A few are in areas that have a semiarid climate, but they either have physical properties that keep them dry, such as a crusty surface that virtually precludes the infiltration of water, or have steep slopes with a high rate of runoff. Little, if any, leaching occurs in the soils in this moisture regime, and soluble salts accumulate in the soils if there is a source of salts.

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 (AWC). Also available moisture capacity. The volume of

water that should be available to plants if the soil, inclusive of fragments, were at field capacity. It is commonly estimated as the difference between the amount of water at field capacity and the amount at wilting point with adjustments for salinity, fragments, and rooting depth. 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 2.5
Low	2.5 to 5.0
Moderate	5.0 to 7.5
High	7.5 to 10.0
Very high	more than 10.0

Avalanche. A large mass of snow, ice, soil, or rock, or mixtures of these materials, falling, sliding, or flowing very rapidly under the force of gravity. Velocities may sometimes exceed 500 km/hr.

Avalanche chute. The central, channel-like corridor, scar, or depression along which an avalanche has moved. An eroded surface marked by pits, scratches, and grooves.

Avalanche track. The path formed by an avalanche. It may take the form of an open path in a forest, with bent and broken trees, or an eroded surface marked by pits, scratches, and grooves. Compare to Avalanche chute.

AWC. See Available water capacity.

Backslope. The hillslope profile position that forms the steepest and generally linear, middle portion of the slope. In profile, backslopes commonly are bounded by a convex shoulder above and a concave footslope below. They may or may not include cliff segments, or free faces. Backslopes are commonly erosional forms produced by mass movement, colluvial action, and running water.

Bajada. A broad, gently inclined piedmont slope extending from the base of a mountain range out into a basin. It is formed by the lateral coalescence of a series of alluvial fans. Typically, it has a broadly undulating transverse profile parallel to the mountain front, resulting from the convexness of the component fans. The term generally refers to the constructional slopes of intermontane basins.

Bar (streams). A general term for a ridge-like accumulation of sand, gravel, or other alluvial material in the channel, along the banks, or at the mouth of a stream where a decrease in velocity induces deposition. Examples are channel bars and meander bars.

Bar (microfeature). A small, sinuous or arcuate, ridge-like lineation separated from others similar to it by small channels. It is caused by fluvial processes and is common on flood plains and young alluvial terraces. It is a constituent of bar and channel topography.

Bar and channel topography. A local topography of recurring, small, sinuous or arcuate ridges separated by shallow troughs irregularly spaced across low-relief flood plains (slopes generally are 2 to 6 percent). The effect is a subdued, sinuously undulating surface that is common on active flood plains. Micro-elevational differences generally range from less than 1 meter to less than 2 meters. The elevational differences between the bars and channels are largely controlled by the competency of the stream. The ridge-like bars commonly consist of sediment that is coarser than the finer textured sediment of the low-lying areas.

Basal till. Compact glacial till deposited beneath the ice.

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 slopewash sediments (for example, slope alluvium).

Basin. The nearly level or gently sloping bottom surface of a wide structural depression between mountain ranges.

Basin floor. A general term for the nearly level, lowermost part of intermontane basins, or bolsons and semibolsons. The floor includes all of the alluvial, eolian, and erosional landforms below the piedmont slope.

Batholith. A large body of igneous intrusive (plutonic) rock, commonly regional in extent, such as the Sierra Nevada batholith.

Beach terrace. A landform that consists of a wave-cut scarp and wave-built terrace of well sorted marine and lacustrine sand and gravel. Colloquially, in the western United States, relict shoreline from pluvial lakes, generally restricted to valley sides.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. A general term for 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.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bolson. An internally drained (closed) intermontane basin into which drainageways from surrounding mountains converge inward toward a central depression.

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.

Bulk density. A measurement of the ovendry weight of the soil material that is less than 2 millimeters in diameter per unit volume. Common measurements are taken at $^1/_3$-, $^1/_{10}$-, or 15-bar moisture tension. Bulk density influences plant growth and engineering applications. It is used to convert measurements from a weight basis to a volume basis. Within a family particle-size class, bulk density is an indicator of how well plant roots are able to extend into the soil. Bulk density is used to calculate porosity.

Butte. An isolated, generally flat-topped hill or mountain with relatively steep slopes and talus or precipitous cliffs. It is characterized by a summit width that is less than the height of bounding escarpments, is commonly topped by a cap of resistant rock, and represents an erosional remnant carved from flat-lying rock.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Calcic horizon. A mineral soil horizon of secondary carbonate enrichment that is more than 15 centimeters thick, has a calcium carbonate equivalent of more than 15 percent, and has a calcium carbonate equivalent at least 5 percent higher than the underlying horizon.

Calcium carbonate equivalent. The amount of calcium carbonate in a soil measured by treating the soil sample with hydrochloric acid (HCL). The evolved carbon dioxide (CO_2) is measured, and the amount of carbonate is then calculated as calcium carbonate ($CaCO_3$).

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Cambic horizon. A mineral soil horizon that has the texture of loamy very fine sand or finer texture, has soil structure rather than rock structure, and contains some weatherable minerals. It is characterized by the alteration or removal of mineral material as indicated by mottling or gray color, stronger chroma or redder hue than the underlying horizons, or the removal of carbonates. The cambic horizon lacks cementation or induration and does not have enough evidences of illuviation to meet the requirements for an argillic horizon.

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 of soils on a landscape that are about the same age and formed in similar kinds of parent material under similar climatic conditions but have different characteristics as a result of differences in relief and drainage.

Cathodic protection. Control of the electrolytic corrosion of an underground or underwater metallic structure, such as a pipeline, by the application of an electrical current in such a way that the structure acts as the cathode rather than the anode of an electrolytic cell. (See Coatings for pipelines.)

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity (CEC). 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.

CEC. See Cation-exchange capacity.

Cement rock. Shaly limestone used in the manufacture of cement.

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.

Cinders. Uncemented vitric, vesicular, pyroclastic material more than 2 millimeters in at least one dimension with apparent specific gravity (including vesicles) of more than 1 and less than 2.

Cirque. A semicircular, concave, bowl-like area that has steep faces primarily resulting from the erosiveness of a mountain glacier.

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.

Clayey. Sandy clay, silty clay, and clay soil textures.

Claypan. A dense, compact, slowly permeable layer in the subsoil that has a much higher content of clay than the overlying material. A claypan commonly is hard when dry and plastic or sticky when wet.

Cliff. Any high, very steep to perpendicular or overhanging face of rock or earth; a precipice.

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 fragments. See Rock fragments.

Coarse textured soil. Sand or loamy sand.

Coatings for pipelines. Coatings used as a barrier to the flow of electricity and moisture, thereby preventing the formation of corrosion cells.

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 percent.

Colluvium. Unconsolidated, unsorted earth material transported or deposited on side slopes and/or at the base of slopes by mass movement, or direct gravitational action, and by local unconcentrated runoff.

Compaction. The process by which the soil grains are rearranged to decrease void space and bring them into closer contact with one another, thereby increasing bulk density.

Complex landslide (mass movement). A category of mass movement processes, associated sediments (complex landslide deposit), or resultant landforms characterized by a composite of several mass movement processes, none of which dominates or leaves a prevailing landform. Numerous types of complex landslides can be specified by naming the constituent processes evident (e.g., a complex earth spread-earth flow landslide). Compare to Fall, Topple, Slide, Lateral spread, Flow, and Landslide.

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.

Congeliturbate. See Cryoturbation.

Conglomerate. A coarse-grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter, commonly with a matrix of sand and finer textured material. Cementing agents include silica, calcium carbonate, and iron oxide. Conglomerate is the consolidated equivalent of gravel.

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.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cryoturbation. A collective term used to describe all soil movement as a result of

frost action, including the folding, breaking, and dislocating of beds and lenses of unconsolidated material.

Cuesta. An asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip (less than 10 degrees, or 16 percent). It is produced by differential erosion of interbedded resistant and weak rocks. A long, gently sloping to sloping face (dip slope), roughly paralleling the inclined beds, opposes a relatively short, steep face (scarp) cut across the tilted rocks.

Debris avalanche (mass movement). The process, associated sediments (debris avalanche deposit) or resultant landform characterized by a very rapid or extremely rapid type of flow dominated by the sudden downslope movement of incoherent, unsorted mixtures of soil and weathered bedrock which, although comparatively dry, behave much as a viscous fluid when moving. Compare to Debris flow, Rock fragment flow, Earthflow, and Landslide.

Debris flow (mass movement). The process, associated sediment (debris flow deposit), or resultant landform characterized by a very rapid type of flow dominated by sudden downslope movement of a mass of rock, soil, and mud (more than 50 percent particles that are more than 2 millimeters in size) that behaves much like viscous fluid whether it is saturated or relatively dry.

Deep soil. See Depth, soil.

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 soils, 20 to 40 inches; shallow soils, 10 to 20 inches; and very shallow soils, less than 10 inches.

Depth to bedrock (in tables). Bedrock is too near the surface for the specified use.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedded rock (for example, the long, gently inclined surface of a cuesta).

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.

Drainageway. A general term for a course or channel along which water moves in draining an area.

Draw. A small stream channel that generally is more open and has a broader floor than a ravine or gulch.

Drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till that may or may not have a core of bedrock or stratified drift. The longer axis is parallel to the general direction of the glacial flow. It is the product of the streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

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.

Duripan. A subsurface soil horizon that is cemented with illuvial silica, commonly opal

or microcrystalline forms, to the degree that less than 50 percent of the volume of air-dry fragments will slake in water or hydrochloric acid.

Earthflow (mass movement). The process, associated sediments (earthflow deposit), or resultant landforms characterized by slow to rapid types of flow dominated by downslope movement of soil, rock, and mud (more than 50 percent of the particles are less than 2 mm) and, whether saturated or comparatively dry, behaves as a viscouos fluid when moving. Compare to Debris flow (coarser, less fluid) and Mudflow (finer, more fluid).

EC. See Electrical conductivity.

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.

Electrical conductivity (EC). The electrolytic conductivity of an extract from saturated soil paste.

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.

End moraine. A ridge-like accumulation that is being or was produced at the outer margin of an actively flowing glacier at any given time; a moraine that has been deposited at the outer or lower end of a valley glacier. Compare to Terminal moraine, Recessional moraine, and Ground moraine.

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 material. Material transported and deposited by wind, including earth material such as dune sand, sand sheets, loess, and clay.

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 concentration of gravel or coarser fragments that remains on the soil surface after finer particles have been removed by running water or wind.

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. The term is most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Esker. A long, narrow, sinuous, steep-sided ridge of irregularly stratified sand and gravel deposited by a subglacial or supraglacial stream flowing between ice walls or in an ice tunnel of a retreating glacier. Eskers are less than 1 kilometer to more than 160 kilometers long and 3 to 30 meters high.

Extrusive. Pertaining to igneous rock and sediment derived from deep-seated molten

matter (magma) deposited and cooled on the earth's surface, including lava flows and tephra deposits.

Fall (mass movement). (a) A category of mass movement processes, associated sediments (fall deposit), or resultant landforms (e.g., rockfall, debris fall, soil fall) characterized by very rapid movement of a mass of rock or earth that travels mostly through the air by free fall, leaping, bounding, or rolling, with little or no interaction between one moving unit and another. Compare to Topple, Slide, Lateral spread, Flow, Complex landslide, and Landslide. (b) The mass of material moved by a fall.

Family, soil. The most specific hierarchical category in soil taxonomy.

Fan (geomorphology). A gently sloping, fan-shaped mass of detritus forming a section of a low-angle cone commonly at a place where there is a notable decrease in gradient; specifically an alluvial fan. Compare to Alluvial fan.

Fan piedmont. The most extensive landform on piedmont slopes that is formed either by the lateral downslope coalescence of mountain-front alluvial fans into one generally smooth slope with or without the transverse undulations of the semiconical alluvial fans or by the accretion of fan aprons.

Fan remnant. A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, fan aprons, inset fans, and fan skirts, that either have been dissected (erosional fan remnants) or partially buried (nonburied fan remnants). An erosional fan remnant has a relatively flat summit that is a relict fan surface. A nonburied fan remnant is a relict surface in its entirety.

Fan terrace. See Fan remnant.

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. An 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. The nearly level plain that borders a stream and is subject to inundation under floodstage conditions unless protected artificially. It is commonly a constructional landform consisting of sediment deposited during overflow and lateral migration of a stream.

Floor (geomorphology). (a) A general term for the nearly level, lower part of a basin

or valley; refer to basin floor and valley floor. (b) The bed of any body of water; e.g., the nearly level surface beneath the water of a stream, lake, or ocean.

Flow (mass movement). A category of mass movement processes, associated sediments (flow deposit), and landforms characterized by slow to very rapid downslope movement of unconsolidated material which, whether saturated or comparatively dry, behaves much as a viscous fluid as it moves. Types of flows can be specified based on the dominant particle size of sediments, such as debris flow (lahar), earth flow (creep, mudflow), rock fragment flow (rockfall avalanche), and debris avalanche. Compare to Fall, Topple, Slide, Lateral spread, Complex landslide, and Landslide.

Fluting. (a) Differential weathering and erosion by which an exposed well-jointed coarse-grained rock, such as granite, develops a corrugated surface of flutes. (b) The formation by glacial action of smooth gutter-like channels or furrows on the face of a rock mass obstructing glacial advance. Also grooves and ridges in till, parallel to the direction of ice movement. (c) The process of forming a flute by the scouring action of a current of water on a muddy surface.

Fluvial. Of or pertaining to rivers; produced by river action.

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.

Fracture. A crack, joint, fault, or other break in rocks.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Fragments. Unattached cemented pieces of bedrock, bedrock-like material, durinodes, concretions, and nodules 2 millimeters in diameter or larger in mineral soils; woody material 20 millimeters in diameter or larger in organic soils.

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.

Glacial. Of or pertaining to the presence and activity of ice and glaciers, such as glacial erosion; pertaining to distinctive features and material produced by or derived from glaciers and ice sheets, such as glacial lakes; or pertaining to an ice age or region of glaciation.

Glacial drift. See Drift.

Glacial outwash. See Outwash.

Glacial till. See Till.

Glacier. (a) A large mass of ice that formed, at least in part, on land by the compaction and recrystallization of snow, moving slowly by creep downslope or outward in all directions due to the stree of its own weight and surviving from year to year. Included are small mountain glaciers, ice sheets continental in size, and ice shelves which float on the ocean but are fed in part by ice formed on land. (b) A

stream-like landform having the appearance of, or moving, like a glacier; e.g., a rock glacier. Compare to Rock glacier.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated with varves or rhythmites.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Granitic. A textural term commonly pertaining to an igneous intrusive rock of felsic to intermediate composition. Referring to granite-like rock, but not necessarily true granite. Commonly applied to granite, quartz monzonite, granodiorite, and diorite.

Granite. A felsic igneous intrusive rock containing quartz and orthoclase with smaller amounts of sodic plagioclase and commonly muscovite.

Granitoid. In the IUGS classification, a preliminary field use term for a plutonic rock with 20 to 40 percent quartz. A general term for all phaneritic igneous rocks (mineral crystals visible unaided and all about the same size) dominated by quartz and feldspars.

Granodiorite. An igneous intrusive rock that is intermediate between felsic and mafic in composition and contains quartz and somewhat more plagioclase than orthoclase.

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 moraine. (a) Commonly an extensive, low relief area of till having an uneven or undulating surface and commonly bounded on the distal end by a recessional or end moraine. (b) A layer of poorly sorted rock and mineral debris (till) dragged along, in, on, or beneath a glacier and deposited by processes including basal lodgement and release from downwasting stagnant ice by ablation. Compare to End moraine, Recessional moraine, and Terminal moraine.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides cut by the concentrated, but intermittent, flow of water commonly during and immediately following heavy rainfall or following icemelt or snowmelt. A gully generally is an obstacle to wheeled vehicles and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Gypsum content. The percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size.

Halophytic. Pertaining to vegetation that is adapted to salty soils.

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.

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.

Hill. A generic term for an area of the land surface that rises as much as 1,000 feet

(300 meters) above surrounding lowlands, commonly has restricted summit area relative to surrounding surfaces, and has a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and commonly is dependent on local usage.

Holocene. The epoch of the Quaternary period of geologic time that extends from the end of the Pleistocene (about 10 to 12 thousand years ago) to the present.

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.

Hummock. Rounded or conical mound or other small rise.

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.

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.

Inset fan. Specific name for the flood plain of an ephemeral stream that is confined between fan remnants, ballenas, basin floor remnants, or closely opposed fan toeslopes of a basin.

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

Intermittent stream. A stream, or reach of a stream, that does not flow year-round (commonly is dry for 3 months or more annually) and that has a channel that is generally below the local water table. It flows only when it receives baseflow during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Intrusive. Pertaining to igneous rock derived from molten matter (magma) that invaded pre-existing rock and cooled below the surface of the earth.

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.

Joint (geology). A surface of actual or potential fracture or parting in a rock, without displacement; the surface is typically planar and commonly occurs with parallel joints to form part of a joint set.

K factor. A measurement of potential soil erodibility caused by detachment of soil particles by water.

Kame. A low mound, knob, hummock, or short irregular ridge of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier, by a supraglacial stream in a low place or hole on the surface of a glacier, or by a ponded area, some of which is at the margin of stagnant ice.

Karst (topography). The relief of an area formed by the dissolution of limestone, gypsum, or other soluble rock and characterized by sinkholes and caves and underground drainage.

Kettle. A steep-sided, bowl-shaped depression commonly without surface drainage (closed depression) in drift deposits, commonly containing a lake or swamp, and formed by the melting of a large, detached block of stagnant ice that had been wholly or partly buried in the drift. Kettles range in depth from one to tens of meters and has a diameter of as much as 13 km. Compare to Pothole.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Lacustrine deposit. Clastic sediment and chemical precipitates deposited in lakes.

Landscape (soils). An assemblage, group, or family of spatially related, natural landforms over a relatively large area; the land surface which the eye can comprehend in a single view.

Landslide (mass movement). A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and

outward deposition of soil and rock materials caused by gravitational forces and which may or may not involve saturated materials. Names of landslide types generally reflect the dominant process and/or the resultant landform. The main operational categories of mass movement are fall (rockfall, soil fall, topple), slide (rotational landslide, block glide, debris slide, lateral spread), flow (rock fragment flow, (especially rockfall avalanche), debris avalanche, debris flow (lahar), earthflow (creep, mudflow), and complex landslides. Compare to solifluction.

Lateral moraine. A ridge-like moraine carried on and deposited at the side margin of a valley glacier. It is composed chiefly of rock fragments derived from valley walls by glacial abrasion and plucking or colluvial accumulation from adjacent slopes.

Leaching. The removal of soluble material from soil or other material by percolating water.

Ledge. (a) A narrow shelf or projection of rock, much longer than wide, formed on a rock wall or cliff face, as along a coast by differential wave action on softer rocks; erosion is by combined biological and chemical weathering. (b) A rocky outcrop; solid rock. (c) A shelf-like quarry exposure or natural rock outcrop. Compare to Structural bench.

LEP. See Linear extensibility percent.

Limestone. A sedimentary rock consisting mainly of calcium carbonate (more than 50 percent) dominantly in the form of calcite. Limestone is commonly formed by a combination of organic and inorganic processes and includes chemical and clastic (soluble and insoluble) constituents. Fossils are common in limestone.

Linear extensibility percent (LEP). The linear expression of the volume difference between the water content of the natural soil fabric at $^1/_3$-bar or $^1/_{10}$-bar and oven dryness. The volume change is reported as a percent for the whole soil.

Liquid limit (LL). The moisture content at which the soil passes from a plastic to a liquid state.

LL. See Liquid limit.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy. Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, and silty clay loam soil textures.

Loess. Material transported and deposited by wind that consists dominantly of silt-sized clastics.

Low strength. The soil is not strong enough to support loads.

Magma. Molten rock material that originates deep in the earth and solidifies to form igneous rock.

Marl. An earthy, unconsolidated deposit consisting mainly of calcium carbonate mixed with clay in approximately equal amounts (35 to 65 percent of each). It is formed primarily under freshwater lacustrine conditions, but some is associated with a more saline environment.

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.

Medial moraine. (a) An elongate moraine carried in or upon the middle of a glacier and parallel to its sides, usually formed by the merging of adjacent and inner lateral moraines below the junction of two coalescing valley glaciers. (b) A moraine formed by glacial abrasion of a rocky protuberance near the middle of a glacier

and whose debris appears at the glacier surface in the ablation area. (c) The irregular ridge left behind in the middle of a glacial valley when the glacier on which it was formed has disappeared.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat-topped and commonly isolated land mass that is bounded by steep slopes or precipitous cliffs and has a nearly horizontal summit that consists of layers of resistant rock and is wider than the height of bounding escarpments. Also used to designate broad structural benches and alluvial terraces at intermediate levels in stepped sequences of platforms bordering canyons and valleys.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement in the earth's crust. Nearly all such rocks are crystalline. Examples are schist, gneiss, quartzite, slate, and marble.

Metasediment. A sediment or sedimentary rock that shows evidence of having been subjected to metamorphism.

Metavolcanic. A volcanic rock that shows evidence of metamorphism but has not been fully metamorphosed into metamorphic rock.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

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 deep soil. See Depth, soil.

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.

Moraine (material). A mound, ridge, or other distinct accumulation of unsorted, unstratified glacial drift, dominantly till, primarily from glacial ice.

Moraine (landform). A general term for a landform composed mainly of till deposited by either an active or extinct glacier. Some types are disintegration, end, lateral, recessional, and terminal.

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).

Mound. (a) A low, rounded natural hill of unspecified origin, generally less than 3 meters high and composed of earthy material. (b) A small, human-made hill composed either of debris accumulated during successive occupations of the site (e.g., tell) or of earth heaped up to mark a burial site (e.g., burial mound). (c) A structure built by colonial organisms (e.g., termite mound).

Mountain. A natural elevation of the land surface that rises more than 1,000 feet (300 meters) above surrounding lowlands, commonly has limited summit area relative to surrounding surfaces, and generally has steep sides (slopes of more than 25 percent) with or without considerable bare-rock surface. A mountain can occur as

a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic and/or volcanic activity and by differential erosion.

Mountain crest. The highest point on a mountain, or the highest line along a ridge or range.

Mountainflank. A geomorphic component of mountains consisting of the side area of mountains, characterized by very long, complex backslopes with comparatively high slope gradients and composed of highly diverse, colluvial sediment mantles, complex near-surface hydrology, mass movement processes and features (e.g., creep, landslides). Rock outcrops or structural benches may be present. The mountainflank can be subdivided by the general location along the mountainside (ie., upper third, middle third, or lower third mountainflank).

Mountain slope. A part of a mountain between the summit and the foot. Compare to Mountainflank.

Mountain valley. (a) Any small, externally drained V-shaped depression (in cross-section) cut or deepened by a stream and floored with alluvium or a broader, U-shaped depression modified by an alpine glacier and floored with either till or alluvium that occurs on a mountain or within mountains. Several types of mountain valleys can be recognized on their form and valley floor sediments (i.e., V-shaped valley, U-shaped valley). Compare to Valley. (b) Colloquially Basin and Range. A relatively small, structural depression within a mountain range that is partly filled with alluvium and commonly drains externally to an intermontane basin, bolson, or semi-bolson. Compare to Valley flat.

Muck. Unconsolidated soil material consisting primarily of highly decomposed organic material in which the original plants are not recognizable. It generally contains more mineral material and is darker in color than peat. (See Sapric soil material.)

Mudstone. A blocky or massive, fine-grained sedimentary rock indurated by clay and silt in approximately equal amounts. Also, a general term for clay, silt, claystone, siltstone, shale, and argillite that is used only when the amounts of clay and silt are not known or cannot be precisely determined.

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.)

Nivation. The process of excavation of a shallow depression or nivation hollow on a mountain side by removal of fine material around the edge of a shrinking snow patch or snow bank, chiefly through sheetwash, rivulet flow, and solution in meltwater. Freeze-thaw action is apparently insignificant.

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.

OM. See Organic matter.

Organic matter (OM). 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.

Outwash plain. An extensive lowland area of coarse textured glaciofluvial material. An outwash plain commonly is smooth; where pitted as a result of the meltout of incorporated ice masses, it generally has low relief.

Paleosol. A soil that formed in a particular area with distinctive morphological features resulting from a soil-forming environment that no longer exists in the area. The pedogenic process was either altered as a result of external environmental changes or interrupted by burial. A Paleosol (or component horizon) is classified as relict if it has persisted without major alteration of morphology by the prevailing pedogenic environment. An exhumed Paleosol is one that was buried and has been re-exposed by erosion of the mantle. Most Paleosols have been affected by some subsequent modification of the morphology of diagnostic horizons and truncation of the profile.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan,* and *traffic pan*.

Parent material. The unconsolidated and chemically weathered mineral and organic material in which the solum of a soil is formed as a result of pedogenic processes.

Peat. Unconsolidated soil material consisting largely of undecomposed or slightly decomposed organic matter that has accumulated under excessive moisture conditions. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pediment. A gently sloping erosional surface at the foot of a receding hill or mountain slope. The surface may be essentially bare, exposing earth material that extends beneath adjacent uplands, or it may have a thin mantle of alluvium and colluvium, ultimately in transit from the upland front to the basin or valley lowland. On hill footslope terrain, the mantle is designated “pedisediment.” The term pediment is used in several geomorphic contexts: (1) landscape positions, for example, intermontane basin piedmont or valley border footslope surfaces, or respectively, apron and terrace pediments; (2) type of material eroded, either bedrock or regolith; or (3) a combination of these.

Pedisediment. A layer of sediment eroded from the shoulder and backslope of an erosional slope that is being transported or was transported across a pediment.

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.

Perched water table. The upper surface of unconfined ground water separated from an underlying main body of ground water by an unsaturated zone.

Percolation. The downward movement of water through the soil.

Permafrost. Soil or rock that has remained at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

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.)

PI. See Plasticity index.

Piedmont (as adjective). Lying or formed at the base of a mountain or mountain range; for example, a piedmont terrace or a piedmont pediment.

Piedmont (as noun). An area, plain, slope, glacier, or other feature at the base of a mountain; for example, a foothill or bajada. In the United States, the Piedmont is a low plateau that extends from New Jersey to Alabama and lies east of the Appalachian Mountains.

Plasticity index (PI). 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. A comparatively flat area of great extent and elevation. Specifically, an extensive land region considerably elevated (more than 100 meters) above adjacent lower-lying terrain that is commonly limited on at least one side by an abrupt descent and has a flat or nearly level surface. A relatively large part of a plateau surface is near summit level.

Pleistocene. The epoch of the Quaternary period of geologic time following the Pliocene and preceding the Holocene (approximately 2 million to 10 thousand years ago). Also refers to the corresponding (time-stratigraphic) "series" of earth material.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

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.

Pothole (glacial geology). A type of small pit or closed depression (1 to 15 meters deep), generally circular or elliptical, occurring in an outwash plain, a recessional moraine, or a till plain.

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.

Pyroclastic. Pertaining to fragmental material produced by commonly explosive aerial

ejection of clastic particles from a volcanic vent. Such material may accumulate on land or under water.

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

Recessional moraine. An end or lateral moraine, built during a temporary but significant halt in the final retreat of a glacier. Also, a moraine built during a minor readvance of the ice front during a period of general recession. Compare to End moraine, Ground moraine, and Terminal moraine.

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. All unconsolidated earth material above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits. Soil scientists regard as soil only that part of the regolith that has been modified by organisms and soil-forming processes. Most engineers describe the entire regolith, even to a great depth, as “soil.”

Relief. The elevations or inequalities of a land surface, considered collectively.

Remnant. The remaining part of a larger landform or land surface that has been dissected or partially buried.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rhyolite. Extrusive igneous rock, generally porphyritic and exhibiting flow texture, with phenocrysts of quartz and alkali feldspar in a glassy cryptocrystalline ground mass. The extrusive equivalent of granite.

Ridge. A long, narrow elevation of the land surface, typically sharp crested with steep sides and forming an extended upland between valleys. The term is used in areas of both hill and mountain relief.

Rill. A small steep-sided channel resulting from erosion. It is cut by a concentrated,

but intermittent, flow of water, usually during and immediately following moderate rains or following icemelt or snowmelt. Generally, a rill is not an obstacle to wheeled vehicles and is shallow enough to be obliterated by ordinary tillage.

Riser (geomorphology). A geomorphic component of terraces, flood-plain steps, and other stepped landforms consisting of the vertical or steep side slope (e.g., escarpment) typically of minimal aerial extent. Commonly a recurring part of a series of natural, step-like landforms such as successive stream terraces. Its characteristic shape and alluvial sediment composition are derived from the cut and fill processes of a fluvial system. Compare to Tread.

River valley. An elongate depression of the earth's surface; carved by a river during the course of its development.

Riverwash. Barren alluvial areas of unstabilized sand, silt, clay, or gravel reworked frequently by stream activity.

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.

Rock outcrop. Exposures of bedrock, excluding lava and rock-lined pits.

Rock glacier. A mass of poorly sorted angular boulders and fine material, with interstitial ice a meter or so below the surface (ice-cemented) or containing a buried ice glacier (ice-cored). It occurs in a permafrost area and is derived from a cirque wall or other steep cliff. Rock glaciers have the general appearance and slow movement of small valley glaciers, ranging from a few hundred meters to several kilometers in length, and having a distal area marked by a series of transverse, arcuate ridges.

Root zone. The part of the soil that can be penetrated by plant roots.

Rubble. An accumulation of loose angular rock fragments, commonly overlying outcropping rock; the unconsolidated equivalent of a breccia. Compare to Scree and Talus.

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.

SAR. See Sodium adsorption ratio.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium. Salinity is expressed as the electrical conductivity of a saturation extract at 25 degrees C. Salinity classes, expressed in millimhos per centimeter, are as follows:

Nonsaline	0 to 2
Very slightly saline	2 to 4
Slightly saline	4 to 8
Moderately saline	8 to 16
Strongly saline	more than 16

Saline-sodic soil. A soil that contains sufficient exchangeable sodium to interfere with the growth of most crops and appreciable quantities of soluble salts. The exchangeable sodium ratio is greater than 0.15; the conductivity of the soil solution, when saturated, is greater than 4 decisiemens per meter (at 25 degrees C); and the pH is commonly 8.5 or less when the soil is saturated.

Sand. As a soil separate, individual rock or mineral fragments ranging 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.

Sandy. Sand and loamy sand soil textures.
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. Soft, friable, isovolumetrically weathered bedrock that retains the fabric and structure of the parent rock and exhibits extensive intercrystal and intracrystal weathering. In pedology, saprolite has been used to refer to any unconsolidated residual material that underlies the soil and grades to hard bedrock below.
SAR. See Sodium adsorption ratio.
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.
Scree. A collective term for an accumulation of coarse rock debris or a sheet of coarse debris mantling a slope. Scree is not a synonym of talus because it includes loose, coarse fragment material on slopes without cliffs. Compare to Talus, Colluvium, and Mass movement.
Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.
Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic matter accumulated at or near the surface of the earth under “normal” low temperature and pressure conditions. Sedimentary rock includes the consolidated equivalents of alluvial, colluvial, drift, eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.
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 that formed as a result of the induration of a clay, silty clay, or silty clay loam deposit and has the tendency to split into thin layers (fissility).
Shallow soil. See Depth, soil.
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.
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.
Slide (mass movement). (a) A category of mass movement processes, associated sediments (slide deposit), or resultant landforms (rotational slide, translational slide, and snowslide) characterized by a failure of earth, snow, or rock under shear stress along one or several surfaces that are either visible or may reasonably be

inferred. The moving mass may or may not be greatly deformed, and movement may be rotational (rotational slide) or planar (translational slide). A slide can result from lateral erosion, lateral pressure, the weight of overlying material, accumulation of moisture, earthquakes, expansion owing to the freezing and thawing of water in cracks, regional tilting, undermining, fire, and human agencies. Compare to Fall, Topple, Lateral spread, Flow, and Complex landslide. (b) The track of bare rock or furrowed earth left by a slide. (c) The mass of material moved in or deposited by a slide. Compare to Fall, Flow, Complex landslide, and Landslide.

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:

Level	0 percent
Nearly level	0 to 2 percent
Gently sloping	2 to 5 percent
Moderately sloping	5 to 9 percent
Strongly sloping	9 to 15 percent
Moderately steep	15 to 30 percent
Steep	30 to 50 percent
Very steep	50 percent and higher

Classes for complex slopes are as follows:

Level	0 percent
Nearly level	0 to 2 percent
Undulating	2 to 5 percent
Gently rolling	5 to 9 percent
Rolling	9 to 15 percent
Hilly	15 to 30 percent
Steep	30 to 50 percent
Very steep	50 percent and higher

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slump block. A mass of material torn away as a coherent unit during a landslide; a largely intact but displaced and commonly reoriented body of rock or 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:

Nonsodic	0-5:1
Very slightly sodic	5-13:1
Slightly sodic	13-30:1
Moderately sodic	30-45:1
Strongly sodic	45-90:1
Very strongly sodic	more than 90:1

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 erodibility factors. The Kw and Kf factors quantify the susceptibility of soil to detachment by water. These erodibility factors predict the long-term average soil loss that results from sheet and rill erosion when various cropping systems and conservation techniques are used. The whole soil is considered in the Kw factor, but only the fine-earth fraction, which is the material less than 2 millimeters in diameter, is considered in the Kf factor.

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.

Spur (geomorphology). A subordinate ridge or lesser elevation that projects sharply from the crest or side of a hill, mountain, or other prominent range of hills or mountains.

Stone line. A sheet-like lag concentration of coarse fragments in surficial sediment. In cross section, the line may be marked only by scattered fragments or it may be a discrete layer of fragments. The fragments are more commonly pebbles or cobbles than stones. A stone line generally overlies material that was subject to weathering, soil formation, and erosion before deposition of the overlying material. Many stone lines appear to be buried erosion pavement originally formed by running water on the land surface and concurrently covered by surficial sediment.

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.

Stratified. Referring to geologic deposits that were formed, arranged, or laid down in layers. Layers in soils that are a result of the processes of soil formation are called horizons; those inherited from the parent material are called strata.

Stream terrace. One of a series of platforms in a stream valley that flanks and is more or less parallel to the stream channel, originally formed near the level of the stream, and represents the dissected remnants of an abandoned flood plain, streambed, or valley floor produced during an earlier period of erosion or deposition.

Structural bench. A platform-like, nearly level or gently inclined erosional surface developed on resistant strata in areas where valleys are cut in alternating strong and weak layers with an essentially horizontal attitude. Structural benches are bedrock controlled and, in contrast to stream terraces, have no geomorphic

implication of former, partial erosion cycles and base-level controls, nor do they represent a stage of flood plain development following an episode of valley trenching. Compare to Pediment and Ledge.

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 grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

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.

T factor. The soil loss tolerance, which is defined as the maximum amount of erosion at which the quality of a soil as a medium for plant growth can be maintained. Maintaining the quality of the soil includes maintaining the surface soil as a seedbed for plants, maintaining the atmosphere-soil interface to allow the entry of air and water into the soil and still protect the underlying soil from wind and water erosion, and maintaining the total soil volume as a reservoir for water and plant nutrients, which is preserved by minimizing soil loss.

Talus. Rock fragments of any size or shape (commonly coarse and angular) at the base of a cliff or very steep rock slope; the accumulated mass of such loose, broken rock formed mainly by falling, rolling, or sliding.

Temperature regime, soil. A system that categorizes for taxonomic purposes general, long-term soil temperature conditions at the standard depth of 20 inches or at the surface of the bedrock, whichever is at a shallower depth. The various regimes are defined according to the freezing point of water or to the high and low extremes for significant biological activity. The regimes, which are defined in "Keys to Soil Taxonomy," are as follows:

Pergellic.—Soils that have a mean annual temperature of less than 32 degrees F and have permafrost.

Cryic.—Soils that have a mean annual temperature of 32 to 47 degrees F and remain cold in summer.

Frigid.—Soils that have a mean annual temperature similar to that of the cryic regime but have a mean summer temperature at least 9 degrees warmer.

Mesic.—Soils that have a mean annual temperature of 47 to 59 degrees F. The difference between the mean summer and mean winter temperature is more than 9 degrees.

Thermic.—Soils that have a mean annual temperature of 59 to 72 degrees F. The difference between the mean summer and mean winter temperature is more than 9 degrees.

Hyperthermic.—Soils that have a mean annual temperature of more than 72 degrees F. The difference between the mean summer and mean winter temperature is more than 9 degrees.

Terminal moraine. An end moraine that marks the farthest advance of a glacier and commonly has the form of a massive arcuate or concentric ridge, or complex of ridges, underlain by till and other types of drift.

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 (geomorphologic). A step-like surface bordering a valley floor or shoreline that represents the former position of a flood plain, lake, or seashore. The term is commonly applied to both the relatively flat summit surface (tread) that has been cut or builtup by stream or wave action and the steeper descending slope (scarp or riser) that grades to a lower base level of erosion. Practically, terraces are considered to be generally flat alluvial areas above the 100-year flood stage.

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."

Thermic temperature regime. See Temperature regime, soil.

Till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The outermost inclined surface at the base of a hill; part of a footslope.

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.

Torric moisture regime. See Aridic moisture regime.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread (geomorphology). A geomorphic component of terraces, flood-plain steps, and other stepped landforms consisting of the flat to gently sloping, topmost and laterally extensive slope. Commonly a recurring part of a series of natural, step-like landforms such as successive stream terraces. Its characteristic shape and alluvial sediment composition are derived from the cut and fill processes of a fluvial system. Compare to Riser.

Tuff. A generic term for any consolidated or cemented deposit that is 50 percent volcanic ash (less than 2 millimeters in size). Various types of tuff can be recognized by their composition; acidic tuff is dominantly acidic particles and basic tuff is dominantly basic particles.

Unified soil classification. A system for classifying mineral and organic soils for engineering purposes based on particle-size characteristics, liquid limit, and plasticity index.

Upland (geomorphologic). A general term for the higher land of a region in contrast to the low-lying, adjacent land, such as a valley or plain; land at a higher elevation than the flood plain or low stream terrace; or land above the footslope zone of the hillslope continuum.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) that fills or partly fills a valley.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers

seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Vegetative cover. The crown cover of all live plants in relation to the ground surface.

Vernal pool. A shallow surficial depression that is temporarily filled with water during periods of rain in winter and spring and is desiccated during the dry summer months. It occurs as a small poorly drained depression perched above an impermeable or very slowly permeable soil horizon or bedrock.

Very deep soil. See Depth, soil.

Very shallow soil. See Depth, soil.

Volcanic (as adjective). Pertaining to (a) the deep seated (igneous) processes by which magma and associated gases rise through the crust and are extruded onto the earth's surface and into the atmosphere, and (b) the structure, rocks, and landforms produced. Compare to Extrusive.

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.

Water table. The upper surface of ground water or the level below which the soil is saturated by water. Also, the top of an aquifer.

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.

WEG. See Wind erodibility group.

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.

Wind erodibility group (WEG). A grouping of soils that have similar properties affecting their resistance to wind erosion in cultivated areas.

Windthrow. The uprooting and tipping over of trees by the wind.

Xeric moisture regime. The typical moisture regime in areas of Mediterranean climates, where it is moist and cool in winter and warm and dry in summer. When potential evapotranspiration is at a minimum, the moisture, which falls in winter, is particularly effective in leaching. The mean annual soil temperature is less than 22 degrees C, and the difference between the mean summer and mean winter soil temperature is 6 degrees.

Xerophytic. Pertaining to vegetation that is adapted to dry areas.

Tables

Table 1A.—Temperature and Precipitation

(Recorded in the period 1961-1990 at Yosemite National Park Headquarters, California)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temp. higher than--	Minimum temp. lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snow-fall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	48.9	26.2	37.5	65	12	38	6.16	1.71	9.74	6	11.7
February-	55.0	28.5	41.8	74	15	102	6.17	1.52	9.85	6	12.0
March----	58.7	30.9	44.8	79	19	181	5.23	1.72	8.11	8	12.3
April----	65.4	35.4	50.4	84	22	323	2.95	0.93	4.59	5	6.5
May------	73.8	41.8	57.8	90	29	550	1.18	0.52	1.91	2	0.1
June-----	81.9	48.3	65.1	97	34	749	0.74	0.27	1.37	1	0.0
July-----	90.0	53.5	71.8	101	42	975	0.41	0.15	1.00	0	0.0
August---	90.1	52.7	71.4	102	40	967	0.32	0.09	0.71	1	0.0
September	84.5	47.0	65.7	99	34	758	0.96	0.19	1.62	2	0.0
October--	73.8	39.0	56.4	93	26	509	2.18	0.41	3.84	3	0.0
November-	57.8	30.9	44.4	80	20	159	5.51	1.86	8.52	6	2.6
December-	48.1	26.4	37.2	62	11	33	5.65	1.75	9.17	6	9.9
Yearly:											
Average	69.0	38.4	53.7	---	---	---	---	---	---	---	---
Extreme	109	-1	---	103	8	---	---	---	---	---	---
Total--	---	---	---	---	---	5,344	37.46	25.67	46.00	46	55.0

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 1B.—Temperature and Precipitation

(Recorded in the period 1961-1990 at Cherry Valley Dam, California)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temp. higher than--	Minimum temp. lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snow-fall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	46.9	27.7	38.7	70	5	70	7.94	2.25	12.54	6	23.0
February-	52.0	28.3	40.1	70	11	83	7.22	1.94	11.44	6	20.6
March----	53.4	29.3	41.4	72	12	112	6.61	2.65	9.94	8	27.1
April----	60.0	33.7	46.8	81	18	234	3.86	1.50	5.85	6	14.2
May------	68.6	41.0	54.8	88	25	448	1.37	0.41	2.33	2	1.6
June-----	78.2	48.5	63.4	95	32	684	0.66	0.24	1.20	1	0.1
July-----	86.7	54.7	70.7	99	43	932	0.11	0.02	0.39	0	0.0
August---	86.1	54.4	70.3	99	43	928	0.33	0.07	0.85	0	0.0
September	78.9	48.8	63.8	94	34	677	1.02	0.20	2.08	1	0.0
October--	69.0	41.3	55.2	88	26	457	2.47	0.68	4.21	3	0.3
November-	55.7	33.2	44.4	76	16	162	7.07	2.31	10.98	6	8.1
December-	49.2	28.3	38.7	65	9	79	7.19	2.42	11.58	6	20.8
Yearly:											
Average	65.6	39.1	52.4	---	---	---	---	---	---	---	---
Extreme	105	-3	---	100	5	---	---	---	---	---	---
Total--	---	---	---	---	---	4,866	45.86	29.14	58.10	45	115.7

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2A.—Freeze Dates in Spring and Fall

(Recorded in the period 1961-1990 at Yosemite National Park Headquarters, California)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 21	May 6	May 28
2 years in 10 later than--	Apr. 10	Apr. 28	May 21
5 years in 10 later than--	Mar. 22	Apr. 11	May 7
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 30	Oct. 17	Sept. 24
2 years in 10 earlier than--	Nov. 7	Oct. 24	Oct. 2
5 years in 10 earlier than-	Nov. 23	Nov. 5	Oct. 19

Table 2B.—Freeze Dates in Spring and Fall

(Recorded in the period 1961-1990 at Cherry Valley Dam, California)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 3	May 20	June 6
2 years in 10 later than--	Apr. 25	May 12	May 30
5 years in 10 later than--	Apr. 10	Apr. 28	May 18
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 27	Oct. 15	Sept. 28
2 years in 10 earlier than--	Nov. 5	Oct. 23	Oct. 5
5 years in 10 earlier than-	Nov. 23	Nov. 6	Oct. 19

Table 3A.—Growing Season

(Recorded in the period 1961-1990 at Yosemite National Park Headquarters, California)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	201	176	132
8 years in 10	216	187	144
5 years in 10	246	208	167
2 years in 10	275	229	190
1 year in 10	290	239	201

Table 3B.—Growing Season

(Recorded in the period 1961-1990 at Cherry Valley Dam, California)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	186	163	129
8 years in 10	200	173	138
5 years in 10	228	192	156
2 years in 10	255	211	173
1 year in 10	270	221	182

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
101	Oxyaquic Xerofluvents-Riverwash-Fluvaquents association, 0 to 2 percent slopes, mesic	65	*
101t	Lithnip-Rock outcrop-Fishsnooze complex, 30 to 75 percent slopes, mountains, cryic	303	*
102	Oxyaquic Xerofluvents-Riverwash complex, 1 to 4 percent slopes, mesic	15	*
102t	Lithnip-Rock outcrop-Fishsnooze complex, 8 to 30 percent slopes, mountains, cryic	163	*
104	Aquandic Humaquepts, 0 to 2 percent slopes, mesic	74	*
111t	Whittell-Jobsis-Rock outcrop complex, 30 to 75 percent slopes, mountains, cryic	360	*
151	Elcapitan fine sandy loam, 0 to 2 percent slopes, mesic	274	*
152	Vitrandic Haploxerolls, sandy, 0 to 3 percent slopes, mesic	4	*
201	Leidig fine sandy loam, 0 to 2 percent slopes, occasionally flooded, mesic	267	*
210	Rubble land-Typic Cryorthents-Rock outcrop-Xeric Dystrocryepts complex, 30 to 80 percent slopes, mountainflanks, metamorphic, mafic, cryic	13,553	1.8
211	Xeric Dystrocryepts-Canisrocks-Oxyaquic Dystrocryepts association, 10 to 40 percent slopes, aprons, lateral moraines, cryic	1,587	0.2
213	Canisrocks-Glacierpoint-Vitrandic Dystrocryepts complex, bouldery, 20 to 45 percent slopes, medial moraines, cryic	6,143	0.8
214	Marmotland-Oxyaquic Dystrocryepts-Xeric Dystrocryepts complex, 0 to 15 percent slopes, mountain valley floors, cryic	4,596	0.6
215	Typic Cryorthents-Rock outcrop-Rubble land complex, 30 to 65 percent slopes, metamorphic, glacially scoured mountain slopes, cryic	1,535	0.2
219	Rock outcrop-Rubble land-Canisrocks association, 0 to 80 percent slopes, cirqued mountainflanks, cryic	34,176	4.5
221	Typic Cryorthents-Xeric Dystrocryepts-Oxyaquic Dystrocryepts complex, 15 to 45 percent slopes, metamorphic, mountain slopes, lateral moraines, cryic	981	0.1
222	Canisrocks-Rubble land-Rock outcrop-Crazymule complex, 30 to 75 percent slopes, mountainflanks, colluvial aprons, cryic	10,030	1.3
223	Rock outcrop-Rubble land-Canisrocks association, 10 to 65 percent slopes, mountain slopes, cryic	5,840	0.8
224	Rock outcrop-Crazymule-Vitrandic Cryorthents association, 0 to 45 percent slopes, joints, fractures, scoured, cryic	62,321	8.2
225	Canisrocks-Rock outcrop-Rubble land-Vitrandic Dystrocryepts association, 2 to 30 percent slopes, glacially scoured mountain valleys, cryic	19,118	2.5
227	Canisrocks-Crazymule complex, 15 to 45 percent slopes, mountain slopes, lateral moraines, cryic	11,559	1.5
228	Xeric Dystrocryepts-Vitrandic Eutrocryepts complex, 0 to 15 percent slopes, wet/dry meadows, cryic	5,118	0.7
229	Marmotland-Oxyaquic Dystrocryepts association, 0 to 8 percent slopes, mountain valleys, ground moraines, fluted, cryic	1,846	0.2
231	Canisrocks-Typic Cryaquents complex, 5 to 30 percent slopes, lateral moraines, aprons, wet/dry, cryic	460	*
232	Canisrocks-Glacierpoint complex, 0 to 25 percent slopes, lateral moraines, cryic	11,311	1.5
234	Rock outcrop-Rubble land association, 0 to 80 percent slopes, metamorphic, cirques, mountainflanks, cryic	9,039	1.2
235	Canisrocks-Rock outcrop-Rubble land complex, 30 to 80 percent slopes, mountainflanks, cryic	31,553	4.1
237	Canisrocks-Glacierpoint-Vitrandic Cryorthents complex, bouldery, 5 to 20 percent slopes, ground moraines, cryic	6,704	0.9
238	Oxyaquic Cryorthents-Canisrocks complex, 0 to 15 percent slopes, ground moraines, wet/dry, cryic	1,755	0.2
239	Crazymule-Canisrocks complex, 0 to 20 percent slopes, ground moraines, cryic	6,215	0.8
241	Canisrocks, 5 to 35 percent slopes, mountain valleys, cryic	3,311	0.4
242	Rock outcrop-Canisrocks-Xeric Dystrocryepts complex, 0 to 35 percent slopes, mountain slopes, cryic	38,187	5.0

See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
244	Typic Cryorthents-Rubble land-Rock outcrop complex, 15 to 40 percent slopes, moraines, cryic	1,272	0.2
245	Rock outcrop-Canisrocks-Xeric Dystrocryepts association, 0 to 35 percent slopes, mountain valleys, scoured, filled, cryic	9.953	1.3
246	Rock outcrop, domes, cryic	1,713	0.2
247	Canisrocks-Xeric Dystrocryepts association, 5 to 30 percent slopes, mountain valleys, moraines, cryic	16,712	2.2
248	Canisrocks-Rock outcrop-Glacierpoint complex, 30 to 70 percent slopes, mountain slopes, cryic	27,386	3.6
249	Rock outcrop-Canisrocks complex, 30 to 70 percent slopes, mountain slopes, cryic	43,070	5.7
250	Canisrocks-Xeric Dystrocryepts association, 5 to 40 percent slopes, mountain valleys, moraines, avalanches, cryic	1,013	0.1
251	Glacierpoint-Typic Cryorthents complex, 30 to 65 percent slopes, mountain slopes, lateral moraines, aprons, cryic	11,525	1.5
252	Rock outcrop-Canisrocks-Xeric Dystrocryepts complex, 5 to 45 percent slopes, moraines, mountain slopes, cryic	32,810	4.3
253	Canisrocks-Glacierpoint-Humic Dystrocryepts complex, 15 to 55 percent slopes, lateral moraines, cryic	16,133	2.1
256	Craneflat-Rock outcrop-Rubble land-Waterwheel association, 30 to 80 percent slopes, mountainflanks, frigid	14,940	2.0
257	Badgerpass-Oxyaquic Dystroxerepts association, 0 to 15 percent slopes, mountain valley floors, frigid	1,127	0.1
258	Typic Dystroxerepts-Badgerpass-Dystric Xerorthents complex, 15 to 45 percent slopes, mountain slopes, moraines, frigid	11,044	1.5
260	Rock outcrop-Craneflat-Dystric Xerorthents complex, 30 to 65 percent slopes, mountain slopes, frigid	6,909	0.9
261	Dystric Xeropsamments-Typic Dystroxerepts-Badgerpass-Rock outcrop association, 5 to 35 percent slopes, mountain valleys, mountain slopes, frigid	7,218	0.9
262	Humic Dystroxerepts-Dystric Xerorthents-Rock outcrop association, 30 to 70 percent slopes, mountain slopes, frigid	5,177	0.7
264	Crazymule-Canisrocks association, 0 to 20 percent slopes, lateral moraines, wet/dry meadows, cryic	2,639	0.3
267	Rock outcrop-Typic Cryorthents-Xeric Dystrocryepts complex, 0 to 35 percent slopes, mountain slopes, joints, cryic	29,722	3.9
268	Rock outcrop-Canisrocks-Glacierpoint complex, 30 to 80 percent slopes, mountain slopes, joints, cryic	28,419	3.7
269	Canisrocks-Rock outcrop-Glacierpoint complex, 0 to 35 percent slopes, mountain slopes, moraines, joints, cryic	14,457	1.9
270	Rock outcrop-Typic Cryorthents-Vitrandic Dystrocryepts complex, 0 to 65 percent slopes, metamorphic, mountain slopes, cryic	1,786	0.2
271	Rock outcrop-Lithic Xerorthents-Waterwheel complex, 0 to 150 percent slopes, cliffs, ledges, frigid	1,049	0.1
273	Nevadafalls-Waterwheel association, 0 to 35 percent slopes, moraines, frigid	3,547	0.5
274	Rock outcrop, domes, frigid	878	0.1
275	Oxyaquic Dystroxerepts-Dystric Xerorthents-Vitrandic Xerorthents-Rubble land complex, stony, 0 to 20 percent slopes, mountain valleys, mesic	2,378	0.3
276	Happyisles-Typic Dystroxerepts association, 0 to 15 percent slopes, mountain valley floors, mesic	672	*
277	Tuolumne-Humic Dystroxerepts complex, 15 to 65 percent slopes, aprons, mesic	1,312	0.2
278	Rock outcrop-Tuolumne-Humic Dystroxerepts-Rubble land complex, 30 to 100 percent slopes, mountainflanks, mesic	9,580	1.3
279	Canisrocks-Xeric Dystrocryepts complex, 15 to 45 percent slopes, mountain slopes, moraines, cryic	15,413	2.0
280	Typic Dystroxerepts-Humic Dystroxerepts-Rock outcrop association, 15 to 45 percent slopes, mountain slopes, frigid	6,778	0.9
282	Clarkslodge-Craneflat-Nevadafalls complex, 0 to 30 percent slopes, mountain slopes, hummocky, frigid	1,747	0.2

See footnote at end of table.

Table .—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
283	Waterwheel-Nevadafalls-Rock outcrop complex, 15 to 45 percent slopes, mountain slopes, landslides, frigid	1,665	0.2
285	Waterwheel-Humic Dystroxerepts complex, 15 to 45 percent slopes, mountain slopes, frigid	14,709	1.9
286	Nevadafalls-Typic Dystroxerepts-Ultic Palexeralfs-Rock outcrop complex, 0 to 30 percent slopes, mountain slopes, landslides, moraines, frigid	1,054	0.1
287	Badgerpass-Waterwheel association, 0 to 15 percent slopes, ridge crests, frigid	693	*
288	Rock outcrop-Craneflat-Waterwheel association, 0 to 30 percent slopes, mountain slopes, frigid	13,363	1.8
289	Waterwheel-Craneflat complex, 35 to 70 percent slopes, mountain slopes, frigid	4,982	0.7
290	Humic Dystroxerepts-Tuolumne-Typic Xerorthents-Ultic Haploxeralfs complex, 30 to 70 percent slopes, mountain slopes, mesic	3,614	0.5
291	Ultic Haploxeralfs-Typic Dystroxerepts complex, 5 to 25 percent slopes, mountain footslopes, frigid	2,813	0.4
292	Humic Dystroxerepts-Typic Haploxerults complex, 5 to 35 percent slopes, mountain footslopes, landslides, mesic	8,335	1.1
293	Xeric Dystrocryepts-Vitrandic Dystrocryepts association, 0 to 25 percent slopes, mountain slopes, summits, cryic	3,274	0.4
294	Waterwheel-Typic Dystroxerepts complex, 30 to 70 percent slopes, landslides, mountain slopes, frigid	4,023	0.5
295	Craneflat-Typic Dystroxerepts complex, 15 to 45 percent slopes, landslides, mountain slopes, frigid	5,946	0.8
296	Ultic Palexeralfs-Humic Dystroxerepts complex, 10 to 35 percent slopes, mountain slopes, mesic	4,541	0.6
297	Typic Xerorthents-Rock outcrop-Typic Xeropsamments complex, 15 to 45 percent slopes, mountain slopes, mesic	2,518	0.3
298	Tuolumne-Typic Dystroxerepts complex, 30 to 65 percent slopes, mountain slopes, landslides, mesic	2,798	0.4
299	Humic Dystroxerepts-Ultic Haploxeralfs complex, 15 to 35 percent slopes, mountain slopes, moraines, mesic	2,506	0.3
300	Typic Dystroxerepts-Ultic Haploxeralfs complex, 0 to 15 percent slopes, mountain slopes, moraines, mesic	1,494	0.2
301	Vitrandic Haploxerolls, coarse-loamy, 0 to 2 percent slopes, somewhat poorly drained, mesic	18	*
302	Typic Haploxerults-Ultic Haploxeralfs complex, 0 to 30 percent slopes, mountain slopes, hummocky, mesic	1,406	0.2 0.2
303	Rock outcrop-Dystric Xeropsamments-Humic Dystroxerepts-Tuolumne complex, 30 to 65 percent slopes, mountain slopes, mesic	6,210	0.8
304	Clarkslodge-Rock outcrop complex, 0 to 30 percent slopes, mountain slopes, metavolcanic, frigid/mesic	701	*
305	Rock outcrop-Waterwheel-Dystric Xeropsamments association, 0 to 35 percent slopes, mountain valleys, scoured, valley fill, frigid	1,376	0.2 0.2
306	Typic Cryopsamments-Humic Dystrocryepts complex, 0 to 20 percent slopes, mountain toeslopes, moraines, cryic	1,704	0.2
307	Rock outcrop-Dystric Xeropsamments-Dystric Xerorthents association, 0 to 35 percent slopes, mountain valleys, scoured, valley fill, mesic	2,026	0.3 0.3
309	Rock outcrop-Waterwheel-Typic Dystroxerepts association, 30 to 80 percent slopes, mountain slopes, joints, frigid	6,203	0.8
310	Rock outcrop-Humic Dystroxerepts-Humic Lithic Haploxerepts association, 30 to 100 percent slopes, mountain slopes, mesic	5,507	0.7
311	Rock outcrop-Humic Dystroxerepts-Humic Lithic Haploxerepts association, 0 to 30 percent slopes, joints, mountain slopes, mesic	3,884	0.5
313	Nevadafalls-Oxyaquic Dystrudepts complex, 5 to 30 percent slopes, mountain valleys, moraines, frigid	3,432	0.5
314	Badgerpass-Dystric Xeropsamments-Rock outcrop complex, 5 to 45 percent slopes, mountain slopes, moraines, frigid	5,722	0.8
315	Nevadafalls-Dystric Xeropsamments complex, 15 to 45 percent slopes, lateral moraines, frigid	4,014	0.5

See footnote at end of table.

Table .—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
316	Dystric Xerorthents-Rock outcrop-Rubble land complex, 30 to 80 percent slopes, mountainflanks, thermic	1,857	0.2
318	Typic Dystroxerepts-Humic Dystroxerepts complex, 0 to 20 percent slopes, ridge crests, frigid/mesic	1,967	0.3
319	Humic Dystroxerepts-Typic Haploxerults-Inceptic Haploxeralfs complex, 30 to 65 percent slopes, mountain slopes, metamorphic, frigid	1,544	0.2
320	Half Dome-Humic Dystroxerepts-Rock outcrop complex, 30 to 60 percent slopes, mountain slopes, moraines, mesic	2,362	0.3
321	Dystric Xeropsamments-Dystric Xerorthents association, 0 to 20 percent slopes, mountain valleys, thermic	239	*
322	Typic Xerorthents, 45 to 100 percent slopes, mountain slopes, thermic	292	*
323	Ultic Haploxeralfs-Humic Dystroxerepts complex, bouldery, 10 to 35 percent slopes, mountain footslopes, thermic	190	*
324	Humic Haploxerepts-Rock outcrop-Ultic Haploxeralfs association, 45 to 100 percent slopes, metasedimentary, mountain slopes, thermic	387	*
325	Urban land, 0 to 45 percent slopes	46	*
328	Clarkslodge-Ultic Palexeralfs complex, metasedimentary, 15 to 45 percent slopes, mountain slopes, landslides, frigid	4,378	0.6
401	Sentinel loam, 0 to 2 percent slopes, mesic	64	*
412	Water-Riverwash complex, 0 to 1 percent slopes, mesic	146	*
501	Happyisles complex, 1 to 5 percent slopes, mesic	745	*
502	Happyisles sandy loam, 0 to 3 percent slopes, somewhat poorly drained, mesic	33	*
504	Mollic Xerofluvents, 1 to 5 percent slopes, frequently flooded, mesic	97	*
510t	Rubble land-Lithnip-Rock outcrop association, 8 to 30 percent slopes, mountains, cryic	4	*
551	Happyisles-Half Dome complex, 5 to 15 percent slopes, mesic	325	*
552	Mollic Xerofluvents, 5 to 15 percent slopes, frequently flooded, mesic	64	*
590	Terric Haplosaprists, 0 to 3 percent slopes, mesic	5	*
601	Half Dome complex, 25 to 60 percent slopes, mesic	1,208	0.2
602	Half Dome extremely stony sandy loam, 10 to 25 percent slopes, mesic	425	*
610	Rubble land-Half Dome complex, 25 to 60 percent slopes, mesic	490	*
620	Half Dome complex, warm, 25 to 60 percent slopes, mesic	606	*
630	Rubble land-Half Dome complex, warm, 25 to 60 percent slopes, mesic	679	*
701	Vitrandic Haploxerolls, coarse-loamy, 4 to 30 percent slopes, well drained, mesic	40	*
702	Vitrandic Dystroxerepts, 4 to 30 percent slopes, mesic	19	*
900	Rock outcrop, mesic	540	*
DAM	Dam	7	*
W	Water	5,204	0.7
	Total	761,236	100.0

* Less than 0.1 percent.

Table 5.—Land Capability Classification

(Land capability is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time. The land capability is given for nonirrigated areas)

Map symbol and soil name	Land capability
101:	
Oxyaquic Xerofluvents	4w
Riverwash	4w
Fluvaquents	6w
101t:	
Lithnip	8
Rock outcrop.	
Fishsnooze	6s
102:	
Oxyaquic Xerofluvents	4w
Riverwash	4w
102t:	
Lithnip	8
Rock outcrop	8
Fishsnooze	6s
104:	
Aquandic Humaquepts	6w
111t:	
Whittell	7e
Jobsis	7s
Rock outcrop	8
151:	
Elcapitan	3w
152:	
Vitrandic Haploxerolls	3s
201:	
Leidig	6w
210:	
Rubble land	8
Typic Cryorthents	7e
Rock outcrop	8
Xeric Dystrocryepts	7e

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
211:	
Xeric Dystrocryepts	6e
Canisrocks	7e
Oxyaquic Dystrocryepts	6e
213:	
Canisrocks	6s
Glacierpoint	6e
Vitrandic Dystrocryepts	6e
214:	
Marmotland	6e
Oxyaquic Dystrocryepts	6w
Xeric Dystrocryepts	6e
215:	
Typic Cryorthents	6e
Rock outcrop	8
Rubble land	8
219:	
Rock outcrop	8
Rubble land	8
Canisrocks	6e
221:	
Typic Cryorthents	6e
Xeric Dystrocryepts	6e
Oxyaquic Dystrocryepts	6w
222:	
Canisrocks	7e
Rubble land	8
Rock outcrop	8
Crazymule	7e
223:	
Rock outcrop	8
Rubble land	8
Canisrocks	6e
224:	
Rock outcrop	8
Crazymule	6e
Vitrandic Cryorthents	7e

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
225:	
Canisrocks	6e
Rock outcrop	8
Rubble land	8
Vitrandic Dystrocryepts	6e
227:	
Canisrocks	6e
Crazymule	6e
228:	
Xeric Dystrocryepts	6e
Vitrandic Eutrocryepts	6e
229:	
Marmotland	6e
Oxyaquic Dystrocryepts	6w
231:	
Canisrocks	6s
Typic Cryaquents	6e
232:	
Canisrocks	7s
Glacierpoint	6e
234:	
Rock outcrop	8
Rubble land	8
235:	
Canisrocks	7e
Rock outcrop	8
Rubble land	8
237:	
Canisrocks	7e
Glacierpoint	6e
Vitrandic Cryorthents	6s
238:	
Oxyaquic Cryorthents	6w
Canisrocks	6e
239:	
Crazymule	7e
Canisrocks	6e

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
241:	
Canisrocks	6e
242:	
Rock outcrop	8
Canisrocks	7s
Xeric Dystrocryepts	6e
244:	
Typic Cryorthents	6e
Rubble land	8
Rock outcrop	8
245:	
Rock outcrop	8
Canisrocks	6e
Xeric Dystrocryepts	6e
246:	
Rock outcrop, domes	8
247:	
Canisrocks	6e
Xeric Dystrocryepts	6e
248:	
Canisrocks	7s
Rock outcrop	8
Glacierpoint	7s
249:	
Rock outcrop	8
Canisrocks	7e
250:	
Canisrocks	6e
Xeric Dystrocryepts	6e
251:	
Glacierpoint	6e
Typic Cryorthents	6e
252:	
Rock outcrop	8
Canisrocks	6e
Xeric Dystrocryepts	6e

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
253:	
Canisrocks	7e
Glacierpoint	6e
Humic Dystrocryepts	7e
256:	
Craneflat	7e
Rock outcrop	8
Rubble land	8
Waterwheel	7s
257:	
Badgerpass	6e
Oxyaquic Dystroxerepts	6e
258:	
Typic Dystroxerepts	6e
Badgerpass	6e
Dystric Xerorthents	6e
260:	
Rock outcrop	8
Craneflat	7e
Dystric Xerorthents	6e
261:	
Dystric Xeropsamments	6e
Typic Dystroxerepts	6e
Badgerpass	6e
Rock outcrop	8
262:	
Humic Dystroxerepts	7s
Dystric Xerorthents	7e
Rock outcrop	8
264:	
Crazymule	6e
Canisrocks	7e
267:	
Rock outcrop	8
Typic Cryorthents	7s
Xeric Dystrocryepts	6e

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
268:	
Rock outcrop	8
Canisrocks	7e
Glacierpoint	7e
269:	
Canisrocks	7e
Rock outcrop	8
Glacierpoint	6e
270:	
Rock outcrop	8
Typic Cryorthents	6s
Vitrandic Dystrocryepts	6e
271:	
Rock outcrop	8
Lithic Xerorthents	7e
Waterwheel	7s
273:	
Nevadafalls	6e
Waterwheel	6e
274:	
Rock outcrop, domes	8
275:	
Oxyaquic Dystroxerepts	4e
Dystric Xerorthents	6e
Vitrandic Xerorthents	4e
Rubble land	8
276:	
Happyisles	3e
Typic Dystroxerepts	4e
277:	
Tuolumne	6s
Humic Dystroxerepts	7e
278:	
Rock outcrop	8
Tuolumne	7s
Humic Dystroxerepts	7s

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
278:	
Rubble land	8
279:	
Canisrocks	6e
Xeric Dystrocryepts	7e
280:	
Typic Dystroxerepts	6e
Humic Dystroxerepts	6e
Rock outcrop	8
282:	
Clarkslodge	6e
Craneflat	6e
Nevadafalls	6e
283:	
Waterwheel	6e
Nevadafalls	6e
Rock outcrop	8
285:	
Waterwheel	6e
Humic Dystroxerepts	6e
286:	
Nevadafalls	6e
Typic Dystroxerepts	6e
Ultic Palexeralfs	6e
Rock outcrop	8
287:	
Badgerpass	6e
Waterwheel	7e
288:	
Rock outcrop	6e
Craneflat	6e
Waterwheel	6e
289:	
Waterwheel	6e
Craneflat	7e
290:	
Humic Dystroxerepts	7e

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
290:	
Tuolumne	7e
Typic Xerorthents	7e
Ultic Haploxeralfs	7e
291:	
Ultic Haploxeralfs	6e
Typic Dystroxerepts	6e
292:	
Humic Dystroxerepts	6e
Typic Haploxerults	6e
293:	
Xeric Dystrocryepts	6e
Vitrandic Dystrocryepts	6e
294:	
Waterwheel	7e
Typic Dystroxerepts	7e
295:	
Craneflat	6e
Typic Dystroxerepts	6e
296:	
Ultic Palexeralfs	4e
Humic Dystroxerepts	4e
297:	
Typic Xerorthents	6e
Rock outcrop	6e
Typic Xeropsamments	6e
298:	
Tuolumne	7e
Typic Dystroxerepts	6e
299:	
Humic Dystroxerepts	7s
Ultic Haploxeralfs	6e
300:	
Typic Dystroxerepts	7e
Ultic Haploxeralfs	4e
301:	
Vitrandic Haploxerolls	4w

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
302:	
Typic Haploxerults	6e
Ultic Haploxeralfs	6e
303:	
Rock outcrop	8
Dystric Xeropsamments	6e
Humic Dystroxerepts	6e
Tuolumne	6e
304:	
Clarkslodge	6e
Rock outcrop	8
305:	
Rock outcrop	8
Waterwheel	7e
Dystric Xeropsamments	6e
306:	
Typic Cryopsamments	6e
Humic Dystrocryepts	6e
307:	
Rock outcrop	8
Dystric Xeropsamments	6e
Dystric Xerorthents	6e
309:	
Rock outcrop	7e
Waterwheel	7e
Typic Dystroxerepts	7e
310:	
Rock outcrop	8
Humic Dystroxerepts	7e
Humic Lithic Haploxerepts	7e
311:	
Rock outcrop	8
Humic Dystroxerepts	6e
Humic Lithic Haploxerepts	7e
313:	
Nevadafalls	6e
Oxyaquic Dystrudepts	6e

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
314:	
Badgerpass	6e
Dystric Xeropsamments	6e
Rock outcrop	8
315:	
Nevadafalls	6e
Dystric Xeropsamments	6e
316:	
Dystric Xerorthents	7e
Rock outcrop	8
Rubble land	8
318:	
Typic Dystroxerepts	4e
Humic Dystroxerepts	4e
319:	
Humic Dystroxerepts	6s
Typic Haploxerults	6e
Inceptic Haploxeralfs	6s
320:	
Half Dome	6e
Humic Dystroxerepts	6e
Rock outcrop	8
321:	
Dystric Xeropsamments	4e
Dystric Xerorthents	7e
322:	
Typic Xerorthents	6s
323:	
Ultic Haploxeralfs	6e
Humic Dystroxerepts	6e
324:	
Humic Haploxerepts	7e
Rock outcrop	7e
Ultic Haploxeralfs	7e
325:	
Urban land	8

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
328:	
Clarkslodge	6e
Ultic Palexeralfs	6e
401:	
Sentinel	3e
412:	
Water.	
Riverwash	8
501:	
Happyisles, sandy loam	2e
Happyisles, loamy fine sand, overwash	2e
502:	
Happyisles	3w
504:	
Mollic Xerofluvents	3w
510t:	
Rubble land	8
Lithnip	8
Rock outcrop	8
551:	
Happyisles	3e
Half Dome	6s
552:	
Mollic Xerofluvents	4w
590:	
Terric Haplosaprists	6w
601:	
Half Dome, very bouldery	6s
Half Dome, cobbly	6s
602:	
Half Dome	4s
610:	
Rubble land	8
Half Dome	4s
620:	
Half Dome, extremely stony sandy loam, warm	6e
Half Dome, very cobbly sandy loam, warm	8

Table 5.—Land Capability Classification—Continued

Map symbol and soil name	Land capability
630:	
Rubble land	8
Half Dome	6e
701:	
Vitrandic Haploxerolls	4e
702:	
Vitrandic Dystroxerepts	4e
900:	
Rock outcrop	8
DAM.	
Dam	
W.	
Water	

Table 6.—Recreational Development, Part I

(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 potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. Brief summaries of rating criteria and abbreviations are listed on the last page of this report)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
101:							
Oxyaquic Xerofluvents---	35	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Frequent flooding	0.50	Flooding > occasional	1.00
Riverwash---	35	Not rated		Not rated		Not rated	
Fluvaquents---	15	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Flooding > rare	1.00	Fragments >10" >3%	1.00	Flooding > occasional	1.00
		Fragments >10" >3%	1.00	Frequent flooding	0.50	Fragments >10" >3%	1.00
101t:							
Lithnip---	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
Rock outcrop---	25	Not rated		Not rated		Not rated	
Fishsnooze---	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
						Bedrock 20-40" and slope > 2%	0.50
102:							
Oxyaquic Xerofluvents---	45	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Fragments >10" >3%	1.00	Flooding > occasional	1.00
		Fragments >10" >3%	1.00	Frequent flooding	0.50	Fragments >10" >3%	1.00
						Slopes 2 to 6%	0.26
Riverwash---	40	Not rated		Not rated		Not rated	
102t:							
Lithnip---	40	Limitations		Limitations		Limitations	
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock depth < 20"	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
102t:							
Rock outcrop----------	25	Not rated		Not rated		Not rated	
Fishsnooze----------	20	Limitations		Limitations		Limitations	
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Surface fragments (<3") >25%	1.00
						Bedrock 20-40" and slope > 2%	0.50
104:							
Aquandic Humaquepts-----	85	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Flooding > rare	1.00	Very dusty	1.00	Flooding > occasional	1.00
		Very dusty	1.00	Organic surface layer > 4" thick	1.00	Very dusty	1.00
111t:							
Whittell----------	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Jobsis----------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3″) 25-50%	0.74	Fragments (<3″) 25-50%	0.74	Fragments >10" >3%	1.00
Rock outcrop----------	15	Not rated		Not rated		Not rated	
151:							
Elcapitan----------	80	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Very dusty	1.00	Very dusty	1.00
		Very dusty	1.00			Occasional flooding	0.50
152:							
Vitrandic Haploxerolls--	80	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Very dusty	1.00	Very dusty	1.00
		Very dusty	1.00			Occasional flooding	0.50
						Surface fragments (<3") 10-25%	0.01
201:							
Leidig----------	80	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Very dusty	1.00	Very dusty	1.00
		Very dusty	1.00			Occasional flooding	0.50

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
210:							
Rubble land	30	Not rated		Not rated		Not rated	
Typic Cryorthents	25	Limitatioins		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") 25-50%	0.46	Fragments (<3") 25-50%	0.46	Surface fragments (<3") >25%	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
Xeric Dystrocryepts	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
211:							
Xeric Dystrocryepts	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Canisrocks	30	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Oxyaquic Dystrocryepts	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Saturation from 18 to 30″ depth	0.56	Saturation from 12 to 30" depth	0.28	Saturation from 18 to 30" depth	0.56
213:							
Canisrocks	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Glacierpoint	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Vitrandic Dystrocryepts	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
214:							
Marmotland	25	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Very dusty	1.00	Very dusty	1.00
		Very dusty	1.00	Slopes 8 to 15%	0.01	Slopes > 6%	1.00
		Slopes 8 to 15%	0.01			Occasional flooding	0.50
Oxyaquic Dystrocryepts	15	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Surface sand fractions 70 - 90% by wt.	0.66	Flooding > occasional	1.00
		Surface sand fractions 70 - 90% by wt.	0.66	Frequent flooding	0.50	Surface sand fractions 70 - 90% by wt.	0.66
		Saturation from 18 to 30" depth	0.56	Saturation from 12 to 30" depth	0.28	Saturation from 18 to 30" depth	0.56
Xeric Dystrocryepts	15	No limitations		No limitations		Limitations	
						Slopes 2 to 6%	0.50
215:							
Typic Cryorthents	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >3" >75%	1.00	Fragments >3" >75%	1.00	Fragments > 3" > 30%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
Rubble land	20	Not rated		Not rated		Not rated	
219:							
Rock outcrop	40	Not rated		Not rated		Not rated	
Rubble land	25	Not rated		Not rated		Not rated	
Canisrocks	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
221:							
Typic Cryorthents	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.96

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
221:							
Xeric Dystrocryepts-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Surface sand fractions 70 - 90% by wt.	0.01	Surface sand fractions 70 - 90% by wt.	0.01	Surface fragments (<3") 10-25%	0.32
Oxyaquic Dystrocryepts--	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Flooding > rare	1.00	Fragments >10" >3%	1.00	Flooding > occasional	1.00
		Fragments >10" >3%	1.00	Frequent flooding	0.50	Fragments >10" >3%	1.00
222:							
Canisrocks--------------	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Fragments >3" >75%	1.00	Fragments >3" >75%	1.00	Fragments >10" >3%	1.00
Rubble land-------------	30	Not rated		Not rated		Not rated	
Rock outcrop------------	20	Not rated		Not rated		Not rated	
Crazymule---------------	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
223:							
Rock outcrop------------	35	Not rated		Not rated		Not rated	
Rubble land-------------	35	Not rated		Not rated		Not rated	
Canisrocks--------------	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
224:							
Rock outcrop------------	40	Not rated		Not rated		Not rated	
Crazymule---------------	20	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Fragments >3" >75%	1.00	Fragments >3" >75%	1.00	Fragments >10" >3%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Vitrandic Cryorthents---	15	Limitations		Limitations		Limitations	
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
225:							
Canisrocks	15	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
Rubble land	15	Not rated		Not rated		Not rated	
Vitrandic Dystrocryepts	15	Limitations		Limitations		Limitations	
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
227:							
Canisrocks	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Crazymule	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
228:							
Xeric Dystrocryepts	35	Limitations		Limitations		Limitations	
		Surface sand fractions 70 - 90% by wt.	0.76	Surface sand fractions 70 - 90% by wt.	0.76	Surface sand fractions 70 - 90% by wt.	0.76
						Slopes 2 to 6%	0.74
						Surface fragments (<3") 10-25%	0.32
Vitrandic Eutrocryepts	25	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Very dusty	1.00	Very dusty	1.00
		Very dusty	1.00	Organic surface layer > 4" thick	1.00	Organic surface layer > 4" thick	1.00
		Organic surface layer > 4" thick	1.00	Saturation from 12 to 30" depth	0.28	Slopes 2 to 6%	0.98
229:							
Marmotland	40	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Very dusty	1.00	Very dusty	1.00
		Very dusty	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Fragments >10" >3%	1.00			Slopes 2 to 6%	0.74

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
229:							
Oxyaquic Dystrocryepts--	40	Limitations		Limitations		Limitations	
		Saturation from 18 to 30" depth	0.56	Saturation from 12 to 30" depth	0.28	Saturation from 18 to 30" depth	0.56
						Slopes 2 to 6%	0.50
231:							
Canisrocks----------	40	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Typic Cryaquents--------	21	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation < 18" depth	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Fragments >3" >75%	1.00	Fragments >3" >75%	1.00	Fragments >10" >3%	1.00
232:							
Canisrocks----------	25	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Glacierpoint----------	21	No limitations		No limitations		Limitations	
						Slopes 2 to 6%	0.74
234:							
Rock outcrop----------	35	Not rated		Not rated		Not rated	
Rubble land----------	35	Not rated		Not rated		Not rated	
235:							
Canisrocks----------	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Rock outcrop----------	30	Not rated		Not rated		Not rated	
Rubble land----------	20	Not rated		Not rated		Not rated	
237:							
Canisrocks----------	25	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Glacierpoint----------	15	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
Vitrandic Cryothents----	15	Limitations		Limitations		Limitations	
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
238:							
Oxyaquic Cryorthents----	25	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Fragments >10" >3%	1.00	Flooding > occasional	1.00
		Fragments >10" >3%	1.00	Frequent flooding	0.50	Fragments >10" >3%	1.00
		Saturation from 18 to 30" depth	0.56	Saturation from 12 to 30" depth	0.28	Saturation from 18 to 30" depth	0.56
Canisrocks----------	15	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Fragments >10" >3%	1.00
239:							
Crazymule----------	45	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Fragments >10" >3%	1.00
Canisrocks----------	34	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Fragments >10" >3%	1.00
241:							
Canisrocks----------	75	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
242:							
Rock outcrop----------	30	Not rated		Not rated		Not rated	
Canisrocks----------	25	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Xeric Dystrocryepts-----	16	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
244:							
Typic Cryorthents-------	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Rubble land----------	25	Not rated		Not rated		Not rated	
Rock outcrop----------	16	Not rated		Not rated		Not rated	

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
245:							
Rock outcrop----------	30	Not rated		Not rated		Not rated	
Canisrocks----------	22	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Xeric Dystrocryepts-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.22
246:							
Rock outcrop, domes-----	90	Not rated		Not rated		Not rated	
247:							
Canisrocks----------	20	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Xeric Dystrocryepts-----	20	No limitations		No limitations		Limitations	
						Slopes 2 to 6%	0.74
248:							
Canisrocks----------	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Fragments >3" >75%	1.00	Fragments >3" >75%	1.00	Fragments >10" >3%	1.00
Rock outcrop----------	30	Not rated		Not rated		Not rated	
Glacierpoint----------	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
249:							
Rock outcrop----------	45	Not rated		Not rated		Not rated	
Canisrocks----------	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
250:							
Canisrocks----------	47	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Xeric Dystrocryepts-----	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
251:							
Glacierpoint	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Typic Cryorthents	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
252:							
Rock outcrop	20	Not rated		Not rated		Not rated	
Canisrocks	15	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Xeric Dystrocryepts	15	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Surface sand fractions 70 - 90% by wt.	0.66	Surface sand fractions 70 - 90% by wt.	0.66	Slopes > 6%	1.00
						Surface sand fractions 70 - 90% by wt.	0.66
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63		
253:							
Canisrocks	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Glacierpoint	18	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Humic Dystrocryepts	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
256:							
Craneflat	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Rubble land	20	Not rated		Not rated		Not rated	
Waterwheel	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
257:							
Badgerpass	55	No limitations		No limitations		Limitations	
						Slopes 2 to 6%	0.26
Oxyaquic Dystroxerepts	35	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Frequent flooding	0.50	Flooding > occasional	1.00
		Saturation from 18 to 30" depth	0.56	Dusty	0.50	Slopes > 6%	1.00
		Dusty	0.50	Saturation from 12 to 30" depth	0.28	Saturation from 18 to 30" depth	0.56
258:							
Typic Dystroxerepts	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Badgerpass	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Dystric Xerorthents	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Flooding > rare	1.00			Occasional flooding	0.50
260:							
Rock outcrop	45	Not rated		Not rated		Not rated	
Craneflat	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Dystric Xerorthents	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
261:							
Dystric Xeropsamments	25	No limitations		No limitations		Limitations	
						Slopes > 6%	1.00
Typic Dystroxerepts	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Badgerpass	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface sand fractions 70- 90% by wt.	0.88	Surface sand fractions 70 - 90% by wt.	0.88	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.08	Fragments (<3") 25-50%	0.08	Surface sand fractions 70 - 90% by wt.	0.88
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
262:							
Humic Dystroxerepts-----	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Dystric Xerorthents-----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Rock outcrop----------	20	Not rated		Not rated		Not rated	
264:							
Crazymule----------	35	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
Canisrocks----------	28	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
267:							
Rock outcrop----------	40	Not rated		Not rated		Not rated	
Typic Cryorthents-------	30	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Surface sand fractions 70 - 90% by wt.	0.95	Surface sand fractions 70 - 90% by wt.	0.95	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.01	Fragments (<3") 25-50%	0.01	Surface sand fractions 70 - 90% by wt.	0.95
Xeric Dystrocryepts-----	15	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
268:							
Rock outcrop----------	40	Not rated		Not rated		Not rated	
Canisrocks----------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Glacierpoint----------	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
269:							
Canisrocks----------	20	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Rock outcrop----------	20	Not rated		Not rated		Not rated	

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
269:							
Glacierpoint----------	15	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
270:							
Rock outcrop----------	35	Not rated		Not rated		Not rated	
Typic Cryorthents-------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Vitrandic Dystrocryepts-	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
271:							
Rock outcrop----------	60	Not rated		Not rated		Not rated	
Lithic Xerorthents------	15	Limitations		Limitations		Limitations	
		Surface sand fractions > 90% by wt.	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
				Surface sand fractions > 90% by wt.	1.00	Surface sand fractions > 90% by wt.	1.00
		Bedrock depth < 20”	1.00				
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Waterwheel----------	15	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
273:							
Nevadafalls----------	55	No limitations		No limitations		Limitations	
						Slopes 2 to 6%	0.50
Waterwheel----------	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
274:							
Rock outcrop, domes-----	85	Not rated		Not rated		Not rated	
275:							
Oxyaquic Dystroxerepts--	25	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Saturation from 12 to 30" depth	0.28	Slopes 2 to 6%	0.74
		Saturation from 18 to 30 “depth	0.56			Saturation from 18 to 30" depth	0.56
						Occasional flooding	0.50

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
275:							
Dystric Xerorthents-----	25	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Vitrandic Xerorthents---	25	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Surface sand fractions > 90% by wt.	1.00	Surface sand fractions > 90% by wt.	1.00
		Surface sand fractions > 90% by wt.	1.00	Very dusty	1.00	Very dusty	1.00
		Very dusty	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Rubble land----------	15	Not rated		Not rated		Not rated	
276:							
Happyisles----------	35	Limitations		No limitations		Limitations	
		Flooding > rare	1.00			Slopes 2 to 6%	0.26
Typic Dystroxerepts-----	35	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 6%	1.00
		Fragments >3" 25 to 75%	0.01	Fragments >3" 25 to 75%	0.01	Fragments >3" 5 to 30%	0.99
277:							
Tuolumne----------	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Humic Dystroxerepts-----	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
278:							
Rock outcrop----------	25	Not rated		Not rated		Not rated	
Tuolumne----------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Surface sand fractions 70 - 90% by wt.	0.34	Surface sand fractions 70 - 90% by wt.	0.34	Surface fragments (<3") 10-25%	0.95
Humic Dystroxerepts-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Rubble land----------	15	Not rated		Not rated		Not rated	

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
279:							
Canisrocks	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Xeric Dystrocryepts	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
280:							
Typic Dystroxerepts	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19
Humic Dystroxerepts	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
282:							
Clarkslodge	50	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Fragments >10" >3%	1.00
Craneflat	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Nevadafalls	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
283:							
Waterwheel	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") 25-50%	0.99	Fragments (<3") 25-50%	0.99	Surface fragments (<3") >25%	1.00
		Surface sand fraction 70 - 90% by wt.	0.59	Surface sand fraction 70 - 90% by wt.	0.59	Surface sand fractions 70 - 90% by wt.	0.59
Nevadafalls	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Rock outcrop	21	Not rated		Not rated		Not rated	
285:							
Waterwheel	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" .1 - 3%	0.76	Fragments >10" .1 - 3%	0.76	Fragments >10" .1 - 3%	0.76

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
285:							
Humic Dystroxerepts-----	16	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
286:							
Nevadafalls------------	26	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface sand fractions 70 - 90% by wt.	0.30	Surface sand fractions 70 - 90% by wt	0.30	Surface fragments (<3") 10-25%	0.96
						Surface sand fractions 70 - 90% by wt.	0.30
Typic Dystroxerepts-----	25	No limitations		No limitations		Limitations	
						Slopes 2 to 6%	0.74
Ultic Palexeralfs-------	20	Limitations		Limitations		Limitations	
		Organic surface layer > 4" thick	1.00	Organic surface layer > 4" thick	1.00	Organic surface layer > 4" thick	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
Rock outcrop------------	15	Not rated		Not rated		Not rated	
287:							
Badgerpass--------------	55	No limitations		No limitations		Limitations	
						Slopes > 6%	1.00
Waterwheel--------------	40	Limitations		Limitations		Limitations	
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Slopes > 6%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Fragments >10" .1 to 3%	0.76
288:							
Rock outcrop------------	35	Not rated		Not rated		Not rated	
Craneflat---------------	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Waterwheel--------------	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76
289:							
Waterwheel--------------	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
289:							
Craneflat	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
290:							
Humic Dystroxerepts	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Tuolumne	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Surface sand fractions 70- 90% by wt.	0.59	Surface sand fractions 70 - 90% by wt.	0.59	Fragments >10" >3%	1.00
Typic Xerorthents	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Ultic Haploxeralfs	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
291:							
Ultic Haploxeralfs	41	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Typic Dystroxerepts	31	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
292:							
Humic Dystroxerepts	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Typic Haploxerults	30	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
293:							
Xeric Dystrocryepts	70	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Vitrandic Dystrocryepts-	18	Limitations		Limitations		Limitations	
		Very dusty	1.00	Very dusty	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Very dusty	1.00
294:							
Waterwheel	65	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
294:							
Typic Dystroxerepts-----	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
295:							
Craneflat----------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Surface sand fraction 70- 90% by wt.	0.59	Surface sand fractions 70 - 90% by wt.	0.59	Surface fragments (<3") 10-25%	0.96
Typic Dystroxerepts-----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
296:							
Ultic Palexeralfs-------	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Humic Dystroxerepts-----	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
297:							
Typic Xerorthents-------	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Rock outcrop------------	25	Not rated		Not rated		Not rated	
Typic Xeropsamments-----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
298:							
Tuolumne----------	41	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Typic Dystroxerepts-----	31	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
299:							
Humic Dystroxerepts-----	46	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Ultic Haploxeralfs------	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
300:							
Typic Dystroxerepts-----	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Ultic Haploxeralfs------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
301:							
Vitrandic Haploxerolls--	90	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Very dusty	1.00	Very dusty	1.00
		Very dusty	1.00	Saturation from 12 to 30" depth	0.19	Saturation from 18 to 30" depth	0.39
		Saturation from 18 to 30" depth	0.39				
302:							
Typic Haploxerults------	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Ultic Haploxeralfs------	41	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
303:							
Rock outcrop------------	30	Not rated		Not rated		Not rated	
Dystric Xeropsamments---	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Humic Dystroxerepts-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Tuolumne----------------	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
304:							
Clarkslodge-------------	60	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Rock outcrop------------	15	Not rated		Not rated		Not rated	
305:							
Rock outcrop------------	50	Not rated		Not rated		Not rated	
Waterwheel--------------	18	Limitations		Limitations		Limitations	
		Surface sand fractions > 90% by wt.	1.00	Surface sand fractions > 90% by wt.	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Surface sand fractions > 90% by wt.	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
305:							
Dystric Xeropsamments---	15	No limitations		No limitations		Limitations	
						Slopes > 6%	1.00
306:							
Typic Cryopsamments-----	50	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 6%	1.00
Humic Dystrocryepts-----	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.23	Fragments >3" 25 to 75%	0.23	Slopes > 6%	1.00
307:							
Rock outcrop----------	40	Not rated		Not rated		Not rated	
Dystric Xeropsamments---	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Dystric Xerorthents-----	20	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Surface sand fractions	1.00	Slopes > 6%	1.00
		Surface sand fractions > 90% by wt.	1.00	> 90% by wt.	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface sand fractions > 90% by wt.	1.00
				Slopes > 15%	1.00		
309:							
Rock outcrop----------	50	Not rated		Not rated		Not rated	
Waterwheel-------------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Typic Dystroxerepts-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
310:							
Rock outcrop----------	55	Not rated		Not rated		Not rated	
Humic Dystroxerepts-----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Humic Lithic Haploxerepts----------	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Saturation < 18" depth	1.00	Ponded (any duration)	1.00	Saturation < 18" depth	1.00
		Ponded (any duration)	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
311:							
Rock outcrop	45	Not rated		Not rated		Not rated	
Humic Dystroxerepts	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments > 3" > 30%	1.00
		Surface sand fractions 70 - 90% by wt.	0.52	Surface sand fractions 70 - 90% by wt.	0.52	Slopes > 6%	1.00
						Surface fragments (<3") >25%	0.99
		Fragments >3" 25 to 75%	0.03	Fragments >3" 25 to 75%	0.03		0.99
Humic Lithic Haploxerepts	19	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Ponded (any duration)	1.00	Saturation < 18" depth	1.00
		Ponded (any duration)	1.00	Fragments >10" >3%	1.00	Ponded (any duration)	1.00
		Fragments >10" >3%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
313:							
Nevadafalls	40	No limitations		No limitations		Limitations	
						Slopes 2 to 6%	0.74
Oxyaquic Dystrudepts	40	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Saturation from 12 to 30" depth	0.28	Slopes 2 to 6%	0.74
		Saturation from 18 to 30" depth	0.56			Saturation from 18 to 30" depth	0.56
						Occasional flooding	0.50
314:							
Badgerpass	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Dystric Xeropsamments	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
315:							
Nevadafalls	60	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Dystric Xeropsamments	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
316:							
Dystric Xerorthents	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >3" 25 to 75%	0.99	Fragments >3" 25 to 75%	0.99	Fragments > 3" > 30%	1.00
		Permeability is 0.6-.6"/hr	0.50	Permeability is .06-.6"/hr	0.50	Permeability is .06 -.6"/hr	0.50

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
316:							
Rock outcrop	40	Not rated		Not rated		Not rated	
Rubble land	20	Not rated		Not rated		Not rated	
318:							
Typic Dystroxerepts	40	No limitations		No limitations		Limitations	
						Slopes 2 to 6%	0.74
Humic Dystroxerepts	36	Limitations		Limitations		Limitations	
		Fragments >10" .1 to > 3%	0.19	Fragments >10" .1 to 3%	0.19	Slopes 2 to 6%	0.50
						Fragments >10" .1 to 3%	0.19
319:							
Humic Dystroxerepts	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Typic Haploxerults	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Inceptic Haploxeralfs	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
320:							
Half Dome	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76
Humic Dystroxerepts	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
321:							
Dystric Xeropsamments	50	Limitations		No limitations		No limitations	
		Flooding > rare	1.00				
Dystric Xerorthents	40	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Surface sand fractions > 90% by wt.	1.00	Surface fragments (<3") >25%	1.00
		Surface sand fractions > 90% by wt.	1.00	Fragments (<3") > 50%	1.00	Surface sand fractions > 90% by wt.	1.00
		Fragments (<3") > 50%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
322:							
Typic Xerorthents-------	90	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
323:							
Ultic Haploxeralfs------	55	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
						Surface fragments (<3") 10-25%	0.14
Humic Dystroxerepts-----	45	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Fragments >10" >3%	1.00
324:							
Humic Haploxerepts------	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Rock outcrop------------	35	Not rated		Not rated		Not rated	
Ultic Haploxeralfs------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
325:							
Urban land--------------	80	Not rated		Not rated		Not rated	
328:							
Clarkslodge-------------	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Ultic Palexerealfs------	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
401:							
Sentinel----------------	90	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Very dusty	1.00	Very dusty	1.00
		Very dusty	1.00				
412:							
Water-------------------	85	Not rated		Not rated		Not rated	
Riverwash---------------	15	Not rated		Not rated		Not rated	
501:							
Happyisles, sandy loam--	65	Limitations		No limitations		Limitations	
		Flooding > rare	1.00			Slopes 2 to 6%	0.26

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
501:							
Happyisles, loamy fine sand, overwash	20	Limitations		No limitations		Limitations	
		Flooding > rare	1.00			Occasional flooding	0.50
						Slopes 2 to 6%	0.26
502:							
Happlyisles	88	Limitations		No limitations		Limitations	
		Flooding > rare	1.00			Slopes 2 to 6%	0.02
504:							
Mollic Xerofluvents	85	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Frequent flooding	0.50	Flooding > occasional	1.00
						Slopes 2 to 6%	0.26
510t:							
Rubble land	40	Not rated		Not rated		Not rated	
Lithnip	20	Limitations		Limitations		Limitations	
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00		
						Bedrock depth < 20"	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
551:							
Happyisles	50	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00			Fragments >10" >3%	1.00
Half Dome	45	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.88	Fragments >3" 25 to 75%	0.88	Fragments >10" >3%	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 6%	1.00
552:							
Mollic Xerofluvents	85	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Frequent flooding	0.50	Flooding > occasional	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 6%	1.00
590:							
Terric Haplosaprists	85	Limitations		No limitations		Limitations	
		Flooding > rare	1.00			Surface fragments (<3") 10-25%	0.92
						Occasional flooding	0.50
						Slopes 2 to 6%	0.02

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
601:							
Half Dome, very bouldery	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Half Dome, cobbly-------	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >3" >75%	1.00	Fragments >3" >75%	1.00	Fragments > 3" > 30%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
602:							
Half Dome----------	85	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.88	Fragments >3" 25 to 75%	0.88	Fragments >10" >3%	1.00
610:							
Rubble land----------	65	Not rated		Not rated		Not rated	
Half Dome----------	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
620:							
Half Dome, extremely stony sandy loam, warm-	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.88	Fragments >3" 25 to 75%	0.88	Fragments >10" >3%	1.00
Half Dome, very cobbly sandy loam, warm-------	43	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
630:							
Rubble land----------	65	Not rated		Not rated		Not rated	
Half Dome----------	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Fragments >3" 25 to 75%	0.82	Fragments >3" 25 to 75%	0.82	Fragments > 3" > 30%	1.00

Table 6.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
701:							
Vitrandic Haploxerolls--	90	Limitations		Limitations		Limitations	
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
702:							
Vitrandic Dystroxerepts-	90	Limitations		Limitations		Limitations	
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >3" 25 to 75%	0.01	Fragments >3" 25 to 75%	0.01	Fragments >3" 5 to 30%	0.99
900:							
Rock outcrop----------	95	Not rated		Not rated		Not rated	
DAM:							
Dam----------	100	Not rated		Not rated		Not rated	
W:							
Water----------	100	Not rated		Not rated		Not rated	

The interpretation for camp areas evaluates the following soil properties at variable depths in the soil: flooding; ponding; wetness; slope; depth to bedrock; depth to cemented pans; fragments less than or equal to or greater than 3 inches in size; sodium content (SAR); salinity (EC); clayey surface textures; Unified classes for high organic matter (PT, OL, OH); soil dustiness; and permeability (Ksat) that is too high, allowing seepage in some climates.

The interpretation for picnic areas evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to cemented pan, salinity (EC), pH, soil dustiness, fragments greater than 3 inches in size, fragments greater than 10 inches in size on the surface, the amount of sand or clay in the surface, Unified classes for high organic matter (PT, OL, OH) and permeability (Ksat) that is too high, allowing seepage in some climates.

The interpretation for playgrounds evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to cemented pans, fragments greater than 10 inches in size on the surface, fragments equal to or less than 3 inches in size, Unified class for high organic matter (PT, OL, OH), soil dustiness, sand or clay surface content, soil pH, salinity (EC), and permeability that is too high, allowing seepage in some climates.

Table 6.—Recreational Development, Part II

(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 potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. Brief summaries of rating criteria and abbreviations are listed on the last page of this report)

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
101:					
Oxyaquic Xerofluvents---	35	Limitations		Limitations	
		Frequent flooding	0.50	Frequent flooding	0.90
				AWC 2-4" to 40" depth	0.44
Riverwash---	35	Not rated		Not rated	
Fluvaquents---	15	Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00
		Fragments >10" >3%	1.00	Frequent flooding	0.90
		Frequent flooding	0.50	Fragments >3" 5 to 30%	0.08
101t:					
Lithnip---	40	Limitations		Limitations	
		Slopes > 25%	1.00	Bedrock depth < 20"	1.00
		Surface fragments <3" >65%	1.00	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.19	Fragments (gravel size) >50%	1.00
Rock outcrop---	25	Not rated		Not rated	
Fishsnooze---	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				Fragments (gravel size) >50%	1.00
				AWC 2-4" to 40" depth	0.69
102:					
Oxyaquic Xerofluvents---	45	Limitations		Limitations	
		Fragments >10" >3%	1.00	Frequent flooding	0.90
		Frequent flooding	0.50	AWC 2-4" to 40" depth	0.77
Riverwash---	40	Not rated		Not rated	
102t:					
Lithnip---	40	Limitations		Limitations	
		Surface fragments <3" >65%	1.00	Bedrock depth < 20"	1.00
		Slopes 15 - 25%	0.32	Fragments (gravel size) >50%	1.00
		Fragments >10" .1 to 3%	0.19	AWC < 2" to 40" depth	1.00
Rock outcrop---	25	Not rated		Not rated	
Fishsnooze---	20	Limitations		Limitations	
		Slopes 15 - 25%	0.32	Fragments (gravel size) >50%	1.00
				Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.69

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
104:					
Aquandic Humaquepts-----	85	Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00
		Organic surface layer > 4" thick	1.00	Organic surface layer > 4" thick	1.00
		Very dusty	1.00	Frequent flooding	0.90
111t:					
Whittell----------	45	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
				Bedrock depth 20 to 40"	0.26
Jobsis----------	25	Limitations		Limitations	
		Slopes > 25%	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Surface sand fractions 70-90% by wt.	0.70	AWC < 2" to 40" depth	1.00
Rock outcrop----------	15	Not rated		Not rated	
151:					
Elcapitan----------	80	Limitations		Limitations	
		Very dusty	1.00	Occasional flooding	0.80
152:					
Vitrandic Haploxerolls--	80	Limitations		Limitations	
		Very dusty	1.00	Occasional flooding	0.80
				AWC 2-4" to 40" depth	0.32
201:					
Leidig----------	80	Limitations		Limitations	
		Very dusty	1.00	Occasional flooding	0.80
210:					
Rubble land----------	30	Not rated		Not rated	
Typic Cryorthents-------	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				Fragments (gravel size) 25 - 50%	0.46
				AWC 2-4" to 40" depth	0.13
Rock outcrop----------	20	Not rated		Not rated	
Xeric Dystrocryepts-----	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.66
211:					
Xeric Dystrocryepts-----	35	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
		Slopes 15 - 25%	0.50	Slopes > 15%	1.00
Canisrocks----------	30	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes 15 - 25%	0.50	AWC < 2" to 40" depth	1.00

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
211:					
Oxyaquic Dystrocryepts--	15	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Saturation from 12 to 24" depth	0.01	AWC 2-4" to 40" depth	0.49
				Saturation from 12 to 24" depth	0.01
213:					
Canisrocks----------	50	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
Glacierpoint----------	15	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes 15 - 25%	0.50	AWC < 2" to 40" depth	1.00
Vitrandic Dystrocryepts-	15	Limitations		Limitations	
		Very dusty	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.73
		Slopes 15 - 25%	0.50		
214:					
Marmotland----------	25	Limitations		Limitations	
		Very dusty	1.00	Occasional flooding	0.80
				Slopes 8 to 15%	0.01
Oxyaquic Dystrocryepts--	15	Limitations		Limitations	
		Surface sand fractions 70 - 90% by wt.	0.66	AWC < 2" to 40" depth	1.00
				Frequent flooding	0.90
		Frequent flooding	0.50	Loamy coarse sand surface	0.50
		Saturation from 12 to 24" depth	0.01		
Xeric Dystrocryepts-----	15	No limitations		Limitations	
				AWC 2-4” to 40” depth	0.48
215:					
Typic Cryorthents-------	40	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >3" >75%	1.00	Fragments >3” > 30%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.76
Rock outcrop----------	20	Not rated		Not rated	
Rubble land----------	20	Not rated		Not rated	
219:					
Rock outcrop----------	40	Not rated		Not rated	
Rubble land----------	25	Not rated		Not rated	
Canisrocks----------	15	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
221:					
Typic Cryorthents-------	35	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
221:					
Xeric Dystrocryepts-----	20	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Surface sand fractions 70-90% by wt.	0.01		
Oxyaquic Dystrocryepts--	15	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Frequent flooding	0.50	Frequent flooding	0.90
		Saturation from 12 to 24" depth	0.01	AWC 2-4" to 40" depth	0.49
222:					
Canisrocks----------	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Fragments >3" > 30%	1.00
		Fragments >3" >75%	1.00	AWC < 2" to 40" depth	1.00
Rubble land----------	30	Not rated		Not rated	
Rock outcrop----------	20	Not rated		Not rated	
Crazymule----------	15	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	0.99
223:					
Rock outcrop----------	35	Not rated		Not rated	
Rubble land----------	35	Not rated		Not rated	
Canisrocks----------	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
224:					
Rock outcrop----------	40	Not rated		Not rated	
Crazymule----------	20	Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >3" > 30%	1.00
		Fragments >3" >75%	1.00	Slopes > 15%	1.00
		Slopes 15 - 25%	0.50	AWC < 2" to 40" depth	0.99
Vitrandic Cryorthents---	15	Limitations		Limitations	
		Very dusty	1.00	AWC < 2" to 40" depth	1.00
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes 15 - 25%	0.92	Fragments >3" > 30%	1.00
225:					
Canisrocks----------	15	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes 15 - 25%	0.50	AWC < 2" to 40" depth	1.00
Rock outcrop----------	15	Not rated		Not rated	
Rubble land----------	15	Not rated		Not rated	
Vitrandic Dystrocryepts-	15	Limitations		Limitations	
		Very dusty	1.00	AWC < 2" to 40" depth	1.00
		Fragments >10" >3%	1.00	Slopes > 15%	1.00

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
227:					
Canisrocks	45	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Crazymule	40	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.95
228:					
Xeric Dystrocryepts	35	Limitations		Limitations	
		Surface sand fractions 70 - 90% by wt.	0.76	AWC < 2" to 40" depth	1.00
Vitrandic Eutrocryepts	25	Limitations		Limitations	
		Organic surface layer > 4" thick	1.00	Organic surface layer > 4" thick	1.00
		Very dusty	1.00	Occasional flooding	0.80
		Saturation from 12 to 24" depth	0.01	AWC 2-4" to 40" depth	0.01
229:					
Marmotland	40	Limitations		Limitations	
		Very dusty	1.00	Occasional flooding	0.80
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.28
Oxyaquic Dystrocryepts	40	Limitations		Limitations	
		Saturation from 12 to 24" depth	0.01	AWC 2-4" to 40" depth	0.70
				Saturation from 12 to 24" depth	0.01
231:					
Canisrocks	40	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2″ to 40″	1.00
		Slopes 15 - 25%	0.50	Slopes > 15%	1.00
Typic Cryaquents	21	Limitations		Limitations	
		Saturation < 12" depth	1.00	Fragments >3″ > 30%	1.00
		Fragments >10" >3%	1.00	Saturation < 12" depth	1.00
		Fragments >3" >75%	1.00	AWC < 2" to 40" depth	1.00
232:					
Canisrocks	25	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
		Slopes 15 - 25%	0.08	Slopes > 15%	1.00
Glacierpoint	21	No limitations		Limitations	
				AWC < 2" to 40" depth	1.00
234:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	
235:					
Canisrocks	35	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
235:					
Rock outcrop	30	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
237:					
Canisrocks	25	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
				Bedrock depth 20 to 40"	0.71
Glacierpoint	15	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	0.99
				Slopes 8 to 15%	0.63
Vitrandic Cryorthents	15	Limitations		Limitations	
		Very dusty	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
		Surface sand fractions 70-90% by wt.	0.08	Slopes 8 to 15%	0.01
238:					
Oxyaquic Cryorthents	25	Limitations		Limitations	
		Fragments >10" >3%	1.00	Frequent flooding	0.90
		Frequent flooding	0.50	AWC 2-4" to 40" depth	0.53
		Saturation from 12 to 24" depth	0.01	Saturation from 12 to 24" depth	0.01
Canisrocks	15	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
				Slopes 8 to 15%	0.63
239:					
Crazymule	45	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
				Bedrock depth 20 to 40"	0.95
				Slopes 8 to 15%	0.16
Canisrocks	34	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
				Slopes 8 to 15%	0.63
241:					
Canisrocks	75	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes 15 - 25%	0.82	AWC < 2" to 40" depth	1.00
242:					
Rock outcrop	30	Not rated		Not rated	
Canisrocks	25	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
		Slopes 15 - 25%	0.82	Slopes > 15%	1.00
Xeric Dystrocryepts	16	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes 15 - 25%	0.18	AWC < 2" to 40" depth	0.99
244:					
Typic Cryorthents	45	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
244:					
Rubble land	25	Not rated		Not rated	
Rock outcrop	16	Not rated		Not rated	
245:					
Rock outcrop	30	Not rated		Not rated	
Canisrocks	22	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes 15 - 25%	0.82	AWC < 2" to 40" depth	1.00
Xeric Dystrocryepts	20	Limitations		Limitations	
		Slopes 15 - 25%	0.18	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.09
246:					
Rock outcrop, domes	90	Not rated		Not rated	
247:					
Canisrocks	20	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
		Slopes 15 - 25%	0.50	Slopes > 15%	1.00
Xeric Dystrocryepts	20	No limitations		Limitations	
				AWC 2-4" to 40" depth	0.77
248:					
Canisrocks	35	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Fragments >3” > 30%	1.00
		Fragments >3" >75%	1.00	AWC < 2" to 40" depth	1.00
Rock outcrop	30	Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
249:					
Rock outcrop	45	Not rated		Not rated	
Canisrocks	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
250:					
Canisrocks	47	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Xeric Dystrocryepts	35	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
		Slopes 15 - 25%	0.50	Slopes > 15%	1.00
251:					
Glacierpoint	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
251:					
Typic Cryorthents	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.76
252:					
Rock outcrop	20	Not rated		Not rated	
Canisrocks	15	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
Xeric Dystrocryepts	15	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.98
		Surface sand fractions 70-90% by wt.	0.66	Slopes 8 to 15%	0.63
253:					
Canisrocks	25	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
Glacierpoint	18	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
Humic Dystrocryepts	15	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
256:					
Craneflat	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Rock outcrop	25	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
Waterwheel	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
257:					
Badgerpass	55	No limitations		Limitations	
				AWC 2-4" to 40" depth	0.94
Oxyaquic Dystroxerpts	35	Limitations		Limitations	
		Frequent flooding	0.50	Frequent flooding	0.90
		Dusty	0.50	Slopes 8 to 15%	0.16
		Saturation from 12 to 24" depth	0.01	Saturation from 12 to 24" depth	0.01
258:					
Typic Dystroxerepts	25	No limitations		Limitations	
				Slopes > 15%	1.00
Badgerpass	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	0.99

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
258:					
Dystric Xerorthents-----	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
				Occasional flooding	0.80
260:					
Rock outcrop----------	45	Not rated		Not rated	
Craneflat----------	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
Dystric Xerorthents-----	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.55
261:					
Dystric Xeropsamments---	25	No limitations		Limitations	
				AWC 2-4" to 40" depth	0.71
Typic Dystroxerepts-----	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.01
Badgerpass----------	15	Limitations		Limitations	
		Surface sand fractions 70 - 90% by wt.	0.88	Slopes > 15%	1.00
				AWC 2-4” to 40” depth	0.92
		Slopes 15 - 25%	0.82	Fragments (gravel size) 25-50%	0.08
Rock outcrop----------	15	Not rated		Not rated	
262:					
Humic Dystroxerepts-----	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Dystric Xerorthents-----	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Rock outcrop----------	20	Not rated		Not rated	
264:					
Crazymule----------	35	No limitations		Limitations	
				Slopes 8 to 15%	0.63
				AWC 2-4" to 40" depth	0.59
Canisrocks----------	28	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
				Slopes > 15%	1.00
267:					
Rock outcrop----------	40	Not rated		Not rated	
Typic Cryorthents-------	30	Limitations		Limitations	
		Fragments >10" >3%	1.00	Coarse sand or sand surface	1.00
		Surface sand fractions 70-90% by wt.	0.95	AWC < 2" to 40" depth	1.00
				Fragments >3” 5 to 30%	0.26

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
267:					
Xeric Dystrocryepts-----	15	No limitations		Limitations	
				AWC < 2" to 40" depth	1.00
				Slopes 8 to 15%	0.63
268:					
Rock outcrop----------	40	Not rated		Not rated	
Canisrocks----------	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Glacierpoint----------	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
269:					
Canisrocks----------	20	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
		Slopes 15 - 25%	0.02	Slopes > 15%	1.00
Rock outcrop----------	20	Not rated		Not rated	
Glacierpoint----------	15	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
		Slopes > 25%	1.00	Slopes > 15%	1.00
270:					
Rock outcrop----------	35	Not rated		Not rated	
Typic Cryorthents-------	25	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
Vitrandic Dystrocryepts-	25	Limitations		Limitations	
		Very dusty	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
		Fragments >10" >3%	1.00		
271:					
Rock outcrop----------	60	Not rated		Not rated	
Lithic Xerorthents------	15	Limitations		Limitations	
		Surface sand fractions > 90% by wt.	1.00	Bedrock depth < 20"	1.00
				AWC <2” to 40” depth	1.00
		Slopes 15 - 25%	0.68	Slopes > 15%	1.00
Waterwheel----------	15	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
		Slopes > 25%	1.00	Slopes > 15%	1.00
273:					
Nevadafalls----------	55	No limitations		Limitations	
				AWC < 2" to 40" depth	0.99
Waterwheel----------	30	Limitations		Limitations	
		Slopes 15 - 25%	0.82	AWC < 2" to 40" depth	1.00
				Slopes > 15%	1.00
274:					
Rock outcrop, domes-----	85	Not rated		Not rated	

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
275:					
Oxyaquic Dystroxerepts--	25	Limitations		Limitations	
		Saturation from 12 to 24" depth	0.01	AWC 2-4" to 40" depth	0.98
				Occasional flooding	0.80
				Saturation from 12 to 24" depth	0.01
Dystric Xerorthents-----	25	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
				Slopes > 15%	1.00
Vitrandic Xerorthents---	25	Limitations		Limitations	
		Very dusty	1.00	Occasional flooding	0.80
		Surface sand fractions > 90% by wt.	1.00	Fragments >3" 5 to 30%	0.79
				AWC 2-4” to 40” depth	0.01
		Fragments >10" >3%	1.00		
Rubble land----------	15	Not rated		Not rated	
276:					
Happyisles----------	35	No limitations		Limitations	
				AWC 2-4" to 40" depth	0.08
Typic Dystroxerepts-----	35	Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >3" 5 to 30%	0.99
		Fragments >3" 25 to 75%	0.01	AWC 2-4" to 40" depth	0.75
				Slopes 8 to 15%	0.16
277:					
Tuolumne----------	45	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
Humic Dystroxerepts-----	35	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
278:					
Rock outcrop----------	25	Not rated		Not rated	
Tuolumne----------	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
		Surface sand fractions 70 - 90% by wt.	0.34	Fragments >3" 5 to 30%	0.79
Humic Dystroxerepts-----	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Rubble land----------	15	Not rated		Not rated	
279:					
Canisrocks----------	40	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
Xeric Dystrocryepts-----	15	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
280:					
Typic Dystroxerepts-----	35	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.19	AWC 2-4" to 40" depth	0.03
Humic Dystroxerepts-----	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
Rock outcrop------------	25	Not rated		Not rated	
282:					
Clarkslodge-------------	50	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes 8 to 15%	0.63
				AWC 2-4" to 40" depth	0.12
Craneflat---------------	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
Nevadafalls-------------	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	0.99
283:					
Waterwheel--------------	35	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Surface sand fractions 70 - 90% by wt.	0.59	AWC < 2" to 40" depth	1.00
				Fragments (gravel size) 25 - 50%	0.99
Nevadafalls-------------	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.27
Rock outcrop------------	21	Not rated		Not rated	
285:					
Waterwheel--------------	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.76	AWC < 2” to 40”	1.00
Humic Dystroxerepts-----	16	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.73
286:					
Nevadafalls-------------	26	Limitations		Limitations	
		Slopes 15 - 25%	0.50	Slopes > 15%	1.00
		Surface sand fractions 70 - 90% by wt.	0.30	AWC 2-4" to 40" depth	0.49
Typic Dystroxerepts-----	25	No limitations		Limitations	
				AWC 2-4” to 40” depth	0.87
Ultic Palexeralfs-------	20	Limitations		Limitations	
		Organic surface layer > 4" thick	1.00	Organic surface layer > 4" thick	1.00
		Fragments >10" >3%	1.00	Slopes 8 to 15%	0.63
Rock outcrop------------	15	Not rated		Not rated	

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
287:					
Badgerpass	55	No limitations		Limitations	
				AWC 2-4" to 40" depth	0.90
Waterwheel	40	Limitations		Limitations	
		Fragments >10" .1 to 3%	0.76	AWC < 2" to 40" depth	1.00
				Slopes 8 to 15%	0.63
288:					
Rock outcrop	35	Not rated		Not rated	
Craneflat	20	No limitations		Limitations	
				AWC < 2" to 40" depth	1.00
				Slopes > 15%	1.00
Waterwheel	20	Limitations		Limitations	
		Fragments >10" .1 to 3%	0.76	AWC < 2" to 40" depth	1.00
		Slopes 15 - 25%	0.50	Slopes > 15%	1.00
289:					
Waterwheel	50	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Craneflat	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
290:					
Humic Dystroxerepts	40	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	0.99
Tuolumne	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Fragments >3" > 30%	1.00
		Surface sand fractions 70 - 90% by wt.	0.59	AWC < 2" to 40" depth	1.00
Typic Xerorthents	15	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Ultic Haploxeralfs	15	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00		
291:					
Ultic Haploxeralfs	41	Limitations		Limitations	
		Slopes 15 - 25%	0.18	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.11
Typic Dystroxerepts	31	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.48
292:					
Humic Dystroxerepts	35	Limitations		Limitations	
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
				Slopes > 15%	1.00

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
292:					
Typic Haploxerults------	30	No limitations		Limitations	
				Slopes 8 to 15%	0.63
293:					
Xeric Dystrocryepts-----	70	No limitations		Limitations	
				Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.71
Vitrandic Dystrocryepts-	18	Limitations		Limitations	
		Very dusty	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC 2-4" to 40" depth	0.33
294:					
Waterwheel--------------	65	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Typic Dystroxerepts-----	35	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.49
295:					
Craneflat---------------	25	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
		Surface sand fractions 70 - 90% by wt.	0.59	Fragments >3" 5 to 30%	0.03
Typic Dystroxerepts-----	25	Limitations		Limitations	
		Slopes 15 - 25%	0.82	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.47
296:					
Ultic Palexeralfs-------	20	No limitations		Limitations	
				Slopes > 15%	1.00
Humic Dystroxerepts-----	15	Limitations		Limitations	
		Slopes 15 - 25%	0.50	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.01
297:					
Typic Xerorthents-------	30	Limitations		Limitations	
		Slopes 15 - 25%	0.50	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
Rock outcrop------------	25	Not rated		Not rated	
Typic Xeropsamments-----	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.70
298:					
Tuolumne----------------	41	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Typic Dystroxerepts-----	31	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.49

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
299:					
Humic Dystroxerepts-----	46	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
Ultic Haploxeralfs------	35	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.19	AWC 2-4" to 40" depth	0.39
300:					
Typic Dystroxerepts-----	35	No limitations		Limitations	
				AWC < 2" to 40" depth	1.00
				Slopes > 15%	1.00
Ultic Haploxeralfs------	25	No limitations		Limitations	
				Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.01
301:					
Vitrandic Haploxerolls--	90	Limitations		No limitations	
		Very dusty	1.00		
302:					
Typic Haploxerults------	45	No limitations		Limitations	
				Slopes > 15%	1.00
Ultic Haploxeralfs------	41	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.01
303:					
Rock outcrop------------	30	Not rated		Not rated	
Dystric Xeropsamments---	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	0.99
Humic Dystroxerepts-----	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
Tuolumne----------------	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00
304:					
Clarkslodge-------------	60	No limitations		Limitations	
				Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.36
Rock outcrop------------	15	Not rated		Not rated	
305:					
Rock outcrop------------	50	Not rated		Not rated	
Waterwheel--------------	18	Limitations		Limitations	
		Surface sand fractions >90% by wt.	1.00	AWC < 2" to 40" depth	1.00
				Fragments (gravel size) >50%	1.00
		Slopes 15 - 25%	0.82		
				Slopes > 15%	1.00

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
305:					
Dystric Xeropsamments---	15	No limitations		Limitations	
				AWC 2-4" to 40" depth	0.71
306:					
Typic Cryopsamments-----	50	No limitations		Limitations	
				AWC < 2" to 40" depth	1.00
				Slopes 8 to 15%	0.16
Humic Dystrocryepts-----	30	Limitations		Limitations	
		Slopes 15 - 25%	0.50	Fragments >3" > 30%	1.00
		Fragments >3" 25 to 75%	0.23	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.35
307:					
Rock outcrop-----------	40	Not rated		Not rated	
Dystric Xeropsamments---	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	0.99
Dystric Xerorthents-----	20	Limitations		Limitations	
		Surface sand fractions > 90% by wt.	1.00	AWC < 2" to 40" depth	1.00
				Fragments (gravel size) >50%	1.00
		Slopes 15 - 25%	0.82	Slopes > 15%	1.00
309:					
Rock outcrop-----------	50	Not rated		Not rated	
Waterwheel-------------	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.89
Typic Dystroxerepts-----	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
310:					
Rock outcrop-----------	55	Not rated		Not rated	
Humic Dystroxerepts-----	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
Humic Lithic Haploxerepts----------	20	Limitations		Limitations	
		Slopes > 25%	1.00	Bedrock depth < 20"	1.00
		Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Fragments >10" >3%	1.00	Slopes > 15%	1.00
311:					
Rock outcrop-----------	45	Not rated		Not rated	
Humic Dystroxerepts-----	35	Limitations		Limitations	
		Slopes > 25%	1.00	AWC < 2" to 40" depth	1.00
		Surface sand fractions 70 - 90% by wt.	0.52	Fragments >3" > 30%	1.00
				Slopes > 15%	1.00
		Fragments >3" 25 to 75%	0.03		

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
311:					
Humic Lithic Haploxerepts	19	Limitations		Limitations	
		Ponded (any duration)	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Ponded (any duration)	1.00
		Saturation from 12 to 24" depth	0.98	AWC < 2" to 40" depth	1.00
313:					
Nevadafalls	40	No limitations		Limitations	
				AWC < 2" to 40" depth	0.99
Oxyaquic Dystrudepts	40	Limitations		Limitations	
		Saturation from 12 to 24" depth	0.01	Occasional flooding	0.80
				Saturation from 12 to 24" depth	0.01
				AWC 2-4" to 40" depth	0.01
314:					
Badgerpass	45	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.73
Dystric Xeropsamments	35	No limitations		Limitations	
				Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.75
Rock outcrop	15	Not rated		Not rated	
315:					
Nevadafalls	60	Limitations		Limitations	
		Slopes 15 - 25%	0.02	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.95
Dystric Xeropsamments	40	Limitations		Limitations	
		Slopes 15 - 25%	0.82	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.93
316:					
Dystric Xerorthents	40	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >3" 25 to 75%	0.99	Fragments >3" > 30%	1.00
		Surface sand fractions 70 - 90% by wt.	0.47	AWC < 2" to 40" depth	1.00
Rock outcrop	40	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
318:					
Typic Dystroxerepts	40	No limitations		Limitations	
				AWC 2-4" to 40" depth	0.01
Humic Dystroxerepts	36	Limitations		Limitations	
		Fragments >10" .1 to 3%	0.19	AWC 2-4" to 40" depth	0.02
319:					
Humic Dystroxerepts	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	1.00

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
319:					
Typic Haploxerults	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.27
Inceptic Haploxeralfs	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC < 2" to 40" depth	0.99
320:					
Half Dome	40	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.76	AWC < 2" to 40" depth	0.99
Humic Dystroxerepts	20	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC < 2" to 40" depth	1.00
Rock outcrop	20	Not rated		Not rated	
321:					
Dystric Xeropsamments	50	No limitations		Limitations	
				AWC 2-4" to 40" depth	0.93
Dystric Xerorthents	40	Limitations		Limitations	
		Surface sand fractions > 90% by wt.	1.00	AWC < 2" to 40" depth	1.00
				Fragments (gravel size) >50%	1.00
		Slopes 15 - 25%	0.18	Slopes > 15%	1.00
322:					
Typic Xerorthents	90	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.96
323:					
Ultic Haploxeralfs	55	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.58
Humic Dysroxerepts	45	Limitations		Limitations	
		Fragments >10" >3%	1.00	Slopes 8 to 15%	0.16
				AWC 2-4" to 40" depth	0.11
324:					
Humic Haploxerepts	40	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.95
Rock outcrop	35	Not rated		Not rated	
Ultic Haploxeralfs	25	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.04
325:					
Urban land	80	Not rated		Not rated	

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
328:					
Clarkslodge	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
				AWC 2-4" to 40" depth	0.12
Ultic Palexeralfs	15	No limitations		Limitations	
				Slopes > 15%	1.00
401:					
Sentinel	90	Limitations		No limitations	
		Very dusty	1.00		
412:					
Water	85	Not rated		Not rated	
Riverwash	15	Not rated		Not rated	
501:					
Happyisles, sandy loam	65	No limitations		Limitations	
				AWC 2-4" to 40" depth	0.15
Happyisles, loamy fine sand, overwash	20	No limitations		Limitations	
				Occasional flooding	0.80
				AWC 2-4" to 40" depth	0.08
502:					
Happyisles	88	No limitations		Limitations	
				AWC 2-4" to 40" depth	0.08
504:					
Mollic Xerofluvents	85	Limitations		Limitations	
		Frequent flooding	0.50	Frequent flooding	0.90
510t:					
Rubble land	40	Not rated		Not rated	
Lithnip	20	Limitations		Limitations	
		Surface fragments <3" >65%	1.00	Bedrock depth < 20"	1.00
		Slopes 15 - 25%	0.32	Fragments (gravel size) >50%	1.00
		Fragments >10” .1 to 3%	0.19	AWC < 2" to 40" depth	1.00
Rock outcrop	15	Not rated		Not rated	
551:					
Happyisles	50	Limitations		Limitations	
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.08
Half Dome	45	Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >3” > 30%	1.00
		Fragments >3" 25 to 75%	0.88	AWC 2-4" to 40" depth	0.75
				Slopes 8 to 15%	0.16
552:					
Mollic Xerofluvents	85	Limitations		Limitations	
		K-factor >.35 and slopes > 8%	1.00	Frequent flooding	0.90
				Slopes 8 to 15%	0.16
		Frequent flooding	0.50		

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
590:					
Terric Haplosaprists----	85	No limitations		Limitations	
				Occasional flooding	0.80
601:					
Half Dome, very bouldery	50	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.93
Half Dome, cobbly-------	45	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >3" >75%	1.00	Fragments >3” > 30%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.75
602:					
Half Dome----------	85	Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >3” > 30%	1.00
		Fragments >3" 25 to 75%	0.88	Slopes > 15%	1.00
		Slopes 15 - 25%	0.18	AWC 2-4" to 40" depth	0.75
610:					
Rubble land----------	65	Not rated		Not rated	
Half Dome----------	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.75
620:					
Half Dome, extremely stony sandy loam, warm-	50	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Fragments >3” > 30%	1.00
		Fragments >3" 25 to 75%	0.88	AWC 2-4" to 40" depth	0.75
Half Dome, very cobbly sandy loam, warm-------	43	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	AWC 2-4" to 40" depth	0.75
630:					
Rubble land----------	65	Not rated		Not rated	
Half Dome----------	30	Limitations		Limitations	
		Slopes > 25%	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Fragments >3” > 30%	1.00
		Fragments >3" 25 to 75%	0.82	AWC 2-4" to 40" depth	0.75
701:					
Vitrandic Haploxerolls--	90	Limitations		Limitations	
		Very dusty	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Fragments >3” > 30%	1.00
		Slopes 15 - 25%	0.08		
702:					
Vitrandic Dystroxerepts-	90	Limitations		Limitations	
		Very dusty	1.00	Slopes > 15%	1.00
		Slopes 15 - 25%	0.08	Fragments >3" 5 to 30%	0.99
		Fragments >3" 25 to 75%	0.01	AWC 2-4" to 40" depth	0.02
900:					
Rock outcrop----------	95	Not rated		Not rated	

Table 6.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of . map unit	Paths and trails		Lawns, landscaping, and golf fairways	
		Limitation	Value	Limitation	Value
DAM:					
Dam	100	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

The interpretation for paths and trails evaluates the following soil properties at variable depths in the soil: flooding; ponding; wetness; slope; fragments less than, equal to, or greater than 3 inches in size; clay and sand content in the surface layer; fragments on the surface that are more than or equal to 10 inches in size; Unified classes for high organic matter (PT, OL, OH); soil dustiness; and the potential of the soil to erosion by water.

The interpretation for lawns, landscaping, and golf fairways evaluates the following soil properties at variable depths in the soil: flooding; ponding; wetness; slope; depth to bedrock; depth to a cemented pan; fragments greater than, equal to, or less than 3 inches in size; Unified class for high organic matter (PT, OL, OH); soil dustiness; sand or clay surface content; fragments on the surface greater than or equal to 10 inches in size; soil pH; salinity (EC); sodium content (SAR); calcium carbonates; and sulfur content.

Table 7.—Building Site Development, Part I

(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 potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. Brief summaries of rating criteria and abbreviations are listed on the last page of this report)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
101:							
Oxyaquic Xerofluvents---	35	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
				Saturation from 2.5' to 6' depth	0.61		
Riverwash---	35	Limitations		Limitations		Limitations	
		Flooding ≥ rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
Fluvaquents---	15	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
101t:							
Lithnip---	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Rock outcrop---	25	Not rated		Not rated		Not rated	
Fishsnooze---	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.89	Bedrock (hard) < 40" depth	1.00	Fragments (>3") 25 to 50%	0.89
		Bedrock (hard) from 20 to 40"	0.10	Fragments (>3") 25 to 50%	0.89	Bedrock (hard) from 20 to 40"	0.10
102:							
Oxyaquic Xerofluvents---	45	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
				Saturation from 2.5' to 6' depth	0.61		
Riverwash---	40	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
102t:							
Lithnip	40	Limitations		Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock (hard) < 20" depth	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Fishsnooze	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.89	Slopes > 15%	1.00	Fragments (>3") 25 to 50%	0.89
		Bedrock (hard) from 20 to 40"	0.10	Fragments (>3") 25 to 50%	0.89	Bedrock (hard) from 20 to 40"	0.10
104:							
Aquandic Humaquepts	85	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
111t:							
Whittell	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
				Bedrock (soft) from 20 to 40"	0.26		
Jobsis	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) < 20" depth	0.99		
Rock outcrop	15	Not rated		Not rated		Not rated	
151:							
Elcapitan	80	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
				Saturation from 2.5' to 6' depth	0.61		
152:							
Vitrandic Haploxerolls	80	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
				Saturation from 2.5' to 6' depth	0.03		

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
201:							
Leidig	80	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
				Saturation from 2.5' to 6' depth	0.61		
210:							
Rubble land	30	Not rated		Not rated		Not rated	
Typic Cryorthents	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99
Rock outcrop	20	Not rated		Not rated		Not rated	
Xeric Dystrocryepts	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
211:							
Xeric Dystrocryepts	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.70	Fragments (>3") 25 to 50%	0.70	Fragments (>3") 25 to 50%	0.70
Canisrocks	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Oxyaquic Dystrocryepts	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Saturation < 2.5' depth	1.00	Slopes > 8%	1.00
		Saturation from 18 to 30" depth	0.56	Slopes > 15%	1.00	Saturation from 18 to 30” depth	0.56
213:							
Canisrocks	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.92	Fragments (>3") 25 to 50%	0.92	Fragments (>3") 25 to 50%	0.92
Glacierpoint	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99
Vitrandic Dystrocryepts-	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
214:							
Marmotland	25	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Slopes 8 to 15%	0.01	Saturation from 2.5' to 6' depth	0.03	Slopes > 8%	0.98
				Slopes 8 to 15%	0.01		
Oxyaquic Dystrocryepts	15	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation from 18 to 30" depth	0.56	Saturation < 2.5' depth	1.00	Saturation from 18 to 30" depth	0.56
Xeric Dysrocryepts	15	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.02
215:							
Typic Cryorthents	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
Rubble land	20	Not rated		Not rated		Not rated	
219:							
Rock outcrop	40	Not rated		Not rated		Not rated	
Rubble land	25	Not rated		Not rated		Not rated	
Canisrocks	15	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") >50%	1.00
221:							
Typic Cryorthents	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.99	Fragments (>3") 25 to 50%	0.99	Fragments (>3") 25 to to 50%	0.99
Xeric Dystrocryepts	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Oxyaquic Dystrocryepts	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation from 18 to 30" depth	0.56	Saturation < 2.5' depth	1.00	Saturation from 18 to 30" depth	0.56

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
222:							
Canisrocks	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Rubble land	30	Not rated		Not rated		Not rated	
Rock outcrop	20	Not rated		Not rated		Not rated	
Crazymule	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.15	Fragments (>3") 25 to 50%	0.15	Fragments (>3") 25 to 50%	0.15
223:							
Rock outcrop	35	Not rated		Not rated		Not rated	
Rubble land	35	Not rated		Not rated		Not rated	
Canisrocks	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
224:							
Rock outcrop	40	Not rated		Not rated		Not rated	
Crazymule	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.20	Fragments (>3") 25 to 50%	0.20	Fragments (>3") 25 to 50%	0.20
Vitrandic Cryorthents	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.88	Slopes > 15%	1.00	Bedrock (hard) from 20 to 40"	0.88
225:							
Canisrocks	15	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") >50%	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
Rubble land	15	Not rated		Not rated		Not rated	
Vitrandic Dystrocryepts	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
227:							
Canisrocks	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Crazymule	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.47	Fragments (>3") 25 to 50%	0.47	Fragments (>3") 25 to to 50%	0.47
228:							
Xeric Dystrocryepts	35	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.26
Vitrandic Eutrocryepts	25	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation from 18 to 30" depth	0.56	Saturation < 2.5' depth	1.00	Saturation from 18 to 30" depth	0.56
						Slopes are from 4 to 8%	0.50
229:							
Marmotland	40	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
				Saturation from 2.5' to 6' depth	0.03	Slopes are from 4 to 8%	0.26
Oxyaquic Dystrocryepts	40	Limitations		Limitations		Limitations	
		Saturation from 18 to 30" depth	0.56	Saturation < 2.5' depth	1.00	Saturation from 18 to 30" depth	0.56
						Slopes are from 4 to 8%	0.02
231:							
Canisrocks	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.15	Fragments (>3") 25 to 50%	0.15	Fragments (>3") 25 to 50%	0.15
Typic Cryaquents	21	Limitations		Limitations		Limitations	
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.99	Fragments (>3") 25 to 50%	0.99	Saturation < 18" depth	1.00
		Slopes 8 to 15%	0.37	Slopes 8 to 15%	0.37	Fragments (>3") 25 to 50%	0.99
232:							
Canisrocks	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.96	Fragments (>3") 25 to 50%	0.96	Fragments (>3") 25 to 50%	0.96

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
232:							
Glacierpoint----------	21	Limitations		Limitations		Limitations	
		Fragments (>3") 25 to 50%	0.19	Fragments (>3") 25 to 50%	0.19	Slopes are from 4 to 8%	0.26
						Fragments (>3") 25 to 50%	0.19
234:							
Rock outcrop----------	35	Not rated		Not rated		Not rated	
Rubble land----------	35	Not rated		Not rated		Not rated	
235:							
Canisrocks----------	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Rock outcrop----------	30	Not rated		Not rated		Not rated	
Rubble land----------	20	Not rated		Not rated		Not rated	
237:							
Canisrocks----------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.42	Bedrock (soft) from 20 to 40"	0.71	Fragments (>3") 25 to 50%	0.42
				Fragments (>3") 25 to 50%	0.42		
Glacierpoint----------	15	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.16	Fragments (>3") 25 to 50%	0.16	Fragments (>3") 25 to 50%	0.16
Vitrandic Cryorthents---	15	Limitations		Limitations		Limitations	
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%	0.98
238:							
Oxyaquic Cryorthents----	25	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation from 18 to 30" depth	0.56	Saturation < 2.5' depth	1.00	Saturation from 18 to 30" depth	0.56
Canisrocks----------	15	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Fragments (>3") >50%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
239:							
Crazymule	45	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.16	Bedrock (soft) from 20 to 40"	0.95	Slopes > 8%	1.00
				Slopes 8 to 15%	0.16		
Canisrocks	34	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Fragments (>3") >50%	1.00
241:							
Canisrocks	75	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.04	Fragments (>3") 25 to 50%	0.04	Fragments (>3") 25 to 50%	0.04
242:							
Rock outcrop	30	Not rated		Not rated		Not rated	
Canisrocks	25	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") >50%	1.00
Xeric Dystrocryepts	16	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
244:							
Typic Cryorthents	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Rubble land	25	Not rated		Not rated		Not rated	
Rock outcrop	16	Not rated		Not rated		Not rated	
245:							
Rock outcrop	30	Not rated		Not rated		Not rated	
Canisrocks	22	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") >50%	1.00
Xeric Dystrocryepts	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
246:							
Rock outcrop, domes	90	Not rated		Not rated		Not rated	

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
247:							
Canisrocks	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Xeric Dystrocryepts	20	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.26
248:							
Canisrocks	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to to 50%	0.34
249:							
Rock outcrop	45	Not rated		Not rated		Not rated	
Canisrocks	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
250:							
Canisrocks	47	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") >50%	1.00
Xeric Dystrocryepts	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.71	Fragments (>3") 25 to 50%	0.71	Fragments (>3") 25 to 50%	0.71
251:							
Glacierpoint	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34
Typic Cryorthents	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.11	Fragments (>3") 25 to 50%	0.11	Fragments (>3") 25 to 50%	0.11
252:							
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
252:							
Canisrocks	15	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") >50%	1.00
Xeric Dystrocryepts	15	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
253:							
Canisrocks	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Glacierpoint	18	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99
Humic Dystrocryepts	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
256:							
Craneflat	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.03	Fragments (>3") 25 to 50%	0.03	Fragments (>3") 25 to 50%	0.03
Rock outcrop	25	Not rated		Not rated		Not rated	
Rubble land	20	Not rated		Not rated		Not rated	
Waterwheel	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
257:							
Badgerpass	55	No limitations		No limitations		No limitations	
Oxyaquic Dystroxerepts	35	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Slopes > 8%	1.00
		Saturation from 18 to 30" depth	0.56	Saturation < 2.5' depth	1.00	Flooding > rare	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Saturation from 18 to 30" depth	0.56
258:							
Typic Dystroxerepts	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Badgerpass	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
258:							
Dystric Xerorthents-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01
260:							
Rock outcrop----------	45	Not rated		Not rated		Not rated	
Craneflat----------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Dystric Xerorthents-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
261:							
Dystric Xeropsamments---	25	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.74
Typic Dystroxerepts-----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Badgerpass----------	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Rock outcrop----------	15	Not rated		Not rated		Not rated	
262:							
Humic Dystroxerepts-----	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Dystric Xerorothents----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Rock outcrop----------	20	Not rated		Not rated		Not rated	
264:							
Crazymule----------	35	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.22	Fragments (>3") 25 to 50%	0.22	Fragments (>3") 25 to 50%	0.22
Canisrocks----------	28	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") >50%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
267:							
Rock outcrop	40	Not rated		Not rated		Not rated	
Typic Cryorthents	30	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
						Slopes are from 4 to 8%	0.02
Xeric Dystrocrepts	15	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
268:							
Rock outcrop	40	Not rated		Not rated		Not rated	
Canisrocks	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Glacierpoint	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34
269:							
Canisrocks	20	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") >50%	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34
270:							
Rock outcrop	35	Not rated		Not rated		Not rated	
Typic Cryorthents	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Vitrandic Dystrocryepts-	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.99	Fragments (>3") 25 to 50%	0.99	Fragments (>3") 25 to 50%	0.99
271:							
Rock outcrop	60	Not rated		Not rated		Not rated	

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
271:							
Lithic Xerorthents------	15	Limitations		Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock (hard) < 20" depth	1.00
Waterwheel----------	15	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") >50%	1.00
273:							
Nevadafalls----------	55	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.02
Waterwheel----------	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.53	Fragments (>3") 25 to 50%	0.53	Fragments (>3") 25 to 50%	0.53
274:							
Rock outcrop, domes-----	85	Not rated		Not rated		Not rated	
275:							
Oxyaquic Dystroxerepts--	25	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation from 18 to 30" depth	0.56	Saturation < 2.5' depth	1.00	Saturation from 18 to 30" depth	0.56
						Slopes are from 4 to 8%	0.26
Dystric Xerorothents----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99
Vitrandic Xerorothents--	25	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
Rubble land----------	15	Not rated		Not rated		Not rated	
276:							
Happyisles----------	35	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
Typic Dystroxerepts-----	35	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
277:							
Tuolumne	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Humic Dystroxerepts	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
278:							
Rock outcrop	25	Not rated		Not rated		Not rated	
Tuolumne	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.21	Fragments (>3") 25 to 50%	0.21	Fragments (>3") 25 to 50%	0.21
Humic Dystroxerepts	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Rubble land	15	Not rated		Not rated		Not rated	
279:							
Canisrocks	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.10	Fragments (>3") 25 to 50%	0.10	Fragments (>3") 25 to 50%	0.10
Xeric Dystrocryepts	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
280:							
Typic Dystroxerepts	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Humic Dystroxerepts	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02
Rock outcrop	25	Not rated		Not rated		Not rated	
282:							
Clarkslodge	50	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.11	Shrink-swell (LEP 3-6)	0.22	Fragments (>3") 25 to 50%	0.11
		Shrink-swell (LEP 3-6)	0.01	Fragments (>3") 25 to 50%	0.11	Shrink-swell (LEP 3-6)	0.01

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
282:							
Craneflat	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.47	Fragments (>3") 25 to 50%	0.47	Fragments (>3") 25 to 50%	0.47
Nevadafalls	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
283:							
Waterwheel	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Nevadafalls	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Rock outcrop	21	Not rated		Not rated		Not rated	
285:							
Waterwheel	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Humic Dystroxerepts	16	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
286:							
Nevadafalls	26	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Typic Dystroxerepts	25	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.26
Ultic Palexeralfs	20	Limitations		Limitations		Limitations	
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Shrink-swell (LEP >6)	0.99
Rock outcrop	15	Not rated		Not rated		Not rated	
287:							
Badgerpass	55	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.74
Waterwheel	40	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
288:							
Rock outcrop	35	Not rated		Not rated		Not rated	
Craneflat	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.47	Fragments (>3") 25 to 50%	0.47	Fragments (>3") 25 to 50%	0.47
Waterwheel	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01
289:							
Waterwheel	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25 to 50%	0.30
Craneflat	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
290:							
Humic Dystroxerepts	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Tuolumne	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Typic Xerorthents	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.89	Fragments (>3") 25 to 50%	0.89	Fragments (>3") 25 to 50%	0.89
Ultic Haploxeralfs	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell (LEP 3-6)	0.01
291:							
Ultic Haploxeralfs	41	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Typic Dystroxerepts	31	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
292:							
Humic Dystroxerepts-----	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.67	Fragments (>3") 25 to 50%	0.67	Fragments (>3") 25 to 50%	0.67
Typic Haploxerults------	30	Limitations		Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Shrink-swell (LEP 3-6)	0.78
293:							
Xeric Dystrocryepts-----	70	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Vitrandic Dystrocryepts-	18	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
294:							
Waterwheel----------	65	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Typic Dystroxerepts-----	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
295:							
Craneflat----------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.21	Fragments (>3") 25 to 50%	0.21	Fragments (>3") 25 to 50%	0.21
Typic Dystroxerepts-----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
296:							
Ultic Palexeralfs-------	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Shrink-swell (LEP >6)	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	0.99	Slopes > 15%	1.00	Shrink-swell (LEP >6)	0.99
Humic Dystroxerepts-----	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
297:							
Typic Xerorthents-------	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Rock outcrop----------	25	Not rated		Not rated		Not rated	
Typic Xeropsamments-----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
298:							
Tuolumne	41	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Typic Dystroxerepts	31	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
299:							
Humic Dystroxerepts	46	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.39	Fragments (>3") 25 to 50%	0.39	Fragments (>3") 25 to to 50%	0.39
Ultic Haploxeralfs	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell (LEP 3-6)	0.01
300:							
Typic Dystroxerepts	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell (LEP 3-6)	0.01
Ultic Haploxeralfs	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22
301:							
Vitrandic Haploxerolls	90	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation from 18 to 30" depth	0.39	Saturation < 2.5' depth	1.00	Saturation from 18 to 30" depth	0.39
302:							
Typic Haploxerults	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22
Ultic Haploxeralfs	41	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22
303:							
Rock outcrop	30	Not rated		Not rated		Not rated	
Dystric Xeropsamments	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
303:							
Humic Dystroxerepts-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Tuolumne----------	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.72	Fragments (>3") 25 to 50%	0.72	Fragments (>3") 25 to to 50%	0.72
304:							
Clarkslodge----------	60	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell (LEP 3-6)	0.01
Rock outcrop----------	15	Not rated		Not rated		Not rated	
305:							
Rock outcrop----------	50	Not rated		Not rated		Not rated	
Waterwheel----------	18	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Dystric Xeropsamments---	15	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.74
306:							
Typic Cryopsamments-----	50	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 8%	1.00
Humic Dystrocryepts-----	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
307:							
Rock outcrop----------	40	Not rated		Not rated		Not rated	
Dystric Xeropsamments---	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Dystric Xerorthents-----	20	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Flooding > rare	1.00
309:							
Rock outcrop----------	50	Not rated		Not rated		Not rated	
Waterwheel----------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
309:							
Typic Dystroxerepts-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.25	Fragments (>3") 25 to 50%	0.25	Fragments (>3") 25 to 50%	0.25
310:							
Rock outcrop----------	55	Not rated		Not rated		Not rated	
Humic Dystroxerepts-----	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Humic Lithic Haploxerepts----------	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
311:							
Rock outcrop----------	45	Not rated		Not rated		Not rated	
Humic Dystroxerepts-----	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.60	Fragments (>3") 25 to 50%	0.60	Fragments (>3") 25 to 50%	0.60
Humic Lithic Haploxerepts----------	19	Limitations		Limitations		Limitations	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Slopes > 8%	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Ponded (any duration)	1.00
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Saturation < 18" depth	1.00
313:							
Nevadafalls----------	40	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.26
Oxyaquic Dystrudepts----	40	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation from 18 to 30" depth	0.56	Saturation < 2.5' depth	1.00	Saturation from 18 to 30" depth	0.56
						Slopes are from 4 to 8%	0.26
314:							
Badgerpass----------	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
Dystric Xeropsamments---	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
314:							
Rock outcrop	15	Not rated		Not rated		Not rated	
315:							
Nevadafalls	60	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.63	Fragments (>3") 25 to 50%	0.63	Fragments (>3") 25 to 50%	0.63
Dystric Xeropsamments	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
316:							
Dystric Xerorthents	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.81	Fragments (>3") 25 to 50%	0.81	Fragments (>3") 25 to 50%	0.81
Rock outcrop	40	Not rated		Not rated		Not rated	
Rubble land	20	Not rated		Not rated		Not rated	
318:							
Typic Dystroxerepts	40	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.26
Humic Dystroxerepts	36	No limitations		No limitations		Limitations	
						Slopes are from 4 to 8%	0.02
319:							
Humic Dystroxerepts	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Typic Haploxerults	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell (LEP 3-6)	0.01
Inceptic Haploxeralfs	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99
320:							
Half Dome	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
320:							
Humic Dystroxerepts-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.79	Fragments (>3") 25 to 50%	0.79	Fragments (>3") 25 to 50%	0.79
Rock outcrop----------	20	Not rated		Not rated		Not rated	
321:							
Dystric Xeropsamments---	50	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
Dystric Xerorthents-----	40	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Flooding > rare	1.00
322:							
Typic Xerorothents------	90	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.45	Fragments (>3") 25 to 50%	0.45	Fragments (>3") 25 to 50%	0.45
323:							
Ultic Haploxeralfs------	55	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78
Humic Dystroxerepts-----	45	Limitations		Limitations		Limitations	
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell (LEP 3-6)	0.01
324:							
Humic Haploxerepts------	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02
Rock outcrop----------	35	Not rated		Not rated		Not rated	
Ultic Haploxeralfs------	25	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25 to 50%	0.63	Shrink-swell (LEP 3-6)	0.78
		Fragments (>3") 25 to 50%	0.63	Shrink-swell (LEP 3-6)	0.22	Fragments (>3") 25 to 50%	0.63

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
325:							
Urban land	80	Not rated		Not rated		Not rated	
328:							
Clarkslodge	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.79	Fragments (>3") 25 to 50%	0.79	Fragments (>3") 25 to 50%	0.79
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22
Ultic Palexeralfs	15	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22
401:							
Sentinel	90	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
412:							
Water	85	Not rated		Not rated		Not rated	
Riverwash	15	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
501:							
Happyisles, sandy loam	65	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
Happyisles, loamy fine sand, overwash	20	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
502:							
Happyisles	88	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
				Saturation from 2.5' to 6' depth	0.61		
504:							
Mollic Xerofluvents	85	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
510t:							
Rubble land	40	Not rated		Not rated		Not rated	
Lithnip	20	Limitations		Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock (hard) < 20" depth	1.00

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
510t:							
Rock outcrop	15	Not rated		Not rated		Not rated	
551:							
Happyisles	50	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
						Slopes are from 4 to 8%	0.74
Half Dome	45	Limitations		Limitations		Limitations	
		Fragments (>3") 25 to 50%	0.92	Fragments (>3") 25 to 50%	0.92	Slopes > 8%	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Fragments (>3") 25 to 50%	0.92
552:							
Mollic Xerofluvents	85	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Flooding > rare	1.00
590:							
Terric Haplosaprists	85	Limitations		Limitations		Limitations	
		Flooding > rare	1.00	Flooding > rare	1.00	Flooding > rare	1.00
		Organic matter (PT, OL, or OH)	1.00	Organic matter (PT, OL, or OH)	1.00	Organic matter (PT, OL, or OH)	1.00
				Saturation from 2.5' to 6' depth	0.95		
601:							
Half Dome, very bouldery	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.88	Fragments (>3") 25 to 50%	0.88	Fragments (>3") 25 to 50%	0.88
Half Dome, cobbly	45	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
602:							
Half Dome	85	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.92	Fragments (>3") 25 to 50%	0.92	Fragments (>3") 25 to 50%	0.92
610:							
Rubble land	65	Not rated		Not rated		Not rated	
Half Dome	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.97	Fragments (>3") 25 to 50%	0.97	Fragments (>3") 25 to 50%	0.97

Table 7.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
620:							
Half Dome, extremely stony sandy loam, warm-	50	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
Half Dome, very cobbly sandy loam, warm-------	43	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
630:							
Rubble land----------	65	Not rated		Not rated		Not rated	
Half Dome----------	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
701:							
Vitrandic Haploxerolls--	90	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
702:							
Vitrandic Dystroxerepts-	90	Limitations		Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") >50%	1.00
900:							
Rock outcrop----------	95	Not rated		Not rated		Not rated	
DAM:							
Dam----------	100	Not rated		Not rated		Not rated	
W:							
Water----------	100	Not rated		Not rated		Not rated	

The interpretation for dwellings without basements evaluates the following soil properties, some at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell expressed as linear extensibility percent (LEP), organic Unified classes for low soil strength (PT, OL, OH), depth to hard or soft bedrock, depth to thick or thin cemented pans, and fragments greater than 3 inches in size.

The interpretation for dwellings with basements evaluates the following soil properties, some at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), organic Unified classes for low strength (PT, OL, OH), depth to hard or soft bedrock, depth to thick or thin cemented pans, and fragments greater than 3 inches in size.

The interpretation for small commercial buildings evaluates the following soil properties, some at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), depth to hard or soft bedrock, depth to thick or thin cemented pans, and fragments greater than 3 inches in size.

Table 7.—Building Site Development, Part II

(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 potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. Brief summaries of rating criteria and abbreviations are listed on the last page of this report)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
101:					
Oxyaquic Xerofluvents	35	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Saturation from 2.5' to 6' depth	0.61
				Frequent or occasional flooding	0.50
Riverwash	35	Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 2.5' depth	1.00
		Flooding > occasional	1.00	Frequent or occasional flooding	0.50
				Caving potential is low	0.10
Fluvaquents	15	Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 2.5' depth	1.00
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Frequent or occasional flooding	0.50
101t:					
Lithnip	40	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Rock outcrop	25	Not rated		Not rated	
Fishsnooze	20	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Fragments (>3") 25 to 50%	0.89	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.89
102:					
Oxyaquic Xerofluvents	45	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Saturation from 2.5' to 6' depth	0.61
				Frequent or occasional flooding	0.50
Riverwash	40	Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 2.5' depth	1.00
		Flooding > occasional	1.00	Frequent or occasional flooding	0.50
				Caving potential is low	0.10

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
102t:					
Lithnip	40	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Rock outcrop	25	Not rated		Not rated	
Fishsnooze	20	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Fragments (>3") 25 to 50%	0.89	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.89
104:					
Aquandic Humaquepts	85	Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 2.5' depth	1.00
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Frequent or occasional flooding	0.50
111t:					
Whittell	45	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
				Fragments (>3") >50%	1.00
Jobsis	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) < 20" depth	0.99
				Caving potential is low	0.10
Rock outcrop	15	Not rated		Not rated	
151:					
Elcapitan	80	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Saturation from 2.5' to 6' depth	0.61
				Frequent or occasional flooding	0.50
152:					
Vitrandic Haploxerolls	80	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
				Frequent or occasional flooding	0.50
				Saturation from 2.5' to 6' depth	0.03

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
201:					
Leidig	80	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Saturation from 2.5' to 6' depth	0.61
				Frequent or occasional flooding	0.50
210:					
Rubble land	30	Not rated		Not rated	
Typic Cryorthents	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99
		Frost action possible	0.50	Caving potential is low	0.10
Rock outcrop	20	Not rated		Not rated	
Xeric Dystrocryepts	20	Limitaitions		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
211:					
Xeric Dystrocryepts	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.70	Fragments (>3") 25 to 50%	0.70
		Frost action possible	0.50	Caving potential is low	0.10
Canisrocks	30	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") >50%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
Oxyaquic Dystrocryepts	15	Limitations		Limitations	
		Slopes > 15%	1.00	Saturation < 2.5' depth	1.00
		Frost action possible	0.50	Caving potential	1.00
		Saturation from 12 to 30" depth	0.28	Slopes > 15%	1.00
213:					
Canisrocks	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.92	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.92
Glacierpoint	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	0.99	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	0.99

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
213:					
Vitrandic Dystrocryepts	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
214:					
Marmotland	25	Limitations		Limitations	
		Flooding > occasional	1.00	Frequent or occasional flooding	0.50
		Frost action possible	0.50	Caving potential is low	0.10
		Slopes 8 to 15%	0.01	Saturation from 2.5' to 6' depth	0.03
Oxyaquic Dystrocryepts	15	Limitations		Limitations	
		Flooding > occasional	1.00	Saturation < 2.5' depth	1.00
		Frost action possible	0.50	Caving potential	1.00
		Saturation from 12 to 30" depth	0.28	Frequent or occasional flooding	0.50
Xeric Dystrocryepts	15	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
215:					
Typic Cryorthents	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Rock outcrop	20	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
219:					
Rock outcrop	40	Not rated		Not rated	
Rubble land	25	Not rated		Not rated	
Canisrocks	15	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
221:					
Typic Cryorthents	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.99	Fragments (>3") 25 to 50%	0.99
		Frost action possible	0.50	Caving potential is low	0.10
Xeric Dystrocryepts	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
221:					
Oxyaquic Dystrocryepts	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Flooding > occasional	1.00	Saturation < 2.5' depth	1.00
		Frost action possible	0.50	Caving potential	1.00
222:					
Canisrocks	30	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Rubble land	30	Not rated		Not rated	
Rock outcrop	20	Not rated		Not rated	
Crazymule	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.15	Fragments (>3") 25 to 50%	0.15
223:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	
Canisrocks	20	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") >50%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
224:					
Rock outcrop	40	Not rated		Not rated	
Crazymule	20	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.20	Fragments (>3") 25 to 50%	0.20
Vitrandic Cryorthents	15	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) from 20 to 40"	0.88	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
225:					
Canisrocks	15	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes > 15%	1.00

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
225:					
Rock outcrop	15	Not rated		Not rated	
Rubble land	15	Not rated		Not rated	
Vitrandic Dystrocryepts	15	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
227:					
Canisrocks	45	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Crazymule	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.47	Fragments (>3") 25 to 50%	0.47
228:					
Xeric Dystrocryepts	35	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
Vitrandic Eutrocryepts	25	Limitations		Limitations	
		Flooding > occasional	1.00	Saturation < 2.5' depth	1.00
		Frost action possible	0.50	Frequent or occasional flooding	0.50
		Saturation from 12 to 30" depth	0.28	Caving potential is low	0.10
229:					
Marmotland	40	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Frequent or occasional flooding	0.50
Oxyaquic Dystrocryepts	40	Limitations		Limitations	
		Frost action possible	0.50	Saturation < 2.5' depth	1.00
		Saturation from 12 to 30" depth	0.28	Caving potential	1.00
231:					
Canisrocks	40	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.15	Fragments (>3") 25 to 50%	0.15
Typic Cryaquents	21	Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 2.5' depth	1.00
		Fragments (>3") 25 to 50%	0.99	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.99

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
232:					
Canisrocks	25	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.96	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.96
Glacierpoint	21	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.19	Fragments (>3") 25 to 50%	0.19
234:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	
235:					
Canisrocks	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Rock outcrop	30	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
237:					
Canisrocks	25	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.42	Bedrock (soft) from 20 to 40"	0.71
Glacierpoint	15	Limitations		Limitations	
		Slopes 8 to 15%	0.63	Caving potential	1.00
		Frost action possible	0.50	Slopes 8 to 15%	0.63
		Fragments (>3") 25 to 50%	0.16	Fragments (>3") 25 to 50%	0.16
Vitrandic Cryorthents	15	Limitations		Limitations	
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
		Frost action possible	0.50	Caving potential	1.00
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01
238:					
Oxyaquic Cryorthents	25	Limitations		Limitations	
		Flooding > occasional	1.00	Saturation < 2.5' depth	1.00
		Frost action possible	0.50	Caving potential	1.00
		Saturation from 12 to 30" depth	0.28	Frequent or occasional flooding	0.50
Canisrocks	15	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes 8 to 15%	0.63	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes 8 to 15%	0.63

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
239:					
Crazymule	45	Limitations		Limitations	
		Frost action possible	0.50	Bedrock (soft) from 20 to 40"	0.95
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
				Caving potential is low	0.10
Canisrocks	34	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes 8 to 15%	0.63	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes 8 to 15%	0.63
241:					
Canisrocks	75	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.04	Fragments (>3") 25 to 50%	0.04
242:					
Rock outcrop	30	Not rated		Not rated	
Canisrocks	25	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Xeric Dystrocryepts	16	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
244:					
Typic Cryorthents	45	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
Rubble land	25	Not rated		Not rated	
Rock outcrop	16	Not rated		Not rated	
245:					
Rock outcrop	30	Not rated		Not rated	
Canisrocks	22	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes > 15%	1.00

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
245:					
Xeric Dystrocryepts	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
246:					
Rock outcrop, domes	90	Not rated		Not rated	
247:					
Canisrocks	20	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Xeric Dystrocryepts	20	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
248:					
Canisrocks	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
Rock outcrop	30	Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34
249:					
Rock outcrop	45	Not rated		Not rated	
Canisrocks	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
250:					
Canisrocks	47	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Xeric Dystrocryepts	35	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.71	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.71

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
251:					
Glacierpoint	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34
Typic Cryorthents	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.11
		Fragments (>3") 25 to 50%	0.11	Caving potential is low	0.10
252:					
Rock outcrop	20	Not rated		Not rated	
Canisrocks	15	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Xeric Dystrocryepts	15	Limitations		Limitations	
		Slopes 8 to 15%	0.63	Caving potential	1.00
		Frost action possible	0.50	Slopes 8 to 15%	0.63
253:					
Canisrocks	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
Glacierpoint	18	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	0.99	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	0.99
Humic Dystrocryepts	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
256:					
Craneflat	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.03	Fragments (>3") 25 to 50%	0.03
Rock outcrop	25	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
256:					
Waterwheel	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
257:					
Badgerpass	55	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
Oxyaquic Dystroxerepts	35	Limitations		Limitations	
		Flooding > occasional	1.00	Saturation < 2.5' depth	1.00
		Frost action possible	0.50	Caving potential	1.00
		Saturation from 12 to 30" depth	0.28	Frequent or occasional flooding	0.50
258:					
Typic Dystroxerepts	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Badgerpass	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Dystric Xerorthents	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Frequent or occasional flooding	0.50
260:					
Rock outcrop	45	Not rated		Not rated	
Craneflat	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
Dystric Xerorthents	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
261:					
Dystric Xeropsamments	25	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
Typic Dystroxerepts	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
261:					
Badgerpass	15	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Rock outcrop	15	Not rated		Not rated	
262:					
Humic Dystroxerepts	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Dystric Xerorthents	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Rock outcrop	20	Not rated		Not rated	
264:					
Crazymule	35	Limitations		Limitations	
		Slopes 8 to 15%	0.63	Caving potential	1.00
		Frost action possible	0.50	Slopes 8 to 15%	0.63
		Fragments (>3") 25 to 50%	0.22	Fragments (>3") 25 to 50%	0.22
Canisrocks	28	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
267:					
Rock outcrop	40	Not rated		Not rated	
Typic Cryorthents	30	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Xeric Dystrocryepts	15	Limitations		Limitations	
		Slopes 8 to 15%	0.63	Caving potential	1.00
		Frost action possible	0.50	Slopes 8 to 15%	0.63
268:					
Rock outcrop	40	Not rated		Not rated	
Canisrocks	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
268:					
Glacierpoint	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34
269:					
Canisrocks	20	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Rock outcrop	20	Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.34	Fragments (>3") 25 to 50%	0.34
270:					
Rock outcrop	35	Not rated		Not rated	
Typic Cryorthents	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
Vitrandic Dystrocryepts	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.99	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.99
271:					
Rock outcrop	60	Not rated		Not rated	
Lithic Xerorthents	15	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Waterwheel	15	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
273:					
Nevadafalls	55	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
273:					
Waterwheel	30	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.53	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.53
274:					
Rock outcrop, domes	85	Not rated		Not rated	
275:					
Oxyaquic Dystroxerepts	25	Limitations		Limitations	
		Flooding > occasional	1.00	Saturation < 2.5' depth	1.00
		Frost action possible	0.50	Caving potential	1.00
		Saturation from 12 to 30" depth	0.28	Frequent or occasional flooding	0.50
Dystric Xerorthents	25	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") >50%	0.99	Slopes > 15%	1.00
				Fragments (>3") >50%	0.99
Vitrandic Xerorthents	25	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Frequent or occasional flooding	0.50
Rubble land	15	Not rated		Not rated	
276:					
Happyisles	35	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
		Flooding = rare	0.50		
Typic Dystroxerepts	35	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01
277:					
Tuolumne	45	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
Humic Dystroxerepts	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
				Fragments (>3") >50%	1.00
278:					
Rock outcrop	25	Not rated		Not rated	

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
278:					
Tuolumne	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.21	Caving potential	1.00
				Fragments (>3") 25 to 50%	0.21
Humic Dystroxerepts	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
				Fragments (>3") >50%	1.00
Rubble land	15	Not rated		Not rated	
279:					
Canisrocks	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.10	Fragments (>3") 25 to 50%	0.10
Xeric Dystrocryepts	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
280:					
Typic Dystroxerepts	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Humic Dystroxerepts	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02
Rock outcrop	25	Not rated		Not rated	
282:					
Clarkslodge	50	Limitations		Limitations	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.11
		Fragments (>3") 25 to 50%	0.11	Caving potential is low	0.10
Craneflat	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.47	Fragments (>3") 25 to 50%	0.47
Nevadafalls	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
283:					
Waterwheel	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
Nevadafalls	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Rock outcrop	21	Not rated		Not rated	
285:					
Waterwheel	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Humic Dystroxerepts	16	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
286:					
Nevadafalls	26	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Typic Dystroxerepts	25	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
Ultic Palexeralfs	20	Limitations		Limitations	
		Shrink-swell (LEP >6)	0.99	Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63	Clay from 40 to 60%	0.12
		Frost action possible	0.50	Caving potential is low	0.10
Rock outcrop	15	Not rated		Not rated	
287:					
Badgerpass	55	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
Waterwheel	40	Limitations		Limitations	
		Slopes 8 to 15%	0.63	Caving potential	1.00
		Frost action possible	0.50	Slopes 8 to 15%	0.63
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01
288:					
Rock outcrop	35	Not rated		Not rated	

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
288:					
Craneflat	20	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.47	Fragments (>3") 25 to 50%	0.47
Waterwheel	20	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01
289:					
Waterwheel	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25 to 50%	0.30
Craneflat	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
290:					
Humic Dystroxerepts	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Tuolumne	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
				Fragments (>3") >50%	1.00
Typic Xerorthents	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.89	Fragments (>3") 25 to 50%	0.89
		Frost action possible	0.50	Caving potential is low	0.10
Ultic Haploxeralfs	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.01		
291:					
Ultic Haploxeralfs	41	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Typic Dystroxerepts	31	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
292:					
Humic Dystroxerepts	35	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.67	Slopes > 15%	1.00
				Fragments (>3") 25 to 50%	0.67
Typic Haploxerults	30	Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.78	Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63	Caving potential is low	0.10
		Frost action possible	0.50		
293:					
Xeric Dystrocryepts	70	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Vitrandic Dystrocryepts	18	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
294:					
Waterwheel	65	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
Typic Dystroxerepts	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
295:					
Craneflat	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.21
		Fragments (>3") 25 to 50%	0.21	Caving potential is low	0.10
Typic Dystroxerepts	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
296:					
Ultic Palexeralfs	20	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential is low	0.10
		Shrink-swell (LEP >6)	0.99		
Humic Dystroxerepts	15	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
297:					
Typic Xerorthents	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
Rock outcrop	25	Not rated		Not rated	
Typic Xeropsamments	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
298:					
Tuolumne	41	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
Typic Dystroxerepts	31	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
299:					
Humic Dystroxerepts	46	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.39	Fragments (>3") 25 to 50%	0.39
Ultic Haploxeralfs	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.01		
300:					
Typic Dystroxerepts	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.01		
Ultic Haploxeralfs	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.22		
301:					
Vitrandic Haploxerolls	90	Limitations		Limitations	
		Frost action possible	0.50	Saturation < 2.5' depth	1.00
		Flooding = rare	0.50	Caving potential	1.00
		Saturation from 12 to 30" depth	0.19		

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
302:					
Typic Haploxerults	45	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.22		
Ultic Haploxeralfs	41	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.22		
303:					
Rock outcrop	30	Not rated		Not rated	
Dystric Xeropsamments	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
Humic Dystroxerepts	20	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
Tuolumne	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.72	Caving potential	1.00
				Fragments (>3") 25 to 50%	0.72
304:					
Clarkslodge	60	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.01		
Rock outcrop	15	Not rated		Not rated	
305:					
Rock outcrop	50	Not rated		Not rated	
Waterwheel	18	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Dystric Xeropsamments	15	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
306:					
Typic Cryopsamments	50	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
306:					
Humic Dystrocryepts	30	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
307:					
Rock outcrop	40	Not rated		Not rated	
Dystric Xeropsamments	20	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
				Slopes > 15%	1.00
Dystric Xerorothents	20	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Frequent or occasional flooding	0.50
309:					
Rock outcrop	50	Not rated		Not rated	
Waterwheel	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Typic Dystroxerepts	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.25
		Fragments (>3") 25 to 50%	0.25	Caving potential is low	0.10
310:					
Rock outcrop	55	Not rated		Not rated	
Humic Dystroxerepts	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
				Fragments (>3") >50%	1.00
Humic Lithic Haploxerepts	20	Limitations		Limitations	
		Ponded (any duration)	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Ponded (any duration)	1.00
		Bedrock (hard) < 20" depth	0.99	Slopes > 15%	1.00
311:					
Rock outcrop	45	Not rated		Not rated	

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
311:					
Humic Dystroxerepts	35	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.60	Slopes > 15%	1.00
				Fragments (>3") 25 to 50%	0.60
Humic Lithic Haploxerepts	19	Limitations		Limitations	
		Ponded (any duration)	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Ponded (any duration)	1.00
		Bedrock (hard) < 20" depth	0.99	Saturation < 2.5' depth	1.00
313:					
Nevadafalls	40	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
Oxyaquic Dystrudepts	40	Limitations		Limitations	
		Flooding > occasional	1.00	Saturation < 2.5' depth	1.00
		Frost action possible	0.50	Caving potential	1.00
		Saturation from 12 to 30" depth	0.28	Frequent or occasional flooding	0.50
314:					
Badgerpass	45	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Dystric Xeropsamments	35	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Rock outcrop	15	Not rated		Not rated	
315:					
Nevadafalls	60	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.63	Fragments (>3") 25 to 50%	0.63
		Frost action possible	0.50	Caving potential is low	0.10
Dystric Xeropsamments	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
316:					
Dystric Xerorthents	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.81	Caving potential	1.00
				Fragments (>3") 25 to 50%	0.81

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
316:					
Rock outcrop	40	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
318:					
Typic Dystroxerepts	40	Limitations		Limitations	
		Frost action possible	0.50	Caving potential is low	0.10
Humic Dystroxerepts	36	Limitations		Limitations	
		Frost action possible	0.50	Caving potential is low	0.10
319:					
Humic Dystroxerepts	30	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Typic Haploxerults	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.01		
Inceptic Haploxeralfs	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99
		Frost action possible	0.50	Caving potential is low	0.10
320:					
Half Dome	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Humic Dystroxerepts	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.79	Caving potential	1.00
				Fragments (>3") 25 to 50%	0.79
Rock outcrop	20	Not rated		Not rated	
321:					
Dystric Xeropsamments	50	Limitations		Limitations	
		Flooding = rare	0.50	Caving potential	1.00
Dystric Xerorthents	40	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Frequent or occasional flooding	0.50

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
322:					
Typic Xerorthents	90	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.45	Caving potential	1.00
				Fragments (>3") 25 to 50%	0.45
323:					
Ultic Haploxeralfs	55	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.78	Slopes > 15%	1.00
Humic Dystroxerepts	45	Limitations		Limitations	
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
		Shrink-swell (LEP 3-6)	0.01	Caving potential is low	0.10
324:					
Humic Haploxerepts	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.78	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02
Rock outcrop	35	Not rated		Not rated	
Ultic Haploxeralfs	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25 to 50%	0.63
		Fragments (>3") 25 to 50%	0.63	Caving potential is low	0.10
325:					
Urban land	80	Not rated		Not rated	
328:					
Clarkslodge	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.79	Fragments (>3") 25 to 50%	0.79
		Frost action possible	0.50	Caving potential is low	0.10
Ultic Palexeralfs	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.22		
401:					
Sentinel	90	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
		Flooding = rare	0.50		

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
412:					
Water	85	Not rated		Not rated	
Riverwash	15	Not rated		Limitations	
				Saturation < 2.5' depth	1.00
				Frequent or occasional flooding	0.50
				Caving potential is low	0.10
501:					
Happyisles, sandy loam	65	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
		Flooding = rare	0.50		
Happyisles, loamy fine sand, overwash	20	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Frequent or occasional flooding	0.50
502:					
Happyisles	88	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
		Flooding = rare	0.50	Saturation from 2.5' to 6' depth	0.61
504:					
Mollic Xerofluvents	85	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Frequent or occasional flooding	0.50
510t:					
Rubble land	40	Not rated		Not rated	
Lithnip	20	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Rock outcrop	15	Not rated		Not rated	
551:					
Happyisles	50	Limitations		Limitations	
		Frost action possible	0.50	Caving potential	1.00
		Flooding = rare	0.50		
Half Dome	45	Limitations		Limitations	
		Fragments (>3") 25 to 50%	0.92	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.92
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
552:					
Mollic Xerofluvents	85	Limitations		Limitations	
		Flooding > occasional	1.00	Caving potential	1.00
		Frost action possible	0.50	Frequent or occasional flooding	0.50
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
590:					
Terric Haplosaprists	85	Limitations		Limitations	
		Flooding > occasional	1.00	Organic matter (PT, OH, OL) below 20"	1.00
		Frost action possible	0.50	Saturation from 2.5' to 6' depth	0.95
				Frequent or occasional flooding	0.50
601:					
Half Dome, very bouldery	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.88	Fragments (>3") 25 to 50%	0.88
		Frost action possible	0.50	Caving potential is low	0.10
Half Dome, cobbly	45	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
602:					
Half Dome	85	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.92	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.92
610:					
Rubble land	65	Not rated		Not rated	
Half Dome	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.97	Fragments (>3") 25 to 50%	0.97
		Frost action possible	0.50	Caving potential is low	0.10
620:					
Half Dome, extremely stony sandy loam, warm	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
Half Dome, very cobbly sandy loam, warm	43	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Caving potential is low	0.10

Table 7.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
630:					
Rubble land	65	Not rated		Not rated	
Half Dome	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") >50%	1.00
701:					
Vitrandic Haploxerolls	90	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
702:					
Vitrandic Dystroxerepts	90	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Caving potential	1.00
		Slopes > 15%	1.00	Fragments (>3") >50%	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
900:					
Rock outcrop	95	Not rated		Not rated	
DAM:					
Dam	100	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

The interpretation for local roads and streets evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, organic Unified classes for low soil strength (PT, OL or OH), amount of clay, depth to hard or soft bedrock, depth to thick or thin cemented pans, fragments greater than 3 inches in size, soil bulk density and the potential of the soil to cave.

The interpretation for shallow excavations evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), potential frost action, depth to hard or soft bedrock, depth to thick or thin cemented pans, fragments greater than 3 inches in size, and soil strength expressed as the AASHTO group index number (AASHTO GI).

Table 8.—Construction Materials, Part I

(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 0.00 to 0.99. The closer the value is to 0, the greater the potential limitation. Values of 0 are absolute limitations based on the soil property criteria used to develop the interpretation. Values closer to 1.0 have less of a limitation. Limiting features with values of 1 have absolutely no limitation and are not shown in this report. Rating classes are determined by the most limiting value. Fine-earth fractions and fragment limiting features are reported on a weight basis. Brief summaries of rating criteria and abbreviations used in the ratings are listed on the last page of this report)

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
101:					
Oxyaquic Xerofluvents---	35	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.07
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.86
Riverwash---	35	Not rated		Not rated	
Fluvaquents---	15	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
101t:					
Lithnip---	40	Fair source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer possible source	0.25	Bottom layer is a possible source	0.03
Rock outcrop---	25	Not rated		Not rated	
Fishsnooze---	20	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
102:					
Oxyaquic Xerofluvents---	45	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.07
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.51
Riverwash---	40	Not rated		Not rated	
102t:					
Lithnip---	40	Fair source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer possible source	0.25	Bottom layer is a possible source	0.03
Rock outcrop---	25	Not rated		Not rated	

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
102t:					
Fishsnooze	20	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
				Thickest layer not a source	0.00
		Bottom layer not a source	0.00		
104:					
Aquandic Humaquepts	85	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.38
111t:					
Whittell	45	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.14
Jobsis	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.61
Rock outcrop	15	Not rated		Not rated	
151:					
Elcapitan	80	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.08
152:					
Vitrandic Haploxerolls	80	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.86
201:					
Leidig	80	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.06
210:					
Rubble land	30	Not rated		Not rated	
Typic Cryorthents	25	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
				Thickest layer not a source	0.00
		Bottom layer not a source	0.00		
Rock outcrop	20	Not rated		Not rated	

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
210:					
Xeric Dystrocryepts-----	20	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.01
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.04
211:					
Xeric Dystrocryepts-----	35	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
Canisrocks----------	30	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
Oxyaquic Dystrocryepts--	15	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04
213:					
Canisrocks----------	50	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Glacierpoint----------	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.09
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.09
Vitrandic Dystrocryepts-	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.06
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.08
214:					
Marmotland----------	25	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Oxyaquic Dystrocryepts--	15	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
Xeric Dystrocryepts-----	15	Poor source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
215:					
Typic Cryorthents	40	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.06
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.09
Rock outcrop	20	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
219:					
Rock outcrop	40	Not rated		Not rated	
Rubble land	25	Not rated		Not rated	
Canisrocks	15	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
221:					
Typic Cryorthents	35	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
Xeric Dystrocryepts	20	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Oxyaquic Dystrocryepts	15	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04
222:					
Canisrocks	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Rubble land	30	Not rated		Not rated	
Rock outcrop	20	Not rated		Not rated	
Crazymule	15	Fair source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer possible source	0.03	Thickest layer possible source	0.08
223:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
223:					
Canisrocks	20	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
224:					
Rock outcrop	40	Not rated		Not rated	
Crazymule	20	Fair source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer possible source	0.03	Thickest layer possible source	0.08
Vitrandic Cryorthents	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10
225:					
Canisrocks	15	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
Rock outcrop	15	Not rated		Not rated	
Rubble land	15	Not rated		Not rated	
Vitrandic Dystrocryepts	15	Poor source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
227:					
Canisrocks	45	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.10
Crazymule	40	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
228:					
Xeric Dystrocryepts	35	Fair source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.12
		Bottom layer possible source	0.10	Thickest layer possible source	0.12
Vitrandic Eutrocryepts	25	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
229:					
Marmotland	40	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.02
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04
Oxyaquic Dystrocryepts	40	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.01
		Bottom layer not a source	0.00	Thickest layer possible source	0.04
231:					
Canisrocks	40	Fair source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.13
		Bottom layer possible source	0.10	Thickest layer possible source	0.13
Typic Cryaquents	21	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
232:					
Canisrocks	25	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.03
Glacierpoint	21	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.04
234:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	
235:					
Canisrocks	35	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10
Rock outcrop	30	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
237:					
Canisrocks	25	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
237:					
Glacierpoint	15	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
Vitrandic Cryorthents	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.04
238:					
Oxyaquic Cryorthents	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.11
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.70
Canisrocks	15	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
239:					
Crazymule	45	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
				Thickest layer not a source	0.00
		Bottom layer not a source	0.00		
Canisrocks	34	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
241:					
Canisrocks	75	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.18
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.33
242:					
Rock outcrop	30	Not rated		Not rated	
Canisrocks	25	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Xeric Dystrocryepts	16	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.09
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.91
244:					
Typic Cryorthents	45	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
244:					
Rubble land	25	Not rated		Not rated	
Rock outcrop	16	Not rated		Not rated	
245:					
Rock outcrop	30	Not rated		Not rated	
Canisrocks	22	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
Xeric Dystrocryepts	20	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
246:					
Rock outcrop, domes	90	Not rated		Not rated	
247:					
Canisrocks	20	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.14
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.14
Xeric Dystrocryepts	20	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.09
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.09
248:					
Canisrocks	35	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
Rock outcrop	30	Not rated		Not rated	
Glacierpoint	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.27
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.38
249:					
Rock outcrop	45	Not rated		Not rated	
Canisrocks	30	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
250:					
Canisrocks	47	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
Xeric Dystrocryepts	35	Poor source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
251:					
Glacierpoint	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Typic Cryorthents	20	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.06
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.07
252:					
Rock outcrop	20	Not rated		Not rated	
Canisrocks	15	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
Xeric Dystrocryepts	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08
253:					
Canisrocks	25	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
				Thickest layer not a source	0.00
		Bottom layer not a source	0.00		
Glacierpoint	18	Poor source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
Humic Dystrocryepts	15	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
256:					
Craneflat	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.08
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
256:					
Rock outcrop	25	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
Waterwheel	20	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
				Thickest layer not a source	0.00
		Bottom layer not a source	0.00		
257:					
Badgerpass	55	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.08
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08
Oxyaquic Dystroxerepts	35	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
258:					
Typic Dystroxerepts	25	Poor source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
Badgerpass	20	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.27
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.58
Dystric Xerorthents	20	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08
260:					
Rock outcrop	45	Not rated		Not rated	
Craneflat	25	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Dystric Xerorothents	20	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.02
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.02
261:					
Dystric Xeropsamments	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.10

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
261:					
Typic Dystroxerepts	25	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
Badgerpass	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.10
Rock outcrop	15	Not rated		Not rated	
262:					
Humic Dystroxerepts	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Dystric Xerorthents	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08
Rock outcrop	20	Not rated		Not rated	
264:					
Crazymule	35	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.08
Canisrocks	28	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
267:					
Rock outcrop	40	Not rated		Not rated	
Typic Cryorthents	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Xeric Dystrocryepts	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.09
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.11
268:					
Rock outcrop	40	Not rated		Not rated	
Canisrocks	25	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer not a source	0.00	Bottom layer not a source	0.00

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
268:					
Glacierpoint	20	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
269:					
Canisrocks	20	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Rock outcrop	20	Not rated		Not rated	
Glacierpoint	15	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
270:					
Rock outcrop	35	Not rated		Not rated	
Typic Cryorthents	25	Fair source		Fair source	
		Thickest layer possible source	0.03	Bottom layer is a possible source	0.03
		Bottom layer possible source	0.03	Thickest layer possible source	0.03
Vitrandic Dystrocryepts	25	Fair source		Fair source	
		Thickest layer possible source	0.07	Thickest layer possible source	0.02
		Bottom layer possible source	0.07	Bottom layer is a possible source	0.10
271:					
Rock outcrop	60	Not rated		Not rated	
Lithic Xerorthents	15	Fair source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer possible source	0.75	Bottom layer is a possible source	0.51
Waterwheel	15	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
273:					
Nevadafalls	55	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.11
Waterwheel	30	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.08
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.09

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
274:					
Rock outcrop, domes	85	Not rated		Not rated	
275:					
Oxyaquic Dystroxerepts	25	Fair source		Fair source	
		Thickest layer possible source	0.07	Thickest layer possible source	0.02
		Bottom layer possible source	0.14	Bottom layer is a possible source	0.08
Dystric Xerorthents	25	Fair source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03
		Bottom layer possible source	0.03	Bottom layer is a possible source	0.03
Vitrandic Xerorthents	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.08
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.09
Rubble land	15	Not rated		Not rated	
276:					
Happyisles	35	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.05
Typic Dystroxerepts	35	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.04
277:					
Tuolumne	45	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Humic Dystroxerepts	35	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
278:					
Rock outcrop	25	Not rated		Not rated	
Tuolumne	25	Fair source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.06
		Thickest layer possible source	0.03	Bottom layer is a possible source	0.19
Humic Dystroxerepts	20	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
278:					
Rubble land	15	Not rated		Not rated	
279:					
Canisrocks	40	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
				Thickest layer not a source	0.00
		Bottom layer not a source	0.00		
Xeric Dystrocryepts	15	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
				Bottom layer not a source	0.00
		Bottom layer not a source	0.00		
280:					
Typic Dystroxerepts	35	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00		
				Thickest layer possible source	0.03
Humic Dystroxerepts	30	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.02
		Thickest layer not a source due to fines or thin layer	0.00		
				Bottom layer is a possible source	0.08
Rock outcrop	25	Not rated		Not rated	
282:					
Clarkslodge	50	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03
Craneflat	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.09
		Thickest layer not a source due to fines or thin layer	0.00		
				Bottom layer is a possible source	0.10
Nevadafalls	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00		
				Bottom layer is a possible source	0.11
283:					
Waterwheel	35	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Nevadafalls	30	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00		
				Bottom layer is a possible source	0.08
Rock outcrop	21	Not rated		Not rated	

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
285:					
Waterwheel	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Humic Dystroxerepts	16	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.21
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.21
286:					
Nevadafalls	26	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.04
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.07
Typic Dystroxerepts	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.08
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08
Ultic Palexeralfs	20	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Rock outcrop	15	Not rated		Not rated	
287:					
Badgerpass	55	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.08
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08
Waterwheel	40	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
288:					
Rock outcrop	35	Not rated		Not rated	
Craneflat	20	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.09
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10
Waterwheel	20	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer not a source	0.00	Bottom layer not a source	0.00

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
289:					
Waterwheel	50	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.10
Craneflat	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
290:					
Humic Dystroxerepts	40	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.02
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.02
Tuolumne	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Typic Xerorthents	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03
Ultic Haploxeralfs	15	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
291:					
Ultic Haplxoeralfs	41	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.02
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.04
Typic Dystroxerepts	31	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.02
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03
292:					
Humic Dystroxerepts	35	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Typic Haploxerults	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
293:					
Xeric Dystrocryepts-----	70	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.09
Vitrandic Dystrocryepts-	18	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.05
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.07
294:					
Waterwheel----------	65	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Typic Dystroxerepts-----	35	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.07
295:					
Craneflat----------	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10
Typic Dystroxerepts-----	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.02
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.04
296:					
Ultic Palexeralfs-------	20	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Humic Dystroxerepts-----	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.10
297:					
Typic Xerorthents-------	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Rock outcrop------------	25	Not rated		Not rated	

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297:					
Typic Xeropsamments-----	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.37
298:					
Tuolumne----------	41	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Typic Dystroxerepts-----	31	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.07
299:					
Humic Dystroxerepts-----	46	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.40
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.40
Ultic Haploxeralfs------	35	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.02
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.04
300:					
Typic Dystroxerepts-----	35	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Ultic Haploxeralfs------	25	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.03
301:					
Vitrandic Haploxerolls--	90	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.06
302:					
Typic Haploxerults------	45	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Ultic Haploxeralfs------	41	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.03

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
303:					
Rock outcrop	30	Not rated		Not rated	
Dystric Xeropsamments	20	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.09
Humic Dystroxerepts	20	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Tuolumne	20	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
304:					
Clarkslodge	60	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.05
Rock outcrop	15	Not rated		Not rated	
305:					
Rock outcrop	50	Not rated		Not rated	
Waterwheel	18	Fair source		Fair source	
		Bottom layer possible source	0.32	Bottom layer is a possible source	0.60
		Thickest layer possible source	0.38	Thickest layer possible source	0.60
Dystric Xeropsamments	15	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.10
306:					
Typic Cryopsamments	50	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10
Humic Dystrocryepts	30	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08
307:					
Rock outcrop	40	Not rated		Not rated	
Dystric Xeropsamments	20	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.09

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
307:					
Dystric Xerorthents-----	20	Fair source		Fair source	
		Bottom layer possible source	0.32	Bottom layer is a possible source	0.60
		Thickest layer possible source	0.38	Thickest layer possible source	0.60
309:					
Rock outcrop----------	50	Not rated		Not rated	
Waterwheel----------	25	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.04
		Bottom layer not a source	0.00	Thickest layer possible source	0.04
Typic Dystroxerepts-----	20	Fair source		Fair source	
		Thickest layer possible source	0.29	Bottom layer is a possible source	0.02
		Bottom layer possible source	0.34	Thickest layer possible source	0.04
310:					
Rock outcrop----------	55	Not rated		Not rated	
Humic Dystroxerepts-----	25	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
Humic Lithic Haploxerepts----------	20	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
311:					
Rock outcrop----------	45	Not rated		Not rated	
Humic Dystroxerepts-----	35	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.08
		Bottom layer not a source	0.00	Thickest layer possible source	0.08
Humic Lithic Haploxerepts----------	19	Poor source		Poor source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
313:					
Nevadafalls----------	40	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.10
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.11

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
313:					
Oxyaquic Dystrudepts	40	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.04
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10
314:					
Badgerpass	45	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.23
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.89
Dystric Xeropsamments	35	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.07
Rock outcrop	15	Not rated		Not rated	
315:					
Nevadafalls	60	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Dystric Xeropsamments	40	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.08
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08
316:					
Dystric Xerorthents	40	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.10
Rock outcrop	40	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
318:					
Typic Dystroxerepts	40	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.02
Humic Dystroxerepts	36	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.06
319:					
Humic Dystroxerepts	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
319:					
Typic Haploxerults------	30	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.91
Inceptic Haploxeralfs---	25	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
320:					
Half Dome---------------	40	Fair source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.04
		Thickest layer possible source	0.40	Bottom layer is a possible source	0.10
Humic Dystroxerepts-----	20	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.04
		Bottom layer not a source	0.00	Thickest layer possible source	0.04
Rock outcrop------------	20	Not rated		Not rated	
321:					
Dystric Xeropsamments---	50	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.02
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.34
Dystric Xerorthents-----	40	Fair source		Fair source	
		Bottom layer possible source	0.32	Bottom layer is a possible source	0.60
		Thickest layer possible source	0.38	Thickest layer possible source	0.60
322:					
Typic Xerorthents-------	90	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
323:					
Ultic Haploxeralfs------	55	Poor source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
		Bottom layer not a source	0.00	Thickest layer possible source	0.04
Humic Dystroxerepts-----	45	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.04

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
324:					
Humic Haploxerepts	40	Fair source		Poor source	
		Bottom layer possible source	0.32	Bottom layer not a source	0.00
				Thickest layer not a source	0.00
		Thickest layer possible source	0.34		
Rock outcrop	35	Not rated		Not rated	
Ultic Haploxeralfs	25	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
325:					
Urban land	80	Not rated		Not rated	
328:					
Clarkslodge	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
Ultic Palexeralfs	15	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
401:					
Sentinel	90	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.07
412:					
Water	85	Not rated		Not rated	
Riverwash	15	Not rated		Not rated	
501:					
Happyisles, sandy loam	65	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.02
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.08
Happyisles, loamy fine sand, overwash	20	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10
502:					
Happyisles	88	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
504:					
Mollic Xerofluvents	85	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.29
510t:					
Rubble land	40	Not rated		Not rated	
Lithnip	20	Fair source		Fair source	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
		Bottom layer possible source	0.25	Bottom layer is a possible source	0.03
Rock outcrop	15	Not rated		Not rated	
551:					
Happyisles	50	Poor source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.03
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10
Half Dome	45	Poor source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
552:					
Mollic Xerofluvents	85	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.29
590:					
Terric Haplosaprists	85	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
601:					
Half Dome, very bouldery	50	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
Half Dome, cobbly	45	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.04
602:					
Half Dome	85	Poor source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00

Table 8.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
610:					
Rubble land	65	Not rated		Not rated	
Half Dome	30	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.04
620:					
Half Dome, extremely stony sandy loam, warm-	50	Poor source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
Half Dome, very cobbly sandy loam, warm-	43	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
630:					
Rubble land	65	Not rated		Not rated	
Half Dome	30	Poor source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00
701:					
Vitrandic Haploxerolls	90	Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.01
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.01
702:					
Vitrandic Dystroxerepts-	90	Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00
900:					
Rock outcrop	95	Not rated		Not rated	
DAM:					
Dam	100	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

The interpretation for gravel source evaluates coarse fragments greater than 0.2 inch in size in the bottom layer or in the thickest layer of the soil.

The interpretation for sand source evaluates the amount of sand and fine gravel in the thickest layer or in the bottom layer of the soil. Organic soil layers with a Unified engineering class for peat (PT) are also evaluated.

Table 8.—Construction Materials, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value column range from 0.00 to 0.99. The closer the value is to 0, the greater the potential limitation. Values of 0 are absolute limitations based on the soil property criteria used to develop the interpretation. Values closer to 1.0 have less of a limitation. Limiting features with values of 1 have absolutely no limitation and are not shown in this report. Rating classes are determined by the most limiting value. Fine-earth fractions and fragment limiting features are reported on a weight basis. A brief summary of rating criteria and abbreviations used in the ratings is listed on the last page of this report)

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
101:			
Oxyaquic Xerofluvents---	35	Poor source	
		Sand fractions > 85%	0.00
		Rock fragment content	0.88
Riverwash---	35	Not rated	
Fluvaquents---	15	Poor source	
		Saturation < 1' depth	0.00
101t:			
Lithnip---	40	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Depth to bedrock < 20"	0.00
Rock outcrop---	25	Not rated	
Fishsnooze---	20	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Depth to bedrock 20 to 40"	0.78
		pH between 4.5 and 6.5	0.88
102:			
Oxyaquic Xerofluvents---	45	Poor source	
		Sand fractions > 85%	0.00
		Rock fragment content	0.95
Riverwash---	40	Not rated	
102t:			
Lithnip---	40	Poor source	
		Rock fragment content	0.00
		Depth to bedrock < 20"	0.00
		Slope > 15%	0.00
Rock outcrop---	25	Not rated	
Fishsnooze---	20	Poor source	
		Rock fragment content	0.00
		Slope > 15%	0.00
		Depth to bedrock 20 to 40"	0.78
		pH between 4.5 and 6.5	0.88

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil: Rating class and limiting features	Value
104:			
Aquandic Humaquepts	85	Poor source	
		Sand fractions > 85%	0.00
		Saturation < 1' depth	0.00
111t:			
Whittell	45	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Depth to bedrock 20 to 40"	0.64
		pH > 6.5 or is NULL	1.00
Jobsis	25	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Depth to bedrock 20 to 40"	0.00
		Sand fractions 75-85%	0.06
		pH between 4.5 and 6.5	0.88
Rock outcrop	15	Not rated	
151:			
Elcapitan	80	Good source	
152:			
Vitrandic Haploxerolls	80	Good source	
201:			
Leidig	80	Good source	
210:			
Rubble land	30	Not rated	
Typic Cryorthents	25	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
		pH between 4.5 and 6.5	0.98
Rock outcrop	20	Not rated	
Xeric Dystrocryepts	20	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Sand fractions < 75% or is NULL	0.99
		Not hard to reclaim	1.00
211:			
Xeric Dystrocryepts	35	Poor source	
		Rock fragment content	0.00
		Slope > 15%	0.00
		pH between 4.5 and 6.5	0.95
Canisrocks	30	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
211:			
Oxyaquic Dystrocryepts--	15	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.01
		Saturation from 1 to 3'	0.44
		pH between 4.5 and 6.5	0.50
213:			
Canisrocks----------	50	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.10
Glacierpoint----------	15	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.05
		Sand fractions 75-85%	0.10
Vitrandic Dystrocryepts-	15	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.50
		Rock fragment content	0.68
		Sand fractions 75-85%	0.90
214:			
Marmotland----------	25	Good source	
Oxyaquic Dystrocryepts--	15	Poor source	
		Sand fractions > 85%	0.00
		Saturation from 1 to 3'	0.44
		Hard to reclaim	0.54
Xeric Dystrocryepts-----	15	Poor source	
		Hard to reclaim	0.00
		pH between 4.5 and 6.5	0.88
215:			
Typic Cryorthents-------	40	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.16
		pH between 4.5 and 6.5	0.68
		Sand fractions 75-85%	0.78
Rock outcrop----------	20	Not rated	
Rubble land----------	20	Not rated	
219:			
Rock outcrop----------	40	Not rated	
Rubble land----------	25	Not rated	

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil: Rating class and limiting features	Value
219:			
Canisrocks	15	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92
221:			
Typic Cryorthents	35	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		pH between 4.5 and 6.5	0.98
Xeric Dystrocryepts	20	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.50
		pH between 4.5 and 6.5	0.88
		Hard to reclaim	0.95
Oxyaquic Dystrocryepts	15	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.01
		Saturation from 1 to 3'	0.44
		pH between 4.5 and 6.5	0.50
222:			
Canisrocks	30	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		pH between 4.5 and 6.5	0.88
Rubble land	30	Not rated	
Rock outcrop	20	Not rated	
Crazymule	15	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.22
		pH between 4.5 and 6.5	0.95
		Hard to reclaim	0.95
223:			
Rock outcrop	35	Not rated	
Rubble land	35	Not rated	
Canisrocks	20	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
224:			
Rock outcrop	40	Not rated	
Crazymule	20	Poor source	
		Rock fragment content	0.00
		Slope > 15%	0.00
		Sand fractions 75-85%	0.22
		pH between 4.5 and 6.5	0.95
		Hard to reclaim	0.95
Vitrandic Cryorthents	15	Poor source	
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
		Depth to bedrock 20 to 40"	0.24
		pH between 4.5 and 6.5	0.88
225:			
Canisrocks	15	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92
Rock outcrop	15	Not rated	
Rubble land	15	Not rated	
Vitrandic Dystrocryepts	15	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
		pH between 4.5 and 6.5	0.88
227:			
Canisrocks	45	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.22
		Hard to reclaim	0.39
Crazymule	40	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		pH between 4.5 and 6.5	0.92
228:			
Xeric Dystrocryepts	35	Poor source	
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
		pH between 4.5 and 6.5	0.88
Vitrandic Eutrocryepts	25	Fair source	
		Saturation from 1 to 3'	0.44
		Rock fragment content	0.68
		pH between 4.5 and 6.5	0.92

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
229:			
Marmotland	40	Poor source	
		Rock fragment content	0.00
		Hard to reclaim	0.00
		pH between 4.5 and 6.5	0.88
Oxyaquic Dystrocryepts	40	Poor source	
		Rock fragment content	0.00
		Hard to reclaim	0.01
		Saturation from 1 to 3'	0.44
		pH between 4.5 and 6.5	0.92
231:			
Canisrocks	40	Poor source	
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
		Slope > 15%	0.00
		pH between 4.5 and 6.5	0.92
Typic Cryaquents	21	Poor source	
		Saturation < 1' depth	0.00
		Rock fragment content	0.18
		Sand fractions 75-85%	0.38
		Slope 8 to 12%	0.63
		Hard to reclaim	0.95
232:			
Canisrocks	25	Poor source	
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
		Slope > 15%	0.00
		pH > 6.5 or is NULL	1.00
Glacierpoint	21	Poor source	
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
		pH between 4.5 and 6.5	0.88
234:			
Rock outcrop	35	Not rated	
Rubble land	35	Not rated	
235:			
Canisrocks	35	Poor source	
		Slope > 15%	0.00
		Sand fractions 75-85%	0.17
		Hard to reclaim	0.50
		Rock fragment content	0.88
Rock outcrop	30	Not rated	
Rubble land	20	Not rated	

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
237:			
Canisrocks	25	Poor source	
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
		Depth to bedrock 20 to 40"	0.38
		pH between 4.5 and 6.5	0.92
Glacierpoint	15	Fair source	
		Hard to reclaim	0.05
		Slope 12 to 15%	0.37
		Sand fractions 75-85%	0.78
		Rock fragment content	0.98
Vitrandic Cryorthents	15	Poor source	
		Depth to bedrock < 20"	0.00
		Rock fragment content	0.82
		pH between 4.5 and 6.5	0.95
		Sand fractions < 75% or is NULL	0.99
238:			
Oxyaquic Cryorthents	25	Fair source	
		Sand fractions 75-85%	0.04
		Saturation from 1 to 3'	0.44
Canisrocks	15	Poor source	
		Sand fractions > 85%	0.00
		Hard to reclaim	0.02
		Slope 12 to 15%	0.37
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92
239:			
Crazymule	45	Poor source	
		Rock fragment content	0.00
		Depth to bedrock 20 to 40"	0.16
		Slope 8 to 12%	0.84
Canisrocks	34	Poor source	
		Sand fractions > 85%	0.00
		Hard to reclaim	0.02
		Slope 12 to 15%	0.37
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92
241:			
Canisrocks	75	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Rock fragment content	0.50
		Hard to reclaim	0.59
		pH between 4.5 and 6.5	0.92
242:			
Rock outcrop	30	Not rated	

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
242:			
Canisrocks	25	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
		Sand fractions 75-85%	0.30
		pH between 4.5 and 6.5	0.92
Xeric Dystrocryepts	16	Poor source	
		Slope > 15%	0.00
		Sand fractions 75-85%	0.10
		No rock fragment limitation	0.99
244:			
Typic Cryorthents	45	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92
Rubble land	25	Not rated	
Rock outcrop	16	Not rated	
245:			
Rock outcrop	30	Not rated	
Canisrocks	22	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92
Xeric Dystrocryepts	20	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.98
		pH between 4.5 and 6.5	0.98
246:			
Rock outcrop, domes	90	Not rated	
247:			
Canisrocks	20	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.08
		Rock fragment content	0.98
		pH > 6.5 or is NULL	1.00
Xeric Dystrocryepts	20	Fair source	
		Sand fractions 75-85%	0.10
		pH between 4.5 and 6.5	0.50

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
248:			
Canisrocks	35	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.26
		pH between 4.5 and 6.5	0.88
Rock outcrop	30	Not rated	
Glacierpoint	15	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.74
		pH between 4.5 and 6.5	0.88
249:			
Rock outcrop	45	Not rated	
Canisrocks	30	Poor source	
		Slope > 15%	0.00
		Sand fractions 75-85%	0.17
		Hard to reclaim	0.50
		Rock fragment content	0.88
250:			
Canisrocks	47	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92
Xeric Dystrocryepts	35	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
		pH between 4.5 and 6.5	0.95
251:			
Glacierpoint	30	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.74
		pH between 4.5 and 6.5	0.88
Typic Cryorthents	20	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.01
		Hard to reclaim	0.41
		Sand fractions 75-85%	0.78
		pH between 4.5 and 6.5	0.98
252:			
Rock outcrop	20	Not rated	

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil: Rating class and limiting features	Value
252:			
Canisrocks	15	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92
Xeric Dystrocryepts	15	Poor source	
		Rock fragment content	0.00
		Sand fractions 75-85%	0.15
		Slope 12 to 15%	0.37
		Hard to reclaim	0.50
		pH between 4.5 and 6.5	0.50
253:			
Canisrocks	25	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.08
		pH between 4.5 and 6.5	0.50
Glacierpoint	18	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
		Sand fractions 75-85%	0.22
		pH between 4.5 and 6.5	0.98
Humic Dystrocryepts	15	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.01
256:			
Craneflat	25	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.20
		pH between 4.5 and 6.5	0.59
		Hard to reclaim	0.59
Rock outcrop	25	Not rated	
Rubble land	20	Not rated	
Waterwheel	20	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
257:			
Badgerpass	55	Fair source	
		Sand fractions 75-85%	0.15
		Rock fragment content	0.24

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
257:			
Oxyaquic Dystroxerepts--	35	Poor source	
		Rock fragment content	0.00
		Saturation from 1 to 3'	0.44
		Slope 8 to 12%	0.84
		Clay 27 to 40%	0.98
258:			
Typic Dystroxerepts-----	25	Poor source	
		Slope > 15%	0.00
Badgerpass----------	20	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Rock fragment content	0.98
Dystric Xerorthents-----	20	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.04
		Sand fractions 75-85%	0.22
		Hard to reclaim	0.50
		pH between 4.5 and 6.5	0.88
260:			
Rock outcrop----------	45	Not rated	
Craneflat----------	25	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
Dystric Xerorthents-----	20	Poor source	
		Slope > 15%	0.00
261:			
Dystric Xeropsamments---	25	Poor source	
		Sand fractions > 85%	0.00
		pH between 4.5 and 6.5	0.88
Typic Dystroxerepts-----	25	Poor source	
		Hard to reclaim	0.00
		Slope > 15%	0.00
		Rock fragment content	0.59
		pH between 4.5 and 6.5	0.68
Badgerpass----------	15	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Rock fragment content	0.24
		pH between 4.5 and 6.5	0.88
Rock outcrop----------	15	Not rated	
262:			
Humic Dystroxerepts-----	30	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
262:			
Dystric Xerorthents-----	25	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.12
		Sand fractions 75-85%	0.22
		Hard to reclaim	0.50
		pH between 4.5 and 6.5	0.88
Rock outcrop-----------	20	Not rated	
264:			
Crazymule---------------	35	Fair source	
		Rock fragment content	0.02
		Hard to reclaim	0.32
		Slope 12 to 15%	0.37
Canisrocks--------------	28	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
		Sand fractions 75-85%	0.08
		pH between 4.5 and 6.5	0.50
267:			
Rock outcrop-----------	40	Not rated	
Typic Cryorthents-------	30	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		pH between 4.5 and 6.5	0.98
Xeric Dystrocryepts-----	15	Poor source	
		Sand fractions > 85%	0.00
		Slope 12 to 15%	0.37
		No rock fragment limitation	0.99
268:			
Rock outcrop-----------	40	Not rated	
Canisrocks--------------	25	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.41
		pH between 4.5 and 6.5	0.92
Glacierpoint------------	20	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.74
		pH between 4.5 and 6.5	0.88
269:			
Canisrocks--------------	20	Poor source	
		Rock fragment content	0.00
		Slope > 15%	0.00
		Sand fractions 75-85%	0.10
		Hard to reclaim	0.32
		pH between 4.5 and 6.5	0.88

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
269:			
Rock outcrop	20	Not rated	
Glacierpoint	15	Poor source	
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.74
		pH between 4.5 and 6.5	0.88
270:			
Rock outcrop	35	Not rated	
Typic Cryorthents	25	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
		pH between 4.5 and 6.5	0.92
Vitrandic Dystrocryepts-	25	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
271:			
Rock outcrop	60	Not rated	
Lithic Xerorthents	15	Poor source	
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Depth to bedrock < 20"	0.00
		Slope > 15%	0.00
		pH between 4.5 and 6.5	0.88
Waterwheel	15	Poor source	
		Sand fractions > 85%	0.00
		Hard to reclaim	0.00
		Slope > 15%	0.00
		Rock fragment content	0.59
273:			
Nevadafalls	55	Fair source	
		Rock fragment content	0.02
		Hard to reclaim	0.02
		Sand fractions 75-85%	0.05
Waterwheel	30	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
		Sand fractions 75-85%	0.10
274:			
Rock outcrop, domes	85	Not rated	

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil: Rating class and limiting features	Value
275:			
Oxyaquic Dystroxerepts--	25	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Saturation from 1 to 3'	0.44
		pH > 6.5 or is NULL	1.00
Dystric Xerorothents----	25	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
		Sand fractions 75-85%	0.78
Vitrandic Xerorthents---	25	Fair source	
		Sand fractions 75-85%	0.53
		pH between 4.5 and 6.5	0.82
Rubble land------------	15	Not rated	
276:			
Happyisles-------------	35	Good source	
Typic Dystroxerepts-----	35	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope 8 to 12%	0.84
277:			
Tuolumne---------------	45	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
Humic Dystroxerepts-----	35	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.15
278:			
Rock outcrop-----------	25	Not rated	
Tuolumne---------------	25	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.97
Humic Dystroxerepts-----	20	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.25
Rubble land------------	15	Not rated	

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
279:			
Canisrocks	40	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		pH between 4.5 and 6.5	0.92
Xeric Dystrocryepts	15	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Rock fragment content	0.50
		pH between 4.5 and 6.5	0.92
280:			
Typic Dystroxerepts	35	Poor source	
		Slope > 15%	0.00
Humic Dystroxerepts	30	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.02
Rock outcrop	25	Not rated	
282:			
Clarkslodge	50	Poor source	
		Rock fragment content	0.00
		Slope 12 to 15%	0.37
Craneflat	25	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.05
		Sand fractions 75-85%	0.40
		Rock fragment content	0.88
Nevadafalls	25	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.02
		Hard to reclaim	0.02
		Sand fractions 75-85%	0.05
283:			
Waterwheel	35	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.30
Nevadafalls	30	Poor source	
		Slope > 15%	0.00
		Sand fractions 75-85%	0.15
Rock outcrop	21	Not rated	

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil: Rating class and limiting features	Value
285:			
Waterwheel	30	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.77
		pH between 4.5 and 6.5	0.82
Humic Dystroxerepts	16	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Hard to reclaim	0.05
		pH between 4.5 and 6.5	0.88
286:			
Nevadafalls	26	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.82
Typic Dystroxerepts	25	Fair source	
		Sand fractions 75-85%	0.30
		Rock fragment content	0.82
Ultic Palexeralfs	20	Fair source	
		Slope 12 to 15%	0.37
Rock outcrop	15	Not rated	
287:			
Badgerpass	55	Fair source	
		Hard to reclaim	0.02
		Sand fractions 75-85%	0.15
		Rock fragment content	0.95
Waterwheel	40	Fair source	
		Slope 12 to 15%	0.37
		Sand fractions 75-85%	0.40
		Rock fragment content	0.95
288:			
Rock outcrop	35	Not rated	
Craneflat	20	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.05
		Sand fractions 75-85%	0.40
		Rock fragment content	0.88
Waterwheel	20	Poor source	
		Slope > 15%	0.00
		Sand fractions 75-85%	0.40
		Rock fragment content	0.95
289:			
Waterwheel	50	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
		Sand fractions 75-85%	0.30
		pH between 4.5 and 6.5	0.88

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
289:			
Craneflat	30	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		pH between 4.5 and 6.5	0.88
290:			
Humic Dystroxerepts	40	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		pH between 4.5 and 6.5	0.88
Tuolumne	30	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.08
		pH between 4.5 and 6.5	0.88
Typic Xerorthents	15	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.08
		pH between 4.5 and 6.5	0.98
Ultic Haploxeralfs	15	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.41
291:			
Ultic Haploxeralfs	41	Poor source	
		Slope > 15%	0.00
Typic Dystroxerepts	31	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.12
		Hard to reclaim	0.95
292:			
Humic Dystroxerepts	35	Poor source	
		Rock fragment content	0.00
		Slope > 15%	0.00
		Sand fractions 75-85%	0.08
		Hard to reclaim	0.50
Typic Haploxerults	30	Fair source	
		Slope 12 to 15%	0.37
		Clay 27 to 40%	0.50
		Hard to reclaim	0.95
		Rock fragment content	0.95
293:			
Xeric Dystrocryepts	70	Poor source	
		Slope > 15%	0.00
		Sand fractions 75-85%	0.06
		Hard to reclaim	0.50
		pH between 4.5 and 6.5	0.50
		No rock fragment limitation	0.99

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil: Rating class and limiting features	Value
293:			
Vitrandic Dystrocryepts-	18	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.41
		Sand fractions 75-85%	0.85
294:			
Waterwheel	65	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Sand fractions 75-85%	0.08
		Rock fragment content	0.68
Typic Dystroxerepts	35	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.41
		Sand fractions 75-85%	0.98
		pH between 4.5 and 6.5	0.98
295:			
Craneflat	25	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.10
Typic Dystroxerepts	25	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
296:			
Ultic Palexeralfs	20	Poor source	
		Slope > 15%	0.00
Humic Dystroxerepts	15	Poor source	
		Slope > 15%	0.00
297:			
Typic Xerorthents	30	Poor source	
		Slope > 15%	0.00
		Sand fractions 75-85%	0.56
		Rock fragment content	0.76
		Hard to reclaim	0.95
Rock outcrop	25	Not rated	
Typic Xeropsamments	25	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
298:			
Tuolumne	41	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Sand fractions 75-85%	0.08
		Rock fragment content	0.68

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
298:			
Typic Dystroxerepts-----	31	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.41
		Sand fractions 75-85%	0.98
		pH between 4.5 and 6.5	0.98
299:			
Humic Dystroxerepts-----	46	Poor source	
		Slope > 15%	0.00
		Sand fractions > 85%	0.00
		Hard to reclaim	0.08
		pH between 4.5 and 6.5	0.76
		Rock fragment content	0.88
Ultic Haploxeralfs------	35	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.76
300:			
Typic Dystroxerepts-----	35	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.41
Ultic Haploxeralfs------	25	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.41
		Hard to reclaim	0.95
301:			
Vitrandic Haploxerolls--	90	Fair source	
		Saturation from 1 to 3'	0.53
302:			
Typic Haploxerults------	45	Poor source	
		Slope > 15%	0.00
Ultic Haploxeralfs------	41	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.41
		Hard to reclaim	0.95
303:			
Rock outcrop------------	30	Not rated	
Dystric Xeropsamments---	20	Poor source	
		Slope > 15%	0.00
		Sand fractions 75-85%	0.10
		Rock fragment content	0.68
Humic Dystroxerepts-----	20	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.02
		Sand fractions 75-85%	0.30
		pH between 4.5 and 6.5	0.88

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
303:			
Tuolumne	20	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.32
		pH between 4.5 and 6.5	0.76
304:			
Clarkslodge	60	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.50
		Hard to reclaim	0.95
Rock outcrop	15	Not rated	
305:			
Rock outcrop	50	Not rated	
Waterwheel	18	Poor source	
		Sand fractions > 85%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
Dystric Xeropsamments	15	Poor source	
		Sand fractions > 85%	0.00
		pH between 4.5 and 6.5	0.88
306:			
Typic Cryopsamments	50	Fair source	
		Sand fractions 75-85%	0.20
		Slope 8 to 12%	0.84
		Hard to reclaim	0.88
		pH between 4.5 and 6.5	0.98
Humic Dystrocryepts	30	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.68
		pH between 4.5 and 6.5	0.88
		Hard to reclaim	0.95
307:			
Rock outcrop	40	Not rated	
Dystric Xeropsamments	20	Poor source	
		Slope > 15%	0.00
		Sand fractions 75-85%	0.10
		Rock fragment content	0.68
Dystric Xerorthents	20	Poor source	
		Sand fractions > 85%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
309:			
Rock outcrop	50	Not rated	
Waterwheel	25	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
Typic Dystroxerepts	20	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
310:			
Rock outcrop	55	Not rated	
Humic Dystroxerepts	25	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.38
Humic Lithic Haploxerepts	20	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Depth to bedrock 20 to 40"	0.00
		Saturation from 1 to 3'	0.01
311:			
Rock outcrop	45	Not rated	
Humic Dystroxerepts	35	Poor source	
		Rock fragment content	0.00
		Hard to reclaim	0.00
		Slope > 15%	0.00
		Sand fractions 75-85%	0.20
Humic Lithic Haploxerepts	19	Poor source	
		Rock fragment content	0.00
		Slope > 15%	0.00
		Depth to bedrock 20 to 40"	0.00
		Saturation from 1 to 3'	0.01
313:			
Nevadafalls	40	Fair source	
		Rock fragment content	0.02
		Hard to reclaim	0.02
		Sand fractions 75-85%	0.05
Oxyaquic Dystrudepts	40	Fair source	
		Saturation from 1 to 3'	0.44
314:			
Badgerpass	45	Poor source	
		Sand fractions > 85%	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.05

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil: Rating class and limiting features	Value
314:			
Dystric Xeropsamments	35	Poor source	
		Slope > 15%	0.00
		Sand fractions 75-85%	0.38
Rock outcrop	15	Not rated	
315:			
Nevadafalls	60	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.95
Dystric Xeropsamments	40	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.02
		Sand fractions 75-85%	0.15
316:			
Dystric Xerorthents	40	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.40
Rock outcrop	40	Not rated	
Rubble land	20	Not rated	
318:			
Typic Dystroxerepts	40	Good source	
Humic Dystroxerepts	36	Fair source	
		Sand fractions 75-85%	0.84
		Rock fragment content	0.98
319:			
Humic Dystroxerepts	30	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Sand fractions 75-85%	0.06
		pH between 4.5 and 6.5	0.92
		Hard to reclaim	0.95
Typic Haploxerults	30	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.82
		pH between 4.5 and 6.5	0.88
Inceptic Haploxeralfs	25	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		pH between 4.5 and 6.5	0.88
320:			
Half Dome	40	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
320:			
Humic Dystroxerepts-----	20	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.08
Rock outcrop----------	20	Not rated	
321:			
Dystric Xeropsamments---	50	Fair source	
		Sand fractions 75-85%	0.28
		Hard to reclaim	0.95
		Rock fragment content	0.95
Dystric Xerorothents----	40	Poor source	
		Sand fractions > 85%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
322:			
Typic Xerorthents-------	90	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.08
		Hard to reclaim	0.59
		Sand fractions 75-85%	0.92
323:			
Ultic Haploxeralfs------	55	Poor source	
		Rock fragment content	0.00
		Hard to reclaim	0.00
		Slope > 15%	0.00
Humic Dystroxerepts-----	45	Fair source	
		Slope 8 to 12%	0.84
324:			
Humic Haploxerepts------	40	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
Rock outcrop----------	35	Not rated	
Ultic Haploxeralfs------	25	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00
325:			
Urban land--------------	80	Not rated	
328:			
Clarkslodge------------	30	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.00

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil: Rating class and limiting features	Value
328:			
Ultic Palexeralfs	15	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.95
		pH between 4.5 and 6.5	0.98
401:			
Sentinel	90	Good source	
412:			
Water	85	Not rated	
Riverwash	15	Not rated	
501:			
Happyisles, sandy loam	65	Fair source	
		Rock fragment content	0.50
Happyisles, loamy fine sand, overwash	20	Good source	
502:			
Happyisles	88	Good source	
504:			
Mollic Xerofluvents	85	Fair source	
		Rock fragment content	0.01
		Hard to reclaim	0.97
		pH between 4.5 and 6.5	0.98
510t:			
Rubble land	40	Not rated	
Lithnip	20	Poor source	
		Rock fragment content	0.00
		Depth to bedrock < 20"	0.00
		Slope > 15%	0.00
Rock outcrop	15	Not rated	
551:			
Happyisles	50	Good source	
Half Dome	45	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope 8 to 12%	0.84
552:			
Mollic Xerofluvents	85	Fair source	
		Rock fragment content	0.01
		Slope 8 to 12%	0.84
		Hard to reclaim	0.97
		pH between 4.5 and 6.5	0.98
590:			
Terric Haplosaprists	85	Poor source	
		OM > 30%	0.00
		Hard to reclaim	0.00
		pH between 4.5 and 6.5	0.98

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
601:			
Half Dome, very bouldery	50	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.41
Half Dome, cobbly-------	45	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.02
602:			
Half Dome----------	85	Poor source	
		Hard to reclaim	0.00
		Rock fragment content	0.00
		Slope > 15%	0.00
610:			
Rubble land----------	65	Not rated	
Half Dome----------	30	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.02
		Rock fragment content	0.02
620:			
Half Dome, extremely stony sandy loam, warm-	50	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.00
Half Dome, very cobbly sandy loam, warm-------	43	Poor source	
		Slope > 15%	0.00
		Rock fragment content	0.00
		Hard to reclaim	0.02
630:			
Rubble land----------	65	Not rated	
Half Dome----------	30	Poor source	
		Slope > 15%	0.00
		Hard to reclaim	0.00
		Rock fragment content	0.08
701:			
Vitrandic Haploxerolls--	90	Poor source	
		Slope > 15%	0.00
702:			
Vitrandic Dystroxerepts-	90	Poor source	
		Rock fragment content	0.00
		Slope > 15%	0.00
		Hard to reclaim	0.59
900:			
Rock outcrop----------	95	Not rated	

Table 8.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil	
		Rating class and limiting features	Value
DAM:			
Dam	100	Not rated	
W:			
Water	100	Not rated	

The interpretation for topsoil source evaluates the following soil properties at various depths: calcium carbonates, clay amount, soil bulk density, sand amount, soil wetness, coarse fragments 0.2 inch to 3 inches in size, fragments greater than 3 inches in size, organic matter content (OM), sodium content expressed as the sodium adsorption ratio (SAR), salinity expressed as dS/m of electrical conductivity (EC), depth to bedrock, slope, and soil pH.

Table 8.—Construction Materials, Part III

(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 0.00 to 0.99. The closer the value is to 0, the greater the potential limitation. Values of 0 are absolute limitations based on the soil property criteria used to develop the interpretation. Values closer to 1.0 have less of a limitation. Limiting features with values of 1 have absolutely no limitation and are not shown in this report. Rating classes are determined by the most limiting value. Fine-earth fractions and fragment limiting features are reported on a weight basis. Brief summaries of rating criteria and abbreviations are listed on the last page of this report)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
101:					
Oxyaquic Xerofluvents	35	Poor source		Good source	
		Sand fractions > 85%	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
		AWC 3 - 6" to 60" depth	0.55		
Riverwash	35	Not rated		Not rated	
Fluvaquents	15	Poor source		Poor source	
		OM < .5%	0.00	Saturation < 1' depth	0.00
		pH is between 4 and 6.5 above 40"	0.72		
		AWC 3 - 6" to 60" depth	0.99		
101t:					
Lithnip	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
Rock outcrop	25	Not rated		Not rated	
Fishsnooze	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		Fragments 3-10" are 25 to 50%	0.37	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.40	Fragments >3" are 25 to 50%	0.68
		OM is .5 to 1%	0.50		
102:					
Oxyaquic Xerofluvents	45	Poor source		Good source	
		Sand fractions > 85%	0.00		
		AWC 3 - 6" to 60" depth	0.17		
		pH is between 4 and 6.5 above 40"	0.40		
Riverwash	40	Not rated		Not rated	
102t:					
Lithnip	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes 15 to 25%	0.68
Rock outcrop	25	Not rated		Not rated	

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
102t:					
Fishsnooze	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		Fragments 3-10" are 25 to 50%	0.37	Slopes 15 to 25%	0.68
		pH is between 4 and 6.5 above 40"	0.40	Fragments >3" are 25 to 50%	0.68
		OM is .5 to 1%	0.50		
104:					
Aquandic Humaquepts	85	Poor source		Poor source	
		Sand fractions > 85%	0.00	Saturation < 1' depth	0.00
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.04		
111t:					
Whittell	45	Poor source		Poor source	
		Sand fractions > 85%	0.00	Depth to bedrock < 40"	0.00
		WEG = 1 or 2	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.56		
		OM is .5 to 1%	0.68		
		Fragments 3-10" are 25 to 50%	0.98		
Jobsis	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
		Sand fractions 75 to 85%	0.15		
		pH is between 4 and 6.5 above 40"	0.40		
		Fragments >10" are 5-15%	0.97		
Rock outcrop	15	Not rated		Not rated	
151:					
Elcapitan	80	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.72		
152:					
Vitrandic Haploxerolls	80	Fair source		Good source	
		AWC 3 - 6" to 60" depth	0.48		
		pH is between 4 and 6.5 above 40"	0.72		
201:					
Leidig	80	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.52		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
210:					
Rubble land	30	Not rated		Not rated	
Typic Cryorthents	25	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.52	Fragments >3" are 25 to 50%	0.92
		AWC 3 - 6" to 60" depth	0.92		
		Fragments 3-10" are 25 to 50%	0.92		
Rock outcrop	20	Not rated		Not rated	
Xeric Dystrocryepts	20	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.37	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.40		
211:					
Xeric Dystrocryepts	35	Poor source		Fair source	
		AWC < 3" to 60" depth	0.00	Slopes 15 to 25%	0.50
		Fragments >10" are 5-15%	0.00	Fragments >3" are 25 to 50%	0.98
		pH is between 4 and 6.5 above 40"	0.44		
		Fragments 3-10" < 25% or NULL data	1.00		
Canisrocks	30	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.50
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
Oxyaquic Dystrocryepts	15	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.20	Saturation from 1 to 3'	0.44
		AWC 3 - 6" to 60" depth	0.25		
213:					
Canisrocks	50	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		OM < .5%	0.00	Fragments >3" are 25 to 50%	0.08
		Fragments 3-10" are 25 to 50%	0.02		
		Sand fractions 75 to 85%	0.22		
		pH is between 4 and 6.5 above 40"	0.60		
Glacierpoint	15	Poor source		Fair source	
		AWC < 3" to 60" depth	0.00	Slopes 15 to 25%	0.50
		Sand fractions 75 to 85%	0.22	Fragments >3" are 25 to 50%	0.70
		pH is between 4 and 6.5 above 40"	0.40		
		Fragments >10" are 5-15%	0.57		
		Fragments 3-10" are 25 to 50%	0.91		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
213:					
Vitrandic Dystrocryepts	15	Fair source		Fair source	
		AWC 3 - 6" to 60" depth	0.32	Slopes 15 to 25%	0.50
		pH is between 4 and 6.5 above 40"	0.48		
		OM is .5 to 1%	0.68		
214:					
Marmotland	25	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.44		
		AWC 3 - 6" to 60" depth	0.58		
Oxyaquic Dystrocryepts	15	Poor source		Fair source	
		Sand fractions > 85%	0.00	Saturation from 1 to 3'	0.44
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are 5-15%	0.05		
		pH is between 4 and 6.5 above 40"	0.32		
Xeric Dystrocryepts	15	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.20		
		AWC 3 - 6" to 60" depth	0.84		
215:					
Typic Cryorthents	40	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.28		
		AWC 3 - 6" to 60" depth	0.55		
Rock outcrop	20	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
219:					
Rock outcrop	40	Not rated		Not rated	
Rubble land	25	Not rated		Not rated	
Canisrocks	15	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
221:					
Typic Cryorthents	35	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	0.94
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.52		
		Fragments 3-10" are 25 to 50%	0.94		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
221:					
Xeric Dystrocryepts	20	Poor source		Good source	
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
Oxyaquic Dystrocryepts	15	Poor source		Fair source	
		OM < .5%	0.00	Saturation from 1 to 3'	0.44
		pH is between 4 and 6.5 above 40"	0.20		
		AWC 3 - 6" to 60" depth	0.25		
222:					
Canisrocks	30	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.79
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
		Fragments 3-10" are 25 to 50%	0.77		
Rubble land	30	Not rated		Not rated	
Rock outcrop	20	Not rated		Not rated	
Crazymule	15	Fair source		Poor source	
		Fragments >10" are 5-15%	0.25	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.40		
		Sand fractions 75 to 85%	0.50		
		AWC 3 - 6" to 60" depth	0.65		
223:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	
Canisrocks	20	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
224:					
Rock outcrop	40	Not rated		Not rated	
Crazymule	20	Fair source		Fair source	
		Fragments >10" are 5-15%	0.20	Slopes 15 to 25%	0.50
		pH is between 4 and 6.5 above 40"	0.40		
		Sand fractions 75 to 85%	0.50		
		AWC 3 - 6" to 60" depth	0.65		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
224:					
Vitrandic Cryorthents	15	Poor source		Poor source	
		Sand fractions > 85%	0.00	Depth to bedrock < 40"	0.00
		AWC < 3" to 60" depth	0.00	Slopes 15 to 25%	0.08
		pH is between 4 and 6.5 above 40"	0.40		
225:					
Canisrocks	15	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.50
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
Rock outcrop	15	Not rated		Not rated	
Rubble land	15	Not rated		Not rated	
Vitrandic Dystrocryepts	15	Poor source		Good source	
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
		Fragments 3-10" < 25% or NULL data	1.00		
227:					
Canisrocks	45	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.40		
		Sand fractions 75 to 85%	0.50		
		Fragments >10" are 5-15%	0.77		
Crazymule	40	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
228:					
Xeric Dystrocryepts	35	Poor source		Good source	
		Sand fractions > 85%	0.00		
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
Vitrandic Eutrocryepts	25	Fair source		Fair source	
		AWC 3 - 6" to 60" depth	0.17	Saturation from 1 to 3'	0.44
		pH is between 4 and 6.5 above 40"	0.36		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
229:					
Marmotland	40	Poor source		Good source	
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
		AWC 3 - 6" to 60" depth	0.64		
Oxyaquic Dystrocryepts	40	Fair source		Fair source	
		pH is between 4 and 6.5 above 40"	0.16	Saturation from 1 to 3'	0.44
		AWC 3 - 6" to 60" depth	0.24		
231:					
Canisrocks	40	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.50
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
Typic Cryaquents	21	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Saturation < 1' depth	0.00
		OM < .5%	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.60		
		Sand fractions 75 to 85%	0.76		
232:					
Canisrocks	25	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.92
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
Glacierpoint	21	Poor source		Fair source	
		Sand fractions > 85%	0.00	Fragments >3" are 25 to 50%	0.94
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
		OM is .5 to 1%	0.50		
		Fragments >10" are 5-15%	0.89		
		Fragments 3-10" are 25 to 50%	0.94		
234:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
235:					
Canisrocks	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Sand fractions 75 to 85%	0.39		
		pH is between 4 and 6.5 above 40"	0.44		
		Fragments >10" are 5-15%	0.95		
Rock outcrop	30	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
237:					
Canisrocks	25	Poor source		Poor source	
		Sand fractions > 85%	0.00	Depth to bedrock < 40"	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" < 25% or NULL data	1.00
		pH is between 4 and 6.5 above 40"	0.44		
		Fragments >10" are 5-15%	0.53		
		Fragments 3-10" < 25% or NULL data	0.99		
Glacierpoint	15	Poor source		Good source	
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.60		
Vitrandic Cryorthents	15	Poor source		Poor source	
		WEG = 1 or 2	0.00	Depth to bedrock < 40"	0.00
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.20		
238:					
Oxyaquic Cryorthents	25	Fair source		Fair source	
		Sand fractions 75 to 85%	0.08	Saturation from 1 to 3'	0.44
		AWC 3 - 6" to 60" depth	0.15		
		OM is .5 to 1%	0.50		
		pH is between 4 and 6.5 above 40"	0.72		
Canisrocks	15	Poor source		Good source	
		Sand fractions > 85%	0.00		
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
239:					
Crazymule	45	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		pH is between 4 and 6.5 above 40"	0.40		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
239:					
Canisrocks	34	Poor source		Good source	
		Sand fractions > 85%	0.00		
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
241:					
Canisrocks	75	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.18
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are 5-15%	0.12		
		pH is between 4 and 6.5 above 40"	0.44		
242:					
Rock outcrop	30	Not rated		Not rated	
Canisrocks	25	Poor source		Fair source	
		Fragments >10" are > 15%	0.00	Slopes 15 to 25%	0.18
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	0.93
		pH is between 4 and 6.5 above 40"	0.44		
		Sand fractions 75 to 85%	0.65		
		Fragments 3-10" are 25 to 50%	0.88		
Xeric Dystrocryepts	16	Fair source		Fair source	
		AWC 3 - 6" to 60" depth	0.02	Slopes 15 to 25%	0.82
		Fragments >10" are 5-15%	0.09		
		Sand fractions 75 to 85%	0.22		
		pH is between 4 and 6.5 above 40"	0.60		
244:					
Typic Cryorthents	45	Poor source		Good source	
		Sand fractions > 85%	0.00		
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
Rubble land	25	Not rated		Not rated	
Rock outcrop	16	Not rated		Not rated	
245:					
Rock outcrop	30	Not rated		Not rated	
Canisrocks	22	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.18
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
245:					
Xeric Dystrocryepts	20	Poor source		Fair source	
		OM < .5%	0.00	Slopes 15 to 25%	0.82
		K-factor .10 -.35	0.06		
		pH is between 4 and 6.5 above 40"	0.52		
		AWC 3 - 6" to 60" depth	0.94		
246:					
Rock outcrop, domes	90	Not rated		Not rated	
247:					
Canisrocks	20	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.50
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.52		
Xeric Dystrocryepts	20	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.20		
		AWC 3 - 6" to 60" depth	0.20		
		Sand fractions 75 to 85%	0.22		
248:					
Canisrocks	35	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
Rock outcrop	30	Not rated		Not rated	
Glacierpoint	15	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		OM < .5%	0.00		
		AWC 3 - 6" to 60" depth	0.05		
		pH is between 4 and 6.5 above 40"	0.40		
249:					
Rock outcrop	45	Not rated		Not rated	
Canisrocks	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Sand fractions 75 to 85%	0.39		
		pH is between 4 and 6.5 above 40"	0.44		
		Fragments >10" are 5-15%	0.95		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
250:					
Canisrocks	47	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
Xeric Dystrocryepts	35	Poor source		Fair source	
		AWC < 3" to 60" depth	0.00	Slopes 15 to 25%	0.50
		pH is between 4 and 6.5 above 40"	0.44	Fragments >3" are 25 to 50%	0.97
		Fragments >10" are 5-15%	0.78		
		Fragments 3-10" are 25 to 50%	0.90		
251:					
Glacierpoint	30	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		OM < .5%	0.00		
		AWC 3 - 6" to 60" depth	0.05		
		pH is between 4 and 6.5 above 40"	0.40		
Typic Cryorthents	20	Fair source		Poor source	
		Fragments >10" are 5-15%	0.19	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.30		
		pH is between 4 and 6.5 above 40"	0.52		
252:					
Rock outcrop	20	Not rated		Not rated	
Canisrocks	15	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
Xeric Dystrocryepts	15	Poor source		Good source	
		WEG = 1 or 2	0.00		
		Fragments >10" are > 15%	0.00		
		AWC 3 - 6" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.20		
		Sand fractions 75 to 85%	0.34		
253:					
Canisrocks	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.99
		Sand fractions 75 to 85%	0.18		
		pH is between 4 and 6.5 above 40"	0.20		
		Fragments 3-10" are 25 to 50%	0.98		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
253:					
Glacierpoint	18	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		Sand fractions 75 to 85%	0.50		
		pH is between 4 and 6.5 above 40"	0.52		
Humic Dystrocryepts	15	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	0.99
		pH is between 4 and 6.5 above 40"	0.40		
		Fragments 3-10" are 25 to 50%	0.85		
256:					
Craneflat	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Fragments >10" are 5-15%	0.00		
		pH is between 4 and 6.5 above 40"	0.24		
		Sand fractions 75 to 85%	0.46		
Rock outcrop	25	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
Waterwheel	20	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.76		
		Fragments 3-10" are 25 to 50%	0.97		
257:					
Badgerpass	55	Fair source		Good source	
		AWC 3 - 6" to 60" depth	0.05		
		Sand fractions 75 to 85%	0.34		
		pH is between 4 and 6.5 above 40"	0.60		
Oxyaquic Dystroxerepts	35	Fair source		Fair source	
		pH is between 4 and 6.5 above 40"	0.60	Saturation from 1 to 3'	0.44
		Clay 27 to 40%	0.98	AASHTO GIN 5 to 8 (soil strength)	0.78
		K-factor < .10 or is NULL	0.99		
258:					
Typic Dystroxerepts	25	Poor source		Good source	
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.52		
		OM is .5 to 1%	0.68		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
258:					
Badgerpass	20	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.03		
		pH is between 4 and 6.5 above 40"	0.40		
Dystric Xerorthents	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
		Sand fractions 75 to 85%	0.50		
260:					
Rock outcrop	45	Not rated		Not rated	
Craneflat	25	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.60		
Dystric Xerorthents	20	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.33		
		pH is between 4 and 6.5 above 40"	0.60		
261:					
Dystric Xeropsamments	25	Poor source		Good source	
		Sand fractions > 85%	0.00		
		AWC 3 - 6" to 60" depth	0.33		
		pH is between 4 and 6.5 above 40"	0.40		
Typic Dystroxerepts	25	Fair source		Poor source	
		pH is between 4 and 6.5 above 40"	0.28	Slopes > 25%	0.00
		Fragments 3-10" are 25 to 50%	0.75		
		AWC 3 - 6" to 60" depth	0.89		
Badgerpass	15	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.18
		WEG = 1 or 2	0.00		
		OM < .5%	0.00		
		AWC 3 - 6" to 60" depth	0.09		
		pH is between 4 and 6.5 above 40"	0.40		
Rock outcrop	15	Not rated		Not rated	

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
262:					
Humic Dystroxerepts	30	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	0.96
		pH is between 4 and 6.5 above 40"	0.60		
		Fragments 3-10" are 25 to 50%	0.95		
Dystric Xerorthents	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Fragments >10" are 5-15%	0.04		
		pH is between 4 and 6.5 above 40"	0.40		
		Sand fractions 75 to 85%	0.50		
Rock outcrop	20	Not rated		Not rated	
264:					
Crazymule	35	Fair source		Good source	
		Fragments >10" are 5-15%	0.18		
		AWC 3 - 6" to 60" depth	0.20		
		pH is between 4 and 6.5 above 40"	0.80		
Canisrocks	28	Poor source		Fair source	
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.98
		AWC < 3" to 60" depth	0.00		
		Sand fractions 75 to 85%	0.18		
		pH is between 4 and 6.5 above 40"	0.20		
		Fragments 3-10" are 25 to 50%	0.93		
267:					
Rock outcrop	40	Not rated		Not rated	
Typic Cryorthents	30	Poor source		Fair source	
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.40
		AWC < 3" to 60" depth	0.00		
		Fragments 3-10" are 25 to 50%	0.21		
		pH is between 4 and 6.5 above 40"	0.52		
Xeric Dystrocryepts	15	Poor source		Good source	
		Sand fractions > 85%	0.00		
		AWC 3 - 6" to 60" depth	0.43		
		pH is between 4 and 6.5 above 40"	0.44		
268:					
Rock outcrop	40	Not rated		Not rated	

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
268:					
Canisrocks	25	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
Glacierpoint	20	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		OM < .5%	0.00		
		AWC 3 - 6" to 60" depth	0.05		
		pH is between 4 and 6.5 above 40"	0.40		
269:					
Canisrocks	20	Poor source		Fair source	
		Fragments >10" are > 15%	0.00	Slopes 15 to 25%	0.98
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.20		
		Sand fractions 75 to 85%	0.22		
Rock outcrop	20	Not rated		Not rated	
Glacierpoint	15	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		OM < .5%	0.00		
		AWC 3 - 6" to 60" depth	0.05		
		pH is between 4 and 6.5 above 40"	0.40		
270:					
Rock outcrop	35	Not rated		Not rated	
Typic Cryorthents	25	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.86
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
		Fragments 3-10" are 25 to 50%	0.83		
Vitrandic Dystrocryepts	25	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		WEG = 1 or 2	0.00		
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.60		
		Fragments 3-10" < 25% or NULL data	1.00		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
271:					
Rock outcrop	60	Not rated		Not rated	
Lithic Xerorthents	15	Poor source		Poor source	
		Sand fractions > 85%	0.00	Depth to bedrock < 40"	0.00
		WEG = 1 or 2	0.00	Slopes 15 to 25%	0.32
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
Waterwheel	15	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.76		
273:					
Nevadafalls	55	Poor source		Good source	
		AWC < 3" to 60" depth	0.00		
		Sand fractions 75 to 85%	0.12		
		pH is between 4 and 6.5 above 40"	0.60		
		Fragments >10" are 5-15%	0.99		
Waterwheel	30	Poor source		Fair source	
		AWC < 3" to 60" depth	0.00	Slopes 15 to 25%	0.18
		OM < .5%	0.00		
		Fragments >10" are 5-15%	0.02		
		Sand fractions 75 to 85%	0.22		
		pH is between 4 and 6.5 above 40"	0.60		
		Fragments 3-10" < 25% or NULL data	1.00		
274:					
Rock outcrop, domes	85	Not rated		Not rated	
275:					
Oxyaquic Dystroxerepts	25	Poor source		Fair source	
		AWC < 3" to 60" depth	0.00	Saturation from 1 to 3'	0.44
		pH is between 4 and 6.5 above 40"	0.52		
		Fragments >10" are 5-15%	0.91		
Dystric Xerorthents	25	Poor source		Good source	
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.76		
		Fragments 3-10" are 25 to 50%	0.97		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
275:					
Vitrandic Xerorthents	25	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.28		
		Sand fractions 75 to 85%	0.89		
		K-factor .10 -.35	0.90		
		AWC 3 - 6" to 60" depth	0.96		
		Fragments >10" are 5-15%	0.96		
Rubble land	15	Not rated		Not rated	
276:					
Happyisles	35	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.84		
		AWC 3 - 6" to 60" depth	0.94		
Typic Dystroxerepts	35	Poor source		Good source	
		Fragments >10" are > 15%	0.00		
		AWC 3 - 6" to 60" depth	0.21		
277:					
Tuolumne	45	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.48		
		Fragments 3-10" are 25 to 50%	0.90		
Humic Dystroxerepts	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.87
		OM < .5%	0.00		
		Sand fractions 75 to 85%	0.34		
		pH is between 4 and 6.5 above 40"	0.60		
		Fragments 3-10" are 25 to 50%	0.70		
278:					
Rock outcrop	25	Not rated		Not rated	
Tuolumne	25	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		WEG = 1 or 2	0.00		
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		OM is .5 to 1%	0.58		
		pH is between 4 and 6.5 above 40"	0.72		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
278:					
Humic Dystroxerepts	20	Poor source		Poor source	
		WEG = 1 or 2	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.83
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		Sand fractions 75 to 85%	0.56		
		pH is between 4 and 6.5 above 40"	0.60		
		Fragments 3-10" are 25 to 50%	0.67		
Rubble land	15	Not rated		Not rated	
279:					
Canisrocks	40	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
Xeric Dystrocryepts	15	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.44		
280:					
Typic Dystroxerepts	35	Fair source		Poor source	
		pH is between 4 and 6.5 above 40"	0.60	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.98		
Humic Dystroxerepts	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Fragments >10" are 5-15%	0.28		
		pH is between 4 and 6.5 above 40"	0.60		
Rock outcrop	25	Not rated		Not rated	
282:					
Clarkslodge	50	Fair source		Fair source	
		pH is between 4 and 6.5 above 40"	0.60	LEP 3 to 9	0.98
Craneflat	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.72		
		Sand fractions 75 to 85%	0.78		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
282:					
Nevadafalls	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Sand fractions 75 to 85%	0.12		
		pH is between 4 and 6.5 above 40"	0.60		
		Fragments >10" are 5-15%	0.99		
283:					
Waterwheel	35	Poor source		Poor source	
		WEG = 1 or 2	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	0.29
		Fragments >10" are 5-15%	0.10		
		Fragments 3-10" are 25 to 50%	0.20		
		pH is between 4 and 6.5 above 40"	0.60		
		Sand fractions 75 to 85%	0.65		
Nevadafalls	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		Sand fractions 75 to 85%	0.34		
		pH is between 4 and 6.5 above 40"	0.60		
		AWC 3 - 6" to 60" depth	0.65		
Rock outcrop	21	Not rated		Not rated	
285:					
Waterwheel	30	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.36		
		Fragments 3-10" < 25% or NULL data	0.99		
		Sand fractions < 75% or is NULL	1.00		
Humic Dystroxerepts	16	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.23		
		pH is between 4 and 6.5 above 40"	0.40		
286:					
Nevadafalls	26	Poor source		Fair source	
		WEG = 1 or 2	0.00	Slopes 15 to 25%	0.50
		AWC 3 - 6" to 60" depth	0.36		
		pH is between 4 and 6.5 above 40"	0.60		
Typic Dystroxerepts	25	Fair source		Good source	
		AWC 3 - 6" to 60" depth	0.13		
		pH is between 4 and 6.5 above 40"	0.60		
		Sand fractions 75 to 85%	0.65		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
286:					
Ultic Palexeralfs	20	Fair source		Fair source	
		pH is between 4 and 6.5 above 40"	0.60	LEP 3 to 9	0.46
Rock outcrop	15	Not rated		Not rated	
287:					
Badgerpass	55	Fair source		Good source	
		AWC 3 - 6" to 60" depth	0.11		
		Sand fractions 75 to 85%	0.34		
		pH is between 4 and 6.5 above 40"	0.60		
Waterwheel	40	Poor source		Good source	
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		Sand fractions 75 to 85%	0.78		
		pH is between 4 and 6.5 above 40"	0.84		
288:					
Rock outcrop	35	Not rated		Not rated	
Craneflat	20	Poor source		Good source	
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.72		
		Sand fractions 75 to 85%	0.78		
Waterwheel	20	Poor source		Fair source	
		AWC < 3" to 60" depth	0.00	Slopes 15 to 25%	0.50
		Fragments >10" are > 15%	0.00		
		Sand fractions 75 to 85%	0.78		
		pH is between 4 and 6.5 above 40"	0.84		
289:					
Waterwheel	50	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.40	Fragments >3" are 25 to 50%	0.94
		Sand fractions 75 to 85%	0.65		
		Fragments >10" are 5-15%	0.73		
		Fragments 3-10" are 25 to 50%	0.94		
Craneflat	30	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" < 25% or NULL data	1.00
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
		Fragments 3-10" are 25 to 50%	0.99		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
290:					
Humic Dystroxerepts	40	Poor source		Poor source	
		AWC 3 - 6" to 60" depth	0.00	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.40		
Tuolumne	30	Poor source		Poor source	
		WEG = 1 or 2	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	0.07
		Fragments 3-10" are 25 to 50%	0.12		
		Sand fractions 75 to 85%	0.18		
		pH is between 4 and 6.5 above 40"	0.40		
		Fragments >10" are 5-15%	0.70		
Typic Xerorthents	15	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.52		
Ultic Haploxeralfs	15	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.60		
291:					
Ultic Haploxeralfs	41	Poor source		Fair source	
		OM < .5%	0.00	Slopes 15 to 25%	0.82
		pH is between 4 and 6.5 above 40"	0.60		
		AWC 3 - 6" to 60" depth	0.98		
Typic Dystroxerepts	31	Fair source		Poor source	
		pH is between 4 and 6.5 above 40"	0.60	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.63		
292:					
Humic Dystroxerepts	35	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		Sand fractions 75 to 85%	0.18		
		pH is between 4 and 6.5 above 40"	0.60		
Typic Haploxerults	30	Fair source		Fair source	
		Fragments >10" are 5-15%	0.23	LEP 3 to 9	0.69
		Clay 27 to 40%	0.50		
		OM is .5 to 1%	0.50		
		pH is between 4 and 6.5 above 40"	0.60		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
293:					
Xeric Dystrocryepts	70	Fair source		Good source	
		Sand fractions 75 to 85%	0.15		
		AWC 3 - 6" to 60" depth	0.17		
		pH is between 4 and 6.5 above 40"	0.20		
Vitrandic Dystrocryepts	18	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.61	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.68		
294:					
Waterwheel	65	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		Sand fractions 75 to 85%	0.18		
		pH is between 4 and 6.5 above 40"	0.40		
		OM is .5 to 1%	0.50		
Typic Dystroxerepts	35	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.14		
		pH is between 4 and 6.5 above 40"	0.52		
		Fragments >10" are 5-15%	0.97		
295:					
Craneflat	25	Poor source		Poor source	
		WEG = 1 or 2	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		Fragments >10" are 5-15%	0.00		
		Sand fractions 75 to 85%	0.22		
		pH is between 4 and 6.5 above 40"	0.60		
Typic Dystroxerepts	25	Fair source		Fair source	
		pH is between 4 and 6.5 above 40"	0.60	Slopes 15 to 25%	0.18
		AWC 3 - 6" to 60" depth	0.74		
296:					
Ultic Palexeralfs	20	Fair source		Poor source	
		pH is between 4 and 6.5 above 40"	0.60	AASHTO GIN > 8 (low soil strength)	0.00
				LEP 3 to 9	0.41
Humic Dystroxerepts	15	Fair source		Fair source	
		pH is between 4 and 6.5 above 40"	0.60	Slopes 15 to 25%	0.50

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297:					
Typic Xerorthents	30	Poor source		Fair source	
		Fragments >10" are > 15%	0.00	Slopes 15 to 25%	0.50
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.80		
		OM is .5 to 1%	0.92		
		Sand fractions 75 to 85%	0.92		
Rock outcrop	25	Not rated		Not rated	
Typic Xeropsamments	25	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.60		
298:					
Tuolumne	41	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		Sand fractions 75 to 85%	0.18		
		pH is between 4 and 6.5 above 40"	0.40		
		OM is .5 to 1%	0.50		
Typic Dystroxerepts	31	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.14		
		pH is between 4 and 6.5 above 40"	0.52		
		Fragments >10" are 5-15%	0.97		
299:					
Humic Dystroxerepts	46	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.32		
Ultic Haploxeralfs	35	Fair source		Poor source	
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.60		
		AWC 3 - 6" to 60" depth	0.75		
300:					
Typic Dystroxerepts	35	Poor source		Good source	
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.40		
Ultic Haploxeralfs	25	Poor source		Fair source	
		OM < .5%	0.00	LEP 3 to 9	0.90
		pH is between 4 and 6.5 above 40"	0.80		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
301:					
Vitrandic Haploxerolls	90	Fair source		Fair source	
		pH is between 4 and 6.5 above 40"	0.40	Saturation from 1 to 3'	0.53
302:					
Typic Haploxerults	45	Poor source		Fair source	
		OM < .5%	0.00	LEP 3 to 9	0.85
		pH is between 4 and 6.5 above 40"	0.80		
Ultic Haploxeralfs	41	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.80	LEP 3 to 9	0.90
303:					
Rock outcrop	30	Not rated		Not rated	
Dystric Xeropsamments	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Sand fractions 75 to 85%	0.22		
		pH is between 4 and 6.5 above 40"	0.60		
Humic Dystroxerepts	20	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	1.00
		pH is between 4 and 6.5 above 40"	0.40		
		Sand fractions 75 to 85%	0.65		
Tuolumne	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.32	Fragments >3" are 25 to 50%	0.82
		Fragments 3-10" are 25 to 50%	0.63		
		Sand fractions 75 to 85%	0.68		
		Fragments >10" are 5-15%	0.96		
304:					
Clarkslodge	60	Fair source		Good source	
		AWC 3 - 6" to 60" depth	0.70		
		pH is between 4 and 6.5 above 40"	0.88		
Rock outcrop	15	Not rated		Not rated	
305:					
Rock outcrop	50	Not rated		Not rated	

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
305:					
Waterwheel	18	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.18
		WEG = 1 or 2	0.00		
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.60		
Dystric Xeropsamments	15	Poor source		Good source	
		Sand fractions > 85%	0.00		
		AWC 3 - 6" to 60" depth	0.33		
		pH is between 4 and 6.5 above 40"	0.40		
306:					
Typic Cryopsamments	50	Poor source		Good source	
		WEG = 1 or 2	0.00		
		AWC < 3" to 60" depth	0.00		
		pH is between 4 and 6.5 above 40"	0.32		
		Sand fractions 75 to 85%	0.44		
Humic Dystrocryepts	30	Poor source		Fair source	
		OM < .5%	0.00	Slopes 15 to 25%	0.50
		pH is between 4 and 6.5 above 40"	0.40		
		AWC 3 - 6" to 60" depth	1.00		
307:					
Rock outcrop	40	Not rated		Not rated	
Dystric Xeropsamments	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Sand fractions 75 to 85%	0.22		
		pH is between 4 and 6.5 above 40"	0.60		
Dystric Xerorthents	20	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.18
		WEG = 1 or 2	0.00		
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.60		
309:					
Rock outcrop	50	Not rated		Not rated	
Waterwheel	25	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.11	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.60		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
309:					
Typic Dystroxerepts	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Fragments >10" are 5-15%	0.02		
		pH is between 4 and 6.5 above 40"	0.60		
310:					
Rock outcrop	55	Not rated		Not rated	
Humic Dystroxerepts	25	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	0.81
		pH is between 4 and 6.5 above 40"	0.60		
		Fragments 3-10" are 25 to 50%	0.75		
		Sand fractions 75 to 85%	0.76		
Humic Lithic Haploxerepts	20	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Depth to bedrock < 40"	0.00
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.84	Saturation from 1 to 3'	0.01
311:					
Rock outcrop	45	Not rated		Not rated	
Humic Dystroxerepts	35	Poor source		Poor source	
		WEG = 1 or 2	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	0.98
		Fragments >10" are 5-15%	0.45		
		Sand fractions 75 to 85%	0.46		
		pH is between 4 and 6.5 above 40"	0.60		
		Fragments 3-10" are 25 to 50%	0.97		
Humic Lithic Haploxerepts	19	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Depth to bedrock < 40"	0.00
		AWC < 3" to 60" depth	0.00	Saturation from 1 to 3'	0.01
		pH is between 4 and 6.5 above 40"	0.84	Slopes 15 to 25%	0.92
313:					
Nevadafalls	40	Poor source		Good source	
		AWC < 3" to 60" depth	0.00		
		Sand fractions 75 to 85%	0.12		
		pH is between 4 and 6.5 above 40"	0.60		
		Fragments >10" are 5-15%	0.99		
Oxyaquic Dystrudepts	40	Fair source		Fair source	
		pH is between 4 and 6.5 above 40"	0.60	Saturation from 1 to 3'	0.44
		AWC 3 - 6" to 60" depth	0.97		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
314:					
Badgerpass	45	Poor source		Poor source	
		Sand fractions > 85%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.32		
		pH is between 4 and 6.5 above 40"	0.60		
Dystric Xeropsamments	35	Fair source		Good source	
		AWC 3 - 6" to 60" depth	0.56		
		pH is between 4 and 6.5 above 40"	0.60		
		Sand fractions 75 to 85%	0.76		
Rock outcrop	15	Not rated		Not rated	
315:					
Nevadafalls	60	Poor source		Fair source	
		Fragments >10" are > 15%	0.00	Slopes 15 to 25%	0.98
		AWC 3 - 6" to 60" depth	0.03		
		pH is between 4 and 6.5 above 40"	0.92		
Dystric Xeropsamments	40	Poor source		Fair source	
		OM < .5%	0.00	Slopes 15 to 25%	0.18
		AWC 3 - 6" to 60" depth	0.09		
		Sand fractions 75 to 85%	0.34		
		pH is between 4 and 6.5 above 40"	0.60		
316:					
Dystric Xerorthents	40	Poor source		Poor source	
		WEG = 1 or 2	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	0.73
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.60		
		Sand fractions 75 to 85%	0.78		
Rock outcrop	40	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
318:					
Typic Dystroxerepts	40	Fair source		Good source	
		AWC 3 - 6" to 60" depth	0.22		
		pH is between 4 and 6.5 above 40"	0.56		
Humic Dystroxerepts	36	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.56		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
319:					
Humic Dystroxerepts	30	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		Sand fractions 75 to 85%	0.12		
		pH is between 4 and 6.5 above 40"	0.44		
Typic Haploxerults	30	Fair source		Poor source	
		pH is between 4 and 6.5 above 40"	0.20	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.92		
Inceptic Haploxeralfs	25	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Fragments >3" are 25 to 50%	0.72
		pH is between 4 and 6.5 above 40"	0.40		
		Fragments 3-10" are 25 to 50%	0.54		
320:					
Half Dome	40	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.01	Slopes > 25%	0.00
Humic Dystroxerepts	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Fragments >10" are 5-15%	0.01		
Rock outcrop	20	Not rated		Not rated	
321:					
Dystric Xeropsamments	50	Poor source		Good source	
		OM < .5%	0.00		
		Fragments >10" are > 15%	0.00		
		AWC 3 - 6" to 60" depth	0.17		
		Sand fractions 75 to 85%	0.61		
		pH is between 4 and 6.5 above 40"	0.80		
Dystric Xerorthents	40	Poor source		Fair source	
		Sand fractions > 85%	0.00	Slopes 15 to 25%	0.82
		WEG = 1 or 2	0.00		
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.60		
322:					
Typic Xerorthents	90	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.76		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
323:					
Ultic Haploxeralfs	55	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.56	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.84	LEP 3 to 9	0.67
Humic Dystroxerepts	45	Fair source		Good source	
		AWC 3 - 6" to 60" depth	0.93		
324:					
Humic Haploxerepts	40	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.03	Slopes > 25%	0.00
		pH is between 4 and 6.5 above 40"	0.80	LEP 3 to 9	0.67
		Fragments >10" are 5-15%	0.89		
Rock outcrop	35	Not rated		Not rated	
Ultic Haploxeralfs	25	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		Fragments 3-10" are 25 to 50%	0.19	Fragments >3" are 25 to 50%	0.37
		AWC 3 - 6" to 60" depth	0.86	LEP 3 to 9	0.77
		pH is between 4 and 6.5 above 40"	0.92		
325:					
Urban land	80	Not rated		Not rated	
328:					
Clarkslodge	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		Fragments 3-10" are 25 to 50%	0.46	Fragments >3" are 25 to 50%	0.42
		pH is between 4 and 6.5 above 40"	0.60	LEP 3 to 9	0.83
		AWC 3 - 6" to 60" depth	0.97		
Ultic Palexeralfs	15	Fair source		Fair source	
		OM is .5 to 1%	0.32	LEP 3 to 9	0.83
		pH is between 4 and 6.5 above 40"	0.48		
401:					
Sentinel	90	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.76		
412:					
Water	85	Not rated		Not rated	
Riverwash	15	Not rated		Not rated	

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
501:					
Happyisles, sandy loam	65	Fair source		Good source	
		AWC 3 - 6" to 60" depth	0.75		
		pH is between 4 and 6.5 above 40"	0.84		
Happyisles, loamy fine sand, overwash	20	Poor source		Good source	
		WEG = 1 or 2	0.00		
		pH is between 4 and 6.5 above 40"	0.84		
		AWC 3 - 6" to 60" depth	0.98		
502:					
Happyisles	88	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.84		
		AWC 3 - 6" to 60" depth	0.98		
504:					
Mollic Xerofluvents	85	Poor source		Good source	
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.52		
510t:					
Rubble land	40	Not rated		Not rated	
Lithnip	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes 15 to 25%	0.68
Rock outcrop	15	Not rated		Not rated	
551:					
Happyisles	50	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.84		
		AWC 3 - 6" to 60" depth	0.98		
Half Dome	45	Fair source		Fair source	
		Fragments >10" are 5-15%	0.16	Fragments >3" are 25 to 50%	0.69
		AWC 3 - 6" to 60" depth	0.21		
		Fragments 3-10" are 25 to 50%	0.66		
552:					
Mollic Xerofluvents	85	Poor source		Good source	
		OM < .5%	0.00		
		pH is between 4 and 6.5 above 40"	0.52		
590:					
Terric Haplosaprists	85	Fair source		Good source	
		pH is between 4 and 6.5 above 40"	0.52		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
601:					
Half Dome, very bouldery----------	50	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		OM < .5%	0.00		
		AWC 3 - 6" to 60" depth	0.15		
Half Dome, cobbly----------	45	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.95
		AWC 3 - 6" to 60" depth	0.13		
		Fragments 3-10" are 25 to 50%	0.99		
602:					
Half Dome----------	85	Fair source		Fair source	
		Fragments >10" are 5-15%	0.16	Fragments >3" are 25 to 50%	0.69
		AWC 3 - 6" to 60" depth	0.21	Slopes 15 to 25%	0.82
		Fragments 3-10" are 25 to 50%	0.66		
610:					
Rubble land----------	65	Not rated		Not rated	
Half Dome----------	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.98
		AWC 3 - 6" to 60" depth	0.13		
		Fragments 3-10" < 25% or NULL data	1.00		
620:					
Half Dome, extremely stony sandy loam, warm----------	50	Fair source		Poor source	
		Fragments 3-10" are 25 to 50%	0.14	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.21	Fragments >3" are 25 to 50%	0.03
		Fragments >10" are 5-15%	0.94		
Half Dome, very cobbly sandy loam, warm----------	43	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.99
		AWC 3 - 6" to 60" depth	0.13		
		Fragments 3-10" < 25% or NULL data	1.00		
630:					
Rubble land----------	65	Not rated		Not rated	
Half Dome----------	30	Poor source		Poor source	
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.21		

Table 8.—Construction Materials, Part III—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
701:					
Vitrandic Haploxerolls	90	Poor source		Fair source	
		OM < .5%	0.00	Slopes 15 to 25%	0.92
		pH is between 4 and 6.5 above 40"	0.72		
		Fragments >10" are < 5% or NULL	0.99		
702:					
Vitrandic Dystroxerepts	90	Poor source		Fair source	
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.65
		AWC 3 - 6" to 60" depth	0.66	Slopes 15 to 25%	0.92
		pH is between 4 and 6.5 above 40"	0.72		
		Fragments 3-10" are 25 to 50%	0.97		
900:					
Rock outcrop	95	Not rated		Not rated	
DAM:					
Dam	100	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

The interpretation for reclamation material evaluates the following soil properties at variable depths in the soil: the amount of sand, clay, fragments, organic matter content (OM), the wind erodibility group (WEG), available water (AWC), soil pH, salinity (EC), amount of sodium (SAR), carbonates, and susceptibility of the soil to erosion by water (K-factor).

The interpretation for roadfill source evaluates the following soil properties at variable depths in the soil: shrink-swell potential expressed as linear extensibility percent (LEP), depth to rock or cemented pans, wetness, slope, soil strength expressed as an AASHTO Group Index Number (AASHTO GIN), and fragment content.

Table 9.—Sanitary Facilities, Part I

(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 potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. Brief summaries of rating criteria and abbreviations are listed on the last page of this report)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
101:					
Oxyaquic Xerofluvents	35	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
Riverwash	35	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Saturation at < 3.5' depth	1.00
Fluvaquents	15	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00		
101t:					
Lithnip	40	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00		
Rock outcrop	25	Not rated		Not rated	
Fishsnooze	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
102:					
Oxyaquic Xerofluvents	45	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Slopes 2 to 8%	0.17
Riverwash	40	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Saturation at < 3.5' depth	1.00
				Slopes 2 to 8%	0.17

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
102t:					
Lithnip	40	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Rock outcrop	25	Not rated		Not rated	
Fishsnooze	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
104:					
Aquandic Humaquepts	85	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
111t:					
Whittell	45	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00		
Jobsis	25	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/hr (seepage)	1.00
Rock outcrop	15	Not rated		Not rated	
151:					
Elcapitan	80	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Saturation < 4' depth	0.99	Saturation from 3.5 to 5' depth	0.48
152:					
Vitrandic Haploxerolls	80	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
201:					
Leidig	80	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Saturation < 4' depth	0.99	Saturation from 3.5 to 5' depth	0.48
210:					
Rubble land	30	Not rated		Not rated	
Typic Cryorthents	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") >50%	0.99	Fragments (>3") 20-35%	0.89
Rock outcrop	20	Not rated		Not rated	
Xeric Dystrocryepts	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
				Fragments (>3") 20-35%	0.04
211:					
Xeric Dystrocryepts	35	Limitations		Limitations	
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.70	Fragments (>3") 20-35%	0.99
Canisrocks	30	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3”) > 35%	1.00
		Slopes > 15%	1.00		
Oxyaquic Dystrocryepts	15	Limitations		Limitations	
		Saturation < 4' depth	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Saturation from 3.5 to 5' depth	0.48
213:					
Canisrocks	50	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3”) > 35%	1.00
		Seepage in bottom layer	1.00		
Glacierpoint	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Fragments (>3”) > 35%	1.00
		Slopes > 15%	1.00	Permeability > 2”/hr (seepage)	1.00
		Seepage in bottom layer	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
213:					
Vitrandic Dystrocryepts	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
214:					
Marmotland	25	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Saturation from 4 to 6' depth	0.08	Slopes > 8%	1.00
Oxyaquic Dystrocryepts	15	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00		
Xeric Dystrocryepts	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.33
		Seepage in bottom layer	1.00		
215:					
Typic Cryorthents	40	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
Rock outcrop	20	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
219:					
Rock outcrop	40	Not rated		Not rated	
Rubble land	25	Not rated		Not rated	
Canisrocks	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
221:					
Typic Cryorthents	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.99	Fragments (>3") 20-35%	0.85
Xeric Dystrocryepts	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
Oxyaquic Dystrocryepts	15	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
222:					
Canisrocks	30	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Fragments (>3") > 35%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
Rubble land	30	Not rated		Not rated	
Rock outcrop	20	Not rated		Not rated	
Crazymule	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability > 2"/hr (seepage)	1.00
				Fragments (>3") 20-35%	0.48
		Fragments (>3") 25 to 50%	0.15		
223:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	
Canisrocks	20	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Slopes > 15%	1.00		
224:					
Rock outcrop	40	Not rated		Not rated	

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
224:					
Crazymule	20	Limitations		Limitations	
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Slopes > 8%	1.00
				Fragments (>3") 20-35%	0.76
		Fragments (>3") 25 to 50%	0.20		
Vitrandic Cryorthents	15	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00		
225:					
Canisrocks	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00		
Rock outcrop	15	Not rated		Not rated	
Rubble land	15	Not rated		Not rated	
Vitrandic Dystrocryepts	15	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
227:					
Canisrocks	45	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") 20-35%	0.02
		Seepage in bottom layer	1.00		
Crazymule	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.47	Fragments (>3") > 35%	1.00
228:					
Xeric Dystrocryepts	35	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.50
		Seepage in bottom layer	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
228:					
Vitrandic Eutrocryepts	25	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Slopes 2 to 8%	0.67
229:					
Marmotland	40	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Saturation from 4 to 6' depth	0.08	Slopes 2 to 8%	0.50
Oxyaquic Dystrocryepts	40	Limitations		Limitations	
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes 2 to 8%	0.33
		Seepage in bottom layer	1.00		
231:					
Canisrocks	40	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3”) 20-35%	0.27
		Slopes > 15%	1.00		
Typic Cryaquents	21	Limitations		Limitations	
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Fragments (>3”) > 35%	1.00
		Seepage in bottom layer	1.00		
232:					
Canisrocks	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3”) > 35%	0.99
		Slopes > 15%	1.00		
Glacierpoint	21	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.50
		Seepage in bottom layer	1.00		
		Fragments (>3") 25 to 50%	0.19		
234:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
235:					
Canisrocks	35	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
Rock outcrop	30	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
237:					
Canisrocks	25	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
Glacierpoint	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00		
		Slopes 8 to 15%	0.63		
Vitrandic Cryorthents	15	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes 8 to 15%	0.01	Slopes > 8%	1.00
238:					
Oxyaquic Cryorthents	25	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00		
Canisrocks	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3”) > 35%	1.00
		Fragments (>3") >50%	1.00		
239:					
Crazymule	45	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes 8 to 15%	0.16	Slopes > 8%	1.00

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
239:					
Canisrocks	34	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00		
241:					
Canisrocks	75	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") 20-25%	0.01
		Slopes > 15%	1.00		
242:					
Rock outcrop	30	Not rated		Not rated	
Canisrocks	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00		
Xeric Dystrocryepts	16	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Fragments (>3") 20-35%	0.01
		Slopes > 15%	1.00		
244:					
Typic Cryorthents	45	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
Rubble land	25	Not rated		Not rated	
Rock outcrop	16	Not rated		Not rated	
245:					
Rock outcrop	30	Not rated		Not rated	
Canisrocks	22	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
245:					
Xeric Dystrocryepts	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability .6-2"/hr (some seepage)	0.53
246:					
Rock outcrop, domes	90	Not rated		Not rated	
247:					
Canisrocks	20	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
		Slopes > 15%	1.00		
Xeric Dystrocryepts	20	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.50
		Seepage in bottom layer	1.00		
248:					
Canisrocks	35	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3”) > 35%	1.00
		Seepage in bottom layer	1.00		
Rock outcrop	30	Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3”) > 35%	1.00
		Seepage in bottom layer	1.00		
249:					
Rock outcrop	45	Not rated		Not rated	
Canisrocks	30	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
250:					
Canisrocks	47	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00		
Xeric Dystrocryepts	35	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.71	Fragments (>3") > 35%	1.00
251:					
Glacierpoint	30	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
Typic Cryorthents	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.11	Fragments (>3") 20-35%	0.98
252:					
Rock outcrop	20	Not rated		Not rated	
Canisrocks	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00		
Xeric Dystrocryepts	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00		
		Slopes 8 to 15%	0.63		
253:					
Canisrocks	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	0.99
		Seepage in bottom layer	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
253:					
Glacierpoint	18	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
Humic Dystrocryepts	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
256:					
Craneflat	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") 20-35%	0.28
		Seepage in bottom layer	1.00		
Rock outcrop	25	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
Waterwheel	20	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
257:					
Badgerpass	55	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.17
		Seepage in bottom layer	1.00		
Oxyaquic Dystroxerepts	35	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Saturation at < 3.5' depth	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
258:					
Typic Dystroxerepts	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
258:					
Badgerpass	20	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
Dystric Xerorthents	20	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
260:					
Rock outcrop	45	Not rated		Not rated	
Craneflat	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") 20-25%	0.16
		Seepage in bottom layer	1.00		
Dystric Xerorthents	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
261:					
Dystric Xeropsamments	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.83
		Seepage in bottom layer	1.00		
Typic Dystroxerepts	25	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
Badgerpass	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00		
		Slopes > 15%	1.00		
Rock outcrop	15	Not rated		Not rated	
262:					
Humic Dystroxerepts	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00	Permeability > 2"/hr (seepage)	1.00

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
262:					
Dystric Xerorthents	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
Rock outcrop	20	Not rated		Not rated	
264:					
Crazymule	35	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes 8 to 15%	0.63	Fragments (>3") > 35%	1.00
		Fragments (>3") 25 to 50%	0.22	Slopes > 8%	1.00
Canisrocks	28	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3”) > 35%	0.99
		Fragments (>3") >50%	1.00		
267:					
Rock outcrop	40	Not rated		Not rated	
Typic Cryorthents	30	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") > 35%	1.00
				Slopes 2 to 8%	0.33
Xeric Dystrocryepts	15	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes 8 to 15%	0.63	Slopes > 8%	1.00
268:					
Rock outcrop	40	Not rated		Not rated	
Canisrocks	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3”) > 35%	1.00
		Seepage in bottom layer	1.00		
Glacierpoint	20	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3”) > 35%	1.00
		Seepage in bottom layer	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
269:					
Canisrocks	20	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
Rock outcrop	20	Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Slopes > 15%	1.00		
270:					
Rock outcrop	35	Not rated		Not rated	
Typic Cryorthents	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
Vitrandic Dystrocryepts	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
271:					
Rock outcrop	60	Not rated		Not rated	
Lithic Xerorthents	15	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Waterwheel	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	.00
		Fragments (>3") >50%	1.00		
273:					
Nevadafalls	55	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.33
		Seepage in bottom layer	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
273:					
Waterwheel	30	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") 20-35%	0.91
		Slopes > 15%	1.00		
274:					
Rock outcrop, domes	85	Not rated		Not rated	
275:					
Oxyaquic Dystroxerepts	25	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Slopes 2 to 8%	0.50
Dystric Xerorthents	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Vitrandic Xerorthents	25	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
				Fragments (>3") 20-35%	0.01
Rubble land	15	Not rated		Not rated	
276:					
Happyisles	35	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Rare flooding	0.40	Flooding = rare	0.50
				Slopes 2 to 8%	0.17
Typic Dystroxerepts	35	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes 8 to 15%	0.16	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.01		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
277:					
Tuolumne	45	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
Humic Dystroxerepts	35	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
278:					
Rock outcrop	25	Not rated		Not rated	
Tuolumne	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.21	Fragments (>3") 20-35%	0.76
Humic Dystroxerepts	20	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
Rubble land	15	Not rated		Not rated	
279:					
Canisrocks	40	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
Xeric Dystrocryepts	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
280:					
Typic Dystroxerepts	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
280:					
Humic Dystroxerepts	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.02		
Rock outcrop	25	Not rated		Not rated	
282:					
Clarkslodge	50	Limitations		Limitations	
		Slopes 8 to 15%	0.63	Permeability > 2"/hr (seepage)	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Slopes > 8%	1.00
				Fragments (>3") 20-35%	0.67
		Fragments (>3") 25 to 50%	0.11		
Craneflat	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
Nevadafalls	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
283:					
Waterwheel	35	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Fragments (>3") > 35%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
Nevadafalls	30	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
Rock outcrop	21	Not rated		Not rated	
285:					
Waterwheel	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") 20-35%	0.92

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
285:					
Humic Dystroxerepts	16	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
286:					
Nevadafalls	26	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
Typic Dystroxerepts	25	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.50
Ultic Palexeralfs	20	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Slopes 8 to 15%	0.63		
Rock outcrop	15	Not rated		Not rated	
287:					
Badgerpass	55	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.83
		Seepage in bottom layer	1.00		
Waterwheel	40	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
		Slopes 8 to 15%	0.63		
288:					
Rock outcrop	35	Not rated		Not rated	
Craneflat	20	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Waterwheel	20	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
		Slopes > 15%	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
289:					
Waterwheel	50	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") 20-25%	0.51
		Seepage in bottom layer	1.00		
Craneflat	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") > 35%	1.00
290:					
Humic Dystroxerepts	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
Tuolumne	30	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Fragments (>3") > 35%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
Typic Xerorthents	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.89	Fragments (>3") 20-35%	0.95
Ultic Haploxeralfs	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability .6-2"/hr (some seepage)	0.53
				Fragments (>3") 20-35%	0.09
291:					
Ultic Haploxeralfs	41	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
Typic Dystroxerepts	31	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
292:					
Humic Dystroxerepts	35	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00		
		Slopes > 15%	1.00		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
292:					
Typic Haploxerults	30	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Permeability .6-2"/hr (some seepage)	0.53
293:					
Xeric Dystrocryepts	70	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Vitrandic Dystrocryepts	18	Limitations		Limitations	
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
294:					
Waterwheel	65	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
Typic Dystroxerepts	35	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
295:					
Craneflat	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Fragments (>3") 20-35%	0.01
Typic Dystroxerepts	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
296:					
Ultic Palexeralfs	20	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Humic Dystroxerepts	15	Limitations		Limitations	
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
297:					
Typic Xerorthents	30	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
Rock outcrop	25	Not rated		Not rated	
Typic Xeropsamments	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
298:					
Tuolumne	41	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Fragments (>3") > 35%	1.00
		Slopes > 15%	1.00		
Typic Dystroxerepts	31	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
299:					
Humic Dystroxerepts	46	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00		
Ultic Haploxeralfs	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
300:					
Typic Dystroxerepts	35	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
Ultic Haploxeralfs	25	Limitations		Limitations	
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Slopes > 8%	1.00

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
301:					
Vitrandic Haploxerolls	90	Limitations		Limitations	
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Saturation at < 3.5' depth	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Flooding = rare	0.50
302:					
Typic Haploxerults	45	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability .6-2"/hr (some seepage)	0.53
Ultic Haploxeralfs	41	Limitations		Limitations	
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Slopes > 8%	1.00
303:					
Rock outcrop	30	Not rated		Not rated	
Dystric Xeropsamments	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability .6-2"/hr (some seepage)	0.53
Humic Dystroxerepts	20	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability .6-2"/hr (some seepage)	0.53
Tuolumne	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.72	Fragments (>3") > 35%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability .6-2"/hr (some seepage)	0.53
304:					
Clarkslodge	60	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability .6-2"/hr (some seepage)	0.53
Rock outcrop	15	Not rated		Not rated	

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
305:					
Rock outcrop	50	Not rated		Not rated	
Waterwheel	18	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
		Slopes > 15%	1.00		
Dystric Xeropsamments	15	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.83
		Seepage in bottom layer	1.00		
306:					
Typic Cryopsamments	50	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00		
		Slopes 8 to 15%	0.16		
Humic Dystrocryepts	30	Limitations		Limitations	
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Slopes > 8%	1.00
307:					
Rock outcrop	40	Not rated		Not rated	
Dystric Xeropsamments	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability .6-2"/hr (some seepage)	0.53
Dystric Xerorthents	20	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
309:					
Rock outcrop	50	Not rated		Not rated	
Waterwheel	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
309:					
Typic Dystroxerepts	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.25	Fragments (>3") 20-35%	0.64
310:					
Rock outcrop	55	Not rated		Not rated	
Humic Dystroxerepts	25	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Fragments (>3") > 35%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00		
Humic Lithic Haploxerepts	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Saturation < 4' depth	1.00	Slopes > 8%	1.00
311:					
Rock outcrop	45	Not rated		Not rated	
Humic Dystroxerepts	35	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Fragments (>3") > 35%	1.00
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Humic Lithic Haploxerepts	19	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
313:					
Nevadafalls	40	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.50
		Seepage in bottom layer	1.00		
Oxyaquic Dystrudepts	40	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	Slopes 2 to 8%	0.50

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
314:					
Badgerpass	45	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00		
		Slopes > 15%	1.00		
Dystric Xeropsamments	35	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00		
		Slopes > 15%	1.00		
Rock outcrop	15	Not rated		Not rated	
315:					
Nevadafalls	60	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.63	Fragments (>3") > 35%	0.99
Dystric Xeropsamments	40	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00		
		Seepage in bottom layer	1.00		
316:					
Dystric Xerorthents	40	Limitations		Limitations	
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%	1.00
				Permeability > 2”/hr (seepage)	1.00
		Slopes > 15%	1.00	Fragments (>3”) > 35%	1.00
		Fragments (>3") 25 to 50%	0.81		
Rock outcrop	40	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
318:					
Typic Dystroxerepts	40	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.50
Humic Dystroxerepts	36	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.33

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
319:					
Humic Dystroxerepts	30	Limitations		Limitations	
		Fragments (>3") >50%	1.00	Slopes > 8%	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Fragments (>3") > 35%	1.00
				Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00		
Typic Haploxerults	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
Inceptic Haploxeralfs	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") >50%	0.99	Fragments (>3") > 35%	1.00
320:					
Half Dome	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
Humic Dystroxerepts	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.79		
Rock outcrop	20	Not rated		Not rated	
321:					
Dystric Xeropsamments	50	Limitations		Limitations	
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Flooding = rare	0.50
		Seepage in bottom layer	1.00		
		Rare flooding	0.40		
Dystric Xerorthents	40	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 8%	1.00
		Seepage in bottom layer	1.00		
322:					
Typic Xerorthents	90	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.45		

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
323:					
Ultic Haploxeralfs	55	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability > 2"/hr (seepage)	1.00
Humic Dystroxerepts	45	Limitations		Limitations	
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.16	Permeability > 2"/hr (seepage)	1.00
324:					
Humic Haploxerepts	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Fragments (>3") 20-35%	0.22
Rock outcrop	35	Not rated		Not rated	
Ultic Haploxeralfs	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") 25 to 50%	0.63	Permeability .6-2”/hr (some seepage)	0.53
325:					
Urban land	80	Not rated		Not rated	
328:					
Clarkslodge	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.79	Fragments (>3") 20-35%	0.75
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability .6-2"/hr (some seepage)	0.53
Ultic Palexeralfs	15	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.46	Permeability .6-2"/hr (some seepage)	0.53
401:					
Sentinel	90	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Rare flooding	0.40	Flooding = rare	0.50
412:					
Water	85	Not rated		Not rated	

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
412:					
Riverwash	15	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Saturation at < 3.5' depth	1.00
501:					
Happyisles, sandy loam	65	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Rare flooding	0.40	Flooding = rare	0.50
				Slopes 2 to 8%	0.17
Happyisles, loamy fine sand, overwash	20	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.17
502:					
Happyisles	88	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Saturation < 4' depth	0.99	Flooding = rare	0.50
		Rare flooding	0.40		
504:					
Mollic Xerofluvents	85	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.17
510t:					
Rubble land	40	Not rated		Not rated	
Lithnip	20	Limitations		Limitations	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Rock outcrop	15	Not rated		Not rated	
551:					
Happyisles	50	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Rare flooding	0.40	Slopes 2 to 8%	0.83
				Flooding = rare	0.50
Half Dome	45	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.92	Slopes > 8%	1.00
		Slopes 8 to 15%	0.16	Fragments (>3") > 35%	1.00

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
552:					
Mollic Xerofluvents	85	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes 8 to 15%	0.16	Slopes > 8%	1.00
590:					
Terric Haplosaprists	85	Limitations		Limitations	
		Flooding	1.00	Flooding > occasional	1.00
		Saturation < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage in bottom layer	1.00	High organic matter (PT) in 50-150 cm	1.00
601:					
Half Dome, very bouldery	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.88	Fragments (>3") 20-35%	0.98
Half Dome, cobbly	45	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00	Permeability > 2"/hr (seepage)	1.00
602:					
Half Dome	85	Limitations		Limitations	
		Seepage in bottom layer	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.92	Fragments (>3") > 35%	1.00
610:					
Rubble land	65	Not rated		Not rated	
Half Dome	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 25 to 50%	0.97	Fragments (>3") > 35%	1.00
620:					
Half Dome, extremely stony sandy loam, warm	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00	Permeability > 2"/hr (seepage)	1.00
Half Dome, very cobbly sandy loam, warm	43	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") > 35%	1.00

Table 9.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
630:					
Rubble land	65	Not rated		Not rated	
Half Dome	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") > 35%	1.00
701:					
Vitrandic Haploxerolls	90	Limitations		Limitations	
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
702:					
Vitrandic Dystroxerepts	90	Limitations		Limitations	
		Seepage in bottom layer	1.00	Fragments (>3") > 35%	1.00
		Fragments (>3") >50%	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
900:					
Rock outcrop	95	Not rated		Not rated	
DAM:					
Dam	100	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

The interpretation for septic tanks absorption fields evaluates the following soil properties at variable depths in the soil: flooding; ponding; wetness; slope; subsidence of organic soils; depth to hard or soft bedrock; depth to cemented pans; permeability that is too fast, allowing seepage; permeability that is too slow; and an impermeable layer at a shallow depth.

The interpretation for sewage lagoons evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, organic Unified classes for low strength (PT, OL, OH), depth to hard or soft bedrock, depth to cemented pans, fragments greater than 3 inches in size, and permeability that is too fast, allowing seepage.

Table 9.—Sanitary Facilities, Part II

(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 potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. Brief summaries of rating criteria and abbreviations are listed on the last page of this report)

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
101:							
Oxyaquic Xerofluvents---	35	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Permeability > 2.0 in/hr	1.00
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00		
		Seepage in bottom layer	1.00	Frequent flooding	0.80		
Riverwash---	35	Not rated		Not rated		Not rated	
Fluvaquents---	15	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Saturation < 18" depth	1.00
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Sandy textures (cos, s, fs, lcos, or vfs	1.00	Frequent flooding	0.80	Permeability > 2.0 in/hr	1.00
101t:							
Lithnip---	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<75mm) > 50%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00			Slopes > 15%	1.00
Rock outcrop---	25	Not rated		Not rated		Not rated	
Fishsnooze---	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40’ depth	1.00	Fragments (>3”) 25-50%	0.89
102:							
Oxyaquic Xerofluvents---	45	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Permeability > 2.0 in/hr	1.00
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00		
		Seepage in bottom layer	1.00	Frequent flooding	0.80		
Riverwash---	40	Not rated		Not rated		Not rated	

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
102t:							
Lithnip	40	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (<75mm) > 50%	1.00
				Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00			Slopes > 15%	1.00
		Seepage in bottom layer	1.00				
Rock outcrop	25	Not rated		Not rated		Not rated	
Fishsnooze	20	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Slopes > 15%	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") 25-50%	0.89
		Seepage in bottom layer	1.00				
104:							
Aquandic Humaquepts	85	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Saturation < 18" depth	1.00
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Sandy textures (cos, s, fs, lcos, or vfs	1.00	Frequent flooding	0.80	Permeability > 2.0 in/hr	1.00
111t:							
Whittell	45	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
				Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
Jobsis	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
Rock outcrop	15	Not rated		Not rated		Not rated	
151:							
Elcapitan	80	Limitations		Limitations		Suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Permeability > 2.0 in/hr	0.52
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00		
		Seepage in bottom layer	1.00	Occasional flooding	0.60		
152:							
Vitrandic Haploxerolls	80	Limitations		Limitations		Limitations	
		Flooding > occasional	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Saturation < 6' depth	1.00	Occasional flooding	0.60	Permeability > 2.0 in/hr	1.00
		Sandy textures (cos, s, fs, lcos, or vfs	1.00				

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
201:							
Leidig	80	Limitations		Limitations		Suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Permeability > 2.0 in/hr	0.52
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00		
		Seepage in bottom layer	1.00	Occasional flooding	0.60		
210:							
Rubble land	30	Not rated		Not rated		Not rated	
Typic Cryorthents	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") 15-35%	0.88			Permeability > 2.0 in/hr	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
Xeric Dystrocryepts	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
211:							
Xeric Dystrocryepts	35	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") 25-50%	0.70
		Fragments (3-10") 15-35%	0.57			Permeability > 2.0 in/hr	0.52
Canisrocks	30	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Slopes > 15%	1.00
		Slopes > 15%	1.00				
Oxyaquic Dystrocryepts	15	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Saturation from 18 to 40" depth	0.91
		Slopes > 15%	1.00	Slopes > 15%	1.00		
						Permeability > 2.0 in/hr	0.52
213:							
Canisrocks	50	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") > 35%	1.00			Fragments (>3") 25-50%	0.98
Glacierpoint	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") 15-35%	0.89			Fragments (>3") 25-50%	0.68

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
213:							
Vitrandic Dystrocryepts-	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
214:							
Marmotland----------	25	Limitations		Limitations		Suited	
		Flooding > occasional	1.00	Occasional flooding	0.60	Slopes 8 to 15%	0.01
		Saturation < 6' depth	1.00	Slopes 8 to 15%	0.01		
		Seepage in bottom layer	1.00				
Oxyaquic Dystrocryepts--	15	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Texture is s, fs, cos, sg	1.00
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Frequent flooding	0.80	Saturation from 18 to 40" depth	0.91
Xeric Dystrocryepts-----	15	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
		Fragments (3-10") 15-35%	0.24			Fragments (>3") 25-50%	0.01
215:							
Typic Cryorthents-------	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
						Fragments (<75mm) 25-50%	0.54
Rock outcrop----------	20	Not rated		Not rated		Not rated	
Rubble land----------	20	Not rated		Not rated		Not rated	
219:							
Rock outcrop----------	40	Not rated		Not rated		Not rated	
Rubble land----------	25	Not rated		Not rated		Not rated	
Canisrocks----------	15	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00			Fragments (>3") > 50%	1.00

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
221:							
Typic Cryorthents-------	35	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") 15-35%	0.83			Permeability > 2.0 in/hr	0.52
Xeric Dystrocryepts-----	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
Oxyaquic Dystrocryepts--	15	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation from 18 to 40" depth	0.91
		Slopes > 15%	1.00	Seepage in 20-40” depth	1.00		
						Permeability > 2.0 in/hr	0.52
222:							
Canisrocks-------------	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
						Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
Rubble land------------	30	Not rated		Not rated		Not rated	
Rock outcrop-----------	20	Not rated		Not rated		Not rated	
Crazymule--------------	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
				Seepage in 20-40" depth	1.00		
223:							
Rock outcrop-----------	35	Not rated		Not rated		Not rated	
Rubble land------------	35	Not rated		Not rated		Not rated	
Canisrocks-------------	20	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Slopes > 15%	1.00
		Slopes > 15%	1.00				
224:							
Rock outcrop-----------	40	Not rated		Not rated		Not rated	
Crazymule--------------	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
				Slopes > 15%	1.00		

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
224:							
Vitrandic Cryorthents---	15	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bedrock < 40"	1.00
				Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00				
225:							
Canisrocks----------	15	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00		1.00	Fragments (>3") > 50%	1.00
		Slopes > 15%	1.00				
Rock outcrop----------	15	Not rated		Not rated		Not rated	
Rubble land----------	15	Not rated		Not rated		Not rated	
Vitrandic Dystrocryepts-	15	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (3-10") 15-35%	0.50			Fragments (>3") > 50%	1.00
227:							
Canisrocks----------	45	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Crazymule----------	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
						Fragments (>3") 25-50%	0.47
228:							
Xeric Dystrocryepts-----	35	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
		Fragments (3-10") 15-35%	0.33			Fragments (<75mm) 25-50%	0.41
Vitrandic Eutrocryepts--	25	Limitations		Limitations		Suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Saturation from 18 to 40" depth	0.91
		Saturation < 6' depth	1.00	Seepage in 10-40" depth	1.00		
		Seepage in bottom layer	1.00	Occasional flooding	0.60	Permeability > 2.0 in/hr	0.52

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
229:							
Marmotland	40	Limitations		Limitations		Suited	
		Flooding > occasional	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
		Saturation < 6' depth	1.00	Occasional flooding	0.60	Fragments (<75mm) 25-50%	0.21
		Seepage in bottom layer	1.00				
Oxyaquic Dystrocryepts	40	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Saturation from 18 to 40" depth	0.91
						Fragments (<75mm) 25-50%	0.27
231:							
Canisrocks	40	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Slopes > 15%	1.00
		Slopes > 15%	1.00				
Typic Cryaquents	21	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation < 18" depth	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50	Slopes 8 to 15%	0.37	Fragments (>3") > 50%	0.99
232:							
Canisrocks	25	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Fragments (>3") > 50%	1.00
		Slopes > 15%	1.00				
Glacierpoint	21	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") 15-35%	0.84			Texture is lcos, ls, lfs, or vfs	0.50
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Fragments (>3") 25-50%	0.43
234:							
Rock outcrop	35	Not rated		Not rated		Not rated	
Rubble land	35	Not rated		Not rated		Not rated	
235:							
Canisrocks	35	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, vfs	0.50

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
235:							
Rock outcrop	30	Not rated		Not rated		Not rated	
Rubble land	20	Not rated		Not rated		Not rated	
237:							
Canisrocks	25	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
Glacierpoint	15	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Fragments (>3") 25-50%	0.72
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Slopes 8 to 15%	0.63
Vitrandic Cryorthents	15	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50	Slopes 8 to 15%	0.01	Testure is lcos, ls, lfs, or vfs	0.50
					0.01		
238:							
Oxyaquic Cryorthents	25	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Texture is s, fs, cos, sg	1.00
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Frequent flooding	0.80	Saturation from 18 to 40" depth	0.91
Canisrocks	15	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00	Slopes 8 to 15%	0.63	Permeability > 2.0 in/hr	1.00
		Slopes 8 to 15%	0.63			Fragments (>3") > 50%	1.00
239:							
Crazymule	45	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	0.52
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
Canisrocks	34	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00	Slopes 8 to 15%	0.63	Permeability > 2.0 in/hr	1.00
		Slopes 8 to 15%	0.63			Fragments (>3") > 50%	1.00

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
241:							
Canisrocks	75	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Slopes > 15%	1.00
		Slopes > 15%	1.00				
242:							
Rock outcrop	30	Not rated		Not rated		Not rated	
Canisrocks	25	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") 15-35%	0.92			Slopes > 15%	1.00
Xeric Dystrocryepts	16	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
244:							
Typic Cryorthents	45	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
						Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
Rubble land	25	Not rated		Not rated		Not rated	
Rock outcrop	16	Not rated		Not rated		Not rated	
245:							
Rock outcrop	30	Not rated		Not rated		Not rated	
Canisrocks	22	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Fragments (>3") > 50%	1.00
		Slopes > 15%	1.00				
Xeric Dystrocryepts	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
246:							
Rock outcrop, domes	90	Not rated		Not rated		Not rated	

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
247:							
Canisrocks	20	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Xeric Dystrocryepts	20	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
248:							
Canisrocks	35	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	1.00
249:							
Rock outcrop	45	Not rated		Not rated		Not rated	
Canisrocks	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, of vfs	0.50
250:							
Canisrocks	47	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00			Fragments (>3") > 50%	1.00
Xeric Dystrocryepts	35	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") 25-50%	0.61
		Fragments (3-10") 15-35%	0.91			Permeability > 2.0 in/hr	0.52

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
251:							
Glacierpoint	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Texture is lcos, ls, lfs, or vfs	0.50
Typic Cryorthents	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
		Fragments (3-10") 15-35%	0.01			Fragments (>3") 25-50%	0.04
252:							
Rock outcrop	20	Not rated		Not rated		Not rated	
Canisrocks	15	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00		1.00	Fragments (>3″) > 50%	1.00
Xeric Dystrocryepts	15	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
253:							
Canisrocks	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") 15-35%	0.70			Fragments (>3") > 50%	1.00
Glacierpoint	18	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Fragments (>3") > 50%	1.00
Humic Dystrocryepts	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") 15-35%	0.95			Fragments (>3") > 50%	1.00
256:							
Craneflat	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
256:							
Rock outcrop----------	25	Not rated		Not rated		Not rated	
Rubble land----------	20	Not rated		Not rated		Not rated	
Waterwheel----------	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
						Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
257:							
Badgerpass----------	55	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Oxyaquic Dystroxerepts--	35	Limitations		Limitations		Suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Saturation from 18 to 40" depth	0.91
		Saturation < 6' depth	1.00	Frequent flooding	0.80		
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
258:							
Typic Dystroxerepts-----	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
Badgerpass----------	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
						Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
Dystric Xerorthents-----	20	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Occasional flooding	0.60	Texture is lcos, ls, lfs, or vfs	0.50
260:							
Rock outcrop----------	45	Not rated		Not rated		Not rated	
Craneflat----------	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Fragments (>3") > 50%	1.00

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
260:							
Dystric Xerorthents-----	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
261:							
Dystric Xeropsamments---	25	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Typic Dystroxerepts-----	25	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	0.52
		Fragments (3-10") > 35%	0.99			Fragments (>3") 25-50%	0.28
Badgerpass----------	15	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Rock outcrop----------	15	Not rated		Not rated		Not rated	
262:							
Humic Dystroxerepts-----	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") 15-35%	0.83			Permeability > 2.0 in/hr	0.52
Dystric Xerorthents-----	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, vfs	0.50
Rock outcrop----------	20	Not rated		Not rated		Not rated	
264:							
Crazymule----------	35	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Canisrocks----------	28	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") 15-35%	0.85			Slopes > 15%	1.00

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
267:							
Rock outcrop	40	Not rated		Not rated		Not rated	
Typic Cryorthents	30	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") > 35%	1.00			Permeability > 2.0 in/hr	0.52
Xeric Dystrocryepts	15	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
268:							
Rock outcrop	40	Not rated		Not rated		Not rated	
Canisrocks	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	1.00
Glacierpoint	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Texture is lcos, ls, lfs, or vfs	0.50
269:							
Canisrocks	20	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") > 50%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Slopes > 15%	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00			Texture is lcos, ls, lfs, or vfs	0.50
270:							
Rock outcrop	35	Not rated		Not rated		Not rated	
Typic Cryorthents	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") 15-35%	0.96			Fragments (>3") > 50%	1.00

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
270:							
Vitrandic Dystrocryepts-	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") 15-35%	0.61			Fragments (>3") > 50%	1.00
271:							
Rock outcrop----------	60	Not rated		Not rated		Not rated	
Lithic Xerorthents------	15	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (<75mm) > 50%	1.00
				Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00			Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00				
Waterwheel----------	15	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Fragments (>3") > 50%	1.00
		Slopes > 15%	1.00				
273:							
Nevadafalls----------	55	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
		Fragments (3-10") 15-35%	0.01				
Waterwheel----------	30	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (3-10") 15-35%	0.59			Fragments (>3") 25-50%	0.68
274:							
Rock outcrop, domes-----	85	Not rated		Not rated		Not rated	
275:							
Oxyaquic Dystroxerepts--	25	Limitations		Limitations		Suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Saturation from 18 to 40" depth	0.91
		Saturation < 6" depth	1.00	Seepage in 20-40" depth	1.00		
		Seepage in bottom layer	1.00	Occasional flooding	0.60	Permeability > 2.0 in/hr	0.52
						Fragments (<75mm) 25-50%	0.51
Dystric Xerorthents-----	25	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") 15-35%	0.74			Slopes > 15%	1.00

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
275:							
Vitrandic Xerorthents---	25	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Occasional flooding	0.60	Texture is lcos, ls, lfs, or vfs	0.50
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50				
Rubble land----------	15	Not rated		Not rated		Not rated	
276:							
Happyisles----------	35	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Flooding = rare	0.50	Rare flooding	0.40	Texture is lcos, ls, lfs, or vfs	0.50
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50				
Typic Dystroxerepts-----	35	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Fragments (>3") 25-50%	0.35
		Fragments (3-10") 15-35%	0.09			Slopes 8 to 15%	0.16
277:							
Tuolumne----------	45	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") 15-35%	0.90			Texture is lcos, ls, lfs, or vfs	0.50
Humic Dystroxerepts-----	35	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") > 35%	0.99			Fragments (>3") > 50%	1.00
278:							
Rock outcrop----------	25	Not rated		Not rated		Not rated	
Tuolumne----------	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Humic Dystroxerepts-----	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") > 35%	1.00			Fragments (>3") > 50%	1.00
Rubble land----------	15	Not rated		Not rated		Not rated	

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
279:							
Canisrocks	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Fragments (>3") 25-50%	0.95
Xeric Dystrocryepts	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
						Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
280:							
Typic Dystroxerepts	35	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
Humic Dystroxerepts	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
282:							
Clarkslodge	50	Limitations		Limitations		Suited	
		Slopes 8 to 15%	0.63	Seepage in 20-40" depth	1.00	Slopes 8 to 15%	0.63
		Fragments (3-10") 15-35%	0.01	Slopes 8 to 15%	0.63		
Craneflat	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Nevadafalls	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
283:							
Waterwheel	35	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
						Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
283:							
Nevadafalls	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Rock outcrop	21	Not rated		Not rated		Not rated	
285:							
Waterwheel	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
						Permeability > 2.0 in/hr	0.52
Humic Dystroxerepts	16	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	1.00
286:							
Nevadafalls	26	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Typic Dystroxerepts	25	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Ultic Palexeralfs	20	Limitations		Limitations		Not suited	
		Clay or silty clay	1.00	Slopes 8 to 15%	0.63	Silty clay or clay 10-60"	1.00
		Slopes 8 to 15%	0.63			Packing (OL, OH, CH, or MH)	1.00
						Clay or silty clay	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
287:							
Badgerpass	55	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
		Fragments (3-10") 15-35%	0.01				

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
287:							
Waterwheel	40	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes 8 to 15%	0.63	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63				
288:							
Rock outcrop	35	Not rated		Not rated		Not rated	
Craneflat	20	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Waterwheel	20	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Slopes > 15%	1.00
		Slopes > 15%	1.00				
289:							
Waterwheel	50	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") 15-35%	0.83			Fragments (>3") 25-50%	0.53
Craneflat	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") 15-35%	0.66			Permeability > 2.0 in/hr	0.52
290:							
Humic Dystroxerepts	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
		Fragments (3-10") 15-35%	0.44				
Tuolumne	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") > 35%	1.00			Fragments (>3") > 50%	1.00
Typic Xerorthents	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
						Fragments (>3") 25-50%	0.05

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
290:							
Ultic Haploxeralfs------	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
291:							
Ultic Haploxeralfs------	41	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	0.52
Typic Dystroxerepts-----	31	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	0.52
292:							
Humic Dystroxerepts-----	35	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Fragments (>3") > 50%	0.99
Typic Haploxerults------	30	Limitations		Limitations		Suited	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Clay loam, silty clay, or silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, or silty clay loam	0.50
293:							
Xeric Dystrocryepts-----	70	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Vitrandic Dystrocryepts-	18	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	0.52
294:							
Waterwheel-------------	65	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Fragments (>3") > 50%	1.00
Typic Dystroxerepts-----	35	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
295:							
Craneflat	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") 15-35%	0.31			Fragments (>3") 25-50%	0.50
Typic Dystroxerepts	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
296:							
Ultic Palexeralfs	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Clay loam, silty clay, or silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, or silty clay loam	0.50
Humic Dystroxerepts	15	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
297:							
Typic Xerorthents	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
Typic Xeropsamments	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
298:							
Tuolumne	41	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Fragments (>3") > 50%	1.00
Typic Dystroxerepts	31	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
299:							
Humic Dystroxerepts-----	46	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
						Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
Ultic Haploxeralfs------	35	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
300:							
Typic Dystroxerepts-----	35	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	0.52
Ultic Haploxeralfs------	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
301:							
Vitrandic Haploxerolls--	90	Limitations		Limitations		Suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation from 18 to 40" depth	0.86
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00		
		Flooding = rare	0.50	Rare flooding	0.40		
302:							
Typic Haploxerults------	45	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
Ultic Haploxeralfs------	41	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
303:							
Rock outcrop------------	30	Not rated		Not rated		Not rated	
Dystric Xeropsamments---	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
Humic Dystroxerepts-----	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Fragments (>3") > 50%	1.00
						Texture is lcos, ls, lfs, or vfs	0.50
		Fragments (3-10") 15-35%	0.49				
Tuolumne----------------	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (3-10") > 35%	1.00			Fragments (>3") 25-50%	0.80
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
304:							
Clarkslodge----------	60	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
Rock outcrop----------	15	Not rated		Not rated		Not rated	
305:							
Rock outcrop----------	50	Not rated		Not rated		Not rated	
Waterwheel----------	18	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) > 50%	1.00
				Slopes > 15%	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00				
Dystric Xeropsamments---	15	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
306:							
Typic Cryopsamments-----	50	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50	Slopes 8 to 15%	0.16	Texture is lcos, ls, lfs, or vfs	0.50
		Slopes 8 to 15%	0.16			Slopes 8 to 15%	0.16
Humic Dystrocryepts-----	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
				Slopes > 15%	1.00		
307:							
Rock outcrop----------	40	Not rated		Not rated		Not rated	
Dystric Xeropsamments---	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
Dystric Xerorthents-----	20	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) > 50%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Slopes > 15%	1.00	Texture is s, fs, cos, sg	1.00
				Occasional flooding	0.60	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
309:							
Rock outcrop----------	50	Not rated		Not rated		Not rated	
Waterwheel----------	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
		Fragments (3-10") 15-35%	0.13			Fragments (<75mm) 25-50%	0.33

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
309:							
Typic Dystroxerepts-----	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) 25-50%	0.69
310:							
Rock outcrop----------	55	Not rated		Not rated		Not rated	
Humic Dystroxerepts-----	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") > 35%	0.99			Fragments (>3") > 50%	1.00
Humic Lithic Haploxerepts----------	20	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Ponded (any duration)	1.00	Depth to bedrock < 40"	1.00
		Ponded (any duration)	1.00	Slopes > 15%	1.00	Ponded (any duration)	1.00
		Slopes > 15%	1.00	Saturation < 5' depth	1.00	Slopes > 15%	1.00
311:							
Rock outcrop----------	45	Not rated		Not rated		Not rated	
Humic Dystroxerepts-----	35	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (3-10") 15-35%	0.75			Fragments (>3") 25-50%	0.55
Humic Lithic Haploxerepts----------	19	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Ponded (any duration)	1.00	Depth to bedrock < 40"	1.00
		Ponded (any duration)	1.00	Saturation < 5' depth	1.00	Ponded (any duration)	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation < 18" depth	1.00
313:							
Nevadafalls----------	40	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
		Fragments (3-10") 15-35%	0.01				
Oxyaquic Dystrudepts----	40	Limitations		Limitations		Suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Saturation from 18 to 40" depth	0.91
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00		
		Seepage in bottom layer	1.00	Occasional flooding	0.60	Permeability > 2.0 in/hr	0.52

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
314:							
Badgerpass	45	Limitations		Limitations		Not suited	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
				Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Slopes > 15%	1.00
		Slopes > 15%	1.00				
Dystric Xeropsamments	35	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
315:							
Nevadafalls	60	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") 25-50%	0.96
						Permeability > 2.0 in/hr	0.52
Dystric Xeropsamments	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
316:							
Dystric Xerorthents	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (3-10") 15-35%	0.08	Seepage in 20-40" depth	1.00		
Rock outcrop	40	Not rated		Not rated		Not rated	
Rubble land	20	Not rated		Not rated		Not rated	
318:							
Typic Dystroxerepts	40	Limitations		Limitations		Suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
Humic Dystroxerepts	36	Limitations		Limitations		Suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
319:							
Humic Dystroxerepts	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Fragments (>3") > 50%	1.00

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
319:							
Typic Haploxerults------	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
						Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
Inceptic Haploxeralfs---	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") > 35%	1.00			Permeability > 2.0 in/hr	0.52
320:							
Half Dome----------	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) 25-50%	0.98
						Permeability > 2.0 in/hr	0.52
Humic Dystroxerepts-----	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
		Fragments (3-10") 15-35%	0.01			Fragments (>3") 25-50%	0.09
Rock outcrop----------	20	Not rated		Not rated		Not rated	
321:							
Dystric Xeropsamments---	50	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Flooding = rare	0.50	Rare flooding	0.40	Texture is lcos, ls, lfs, or vfs	0.50
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50				
Dystric Xerorthents-----	40	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) > 50%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Slopes > 15%	1.00	Texture is s, fs, cos, sg	1.00
				Occasional flooding	0.06	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
322:							
Typic Xerorthents-------	90	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
						Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00				
323:							
Ultic Haploxeralfs------	55	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Fragments (3-10") 15-35%	0.01	Slopes > 15%	1.00	Fragments (<75mm) 25-50%	0.04

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
323:							
Humic Dystroxerepts-----	45	Limitations		Limitations		Suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16
324:							
Humic Haploxerepts------	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) 25-50%	0.85
		Fragments (3-10") 15-35%	0.38	Very rare flooding	0.20	Permeability > 2.0 in/hr	0.52
Rock outcrop------------	35	Not rated		Not rated		Not rated	
Ultic Haploxeralfs------	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (3-10") > 35%	1.00			Fragments (>3") 25-50%	0.81
						Fragments (<75mm) 25-50%	0.01
325:							
Urban land--------------	80	Not rated		Not rated		Not rated	
328:							
Clarkslodge-------------	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (3-10") > 35%	1.00			Fragments (>3") 25-50%	0.70
Ultic Palexeralfs-------	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
401:							
Sentinel----------------	90	Limitations		Limitations		Suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.52
		Flooding = rare	0.50	Rare flooding	0.40		
412:							
Water-------------------	85	Not rated		Not rated		Not rated	
Riverwash---------------	15	Not rated		Not rated		Not rated	
501:							
Happyisles, sandy loam--	65	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Flooding = rare	0.50	Rare flooding	0.40		
Happyisles, loamy fine sand, overwash---------	20	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Occasional flooding	0.60	Texture is lcos, ls, lfs, or vfs	0.50
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50				

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
502:							
Happyisles	88	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Texture is lcos, ls, lfs, or vfs	0.50
		Flooding = rare	0.50	Rare flooding	0.40		
504:							
Mollic Xerofluvents	85	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Frequent flooding	0.80		
510t:							
Rubble land	40	Not rated		Not rated		Not rated	
Lithnip	20	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (<75mm) > 50%	1.00
				Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00			Slopes > 15%	1.00
		Seepage in bottom layer	1.00				
Rock outcrop	15	Not rated		Not rated		Not rated	
551:							
Happyisles	50	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Flooding = rare	0.50	Rare flooding	0.40	Texture is lcos, ls, lfs, or vfs	0.50
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50				
Half Dome	45	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") > 35%	1.00	Slopes 8 to 15%	0.16	Fragments (>3") 25-50%	0.98
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, or vfs	0.50
552:							
Mollic Xerofluvents	85	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Frequent flooding	0.80	Slopes 8 to 15%	0.16
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16		
590:							
Terric Haplosaprists	85	Limitations		Limitations		Not suited	
		Flooding > occasional	1.00	Saturation < 5' depth	1.00	Organic matter (PT)	1.00
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.16
		Seepage in bottom layer	1.00	Occasional flooding	0.60	Saturation from 18 to 40" depth	0.11

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
601:							
Half Dome, very bouldery	50	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") 15-35%	0.03			Permeability > 2.0 in/hr	0.52
Half Dome, cobbly-------	45	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") 15-35%	0.68			Permeability > 2.0 in/hr	0.52
602:							
Half Dome----------	85	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") > 35%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00			Fragments (>3") 25-50%	0.98
610:							
Rubble land----------	65	Not rated		Not rated		Not rated	
Half Dome----------	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	0.99
		Fragments (3-10") 15-35%	0.60			Permeability > 2.0 in/hr	0.52
620:							
Half Dome, extremely stony sandy loam, warm-	50	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Fragments (3-10") > 35%	1.00			Fragments (>3") > 50%	1.00
Half Dome, very cobbly sandy loam, warm-------	43	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
		Fragments (3-10") 15-35%	0.54			Permeability > 2.0 in/hr	0.52
630:							
Rubble land----------	65	Not rated		Not rated		Not rated	
Half Dome----------	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Fragments (>3") > 50%	1.00

Table 9.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
701:							
Vitrandic Haploxerolls--	90	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	0.52
702:							
Vitrandic Dystroxerepts-	90	Limitations		Limitations		Not suited	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") > 50%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (3-10") 15-35%	0.75			Permeability > 2.0 in/hr	0.52
900:							
Rock outcrop----------	95	Not rated		Not rated		Not rated	
DAM:							
Dam----------	100	Not rated		Not rated		Not rated	
W:							
Water----------	100	Not rated		Not rated		Not rated	

The interpretation for sanitary landfill (trench) evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to hard or soft bedrock, depth to thick or thin cemented pans, fragments 3 to 10 inches in size, sodium content (SAR), soil pH, clayey or sandy textures, and permeability that is too high, allowing seepage in some climates.

The interpretation for sanitary landfill (area) evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to cemented pans, and permeability that is too high, allowing seepage in some climates.

The interpretation for daily cover for landfill evaluates the following soil properties at variable depths in the soil: ponding, wetness, slope, depth to bedrock, depth to cemented pans, fragments greater than or less than 3 inches in size, Unified class for peat (PT), Unified classes for packing (OL, OH, CH, MH), sandy or clayey textures, soil pH, carbonates, sodium content (SAR), salinity (EC), soil climate, kaolinitic mineralogy, and permeability that is too high, allowing seepage.

Table 10.—Water Management

(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 potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are lisited. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. Brief summaries of rating criteria and abbreviations are listed on the last page of this report)

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
101:					
Oxyaquic Xerofluvents	35	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Riverwash	35	Not rated		Not rated	
Fluvaquents	15	Limitations		Limitations	
		Saturation < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Slight seepage problem	0.10		
101t:					
Lithnip	40	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Rock outcrop	25	Not rated		Not rated	
Fishsnooze	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Thin layer	0.70	Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.70
102:					
Oxyaquic Xerofluvents	45	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.01
Riverwash	40	Not rated		Not rated	
102t:					
Lithnip	40	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
				Slopes > 7%	1.00
Rock outcrop	25	Not rated		Not rated	
Fishsnooze	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
		Thin layer	0.70	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.70

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
104:					
Aquandic Humaquepts	85	Limitations		Limitations	
		Saturation < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage problem	1.00		
111t:					
Whittell	45	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Thin layer	0.79	Depth to bedrock from 20-60"	0.79
Jobsis	25	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock < 20"	1.00
Rock outcrop	15	Not rated		Not rated	
151:					
Elcapitan	80	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
152:					
Vitrandic Haploxerolls	80	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
201:					
Leidig	80	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
210:					
Rubble land	30	Not rated		Not rated	
Typic Cryorthents	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Rock outcrop	20	Not rated		Not rated	
Xeric Dystrocryepts	20	Limitations		Limitations	
		Fragments (>3") 15-35%	0.03	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
211:					
Xeric Dystrocryepts	35	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Thin layer	0.81	Permeability > 2"/hr (seepage)	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
211:					
Canisrocks	30	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
Oxyaquic Dystrocryepts	15	Limitations		Limitations	
		Saturation < 2' depth	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
213:					
Canisrocks	50	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Glacierpoint	15	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Vitrandic Dystrocryepts	15	Limitations		Limitations	
		Possible seepage problem	0.50	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
214:					
Marmotland	25	Limitations		Limitations	
		Thin layer	0.82	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	0.99
Oxyaquic Dystrocryepts	15	Limitations		Limitations	
		Saturation < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage problem	1.00		
Xeric Dystrocryepts	15	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.08
215:					
Typic Cryorthents	40	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Rock outcrop	20	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
219:					
Rock outcrop	40	Not rated		Not rated	
Rubble land	25	Not rated		Not rated	

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
219:					
Canisrocks	15	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
221:					
Typic Cryorthents	35	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Xeric Dystrocryepts	20	Limitations		Limitations	
		Very high piping potential	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Oxyaquic Dystrocryepts	15	Limitations		Limitations	
		Saturation < 2' depth	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
222:					
Canisrocks	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Rubble land	30	Not rated		Not rated	
Rock outcrop	20	Not rated		Not rated	
Crazymule	15	Limitations		Limitations	
		Fragments (>3") 15-35%	0.95	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
223:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	
Canisrocks	20	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
224:					
Rock outcrop	40	Not rated		Not rated	
Crazymule	20	Limitations		Limitations	
		Fragments (>3") 15-35%	0.98	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
224:					
Vitrandic Cryorthents---------	15	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Thin layer	0.97	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.97
225:					
Canisrocks---------	15	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
Rock outcrop---------	15	Not rated		Not rated	
Rubble land---------	15	Not rated		Not rated	
Vitrandic Dystrocryepts-------	15	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
		Possible seepage problem	0.50	Slopes > 7%	1.00
227:					
Canisrocks---------	45	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.25	Permeability > 2"/hr (seepage)	1.00
Crazymule---------	40	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Thin layer	0.81	Permeability > 2"/hr (seepage)	1.00
228:					
Xeric Dystrocryepts----------	35	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.13	Slopes 2 to 7%	0.31
Vitrandic Eutrocryepts--------	25	Limitations		Limitations	
		Saturation < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Thin layer	0.70	Slopes 2 to 7%	0.66
229:					
Marmotland---------	40	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.31
Oxyaquic Dystrocryepts--------	40	Limitations		Limitations	
		Saturation < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Possible seepage problem	0.50	Slopes 2 to 7%	0.08

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
231:					
Canisrocks	40	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.95	Permeability > 2"/hr (seepage)	1.00
Typic Cryaquents	21	Limitations		Limitations	
		Saturation < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Possible seepage problem	0.50		
232:					
Canisrocks	25	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
Glacierpoint	21	Limitations		Limitations	
		Fragments (>3") 15-35%	0.97	Permeability > 2"/hr (seepage)	1.00
		Possible seepage problem	0.50	Slopes 2 to 7%	0.31
234:					
Rock outcrop	35	Not rated		Not rated	
Rubble land	35	Not rated		Not rated	
235:					
Canisrocks	35	Limitations		Limitations	
		Possible seepage problem	0.50	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Rock outcrop	30	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
237:					
Canisrocks	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Thin layer	0.93	Permeability > 2"/hr (seepage)	1.00
		Possible seepage problem	0.50	Depth to bedrock from 20-60"	0.93
Glacierpoint	15	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.96	Slopes > 7%	1.00
Vitrandic Cryorthents	15	Limitations		Limitations	
		Thin layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Slight seepage problem	0.10	Depth to bedrock < 20"	1.00
				Slopes > 7%	0.99

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
238:					
Oxyaquic Cryorthents----------	25	Limitations		Limitations	
		Saturation < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage problem	1.00		
Canisrocks----------	15	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
239:					
Crazymule----------	45	Limitations		Limitations	
		Thin layer	0.99	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.99
Canisrocks----------	34	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
241:					
Canisrocks----------	75	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.80	Permeability > 2"/hr (seepage)	1.00
242:					
Rock outcrop----------	30	Not rated		Not rated	
Canisrocks----------	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Xeric Dystrocryepts----------	16	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.36	Slopes > 7%	1.00
244:					
Typic Cryorthents----------	45	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
Rubble land----------	25	Not rated		Not rated	
Rock outcrop----------	16	Not rated		Not rated	
245:					
Rock outcrop----------	30	Not rated		Not rated	
Canisrocks----------	22	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
245:					
Xeric Dystrocryepts	20	Limitations		Limitations	
		Very high piping potential	1.00	Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.53
246:					
Rock outcrop, domes	90	Not rated		Not rated	
247:					
Canisrocks	20	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.06	Permeability > 2"/hr (seepage)	1.00
Xeric Dystrocryepts	20	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.31
248:					
Canisrocks	35	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
Rock outcrop	30	Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
249:					
Rock outcrop	45	Not rated		Not rated	
Canisrocks	30	Limitations		Limitations	
		Possible seepage problem	0.50	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
250:					
Canisrocks	47	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
Xeric Dystrocryepts	35	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
251:					
Glacierpoint	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
251:					
Typic Cryorthents	20	Limitations		Limitations	
		Fragments (>3") 15-35%	0.91	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
252:					
Rock outcrop	20	Not rated		Not rated	
Canisrocks	15	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
Xeric Dystrocryepts	15	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
253:					
Canisrocks	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Glacierpoint	18	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
Humic Dystrocryepts	15	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
256:					
Craneflat	25	Limitations		Limitations	
		Fragments (>3") 15-35%	0.77	Slopes > 7%	1.00
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
Rock outcrop	25	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
Waterwheel	20	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
257:					
Badgerpass	55	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.01
Oxyaquic Dystroxerepts	35	Limitations		Limitations	
		Saturation < 2' depth	1.00	Slopes > 7%	1.00
		High piping potential	0.33	Permeability .6-2"/hr (some seepage)	0.53

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
258:					
Typic Dystroxerepts	25	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Badgerpass	20	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Dystric Xerorthents	20	Limitations		Limitations	
		Fragments (>3") 15-35%	0.54	Slopes > 7%	1.00
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
260:					
Rock outcrop	45	Not rated		Not rated	
Craneflat	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Dystric Xerorthents	20	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
261:					
Dystric Xeropsamments	25	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.91
Typic Dystroxerepts	25	Limitations		Limitations	
		Fragments (>3") 15-35%	0.42	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
Badgerpass	15	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
Rock outcrop	15	Not rated		Not rated	
262:					
Humic Dystroxerepts	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Dystric Xerorthents	25	Limitations		Limitations	
		Possible seepage problem	0.50	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.32	Permeability > 2"/hr (seepage)	1.00
Rock outcrop	20	Not rated		Not rated	

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
264:					
Crazymule	35	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.99	Slopes > 7%	1.00
Canisrocks	28	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
267:					
Rock outcrop	40	Not rated		Not rated	
Typic Cryorthents	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.08
Xeric Dystrocryepts	15	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
268:					
Rock outcrop	40	Not rated		Not rated	
Canisrocks	25	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
Glacierpoint	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
269:					
Canisrocks	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Rock outcrop	20	Not rated		Not rated	
Glacierpoint	15	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
		Possible seepage problem	0.50	Slopes > 7%	1.00
270:					
Rock outcrop	35	Not rated		Not rated	
Typic Cryorthents	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
270:					
Vitrandic Dsytrocryepts-------	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
271:					
Rock outcrop------------------	60	Not rated		Not rated	
Lithic Xerorthents-----------	15	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Seepage problem	1.00	Slopes > 7%	1.00
Waterwheel--------------------	15	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
273:					
Nevadafalls-------------------	55	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.04	Slopes 2 to 7%	0.08
Waterwheel--------------------	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
274:					
Rock outcrop, domes-----------	85	Not rated		Not rated	
275:					
Oxyaquic Dystroxerepts--------	25	Limitations		Limitations	
		Saturation < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.12	Slopes 2 to 7%	0.31
Dystric Xerorthents-----------	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage problem	1.00	Slopes > 7%	1.00
Vitrandic Xerorthents---------	25	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
Rubble land-------------------	15	Not rated		Not rated	
276:					
Happyisles--------------------	35	Limitations		Limitations	
		Slight seepage problem	0.10	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.01
Typic Dystroxerepts-----------	35	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.67	Slopes > 7%	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
277:					
Tuolumne	45	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.10	Permeability > 2"/hr (seepage)	1.00
Humic Dystroxerepts	35	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
278:					
Rock outcrop	25	Not rated		Not rated	
Tuolumne	25	Limitations		Limitations	
		Fragments (>3") 15-35%	0.98	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Humic Dystroxerepts	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Rubble land	15	Not rated		Not rated	
279:					
Canisrocks	40	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.90	Permeability > 2"/hr (seepage)	1.00
Xeric Dystrocryepts	15	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
		Thin layer	0.81		
280:					
Typic Dystroxerepts	35	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Humic Dystroxerepts	30	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.70	Permeability > 2"/hr (seepage)	1.00
Rock outcrop	25	Not rated		Not rated	
282:					
Clarkslodge	50	Limitations		Limitations	
		Fragments (>3") 15-35%	0.91	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.22	Slopes > 7%	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
282:					
Craneflat	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Nevadafalls	25	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.04	Permeability > 2"/hr (seepage)	1.00
283:					
Waterwheel	35	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Nevadafalls	30	Limitations		Limitations	
		Possible seepage problem	0.50	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Rock outcrop	21	Not rated		Not rated	
285:					
Waterwheel	30	Not rated		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Humic Dystroxerepts	16	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
286:					
Nevadafalls	26	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
Typic Dystroxerepts	25	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.31
Ultic Palexeralfs	20	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Permeability > 2"/hr (seepage)	1.00
		MH or CH Unified and PI <40%	0.50	Slopes > 7%	1.00
Rock outcrop	15	Not rated		Not rated	
287:					
Badgerpass	55	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.91

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
287:					
Waterwheel	40	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.66	Permeability > 2"/hr (seepage)	1.00
288:					
Rock outcrop	35	Not rated		Not rated	
Craneflat	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage problem	1.00	Slopes > 7%	1.00
Waterwheel	20	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.66	Permeability > 2"/hr (seepage)	1.00
289:					
Waterwheel	50	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	0.99	Permeability > 2"/hr (seepage)	1.00
Craneflat	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
290:					
Humic Dystroxerepts	40	Limitations		Limitations	
		Fragments (>3") 15-35%	0.25	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Tuolumne	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Typic Xerorthents	15	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Very high piping potential	1.00	Permeability > 2"/hr (seepage)	1.00
		Slight seepage problem	0.10		
Ultic Haploxeralfs	15	Limitations		Limitations	
		Fragments (>3") 15-35%	0.39	Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.53
291:					
Ultic Haploxeralfs	41	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
291:					
Typic Dystroxerepts	31	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
292:					
Humic Dystroxerepts	35	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage problem	1.00	Slopes > 7%	1.00
Typic Haploxerults	30	Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.01	Permeability .6-2"/hr (some seepage)	0.53
293:					
Xeric Dystrocryepts	70	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
Vitrandic Dystrocryepts	18	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
294:					
Waterwheel	65	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Typic Dystroxerepts	35	Limitations		Limitations	
		Fragments (>3") 15-35%	0.03	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
295:					
Craneflat	25	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.98	Permeability > 2"/hr (seepage)	1.00
Typic Dystroxerepts	25	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
296:					
Ultic Palxeralfs	20	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
Humic Dystroxerepts	15	Limitations		Limitations	
		Slight seepage problem	0.10	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
297:					
Typic Xerorthents	30	Limitations		Limitations	
		Possible seepage problem	0.50	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.26	Permeability > 2"/hr (seepage)	1.00
Rock outcrop	25	Not rated		Not rated	
Typic Xeropsamments	25	Limitations		Limitations	
		Slight seepage problem	0.10	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
298:					
Tuolumne	41	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
Typic Dystroxerepts	31	Limitations		Limitations	
		Fragments (>3") 15-35%	0.03	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
299:					
Humic Dystroxerepts	46	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
Ultic Haploxeralfs	35	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
300:					
Typic Dystroxerepts	35	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
Ultic Haploxeralfs	25	Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.22	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
301:					
Vitrandic Haploxerolls	90	Limitations		Limitations	
		Very high piping potential	1.00	Permeability > 2"/hr (seepage)	1.00
		Saturation < 2' depth	0.99		
302:					
Typic Haploxerults	45	Limitations		Limitations	
		High piping potential	0.39	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Permeability .6-2"/hr (some seepage)	0.53

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
302:					
Ultic Haploxeralfs	41	Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.22	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
303:					
Rock outcrop	30	Not rated		Not rated	
Dystric Xeropsamments	20	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.53
Humic Dystroxerepts	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.53
Tuolumne	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.53
304:					
Clarkslodge	60	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.53
Rock outcrop	15	Not rated		Not rated	
305:					
Rock outcrop	50	Not rated		Not rated	
Waterwheel	18	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Dystric Xeropsamments	15	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.91
306:					
Typic Cryopsamments	50	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
Humic Dystrocryepts	30	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
307:					
Rock outcrop	40	Not rated		Not rated	
Dystric Xeropsamments	20	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.53
Dystric Xerorthents	20	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
309:					
Rock outcrop	50	Not rated		Not rated	
Waterwheel	25	Limitations		Limitations	
		Fragments (>3") 15-35%	0.06	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Typic Dystroxerepts	20	Limitations		Limitations	
		Fragments (>3") > 35%	0.99	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
310:					
Rock outcrop	55	Not rated		Not rated	
Humic Dystroxerepts	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
Humic Lithic Haploxerepts	20	Limitations		Limitations	
		Ponded (any duration)	1.00	Slopes > 7%	1.00
		Thin layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Saturation < 2' depth	1.00	Depth to bedrock < 20"	1.00
311:					
Rock outcrop	45	Not rated		Not rated	
Humic Dystroxerepts	35	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage problem	1.00	Slopes > 7%	1.00
Humic Lithic Haploxerepts	19	Limitations		Limitations	
		Ponded (any duration)	1.00	Permeability > 2"/hr (seepage)	1.00
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Saturation < 2' depth	1.00	Slopes > 7%	1.00
313:					
Nevadafalls	40	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.04	Slopes 2 to 7%	0.31

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
313:					
Oxyaquic Dystrudepts	40	Limitations		Limitations	
		Saturation < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.31
314:					
Badgerpass	45	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
Dystric Xeropsamments	35	Limitations		Limitations	
		Slight seepage problem	0.10	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
Rock outcrop	15	Not rated		Not rated	
315:					
Nevadafalls	60	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Dystric Xeropsamments	40	Limitations		Limitations	
		Possible seepage problem	0.50	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
316:					
Dystric Xerorthents	40	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Rock outcrop	40	Not rated		Not rated	
Rubble land	20	Not rated		Not rated	
318:					
Typic Dystroxerepts	40	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.31
Humic Dystroxerepts	36	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.08
319:					
Humic Dystroxerepts	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
319:					
Typic Haploxerults	30	Limitations		Limitations	
		Slight seepage problem	0.10	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Inceptic Haploxeralfs	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
320:					
Half Dome	40	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Humic Dystroxerepts	20	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Rock outcrop	20	Not rated		Not rated	
321:					
Dystric Xeropsamments	50	Limitations		Limitations	
		Slight seepage problem	0.10	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.01		
Dystric Xerorthents	40	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
322:					
Typic Xerorthents	90	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
323:					
Ultic Haploxeralfs	55	Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Humic Dystroxerepts	45	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
324:					
Humic Haploxerepts	40	Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.72	Permeability > 2"/hr (seepage)	1.00
Rock outcrop	35	Not rated		Not rated	

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
324:					
Ultic Haploxeralfs	25	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Permeability .6-2"/hr (some seepage)	0.53
325:					
Urban land	80	Not rated		Not rated	
328:					
Clarkslodge	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Permeability .6-2"/hr (some seepage)	0.53
Ultic Palexeralfs	15	Limitations		Limitations	
		High piping potential	0.93	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.22	Permeability .6-2"/hr (some seepage)	0.53
401:					
Sentinel	90	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
412:					
Water	85	Not rated		Not rated	
Riverwash	15	Not rated		Not rated	
501:					
Happyisles, sandy loam	65	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.01
Happyisles, loamy fine sand, overwash	20	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.01
502:					
Happyisles	88	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
504:					
Mollic Xerofluvents	85	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.01

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
510t:					
Rubble land	40	Not rated		Not rated	
Lithnip	20	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
				Slopes > 7%	1.00
Rock outcrop	15	Not rated		Not rated	
551:					
Happyisles	50	Limitations		Limitations	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.91
Half Dome	45	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
552:					
Mollic Xerofluvents	85	Limitations		Limitations	
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
590:					
Terric Haplosaprists	85	Limitations		Limitations	
		Organic matter (PT, OL, OH)	1.00	Permeability > 2"/hr (seepage)	1.00
		Saturation between 2-4'	0.46		
601:					
Half Dome, very bouldery	50	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Half Dome, cobbly	45	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
602:					
Half Dome	85	Limitations		Limitations	
		Seepage problem	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
610:					
Rubble land	65	Not rated		Not rated	
Half Dome	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00

Table 10.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
620:					
Half Dome, extremely stony sandy loam, warm----------	50	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
Half Dome, very cobbly sandy loam, warm----------	43	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
630:					
Rubble land----------	65	Not rated		Not rated	
Half Dome----------	30	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
701:					
Vitrandic Haploxerolls--------	90	No limitations		Limitations	
				Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
702:					
Vitrandic Dystroxerepts-------	90	Limitations		Limitations	
		Fragments (>3") > 35%	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes > 7%	1.00
900:					
Rock outcrop----------	95	Not rated		Not rated	
DAM:					
Dam----------	100	Not rated		Not rated	
W:					
Water----------	100	Not rated		Not rated	

The interpretation for pond reservoir areas evaluates the following soil properties at variable depths in the soil: slope, depth to hard or soft bedrock, depth to cemented pans, marly textures, gypsum content, and permeability that is too high, allowing seepage.

The interpretation for embankments evaluates the following soil properties at variable depths in the soil: ponding; wetness; depth to a restrictive layer; fragments greater than 3 inches in diameter; salinity (EC); Unified classes for high organic content (PT, OL, OH); Unified classes that are hard to pack (MH, CH); permeability that is too high, allowing seepage; and piping as determined by Atterberg limits of liquid limit (LL) and plasticity index (PI); sodium content (SAR); and gypsum content.

Table 11.—Engineering Index Properties

(Absence of an entry indicates that 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	
101:												
Oxyaquic Xerofluvents----	0-0	SPM, GR-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-2	FSL, LFS, GR-S, COS, S	SM	A-2-4, A-4	0	0	84-97	77-93	66-85	30-42	0-39	NP-3
	2-4	LFS, LCOS, S, COS, GR-S, FSL	SC-SM, SM	A-1-b	0	0	86-97	79-94	44-58	15-24	0-32	NP-4
	4-10	LCOS, FSL, LFS, GR-S, COS, S, LS	SC-SM, SM	A-2-4	0	0	85-97	77-93	58-76	18-27	0-28	NP-4
	10-17	SR- GR-S FSL	SC-SM, SW-SM, SM	A-1-b	0	0	86-97	79-94	36-49	9-17	0-25	NP-4
	17-28	SR- GR-S FSL	SP-SM, SC-SM, SW-SM, SM	A-2-4	0	0	85-97	78-94	60-78	10-18	0-22	NP-4
	28-39	SR- GR-S FSL	SC-SM, SM	A-2-4	0	0	85-97	78-94	72-93	20-29	0-22	NP-4
	39-43	SR- GR-S FSL	SP-SM, SC-SM, SW-SM, SM	A-2-4	0	0	85-97	78-94	60-78	10-18	0-20	NP-4
	43-57	SR- GR-S FSL	SC-SM, SW-SM, SM	A-1-b	0	0	86-97	79-94	36-49	9-17	0-20	NP-4
	57-60	SR- GR-S FSL	SM, SC-SM	A-2-4, A-4	0	0	85-97	78-94	65-84	29-41	0-39	NP-3
Riverwash.												
Fluvaquents----------	0-1	SR- COS SL	SM	A-2-4, A-4	0-6	0-8	91-100	91-100	68-79	35-42	0-39	NP-3
	1-4	SR- COS SL	SM	A-4	0-6	0-8	91-100	91-100	78-90	39-47	0-32	NP-3
	4-6	SR- COS SL	SM	A-2-4, A-4	0-6	0-8	91-100	91-100	85-96	30-36	0-27	NP-2
	6-10	SR- COS SL	SM	A-4	0-6	0-8	91-100	91-100	78-89	39-46	0-21	NP-2
	10-60	SR- COS SL	SM	A-4	0-6	0-8	91-100	91-100	78-89	39-46	0-19	NP-2
101t:												
Lithnip----------	0-1	GRX-SL	GP-GM	A-1	0-8	5-15	40-55	15-25	10-20	5-15	20-30	NP-5
	1-5	GRV-SL, GRX-SL	GW-GM	A-1	0-5	5-15	25-45	15-35	5-25	0-20	20-30	NP-5
	5-15	BR			---	---	---	---	---	---	---	---
Rock outcrop.												

Table 11.—Engineering Index 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	
101t:												
Fishsnooze	0-1	GRV-SL	GM	A-1	0-10	0-10	45-60	35-50	25-40	15-30	20-30	NP-5
	1-9	GRV-COSL, GRX-COSL, GRX-SL	GP-GM	A-1	0-15	0-15	25-45	15-35	10-25	5-15	20-30	NP-5
	9-13	GRX-COSL, GRV-COSL, GRX-SL	GP-GM	A-1	0-15	10-30	35-55	15-35	10-25	5-15	20-30	NP-5
	13-35	CBX-COSL, GRX-SL	GP-GM	A-1	0-15	20-60	25-65	10-45	10-25	5-15	20-30	NP-5
	35-45	BR			---	---	---	---	---	---	---	---
102:												
Oxyaquic Xerofluvents	0-0	ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-2	FSL, LFS, GR-S, COS, S	PT	A-2-4, A-4	0	0	90-100	78-100	64-91	22-37	0-41	NP-6
	2-4	S, LCOS, COS, GR-S, LFS, FSL	SC-SM, SM	A-2-4, A-1-b	0	0	91-100	80-100	40-59	12-24	0-35	NP-6
	4-10	COS, S, LCOS, LS, LFS, FSL, GR-S	SC-SM, SM	A-2-4	0	0	91-100	78-100	57-82	16-29	0-30	NP-6
	10-17	SR- GR-S FSL	SC-SM, SW-SM, SM	A-1-b, A-2-4	0	0	91-100	80-100	37-55	10-21	0-28	NP-6
	17-28	SR- GR-S FSL	SP-SM, SC-SM, SW-SM, SM	A-2-4	0	0	91-100	79-100	61-86	10-22	0-24	NP-6
	28-39	SR- GR-S FSL	SP-SM, SC-SM, SW-SM, SM	A-2-4	0	0	91-100	79-100	61-86	10-22	0-24	NP-6
	39-43	SR- GR-S FSL	SP-SM, SC-SM, SW-SM, SM	A-2-4	0	0	91-100	79-100	61-86	10-22	0-23	NP-6
	43-57	SR- GR-S FSL	SC-SM, SW-SM, SM	A-1-b, A-2-4	0	0	91-100	80-100	37-55	10-21	0-23	NP-6
	57-60	SR- GR-S FSL	SM, SC-SM	A-2-4, A-4	0	0	91-100	79-100	63-90	27-43	0-41	NP-6
Riverwash.												
102t:												
Lithnip	0-1	GRX-SL	GP-GM	A-1	0-8	5-15	40-55	15-25	10-20	5-15	20-30	NP-5
	1-5	GRV-SL, GRX-SL	GW-GM	A-1	0-5	5-15	25-45	15-35	5-25	0-20	20-30	NP-5
	5-15	BR			---	---	---	---	---	---	---	---
Rock outcrop.												

Table 11.—Engineering Index 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	
102t:												
Fishsnooze	0-1	GRV-SL	GM	A-1	0-10	0-10	45-60	35-50	25-40	15-30	20-30	NP-5
	1-9	GRV-COSL, GRX-COSL, GRX-SL	GP-GM	A-1	0-15	0-15	25-45	15-35	10-25	5-15	20-30	NP-5
	9-13	GRX-COSL, GRV-COSL, GRX-SL	GP-GM	A-1	0-15	10-30	35-55	15-35	10-25	5-15	20-30	NP-5
	13-35	CBX-COSL, GRX-SL	GP-GM	A-1	0-15	20-60	25-65	10-45	10-25	5-15	20-30	NP-5
	35-45	BR			---	---	---	---	---	---	---	---
104:												
Aquandic Humaquepts	0-8	MK-VFSL, MK-SIL, MK-FSL	OH, ML, MH	A-5, A-4	0	0	92-100	83-100	81-100	55-70	0-63	NP-3
	8-18	MK-SIL, MK-VFSL, MK-FSL	OH, ML, MH	A-5, A-4	0	0	100	91-100	85-100	75-90	0-65	NP-5
	18-26	FSL, VFSL, SIL	SM, ML	A-4	0	0	95-100	85-100	72-88	44-55	0-34	NP-3
	26-68	LS, S, COS	SM	A-2-4	0	0	94-100	85-100	65-80	11-16	0-18	NP-2
111t:												
Whittell	0-0	SPM			0	0	---	---	---	---	---	---
	0-7	CBV-LCOS	SM	A-1-b	15-30	20-40	70-90	55-75	35-55	10-30	0-23	NP-2
	7-20	CBV-LCOS, STV-LCOS, GRV-LCOS, GRV-COS	SP-SM	A-1-a	15-35	15-30	50-85	35-70	20-50	5-20	0-19	NP-2
	20-32	GRV-COS, CBV-LCOS, STV-LCOS, STX-LCOS, GRV-LCOS	GP-GM	A-1-a	15-40	15-35	45-80	30-65	15-45	5-20	0-28	NP-2
	32-42	BR			---	---	---	---	---	---	---	---
Jobsis	0-5	GRV-LCOS	SM, SP-SM	A-1	5-15	5-10	65-85	40-60	25-40	5-20	---	NP
	5-9	GRV-LCOS, GRV-COS	SM, SW-SM	A-1	0-10	0-10	55-75	25-50	15-30	5-15	---	NP
	9-17	GRV-LCOS, GRV-COS	SM, SW-SM	A-1	0-10	0-10	55-75	25-50	15-30	5-15	---	NP
	17-20	GRV-LCOS, GRV-COS	SM, SW-SM	A-1	0-10	0-10	55-75	25-50	15-30	5-15	---	NP
	20-30	BR			---	---	---	---	---	---	---	---
Rock outcrop.												

Table 11.—Engineering Index 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	
151:												
Elcapitan	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-7	SR- SL MK-L	SC-SM, SM	A-4, A-2-4	0	0	100	95-100	80-100	35-53	0-40	NP-12
	7-12	SR- SL MK-L	SM	A-4, A-2-4	0	0	100	95-100	80-100	35-53	0-40	NP-12
	12-20	SR- SL MK-L	SM	A-4, A-2-4	0	0	100	95-100	80-100	35-53	0-40	NP-12
	20-31	SR- SL MK-L	SM	A-4	0	0	100	95-100	81-100	40-58	0-37	NP-12
	31-38	SR- SL MK-L	SM	A-4	0	0	100	95-100	81-100	40-58	0-35	NP-12
	38-44	SR- S L	SM, SC-SM	A-2-4	0	0	100	95-100	70-89	16-33	0-40	NP-12
	44-47	SR- SL MK-L	SM	A-2-4, A-4	0	0	100	95-100	80-100	27-45	0-55	NP-11
	47-53	SR- S L	SM	A-1-b, A-2-4	0	0	100	96-100	45-63	13-30	0-40	NP-12
	53-58	SR- SL MK-L	SM	A-2-4, A-4	0	0	100	95-100	80-100	29-46	0-40	NP-12
	58-60	SR- SL MK-L	SM	A-2-4, A-4	0	0	100	95-100	73-93	26-44	0-36	NP-11
152:												
Vitrandic Haploxerolls	0-2	FSL, LFS	SM	A-2-4, A-4	0	0	95-100	81-100	70-91	35-47	0-37	NP-4
	2-3	SR- GR-COS S	SP-SM, SM	A-2-4	0	0	87-100	70-100	54-81	9-16	0-24	NP-2
	3-5	FSL, LFS	SM	A-4, A-2-4	0	0	95-100	81-100	70-91	35-47	0-37	NP-4
	5-13	FSL, LFS	SM	A-2-4, A-4	0	0	95-100	82-100	70-88	32-42	0-27	NP-2
	13-18	FSL, LFS	SM	A-4, A-2-4	0	0	95-100	82-100	71-90	35-46	0-24	NP-2
	18-24	SR- GR-COS S	SW-SM, SC-SM, SM	A-1-b	0	0	88-100	73-100	33-50	8-15	0-21	NP-2
	24-28	SR- GR-COS S	SP-SM, SC-SM	A-3, A-2-4	0	0	87-100	71-100	54-80	5-11	0-20	NP-2
	28-32	SR- GR-COS S	SW-SM, SM	A-1-b	0	0	88-100	73-100	33-49	8-15	0-19	NP-2
	32-60	SR- GR-COS S	SP-SM, SC-SM	A-3, A-2-4	0	0	87-100	71-100	54-80	5-11	0-19	NP-2

Table 11.—Engineering Index 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	
201:												
Leidig	0-0	SPM	PT	A-8	0	0	---	---	---	---	---	---
	0-7	VFSL, L, SL, FSL	SC-SM, SC, SM, CL-ML, ML, CL	A-2-4, A-4, A-7-5	0	0	100	100	82-100	32-50	0-46	NP-11
	7-16	SL, FSL, VFSL, L	CL-ML, ML, CL	A-4, A-5, A-6, A-7-5	0	0	100	100	78-96	52-70	0-46	NP-11
	16-23	FSL, VFSL, L, SL	CL, CL-ML, ML	A-6, A-5, A-4, A-7-5	0	0	100	100	78-96	52-70	0-46	NP-11
	23-30	FSL, SL, L, VFSL	SC, SC-SM, CL, CL-ML, ML	A-4, A-6	0	0	100	100	89-100	48-66	0-35	NP-12
	30-34	FSL, SL, VFSL, L	SC-SM, CL, CL-ML, ML	A-4, A-6	0	0	100	100	83-100	36-54	0-35	NP-12
	34-42	VFSL, L, SL, FSL	SC, SM, SC-SM	A-4, A-6	0	0	100	100	82-100	32-50	0-35	NP-12
	42-46	FSL, L, SL, VFSL	CL-ML, SC, SM, SC-SM	A-4, A-6	0	0	100	100	88-100	45-63	0-30	NP-12
	46-52	FSL, SL, L, VFSL	SC, SM, SC-SM	A-4, A-6	0	0	100	100	68-86	30-48	0-30	NP-12
	52-58	FSL, LS, VFSL, L, SL	SC, SM, SC-SM	A-4, A-6	0	0	100	100	82-100	32-50	0-30	NP-12
	58-60	SR- LS FSL	SC, SM, SC-SM	A-2-4	0	0	100	100	80-98	21-39	0-37	NP-12
210:												
Rubble land.												
Typic Cryorthents	0-2	GR-SL	SM	A-1-b, A-2-4	0	0	59-71	57-70	43-54	22-29	0-33	NP-2
	2-13	CBV-SL	GM, SM	A-2-4	0	24-37	47-66	45-64	42-60	27-39	18-25	1-3
	13-19	CBX-FSL, CBV-FSL	GM, SM	A-1-b, A-2-4	0	30-42	45-65	43-63	38-56	19-29	0-22	NP-2
	19-60	STV-FSL, STX-FSL	SM, GM	A-1-b, A-2-4	30-42	23-36	34-67	31-66	27-58	13-29	0-20	NP-1
Rock outcrop.												

Table 11.—Engineering Index 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	
210:												
Xeric Dystrocryepts------	0-1	MPM	PT	A-8	0	0	---	---	---	---	---	---
	1-5	FSL, GR-FSL	SM	A-2-4, A-4	0	0	78-92	77-92	67-83	35-43	30-41	2-3
	5-13	CBV-FSL, CB-FSL, CBX-FSL	SM, GM	A-1-b, A-2-4	0	8-42	47-84	43-83	38-74	19-38	0-28	NP-2
	13-28	CB-FSL, CBX-FSL, CBV-FSL	SM, SC-SM, GM	A-2-4, A-1-b	0	8-42	47-84	43-83	39-76	17-34	19-25	3-4
	28-60	GR-SL, SL	SC-SM, GM	A-2-4, A-1-b	0	0	57-84	57-84	43-65	21-33	18-22	3-5
211:												
Xeric Dystrocryepts------	0-0	SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	ST-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-9	STV-LFS, ST-LFS, STV-FSL, ST-FSL	SM	A-2-4	8-23	8-23	61-83	59-82	48-70	27-41	0-45	NP-3
	9-19	STX-SL, STX-LFS, ST-LFS, ST-SL, STV-SL, STV-LFS	SM	A-1-b, A-2-4	8-23	15-29	50-74	48-73	36-57	22-37	0-31	NP-3
	19-32	STV-FSL, STV-COSL, STX-COSL, STX-FSL	GM	A-1-b, A-1-a	8-23	29-42	28-56	25-54	17-39	13-29	0-22	NP-3
	32-60	CBX-LFS, CBX-COSL, CBV-COSL, CBV-LFS	GM	A-1-b, A-1-a	0	29-42	28-45	25-43	16-31	11-21	0-20	NP-3

Table 11.—Engineering Index 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	
211:												
Canisrocks----------	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	BY-S, BY-LCOS, BYV-S, S, BYV-LCOS, BYV-LS, LS, BY-LS	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	46-59	15-22	0-37	NP-1
	4-18	BYX-LS, BY-LCOS, BYX-S, BYX-LCOS, BY-S, BYV-S, BY-LS, BYV-LS, BYV-LCOS	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	48-62	14-20	0-14	NP
	18-28	BY-LCOS, BYX-LS, BYX-S, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S, BYX-LCOS	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	38-62	10-18	0-14	NP
	28-34	BYX-LS, BYV-LS, BYV-LCOS, BY-LS, BYV-S, BY-S, BY-LCOS, BYX-LCOS, BYX-S	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	34-55	9-15	0-14	NP
	34-60	BYX-LCOS, BY-S, BY-LS, BYX-S, BYX-LS, BY-LCOS	SM, SP-SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	20-60	5-15	0-14	NP
Oxyaquic Dystrocryepts---	0-0	SL	SM	A-2-4, A-4	0	0	85-100	84-100	64-84	33-47	0-43	NP-6
	0-9	CB-SL, GR-SL, SL	SM	A-4, A-2-4	0	0-29	81-100	80-100	61-84	31-47	0-43	NP-6
	9-16	GR-SL, CB-SL, SL	SM	A-4, A-2-4	0	0-29	81-100	80-100	60-83	31-46	0-37	NP-6
	16-23	GR-SL, SL, CB-SL	SM, SC-SM	A-4, A-2-4	0	0-29	74-100	73-100	52-79	24-41	0-30	NP-6
	23-60	CB-SL, CBV-SL, GR-SL, GRV-SL, SL	SM, GM, GC-GM	A-4, A-2-4, A-1-b, A-1-a	0	0-29	30-100	27-100	19-79	9-41	0-23	NP-6

Table 11.—Engineering Index 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	
213:												
Canisrocks	0-0	ST-SPM, STV-SPM, STX-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-3	CBV-LS, CB-S, CBV-S, CB-LS	SM	A-2-4	0	15-29	73-91	72-91	55-74	19-28	0-37	NP-2
	3-12	CB-S, CBV-S, CB-LS, CBV-LS	SM	A-2-4	0	23-36	71-91	70-90	54-74	19-28	0-24	NP-2
	12-60	CBX-LS, CBV-LS, CBX-S, CBV-S	SM	A-2-4, A-1-b	0	47-58	53-77	51-76	39-62	13-24	0-19	NP-2
Glacierpoint	0-0	SPM, STV-SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM, STV-MPM, ST-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-9	STV-S, STX-S, STX-LS, STV-LS	SM	A-2-4, A-1-b	36-47	23-36	65-95	64-94	49-77	17-29	0-37	NP-2
	9-15	STX-LS, STX-S, STV-S, STV-SL	GM, SM	A-1-b, A-2-4	36-47	23-36	40-65	37-64	28-52	10-20	0-28	NP-2
	15-20	CBV-S, CBV-LS, CB-LS, CB-S	SM	A-2-4	0	29-42	70-90	68-90	53-73	18-28	0-26	NP-2
	20-29	CBV-LS, CBV-S	SM	A-1-b, A-2-4	0	36-47	59-80	57-79	44-64	15-25	0-24	NP-2
	29-37	CBV-S, CBV-LS	SM	A-1-b, A-2-4	0	36-47	59-80	57-79	44-64	15-25	0-19	NP-2
	37-60	CBV-LS, CBV-S, CB-LS, CB-S	SM	A-1-b, A-2-4	0	15-29	59-76	57-75	44-61	15-23	0-18	NP-2
Vitrandic Dystrocryepts	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-11	LS	SM	A-4, A-2-4	0	0	85-100	85-100	60-74	28-37	0-36	NP-1
	11-17	LS, SL	SM	A-4, A-2-4	0	0	85-100	85-100	59-73	29-38	0-25	NP-1
	17-25	LS, CB-LS	SM	A-2-4, A-4	0	0-15	84-100	83-100	62-79	28-37	0-21	NP-1
	25-37	STV-LS, STV-LCOS, ST-LCOS, ST-LS	SM	A-2-4	7-22	0-15	72-92	71-92	49-66	23-33	0-18	NP-1
	37-60	CBV-S, CBV-LCOS, CB-LCOS, CB-S	SM	A-2-4	0	0-22	68-92	66-92	46-67	20-31	0-17	NP-1

Table 11.—Engineering Index 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	
214:												
Marmotland	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-11	SL, FSL	SM	A-5, A-2-4, A-4	0	0	85-100	84-100	74-93	31-43	34-43	2-6
	11-19	FSL, L	CL-ML, SM	A-4	0	0	84-100	83-100	71-89	49-63	23-32	4-7
	19-36	FSL, L	CL-ML, SC-SM	A-4	0	0	84-100	83-100	71-91	50-66	23-33	6-10
	36-48	FSL, SL	CL, SC, SC-SM, SM	A-4	0	0	84-100	83-100	70-90	49-64	22-35	6-12
	48-60	ASHY-SL	ML	A-4	0	0	91-100	91-100	78-88	52-59	0-14	NP
Oxyaquic Dystrocryepts	0-2	SL, COS, LCOS	SM	A-2-4	0	0	92-100	92-100	59-68	19-24	0-36	NP-1
	2-7	COS, LCOS, SL	SM	A-2-4	0	0	93-100	93-100	46-53	12-17	0-25	NP-1
	7-14	LCOS, SL, COS	SM	A-2-4	0	0	85-95	85-95	53-63	16-22	0-27	NP-1
	14-20	COS, LCOS, SL	SM	A-2-4	0	0	85-95	85-95	49-59	15-20	0-23	NP-1
	20-31	COS, SL, LCOS	SM	A-2-4	0	0	86-96	85-95	54-63	15-20	0-22	NP-1
	31-40	COS, GR-LCOS, GR-SL, GR-COS, LCOS, SL	SM	A-2-4, A-1-b	0	0	79-92	78-92	48-60	15-21	0-22	NP-1
	40-61	BYX-LCOS, BYX-SL, BYV-COS, BYV-SL, BYV-LCOS, BYX-COS	SM, GM, SP-SM	A-1-a, A-1-b	31-48	6-16	42-80	39-80	25-53	7-18	0-20	NP-1
Xeric Dystrocryepts	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-2	MPM	PT	A-8	0	0	---	---	---	---	---	---
	2-16	S, SL	SM	A-2-4, A-4	0	0	70-100	60-100	40-75	25-40	0-36	NP-1
	16-23	S, LS	SM	A-2-4	0	0	70-100	60-100	40-75	15-30	0-29	NP-1
	23-36	GR-S, GR-LS	SM	A-2-4	0	0-7	70-100	60-100	40-75	15-30	0-22	NP-1
	36-63	CBV-S, CBV-LS	SM	A-2-4	0-6	0-45	70-100	60-100	40-75	15-30	0-18	NP-1
	63-69	CBV-LS, CBV-S	SP	A-2-4, A-1-b	0-12	0-36	60-100	60-100	40-75	1-10	0-17	NP-1
215:												
Typic Cryorthents	0-0	SPM, STV-SPM, ST-SPM	PT	A-8	51-85	51-85	---	---	---	---	---	---
	0-1	ST-MPM, STV-MPM, MPM	PT	A-8	73-93	73-93	---	---	---	---	---	---
	1-3	LFS, GR-LFS	SM	A-2-4, A-4	0	0	79-92	78-92	73-92	25-38	0-42	NP-6
	3-12	GRV-LS, GR-LS	SM	A-1-b, A-2-4	0	4-15	51-65	49-63	37-53	12-20	0-37	NP-6
	12-18	GR-LS, GRV-LS	GC-GM, GM, SM	A-1-b, A-2-4	4-15	4-15	46-64	44-62	33-53	10-20	0-31	NP-6
	18-22	GR-SL, GRV-LS	GC-GM, GM, SM	A-1-b	0	5-15	50-64	48-63	32-47	12-21	0-25	NP-6
	22-60	GRV-SL, GR-SL	GM, SM	A-1-b	0	4-15	51-65	49-63	34-50	14-23	0-24	NP-6

Table 11.—Engineering Index 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	
215:												
Rock outcrop.												
Rubble land.												
219:												
Rock outcrop.												
Rubble land.												
Canisrocks	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	BY-S, BYV-S, BY-LS, BYV-LS, S, LS, BY-LCOS, BYV-LCOS	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	44-61	14-22	0-37	NP-1
	4-18	BYV-LS, BYV-LCOS, BYX-S, BY-LCOS, BYX-LS, BY-S, BYX-LCOS, BY-LS, BYV-S	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	45-63	13-21	0-14	NP
	18-28	BYX-LCOS, BY-S, BYV-S, BY-LS, BYV-LS, BYV-LCOS, BYX-LS, BY-LCOS, BYX-S	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	35-63	9-18	0-14	NP
	28-34	BYX-LCOS, BY-S, BYV-S, BY-LS, BYV-LS, BYV-LCOS, BYX-S, BYX-LS, BY-LCOS	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	32-58	8-16	0-14	NP
	34-60	BY-LCOS, BYX-LS, BYX-S, BY-LS, BY-S, BYX-LCOS	SP-SM, SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	19-62	4-17	0-14	NP

Table 11.—Engineering Index 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	
221:												
Typic Cryorthents--------	0-2	GR-L, CB-FSL, CB-SL, GR-SL, GR-FSL, CB-L	SM	A-2-4, A-4	0	0	72-92	70-92	53-74	27-41	0-42	NP-4
	2-13	CBV-SL, CBV-FSL, CB-FSL, CB-L, CBV-L, CB-SL	SM, GM	A-4, A-2-4, A-1-b	0	16-48	35-83	33-82	27-72	18-51	0-29	NP-4
	13-19	STX-SL, STV-SL, STX-FSL, STV-FSL, CBV-FSL, CBV-SL	GM, SM	A-2-4, A-1-b, A-1-a	0	28-47	36-73	33-72	29-66	14-35	0-23	NP-4
	19-60	CBV-FSL, STV-FSL, STX-FSL, STX-SL, STV-SL, CBV-SL	GM, SM	A-4, A-2-4, A-1-a, A-1-b	15-47	15-47	18-81	14-80	12-75	6-39	0-21	NP-4
Xeric Dystrocryepts------	0-3	VFSL, FSL, ST-SL, SL, STV-SL, CB-SL, CBV-SL, CBV-VFSL, CB-VFSL, STV-VFSL, ST-FSL, CB-FSL, CBV-FSL, ST-VFSL	SM, ML	A-4	0	0	71-92	70-92	70-92	39-57	0-46	NP-3
	3-19	CB-VFSL, ST-VFSL, CBV-FSL, CB-FSL, FSL, STV-VFSL, VFSL, SL, STV-SL, CB-SL, CBV-SL, ST-FSL, ST-SL, CBV-VFSL	ML, SM, GM	A-4	3-15	3-23	71-97	70-96	70-96	49-71	0-37	NP-3
	19-60	CBV-SL, ST-FSL, STV-SL, CB-VFSL, STV-VFSL, CB-FSL, ST-VFSL, CBV-FSL, VFSL, CB-SL, FSL, CBV-VFSL, SL, ST-SL	CL-ML, SC-SM	A-4	0-15	3-15	73-92	72-92	65-87	41-56	19-25	4-7

Table 11.—Engineering Index 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	
221:												
Oxyaquic Dystrocryepts---	0-0	SL	SM	A-2-4, A-4	0	0	85-100	84-100	64-84	33-47	0-43	NP-6
	0-9	SL, CB-SL, GR-SL	SM	A-4, A-2-4	0	0-29	81-100	80-100	61-84	31-47	0-43	NP-6
	9-16	CB-SL, GR-SL, SL	SM	A-4, A-2-4	0	0-29	81-100	80-100	60-83	31-46	0-37	NP-6
	16-23	GR-SL, SL, CB-SL	SM, SC-SM	A-4, A-2-4	0	0-29	74-100	73-100	52-79	24-41	0-30	NP-6
	23-60	CBV-SL, GRV-SL, GR-SL, SL, CB-SL	SM, GM, GC-GM	A-4, A-2-4, A-1-b, A-1-a	0	0-29	30-100	27-100	19-79	9-41	0-23	NP-6
222:												
Canisrocks----------	0-0	SPM, BY-SPM	PT	A-8	45-100	22-61	---	---	---	---	---	---
	0-2	SPM, BY-SPM	PT	A-8	45-100	22-61	---	---	---	---	---	---
	2-7	STX-COS, CBV-COS, CB-COS, STX-LCOS, CBV-LCOS, CB-LCOS, CBV-LS, CB-LS, STX-LS	GM, SM	A-1-b, A-1-a	4-15	15-29	47-68	45-67	27-43	13-21	0-30	NP-1
	7-14	CBX-COS, CBX-LCOS, CBV-LCOS, CBX-S, CBV-S, CBV-COS	GP-GM, GC-GM	A-1-a	4-15	29-41	26-51	23-49	17-37	3-8	0-25	NP-1
	14-60	STX-COS, STV-COS, STX-LCOS, STV-LCOS, STV-S, STX-S	SP-SM, SM, GM	A-1-b, A-1-a	34-45	27-39	35-75	33-74	16-39	5-15	0-20	NP-1
Rubble land.												
Rock outcrop.												
Crazymule----------	0-0	GR-SPM	PT	A-8	0	0	---	---	---	---	---	---
	0-5	GR-LS	SM	A-2-4, A-1-b	0	0	60-100	58-100	45-81	16-31	0-40	NP-3
	5-22	BYV-LS	SC-SM, GC-GM, GM, SM	A-2-4, A-1-b	0-42	0-15	26-100	23-100	17-80	6-30	0-29	NP-3
	22-35	BYV-LS	SC-SM, GC-GM, GM, SM	A-2-4, A-1-b	0-29	0-42	31-100	28-100	21-80	7-30	0-25	NP-3
	35-60	CB-L	CL-ML, SC-SM	A-4	0	0-16	67-100	66-100	61-100	44-75	21-30	6-12

Table 11.—Engineering Index 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	
223:												
Rock outcrop.												
Rubble land.												
Canisrocks	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	BY-LCOS, LS, S, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	44-61	14-22	0-37	NP-1
	4-18	BYV-LS, BY-S, BYV-S, BY-LS, BYX-LCOS, BYX-S, BYX-LS, BY-LCOS, BYV-LCOS	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	45-63	13-21	0-14	NP
	18-28	BY-LCOS, BYX-LS, BYX-LCOS, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S, BYX-S	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	35-63	9-18	0-14	NP
	28-34	BYV-LCOS, BY-S, BYX-LCOS, BYV-S, BY-LS, BYV-LS, BYX-S, BYX-LS, BY-LCOS	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	32-58	8-16	0-14	NP
	34-60	BY-LCOS, BYX-LS, BY-LS, BYX-S, BYX-LCOS, BY-S	SP-SM, SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	19-62	4-17	0-14	NP
224:												
Rock outcrop.												
Crazymule	0-0	ST-SPM, STV-SPM	PT	A-8	42-71	42-71	---	---	---	---	---	---
	0-5	GR-LS	SM	A-2-4	0	0	72-85	70-84	54-67	19-25	0-39	NP-2
	5-22	BYV-LS, BYX-LS	GM, SM	A-1-b	23-36	0-15	36-60	34-59	25-47	9-17	0-29	NP-3
	22-35	BYV-LS, BYX-LS, BY-LS	GM, SM	A-2-4, A-1-b	8-23	23-36	56-81	54-80	41-64	14-24	0-25	NP-3
	35-60	CB-L	GC, SC, CL	A-4	0	0-16	74-92	73-91	63-82	44-59	23-29	7-10

Table 11.—Engineering Index 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	
224:												
Vitrandic Cryorthents----	0-2	CB-SPM, SPM	PT	A-8	0	0-61	---	---	---	---	---	---
	2-2	CB-SPM, SPM	PT	A-8	0	0-61	---	---	---	---	---	---
	2-7	LFS	SM	A-4, A-2-4	0	0	85-92	84-92	79-88	31-36	0-37	NP-2
	7-15	CB-LS, LS	SM	A-2-4	0	4-15	76-92	75-92	58-74	23-31	0-26	NP-2
	15-24	GR-LS, GRV-LS	SM	A-1-b, A-2-4	0	4-15	56-71	54-69	41-54	13-17	0-19	NP-1
	24-60	BR			---	---	---	---	---	---	---	---
225:												
Canisrocks----------	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	BYV-S, BY-S, BYV-LS, BYV-LCOS, S, LS, BY-LS, BY-LCOS	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	44-61	14-22	0-37	NP-1
	4-18	BY-LCOS, BYX-LS, BYX-S, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S, BYX-LCOS	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	45-63	13-21	0-14	NP
	18-28	BY-LS, BYV-S, BY-S, BYV-LCOS, BYV-LS, BYX-LCOS, BY-LCOS, BYX-S, BYX-LS	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	35-63	9-18	0-14	NP
	28-34	BY-LS, BYV-LS, BYV-LCOS, BYX-S, BYX-LS, BYX-LCOS, BY-S, BYV-S, BY-LCOS	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	32-58	8-16	0-14	NP
	34-60	BYX-LCOS, BY-S, BY-LS, BYX-S, BYX-LS, BY-LCOS	SP-SM, SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	19-62	4-17	0-14	NP
Rock outcrop.												
Rubble land.												

Table 11.—Engineering Index 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	
225:												
Vitrandic Dystrocryepts--	0-1	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-5	BY-LS, LS, BY-SL, SL	SM	A-2-4	0-15	0-15	82-100	81-100	62-79	22-29	0-38	NP-1
	5-12	BYV-LS, BYX-LS, BYX-SL, BYV-SL, BY-SL, BY-LS	SM	A-2-4, A-1-b	16-58	8-22	57-91	55-91	42-71	15-26	0-36	NP-1
	12-26	BYX-SL, BY-LS, BY-SL	SM	A-4	16-84	8-42	100	100	75-77	38-40	0-24	NP-1
	26-30	BYX-SL, BY-LS, BY-SL	SM	A-4	16-95	8-42	100	100	75-77	38-40	0-18	NP-1
	30-60	BYX-LS, BYX-S, BY-LS, BY-S	SM	A-2-4	16-94	8-41	100	100	74-76	19-21	0-17	NP-1
227:												
Canisrocks----------	0-0	ST-SPM, STV-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-2	CB-SL, SL	SM	A-2-4, A-4	0	5-16	68-84	67-83	50-66	27-36	0-40	NP-3
	2-6	CB-SL, SL	SM	A-4, A-2-4	0	5-16	68-84	67-83	50-66	27-36	0-27	NP-3
	6-17	ST-LCOS, STV-LCOS, STX-LCOS	GM, SM	A-1-b, A-1-a	7-21	7-34	42-70	39-69	22-42	9-18	0-24	NP-2
	17-25	ST-LCOS, STV-LCOS, STX-LCOS	SM, GM	A-1-a, A-1-b	7-21	7-21	48-70	46-69	26-42	11-18	0-22	NP-2
	25-34	STV-LCOS, STX-LCOS, ST-LCOS	SM, GM	A-1-a, A-1-b	4-21	7-21	48-71	46-70	25-40	10-17	0-22	NP-3
	34-60	ST-LCOS, STX-LCOS, STV-LCOS	SM, GM	A-1-a, A-1-b	4-21	7-21	48-71	46-70	27-42	11-18	0-18	NP-1
Crazymule----------	0-1	SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-12	FSL, LFS, CB-LFS, CB-FSL	SM	A-4, A-5	0	4-15	83-92	82-92	78-91	41-49	0-45	NP-3
	12-22	STX-LFS, STV-LFS, STV-FSL, STX-FSL	SM, GM	A-1-a, A-1-b, A-4, A-2-4	57-82	8-23	30-86	28-85	23-75	13-45	22-35	1-4
	22-34	CB-FSL, CBV-FSL, CB-COSL, CBV-COSL	GM, SM, ML	A-4	0	16-30	72-91	71-91	59-79	39-53	18-26	1-4
	34-60	CBV-LS, CBV-COSL, CB-COSL, CB-LS	SM	A-2-4	0	8-23	54-70	52-69	43-59	24-33	0-20	NP-1

Table 11.—Engineering Index 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	
228:												
Xeric Dystrocryepts------	0-4	GR-LFS, LFS, GR-SL, SL	SM	A-2-4	0	0	78-92	77-92	53-67	18-25	0-40	NP-3
	4-14	GR-LFS, CBV-LFS, GRV-LFS, CBV-SL, GR-SL, GRV-SL	SM	A-1-b	0	8-23	53-69	51-68	36-50	12-19	0-27	NP-4
	14-20	CBV-LFS, CBV-LS, GRV-LS, GRV-LFS	SM, GM	A-1-b	0	15-29	45-62	43-60	33-48	10-16	0-22	NP-1
	20-30	GRV-LCOS, CBV-LFS, CBV-LCOS, GRV-LFS	GP-GM, SM, GM	A-1-b, A-1-a	0	15-29	45-62	43-60	24-35	8-14	0-18	NP-1
	30-60	CBX-LFS, CBX-LCOS, CBV-LCOS, CBV-LFS	GP-GM, GW-GM	A-1-b, A-1-a	0	22-35	37-55	35-53	19-30	7-11	0-14	NP
Vitrandic Eutrocryepts---	0-6	VFSL, GR-SL, GR-VFSL, SL	ML, OL, SM, SC-SM	A-5, A-4	0	0	78-92	77-92	75-92	46-61	0-55	NP-4
	6-14	VFSL, SL, ST-VFSL, ST-SL, STV-VFSL, STV-SL	ML, SC-SM, SM	A-4	5-15	5-15	73-92	72-91	70-91	43-59	24-37	1-4
	14-21	CB-FSL, CBV-FSL, CBV-SL, CB-SL	SC-SM, SM	A-4, A-2-4	0	8-23	67-84	66-83	58-79	35-50	24-38	3-7
	21-28	CBV-FSL, GR-FSL, GR-SL, CBV-SL, CB-SL, CB-FSL	GM, SC-SM, SM	A-4, A-2-4	0	8-23	59-76	58-75	52-74	35-51	17-25	2-7
	28-60	CBV-FSL, CBV-COSL, CB-FSL, CB-COSL	GM, SC-SM, SM	A-4, A-2-4	0	15-29	51-69	49-67	33-48	25-37	16-21	1-4
229:												
Marmotland----------	0-0	SL	SM	A-4	0	0	92-100	92-100	70-79	37-44	0-42	NP-2
	0-9	SL, CB-SL	SM	A-4	0	16-23	91-100	90-100	69-79	37-44	0-35	NP-2
	9-16	SL, CB-SL	SM	A-2-4, A-4	0	8-23	82-91	81-91	60-71	29-37	0-32	NP-4
	16-23	GR-SL, SL	SM	A-2-4, A-4	0	3-8	76-92	75-91	56-72	27-36	18-27	2-5
	23-60	GRV-SL, GR-SL	GM	A-1-b	0	3-8	46-58	44-56	33-44	16-22	17-23	2-5

Table 11.—Engineering Index 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	
229:												
Oxyaquic Dystrocryepts---	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-2	HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-5	SL, LS	SM	A-4, A-2-4	0	0	85-92	84-92	62-72	31-38	0-31	NP-3
	5-12	SL, LS	SM	A-4, A-2-4	0	3-16	83-97	82-96	61-76	29-39	0-31	NP-3
	12-19	SL, CB-LFS, LFS, CB-SL	SM	A-4, A-2-4	0	23-36	80-96	79-96	59-76	29-39	0-31	NP-3
	19-28	GRV-COSL, GRV-LS, GR-COSL, GR-LS	GM, SM	A-2-4, A-1-b	0	0	54-66	53-64	42-54	19-26	0-21	NP-3
	28-60	GR-SL, GRV-LS, GR-LS, GRV-SL	GM	A-2-4, A-1-b	0	0	49-59	46-57	38-49	19-27	0-29	NP-3
231:												
Canisrocks---	0-1	BYV-SPM, BYX-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	BYV-MPM, BYX-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	BYX-HPM, BYV-HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-6	FS, ST-LS, LS, ST-FS	SP-SM, SC-SM	A-3, A-2-4	3-15	3-15	82-97	81-97	76-94	8-12	0-39	NP-1
	6-10	GR-FS, STV-FS, GR-LFS, STV-LFS	SM	A-2-4	3-15	3-15	73-92	72-91	68-90	23-32	0-34	NP-1
	10-17	CB-FS, CBV-FS, CB-LFS, CBV-LFS	SM	A-2-4	11-21	24-38	87-95	86-94	81-92	26-32	0-25	NP-1
	17-26	CB-FS, CB-LFS, CBV-LFS, STX-FS, CBV-FS, STX-LFS	SM	A-2-4	15-35	10-33	66-86	65-85	61-84	13-20	0-21	NP-1
	26-35	GRV-FS, GRX-FS, GRV-LFS, GRX-LFS	GP-GM, SM	A-1-b, A-2-4	7-22	7-22	40-63	38-61	36-60	7-13	0-20	NP-1
	35-60	STV-FS, STX-FS, STV-LFS, STX-LFS	GP-GM, GM, SM	A-1-a, A-1-b	11-44	15-29	24-60	21-58	20-57	4-13	0-18	NP-1

Table 11.—Engineering Index 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	
231:												
Typic Cryaquents	0-0	BYV-SPM, BY-SPM	PT	A-8	45-100	22-71	---	---	---	---	---	---
	0-1	BYV-MPM, BY-MPM	PT	A-8	45-100	22-71	---	---	---	---	---	---
	1-3	VFSL, SL, ST-VFSL, ST-SL	ML, SM	A-4	8-16	0-16	80-100	79-100	77-100	45-61	0-39	NP-2
	3-9	SL, LVFS, STV-SL, STX-SL, STX-LVFS, STV-LVFS	SM, ML	A-4, A-2-4	8-53	0-16	59-100	57-100	57-100	35-65	0-35	NP-2
	9-17	STX-LS, STX-S, STV-S, STV-LS, LS, S	SM	A-1-b, A-2-4	8-53	0-15	60-100	58-100	44-81	15-32	0-23	NP-4
	17-60	STV-LS, LS, S, STX-LS, STX-S, STV-S	SM	A-2-4, A-1-b	8-53	0-15	60-100	58-100	44-81	15-32	0-20	NP-4
232:												
Canisrocks	0-0	STV-SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-2	S, LCOS, LS, CB-LCOS, CB-LS, CB-S	SM	A-1-b, A-2-4	0	3-15	76-97	75-97	42-57	16-24	0-39	NP-1
	2-10	S, ST-S, ST-LS, ST-LCOS, LS, LCOS, STV-LCOS, STV-S, STV-LS	SM	A-2-4	7-23	5-18	84-96	83-95	63-76	20-26	0-23	NP-1
	10-24	STX-LCOS, STX-LS, STV-LCOS, STV-LS, STX-S, STV-S	SP-SM, SM	A-1-b, A-2-4	17-35	18-32	61-81	59-80	46-66	10-16	0-21	NP-1
	24-60	GRX-S, GRV-S, GRV-LS, GRV-LCOS, GRX-LCOS, GRX-LS	GP-GM, GC-GM, SC-SM	A-1-a, A-1-b, A-2-4	23-41	20-34	38-65	35-64	28-52	5-11	0-21	NP-1

Table 11.—Engineering Index 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	
232:												
Glacierpoint	0-0	GR-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-6	GR-LFS, LFS, LS, GR-LS	SM	A-2-4	0	4-15	69-84	67-84	51-66	16-23	0-39	NP-2
	6-9	CBV-SL, CB-SL, CB-LS, CBV-LS	SM	A-2-4	0	8-23	60-77	59-76	44-60	14-21	0-26	NP-2
	9-18	CBV-SL, CBV-LFS	GM, SM	A-1-b, A-2-4	0	15-29	45-62	43-60	40-58	12-20	0-24	NP-2
	18-31	CBX-LFS, CBV-LFS, CBX-FS, CBV-FS	GM, SM	A-1-b, A-2-4	0	42-53	47-70	45-68	42-66	13-22	0-19	NP-2
	31-60	STX-FS, ST-LFS, STV-LFS, STX-LFS, ST-FS, STV-FS	SM	A-2-4	8-23	8-36	56-91	54-91	51-89	16-30	0-19	NP-2
234:												
Rock outcrop.												
Rubble land.												
235:												
Canisrocks	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-3	MPM	PT	A-8	0	0	---	---	---	---	---	---
	3-4	HPM	PT	A-8	0	0	---	---	---	---	---	---
	4-11	LCOS, LS, GR-LS, GR-LCOS	SM	A-1-b, A-2-4	0	0	79-97	78-97	45-59	19-26	0-38	NP-1
	11-17	LS, LCOS	SM	A-2-4, A-1-b	0	0	85-97	85-97	49-59	20-26	0-29	NP-1
	17-37	LCOS, GR-LS, LS, GR-LCOS	SM	A-2-4, A-1-b	0	0	79-97	78-97	45-59	19-26	0-24	NP-1
	37-53	ST-LS, ST-LCOS, STV-LS, STV-LCOS	SM	A-2-4, A-1-b	22-35	4-15	68-91	67-90	39-55	16-24	0-19	NP-1
	53-68	GR-LS, CBV-LS, CB-LCOS, CBV-LCOS, GR-LCOS, CB-LS	SM	A-1-b	0	7-22	61-77	59-76	34-46	14-20	0-14	NP
Rock outcrop.												
Rubble land.												

Table 11.—Engineering Index 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	
237:												
Canisrocks	0-0	BY-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-3	LS, SL	GM	A-1-a, A-1-b	0	0	41-79	39-78	29-61	15-32	0-37	NP-1
	3-8	ST-LCOS, ST-SL, LCOS, SL	SM	A-2-4	3-15	0	84-97	83-97	57-71	20-27	0-29	NP-3
	8-13	GR-S, STV-S, GR-LS, STV-SL, STV-LS	SM	A-1-b, A-2-4	7-22	22-35	66-90	65-90	44-65	12-21	0-25	NP-3
	13-27	CBV-SL, CBV-LS, CBV-LCOS, CBX-LS, CBX-LCOS	SM	A-2-4	10-22	35-48	78-94	77-94	52-68	15-23	0-21	NP-3
	27-60	GRX-S, BY-LCOS, GRX-LCOS, GRX-SL, GRV-SL, GRV-S	GP-GM, SW-SM, GW-GM	A-1-b, A-1-a	21-24	14-29	36-54	34-52	22-37	6-11	0-20	NP-3
Glacierpoint	0-0	BYV-SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-4	ST-LS, S, ST-S, LS	SM	A-2-4	0-15	0	84-100	83-100	68-87	25-35	0-40	NP-3
	4-17	LS, ST-LS, ST-SL, SL	SM	A-2-4	3-15	3-15	82-97	81-97	61-78	24-34	0-26	NP-3
	17-27	ST-LS, STV-SL, ST-SL, STV-LS	SM	A-1-b, A-2-4	15-35	7-22	66-91	65-91	47-71	13-23	0-24	NP-3
	27-60	ST-LS, STV-S, ST-S, STV-LS, STX-S, STX-LS	SM	A-2-4, A-1-b	15-41	15-35	45-90	43-90	34-76	10-26	0-20	NP-3
Vitrandic Cryorthents	0-1	LVFS, LS	SM	A-2-4, A-4	0	0	85-100	84-100	70-88	33-43	0-33	NP-2
	1-6	LCOS, LS, CB-LS, CB-LCOS	SM	A-4, A-2-4	0	0-15	76-92	75-92	52-68	26-36	0-33	NP-2
	6-12	GR-LS, GR-LCOS, LCOS, LS	SM	A-4, A-2-4	0	0	78-92	77-92	56-71	28-38	0-22	NP-2
	12-60	GRV-LS, GR-SL, GR-LS, GRV-SL, GRX-LS, GRX-SL	SM, GM	A-2-4, A-1-a, A-1-b	0	0-16	34-65	31-63	23-49	13-30	0-19	NP-2

Table 11.—Engineering Index 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	
238:												
Oxyaquic Cryorthents-----	0-3	BYV-SL, SL	SM	A-2-4, A-4	0-24	0-16	80-100	79-100	58-77	35-48	0-38	NP-3
	3-13	BYV-SL, SL	SM	A-4, A-2-4	0-24	0-16	80-100	79-100	58-77	35-48	0-29	NP-3
	13-18	BYV-SL, SL	SC-SM, SM	A-4, A-2-4	0-24	0-16	80-100	79-100	55-76	31-46	0-26	NP-4
	18-30	BYV-LCOS, LCOS	SM	A-2-4, A-1-b	0-23	0-15	81-100	80-100	46-59	18-24	0-14	NP
	30-60	BYV-COS, COS	SW-SM, SP-SM	A-1-b	0-22	0-14	73-100	72-100	32-47	7-12	0-14	NP
Canisrocks----------	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	BY-LCOS, LS, S, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	44-61	14-22	0-37	NP-1
	4-18	BY-LCOS, BYX-LS, BYV-LCOS, BYX-LCOS, BYX-S, BYV-LS, BY-LS, BYV-S, BY-S	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	45-63	13-21	0-14	NP
	18-28	BYX-LCOS, BYV-LS, BY-S, BYV-S, BY-LS, BY-LCOS, BYV-LCOS, BYX-S, BYX-LS	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	35-63	9-18	0-14	NP
	28-34	BYV-S, BY-S, BYX-LCOS, BYV-LS, BY-LS, BY-LCOS, BYX-LS, BYX-S, BYV-LCOS	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	32-58	8-16	0-14	NP
	34-60	BYX-LCOS, BY-S, BY-LS, BYX-S, BYX-LS, BY-LCOS	SP-SM, SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	19-62	4-17	0-14	NP

Table 11.—Engineering Index 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	
239:												
Crazymule	0-0	SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-5	ST-FSL, SL, ST-SL, FSL	SM	A-2-4, A-4	0-16	0-16	81-100	80-100	59-77	29-39	0-39	NP-1
	5-13	STV-SL, GR-SL, GR-FSL, STV-FSL	SM	A-2-4	3-16	3-16	65-84	63-83	47-65	25-35	0-24	NP-1
	13-23	STV-SL, CB-SL, STV-COSL, CB-COSL, STV-LFS, STV-FSL, CB-FSL, CB-LFS	SM, GM	A-2-4, A-4	0-16	8-23	48-84	46-83	34-64	20-40	0-24	NP-3
	23-60	GRV-COSL, CBX-FSL, CBV-LFS, CBV-FSL, CB-LFS, CB-SL, GRV-FSL, GRV-LFS, CB-COSL, CBV-COSL, CBX-COSL, CBX-SL, CBV-SL, CBX-LFS, GRV-SL, CB-FSL	SM, GM	A-2-4, A-1-b	0	16-36	30-68	28-67	21-53	11-29	0-20	NP-3

Table 11.—Engineering Index 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	
239:												
Canisrocks	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	S, BY-LCOS, LS, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	44-61	14-22	0-37	NP-1
	4-18	BY-LCOS, BY-S, BYX-LCOS, BYX-LS, BYV-S, BY-LS, BYV-LS, BYV-LCOS, BYX-S	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	45-63	13-21	0-14	NP
	18-28	BY-LS, BYV-LS, BYV-LCOS, BYX-S, BYX-LS, BY-LCOS, BYX-LCOS, BY-S, BYV-S	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	35-63	9-18	0-14	NP
	28-34	BYX-LCOS, BY-S, BYV-S, BY-LS, BYV-LS, BYV-LCOS, BYX-S, BYX-LS, BY-LCOS	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	32-58	8-16	0-14	NP
	34-60	BY-S, BYX-LCOS, BY-LS, BYX-S, BYX-LS, BY-LCOS	SP-SM, SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	19-62	4-17	0-14	NP

Table 11.—Engineering Index 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	
241:												
Canisrocks	0-0	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	CB-LS, LCOS, LS, CB-LCOS	SM	A-2-4	0	0-15	84-97	83-97	58-77	17-27	0-39	NP-1
	4-18	STV-S, ST-S, ST-LS, ST-LCOS, STV-LCOS, STV-LS	SM	A-2-4	4-15	7-35	78-95	77-95	53-75	11-18	0-22	NP-1
	18-28	ST-S, STV-LCOS, STV-LS, STV-S, ST-LCOS, ST-LS	SM	A-2-4	10-29	15-36	79-95	79-95	55-77	12-18	0-20	NP-1
	28-34	STV-S, ST-LCOS, ST-LS, ST-S, STV-LCOS, STV-LS	SM	A-2-4	10-29	8-36	79-96	79-95	55-76	11-16	0-14	NP
	34-60	ST-S, ST-LS, ST-LCOS, STV-LCOS, STV-LS, STV-S	SP-SM, SM	A-2-4, A-1-b	7-27	7-27	58-92	56-92	39-74	8-17	0-14	NP
242:												
Rock outcrop.												
Canisrocks	0-0	STV-SPM, ST-SPM, STX-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	ST-SPM, STV-MPM, STX-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	STX-HPM, STV-HPM, ST-HPM	PT	A-8	---	---	---	---	---	---	---	---
	1-7	STX-S, STX-LCOS, STV-S, STV-LCOS, STV-LS, STX-LS	SM	A-1-b, A-2-4	22-35	15-29	53-81	51-80	39-64	14-25	0-39	NP-2
	7-23	STX-LCOS, STV-S, STX-LS, STV-LCOS, STX-S, STV-LS	SM, GC-GM, GM, SC-SM	A-1-b, A-2-4 A-1-a	14-27	21-34	38-65	35-64	26-51	9-19	0-28	NP-2
	23-32	CBX-S, CBX-LCOS, CBV-S CBX-LS, CBV-LCOS, CBV-LS	SM, SC-SM, GC-GM, GM	A-1-b, A-2-4 A-1-a	7-21	34-45	42-71	39-70	30-56	10-21	0-20	NP-2
	32-60	STV-S, STX-S, BYV-LCOS, STV-LS, STX-LCOS, STX-LS	SM, GM	A-2-4, A-1-b	33-51	26-41	45-75	43-74	32-59	10-20	0-19	NP-2

Table 11.—Engineering Index 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	
242:												
Xeric Dystrocryepts------	0-0	SPM, ST-SPM, STV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-5	LS, GR-LS	SM	A-2-4	0	0	78-92	77-92	59-74	20-28	0-36	NP-1
	5-20	BY-LS, BYV-LS	SM	A-2-4	13-31	4-23	68-91	66-91	51-73	18-27	0-25	NP-1
	20-35	STV-LS, ST-LS	SM	A-2-4	23-36	3-8	89-100	88-100	68-80	23-30	0-23	NP-1
	35-47	CB-LS, LS	SM	A-2-4	0	0-8	84-95	83-95	64-76	22-28	0-18	NP-1
	47-60	S, GR-S	SP-SM, SC-SM	A-3, A-2-4	0	0	79-92	78-92	59-73	5-9	0-18	NP-1
244:												
Typic Cryorthents--------	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	LS, S, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S, BY-LCOS	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	44-61	14-22	0-37	NP-1
	4-18	BYV-S, BYV-LS, BYX-LCOS, BYV-LCOS, BYX-LS, BY-LCOS, BYX-S, BY-S, BY-LS	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	45-63	13-21	0-14	NP
	18-28	BY-LS, BYX-LCOS, BY-S, BYV-LS, BYV-LCOS, BYX-S, BYX-LS, BY-LCOS, BYV-S	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	35-63	9-18	0-14	NP
	28-34	BYX-S, BYX-LS, BYX-LCOS, BY-S, BYV-S, BY-LS, BYV-LS, BYV-LCOS, BY-LCOS	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	32-58	8-16	0-14	NP
	34-60	BYX-LCOS, BY-LCOS, BYX-LS, BYX-S, BY-LS, BY-S	SP-SM, SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	19-62	4-17	0-14	NP
Rubble land.												
Rock outcrop.												

Table 11.—Engineering Index 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	
245: Rock outcrop.												
Canisrocks	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	LS, BY-LCOS, S, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	44-61	14-22	0-37	NP-1
	4-18	BYV-LS, BY-LCOS, BYX-LCOS, BY-S, BYV-S, BY-LS, BYV-LCOS, BYX-S, BYX-LS	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	45-63	13-21	0-14	NP
	18-28	BYX-S, BY-LCOS, BYX-LCOS, BYX-LS, BY-S, BYV-LCOS, BYV-LS, BY-LS, BYV-S	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	35-63	9-18	0-14	NP
	28-34	BYX-LCOS, BY-S, BYV-S, BY-LS, BYV-LS, BYV-LCOS, BYX-S, BYX-LS, BY-LCOS	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	32-58	8-16	0-14	NP
	34-60	BY-LS, BY-S, BYX-LCOS, BY-LCOS, BYX-LS, BYX-S	SP-SM, SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	19-62	4-17	0-14	NP
Xeric Dystrocryepts	0-2	SL, GR-SL	SM	A-2-4,	0	0	78-92	77-92	56-69	34-43	0-36	NP-1
	2-4	SL, GR-SL	SM	A-4, A-2-4	0	0	78-92	77-92	56-69	34-43	0-25	NP-1
	4-11	FSL, GR-SL	SM	A-4	0	0	78-92	77-92	63-80	38-50	0-22	NP-3
	11-60	VFSL, GR-VFSL	ML	A-4	0	0	77-92	76-91	73-91	49-62	0-18	NP-1
246. Rock outcrop, domes												

Table 11.—Engineering Index 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	
247:												
Canisrocks----------	0-2	BYV-SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-8	BY-LS, BY-COS, BY-LCOS, BYV-LCOS, LS, BYV-LS, LCOS, COS, BYV-COS	SM	A-2-4, A-1-b	6-30	3-15	79-97	78-97	46-59	14-20	0-24	NP-1
	8-36	LCOS, BY-LCOS, BYV-LCOS, LS, BYV-LS, BY-LS, COS, BYV-COS, BY-COS	SM	A-1-b, A-2-4	6-30	3-15	79-97	78-97	47-60	15-20	0-22	NP-1
	36-45	LCOS, BY-COS, BYV-COS, COS, BY-LCOS, BY-LS, BYV-LS, LS, BYV-LCOS	SM	A-1-b, A-2-4	6-29	7-14	63-85	62-84	40-56	11-17	0-19	NP-1
	45-60	BY-LCOS, BYV-LCOS, LS, BYV-LS, LCOS, BYX-COS, BY-LS, COS, BYV-COS, BY-COS, BYX-LCOS, BYX-LS	SM	A-1-b, A-2-4	15-43	7-27	51-92	49-91	33-62	9-18	0-18	NP-1
Xeric Dystrocryepts------	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-10	SL, LS	SM	A-2-4	0	0	85-100	84-100	65-79	22-29	0-36	NP-1
	10-21	LS, SL	SM	A-2-4	0	0	85-100	84-100	65-79	22-29	0-29	NP-1
	21-31	LS, SL	SM	A-2-4	0	0	85-100	84-100	65-79	22-29	0-24	NP-1
	31-42	LS, SL	SM	A-2-4	0	0	85-100	84-100	65-79	22-29	0-22	NP-1
	42-58	SL, LS, GR-LS, GR-SL	SM	A-2-4	0	0	78-100	77-100	59-79	21-29	0-18	NP-1
	58-60	GR-LS, GRV-LS, GR-SL, GRV-SL	SM, GM	A-1-b, A-2-4	0	0	47-80	44-79	34-62	12-22	0-14	NP

Table 11.—Engineering Index 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	
248:												
Canisrocks	0-1	ST-SPM, STV-SPM	PT	A-8	22-100	22-71	---	---	---	---	---	---
	1-2	STV-MPM, ST-MPM	PT	A-8	22-100	22-71	---	---	---	---	---	---
	2-2	STV-HPM, ST-HPM	PT	A-8	22-100	22-71	---	---	---	---	---	---
	2-5	STV-COS, ST-COS, LCOS, STV-LCOS, LS, ST-LS, STV-LS, COS, ST-LCOS	SM	A-2-4, A-1-b	3-30	3-22	68-97	67-97	41-61	19-30	0-29	NP-1
	5-13	STV-COS, COS, STV-LCOS, ST-LCOS, ST-COS, LS, LCOS, STV-LS, ST-LS	SM	A-1-b, A-2-4	3-30	3-35	63-97	62-97	36-59	15-26	0-24	NP-1
	13-32	STV-LCOS, ST-LS, STX-LS, STV-COS, STX-COS, STV-LS, STX-LCOS, ST-LCOS, ST-COS	SP-SM, SM, GM, GP, GW	A-1-b, A-1-a	14-47	7-27	27-84	24-83	12-43	4-16	0-19	NP-1
	32-60	STX-LS, STV-LS, STX-LCOS, ST-LCOS, STV-LCOS, STX-COS, STV-COS, ST-LS, ST-COS	SP-SM, GP, GW	A-1-b, A-1-a	14-54	14-27	21-83	18-82	8-40	2-11	0-17	NP-1
Rock outcrop.												

Table 11.—Engineering Index 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	
248:												
Glacierpoint----------	0-0	SPM, BYV-SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BYV-MPM, BY-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	ST-LS, LS, STV-LS, STV-S, S, ST-S	SM	A-2-4, A-1-b	8-42	4-15	65-95	64-95	49-73	16-25	0-14	NP
	4-16	STX-S, STX-LS, ST-LS, ST-S, STV-LS, STV-S	SM	A-1-b, A-2-4	8-42	8-23	53-91	51-91	39-70	13-24	0-14	NP
	16-27	STV-S, STX-S, STX-LS, ST-LS, ST-S, STV-LS	SM	A-1-b, A-2-4	15-42	8-23	63-91	61-90	47-70	15-23	0-14	NP
	27-46	ST-LS, STV-S, STV-LS, STX-LS, STX-S, ST-S	SP-SM, SM	A-2-4, A-1-b	7-29	7-22	51-92	49-91	39-72	7-13	0-14	NP
	46-64	STX-S, STX-LS, ST-LS, ST-S, STV-S, STV-LS	SP-SM, SM	A-2-4, A-1-b	7-29	7-22	51-92	49-91	39-72	7-13	0-14	NP
249:												
Rock outcrop.												
Canisrocks----------	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-3	MPM	PT	A-8	0	0	---	---	---	---	---	---
	3-4	HPM	PT	A-8	0	0	---	---	---	---	---	---
	4-11	GR-LCOS, GR-LS, LS, LCOS	SM	A-1-b, A-2-4	0	0	79-97	78-97	45-59	19-26	0-38	NP-1
	11-17	LCOS, LS	SM	A-2-4, A-1-b	0	0	85-97	85-97	49-59	20-26	0-29	NP-1
	17-37	LCOS, LS, GR-LS, GR-LCOS	SM	A-2-4, A-1-b	0	0	79-97	78-97	45-59	19-26	0-24	NP-1
	37-53	STV-LCOS, ST-LCOS, ST-LS, STV-LS	SM	A-2-4, A-1-b	22-35	4-15	68-91	67-90	39-55	16-24	0-19	NP-1
	53-68	CB-LCOS, CBV-LCOS, GR-LS, GR-LCOS, CB-LS, CBV-LS	SM	A-1-b	0	7-22	61-77	59-76	34-46	14-20	0-14	NP

Table 11.—Engineering Index 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	
250:												
Canisrocks	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	BY-S, BY-LCOS, BYV-S, BY-LS, BYV-LS, BYV-LCOS, S, LS	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	44-61	14-22	0-37	NP-1
	4-18	BY-LCOS, BYX-LS, BYX-S, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S, BYX-LCOS	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	45-63	13-21	0-14	NP
	18-28	BY-S, BY-LCOS, BYX-LCOS, BYV-S, BYX-S, BYV-LCOS, BYX-LS, BYV-LS, BY-LS	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	35-63	9-18	0-14	NP
	28-34	BYV-S, BY-LS, BYV-LS, BYV-LCOS, BYX-S, BYX-LS, BY-LCOS, BYX-LCOS, BY-S	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	32-58	8-16	0-14	NP
	34-60	BY-S, BYX-S, BY-LCOS, BYX-LS, BY-LS, BYX-LCOS	SP-SM, SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	19-62	4-17	0-14	NP
Xeric Dystrocryepts	0-0	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	ST-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-9	STV-LFS, ST-LFS, STV-FSL, ST-FSL	SM	A-2-4	8-23	8-23	60-83	59-82	49-71	27-42	0-45	NP-3
	9-19	STX-LFS, STX-SL, STV-LFS, ST-LFS, STV-SL, ST-SL	SM, GM	A-1-b, A-2-4, A-4	8-23	16-30	50-74	48-73	35-57	22-37	0-31	NP-3
	19-32	CBV-FSL, CBV-COSL, CBX-COSL, CBX-FSL	GM	A-1-b, A-1-a	8-23	30-42	28-55	25-53	20-46	13-31	0-22	NP-3
	32-60	CBX-COSL, CBX-LCOS, CBV-LCOS, CBV-COSL	GM, GC-GM	A-1-b, A-1-a	0	30-42	27-45	24-42	17-31	10-20	0-20	NP-3

Table 11.—Engineering Index 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	
251:												
Glacierpoint----------	0-0	BYV-SPM, SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BYV-MPM, BY-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	LFS, ST-LS, LS, ST-LFS, STV-LFS, STV-LS	SM	A-2-4, A-1-b	8-42	4-15	65-95	64-95	49-73	16-25	0-14	NP
	4-16	STV-LS, STV-LFS, ST-LFS, ST-LS, STX-LS, STX-LFS	SM	A-1-b, A-2-4	8-42	8-23	53-91	51-91	39-70	13-24	0-14	NP
	16-27	STX-LFS, STX-LS, ST-LS, ST-LFS, STV-LFS, STV-LS	SM	A-1-b, A-2-4	15-42	8-23	63-91	61-90	47-70	15-23	0-14	NP
	27-46	ST-LS, STV-LS, STV-VFS, ST-VFS, STX-LS, STX-VFS	SM	A-2-4, A-1-b	7-29	7-22	51-92	49-91	49-91	22-42	0-14	NP
	46-64	STX-VFS, STX-LS, ST-LS, STV-LS, STV-VFS, ST-VFS	SM	A-2-4, A-1-b	7-29	7-22	51-92	49-91	49-91	22-42	0-14	NP
Typic Cryorthents--------	0-0	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-4	ST-LS, STV-LS, STV-SL, ST-SL	SM	A-2-4, A-1-b	8-23	8-23	60-83	59-82	41-64	17-30	0-43	NP-6
	4-10	ST-SL, STV-LS, ST-LS, STV-SL	SM	A-2-4, A-1-b	8-23	8-23	60-83	59-82	40-63	17-30	0-39	NP-6
	10-16	STV-LS, ST-LS, STV-SL, ST-SL	SC-SM, SM	A-2-4, A-1-b	8-23	16-30	58-82	56-81	38-61	15-28	0-30	NP-6
	16-30	ST-LS, ST-SL, STV-SL, STV-LS	SC-SM, SM	A-2-4, A-1-b	8-23	8-23	60-83	59-82	40-62	15-27	0-25	NP-6
	30-60	STV-LS, ST-LS, STV-SL, ST-SL	SM	A-2-4, A-1-b	3-16	8-23	55-76	53-75	38-59	16-28	0-23	NP-6

Table 11.—Engineering Index 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	
252:												
Rock outcrop.												
Canisrocks	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	BYV-LS, BY-LS, BYV-S, BY-S, S, BYV-LCOS, BY-LCOS, LS	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	44-61	14-22	0-37	NP-1
	4-18	BYV-LS, BYV-LCOS, BYV-S, BY-S, BYX-S, BYX-LS, BY-LCOS, BY-LS, BYX-LCOS	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	45-63	13-21	0-14	NP
	18-28	BY-S, BYV-S, BYX-LCOS, BYV-LS, BY-LCOS, BYX-LS, BYX-S, BY-LS, BYV-LCOS	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	35-63	9-18	0-14	NP
	28-34	BYV-S, BY-LS, BYV-LS, BYV-LCOS, BYX-S, BY-S, BY-LCOS, BYX-LS, BYX-LCOS	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	32-58	8-16	0-14	NP
	34-60	BYX-LCOS, BY-S, BYX-S, BY-LCOS, BYX-LS, BY-LS	SP-SM, SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	19-62	4-17	0-14	NP
Xeric Dystrocryepts	0-3	ST-SL, ST-LS, SL, LS	SM	A-2-4	0-15	0-15	81-92	80-92	62-73	21-27	0-38	NP-1
	3-15	STV-SL, GR-SL, LS, STV-LS, GR-LS, SL	SM	A-2-4, A-1-b	0-15	0-15	65-92	64-92	49-73	17-27	0-33	NP-1
	15-35	GR-LS, GRV-LS, GR-SL, GRV-SL	SM, GM, GC-GM, SC-SM	A-2-4, A-1-b	3-15	0-15	45-71	43-70	33-55	11-20	0-22	NP-1
	35-47	STV-LS, LS, SL, STV-SL	SM	A-2-4	8-29	8-36	74-98	73-98	55-77	19-28	0-18	NP-1
	47-61	ST-LS, STX-LS, ST-SL, STV-SL, STX-SL, STV-LS	SM	A-1-b, A-2-4	8-53	8-23	56-91	54-91	41-72	14-26	0-16	NP-1

Table 11.—Engineering Index 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	
253:												
Canisrocks	0-1	SPM, ST-SPM, STV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	MPM, ST-MPM, STV-MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-3	SL, ST-SL, LS	SM	A-4, A-2-4	0-16	3-16	81-97	80-96	60-75	30-39	0-14	NP-1
	3-11	CB-S, CBV-S, BYX-S, BYX-LS, CBV-LS, CB-LS	SM, GM	A-2-4, A-1-b	0-32	16-42	48-83	46-82	35-65	12-24	0-14	NP-1
	11-23	CB-LS, CBV-LS, BYX-LS, CB-S, CBV-S, BYX-S	SM	A-1-b, A-2-4	3-31	8-42	60-92	58-91	45-73	16-27	0-14	NP
	23-35	BY-LS, BYX-LS, BYX-S, BY-S	GM, SM, SC-SM, GC-GM	A-1-b, A-2-4, A-1-a	16-71	8-23	33-91	31-90	24-72	8-26	0-14	NP
	35-60	ST-LS, STX-LS, STX-, ST-S	GM, SM, SC-SM, GC-GM	A-1-a, A-1-b, A-2-4	15-63	15-36	22-81	19-80	15-64	5-24	0-17	NP-1
Glacierpoint	0-0	BYV-HPM, BY-HPM	PT	A-8	---	---	---	---	---	---	---	---
	0-4	BYX-FSL, ST-FSL, STV-FSL	SM	A-2-4, A-4	8-39	8-23	55-83	53-82	45-72	27-44	0-40	NP-3
	4-7	STV-FSL, BYX-FSL, ST-FSL	SM	A-2-4, A-1-b, A-4	8-39	8-23	55-83	53-82	44-71	24-41	0-38	NP-3
	7-11	BYX-SL, BY-SL, BYV-SL	SM, GM	A-2-4, A-1-b	16-47	8-30	48-82	46-81	34-64	18-35	0-31	NP-3
	11-19	BYX-COSL, BYV-COSL, BY-COSL	SM, GM	A-2-4, A-1-b, A-1-a	16-47	8-23	35-82	32-81	20-54	12-34	0-27	NP-3
	19-60	BYX-LCOS, BYV-LCOS	GW-GM, GM, SM	A-1-a, A-1-b	23-51	7-22	17-66	13-65	8-39	3-17	0-17	NP-1
Humic Dystrocryepts	0-0	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	ST-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	HPM, ST-HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-16	STV-SL, ST-SL	SM	A-1-b, A-2-4, A-4	8-23	8-23	60-91	59-91	42-69	25-43	0-36	NP-3
	16-30	STV-LS, STX-LS, ST-LS	GP-GM	A-1-a, A-1-b, A-2-4	15-42	15-36	35-81	32-80	24-63	8-21	0-24	NP-1
	30-60	STX-LS, STV-LS	GW-GM	A-1-b, A-2-4, A-1-a	23-36	23-47	18-70	14-68	11-54	3-18	0-17	NP-1

Table 11.—Engineering Index 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	
256:												
Craneflat	0-1	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	ST-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-7	LS, ST-LFS, STV-LFS, STV-LS, ST-LS, LFS	SM	A-2-4, A-1-b	3-15	8-15	65-84	64-83	49-67	17-25	---	---
	7-13	STV-LFS, CBV-LFS, CB-LFS, CB-LS, CBV-LS, STV-LS	SM	A-2-4, A-1-b	3-29	23-29	65-82	64-81	49-65	17-25	0-28	NP-2
	13-60	STX-LFS, STV-LFS, STV-LS, STX-LS	SM	A-1-b, A-2-4	14-27	7-21	53-84	51-83	39-66	13-25	0-20	NP-2
Rock outcrop.												
Rubble land.												
Waterwheel	0-1	BYX-SPM, BYV-SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	BYX-MPM, BYV-MPM, BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	BYX-HPM, BY-HPM, BYV-HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-6	STV-LCOS, BYX-LCOS, STX-LS, STV-LS, ST-LS, ST-LCOS	SM	A-2-4, A-1-b	15-29	15-35	63-90	62-90	38-58	15-24	0-42	NP-1
	6-14	STX-LS, BYX-LCOS, STV-LS, ST-LS, ST-LCOS, STV-LCOS	SM	A-1-b, A-2-4	15-36	15-29	63-90	61-90	44-67	20-31	0-21	NP-1
	14-28	STX-LS, STV-LS, ST-LS, BYX-COS, ST-COS, STV-COS	SM, GM, GP-GM	A-1-b, A-1-a	17-48	14-27	47-91	45-90	21-46	6-14	0-19	NP-1
	28-60	ST-LS, BYX-COS, ST-COS, BYX-LS	GP-GM, GP, SM, GM	A-1-a, A-1-b, A-2-4	17-42	14-39	21-91	18-90	10-54	2-15	0-17	NP-1

Table 11.—Engineering Index 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	
257:												
Badgerpass	0-1	SPM, GR-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-6	LS, GR-LS	SM	A-2-4	0	3-15	83-97	82-97	63-77	22-29	0-34	NP-1
	6-13	CB-LS, LS	SM	A-2-4	0	3-15	83-97	82-97	63-77	22-29	0-27	NP-1
	13-21	LS, CB-LS	SM	A-2-4	0	0	78-100	77-100	59-80	20-30	0-25	NP-1
	21-32	GR-LS, LS	SM	A-2-4	0	0	72-100	70-100	54-80	19-30	0-23	NP-1
	32-50	GR-LS, LS	SM	A-2-4	0	0	72-100	70-100	54-80	19-30	0-21	NP-1
	50-60	CB-LS, CBV-LS, LS	SM	A-2-4, A-1-b	0	8-23	60-100	59-100	45-80	15-30	0-20	NP-1
Oxyaquic Dystroxerepts	0-11	GR-L, L	ML	A-7-5, A-6, A-5, A-4	0	0	77-92	76-91	65-85	46-62	38-50	5-11
	11-19	L, CL, GR-CL, GR-L	CL, ML	A-4, A-5, A-6, A-7-5	0	0	77-92	76-91	60-88	42-66	32-51	6-19
	19-32	GR-L, CL, L, GR-CL	GC, ML, SM	A-7-6	0	0	63-84	62-83	46-79	34-62	30-52	10-24
	32-43	SCL, L	CL	A-4, A-6	0	0	100	100	81-91	58-68	27-37	9-17
	43-60	L, SCL	SC, CL, SC-SM	A-4, A-6, A-7-6	0	0	100	100	74-89	39-54	25-41	9-21
258:												
Typic Dystroxerepts	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-2	MPM	PT	A-8	0	0	---	---	---	---	---	---
	2-2	HPM	PT	A-8	0	0	---	---	---	---	---	---
	2-3	LCOS, SL	SM	A-2-4	0	0	95-100	95-100	53-59	16-20	0-25	NP-1
	3-11	SL, FSL	SM	A-4	0	0	95-100	95-100	84-91	41-45	0-23	NP-1
	11-26	FSL, SL	SM	A-4	0	0	95-100	95-100	84-90	43-47	0-18	NP-1
	26-43	FSL, SL	SM	A-4	0	0	95-100	95-100	82-92	40-47	0-21	NP-4
	43-60	BYV-SL, BYV-FSL, BY-FSL, BY-SL	SM, SC-SM	A-4, A-2-4	32-73	0	90-100	90-100	72-87	34-44	17-24	2-7
Badgerpass	0-2	SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-7	LCOS, LS	SM	A-2-4, A-1-b	0	0	85-95	85-95	49-58	20-26	0-36	NP-1
	7-18	LS, GR-LCOS, GR-LS, LCOS	SM	A-2-4, A-1-b	0	0	79-92	78-92	45-56	19-25	0-27	NP-1
	18-37	GR-S, LCOS, S, GR-LCOS	SC-SM	A-3, A-2-4	0	0	79-92	78-92	58-72	5-9	0-25	NP-1
	37-55	GR-LCOS, S, LCOS, GR-S	SC-SM	A-3, A-2-4	0	0	79-92	78-92	58-72	5-9	0-20	NP-1
	55-67	GR-LCOS, GR-COS	SP-SM, SC-SM	A-1-b	0	0	62-73	60-72	27-35	6-10	0-18	NP-1

Table 11.—Engineering Index 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	
258:												
Dystric Xerorthents------	0-1	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	MPM, ST-MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-3	HPM, ST-HPM	PT	A-8	---	---	---	---	---	---	---	---
	3-11	SL, ST-LS	SM	A-2-4	3-15	3-15	81-97	80-97	61-80	19-29	0-42	NP-4
	11-24	LFS, ST-LFS, STV-LFS	SM	A-2-4	8-23	3-15	63-84	62-83	57-83	17-29	0-33	NP-4
	24-38	ST-LS, STV-LS, LS	SM	A-2-4, A-1-b	15-29	15-23	59-81	57-80	42-65	14-25	0-26	NP-4
	38-60	LFS, ST-LFS, STV-LFS	SM	A-2-4	8-23	8-23	61-83	60-82	55-81	17-30	0-21	NP-4
260:												
Rock outcrop.												
Craneflat----------	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	SL, LS	SM	A-2-4	0	0	79-92	79-92	61-74	25-31	0-38	NP-1
	2-4	SL, LS, GR-SL, GR-LS	SM	A-2-4	0	0	72-92	70-92	54-73	20-29	0-36	NP-1
	4-13	GR-SL, LS, SL, GR-LS	SM	A-2-4	0	3-15	62-92	60-92	46-73	16-27	0-27	NP-1
	13-19	CN-SL, CN-LS, CNV-LS, CNV-SL	SM	A-2-4	15-36	15-36	100	100	75-78	23-25	0-22	NP-1
	19-60	CNX-LS, CNX-SL	SM, GM	A-2-4, A-1-b, A-1-a	62-87	0	31-85	28-84	21-65	6-21	0-17	NP-1
Dystric Xerorthents------	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-1	MPM	PT	A-8	0	0	---	---	---	---	---	---
	1-5	SL	SM	A-2-4, A-4	0	0	90-100	90-100	67-80	35-44	0-29	NP-4
	5-17	SL	SM	A-4, A-2-4	0	0	90-100	90-100	67-80	35-44	0-22	NP-4
	17-60	SL	SM	A-4, A-2-4	0	0	90-100	90-100	67-80	35-44	0-21	NP-4
261:												
Dystric Xeropsamments----	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-6	LS	SM	A-2-4	0	0	79-100	79-100	59-79	18-26	---	---
	6-18	LS	SM	A-2-4	0	0	79-100	79-100	59-79	18-26	0-14	NP
	18-25	LS	SM	A-2-4	0	0	79-100	79-100	59-79	18-26	0-16	NP-1
	25-41	LS	SM	A-2-4	0	0	79-100	79-100	59-79	18-26	0-16	NP-1
	41-60	LS	SM	A-2-4	0	0	79-100	79-100	59-79	18-26	0-16	NP-1

Table 11.—Engineering Index 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	
261:												
Typic Dystroxerepts------	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-3	FSL	SM	A-4, A-2-4	0	0-6	76-100	75-100	66-94	28-44	36-45	1-2
	3-8	FSL	SM	A-2-4, A-4	0	0-6	76-100	75-100	66-93	28-43	34-45	1-3
	8-20	FSL	SM	A-2-4, A-4	0	0-6	76-100	75-100	66-93	28-43	25-35	1-4
	20-31	CBV-FSL, CB-FSL	SM, SC-SM	A-2-4, A-4	0	23-48	67-91	66-90	57-84	24-39	18-35	1-5
	31-60	CB-FSL, CBV-FSL, CBX-FSL	SM, GM	A-2-4, A-4, A-1-a, A-1-b	0-16	23-58	34-82	31-81	27-74	12-36	17-35	1-6
Badgerpass---------------	0-7	LS, GR-LS	SM	A-2-4, A-1-b	0	0	100	64-84	48-66	15-22	0-36	NP-1
	7-18	GR-LS, LS	SM	A-1-b, A-2-4	0	0	100	64-84	48-66	14-21	0-27	NP-1
	18-60	LS, GR-LS	SM	A-1-b, A-2-4	0	0	100	64-84	48-66	14-22	0-18	NP-1
Rock outcrop.												
262:												
Humic Dystroxerepts------	0-0	BYX-SPM, BYV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BYX-MPM, BYV-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	BYX-SL, BYV-SL	SM, GM	A-2-4, A-1-a, A-1-b	32-60	16-30	39-78	36-77	27-62	14-34	0-42	NP-4
	2-5	BYX-SL, BYV-SL	GM, SM	A-1-a, A-1-b, A-2-4	32-60	16-30	39-78	36-77	27-62	14-34	0-42	NP-4
	5-18	BYX-SL, BYV-SL	GM, SM	A-1-a, A-1-b, A-2-4	32-67	16-36	25-78	22-77	17-62	9-34	0-33	NP-4
	18-60	BYX-SL, BYV-SL	GM, SM	A-1-a, A-1-b, A-2-4	32-67	16-36	25-78	22-77	17-62	9-34	0-26	NP-4

Table 11.—Engineering Index 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	
262:												
Dystric Xerorthents------	0-1	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	ST-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-3	ST-HPM, HPM	PT	A-8	---	---	---	---	---	---	---	---
	3-11	SL, ST-LS	SM	A-2-4	3-15	3-15	81-97	80-97	61-80	19-29	0-42	NP-4
	11-24	STV-LFS, ST-LFS, LFS	SM	A-2-4	3-15	3-15	65-84	64-83	59-83	18-29	0-33	NP-4
	24-38	LS, ST-LS, STV-LS	SM	A-2-4, A-1-b	15-29	15-23	59-81	57-80	42-65	14-25	0-26	NP-4
	38-60	LFS, ST-LFS, STV-LFS	SM	A-2-4	8-23	8-23	61-83	60-82	55-81	17-30	0-21	NP-4
Rock outcrop.												
264:												
Crazymule----------	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-12	LFS, CB-LFS	SM	A-2-4	0	4-15	83-92	82-92	77-88	27-32	0-39	NP-1
	12-22	STV-FSL, STX-FSL	SM, GM	A-2-4, A-4	57-82	8-23	30-86	28-85	24-77	12-41	0-29	NP-4
	22-34	CBV-FSL, CB-FSL	SM	A-2-4, A-4	0	16-30	72-91	71-91	61-83	31-44	16-24	1-4
	34-60	GR-LS, GRV-LS	SM	A-2-4, A-1-b	0	8-23	54-70	52-69	40-55	14-21	0-19	NP-2
Canisrocks----------	0-1	SPM, ST-SPM, STV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	ST-MPM, STV-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-3	CB-SL, SL	SM	A-2-4	0	3-8	84-97	83-96	63-75	31-39	0-33	NP-1
	3-11	CB-SL, CBV-SL	SM	A-1-b, A-2-4	0	30-42	60-81	59-80	44-62	22-32	0-22	NP-1
	11-23	CBV-LS, CB-LS	SM	A-1-b, A-2-4	3-15	29-42	65-90	64-90	49-71	17-26	0-20	NP-1
	23-35	BYV-LS, BYX-LS	SM, GM, SC-SM, GW-GM	A-1-b, A-2-4	51-82	10-26	48-87	46-86	35-68	12-25	0-20	NP-1
	35-60	STX-LS, STV-LS	SM, GM, SC-SM, GC-GM	A-2-4, A-1-b	44-60	25-40	43-78	40-77	31-61	11-23	0-18	NP-1

Table 11.—Engineering Index 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	
267: Rock outcrop.												
Typic Cryorthents--------	0-5	COS, GRV-COS, GR-COS	SM, SW-SM, GM	A-1-b, A-3, A-2-4	0-14	0-14	54-100	52-100	25-51	8-18	0-36	NP-1
	5-13	STX-COS, STV-COS	SM, SP-SM, GM	A-1-b, A-1-a	7-27	21-39	25-75	22-74	11-37	3-13	0-24	NP-1
	13-28	STV-SL, STX-SL	SM, GM, GW-GM	A-2-4, A-1-b, A-1-a, A-4	23-42	36-58	30-92	28-92	21-73	11-40	0-25	NP-4
	28-60	STV-SL, STX-SL	SM, GM, GW-GM	A-1-a, A-1-b, A-4, A-2-4	23-42	36-58	30-92	28-92	21-73	11-40	0-20	NP-4
Xeric Dystrocryepts------	0-2	SPM	PT	A-8	0	0	---	---	---	---	---	---
	2-4	MPM	PT	A-8	0	0	---	---	---	---	---	---
	4-13	LCOS, LS	SM	A-2-4	0	0	86-97	85-97	55-66	18-24	0-36	NP-3
	13-20	LS, LCOS	SM	A-2-4	0	0	85-97	84-97	50-61	15-21	0-27	NP-3
	20-30	LS, COS	SM	A-1-b, A-2-4	0	0	85-97	84-97	47-57	14-20	0-25	NP-3
	30-42	LCOS, COS	SM	A-1-b, A-2-4	0	0	85-97	85-97	47-58	14-20	0-25	NP-3
	42-48	LCOS, LS	SM	A-2-4	0	0	85-97	85-97	61-74	24-31	0-25	NP-3
	48-62	GR-LCOS, GR-LS, LS, LCOS	SM	A-2-4	0	0	78-97	77-97	51-67	16-24	0-22	NP-3
	62-78	LS, GR-LCOS, LCOS, GR-LS	SM	A-2-4	0	0	78-97	77-97	52-69	16-24	0-21	NP-3
	78-84	CB-SL, CB-COSL, SL, COSL	SM	A-2-4	0	8-23	74-91	73-91	47-64	18-28	0-21	NP-4

Table 11.—Engineering Index 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	
268:												
Rock outcrop.												
Canisrocks----------	0-0	BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	BY-LCOS, LS, S, BYV-LCOS, BYV-LS, BYV-S, BY-LS, BY-S	SM	A-1-b, A-2-4	23-42	0	79-96	78-96	46-59	15-22	0-37	NP-1
	4-18	BYX-S, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S, BYX-LCOS, BYX-LS, BY-LCOS	SM	A-1-b, A-2-4	14-57	8-38	78-97	77-97	48-62	14-20	0-14	NP
	18-28	BYV-LS, BYX-LCOS, BY-LS, BYV-S, BY-S, BYX-LS, BYX-S, BYV-LCOS, BY-LCOS	SM	A-1-b, A-2-4	27-67	16-38	62-94	60-94	38-62	10-18	0-14	NP
	28-34	BYX-LS, BYX-S, BYV-LCOS, BYV-LS, BY-LS, BYV-S, BY-S, BYX-LCOS, BY-LCOS	SM	A-1-b, A-2-4	19-67	9-38	62-95	60-95	34-55	9-15	0-14	NP
	34-60	BY-LCOS, BYX-LS, BYX-S, BY-LS, BYX-LCOS, BY-S	SP-SM, SM	A-2-4, A-1-b	24-65	8-29	33-90	31-90	20-60	5-15	0-14	NP

Table 11.—Engineering Index 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	
268:												
Glacierpoint	0-0	SPM, BY-SPM, BYV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM, BY-MPM, BYV-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	ST-LS, LFS, ST-LFS, LS, STV-LS, STV-LFS	SM	A-2-4, A-1-b	8-42	4-15	65-95	64-95	49-73	16-25	0-14	NP
	4-16	STX-LS, STX-LFS, ST-LFS, ST-LS, STV-LFS, STV-LS	SM	A-1-b, A-2-4	8-42	8-23	53-91	51-91	39-70	13-24	0-14	NP
	16-27	STX-LFS, STX-LS, STV-LS, ST-LS, STV-LFS, ST-LFS	SM	A-1-b, A-2-4	15-42	8-23	63-91	61-90	47-70	15-23	0-14	NP
	27-46	STV-LS, STV-VFS, ST-VFS, STX-LS, STX-VFS, ST-LS	SM	A-2-4, A-1-b	7-29	7-22	51-92	49-91	49-91	22-42	0-14	NP
	46-64	ST-LS, ST-VFS, STV-VFS, STV-LS, STX-VFS, STX-LS	SM	A-2-4, A-1-b	7-29	7-22	51-92	49-91	49-91	22-42	0-14	NP
269:												
Canisrocks	0-0	STV-SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-2	STV-LS, LS, LCOS, STV-LCOS, STV-SL, SL	SM	A-2-4, A-1-b	0-22	0-15	64-95	63-95	36-60	15-27	0-37	NP-2
	2-7	STV-LS, LS, STV-LCOS, STV-SL, LCOS, SL	SM	A-2-4	0-22	0-15	72-95	71-95	41-60	17-27	0-26	NP-2
	7-20	BYV-LCOS, BYX-LS, BYX-SL, BYV-SL, BYX-LCOS, BYV-LS	SM	A-2-4, A-1-b	37-63	7-15	69-89	68-89	39-56	16-25	0-24	NP-2
	20-60	BYX-LS, BYX-LCOS, BYX-SL	SM, GM	A-1-b, A-2-4	71-89	8-23	31-83	28-82	22-67	7-26	0-19	NP-2
Rock outcrop.												

Table 11.—Engineering Index 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	
269:												
Glacierpoint----------	0-0	BYV-SPM, SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM, BY-MPM, BYV-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	ST-LFS, LS, LFS, ST-LS, STV-LFS, STV-LS	SM	A-2-4, A-1-b	8-42	4-15	65-95	64-95	49-73	16-25	0-14	NP
	4-16	STX-LFS, STX-LS, ST-LS, ST-LFS, STV-LFS, STV-LS	SM	A-1-b, A-2-4	8-42	8-23	53-91	51-91	39-70	13-24	0-14	NP
	16-27	STV-LS, STV-LFS, ST-LFS, ST-LS, STX-LFS, STX-LS	SM	A-1-b, A-2-4	15-42	8-23	63-91	61-90	47-70	15-23	0-14	NP
	27-46	STV-LS, STV-VFS, ST-VFS, ST-LS, STX-VFS, STX-LS	SM	A-2-4, A-1-b	7-29	7-22	51-92	49-91	49-91	22-42	0-14	NP
	46-64	ST-LS, STX-VFS, ST-VFS, STV-VFS, STV-LS, STX-LS	SM	A-2-4, A-1-b	7-29	7-22	51-92	49-91	49-91	22-42	0-14	NP

Table 11.—Engineering Index 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	
270: Rock outcrop.												
Typic Cryorthents--------	0-0	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	ST-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	LS, STV-LS, STV-LCOS, ST-LS, ST-LCOS, LCOS	SM	A-1-b, A-2-4	0-15	0-15	59-100	57-100	40-80	12-28	0-39	NP-1
	4-18	STV-S, STX-LCOS, STX-S, ST-LS, ST-LCOS, STV-LS, STV-LCOS, STX-LS, ST-S	GP-GM, SM, GM	A-1-a, A-1-b, A-2-4	15-41	15-41	20-82	17-81	12-64	3-21	0-22	NP-1
	18-28	STV-LS, STV-S, ST-LCOS, STX-LCOS, ST-S, STX-LS, STV-LCOS, ST-LS, STX-S	GP-GM, GM, SM	A-1-a, A-1-b, A-2-4	14-39	14-39	21-83	18-82	13-68	3-24	0-20	NP-1
	28-34	ST-S, STX-LCOS, STX-S, STX-LS, STV-LCOS, STV-LS, STV-S, ST-LCOS, ST-LS	GP-GM, GM, SM	A-1-a, A-1-b, A-2-4	14-39	14-39	21-83	18-82	13-69	3-24	0-14	NP
	34-60	ST-LS, ST-LCOS, STV-S, STV-LS, STV-LCOS, STX-LS, STX-S, STX-LCOS, ST-S	GP-GM, GM, SM	A-1-a, A-1-b, A-2-4	14-39	14-39	21-83	18-82	13-69	3-23	0-14	NP

Table 11.—Engineering Index 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	
270:												
Vitrandic Dystrocryepts--	0-3	LS, ST-LS, ST-SL, SL	SM	A-2-4	0-15	0-15	82-100	81-100	61-78	18-25	0-36	NP-1
	3-4	LS, ST-LS, ST-SL, SL, FS, ST-FS	SM	A-2-4	0-15	0-15	82-100	81-100	77-98	14-21	0-36	NP-1
	4-8	CB-FS, STV-FS, CB-SL, CB-LS, STV-LS, STV-SL	SM	A-2-4	0-15	0-23	71-100	70-100	53-78	16-25	0-27	NP-1
	8-17	ST-LS, STV-LS, STV-SL, ST-SL, STV-FS, STX-SL, STX-FS, ST-FS, STX-LS	SM, GM	A-2-4, A-1-b	16-36	16-36	30-81	28-80	21-64	11-35	0-30	NP-4
	17-60	STX-LS, STV-FS, STX-FS, STX-SL, ST-FS, ST-SL, ST-LS, STV-LS, STV-SL	GM, SM	A-1-b, A-2-4	15-42	15-42	20-81	16-80	12-63	4-21	0-18	NP-1
271:												
Rock outcrop.												
Lithic Xerorthents-------	0-3	STV-S, S, ST-S	SP-SM, SM	A-2-4	0-15	7-22	72-92	71-92	55-73	10-14	0-14	NP
	3-7	PGRX-S	GW-GM, GP	A-1-a	0	0-1	10-41	6-38	5-30	1-5	0-14	NP
	7-60	BR			---	---	---	---	---	---	---	---

Table 11.—Engineering Index 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	
271:												
Waterwheel	0-1	BYX-SPM, BYV-SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	BY-MPM, BYV-MPM, BYX-MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	BYX-HPM, BY-HPM, BYV-HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-6	STX-LS, STV-LCOS, ST-LCOS, BYX-LCOS, ST-LS, STV-LS	SM	A-2-4	30-64	7-22	100	100	62-64	24-26	0-42	NP-1
	6-14	ST-LS, STV-LS, STX-LS, BYX-LCOS, ST-LCOS, STV-LCOS	SM	A-2-4	31-65	8-23	100	100	73-75	32-34	0-21	NP-1
	14-28	STX-LS, BYX-COS, ST-COS, STV-LS, ST-LS, STV-COS	SM	A-1-b, A-2-4	29-62	7-21	100	100	48-51	13-16	0-19	NP-1
	28-60	BYX-LS, ST-COS, BYX-COS, ST-LS	GP-GM, GP, SM, GM	A-1-a, A-1-b, A-2-4	17-42	14-39	21-91	18-90	10-54	2-15	0-17	NP-1
273:												
Nevadafalls	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-6	LS, LCOS	SM	A-2-4	0	0	78-92	77-92	49-60	18-23	0-28	NP-2
	6-17	LCOS, LS	SM	A-2-4	0	0	78-92	77-92	51-63	20-25	0-25	NP-2
	17-31	CBV-LS, CB-LS, STV-LS, STV-LCOS, CBV-LCOS, CB-LCOS	SM	A-1-b, A-2-4	0-15	15-29	61-83	60-82	40-58	14-21	0-20	NP-2
	31-60	STV-LCOS, STV-LS, CBV-LCOS, CB-LCOS, CBV-LS, CB-LS	SM	A-1-b, A-2-4	0-15	15-29	53-83	51-82	35-57	11-20	0-20	NP-2
Waterwheel	0-0	SPM, GR-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM, GR-MPM	SM	A-8	---	---	---	---	---	---	---	---
	1-1	HPM, GR-HPM	SM	A-8	---	---	---	---	---	---	---	---
	1-6	LS, CB-LS, CBV-LS	SM	A-2-4	0-8	8-23	73-97	72-96	51-72	22-33	0-36	NP-1
	6-11	LS, CB-LS, CBV-LS	SM	A-2-4	3-15	8-29	70-97	68-96	48-72	21-33	0-27	NP-1
	11-19	STV-LS, STX-LS, ST-LS	SM	A-2-4	15-29	15-29	56-81	54-80	41-64	14-24	0-18	NP-1
	19-60	STV-LS, ST-LS	SM	A-2-4	7-22	22-35	66-90	65-90	50-72	17-27	0-18	NP-1

Table 11.—Engineering Index 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	
274. Rock outcrop, domes												
275:												
Oxyaquic Dystroxerepts---	0-1	BY-SPM, MPM, BYV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	BYV-HPM, BY-HPM, HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-9	CBV-LS, CBV-SL, CB-SL, CB-LS	SM	A-2-4	0	8-23	66-84	65-83	47-64	21-30	0-38	NP-3
	9-19	GR-LS, GR-SL, GRV-SL, GRV-LS	SM, GM	A-1-b	0	8-23	47-63	45-61	32-46	13-21	0-29	NP-3
	19-34	GRV-COSL, GRV-SL, CBX-SL, CBX-COSL	GM, SM	A-1-b, A-2-4	0	16-30	39-61	36-60	24-42	15-28	0-27	NP-3
	34-46	CBV-COSL, CBV-LS, CBX-LS, CBX-COSL	GM	A-1-a	0	23-36	30-47	28-45	16-28	8-15	0-25	NP-3
	46-60	STX-COSL, STX-LS	GP-GM	A-1-a	23-36	16-30	14-36	10-33	6-23	3-11	0-25	NP-3
Dystric Xerorthents------	0-1	ST-SPM, STV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	ST-SPM, STV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	ST-SPM, STV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-6	STV-LCOS, ST-LCOS, STX-LCOS, ST-LS, STV-LS, STX-LS	SM	A-2-4, A-1-b	15-29	15-35	63-90	62-90	35-54	14-23	0-42	NP-1
	6-14	STV-LCOS, ST-LCOS, STX-LCOS, ST-LS, STV-LS, STX-LS	SM	A-1-b, A-2-4	15-36	15-29	63-90	61-90	37-56	18-28	0-21	NP-1
	14-28	ST-LCOS, STX-LS, STV-LCOS, STX-LCOS, ST-LS, STV-LS	SM	A-1-b	14-34	14-27	55-91	53-91	35-62	15-28	0-19	NP-1
	28-60	STX-LS, ST-LS, STX-LCOS, ST-LCOS	GP-GM, SM, GM	A-1-a, A-1-b	14-27	14-39	33-91	30-91	20-62	8-28	0-17	NP-1

Table 11.—Engineering Index 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	
275:												
Vitrandic Xerorthents----	0-8	ST-S, FS, ST-FS	SM	A-2-4	15-29	0	100	100	94-97	17-21	0-32	NP-1
	8-18	ST-FSL, ST-VFSL, VFSL, FSL	PT	A-8	16-30	0	100	100	93-96	46-49	0-30	NP-1
	18-24	FSL, FS	SM	A-4	0	0	93-100	92-100	90-100	45-53	0-23	NP-1
	24-35	LS, FSL	SM	A-2-4	0	0	93-100	92-100	78-88	28-34	0-22	NP-1
	35-50	LS	SM	A-2-4	0	0	93-100	92-100	66-75	22-28	0-20	NP-1
	50-62	LS	SM	A-2-4	0	0	93-100	92-100	68-77	24-30	0-18	NP-1
Rubble land.												
276:												
Happyisles----------	0-3	SPM	PT	A-8	0	0	---	---	---	---	---	---
	3-7	S, COSL, FSL, SL	SC-SM, SM	A-2-4, A-4	0	0	95-100	86-100	63-80	30-42	18-32	2-7
	7-13	COSL, SL, FSL, S	SC-SM, SM	A-2-4, A-4	0	0	95-100	86-100	53-68	30-42	0-31	NP-6
	13-17	SL, COSL, S, FSL	SC-SM, SM	A-2-4, A-4	0	0	95-100	85-100	63-80	30-42	18-32	2-7
	17-33	COSL, FSL, SL, S	SC-SM, SM	A-2-4, A-4	0	0	95-100	85-100	63-80	30-42	17-26	2-7
	33-60	SR- LCOS LS	SC-SM, SM	A-2-4, A-4	0	0	95-100	86-100	63-80	30-42	0-22	NP-4

Table 11.—Engineering Index 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	
276:												
Typic Dystroxerepts------	0-1	ST-SPM, STV-SPM	SM, SC-SM	A-8	8-32	0-16	---	---	---	---	17-30	1-7
	1-19	ST-LS, SL, GR-SL, CB-SL, GR-LCOS, CBX-SL, ST-SL, BYV-SL, GR-COSL, STV-SL, CBV-SL	SM, SC-SM	A-1-b, A-1-a	8-23	0	70-91	39-83	28-67	13-35	17-30	1-7
	19-28	GR-SL, CBX-SL, SL, ST-LS, GR-LCOS, CBV-SL, CB-SL, ST-SL, BYV-SL, GR-COSL, STV-SL	SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	0	70-91	39-83	28-67	13-35	15-25	1-7
	28-33	STX-LS, CBV-LCOS, GR-SL, BY-SL, STX-SL, ST-SL, CBX-SL, CBV-SL, CB-SL, CBX-COSL, CBV-COSL	SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	23-48	54-90	20-80	11-53	6-32	15-25	1-7
	33-50	ST-SL, BY-SL, STX-SL, CBX-SL, CBV-SL, CB-SL, CBV-COSL, GR-SL, STX-LS, CBV-LCOS	SW-SC, SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	23-48	54-90	20-80	10-45	3-17	15-25	1-7
	50-60	CBV-LCOS, CBV-LS, STX-SL, CBV-SL, CBX-LS	SC-SM, SM	A-1-a, A-1-b, A-2-4	8-23	23-48	54-90	20-80	15-64	5-24	0-19	NP-2
277:												
Tuolumne----------	0-1	BYV-SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	BY-SPM, BYV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-5	COS, GR-COS	SM	A-2-4, A-1-b	0	0	80-93	79-93	43-54	8-13	0-27	NP-1
	5-32	GRV-COS, GRX-COS	GC-GM, SC-SM	A-1-b, A-1-a	0	7-27	36-54	33-52	17-28	4-8	0-23	NP-1
	32-60	CBX-LCOS, CBV-LCOS	GM, SM	A-1-b, A-1-a	0	47-57	44-68	42-67	24-40	9-16	0-23	NP-1

Table 11.—Engineering Index 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	
277:												
Humic Dystroxerepts------	0-1	BYV-SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	BY-MPM, BYV-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	BYV-HPM, BY-HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-15	STX-LS, CBV-LS	SM, GM	A-1-a, A-1-b	4-15	15-29	40-61	37-59	28-47	10-18	0-36	NP-1
	15-25	BYX-LS, STX-LS, CBX-LS	GM, SM, GP-GM, SP-SM	A-1-a, A-1-b	16-46	29-42	18-53	14-51	11-41	4-15	0-25	NP-1
	25-60	BYX-LS, STX-LS, CBX-LS	GM, GP-GM	A-1-a, A-1-b	18-38	35-47	18-50	15-48	11-38	4-14	0-18	NP-1
278:												
Rock outcrop.												
Tuolumne----------	0-2	GR-SL, CB-SL, GR-LCOS, CB-LCOS	SM	A-1-b	3-15	7-22	57-77	55-76	33-48	14-22	0-35	NP-2
	2-10	GRV-SL, GRV-COSL	SM, GM	A-1-a, A-1-b	3-15	8-23	43-63	40-62	27-42	14-22	0-23	NP-1
	10-35	GRV-LCOS, BYV-LS, BYV-LCOS, GRV-LS	GP-GM, SM, GM	A-1-a, A-1-b	23-51	3-22	24-60	21-58	13-38	4-13	0-19	NP-2
	35-60	GR-COS, GRX-COS, GR-LS, GRX-LS	GM, SM	A-1-a, A-1-b	7-36	7-14	38-84	36-84	19-47	5-15	0-18	NP-1
Humic Dystroxerepts------	0-1	GRX-SPM, GRV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	GRV-SPM, GRX-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-10	GR-COS, GRV-COS, GR-LCOS, GRV-LCOS	SM	A-1-b	0	15-29	59-76	57-75	33-45	14-20	0-36	NP-1
	10-21	STV-LCOS, STX-LCOS, STX-COS, STV-COS	SM	A-1-b	15-29	22-35	53-81	51-80	30-48	12-21	0-24	NP-1
	21-60	BYX-COS, BYX-LCOS	GC-GM	A-1-a	30-45	35-41	20-44	17-42	10-25	4-11	0-17	NP-1
Rubble land.												

Table 11.—Engineering Index 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	
279:												
Canisrocks	0-2	BY-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	BY-HPM, HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-11	GR-LS, LS, LCOS, GR-LCOS	SM	A-2-4	0	0	78-92	77-92	54-73	16-26	0-38	NP-1
	11-21	STV-LS, STV-LCOS, STV-S, GR-LCOS, GR-LS, GR-S	SM	A-1-b, A-2-4	8-23	8-15	56-76	54-75	37-59	10-20	0-24	NP-1
	21-29	STX-LS, STX-LCOS, STV-LS, STX-S, STV-LCOS, GR-LS, GR-LCOS, STV-S, GR-S	SM	A-1-b, A-2-4	18-38	11-28	62-81	60-80	42-64	11-21	0-20	NP-1
	29-36	GR-LCOS, GR-LS, STV-LCOS, STX-S, STV-LS, STX-LCOS, STV-S, GR-S, STX-LS	SM	A-1-b, A-2-4	18-38	11-28	62-81	60-80	43-65	11-20	0-20	NP-1
	36-60	STX-LS, STV-S, STX-S, BYV-LCOS, STV-LS, STX-LCOS	SM, GM	A-2-4, A-1-b	33-51	26-41	45-75	43-74	30-60	8-19	0-18	NP-1

Table 11.—Engineering Index 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	
279:												
Xeric Dystroxerepts------	0-0	BY-SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	0-0	NP
	0-1	ST-MPM, BY-MPM	PT	A-8	---	---	---	---	---	---	0-0	NP
	1-4	BYV-LCOS, BY-LCOS, BY-LS, BYV-LS	SM	A-1-b, A-2-4	22-41	0	79-96	78-96	44-61	15-22	0-37	NP-1
	4-18	BY-LCOS, BYV-S, BYX-LS, BYX-LCOS, BY-LS, BYV-LS, BY-S, BYV-LCOS, BYX-S	SM	A-1-b, A-2-4	12-50	7-35	66-95	65-94	36-59	9-18	0-14	NP
	18-28	BY-LCOS, BYV-S, BYX-LS, BYX-LCOS, BYV-LS, BY-LS, BYV-LCOS, BY-S, BYX-S	SM	A-1-b, A-2-4	24-63	15-36	64-95	62-94	37-63	9-18	0-14	NP
	28-34	BY-LCOS, BYV-S, BYV-LS, BYX-LCOS, BYX-LS, BY-LS, BYV-LCOS, BY-S, BYX-S	SP-SM, SM	A-1-b, A-2-4	17-63	8-36	64-95	62-95	33-58	8-16	0-14	NP
	34-60	BYV-LS, BYX-LCOS, BYX-LS, BYV-S, BY-LCOS, BY-LS, BYV-LCOS, BY-S, BYX-S	SP-SM, SM	A-2-4, A-1-b	22-62	7-27	35-91	33-91	20-63	5-17	0-14	NP
280:												
Typic Dystroxerepts------	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-4	FSL, SL, LS	SM	A-2-4, A-4	0	0	84-92	84-92	62-74	30-39	30-41	2-7
	4-8	SL, LS, FSL	SM	A-4, A-2-4	0	3-16	91-100	91-100	66-80	32-42	27-38	2-7
	8-15	LS, SL, FSL	SM	A-2-4	0	0	92-100	92-100	67-80	32-42	19-27	2-7
	15-24	SL, FSL, LS	SC-SM, SM	A-2-4	0	0	84-97	84-97	61-77	29-40	18-26	2-7
	24-36	SL, LS, FSL	SC-SM, SM	A-2-4	0	0	84-97	84-97	61-77	29-41	18-26	2-7
	36-60	SL, LS, FSL	SC-SM, SM	A-2-4	0	0	79-92	78-92	57-73	27-38	17-25	2-7

Table 11.—Engineering Index 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	
280:												
Humic Dystroxerepts------	0-2	SPM, CB-SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	CB-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-3	HPM, CB-HPM	PT	A-8	---	---	---	---	---	---	---	---
	3-8	GR-LCOS, CB-LCOS, LCOS, LS, GR-LS, CB-LS	SM	A-2-4	0	4-15	69-84	67-84	51-67	18-25	0-36	NP-1
	8-16	CB-LCOS, GR-LCOS, CB-LS, GR-LS	SM	A-1-b	0	7-22	61-77	59-76	34-47	14-21	0-27	NP-1
	16-30	STV-LS, ST-LS, STX-LS, ST-SL, STV-SL, STX-SL	SM	A-1-b, A-2-4	8-23	16-30	50-74	48-73	36-57	18-31	0-25	NP-3
	30-60	ST-LS, STV-LS, STX-LS, ST-LCOS, STV-LCOS, STX-LCOS	SM	A-1-b, A-2-4	8-23	15-29	51-74	48-73	37-59	13-22	0-18	NP-1
Rock outcrop.												
282:												
Clarkslodge----------	0-1	BY-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	BY-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-6	CB-L, SIL, CB-SIL, SL, CB-SL, L	SM	A-2-4, A-4, A-5	0	0-16	83-100	82-100	60-79	28-41	33-43	1-6
	6-19	CB-SIL, CBV-SIL, CB-L, CBV-L, CB-SL, CBV-SL	SM	A-4, A-2-4	3-16	23-36	77-96	76-96	55-75	26-39	29-39	1-6
	19-34	CBV-SIL, CB-SIL, CB-L, CBV-L, CB-SL, CBV-SL	SM, SC	A-6, A-4	3-16	30-42	75-96	74-96	55-82	28-47	28-43	10-19
	34-60	CBV-SL, CB-SL, CBV-L, CB-L, CBV-SIL, CB-SIL	SC, CL	A-6, A-4	0	0	84-97	83-96	67-89	48-67	27-39	10-19

Table 11.—Engineering Index 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	
282:												
Craneflat	0-1	SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	MPM, ST-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	HPM, ST-HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-4	STV-SL, STV-LS	SM	A-2-5, A-2-4	36-48	3-8	75-95	74-95	52-71	21-31	0-64	NP-3
	4-11	STV-S, STV-LS	SM	A-2-4	42-53	3-8	74-93	73-93	51-70	21-31	0-31	NP-4
	11-22	LCOS, STV-LCOS, LS, STV-LS	SM	A-2-4	15-41	3-15	76-95	75-95	51-69	20-29	0-26	NP-4
	22-30	STV-S, LS, S, STV-LS	SM	A-2-4	15-42	3-15	76-95	75-94	53-72	21-31	0-26	NP-4
	30-60	CBV-LCOS, CBV-S, CB-S, CB-LCOS	SM	A-2-4, A-1-b	0	15-29	59-84	57-83	36-56	12-22	0-23	NP-4
Nevadafalls	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-6	LS	SM	A-2-4	0	0	78-92	77-92	49-60	18-23	0-28	NP-2
	6-17	LS	SM	A-2-4	0	0	78-92	77-92	52-63	20-25	0-25	NP-2
	17-31	CB-LS, CBV-LS, STV-LS	SM	A-1-b, A-2-4	0-15	15-29	61-83	60-82	40-58	14-21	0-20	NP-2
	31-60	CBV-LS, CB-LS, STV-LS	SM	A-1-b, A-2-4	0-15	15-29	53-83	51-82	35-57	11-20	0-20	NP-2
283:												
Waterwheel	0-1	GR-LS, GRV-LS, GR-LCOS, GRV-LCOS	SM, GM	A-1-b	0	0	49-60	47-58	36-47	13-18	0-40	NP-3
	1-7	CB-LS, CBV-LS, CB-LCOS, CBV-LCOS	SM	A-2-4	0	8-23	67-84	66-83	50-68	17-26	0-38	NP-3
	7-26	STV-LCOS, STX-LS, STV-LS, STX-LCOS	SM	A-1-b, A-2-4	8-23	42-53	56-88	54-88	41-71	14-28	0-21	NP-3
	26-60	ST-COS, STV-COS, ST-LS, STV-LS	SC-SM, SM	A-1-b	7-21	39-50	58-89	56-89	27-46	6-14	0-20	NP-3
Nevadafalls	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-2	MPM	PT	A-8	0	0	---	---	---	---	---	---
	2-6	SL, LFS	SM	A-2-4, A-4	0	0	84-97	84-97	63-75	32-39	0-36	NP-1
	6-11	LFS, SL	SM	A-4, A-2-4	0	0	84-97	84-97	63-75	32-39	0-27	NP-1
	11-21	LFS, SL	SM	A-4, A-2-4	0	0	84-97	84-97	63-75	32-39	0-23	NP-1
	21-60	LS, SL	SM	A-2-4	0	0	85-97	84-97	65-77	23-29	0-18	NP-1
Rock outcrop.												

Table 11.—Engineering Index 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	
285:												
Waterwheel	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-4	LS, GR-LS, COSL, GR-COSL	SM	A-2-4	0	0	78-92	77-92	52-67	21-31	22-32	1-6
	4-8	GR-COSL, COSL, GR-LS, LS	SM	A-2-4, A-1-b	0	5-16	75-92	74-91	49-66	22-32	20-30	1-6
	8-16	CBV-LS, CB-LS	SM	A-2-4, A-1-b	3-15	23-36	68-91	66-90	46-68	19-31	18-28	1-6
	16-60	BYV-SL, BYX-SL, BYV-LS, BYX-LS	GM, SC-SM, SM	A-1-b, A-1-a	39-67	23-36	39-87	36-86	25-64	10-29	16-25	1-6
Humic Dystroxerepts	0-1	SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-6	ST-LS, LCOS, LS, ST-LCOS	SM	A-2-4	0-7	0-7	92-100	91-100	70-83	25-33	0-36	NP-3
	6-13	ST-LS, ST-LCOS, LCOS, LS	SM	A-2-4	0-7	0-7	84-100	83-100	64-83	23-33	0-29	NP-3
	13-24	ST-LCOS, LCOS, ST-LS, LS	SM	A-2-4	0-7	0-7	84-100	83-100	64-83	23-33	0-27	NP-3
	24-42	ST-LS, LS, S, ST-S	SM	A-2-4	0-7	0-7	84-100	83-100	65-84	14-23	0-25	NP-3
	42-55	STV-S, STV-LS, CB-LS, S, CB-S, LS	SM	A-2-4	0-15	15-29	79-95	78-95	62-80	13-21	0-25	NP-3
	55-60	ST-LS, ST-S, S, LS	SM	A-2-4	0-15	0-15	82-100	81-100	64-84	14-23	0-20	NP-3
286:												
Nevadafalls	0-8	LS, GR-SL, GR-LS, SL	SM	A-2-4	0	0	72-92	70-92	53-73	19-28	0-40	NP-3
	8-21	SL, LS	SM	A-2-4, A-4	0	0	78-92	77-92	56-74	26-39	25-37	1-7
	21-28	SL, LS	SC-SM, SM	A-4, A-2-4	0	0	78-92	77-92	55-73	26-38	18-30	1-7
	28-60	SL, LS	SM	A-2-4	0	0	78-92	77-92	58-73	21-28	0-20	NP-3
Typic Dystroxerepts	0-1	SPM, GR-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	GR-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-3	GR-HPM, HPM	PT	A-8	---	---	---	---	---	---	---	---
	3-16	GR-SL, GR-LS, SL, LS	SM	A-2-4	0	0	78-92	77-92	59-74	21-29	0-38	NP-3
	16-25	GR-LS, LS, GR-SL, SL	SM	A-2-4	0	0	78-92	77-92	59-74	21-29	0-29	NP-3
	25-35	SL, LS, GR-LS, GR-SL	SM	A-2-4, A-4	0	0	78-92	77-92	57-72	29-39	0-25	NP-3
	35-60	GR-LS, LS, GR-SL, SL	SM	A-2-4	0	0	78-92	77-92	59-74	21-29	0-20	NP-3

Table 11.—Engineering Index 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	
286:												
Ultic Palexeralfs--------	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-2	MPM	PT	A-8	0	0	---	---	---	---	---	---
	2-9	LFS, SL, FSL	PT	A-8	0	0	92-100	92-100	66-79	31-40	---	---
	9-14	LFS, FSL, SL	SM	A-2-4, A-4	0	0	92-100	92-100	66-78	31-40	33-43	1-6
	14-22	L, FSL, CL	CL, ML, CH	A-7-6	0	0	92-100	91-100	76-100	56-78	36-55	12-25
	22-32	L, CL, SCL	CH, ML, CL	A-7-6	0	0-8	91-100	91-100	60-95	43-76	32-56	12-29
	32-60	SCL, CL, C	CH, ML, CL	A-7-6	0	0-9	91-100	90-100	61-100	46-83	31-61	12-36
Rock outcrop.												
287:												
Badgerpass----------	0-2	SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-3	HPM	PT	A-8	---	---	---	---	---	---	---	---
	3-11	LS, LCOS	SM	A-2-4	0	0	92-100	92-100	70-80	24-30	0-39	NP-1
	11-25	LS, LCOS, CB-LS, CB-LCOS	SM	A-2-4	0	0-15	91-100	91-100	69-80	24-30	0-27	NP-1
	25-60	CB-LCOS, CB-LS, LCOS, LS	SM	A-2-4	0	0-29	90-100	90-100	69-80	24-30	0-18	NP-1
Waterwheel----------	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	LCOS, LS, ST-LS, ST-LCOS	SM	A-1-b, A-2-4	0-20	0-7	74-100	73-100	42-61	18-27	0-36	NP-1
	4-11	ST-LS, LS, ST-LCOS, LCOS	SM	A-2-4, A-1-b	0-20	0-7	74-100	73-100	42-61	18-27	0-30	NP-1
	11-22	LS, ST-LS, LCOS, ST-LCOS	SM	A-2-4, A-1-b	0-20	0-7	74-100	73-100	42-60	17-27	0-25	NP-1
	22-29	STV-LS, STX-LCOS, STV-LCOS, STX-LS	SM	A-1-b, A-1-a, A-2-4	0-74	0-7	47-100	45-100	26-61	11-27	0-18	NP-1
	29-60	STX-LS, STX-COS, STV-LS, STV-COS	GW-GM, SM, GM	A-1-a, A-1-b	0-73	0-7	48-100	46-100	21-48	5-15	0-18	NP-1

Table 11.—Engineering Index 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	
288:												
Rock outcrop.												
Craneflat----------	0-1	SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	ST-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	ST-HPM, HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-4	STV-SL, STV-LS	SM	A-2-4, A-2-5	36-48	3-8	75-95	74-95	52-71	21-31	0-64	NP-3
	4-11	STV-S, STV-LS	SM	A-2-4	42-53	3-8	74-93	73-93	51-70	21-31	0-31	NP-4
	11-22	STV-LS, LCOS, LS, STV-LCOS	SM	A-2-4	15-41	3-15	76-95	75-95	51-69	20-29	0-26	NP-4
	22-30	LS, S, STV-S, STV-LS	SM	A-2-4	15-42	3-15	76-95	75-94	53-72	21-31	0-26	NP-4
	30-60	CB-LCOS, CB-S, CBV-S, CBV-LCOS	SM	A-1-b, A-2-4	0	15-29	59-84	57-83	36-56	12-22	0-23	NP-4
Waterwheel----------	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	LS, ST-LCOS, ST-LS, LCOS	SM	A-1-b, A-2-4	0-20	0-7	74-100	73-100	42-61	18-27	0-36	NP-1
	4-11	LS, ST-LCOS, ST-LS, LCOS	SM	A-2-4, A-1-b	0-20	0-7	74-100	73-100	42-61	18-27	0-34	NP-1
	11-22	ST-LS, LCOS, ST-LCOS, LS	SM	A-2-4, A-1-b	0-20	0-7	74-100	73-100	42-60	17-27	0-25	NP-1
	22-29	STV-LCOS, STX-LS, STX-LCOS, STV-LS	SM	A-2-4, A-1-b, A-1-a	0-74	0-7	47-100	45-100	26-61	11-27	0-18	NP-1
	29-60	STX-LS, STX-COS, STV-COS, STV-LS	GW-GM, GM	A-1-a, A-1-b	0-73	0-7	48-100	46-100	21-48	5-15	0-17	NP-1
289:												
Waterwheel----------	0-1	GR-SPM, STV-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-6	CB-LS, CBV-LS, CB-LCOS	SM	A-1-b, A-2-4	0	15-29	74-92	72-91	42-56	17-26	0-39	NP-2
	6-15	CB-LS, CB-LCOS, CBV-LS	SM	A-2-4, A-1-b	0	22-35	72-91	71-91	41-56	17-26	0-35	NP-2
	15-25	CB-LCOS, CBV-LS, CB-LS	SM	A-2-4	0	29-42	70-90	68-90	52-72	18-27	0-28	NP-2
	25-36	STV-LS, ST-LCOS, ST-LS	SM	A-1-b, A-2-4	8-23	23-36	65-90	64-90	48-72	17-27	0-24	NP-2
	36-60	CBV-LS, CBV-LCOS, STV-LCOS, STV-LS, STX-LCOS, STX-LS	SM	A-1-b, A-1-a	7-22	22-35	48-74	46-72	27-45	11-21	0-19	NP-2

Table 11.—Engineering Index 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	
289:												
Craneflat	0-2	BY-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-4	BY-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	4-4	BY-HPM, HPM	PT	A-8	---	---	---	---	---	---	---	---
	4-12	STX-LS, STV-LS, STX-SL, STV-SL	SM, GM	A-1-b, A-2-4	8-23	15-29	43-67	41-66	31-53	11-20	0-39	NP-2
	12-23	STV-LS, STX-LS, STX-SL, STV-SL	GM, SM	A-1-b, A-1-a	15-29	23-36	36-63	33-62	25-50	9-19	0-28	NP-2
	23-28	STV-LS, STX-LS, STV-SL, STX-SL	GM, SM	A-1-a, A-1-b, A-2-4	31-59	23-36	33-77	31-76	24-62	8-24	0-24	NP-2
	28-60	STX-LS, STV-LS, STX-SL, STV-SL	GM, SM	A-1-a, A-1-b, A-2-4	32-60	23-36	33-77	30-76	22-59	11-31	0-19	NP-2
290:												
Humic Dystroxerepts	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-9	GR-FSL, LS, GR-LS, SL, FSL, GR-SL	SM	A-2-4, A-4	0	0	72-85	70-84	53-67	28-36	0-42	NP-4
	9-20	STV-LS, ST-SL, ST-LS, STV-FSL, ST-FSL, STV-SL	SM	A-2-4	0	23-36	63-82	62-82	47-65	24-35	0-35	NP-4
	20-60	ST-LS, STV-FSL, ST-FSL, STV-SL, ST-SL, STV-LS	SM	A-2-4	0	23-36	71-82	70-82	53-65	28-35	15-24	1-4

Table 11.—Engineering Index 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	
290:												
Tuolumne	0-3	CB-LS, CBV-LS, CB-LCOS, CBV-LCOS	SM	A-2-4, A-1-b	0	35-47	78-90	77-89	45-55	19-25	0-39	NP-1
	3-7	CBV-LS, CBV-LCOS	SM	A-1-b, A-2-4	0	47-57	74-88	73-88	42-54	18-24	0-34	NP-1
	7-12	CBV-LS, CBV-LCOS	SM	A-1-b, A-2-4	0	47-57	74-88	73-88	43-54	18-24	0-32	NP-1
	12-24	CBV-LCOS, CBX-LCOS, CBV-LS, CBX-LS	SM	A-1-b, A-2-4	0	47-58	63-88	61-88	47-70	16-26	0-25	NP-1
	24-39	CBX-LS, CBV-LS, CBX-LCOS, CBV-LCOS	SM, GM	A-1-b, A-1-a	8-23	29-42	36-63	33-62	25-50	9-19	0-23	NP-1
	39-46	STX-LS, CBV-LS, STX-LCOS, CBV-LCOS	GM, SM	A-1-b, A-1-a	7-22	35-47	40-70	38-69	22-42	9-19	0-18	NP-1
	46-60	STX-LCOS, CBV-LS, STX-LS, CBV-LCOS	SM	A-1-b	7-22	35-47	40-70	38-69	22-42	9-19	0-18	NP-1
Typic Xerorthents	0-4	SL	SM, ML	A-2-4, A-4	0	0	85-95	84-95	60-90	20-60	---	---
	4-15	PST-SL	SM	A-2-4, A-4	16-30	0	81-95	80-94	---	---	---	---
	15-33	STX-SL	SM	A-2-4, A-4	76-84	0	48-86	46-86	35-71	18-39	0-22	NP-5
	33-60	WB			---	---	---	---	---	---	---	---

Table 11.—Engineering Index 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	
290:												
Ultic Haploxeralfs-------	0-1	BYX-SPM, BY-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	SPM, BY-SPM, BYX-SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	BY-SPM, SPM, BYX-SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-6	SL, BY-SL	SM	A-4, A-5, A-6, A-7-5, A-2	8-23	0	82-91	81-91	59-74	29-39	36-48	5-11
	6-12	BY-SL, SL, BYV-SL	SM	A-2, A-4, A-5, A-6, A-7-5	8-23	5-16	80-95	79-94	56-75	27-40	34-46	5-11
	12-30	BY-SCL, SCL, BYV-SCL	SC, SM, CL, CH	A-7-6, A-2, A-6	8-24	5-24	78-94	77-94	65-94	35-57	34-52	13-24
	30-41	SCL, BYV-SCL	SC, CH, CL, SM	A-7-6, A-6, A-2	8-24	1-16	79-98	78-98	64-95	35-58	32-50	13-24
	41-60	SCL, BY-SCL	CL, SC	A-7-6, A-6	8-24	0	81-98	81-98	66-95	36-58	30-46	13-25
291:												
Ultic Haploxeralfs-------	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-2	MPM	PT	A-8	0	0	---	---	---	---	---	---
	2-3	HPM	PT	A-8	0	0	---	---	---	---	---	---
	3-5	VFSL, SL, COSL	SM	A-4	0	0	92-100	92-100	62-74	37-46	0-39	NP-5
	5-12	COSL, SL, VFSL	SM	A-4	0	0	92-100	92-100	64-76	36-46	0-28	NP-5
	12-19	COSL, SL, VFSL	SM	A-4, A-2-4	0	0	92-100	92-100	59-71	34-43	0-28	NP-5
	19-22	COSL, SL, VFSL	SC-SM, SM	A-4	0	0	92-100	92-100	67-77	38-44	18-23	3-5
	22-41	VFSL, SL, COSL	SC-SM, SM	A-4	0	0	92-100	92-100	67-76	36-42	18-23	3-5
	41-57	VFSL, SL, COSL	SC-SM, SM	A-4, A-2-4	0	0	92-100	92-100	67-76	34-40	18-23	3-5
	57-61	SL, VFSL, COSL	SC-SM, SM	A-4, A-2-4	0	0	92-100	92-100	67-76	34-40	17-22	3-5

Table 11.—Engineering Index 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	
291:												
Typic Dystroxerepts------	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-7	SL, FSL	SM	A-2-4, A-4	0	3-8	84-92	83-91	62-73	32-40	0-37	NP-4
	7-16	SL, CB-SL, CB-FSL, FSL	SM	A-4, A-2-4	0	8-23	74-91	73-91	54-72	28-39	0-35	NP-4
	16-29	CB-SL, CB-FSL, FSL, SL	SM, SC-SM	A-4, A-2-4	0	3-16	68-84	67-83	48-68	23-36	21-34	2-9
	29-39	CB-SL, CB-FSL, FSL, SL	SC-SM, SM	A-2-4	0	3-16	68-84	67-83	46-65	21-33	19-32	2-9
	39-60	CB-SL, CB-FSL, FSL, SL	SC-SM, SM	A-2-4, A-4	0	3-16	68-84	67-83	50-66	25-36	0-21	NP-4
292:												
Humic Dystroxerepts------	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-3	GR-LS, LS, GR-LCOS, LCOS	SM	A-2-4	0	0	100	70-84	54-68	19-26	0-39	NP-1
	3-4	GR-LCOS, LCOS, GR-LS, LS	SM	A-2-4	0	0	100	70-84	54-68	19-26	0-36	NP-1
	4-7	LS, GR-LS, LCOS, GR-LCOS	SM	A-2-4	0	0	100	70-84	54-68	19-26	0-34	NP-1
	7-11	LS, GR-LCOS, LCOS, GR-LS	SM	A-2-4	0	3-15	100	67-84	52-67	18-25	0-32	NP-1
	11-19	CB-LS, CBV-LS, CB-LCOS, CBV-LCOS	SM	A-2-4	0	8-23	94-97	66-83	51-67	18-25	0-25	NP-1
	19-31	STX-LS, STX-LCOS, STV-LCOS, STV-LS	SM	A-2-4, A-1-b, A-1-a	47-58	8-23	90-96	37-75	29-60	10-23	0-21	NP-1
	31-60	STX-LS, STV-LS, STV-LCOS, STX-LCOS	SM	A-1-a, A-1-b, A-2-4	47-58	8-23	90-96	37-75	29-60	10-23	0-18	NP-1

Table 11.—Engineering Index 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	
292:												
Typic Haploxerults-------	0-2	SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-4	MPM	PT	A-8	---	---	---	---	---	---	---	---
	4-7	COSL, STV-SL, GR-SL, SL, GR-L, STV-L, GR-COSL, L, STV-COSL	SM, SC-SM	A-2-5, A-2-4	0-8	0-15	67-85	66-84	39-57	22-34	33-44	3-8
	7-9	ST-COSL, L, CB-L, ST-SL, CB-COSL, COSL, CB-SL, SL, ST-L	SC-SM, SM	A-2-4, A-2-5, A-4	0-8	0-16	74-92	73-92	51-75	23-40	31-46	3-12
	9-15	L, ST-SL, SL, SCL, ST-SCL, ST-L	SC-SM, SC, CL, CH	A-2-4, A-2-5, A-4, A-5, A-6, A-5-6	0-8	0-16	73-97	72-96	58-96	30-59	31-53	10-25
	15-22	CB-CL, SCL, GR-SCL, CB-SCL, CL, GR-CL, CB-L, GR-L, L	CH, CL, SC, SC-SM	A-4, A-5, A-6, A-7-6	0-8	8-24	80-96	79-96	60-93	45-74	29-51	10-25
	22-60	CL, SCL, CB-SCL, ST-CL, STV-CL, STV-L, STV-SCL, L, CB-L	CH, CL, SC, SC-SM	A-6, A-7-6	0-24	0-17	79-96	78-96	59-93	45-75	32-51	14-29
293:												
Xeric Dystrocryepts------	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-4	LFS, LS	SM	A-2-4	0	0	85-92	84-92	80-90	27-33	0-36	NP-1
	4-20	LS, LFS	SM	A-2-4	0	0	85-92	84-92	80-90	27-33	0-30	NP-1
	20-34	GR-LFS, LS, LFS, GR-LS	SM	A-2-4	0	0	78-92	77-92	60-74	21-28	0-25	NP-1
	34-47	STV-LS, STV-LFS, ST-LS, ST-LFS, LS, LFS	SM	A-2-4	3-15	3-15	73-92	72-91	55-74	19-28	0-20	NP-1
	47-60	ST-LFS, ST-LS, STV-LS, STV-LFS	SM	A-2-4	8-23	8-23	70-91	68-91	53-73	18-28	0-18	NP-1

Table 11.—Engineering Index 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	
293:												
Vitrandic Dystroxerepts--	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-2	SL, FSL	SM	A-2-4, A-4, A-5	0	0	92-100	92-100	71-83	33-41	34-50	1-5
	2-5	SL, FSL	SM	A-4, A-2-4	0	0	92-100	92-100	71-83	32-40	25-34	1-5
	5-18	SL, FSL	SM, SC-SM	A-4, A-2-4	0	0	85-100	84-100	65-83	28-39	20-32	1-5
	18-25	CB-FSL, CB-SL, FSL, SL	SM, SC-SM	A-2-4	1-8	1-8	91-98	91-98	69-79	28-35	17-24	1-5
	25-36	CB-SL, CB-FSL, CBV-FSL, CBV-SL	SM, SC-SM	A-2-4	0	23-36	63-82	62-82	50-70	20-30	17-24	1-5
	36-60	CB-SL, CB-FSL, CBV-SL, CBV-FSL	SM, SC-SM	A-1-b, A-2-4	0	8-23	59-76	58-75	43-62	15-25	16-25	1-7
294:												
Waterwheel----------	0-0	SPM	PT	A-8	0	0	---	---	---	---	---	---
	0-1	MPM	PT	A-8	0	0	---	---	---	---	---	---
	1-2	HPM	PT	A-8	0	0	---	---	---	---	---	---
	2-6	CB-LCOS, LCOS, CB-LS, LS	SM	A-2-4	0	3-15	84-92	83-92	48-56	20-25	0-38	NP-1
	6-11	STV-LCOS, ST-LCOS, LCOS, ST-LS, STV-LS, LS	SM	A-2-4	7-22	3-22	79-92	78-91	46-56	19-24	0-24	NP-1
	11-26	STV-LS, STX-LCOS, STX-LS, STV-LCOS	SM	A-2-4	58-67	3-15	61-86	60-85	46-68	16-25	0-18	NP-1
	26-60	STX-LCOS, STX-LS, STV-LS, STV-LCOS	GM	A-1-b	83-100	0	40-76	38-75	29-60	10-22	0-17	NP-1

Table 11.—Engineering Index 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	
294:												
Typic Dystroxerepts------	0-1	SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-5	ST-COSL, COSL, LCOS, ST-LCOS	SM, SC-SM	A-2-5, A-2-4 A-1-b	0-16	0-16	81-100	80-100	45-65	20-35	0-63	NP-7
	5-12	ST-LCOS, LCOS, COSL, ST-COSL	SC-SM, SM	A-1-b, A-2-4	0-16	0-16	81-100	80-100	49-69	21-35	0-37	NP-7
	12-20	STV-COSL, LCOS, STV-LCOS, CB-COSL, COSL, CB-LCOS	SC-SM, SM	A-1-b, A-2-4	0-16	3-16	73-92	72-92	42-62	19-32	0-32	NP-7
	20-28	STX-LCOS, STX-COSL, STV-LCOS, STV-COSL	SC-SM, SM	A-1-b, A-2-4	48-58	3-16	68-95	67-95	36-60	16-32	16-28	1-7
	28-49	STV-COSL, STV-LCOS, CB-COSL, CB-LCOS, LCOS, COSL	SC-SM, SM	A-1-b, A-2-4	0-16	8-23	80-92	79-91	47-62	20-32	15-25	1-7
	49-60	WB			---	---	---	---	---	---	---	---
295:												
Craneflat----------	0-5	GR-COSL, SL, CB-LS, COSL, CB-COSL, GR-SL	SM	A-1-b	0	3-16	68-84	67-83	36-50	16-24	0-40	NP-3
	5-19	STV-COSL, STV-SL, ST-COSL, ST-SL	SM	A-1-b	8-23	3-16	63-83	61-83	33-50	14-24	0-31	NP-3
	19-60	CB-SL, CB-COSL, STV-COSL, STV-SL	SM	A-1-b, A-2-4	8-23	23-36	65-90	63-90	35-54	15-26	0-20	NP-3
Typic Dystroxerepts------	0-1	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-9	COSL, ST-SL, ST-COSL, SL	SM, SC-SM	A-2-4, A-4, A-5	0-8	0-8	83-100	82-100	62-82	32-45	0-43	NP-5
	9-18	COSL, ST-SL, SL, CB-SL, CB-COSL, ST-COSL	SC-SM, SM	A-4, A-2-4	0-8	3-16	74-92	73-91	53-72	24-36	0-32	NP-5
	18-31	CBV-COSL, CBV-SL, CB-COSL, CB-SL	SC-SM, SM	A-4, A-2-4	0-8	23-36	78-91	77-90	56-71	26-36	0-27	NP-5
	31-60	SL, ST-COSL, ST-SL, COSL	SC-SM, SM	A-4, A-2-4	0-8	0-8	91-100	91-100	68-81	35-45	0-22	NP-5

Table 11.—Engineering Index 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	
296:												
Ultic Palexeralfs--------	0-2	SPM	PT	A-8	0	0	---	---	---	---	---	---
	2-3	MPM	PT	A-8	0	0	---	---	---	---	---	---
	3-6	L, SL	ML	A-4, A-6, A-5, A-7-5	0	0	92-100	91-100	74-96	50-70	38-56	6-16
	6-12	SL, L	ML, SM	A-5, A-7-5, A-6, A-4	0	0	92-100	91-100	71-93	48-67	34-52	6-17
	12-23	CL	CL, CH, ML	A-7-6	0	0	92-100	91-100	79-100	61-82	40-59	17-29
	23-32	SICL, CL, L	ML, CH	A-7-6	0	0	92-100	91-100	81-100	71-93	41-59	17-29
	32-41	L, SICL, CL	ML, CH	A-7-6, A-6	0	0	92-100	91-100	78-100	68-90	39-57	18-29
	41-60	L, CL, SICL	CH, CL	A-7-6, A-6	0	0	91-100	91-100	74-97	62-83	37-53	18-29
Humic Dystroxerepts------	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-3	MPM	PT	A-8	---	---	---	---	---	---	---	---
	3-6	SL, FSL	SM	A-2-4, A-4	0	0	85-100	84-100	62-83	30-45	34-47	2-9
	6-17	FSL, SL	SM	A-4, A-2-4, A-5	0	0	85-100	84-100	64-86	34-50	32-45	2-9
	17-22	SL, FSL	SM	A-4, A-2-4	0	0	85-100	84-100	62-83	30-45	25-39	2-9
	22-28	PCB-FSL, PCB-SL, FSL, SL	SM	A-2-4	0	0	85-100	84-100	62-83	30-44	21-34	2-9
	28-37	SL, FSL, PCB-SL, PCB-FSL	SM, SC-SM	A-4	0	0	100	100	88-97	38-47	19-32	2-9
	37-48	SL, FSL	SM, SC-SM	A-2-4, A-4	0	0	100	100	69-78	31-40	17-27	2-9
	48-70	LCOS, COS, LS	SM	A-2-4	0	0	100	100	58-62	25-29	0-20	NP-3
	70-86	LCOS, LS, COS	SM	A-2-4	0	0	100	100	77-81	28-32	0-20	NP-3
	86-106	LCOS, LFS, LS, COS	SM	A-2-4	0	0	100	100	94-98	33-37	0-20	NP-3

Table 11.—Engineering Index 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	
297:												
Typic Xerorthents--------	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-3	LCOS, LS	SM	A-2-4	0	0	85-92	84-92	56-67	20-28	0-40	NP-5
	3-6	LCOS, LS	SM	A-2-4	0	0	85-92	84-92	56-67	20-28	0-40	NP-5
	6-9	LCOS, CB-LS, CB-LCOS, LS	SM	A-2-4	0	3-15	76-92	75-92	54-73	21-32	0-29	NP-5
	9-16	LS, LCOS, GR-LCOS, GR-LS	SM	A-2-4	0	3-15	69-84	67-84	51-69	19-29	0-27	NP-5
	16-28	CB-LS, CB-LCOS, LCOS, LS	SM	A-2-4	0	3-15	83-92	82-92	57-70	21-30	0-23	NP-5
	28-60	STV-LS, STX-LCOS, STX-LS, STV-LCOS	SM	A-2-4, A-1-b	47-58	3-15	69-88	67-87	47-66	17-28	0-22	NP-5
Rock outcrop.												
Typic Xeropsamments------	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	HPM	PT	A-8	---	---	---	---	---	---	---	---
	1-3	GR-LS, GR-LCOS, LCOS, LS	SM	A-2-4	0	0	72-91	70-90	54-73	19-27	0-36	NP-1
	3-7	LCOS, LS	SM	A-2-4	0	0	85-97	84-97	65-78	23-29	0-34	NP-1
	7-12	LCOS, LS	SM	A-2-4	0	0	85-97	84-97	65-78	22-29	0-27	NP-1
	12-17	LS, LCOS	SM	A-2-4	0	0	92-100	92-100	71-80	24-30	0-25	NP-1
	17-21	LCOS, LS, S	SP-SM	A-3, A-2-4	0	0	85-92	84-92	64-73	5-9	0-23	NP-1
	21-30	PGR-S, PGR-LCOS, PGR-LS, S, LCOS, LS	SP-SM	A-3, A-2-4	0	0	100	100	76-80	6-10	0-20	NP-1
	30-38	LS, LCOS, GR-LS, GR-LCOS, GR-S, S	SP-SM	A-3, A-2-4	0	0	72-85	71-85	54-68	4-8	0-18	NP-1
	38-60	WB			0	0	100	100	---	---	0-18	NP-1

Table 11.—Engineering Index 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	
298:												
Tuolumne----------	0-0	SPM	PT	A-8	0	0	---	---	---	---	---	---
	0-1	MPM	PT	A-8	0	0	---	---	---	---	---	---
	1-2	HPM	SM	A-8	0	0	---	---	---	---	---	---
	2-6	CB-LCOS, LCOS, CB-LS, LS	SM	A-2-4	0	3-15	84-92	83-92	48-56	20-25	0-38	NP-1
	6-11	ST-LS, LS, LCOS, ST-LCOS, STV-LS, STV-LCOS	SM	A-2-4	7-22	3-22	79-92	78-91	46-56	19-24	0-24	NP-1
	11-26	STV-LCOS, STV-LS, STX-LS, STX-LCOS	SM	A-2-4	58-67	3-15	61-86	60-85	46-68	16-25	0-18	NP-1
	26-60	STX-LS, STV-LCOS, STV-LS, STX-LCOS	GM	A-1-b	83-100	0	40-76	38-75	29-60	10-22	0-17	NP-1
Typic Dystroxerepts------	0-1	ST-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-5	LCOS, ST-LCOS, COSL, ST-COSL	SM, SC-SM	A-2-5, A-2-4, A-1-b	0-16	0-16	81-100	80-100	45-65	20-35	0-63	NP-7
	5-12	LCOS, ST-LCOS, COSL, ST-COSL	SC-SM, SM	A-1-b, A-2-4	0-16	0-16	81-100	80-100	49-69	21-35	0-37	NP-7
	12-20	STV-COSL, STV-LCOS, CB-COSL, COSL, CB-LCOS, LCOS	SC-SM, SM	A-1-b, A-2-4	0-16	3-16	73-92	72-92	42-62	19-32	0-32	NP-7
	20-28	STX-LCOS, STV-COSL, STV-LCOS, STX-COSL	SC-SM, SM	A-1-b, A-2-4	48-58	3-16	68-95	67-95	36-60	16-32	16-28	1-7
	28-49	STV-COSL, LCOS, CB-LCOS, COSL, CB-COSL, STV-LCOS	SC-SM, SM	A-1-b, A-2-4	0-16	8-23	80-92	79-91	47-62	20-32	15-25	1-7
	49-60	WB			---	---	---	---	---	---	---	---

Table 11.—Engineering Index 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	
299:												
Humic Dystroxerepts------	0-1	STV-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	STV-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	HPM, STV-HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-4	ST-COS, STV-COS, ST-LS, STV-LS	SM	A-1-b	34-45	3-7	77-96	76-96	32-44	7-13	0-37	NP-2
	4-11	ST-LS, STV-COS, ST-COS, STV-LS	SM	A-1-b	39-50	3-7	75-96	74-96	31-44	7-13	0-33	NP-2
	11-22	ST-COS, STV-LS, STV-COS, ST-LS	SW-SM	A-1-b	14-39	3-14	77-97	76-97	31-43	6-12	0-26	NP-2
	22-30	STV-LS, ST-LS, STV-COS, ST-COS	SM	A-2-4	15-42	3-15	76-96	75-96	56-77	17-26	0-20	NP-2
	30-60	CBV-LS, CB-LS, CBV-COS, CB-COS	SW-SM	A-1-b	0	14-27	60-84	59-84	24-39	6-12	0-19	NP-2
Ultic Haplxoeralfs-------	0-0	SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM, ST-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-8	ST-SL, ST-SCL, SL, SCL, L, ST-L	SM, ML, SC-SM	A-4, A-2-4, A-5, A-7-5	3-16	3-8	74-97	73-96	56-90	29-55	31-50	1-13
	8-17	CB-SCL, CB-SL, SCL, SL, L, CB-L	ML, SC-SM, SM	A-2-4, A-4, A-5	0	3-8	76-97	75-96	57-89	30-54	22-42	1-13
	17-28	GR-SL, STV-SL, GR-SCL, STV-SCL, GR-L, STV-L	SC, SC-SM, SM	A-2-4, A-4	0-8	3-16	66-84	65-83	47-74	22-42	18-38	1-13
	28-47	GR-SL, L, GR-L, GR-SCL, SCL, SL	SC, SC-SM, SM	A-2-4, A-4	0	3-8	76-97	75-96	54-85	25-49	16-33	1-14
	47-60	L, GR-SCL, SCL, GR-L, GR-SL, SL	CL, CL-ML, ML, SC, SC-SM, SM	A-2-4, A-4	0	0	78-97	77-97	58-90	30-54	16-33	1-14

Table 11.—Engineering Index 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	
300:												
Typic Dystroxerepts------	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-2	SPM	PT	A-8	0	0	---	---	---	---	---	---
	2-2	SL, GR-SL, LS, GR-LS	SM, SC-SM	A-2-4, A-4, A-5	0	0	100	70-84	51-68	24-36	34-46	1-7
	2-5	GR-LS, LS, GR-SL, SL	SC-SM, SM	A-2-4, A-5, A-4	0	0	100	70-84	51-68	24-36	32-44	1-7
	5-9	GR-LS, LS, GR-SL, SL	SC-SM, SM	A-2-4, A-4	0	0	100	70-90	50-73	24-38	21-33	1-7
	9-15	GR-LS, GRV-LS, GR-SL, GRV-SL	GC-GM, SC-SM, SM	A-1-b, A-2-4	0	0-8	51-65	49-63	36-51	17-27	18-28	1-8
	15-20	GR-LS, LS, GR-SL, SL	SC-SM, SM	A-2-4, A-4	0-8	0	76-92	75-92	54-73	26-38	17-26	1-8
	20-30	WB			---	---	---	---	---	---	---	---
Ultic Haploxeralfs-------	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-2	MPM	PT	A-8	0	0	---	---	---	---	---	---
	2-2	HPM	PT	A-8	0	0	---	---	---	---	---	---
	2-10	SL, CBV-SL, CB-SL	SM	A-2-4, A-4	0	8-23	68-89	65-88	49-71	25-39	0-42	NP-4
	10-19	CBV-SL, CB-SL	SM, SC-SM	A-2-4, A-4	0	16-30	67-89	63-87	47-71	23-38	20-32	3-9
	19-60	CB-SCL, SCL	SC, SC-SM	A-2-4, A-4, A-6, A-2-6	0	8-16	69-89	66-87	48-72	23-40	27-38	10-17
301:												
Vitrandic Haploxerolls---	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-4	L	MH, ML	A-7-5, A-6, A-4	0	0	100	100	95-100	71-84	32-52	2-11
	4-7	L	ML	A-4, A-6, A-7-5	0	0	100	100	92-100	67-80	30-48	2-11
	7-11	FSL	CL, ML, CL-ML	A-4, A-6	0	0	100	100	78-100	53-66	18-35	2-12
	11-19	L, SL, FSL	CL-ML, CL, ML	A-4, A-6	0	0	100	100	95-100	70-83	18-35	2-12
	19-34	COS, SL, FSL, L	CL-ML, CL, ML	A-4, A-6	0	0	100	100	96-100	70-83	17-31	2-12
	34-57	L, FSL, SL, COS	CL-ML, CL, ML	A-4, A-6	0	0	100	100	96-100	70-83	17-30	2-12
	57-63	FSL, COS, SL, L	CL-ML, CL, ML	A-4, A-6	0	0	100	100	96-100	70-83	17-29	2-12
	63-69	FSL, COS, L, SL	SM	A-2-4, A-4, A-6	0	0	100	100	53-100	27-43	0-29	NP-12

Table 11.—Engineering Index 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	
302:												
Typic Haploxerults-------	0-2	SPM	PT	A-8	0	0	---	---	---	---	---	---
	2-2	MPM	PT	A-8	0	0	---	---	---	---	---	---
	2-3	HPM	PT	A-8	0	0	---	---	---	---	---	---
	3-5	L	MH, ML	A-5, A-7-5	0	0	92-100	91-100	77-91	54-67	41-52	8-13
	5-12	L	MH, ML	A-5, A-7-5	0	0	92-100	91-100	75-95	53-70	36-54	8-17
	12-22	CL	ML, CL	A-7-6	0	0	91-100	91-100	76-94	58-73	35-49	13-21
	22-60	SCL	CL, SC	A-7-6, A-6	0	0-8	91-100	91-100	74-92	40-55	31-42	13-21
Ultic Haploxeralfs-------	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-2	MPM	PT	A-8	0	0	---	---	---	---	---	---
	2-2	HPM	PT	A-8	0	0	---	---	---	---	---	---
	2-10	CBV-SL, SL, CB-SL	SM	A-2-4, A-4	0	8-23	68-89	65-88	49-71	25-39	0-42	NP-4
	10-19	CB-SL, CBV-SL	SM, SC-SM	A-2-4, A-4	0	16-30	67-89	63-87	47-71	23-38	20-32	3-9
	19-60	CB-SCL, SCL	SC, SC-SM	A-2-4, A-4, A-6, A-2-6	0	8-16	69-89	66-87	48-72	23-40	27-38	10-17
303:												
Rock outcrop.												
Dystric Xeropsamments----	0-0	SPM, BYV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM, BYV-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-3	SL, GR-SL, LS, GR-LS	SM	A-2-4	0	3-8	69-84	68-83	52-67	18-26	0-40	NP-3
	3-5	LS, SL, GR-SL, GR-LS	SM	A-2-4	0	3-8	69-84	68-83	52-68	18-27	0-38	NP-3
	5-14	SL, LS, GR-SL, GR-LS	SM	A-2-4	0	3-8	69-84	68-83	52-68	18-27	0-29	NP-3
	14-28	SL, LS, GR-SL, GR-LS	SM	A-2-4	0	3-8	69-84	68-83	53-69	18-27	0-25	NP-3
	28-37	CBV-LS, CB-SL, CBV-SL, CB-LS	SM	A-2-4	0	8-23	66-84	65-83	50-68	18-27	0-20	NP-3
	37-60	WB			---	---	---	---	---	---	---	---

Table 11.—Engineering Index 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	
303:												
Humic Dystroxerepts------	0-1	STV-SPM, ST-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	CB-SL, CBV-SL, CBV-LS, CB-LS	SM	A-2-4	1-8	3-23	72-97	71-96	55-79	20-31	0-39	NP-3
	2-7	CB-LS, CBX-LS, CBX-SL, CBV-SL, CB-SL, CBV-LS	SM	A-2-4	3-16	30-42	55-80	53-79	41-65	15-26	0-37	NP-3
	7-13	CBX-SL, CB-LS, CBX-LS, CB-SL, CBV-LS, CBV-SL	SM	A-2-4	3-16	30-42	65-90	63-89	48-73	17-29	0-28	NP-4
	13-33	STX-SL, STV-LS, STV-SL, STX-LS	SM, GM	A-2-4	48-58	16-30	33-86	30-85	23-70	8-28	0-25	NP-4
	33-60	STX-SL, STX-LS, STV-SL, STV-LS	GM, SM	A-1-b, A-2-4	48-58	16-30	33-73	30-72	23-60	8-24	0-20	NP-4
Tuolumne-----------------	0-1	BY-SPM, BYV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-9	CBV-LS, STV-LS, CB-LS, STV-COSL, CB-COSL, CBV-COSL	SM	A-2-4, A-4, A-1-b	3-16	23-36	67-90	66-90	40-59	24-36	0-38	NP-3
	9-21	CB-LS, CB-LCOS, STV-LCOS, CBV-LCOS, CBV-LS, STV-LS	SM	A-2-4, A-1-b	3-16	23-36	67-90	66-90	38-55	16-25	0-26	NP-2
	21-29	STV-LCOS, CB-LCOS, STV-LS, CB-LS	SM	A-2-4, A-1-b	8-23	23-36	65-90	63-90	37-55	16-25	0-24	NP-2
	29-44	CBX-LCOS, CBV-LCOS, CBX-LS, CBV-LS	SM	A-1-b	3-16	36-48	52-79	50-78	30-49	13-22	0-19	NP-2
	44-60	CBX-LCOS, CBV-LCOS, CBX-LS, CBV-LS	SM	A-1-b	3-16	36-48	52-79	50-78	30-49	13-22	0-19	NP-2

Table 11.—Engineering Index 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	
304:												
Clarkslodge	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-1	HPM	SM	A-8	---	---	---	---	---	---	---	---
	1-3	GR-SL, GR-COSL, COSL, LS	SM	A-4, A-2-4	0	0	79-85	78-85	53-69	27-42	27-49	1-12
	3-6	COSL, LS, GR-COSL, GR-SL		A-2-4	0	0	72-85	71-85	45-66	23-39	21-40	1-12
	6-12	COSL, SL	SM	A-4, A-2-4	0	0	85-92	85-92	56-74	27-42	19-35	1-12
	12-27	SL, COSL, GR-COSL, GR-SL	SC-SM, SM	A-2-4	0	0	72-85	71-85	48-69	23-40	18-33	1-12
	27-35	SL, GR-SL	SC-SM, SM	A-2-4	0	0	65-78	64-77	43-63	20-35	17-32	1-12
	35-60	GR-SL, SL	SC, SC-SM	A-2-4, A-4, A-6	0	5-15	69-84	67-84	47-70	22-39	17-30	1-12
Rock outcrop.												
305:												
Rock outcrop.												
Waterwheel	0-3	GRV-S, GRX-S	GP, GP-GM	A-1-a, A-1-b	0	7-22	38-53	35-51	27-40	2-5	0-39	NP-1
	3-9	GRX-S, GRV-S	GP	A-1-a	0	7-15	18-29	15-26	11-21	1-3	0-34	NP-1
	9-11	GRV-S	SP, GP-GM, GP	A-1-b	0	7-15	51-64	49-63	37-50	3-6	0-25	NP-1
	11-21	GRX-S, GRV-S	GP	A-1-b, A-1-a	0	7-22	28-43	25-40	19-32	2-4	0-23	NP-1
	21-60	GRV-S, GRX-S	GP	A-1-b, A-1-a	0	7-21	29-44	26-42	20-33	2-4	0-18	NP-1
Dystric Xeropsamments	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-6	LS	SM	A-2-4	0	0	79-100	79-100	59-79	18-26	---	---
	6-18	LS	SM	A-2-4	0	0	79-100	79-100	59-79	18-26	0-14	NP
	18-25	LS	SM	A-2-4	0	0	79-100	79-100	59-79	18-26	0-16	NP-1
	25-41	LS	SM	A-2-4	0	0	79-100	79-100	59-79	18-26	0-16	NP-1
	41-60	LS	SM	A-2-4	0	0	79-100	79-100	59-79	18-26	0-16	NP-1

Table 11.—Engineering Index 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	
306:												
Typic Cryopsamments------	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	LCOS	SM	A-2-4	0	0	85-92	85-92	50-59	20-26	0-40	NP-3
	4-15	GR-LCOS, LCOS, GR-LS, LS	SM	A-2-4	0	0	79-92	78-92	44-57	17-25	0-27	NP-3
	15-32	LS, LCOS	SM	A-2-4	0	0	85-92	85-92	54-63	20-27	0-21	NP-3
	32-43	CB-LS, LCOS, LS, CB-LCOS	SM	A-2-4	0	3-15	84-92	83-92	49-59	19-26	0-20	NP-3
	43-60	GR-LCOS, GR-LS, GRV-LCOS, GRV-LS	SM	A-1-b	0	3-15	63-78	61-77	36-49	14-21	0-20	NP-3
Humic Dystroxerepts------	0-0	SPM	PT	A-8	0	22-61	---	---	---	---	---	---
	0-5	LS, GR-LS	SM, GM	A-1-b, A-2-4	0	0	60-100	58-100	50-70	15-30	0-39	NP-2
	5-13	CB-LS, LS	SM	A-2-4	0	4-15	83-95	82-95	62-76	21-28	0-29	NP-3
	13-23	CB-LS, LS	SM	A-2-4	0	4-15	83-95	82-95	62-76	21-28	0-25	NP-3
	23-60	CB-L	GC, SC, CL	A-4	0	5-16	74-91	73-91	63-82	44-58	23-29	7-10
307:												
Rock outcrop.												
Dystric Xeropsamments----	0-0	BYV-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM, BYV-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-3	GR-LS, GR-SL, LS, SL	SM	A-2-4	0	3-8	69-84	68-83	52-67	18-26	0-40	NP-3
	3-5	SL, GR-LS, GR-SL, LS	SM	A-2-4	0	3-8	69-84	68-83	52-68	18-27	0-38	NP-3
	5-14	SL, LS, GR-SL, GR-LS	SM	A-2-4	0	3-8	69-84	68-83	52-68	18-27	0-29	NP-3
	14-28	GR-SL, LS, SL, GR-LS	SM	A-2-4	0	3-8	69-84	68-83	53-69	18-27	0-25	NP-3
	28-37	CB-LS, CB-SL, CBV-SL, CBV-LS	SM	A-2-4	0	8-23	66-84	65-83	50-68	18-27	0-20	NP-3
	37-60	WB			---	---	---	---	---	---	---	---
Dystric Xerorthents------	0-3	GRV-S, GRX-S	GP, GP-GM	A-1-a,	0	7-22	38-53	35-51	27-40	2-5	0-39	NP-1
	3-9	GRV-S, GRX-S	GP	A-1-a	0	7-15	18-29	15-26	11-21	1-3	0-34	NP-1
	9-11	GRV-S	SP, GP-GM, GP	A-1-b	0	7-15	51-64	49-63	37-50	3-6	0-25	NP-1
	11-21	GRX-S, GRV-S	GP	A-1-b, A-1-a	0	7-22	28-43	25-40	19-32	2-4	0-23	NP-1
	21-60	GRV-S, GRX-S	GP	A-1-b, A-1-a	0	7-21	29-44	26-42	20-33	2-4	0-18	NP-1

Table 11.—Engineering Index 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	
309:												
Rock outcrop.												
Waterwheel----------	0-2	SPM, CB-SPM	PT	A-8	---	---	---	---	---	---	---	---
	2-7	CB-SL, CBV-SL	GM, SM	A-1-b, A-2-4	0	8-23	53-69	51-68	39-55	20-31	16-21	1-5
	7-17	CB-SL, CBV-SL	GC-GM, SM, GM	A-1-b	0	16-30	45-61	42-60	31-47	15-24	16-21	1-5
	17-31	CBV-SL, CB-SL	SC-SM, SM	A-2-4	0	8-23	53-69	51-68	37-53	18-27	16-21	1-5
	31-60	CBV-SL, CB-SL	GC-GM, GM, SM	A-1-b	0	16-30	45-61	42-60	31-46	14-23	16-21	1-5
Typic Dystroxerepts------	0-1	CB-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	CB-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	CB-HPM, HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-3	CBV-SL	GM	A-1-a, A-1-b	0	8-23	42-57	39-55	29-44	15-24	0-42	NP-4
	3-7	CBV-SL	GM	A-1-b, A-1-a	0	8-23	36-51	34-49	24-38	11-19	0-40	NP-4
	7-27	STX-SL, STV-SL	GC-GM, GM	A-1-a, A-1-b	8-23	16-30	23-47	20-45	15-35	7-17	0-29	NP-4
	27-41	STX-SL, STV-SL	GC-GM, GM	A-1-a, A-1-b	8-23	16-30	23-47	20-45	15-35	7-17	0-27	NP-4
	41-60	STX-SL, STV-SL	GM	A-1-a, A-1-b	8-23	16-30	23-47	20-45	15-36	8-20	15-22	1-4
310:												
Rock outcrop.												
Humic Dystroxerepts------	0-0	CB-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	CB-HPM, HPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	CBV-LS, CB-LS	SM	A-2-4	0	8-23	67-84	66-83	51-68	18-27	0-41	NP-3
	4-8	CBV-LS, CB-LS	SM	A-1-b, A-1-4	3-15	23-36	59-82	57-81	44-66	16-26	0-39	NP-3
	8-30	STV-LS, STX-LS	SM	A-1-b, A-2-4	23-36	29-42	56-88	54-88	42-71	15-28	0-28	NP-4
	30-39	STV-LS, STX-LS	SM, GM	A-1-b, A-2-4	26-52	29-42	46-88	44-87	34-71	12-28	0-25	NP-4
	39-60	BYX-LS, BYV-LS	SM, GM	A-1-b, A-2-4	31-59	29-42	40-87	37-87	29-70	10-28	0-20	NP-4

Table 11.—Engineering Index 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	
310:												
Humic Lithic Haploxerepts	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-2	MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-10	GR-LCOS, GRX-LCOS, GRV-LCOS, GR-SL, GRX-SL, GRV-SL	GM, SM	A-1-b	15-30	3-15	54-76	52-75	28-43	9-16	0-49	NP-2
	10-20	BYV-SL, BYV-FSL, BYX-FSL, BYX-SL	SM, GM	A-1-b, A-1-a	32-60	8-23	34-71	31-70	27-62	14-32	0-49	NP-2
	20-60	BR			---	---	---	---	---	---	---	---
311:												
Rock outcrop.												
Humic Dystroxerepts------	0-1	CBV-LS, CB-LS	SM	A-2-4, A-1-b	3-15	15-29	53-75	51-74	40-59	14-23	0-39	NP-2
	1-11	CBV-LS, CB-LS	SM	A-1-b, A-2-4	3-15	15-29	53-75	51-74	40-59	14-23	0-37	NP-2
	11-30	STX-LS, STV-LS, CB-LS	SM, GM	A-1-b, A-1-4	8-23	23-36	47-73	45-72	35-58	12-22	0-28	NP-2
	30-60	CBX-LS, CBV-LS	SM, GM	A-1-b, A-2-4	3-15	23-36	43-66	41-65	31-52	11-20	0-19	NP-2
Humic Lithic Haploxerepts	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-2	MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-10	GR-SL, GRX-SL, GRV-SL	GM, SM	A-2-4, A-1-b	16-32	3-16	53-75	51-73	37-58	18-30	34-44	2-6
	10-20	BYV-SL, BYX-SL	SM, GM	A-1-b, A-1-a	32-60	8-23	34-71	31-70	24-57	13-32	32-42	2-6
	20-60	BR			---	---	---	---	---	---	---	---
313:												
Nevadafalls----------	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-6	LS	SM	A-2-4	0	0	78-92	77-92	49-60	18-23	0-28	NP-2
	6-17	LS	SM	A-2-4	0	0	78-92	77-92	52-63	20-25	0-25	NP-2
	17-31	CB-LS, CBV-LS, STV-LS	SM	A-1-b, A-2-4	0-15	15-29	61-83	60-82	40-58	14-21	0-20	NP-2
	31-60	STV-LS, CB-LS, CBV-LS	SM	A-1-b, A-2-4	0-15	15-29	53-83	51-82	35-57	11-20	0-20	NP-2

Table 11.—Engineering Index 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	
313:												
Oxyaquic Dystrudepts-----	0-0	SPM	PT	A-8	0	0	---	---	---	---	---	---
	0-10	SL	SM	A-2-4, A-4	0	0	92-100	92-100	68-79	33-41	32-40	2-5
	10-35	SL	SC-SM, SM	A-4, A-2-4	0	0	92-100	92-100	68-79	33-41	21-31	2-6
	35-48	SL	SC-SM, SM	A-4, A-2-4	0	0	92-100	92-100	68-79	33-41	19-29	2-6
	48-61	LCOS	SM	A-2-4	0	0	92-100	92-100	54-62	23-28	0-19	NP-2
314:												
Badgerpass----------	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-6	LS, S	SM	A-2-4	0	0	92-100	92-100	71-80	24-30	0-39	NP-1
	6-13	LS, S	SM	A-2-4	0	0	85-100	84-100	65-80	22-30	0-34	NP-1
	13-24	S, LS	SM	A-2-4	0	0	85-100	84-100	65-80	22-30	0-27	NP-1
	24-42	LS, S	SC-SM	A-3, A-2-4	0	0	85-100	85-100	64-79	5-10	0-23	NP-1
	42-55	CB-S, S, CB-LS, LS	SP-SM, SC-SM	A-3, A-2-4	0-6	15-29	81-100	80-100	61-79	5-10	0-18	NP-1
	55-60	S, LS	SP-SM, SC-SM	A-3, A-2-4	0	3-15	84-92	83-92	63-73	5-9	0-18	NP-1
Dystric Xeropsamments----	0-2	SPM	PT	A-8	0	0	---	---	---	---	---	---
	2-4	MPM	PT	A-8	0	0	---	---	---	---	---	---
	4-4	HPM	PT	A-8	0	0	---	---	---	---	---	---
	4-9	S, LFS, LS	SM	A-2-4	0	0	92-100	92-100	71-81	25-31	0-38	NP-3
	9-25	LS, S, LFS	SM	A-2-4	0	0	92-100	92-100	70-80	25-31	0-27	NP-3
	25-30	S, LFS, LS	SM	A-2-4	0	0	92-100	92-100	70-80	25-31	0-25	NP-3
	30-60	LFS, S, LS	SM	A-2-4, A-4	0	0	92-100	92-100	87-99	31-37	0-20	NP-3
Rock outcrop.												
315:												
Nevadafalls----------	0-1	MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	SL, GR-SL	SM	A-2-4, A-1-b	0	0	65-85	63-84	45-63	20-30	0-41	NP-3
	2-14	BY-SL, BYV-SL, BYX-SL	SM	A-2-4, A-1-b	23-36	3-16	50-81	48-81	35-63	17-33	22-31	3-6
	14-35	BYX-SL, BY-SL, BYV-SL	SM	A-2-4, A-1-b	23-36	3-16	50-81	48-81	34-60	15-29	24-33	3-6
	35-60	BYX-SL, BYV-SL	SC-SM, SM	A-2-4, A-1-b	48-58	3-16	55-87	53-87	38-65	17-32	18-24	3-6

Table 11.—Engineering Index 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	
315:												
Dystric Xeropsamments----	0-0	SPM	PT	A-8	0	0	---	---	---	---	---	---
	0-7	GR-LS, LS	SM	A-2-4	0	0	78-92	77-92	59-74	21-28	0-37	NP-2
	7-16	LS, GR-LS	SM	A-2-4	0	0	78-92	77-92	59-74	21-28	0-28	NP-2
	16-26	LS, GR-LS	SM	A-2-4	0	0-8	77-92	76-92	58-74	20-28	0-24	NP-2
	26-60	CB-LS, CBV-LS	SM	A-2-4	0	15-29	73-91	72-91	55-73	19-28	0-19	NP-2
316:												
Dystric Xerorthents------	0-4	CB-LCOS, CBV-LCOS	GP-GM, SC-SM, SM, GM, GC-GM	A-1-a, A-1-b	0	61-78	26-56	23-54	14-34	6-16	0-40	NP-3
	4-13	CBV-LCOS, CB-LCOS	SM	A-1-b, A-2-4	0	22-35	64-83	63-82	36-52	15-24	0-34	NP-3
	13-23	STX-LCOS, STV-LCOS	SM, GM	A-1-b	7-22	29-41	53-81	51-80	29-49	12-23	0-25	NP-3
	23-35	STV-LCOS, STX-LCOS	GM, SM	A-1-b, A-1-a	7-22	35-47	50-79	48-78	27-49	11-23	0-20	NP-3
	35-393	BR			---	---	---	---	---	---	---	---
Rock outcrop.												
Rubble land.												
318:												
Typic Dystroxerepts------	0-4	SL	SM	A-2-4, A-4	0	0	92-100	92-100	67-79	32-41	34-44	1-6
	4-12	SL	SM, SC-SM	A-4	0	0	92-100	92-100	69-82	36-46	25-35	1-6
	12-27	SL	SC-SM, SM	A-4	0	0	92-100	92-100	69-82	36-46	20-31	1-6
	27-39	SL	SC-SM, SM	A-4	0	0	92-100	92-100	69-82	36-46	18-29	1-6
	39-57	WB	SC-SM, SM		0	---	---	---	---	---	---	---
Humic Dystroxerepts------	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	HPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	LS, SL	SM	A-2-5, A-2-4	0	0	85-92	84-92	59-69	23-30	0-45	1-4
	2-5	LS, SL	SM	A-2-4	0	0	85-92	84-92	59-70	25-32	0-30	1-4
	5-14	SL, LS	SM	A-2-4	0	0	85-92	84-92	62-72	25-32	0-30	1-4
	14-33	LS, SL	SM	A-2-4	0	0	85-92	84-92	63-73	26-33	0-25	1-4
	33-46	SL, LS	SM	A-2-4	0	0	85-92	84-92	63-73	26-33	0-25	1-4
	46-48	SL, LS	SC-SM, SM	A-4, A-2-4	0	0	85-92	84-92	63-73	28-36	0-25	1-4
	48-54	FSL, SL	SC, SM, SC-SM	A-4	0	0	100	100	79-87	38-46	18-26	3-9
	54-60	FSL, SL	SC-SM, SM	A-4	0	0	100	100	81-89	41-49	18-26	3-9

Table 11.—Engineering Index 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	
319:												
Humic Dystroxerepts------	0-0	CBV-SPM, CB-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	CB-MPM, CBV-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-5	CBV-FSL, STX-FSL, STX-LS, CBV-LS	SM, SC-SM	A-2-4, A-1-b	8-22	29-41	53-81	51-80	39-63	12-21	0-40	NP-3
	5-13	STX-LS, STX-FS, CBV-FS, CBX-LS, CBX-FS, CBV-LS	SC-SM, SM	A-1-b, A-1-a	8-22	29-41	36-64	33-62	27-53	8-17	0-29	NP-3
	13-20	STV-LS, STX-LS, STV-S, STX-S	SC-SM, SM	A-1-b, A-2-4	35-47	8-22	40-70	38-69	31-60	9-19	0-22	NP-3
	20-35	STV-S, STX-S, STX-LS, STV-LS	SC-SM, SM	A-1-b, A-2-4	52-62	8-22	47-86	45-86	36-73	10-22	0-21	NP-3
	35-60	STX-S, STX-LS	SC-SM, SM	A-2-4, A-1-b, A-1-a	75-83	4-15	40-86	38-85	30-72	8-22	0-21	NP-3
Typic Haploxerults-------	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-5	LCOS	SM	A-2-4, A-1-b	0	0	85-97	85-97	49-59	20-26	0-14	NP
	5-7	LCOS	SM	A-2-4	0	3-7	92-97	92-97	53-59	22-26	0-14	NP
	7-12	GR-SL, SL	SM	A-4, A-2-4	0	0	78-92	77-92	56-77	27-42	23-36	3-10
	12-20	SL, GR-SL	SC, SM	A-4, A-2-4	0	0	78-92	77-92	52-72	24-38	21-34	3-10
	20-31	SL, GR-SL	SC, SM	A-4, A-2-4	0	0	78-92	77-92	53-73	24-38	19-32	3-10
	31-46	SL, GR-SL	SC, SM	A-2-4	0	0	71-85	70-84	48-66	22-34	18-30	3-10
	46-53	GR-S, S	SP-SM, SC-SM	A-3	0	0	79-100	78-100	59-78	5-9	0-14	NP
	53-71	GR-S, S	SP-SM, SC-SM	A-3	0	0	79-100	78-100	59-78	5-9	0-14	NP
Inceptic Haploxeralfs----	0-0	STV-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	STV-MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	CBV-FSL, CB-FSL	SM	A-2-4	0	23-36	56-74	54-73	47-67	23-35	0-37	NP-2
	4-12	CBX-FSL, CBV-FSL, CB-FSL	SM	A-2-4	8-15	23-36	50-73	48-72	42-65	20-34	0-28	NP-3
	12-22	CBV-FSL, CBX-FSL	SM, GM	A-2-4, A-1-b	8-15	29-42	47-71	45-70	38-63	19-32	0-26	NP-3
	22-30	CBV-FSL, CBX-FSL	GM, SM	A-1-b, A-1-a	8-23	29-42	28-56	25-54	21-49	10-25	0-23	NP-3
	30-60	STX-FSL	GP-GM, GM	A-1-a	29-42	36-42	16-35	13-33	11-30	5-15	0-18	NP-3

Table 11.—Engineering Index 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	
320:												
Half Dome	0-1	BYX-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	GR-LS, BYX-LS	SM, GM	A-1-b, A-1-a, A-2-4	0-71	0-8	18-65	14-64	11-53	4-22	0-43	NP-5
	4-10	GR-LS, BYX-LS	GM, SM	A-2-4, A-1-b	0-71	0-8	45-85	42-84	33-70	12-29	0-34	NP-5
	10-20	BYX-SL, GRV-SL	GM	A-1-a, A-1-b	0-60	0-8	14-48	10-46	7-36	3-18	0-30	NP-5
	20-47	GRV-SL, GRX-SL	GM	A-1-a	0-47	0-8	12-39	9-36	6-28	3-14	0-28	NP-5
	47-61	LCOS, BYX-LCOS	GM, SM	A-2-4, A-1-b	0-70	0-7	57-92	55-92	32-60	14-30	0-23	NP-5
Humic Dystroxerepts	0-0	BYX-MPM, MPM	PT	A-8	---	---	---	---	---	---	---	---
	0-3	BYX-LS, GR-LS	SM, GM	A-1-a, A-2-4, A-1-b	0-59	0-29	40-85	37-84	29-67	10-26	0-39	NP-2
	3-7	BYX-LS, GR-LS	GM, SM	A-1-a, A-1-b, A-2-4	0-59	0-29	40-85	37-84	29-67	10-26	0-37	NP-2
	7-16	GR-LS, BYX-LS	GM, SM	A-1-a, A-1-b, A-2-4	0-59	0-29	40-85	37-84	29-67	10-26	0-28	NP-2
	16-22	STV-LS, BYX-LS	GM, SM	A-1-a, A-1-b, A-2-4	23-65	36-47	31-87	28-87	22-70	8-26	0-26	NP-2
	22-35	STX-COSL	GM, SM	A-1-a, A-1-b, A-2-4	30-59	48-58	39-83	36-82	23-55	13-34	0-26	NP-4
	35-60	GRX-COSL, GRV-COSL	GM, SM	A-1-a, A-1-b, A-2-4	0-47	0-23	28-92	25-92	15-61	9-38	0-21	NP-4
Rock outcrop.												
321:												
Dystric Xeropsamments	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-8	S	SP-SM, SC-SM	A-3, A-2-4	0	0	92-100	92-100	70-80	6-11	0-37	NP-2
	8-21	ST-COS, COS	SW-SM, SM, SC-SM	A-1-b	0-7	0-7	92-100	92-100	41-49	10-15	0-26	NP-2
	21-61	STV-LFS, ST-LFS, LFS	SM	A-2-4, A-4	15-29	0-15	89-100	88-100	83-97	30-37	0-20	NP-3

Table 11.—Engineering Index 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	
321:												
Dystric Xerorthents------	0-3	GRX-S, GRV-S	GP, GP-GM	A-1-a, A-1-b	0	7-22	38-53	35-51	27-40	2-5	0-39	NP-1
	3-9	GRV-S, GRX-S	GP	A-1-a	0	7-15	18-29	15-26	11-21	1-3	0-34	NP-1
	9-11	GRV-S	SP, GP-GM, GP	A-1-b	0	7-15	51-64	49-63	37-50	3-6	0-25	NP-1
	11-21	GRV-S, GRX-S	GP	A-1-b, A-1-a	0	7-22	28-43	25-40	19-32	2-4	0-23	NP-1
	21-60	GRV-S, GRX-S	GP	A-1-b, A-1-a	0	7-21	29-44	26-42	20-33	2-4	0-18	NP-1
322:												
Typic Xerorthents--------	0-0	SPM, BYV-SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-7	COSL, GR-SL, SL, GR-COSL	SM	A-2-4	0	0	71-84	70-84	50-64	24-32	0-30	NP-4
	7-24	CBV-LS, CB-LS	SM	A-2-4	0	8-23	66-84	65-83	51-68	21-30	0-23	NP-4
	24-42	STX-LS, STX-LCOS	SM, SC-SM, GM, GC-GM	A-1-b, A-1-a	57-66	7-22	26-72	23-71	13-42	5-17	0-19	NP-2
	42-60	STV-COS, STX-S, STV-S, STX-COS			55-65	7-21	100	100	53-57	17-21	0-18	NP-2
323:												
Ultic Haploxeralfs-------	0-3	BYV-SL, SL	SM	A-2-4, A-2-5	0-24	0-8	73-100	72-100	54-79	27-42	36-45	4-8
	3-5	SL, BYV-SL	SM	A-2-5, A-2-4	0-24	0-8	73-100	72-100	52-80	25-43	34-46	6-12
	5-10	BYV-SL, SL	SM, SC, SC-SM	A-2-5, A-2-4	0-24	0-8	73-100	72-100	52-80	25-43	29-41	6-12
	10-21	BYV-SL, SL	SM, SC-SM, SC	A-2-6, A-2-4	0-24	0-8	73-100	72-100	53-79	26-43	29-39	8-12
	21-37	GRX-SL, GR-SL, GRV-SL	GC, GC-GM, GM, SC, SM	A-2-6, A-2-4	0-16	8-23	42-64	40-62	28-51	13-28	26-42	8-17
	37-60	CBX-SCL, CBV-SCL	SC, GC-GM, GC	A-2-6, A-2-4	0-17	23-37	35-59	33-58	26-51	13-29	27-37	10-17

Table 11.—Engineering Index 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	
323:												
Humic Dystroxerepts------	0-1	BYV-SPM, BY-SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-2	BYV-MPM, BY-MPM	PT	A-8	---	---	---	---	---	---	---	---
	2-2	BYV-HPM, BY-HPM	PT	A-8	---	---	---	---	---	---	---	---
	2-7	BYV-SL, GR-SL	SM	A-2-4, A-2-5, A-5, A-4	0-31	0-8	63-100	62-100	45-79	21-41	32-42	1-6
	7-15	BYV-SL, SL	SM	A-2-4, A-4	0-31	0-8	71-100	70-100	50-82	24-44	21-35	1-9
	15-29	SL, BYV-SL	SC-SM, SM	A-2-4, A-4	0-31	0-8	80-100	79-100	57-82	27-44	18-33	1-9
	29-60	BYV-SL, SL	SM, SC-SM	A-1-b, A-2-4	0-31	0-8	71-100	70-100	49-78	22-40	18-28	3-9
324:												
Humic Haploxerepts-------	0-0	CB-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-4	GRV-SL, GR-L, GRV-L, GR-SL	GM, SM	A-2-4, A-2-5	0	8-23	53-69	51-68	38-54	26-39	30-45	3-8
	4-8	CBX-L, CBX-SCL, GRV-SCL, GRV-L	GC-GM, GM	A-1-b, A-2-4	0	16-30	39-55	36-53	27-43	19-31	24-34	3-8
	8-20	CBX-SCL, GRX-SCL, CBX-SL, GRX-SL, GRV-SCL, GRV-SL	GC-GM, GC, GM	A-1-b, A-2-4	0	23-36	26-42	23-40	16-31	11-22	21-31	3-8
	20-30	GRX-SCL, GRV-SCL, GRX-L, GRV-L	GC-GM, GM, GC	A-1-b, A-2-4	0	16-30	33-49	31-47	23-38	16-27	21-31	3-8
	30-60	GRV-FSL, GRX-SCL, GRV-SCL, GRX-FSL	GC-GM, GC	A-1-b, A-2-4	8-23	15-29	24-48	21-46	15-37	11-26	20-31	3-8
Rock outcrop.												
Ultic Haploxeralfs-------	0-0	CBV-SPM, CB-SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-6	CBV-L, CBX-L	GC-GM, CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	43-54	55-89	53-88	45-81	33-60	24-38	4-9
	6-16	CBV-L	GC-GM, SC-SM, SC, SM	A-2-4, A-4	0	31-43	52-72	50-70	43-70	30-57	20-32	4-9
	16-29	CBV-L, CB-L, CBV-FSL, CB-FSL	GC-GM, SC-SM, SC	A-2-4, A-4	0	24-37	54-73	52-72	42-72	26-50	20-27	4-8
	29-60	CBV-L, CBX-L	GC-GM	A-2-4, A-4	0	43-54	39-60	36-59	30-52	21-36	20-26	4-8

Table 11.—Engineering Index 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	
325. Urban land												
328:												
Clarkslodge	0-0	SPM	PT	A-8	---	---	---	---	---	---	---	---
	0-1	MPM	PT	A-8	---	---	---	---	---	---	---	---
	1-5	CB-FSL, FSL, SL, CB-SL, L, CB-L	SM	A-8, A-5, A-7-5	0	0-16	91-100	90-100	81-99	36-50	65-75	4-14
	5-11	CB-SL, CB-L, CBV-L, CBV-SL, CBV-FSL, CB-FSL	SM, SC-SM	A-4, A—2-4, A-5, A-7-6	0	30-43	69-90	67-89	58-86	23-39	25-41	4-12
	11-20	CBV-FSL, CB-FSL, CBV-SL, CB-SL, CBV-L, CB-L	SC, SC-SM	A-2-4, A-4	0	30-43	69-90	67-89	58-86	23-39	21-33	4-12
	20-37	CBV-FSL, CBV-SL, CBX-SL, CBV-L, CBX-L, CBX-FSL	SC, SC-SM	A-2-4, A-4	0-16	43-54	58-88	57-88	49-84	19-38	21-32	4-12
	37-60	CBV-FSL, CBV-SL, CB-SL, CBV-L, CB-L, CB-FSL	SC, SC-SM	A-2-4, A-4	0	30-43	69-90	67-89	49-74	23-39	20-32	4-12
Ultic Palexeralfs	0-1	SPM	PT	A-8	---	---	---	---	---	---	---	---
	1-4	CB-FSL, FSL, CB-L, L	MH	A-5, A-7-5	0	0-16	89-100	89-100	77-100	56-76	36-85	7-14
	4-13	CB-FSL, CB-L, L, FSL	CL, CL-ML, ML	A-6, A-5, A-7-6, A-4	0	8-23	89-100	88-100	76-99	57-77	28-47	7-17
	13-31	L, FSL, ST-FSL, ST-L	CL, CL-ML	A-4, A-6	0-16	0-16	88-100	87-100	76-99	55-76	25-38	7-17
	31-49	GR-L, L, FSL, GR-FSL	CL, CL-ML	A-4, A-6	0	0-8	83-100	83-100	68-95	46-69	24-36	7-17
	49-60	L, GR-L, FSL, GR-FSL	CL, CL-ML	A-4, A-6	0	0-8	83-100	83-100	69-96	46-68	24-36	7-17
401:												
Sentinel	0-1	SPM	PT	A-8	0	0	---	---	---	---	---	---
	1-5	SL, L, FSL	SM, ML	A-5, A-4	0	0	100	91-100	67-82	40-53	0-41	NP-7
	5-20	SL, L, FSL	SM, ML	A-4	0	0	100	91-100	69-83	45-56	18-35	2-7
	20-27	FSL, L, SL	ML, SM	A-4	0	0	100	91-100	69-82	45-56	18-30	2-7
	27-41	L, FSL, SL	ML, SM	A-4	0	0	100	91-100	73-86	48-59	0-26	NP-6
	41-56	SL, LS	ML	A-4	0	0	100	91-100	83-98	52-63	0-24	NP-6
	56-66	SL, LS	SM	A-2-4	0	0	100	92-100	70-82	26-33	0-21	NP-4

Table 11.—Engineering Index 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	
412. Water-Riverwash												
501:												
Happyisles, sandy loam---	0-3	GR-SPM, SPM	PT	A-8	---	---	---	---	---	---	---	---
	3-7	FSL, GR-S, GR-COSL, GR-FSL, GR-SL, COSL, SL, S	SC-SM, SM	A-2-4, A-4	0	0	89-97	74-92	57-81	30-48	0-37	NP-11
	7-13	S, FSL, SL, GR-SL, GR-COSL, GR-S, COSL, GR-FSL	SC-SM, SM	A-2-4, A-4	0	0	89-97	74-92	55-81	29-48	0-37	NP-11
	13-17	GR-S, GR-COSL, GR-FSL, SL, FSL, COSL, S, GR-SL	SC-SM, SM	A-2-4, A-4	0	0	89-97	74-92	57-81	30-48	0-37	NP-11
	17-33	GR-FSL, GR-SL, SL, FSL, COSL, S, GR-COSL, GR-S	SC-SM, SM	A-2-4, A-4	0	0	89-97	74-92	57-81	30-48	0-31	NP-11
	33-60	SR- GR-S FSL	SC-SM, SM	A-2-4	0	0	85-100	71-100	55-82	20-32	0-21	NP-4
Happyisles, loamy fine sand, overwash----------	0-3	SPM	PT	A-8	0	0	---	---	---	---	---	---
	3-7	SL, FSL, LFS, S, COSL	SC-SM, SM	A-2-4, A-4	0	0	95-100	86-100	79-99	34-46	18-32	2-7
	7-13	SL, FSL, COSL, S	SC-SM, SM	A-2-4, A-4	0	0	95-100	86-100	53-68	30-42	0-31	NP-6
	13-17	SL, FSL, COSL, S	SC-SM, SM	A-2-4, A-4	0	0	95-100	85-100	63-80	30-42	18-32	2-7
	17-33	SL, FSL, COSL, S	SC-SM, SM	A-2-4, A-4	0	0	95-100	85-100	63-80	30-42	17-26	2-7
	33-41	SR- LCOS LS	SC-SM, SM	A-2-4, A-4	0	0	95-100	86-100	63-80	30-40	0-22	NP-4
	41-62	LS	SC-SM, SM	A-2-4	0	0	95-100	86-100	66-84	18-28	16-25	2-7

Table 11.—Engineering Index 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	
502:												
Happyisles	0-3	SPM	PT	A-8	0	0	---	---	---	---	---	---
	3-7	SL, COSL, FSL, S	SM, SC-SM	A-2-4, A-4	0	0	95-100	86-100	63-80	30-42	18-32	2-7
	7-13	SL, S, COSL, FSL	SM, SC-SM	A-2-4, A-4	0	0	95-100	86-100	53-68	30-42	0-31	NP-6
	13-17	S, COSL, FSL, SL	SM, SC-SM	A-2-4, A-4	0	0	95-100	85-100	63-80	30-42	18-32	2-7
	17-33	S, COSL, SL, FSL	SM, SC-SM	A-4, A-2-4	0	0	95-100	85-100	63-80	30-42	17-26	2-7
	33-41	SR- GR-S FSL	SM, SC-SM	A-2-4, A-4	0	0	95-100	86-100	---	---	0-22	NP-4
	41-62	LS	SC-SM, SM	A-2-4	0	0	95-100	86-100	66-84	18-28	16-25	2-7
504:												
Mollic Xerofluvents	0-2	SPM	PT	A-8	0	0	---	---	---	---	---	---
	2-6	SR- GR-S L	SM, ML	A-6, A-5, A-4	0	0	95-100	81-100	67-92	47-66	31-48	5-11
	6-8	SR- GR-S L	SP-SM	A-3, A-2-4	0	0	95-100	82-100	62-78	7-10	0-23	NP-2
	8-12	SR- GR-S L	SC, SC-SM	A-6, A-2-4, A-4	0	0	85-95	69-95	53-80	26-43	20-30	6-12
	12-23	SR- GR-S L	SM, SC-SM	A-2-4, A-4, A-1-b	0	0	72-100	60-100	49-85	21-37	0-19	NP-2
	23-29	SR- GR-S L	SC-SM, SM	A-2-4, A-4	0	0	84-93	69-90	65-87	30-42	15-20	1-3
	29-49	SR- GR-S L	SP-SM	A-3, A-2-4	0	0	85-91	61-87	46-68	5-9	0-17	NP-2
	49-54	SR- GR-S L	SC-SM	A-4, A-2-4	0	0	84-92	69-89	51-71	25-37	21-33	3-7
	54-68	SR- GR-S L	SC-SM	A-4, A-2-4	0	0	85-91	61-87	45-70	22-37	19-28	3-7
510t:												
Rubble land.												
Lithnip	0-1	GRX-SL	GP-GM	A-1	0-8	5-15	40-55	15-25	10-20	5-15	20-30	NP-5
	1-5	GRV-SL, GRX-SL	GW-GM	A-1	0-5	5-15	25-45	15-35	5-25	0-20	20-30	NP-5
	5-15	BR			---	---	---	---	---	---	---	---
Rock outcrop.												

Table 11.—Engineering Index 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	
551:												
Happyisles	0-3	SPM	PT	A-8	0	0	---	---	---	---	---	---
	3-7	SL, FSL, COSL, S	SC-SM, SM	A-2-4, A-4	0	0	95-100	86-100	63-80	30-42	18-32	2-7
	7-13	S, COSL, FSL, SL	SC-SM, SM	A-2-4, A-4	0	0	95-100	86-100	53-68	30-42	0-31	NP-6
	13-17	COSL, SL, S, FSL	SC-SM, SM	A-2-4, A-4	0	0	95-100	85-100	63-80	30-42	18-32	2-7
	17-33	S, COSL, FSL, SL	SC-SM, SM	A-2-4, A-4	0	0	95-100	85-100	63-80	30-42	17-26	2-7
	33-41	SR- GR-S FSL	SC-SM, SM	A-2-4, A-4	0	0	95-100	86-100	63-80	30-42	0-22	NP-4
	41-62	LS	SC-SM, SM	A-2-4	0	0	95-100	86-100	66-84	18-28	16-25	2-7

Table 11.—Engineering Index 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	
551:												
Half Dome----------	0-1	CBV-SL, GR-COSL, BYV-SL, STV-SL, STX-SL, CBX-SL, SL, ST-SL, ST-LS, GR-LCOS, GR-SL, CB-SL	SP-SC, SM, SC-SM	A-1-b, A-1-a, A-2-4	53-72	0	56-87	12-74	9-60	4-31	17-30	1-7
	1-19	CBV-SL, GR-LCOS, ST-LS, SL, GR-SL, CB-SL, CBX-SL, ST-SL, BYV-SL, GR-COSL, STV-SL	SM, SC-SM	A-1-b, A-2-4, A-1-a	0	23-48	62-91	33-81	24-65	11-34	17-30	1-7
	19-28	SL, GR-SL, CB-SL, ST-LS, GR-LCOS, ST-SL, BYV-SL, GR-COSL, STV-SL, CBV-SL, CBX-SL	SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	23-48	54-90	20-80	14-64	7-34	15-25	1-7
	28-33	BY-SL, ST-SL, CBV-LCOS, STX-LS, CBV-COSL, GR-SL, STX-SL, CB-SL, CBX-SL, CBV-SL	SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	23-48	54-90	20-80	11-53	6-32	15-25	1-7
	33-50	CBV-LCOS, CB-SL, BY-SL, STX-LS, CBV-COSL, GR-SL, CBV-SL, STX-SL, CBX-SL, ST-SL	SW-SC, SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	23-48	54-90	20-80	10-45	3-17	15-25	1-7
	50-60	CBV-LS, CBV-SL, STX-SL, CBV-LCOS	SC-SM, SM	A-1-a, A-1-b, A-2-4	8-23	23-48	54-90	20-80	15-64	5-24	0-17	NP-2

Table 11.—Engineering Index 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	
552:												
Mollic Xerofluvents------	0-2	SPM	PT	A-8	0	0	---	---	---	---	---	---
	2-6	SR- GR-S L	SM, ML	A-6, A-5, A-4	0	0	95-100	81-100	67-92	47-66	31-48	5-11
	6-8	SR- GR-S L	SP-SM	A-3, A-2-4	0	0	95-100	82-100	62-78	7-10	0-23	NP-2
	8-12	SR- GR-S L	SC, SC-SM	A-6, A-2-4, A-4	0	0	85-95	69-95	53-80	26-43	20-30	6-12
	12-23	SR- GR-S L	SM, SC-SM	A-2-4, A-4, A-1-b	0	0	72-100	60-100	49-85	21-37	0-19	NP-2
	23-29	SR- GR-S L	SC-SM, SM	A-2-4, A-4	0	0	84-93	69-90	65-87	30-42	15-20	1-3
	29-49	SR- GR-S L	SP-SM	A-3, A-2-4	0	0	85-91	61-87	46-68	5-9	0-17	NP-2
	49-54	SR- GR-S L	SC-SM	A-4, A-2-4	0	0	84-92	69-89	51-71	25-37	21-33	3-7
	54-68	SR- GR-S L	SC-SM	A-4, A-2-4	0	0	85-91	61-87	45-70	22-37	19-28	3-7
590:												
Terric Haplosaprists-----	0-3	MK-L, SL, L	SM, ML	A-5	0	0	89-100	66-100	56-91	39-66	39-59	7-11
	3-8	GR-S, LFS	SP-SM	A-2-4	0	0	93-100	68-100	51-78	6-11	0-34	NP-3
	8-12	GR-S, LFS	SM	A-2-4, A-4	0	0	96-100	75-100	70-96	25-36	0-30	NP-3
	12-31	MUCK	PT	A-8	0	0	---	---	---	---	---	---
	31-35	SL, MK-L, L	ML	A-4	0	0	95-100	85-100	70-93	49-68	31-50	5-13
	35-38	MK-L, L, SL	SM	A-2-4, A-4	0	0	100	100	73-81	35-43	27-44	6-12
	38-46	SL, L	CL, ML	A-6, A-4	0	0	100	86-100	73-90	52-66	29-43	9-13
	46-52	MUCK	PT	A-8	0	0	---	---	---	---	---	---
	52-58	L, MK-L, SL	SM	A-4	0	0	95-100	86-100	62-81	30-43	31-48	5-11
	58-60	L, SL	SM	A-4	0	0	100	100	78-86	40-48	27-44	6-12

Table 11.—Engineering Index 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	
601:												
Half Dome, very bouldery-	0-3	BYV-SPM	PT	A-8	---	0	---	---	---	---	---	---
	3-5	CBX-SL, GR-LCOS, STV-SL, GR-COSL, ST-LS, STX-SL, ST-SL, SL, CBV-SL, BYV-SL, GR-SL, CB-SL	SM, SC-SM	A-4, A-2-4	16-73	0	73-100	46-100	33-81	16-42	17-30	1-7
	5-8	STX-SL, ST-SL, GR-SL, CBV-SL, GR-LCOS, STV-SL, ST-LS, CBX-SL, GR-COSL, CB-SL, BYV-SL, SL	SC-SM, SM	A-4, A-1-b, A-2-4	16-85	0	82-100	63-100	46-81	22-42	17-30	1-7
	8-15	CBX-SL, CBV-SL, CB-SL, CBV-COSL, BY-SL, STX-SL, ST-SL, GR-SL, STX-LS, CBV-LCOS	SC-SM, SM	A-1-b, A-4, A-2-4	16-85	0	82-100	63-100	46-81	22-42	16-26	1-7
	15-39	CBV-SL, CBV-COSL, BY-SL, STX-SL, ST-SL, CBX-SL, CB-SL, GR-SL, CBV-LCOS, STX-LS	SC-SM, SM	A-2-4, A-4, A-1-b	8-59	8-30	82-100	63-100	46-81	22-42	16-26	1-7
	39-63	CBV-LCOS, STX-SL, CBV-SL, CBV-LS	SM, SC-SM	A-2-4, A-4	16-46	23-42	82-100	63-100	48-85	26-49	16-26	1-7

Table 11.—Engineering Index 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	
601:												
Half Dome, cobbly--------	0-1	ST-SPM	PT	A-8	0-61	78-88	---	---	---	---	---	---
	1-2	ST-SPM	PT	A-8	0-61	78-88	---	---	---	---	---	---
	2-10	SL, GR-SL, STX-SL, STV-SL, GR-COSL, ST-LS, GR-LCOS, CBV-SL, CB-SL, BYV-SL, ST-SL, CBX-SL	SM, SC-SM	A-1-b, A-4, A-2-4	8-23	30-42	62-96	60-95	44-77	21-40	17-30	1-7
	10-17	STV-SL, STX-SL, GR-COSL, SL, ST-LS, GR-LCOS, CBV-SL, CB-SL, GR-SL, BYV-SL, ST-SL, CBX-SL	SM, GC-GM, GM, SC-SM	A-1-b, A-4, A-2-4	8-46	16-30	48-91	46-90	33-73	16-38	17-30	1-7
	17-29	STX-SL, STV-SL, GR-COSL, SL, ST-LS, GR-LCOS, CBV-SL, CB-SL, GR-SL, BYV-SL, ST-SL, CBX-SL	SM, GM, SC-SM, GC-GM	A-1-b, A-4, A-2-4	8-46	16-30	48-91	46-90	33-73	16-38	15-25	1-7
	29-60	STX-LS, ST-SL, CBV-COSL, STV-SL, BY-SL, STX-SL, CBX-SL, CBV-SL, CB-SL, GR-SL, CBV-LCOS	GM, GC-GM, SC-SM, SM	A-1-b, A-2-4, A-4	8-46	16-30	48-91	46-90	33-73	16-38	15-25	1-7

Table 11.—Engineering Index 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	
602:												
Half Dome	0-1	ST-LS, STX-SL, STV-SL, GR-COSL, GR-LCOS, CBV-SL, CB-SL, GR-SL, BYV-SL, ST-SL, CBX-SL, SL	SP-SC, SM, SC-SM	A-1-b, A-1-a, A-2-4	53-72	0	56-87	12-74	9-60	4-31	17-30	1-7
	1-19	CBV-SL, GR-LCOS, ST-LS, SL, CB-SL, GR-SL, STV-SL, GR-COSL, BYV-SL, ST-SL, CBX-SL	SM, SC-SM	A-1-b, A-2-4, A-1-a	0	23-48	62-91	33-81	24-65	11-34	17-30	1-7
	19-28	CBX-SL, CBV-SL, GR-COSL, GR-SL, SL, ST-LS, ST-SL, BYV-SL, GR-LCOS, STV-SL, CB-SL	SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	23-48	54-90	20-80	14-64	7-34	15-25	1-7
	28-33	CBV-LCOS, STX-LS, CBV-COSL, CB-SL, CBV-SL, ST-SL, STX-SL, BY-SL, GR-SL, CBX-SL	SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	23-48	54-90	20-80	11-53	6-32	15-25	1-7
	33-50	CBV-LCOS, STX-LS, CBV-COSL, GR-SL, CB-SL, CBV-SL, CBX-SL, ST-SL, STX-SL, BY-SL	SW-SC, SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	23-48	54-90	20-80	10-45	3-17	15-25	1-7
	50-60	CBV-LS, CBV-LCOS, CBV-SL, STX-SL	SC-SM, SM	A-1-a, A-1-b, A-2-4	8-23	23-48	54-90	20-80	15-64	5-24	0-19	NP-2
610:												
Rubble land.												

Table 11.—Engineering Index 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	
610:												
Half Dome	0-1	BYX-SPM	PT	A-8	---	78-99	---	---	---	---	---	---
	1-2	BYX-SPM	PT	A-8	---	78-99	---	---	---	---	---	---
	2-10	BYV-SL, CBX-SL, CB-SL, CBV-SL, GR-LCOS, ST-LS, SL, STX-SL, ST-SL, STV-SL, GR-SL, GR-COSL	SM, SC-SM	A-1-b, A-4, A-2-4	8-23	16-42	62-91	60-90	44-73	21-38	17-30	1-7
	10-17	STV-SL, CBX-SL, CBV-SL, CB-SL, GR-SL, BYV-SL, ST-SL, GR-LCOS, ST-LS, SL, STX-SL, GR-COSL	SM, GC-GM, GM, SC-SM	A-1-b, A-4, A-2-4	8-46	16-30	48-91	46-90	33-73	16-38	17-30	1-7
	17-29	ST-SL, STX-SL, ST-LS, CBX-SL, BYV-SL, GR-SL, CB-SL, CBV-SL, GR-LCOS, STV-SL, SL, GR-COSL	SM, GM, SC-SM, GC-GM	A-1-b, A-4, A-2-4	8-46	16-30	48-91	46-90	33-73	16-38	15-25	1-7
	29-60	CB-SL, CBV-SL, CBV-COSL, CBX-SL, ST-SL, STX-SL, BY-SL, STV-SL, CBV-LCOS, STX-LS, GR-SL	GM, GC-GM, SC-SM, SM	A-1-b, A-2-4, A-4	8-46	16-30	48-91	46-90	33-73	16-38	15-25	1-7

Table 11.—Engineering Index 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	
620: Half Dome, extremely stony sandy loam, warm--	0-1	GR-COSL, STX-SL, STV-SL, CBX-SL, ST-SL, BYV-SL, SL, ST-LS, GR-LCOS, CBV-SL, CB-SL, GR-SL	SP-SC, SM, SC-SM	A-1-b, A-1-a, A-2-4	53-72	0	56-87	12-74	9-60	4-31	17-30	1-7
	1-19	BYV-SL, GR-COSL, STV-SL, STX-SL, GR-SL, CB-SL, ST-SL, CBX-SL, CBV-SL, SL, GR-LCOS, ST-LS	SP-SC, SM, SC-SM	A-1-b, A-2-4, A-1-a	0	53-72	56-87	12-74	9-60	4-31	17-30	1-7
	19-28	BYV-SL, CBV-SL, CB-SL, GR-COSL, CBX-SL, CBV-COSL, ST-SL, GR-SL, SL, ST-LS, GR-LCOS	SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	8-48	54-96	20-92	14-75	7-39	15-25	1-7
	28-33	CBV-LCOS, CBX-SL, BY-SL, STX-SL, ST-SL, STX-LS, CBV-SL, CB-SL, CBV-COSL, GR-SL	SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	8-48	54-96	20-92	14-75	7-39	15-25	1-7
	33-50	CBV-COSL, BY-SL, CB-SL, CBV-SL, GR-SL, ST-SL, CBX-SL, STX-LS, CBV-LCOS, STX-SL	SM, SC-SM	A-2-4, A-1-b, A-1-a	8-23	8-48	54-96	20-92	17-87	7-42	15-25	1-7
	50-60	CBV-LCOS, CBV-LS, STX-SL, CBV-SL	SC-SM, SM	A-1-a, A-1-b, A-2-4	8-23	8-48	54-96	20-92	14-68	5-28	0-19	NP-2

Table 11.—Engineering Index 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	
620:												
Half Dome, very cobbly sandy loam, warm--------	0-1	STV-SPM	PT	A-8	42-100	42-71	---	---	---	---	---	---
	1-2	STV-SPM	SC-SM, PT	A-8	42-100	42-71	---	---	---	---	---	---
	2-10	CBX-SL, CBV-SL, STV-SL, STX-SL, BYV-SL, ST-SL, GR-SL, CB-SL, GR-COSL, GR-LCOS, ST-LS, SL	SC-SM, PT	A-1-b, A-4, A-2-4	8-23	16-42	62-91	60-90	44-73	21-38	17-30	1-7
	10-17	GR-SL, GR-COSL, CB-SL, CBX-SL, CBV-SL, GR-LCOS, ST-LS, ST-SL, BYV-SL, SL, STX-SL, STV-SL	SM, GC-GM, GM, SC-SM	A-1-b, A-4, A-2-4	8-70	16-30	25-91	22-90	16-73	8-38	17-30	1-7
	17-29	ST-SL, BYV-SL, GR-SL, CB-SL, CBV-SL, GR-LCOS, ST-LS, SL, GR-COSL, STX-SL, CBX-SL, STV-SL	SM, GM, SC-SM, GC-GM	A-1-b, A-4, A-2-4	8-70	16-30	25-91	22-90	16-73	8-38	15-25	1-7
	29-60	STV-SL, BY-SL, STX-SL, ST-SL, CBX-SL, CBV-SL, CBV-COSL, GR-SL, STX-LS, CBV-LCOS, CB-SL	GM, GC-GM, SC-SM, SM	A-1-b, A-2-4 A-4	8-70	16-30	25-91	22-90	16-73	8-38	15-25	1-7

Table 11.—Engineering Index 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	
630: Rubble land.												
Half Dome	0-1	STX-SL, STV-SL, GR-COSL, SL, ST-LS, GR-LCOS, CBV-SL, CB-SL, GR-SL, BYV-SL, ST-SL, CBX-SL	SM, SC-SM	A-1-b, A-1-a, A-2-4, A-4	16-85	0	68-96	36-92	26-75	12-39	17-30	1-7
	1-19	CBV-SL, GR-LCOS, ST-LS, SL, GR-SL, CB-SL, CBX-SL, BYV-SL, GR-COSL, ST-SL, STV-SL	SC-SM, SM	A-1-b, A-2,4 A-1-a, A-4	16-85	0	68-96	36-92	26-75	12-39	17-30	1-7
	19-28	STV-SL, GR-COSL, BYV-SL, ST-SL, CBX-SL, CBV-COSL, CB-SL, ST-LS, GR-LCOS, CBV-SL, GR-SL, SL	SC-SM, SM	A-2-4, A-1-b, A-1-a, A-4	3-23	8-48	54-96	20-93	11-62	6-37	15-25	1-7
	28-33	CBV-LCOS, STX-LS, CBV-COSL, GR-SL, CB-SL, CBV-SL, CBX-SL, ST-SL, STX-SL, BY-SL	SC-SM, SM	A-2-4, A-1-b, A-1-a, A-4	3-23	8-48	54-96	20-93	11-62	6-37	15-25	1-7
	33-50	BY-SL, CB-SL, CBV-LCOS, STX-LS, CBV-COSL, GR-SL, STX-SL, CBV-SL, CBX-SL, ST-SL	SC-SM, SM	A-2-4, A-1-b, A-1-a	3-23	8-48	54-96	20-93	10-53	3-20	15-25	1-7
	50-60	CBV-SL, CBV-LS, STX-SL, CBV-LCOS	SC-SM, SM	A-1-a, A-1-b, A-2-4	3-23	8-48	54-96	20-93	11-56	5-25	0-19	NP-2

Table 11.—Engineering Index 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	
701:												
Vitrandic Haploxerolls---	0-1	SPM	PT	A-8	0-52	0	---	---	---	---	---	---
	1-3	FSL	SM	A-4, A-5	0-8	0	100	100	88-98	38-48	34-47	2-9
	3-12	FSL, SL, COSL	SM, SC-SM	A-5, A-4	0-8	0	100	100	88-98	38-48	30-43	2-9
	12-16	SL, FSL, COSL	SM, SC-SM	A-4	0-8	0	100	100	88-98	38-48	23-37	2-9
	16-24	COSL, SL, FSL	SC-SM, SM	A-4	0-8	0	100	100	88-98	38-48	18-30	2-10
	24-36	COSL, SL, FSL	SC-SM, SM	A-4	0-8	0	100	100	88-98	38-48	17-28	2-10
	36-50	FSL	SC-SM, SM	A-4	0-8	0	100	100	88-98	38-48	17-27	2-10
	50-60	FSL	SC-SM, SM	A-4	0-8	0	100	100	88-98	38-48	16-27	2-10
702:												
Vitrandic Dystroxerepts--	0-8	CB-COSL	SM, SC-SM	A-2-4, A-4	0	21-35	92-100	79-100	47-64	26-37	27-42	2-6
	8-30	STV-LCOS, CBV-COSL, GRV-COSL	SC-SM, SM	A-4, A-2-4	9-17	39-54	97-100	87-100	51-64	28-37	18-29	2-6
	30-50	GRV-COSL, CBV-COSL, STV-LCOS	SM, SC-SM	A-2-4, A-4	39-54	9-17	97-100	87-100	51-64	28-37	17-23	2-6
	50-60	STV-LCOS	SM, SC-SM	A-2-4, A-1-b	38-51	9-16	97-100	88-100	46-58	17-25	17-23	2-6
900.												
Rock outcrop												
DAM.												
Dam												
W.												
Water												

Table 12.—Physical Properties of the Soils

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
101:							
Oxyaquic Xerofluvents--------	0-0	---	---	42.34-141.14	0.00-0.00	---	70-90
	0-2	1-7	1.50-1.60	42.34-141.14	0.12-0.14	1.0-2.0	5.0-9.0
	2-4	1-7	1.70-1.80	141.14-423.30	0.12-0.14	1.0-2.0	4.0-6.0
	4-10	1-7	1.55-1.65	42.34-141.14	0.12-0.14	1.0-2.0	2.0-4.0
	10-17	1-7	1.70-1.80	141.14-423.30	0.03-0.14	1.0-2.0	1.0-3.0
	17-28	1-7	1.60-1.70	42.34-141.14	0.03-0.14	1.0-2.0	0.5-1.2
	28-39	1-7	1.60-1.70	42.34-141.14	0.03-0.14	1.0-2.0	0.5-1.2
	39-43	1-7	1.60-1.70	42.34-141.14	0.03-0.14	1.0-2.0	0.2-0.8
	43-57	1-7	1.70-1.80	141.14-423.30	0.03-0.14	1.0-2.0	0.2-0.8
	57-60	1-7	1.60-1.70	42.34-141.14	0.03-0.14	1.0-2.0	5.0-9.0
Riverwash.							
Fluvaquents------------------	0-1	2-6	1.50-1.60	42.34-141.14	0.10-0.13	0.0-2.9	5.0-9.0
	1-4	2-6	1.50-1.60	42.34-141.14	0.10-0.15	0.0-2.9	4.0-6.0
	4-6	2-5	1.55-1.65	42.34-141.14	0.08-0.11	0.0-2.9	2.0-4.0
	6-10	2-5	1.50-1.60	42.34-141.14	0.13-0.15	0.0-2.9	0.5-1.5
	10-60	2-5	1.50-1.70	141.14-423.30	0.03-0.15	0.0-2.9	0.2-0.8
101t:							
Lithnip----------------------	0-1	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	1.0-2.0
	1-5	12-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0
	5-15	---	---	0.00-0.01	---	---	---
Rock outcrop.							
Fishsnooze-------------------	0-1	10-18	1.20-1.25	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	1-9	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	9-13	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	13-35	12-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	35-45	---	---	0.00-0.01	---	---	---
102:							
Oxyaquic Xerofluvents--------	0-0	---	---	42.34-141.14	0.00-0.00	---	70-90
	0-2	1-10	1.50-1.60	14.11-42.34	0.13-0.15	1.0-2.0	5.0-9.0
	2-4	1-10	1.70-1.80	42.34-141.14	0.05-0.07	1.0-2.0	4.0-6.0
	4-10	1-10	1.55-1.65	42.34-141.14	0.06-0.08	1.0-2.0	2.0-4.0
	10-17	1-10	1.70-1.80	141.14-423.30	0.03-0.06	1.0-2.0	1.0-3.0
	17-28	1-10	1.60-1.70	42.34-141.14	0.06-0.08	1.0-2.0	0.5-1.2
	28-39	1-10	1.60-1.70	42.34-141.14	0.06-0.08	1.0-2.0	0.5-1.2
	39-43	1-10	1.60-1.70	42.34-141.14	0.06-0.08	1.0-2.0	0.2-0.8
	43-57	1-10	1.70-1.80	141.14-423.30	0.03-0.06	1.0-2.0	0.2-0.8
	57-60	1-10	1.60-1.70	42.34-141.14	0.06-0.08	1.0-2.0	5.0-9.0
Riverwash.							
102t:							
Lithnip----------------------	0-1	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	1.0-2.0
	1-5	12-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0
	5-15	---	---	0.00-0.01	---	---	---
Rock outcrop.							
Fishsnooze-------------------	0-1	10-18	1.20-1.25	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	1-9	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	9-13	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	13-35	12-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	35-45	---	---	0.00-0.01	---	---	---

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
104:							
Aquandic Humaquepts	0-8	2-6	0.70-1.00	14.11-42.34	0.13-0.15	1.0-4.0	10-20
	8-18	2-9	0.70-0.95	4.23-14.11	0.15-0.17	1.0-4.0	10-20
	18-26	2-6	1.45-1.60	4.23-14.11	0.15-0.17	0.0-2.0	3.0-7.0
	26-68	2-5	1.55-1.70	141.14-423.30	0.06-0.08	0.0-2.0	0.0-0.5
111t:							
Whittell	0-0	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	0-7	4-8	1.60-1.70	42.34-141.14	0.02-0.04	0.0-1.0	1.0-3.0
	7-20	1-8	1.60-1.70	42.34-141.14	0.02-0.03	0.0-1.0	0.5-1.0
	20-32	1-8	1.60-1.70	42.34-141.14	0.02-0.02	0.0-1.0	0.0-5.0
	32-42	---	---	0.10-10.00	---	0.0-1.0	---
Jobsis	0-5	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	5-9	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	9-17	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	17-20	4-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	20-30	---	---	0.10-10.00	---	---	---
Rock outcrop.							
151:							
Elcapitan	0-1	---	0.02-0.19	42.34-141.14	0.00-0.00	---	70-90
	1-7	2-18	1.50-1.60	14.11-42.34	0.13-0.15	0.0-2.9	1.0-5.0
	7-12	2-18	1.50-1.60	14.11-42.34	0.13-0.15	0.0-2.9	3.0-5.0
	12-20	2-18	1.50-1.60	14.11-42.34	0.13-0.15	0.0-2.9	3.0-5.0
	20-31	2-18	1.50-1.60	14.11-42.34	0.13-0.15	0.0-2.9	2.0-4.0
	31-38	2-18	1.50-1.60	14.11-42.34	0.13-0.15	0.0-2.9	1.5-3.0
	38-44	2-18	1.55-1.65	42.34-141.14	0.06-0.08	0.0-2.9	1.0-5.0
	44-47	2-18	1.55-1.65	42.34-141.14	0.06-0.08	0.0-2.9	3.0-5.0
	47-53	2-18	1.70-1.80	141.14-423.30	0.03-0.06	0.0-2.9	1.0-5.0
	53-58	2-18	1.60-1.70	42.34-141.14	0.05-0.07	0.0-2.9	3.0-5.0
	58-60	2-18	1.55-1.65	42.34-141.14	0.06-0.08	0.0-2.9	2.0-4.0
152:							
Vitrandic Haploxerolls	0-2	3-7	1.50-1.60	42.34-141.14	0.12-0.14	0.0-2.9	2.0-8.0
	2-3	1-5	1.50-1.60	42.34-141.14	0.12-0.14	0.0-2.9	0.5-1.5
	3-5	3-7	1.50-1.60	42.34-141.14	0.12-0.14	0.0-2.9	2.0-8.0
	5-13	3-5	1.50-1.70	42.34-141.14	0.12-0.14	0.0-2.9	2.0-4.0
	13-18	2-5	1.55-1.65	42.34-141.14	0.07-0.09	0.0-2.9	1.0-3.0
	18-24	1-5	1.70-1.80	141.14-423.30	0.03-0.05	0.0-2.9	0.8-1.5
	24-28	1-5	1.60-1.70	42.34-141.14	0.05-0.07	0.0-2.9	0.5-1.0
	28-32	1-5	1.70-1.80	141.14-423.30	0.03-0.05	0.0-2.9	0.2-0.8
	32-60	1-5	1.60-1.70	42.34-141.14	0.05-0.07	0.0-2.9	0.2-0.8
201:							
Leidig	0-0	---	0.06-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-7	0-18	1.50-1.60	14.11-42.34	0.13-0.15	0.0-2.0	2.0-8.0
	7-16	0-18	1.45-1.50	14.11-42.34	0.14-0.16	0.0-2.0	2.0-8.0
	16-23	0-18	1.45-1.55	14.11-42.34	0.14-0.16	0.0-2.0	2.0-8.0
	23-30	0-18	1.45-1.55	14.11-42.34	0.14-0.16	0.0-2.0	2.0-3.0
	30-34	0-18	1.45-1.55	14.11-42.34	0.14-0.16	0.0-2.0	2.0-3.0
	34-42	0-18	1.50-1.60	14.11-42.34	0.13-0.15	0.0-2.0	1.0-3.0
	42-46	0-18	1.50-1.60	14.11-42.34	0.13-0.15	0.0-2.0	0.0-1.0
	46-52	0-18	1.50-1.60	14.11-42.34	0.09-0.11	0.0-2.0	0.0-1.0
	52-58	0-18	1.50-1.60	14.11-42.34	0.13-0.15	0.0-2.0	0.0-1.0
	58-60	0-18	1.55-1.65	42.34-141.14	0.06-0.08	0.0-2.0	0.0-4.0

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
210:							
Rubble land.							
Typic Cryorthents	0-2	2-5	1.50-1.60	14.11-42.34	0.04-0.04	0.5-2.0	4.0-7.0
	2-13	4-6	1.45-1.55	4.23-14.11	0.08-0.10	0.5-2.0	1.0-3.0
	13-19	3-5	1.50-1.60	14.11-42.34	0.09-0.10	0.5-2.0	0.5-2.0
	19-60	1-4	1.50-1.60	14.11-42.34	0.09-0.10	0.5-2.0	0.5-1.5
Rock outcrop.							
Xeric Dystrocryepts	0-1	0-0	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-5	5-7	1.50-1.60	14.11-42.34	0.10-0.11	0.5-2.0	6.0-10
	5-13	3-5	1.50-1.60	14.11-42.34	0.07-0.08	0.5-2.0	2.0-5.0
	13-28	6-8	1.50-1.60	14.11-42.34	0.07-0.08	0.5-2.0	1.0-2.5
	28-60	7-9	1.50-1.60	14.11-42.34	0.07-0.08	0.5-2.0	0.2-0.8
211:							
Xeric Dystrocryepts	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-9	2-6	1.50-1.60	14.11-42.34	0.09-0.10	0.5-2.0	8.0-12
	9-19	2-6	1.50-1.60	14.11-42.34	0.05-0.06	0.5-2.0	3.0-6.0
	19-32	2-6	1.55-1.60	14.11-42.34	0.03-0.04	0.5-2.0	0.5-2.0
	32-60	1-6	1.55-1.60	14.11-42.34	0.03-0.04	0.5-2.0	0.2-1.0
Canisrocks	0-0	---	1.55-1.65	42.34-141.14	---	---	70-90
	0-1	---	1.55-1.65	42.34-141.14	---	---	65-85
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0
Oxyaquic Dystrocryepts	0-0	2-10	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	7.0-10
	0-9	2-10	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	7.0-10
	9-16	2-10	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	5.0-7.0
	16-23	2-10	1.50-1.60	14.11-42.34	0.09-0.10	0.5-2.0	2.0-4.0
	23-60	2-10	1.55-1.65	14.11-42.34	0.05-0.06	0.5-2.0	0.2-0.8
213:							
Canisrocks	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-3	0-5	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	7.0-9.0
	3-12	0-5	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	1.0-3.0
	12-60	0-5	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.2-1.0
Glacierpoint	0-0	---	---	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-1	---	---	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-9	0-5	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	7.0-9.0
	9-15	0-5	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	3.0-5.0
	15-20	0-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	2.0-4.0
	20-29	0-5	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-3.0
	29-37	0-5	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.5-1.0
	37-60	0-5	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
213:							
Vitrandic Dystrocryepts------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	65-85
	1-11	0-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	5.0-9.0
	11-17	0-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	2.0-4.0
	17-25	0-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	1.0-2.0
	25-37	0-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	0.5-1.0
	37-60	0-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	0.1-0.5
214:							
Marmotland-------------------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-11	3-6	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	8.0-10
	11-19	3-6	1.45-1.55	4.23-14.11	0.14-0.16	0.5-2.0	2.0-4.0
	19-36	3-6	1.45-1.55	4.23-14.11	0.14-0.16	0.5-2.0	1.0-3.0
	36-48	3-6	1.45-1.55	4.23-14.11	0.14-0.16	0.5-12.0	0.5-1.0
	48-60	3-6	1.20-1.60	42.34-141.14	0.00-0.05	0.5-2.0	0.2-0.8
Oxyaquic Dystrocryepts-------	0-2	0-4	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	5.0-9.0
	2-7	0-4	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	2.0-4.0
	7-14	0-4	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	2.0-5.0
	14-20	0-4	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	1.0-3.0
	20-31	0-4	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	0.5-2.5
	31-40	0-4	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	0.5-2.5
	40-61	0-4	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.2-1.5
Xeric Dystrocryepts----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	65-85
	2-16	0-3	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	7.0-9.0
	16-23	0-3	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	4.0-6.0
	23-36	0-3	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	1.0-3.0
	36-63	0-3	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	0.5-1.0
	63-69	0-3	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	0.2-0.8
215:							
Typic Cryorthents------------	0-0	0-0	0.02-0.09	42.34-141.14	0.00-0.00	1.0-1.0	70-90
	0-1	0-0	0.02-0.02	42.34-141.14	0.00-0.00	1.0-1.0	70-90
	1-3	1-10	1.55-1.65	42.34-141.14	0.07-0.09	1.0-2.5	5.0-9.0
	3-12	2-10	1.55-1.65	42.34-141.14	0.04-0.05	1.0-2.5	3.0-7.0
	12-18	2-10	1.55-1.65	42.34-141.14	0.03-0.04	1.0-2.5	1.0-4.0
	18-22	2-10	1.50-1.60	14.11-42.34	0.09-0.10	1.0-2.5	0.5-1.5
	22-60	2-10	1.55-1.65	42.34-141.14	0.09-0.10	1.0-2.5	0.0-1.0
Rock outcrop.							
Rubble land.							
219:							
Rock outcrop.							
Rubble land.							
Canisrocks-------------------	0-0	---	1.55-1.65	42.34-141.14	---	---	---
	0-1	---	1.55-1.65	42.34-141.14	---	---	---
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
221:							
Typic Cryorthents	0-2	2-8	1.50-1.60	14.11-42.34	0.08-0.09	0.5-2.0	8.0-10
	2-13	2-8	1.45-1.55	4.23-14.11	0.08-0.09	0.5-2.0	2.0-4.0
	13-19	2-8	1.50-1.60	14.11-42.34	0.05-0.06	0.5-2.0	1.0-1.5
	19-60	2-8	1.50-1.60	14.11-42.34	0.03-0.04	0.5-2.0	0.2-0.5
Xeric Dystrocryepts	0-3	6-12	1.50-1.60	14.11-42.34	0.10-0.12	0.5-2.0	8.0-10
	3-19	8-12	1.50-1.60	14.11-42.34	0.08-0.09	0.5-2.0	3.0-6.0
	19-60	8-12	1.50-1.60	14.11-42.34	0.14-0.15	0.5-2.0	0.2-0.8
Oxyaquic Dystrocryepts	0-0	2-10	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	7.0-10
	0-9	2-10	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	7.0-10
	9-16	2-10	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	5.0-7.0
	16-23	2-10	1.50-1.60	14.11-42.34	0.09-0.10	0.5-2.0	2.0-4.0
	23-60	2-10	1.55-1.65	14.11-42.34	0.05-0.06	0.5-2.0	0.2-0.8
222:							
Canisrocks	0-0	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-2	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-7	0-4	1.60-1.70	42.34-141.14	0.03-0.05	0.5-2.0	4.0-6.0
	7-14	0-4	1.60-1.70	42.34-141.14	0.03-0.05	0.5-2.0	2.0-4.0
	14-60	0-4	1.70-1.80	141.14-423.30	0.01-0.03	0.5-2.0	1.0-1.5
Rubble land.							
Rock outcrop.							
Crazymule	0-0	0-0	0.02-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-5	2-6	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	6.0-10
	5-22	2-6	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	2.0-5.0
	22-35	2-6	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-3.0
	35-60	10-18	1.45-1.55	4.23-14.11	0.12-0.14	0.5-2.0	0.2-1.0
223:							
Rock outcrop.							
Rubble land.							
Canisrocks	0-0	---	1.55-1.65	42.34-141.14	---	---	---
	0-1	---	1.55-1.65	42.34-141.14	---	---	---
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0
224:							
Rock outcrop.							
Crazymule	0-0	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-5	2-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	6.0-10
	5-22	2-6	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	2.0-5.0
	22-35	2-6	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-3.0
	35-60	12-16	1.45-1.55	4.23-14.11	0.12-0.14	0.5-2.0	0.2-1.0

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
224:							
Vitrandic Cryorthents--------	0-2	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	2-2	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-7	2-5	1.55-1.65	42.34-141.14	0.07-0.09	0.5-2.0	5.0-9.0
	7-15	2-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	2.0-4.0
	15-24	1-3	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	0.5-1.5
	24-60	---	---	0.01-0.07	---	---	---
225:							
Canisrocks--------------------	0-0	---	1.55-1.65	42.34-141.14	---	---	---
	0-1	---	1.55-1.65	42.34-141.14	---	---	---
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0
Rock outcrop.							
Rubble land.							
Vitrandic Dystrocryepts------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-5	1-3	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	8.0-10
	5-12	1-3	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	7.0-9.0
	12-26	1-3	1.50-1.60	14.11-42.34	0.03-0.04	0.5-2.0	2.0-4.0
	26-30	1-3	1.50-1.60	14.11-42.34	0.02-0.02	0.5-2.0	0.5-1.0
	30-60	1-3	1.55-1.65	42.34-141.14	0.02-0.02	0.5-2.0	0.2-0.8
227:							
Canisrocks--------------------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-2	3-6	1.50-1.60	14.11-42.34	0.07-0.09	0.5-2.0	6.0-10
	2-6	3-6	1.50-1.60	14.11-42.34	0.07-0.09	0.5-2.0	2.0-4.0
	6-17	2-5	1.70-1.80	42.34-141.14	0.03-0.04	0.5-2.0	1.0-3.0
	17-25	2-5	1.70-1.80	42.34-141.14	0.03-0.04	0.5-2.0	1.0-2.0
	25-34	3-6	1.70-1.80	42.34-141.14	0.03-0.04	0.5-2.0	0.5-2.0
	34-60	2-4	1.70-1.80	42.34-141.14	0.03-0.04	0.5-2.0	0.2-0.8
Crazymule---------------------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-12	2-6	1.55-1.65	42.34-141.14	0.07-0.09	0.5-2.0	8.0-12
	12-22	4-8	1.50-1.60	14.11-42.34	0.04-0.05	0.5-2.0	3.0-7.0
	22-34	4-8	1.50-1.60	14.11-42.34	0.10-0.11	0.5-2.0	1.0-3.0
	34-60	1-4	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.5-1.0
228:							
Xeric Dystrocryepts-----------	0-4	2-6	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	6.0-10
	4-14	3-7	1.50-1.60	14.11-42.34	0.06-0.07	0.5-2.0	2.0-3.5
	14-20	1-4	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-2.5
	20-30	1-4	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.2-1.0
	30-60	0-2	1.60-1.70	42.34-141.14	0.02-0.03	0.5-2.0	0.2-0.8
Vitrandic Eutrocryepts-------	0-6	2-8	1.50-1.60	14.11-42.34	0.12-0.14	0.5-2.0	10-16
	6-14	4-8	1.50-1.60	14.11-42.34	0.10-0.12	0.5-2.0	4.0-8.0
	14-21	6-12	1.50-1.60	14.11-42.34	0.10-0.11	0.5-2.0	3.0-7.0
	21-28	5-12	1.45-1.55	4.23-14.11	0.11-0.12	0.5-2.0	0.5-1.0
	28-60	4-8	1.50-1.60	14.11-42.34	0.09-0.10	0.5-2.0	0.2-0.5

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
229:							
Marmotland	0-0	2-5	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	9.0-11
	0-9	2-5	1.50-1.60	14.11-42.34	0.08-0.09	0.5-2.0	6.0-8.0
	9-16	3-7	1.50-1.60	14.11-42.34	0.08-0.09	0.5-2.0	4.0-6.0
	16-23	5-9	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	1.0-3.0
	23-60	5-9	1.50-1.60	14.11-42.34	0.06-0.07	0.5-2.0	0.2-1.0
Oxyaquic Dystrocryepts	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	70-90
	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	60-80
	2-5	2-6	1.50-1.60	42.34-141.14	0.09-0.11	0.5-2.0	1.0-6.0
	5-12	2-6	1.50-1.60	42.34-141.14	0.09-0.11	0.5-2.0	1.0-6.0
	12-19	2-6	1.50-1.60	42.34-141.14	0.06-0.08	0.5-2.0	1.0-6.0
	19-28	2-6	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	0.5-1.5
	28-60	2-6	1.50-1.60	42.34-141.14	0.05-0.07	0.5-2.0	1.5-5.0
231:							
Canisrocks	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-6	0-4	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	8.0-10
	6-10	0-4	1.55-1.65	42.34-141.14	0.07-0.09	0.5-2.0	6.0-8.0
	10-17	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	2.0-4.0
	17-26	0-4	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	1.0-2.0
	26-35	0-4	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	0.8-1.5
	35-60	0-4	1.60-1.70	42.34-141.14	0.02-0.04	0.5-2.0	0.2-1.0
Typic Cryaquents	0-0	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	65-80
	1-3	1-5	1.45-1.55	4.23-14.11	0.13-0.14	0.5-2.0	8.0-15
	3-9	1-5	1.55-1.60	14.11-42.34	0.05-0.07	0.5-2.0	7.0-12
	9-17	1-7	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-2.0
	17-60	1-7	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.1-0.5
232:							
Canisrocks	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-2	0-4	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	6.0-10
	2-10	0-4	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	1.0-3.0
	10-24	0-4	1.70-1.80	141.14-423.30	0.03-0.04	0.5-2.0	1.0-2.0
	24-60	0-4	1.70-1.80	141.14-423.30	0.02-0.02	0.5-2.0	1.0-2.0
Glacierpoint	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-6	1-5	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	6.0-10
	6-9	1-5	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	2.0-4.0
	9-18	1-5	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	1.0-3.0
	18-31	1-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.5-1.0
	31-60	1-5	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	0.2-1.0
234. Rock outcrop-Rubble land							
235:							
Canisrocks	0-1	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-3	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	3-4	0-0	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	60-80
	4-11	0-3	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	7.0-10
	11-17	0-3	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	3.0-6.0
	17-37	0-3	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	2.0-4.0
	37-53	0-3	1.60-1.70	42.34-141.14	0.03-0.05	0.5-2.0	0.5-1.5
	53-68	0-2	1.60-1.70	42.34-141.14	0.03-0.05	0.5-2.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
235:							
Rock outcrop.							
Rubble land.							
237:							
Canisrocks	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-3	1-4	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	6.0-10
	3-8	2-6	1.60-1.70	42.34-141.14	0.03-0.70	0.5-2.0	3.0-5.0
	8-13	2-6	1.60-1.70	42.34-141.14	0.03-0.07	0.5-2.0	1.0-3.0
	13-27	2-6	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	0.5-1.5
	27-60	2-6	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	0.2-0.8
Glacierpoint	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-4	1-6	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	6.0-10
	4-17	1-6	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	2.0-3.5
	17-27	1-6	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	1.0-2.5
	27-60	1-6	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	0.2-1.0
Vitrandic Cryorthents	0-1	0-5	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	3.0-7.0
	1-6	0-5	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	3.0-7.0
	6-12	0-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	1.0-2.0
	12-60	0-5	1.50-1.60	14.11-42.34	0.05-0.07	0.5-2.0	0.2-0.7
238:							
Oxyaquic Cryorthents	0-3	2-6	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	5.0-9.0
	3-13	2-6	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	3.0-5.0
	13-18	2-8	1.50-1.60	14.11-42.34	0.10-0.11	0.5-2.0	1.0-3.0
	18-30	0-2	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.5-1.0
	30-60	0-2	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	0.2-0.8
Canisrocks	0-0	---	1.55-1.65	42.34-141.14	---	---	---
	0-1	---	1.55-1.65	42.34-141.14	---	---	---
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0
239:							
Crazymule	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-5	1-4	1.50-1.60	14.11-42.34	0.09-0.11	1.0-2.0	6.0-10
	5-13	1-4	1.50-1.60	14.11-42.34	0.07-0.09	1.0-2.0	2.0-3.5
	13-23	2-6	1.50-1.60	14.11-42.34	0.07-0.09	1.0-2.0	1.0-2.5
	23-60	2-6	1.50-1.60	14.11-42.34	0.05-0.06	1.0-2.0	0.2-1.0
Canisrocks	0-0	---	1.55-1.65	42.34-141.14	---	---	---
	0-1	---	1.55-1.65	42.34-141.14	---	---	---
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
241:							
Canisrocks	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-4	1-4	1.60-1.70	42.34-141.14	0.03-0.70	0.5-2.0	6.0-10
	4-18	0-3	1.60-1.70	141.14-423.30	0.05-0.06	0.5-2.0	1.0-3.0
	18-28	0-3	1.70-1.80	141.14-423.30	0.04-0.06	0.5-2.0	1.0-2.0
	28-34	0-1	1.70-1.80	141.14-423.30	0.04-0.06	0.5-2.0	1.0-2.0
	34-60	0-1	1.70-1.80	141.14-423.30	0.04-0.06	0.5-2.0	0.5-1.0
242:							
Rock outcrop.							
Canisrocks	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-1	---	1.60-1.70	42.34-141.14	0.03-0.70	0.5-2.0	60-80
	1-7	0-5	1.60-1.70	42.34-141.14	0.03-0.07	0.5-2.0	6.0-10
	7-23	0-5	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	3.0-5.0
	23-32	0-5	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	0.8-1.5
	32-60	0-5	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	0.5-1.0
Xeric Dystrocryepts	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-5	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	5-20	0-4	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	2.0-4.0
	20-35	0-4	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	1.0-3.0
	35-47	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	0.5-1.0
	47-60	0-4	1.60-1.70	42.34-141.14	0.06-0.07	0.5-2.0	0.2-0.8
244:							
Typic Cryorthents	0-0	---	1.55-1.65	42.34-141.14	---	---	---
	0-1	---	1.55-1.65	42.34-141.14	---	---	---
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0
Rubble land.							
Rock outcrop.							
245:							
Rock outcrop.							
Canisrocks	0-0	---	1.55-1.65	42.34-141.14	---	---	---
	0-1	---	1.55-1.65	42.34-141.14	---	---	---
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0
Xeric Dystrocryepts	0-2	1-4	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	5.0-9.0
	2-4	1-4	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	2.0-4.0
	4-11	1-6	1.50-1.60	14.11-42.32	0.08-0.10	0.5-2.0	0.5-2.0
	11-60	1-4	1.45-1.55	4.23-14.11	0.08-0.10	0.5-2.0	0.2-0.8
246.							
Rock outcrop, domes							

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
247:							
Canisrocks	0-2	---	0.05-0.30	43.34-141.14	0.00-0.00	0.5-2.0	70-90
	2-8	1-3	1.60-1.70	43.34-141.14	0.04-0.06	0.5-2.0	2.0-4.0
	8-36	1-3	1.60-1.70	43.34-141.14	0.04-0.06	0.5-2.0	1.0-3.0
	36-45	1-3	1.70-1.80	43.34-141.14	0.02-0.03	0.5-2.0	0.5-1.5
	45-60	1-3	1.70-1.80	43.34-141.14	0.02-0.03	0.5-2.0	0.5-1.0
Xeric Dystrocryepts	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-10	0-3	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	5.0-9.0
	10-21	0-3	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	3.0-6.0
	21-31	0-3	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	2.0-4.0
	31-42	0-3	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	1.0-3.0
	42-58	0-3	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	0.5-1.2
	58-60	0-2	1.70-1.80	141.14-423.30	0.04-0.05	0.5-2.0	0.2-0.8
248:							
Canisrocks	0-1	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-2	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-5	0-3	1.60-1.70	42.34-141.14	0.03-0.05	0.5-2.0	4.0-6.0
	5-13	0-3	1.60-1.70	42.34-141.14	0.03-0.05	0.5-2.0	2.0-4.0
	13-32	0-3	1.70-1.80	141.14-423.30	0.01-0.03	0.5-2.0	1.0-1.5
	32-60	0-3	1.70-1.80	141.14-423.30	0.01-0.03	0.5-2.0	0.2-0.8
Rock outcrop.							
Glacierpoint	0-0	---	---	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-1	---	---	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-4	1-2	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	6.0-10
	4-16	1-2	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	2.0-3.5
	16-27	1-2	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-2.5
	27-46	0-2	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
	46-64	0-2	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
249:							
Rock outcrop.							
Canisrocks	0-1	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-3	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	3-4	0-0	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	60-80
	4-11	0-3	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	7.0-10
	11-17	0-3	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	3.0-6.0
	17-37	0-3	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	2.0-4.0
	37-53	0-3	1.60-1.70	42.34-141.14	0.03-0.05	0.5-2.0	0.5-1.5
	53-68	0-2	1.60-1.70	42.34-141.14	0.03-0.05	0.5-2.0	0.2-0.8
250:							
Canisrocks	0-0	---	1.55-1.65	42.34-141.14	---	---	---
	0-1	---	1.55-1.65	42.34-141.14	---	---	---
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
250:							
Xeric Dystrocryepts	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-9	2-6	1.50-1.60	14.11-42.34	0.09-0.10	0.5-2.0	8.0-12
	9-19	2-6	1.50-1.60	14.11-42.34	0.05-0.06	0.5-2.0	3.0-6.0
	19-32	2-6	1.55-1.60	14.11-42.34	0.03-0.04	0.5-2.0	0.5-2.0
	32-60	1-6	1.55-1.60	14.11-42.34	0.03-0.04	0.5-2.0	0.2-1.0
251:							
Glacierpoint	0-0	---	---	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-1	---	---	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-4	1-2	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	6.0-10
	4-16	1-2	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	2.0-3.5
	16-27	1-2	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-2.5
	27-46	0-2	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
	46-64	0-2	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
Typic Cryorthents	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-4	2-10	1.50-1.60	14.11-42.34	0.06-0.07	0.5-2.0	8.0-10
	4-10	2-10	1.50-1.60	14.11-42.34	0.06-0.07	0.5-2.0	6.0-8.0
	10-16	2-10	1.50-1.60	14.11-42.34	0.05-0.07	0.5-2.0	2.0-4.0
	16-30	2-10	1.50-1.60	14.11-42.34	0.06-0.07	0.5-2.0	1.0-1.8
	30-60	2-10	1.50-1.60	14.11-42.34	0.06-0.07	0.5-2.0	0.2-0.8
252:							
Rock outcrop.							
Canisrocks	0-0	---	1.55-1.65	42.34-141.14	---	---	---
	0-1	---	1.55-1.65	42.34-141.14	---	---	---
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0
Xeric Dystrocryepts	0-3	0-3	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	8.0-10
	3-15	0-3	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	6.0-8.0
	15-35	0-3	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	1.0-3.0
	35-47	0-3	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.5-1.0
	47-61	0-3	1.55-1.65	42.34-141.14	0.03-0.05	0.5-2.0	0.1-0.5
253:							
Canisrocks	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-3	0-3	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	7.0-9.0
	3-11	0-3	1.50-1.60	14.11-42.34	0.06-0.08	0.5-2.0	6.0-8.0
	11-23	0-3	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	3.0-5.0
	23-35	0-3	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	1.0-2.0
	35-60	0-3	1.55-1.65	42.34-141.14	0.02-0.02	0.5-2.0	0.2-0.8
Glacierpoint	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	60-80
	0-4	2-6	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	8.0-10
	4-7	2-6	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	2.0-5.0
	7-11	2-6	1.50-1.60	14.11-42.34	0.08-0.09	0.5-2.0	1.0-3.0
	11-19	2-6	1.50-1.60	14.11-42.34	0.02-0.03	0.5-2.0	0.8-1.5
	19-60	0-3	1.60-1.70	42.34-141.14	0.01-0.02	0.5-2.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
253:							
Humic Dystrocryepts----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-16	2-6	1.50-1.60	14.11-42.32	0.06-0.07	0.5-2.0	6.0-8.0
	16-30	0-3	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	2.0-4.0
	30-60	0-3	1.55-1.65	42.34-141.14	0.01-0.02	0.5-2.0	0.2-0.8
256:							
Craneflat----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-7	1-5	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	8.0-30
	7-13	1-5	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	2.0-5.0
	13-60	1-5	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.2-1.5
Rock outcrop.							
Rubble land.							
Waterwheel----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-6	0-3	1.60-1.70	42.34-141.14	0.04-0.06	0.5-2.0	9.0-12
	6-14	0-3	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-2.5
	14-28	0-3	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.5-1.5
	28-60	0-3	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.5-0.8
257:							
Badgerpass----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-6	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	3.0-8.0
	6-13	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	2.0-5.0
	13-21	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	1.5-4.0
	21-32	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	1.0-3.0
	32-50	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	0.8-2.0
	50-60	0-4	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	0.2-1.5
Oxyaquic Dystroxerepts-------	0-11	10-18	1.45-1.55	4.23-14.11	0.13-0.14	0.5-2.0	8.0-10
	11-19	10-28	1.45-1.55	4.23-14.11	0.13-0.14	1.0-2.0	5.0-7.0
	19-32	15-35	1.40-1.50	1.41-4.23	0.14-0.16	2.0-4.0	2.0-4.0
	32-43	15-25	1.45-1.55	4.23-14.11	0.13-0.14	1.0-2.0	1.0-1.5
	43-60	15-30	1.45-1.55	4.23-14.11	0.16-0.18	1.0-3.0	0.2-0.8
258:							
Typic Dystroxerepts----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-3	1-4	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	6.0-8.0
	3-11	2-4	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	5.0-7.0
	11-26	2-4	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	0.5-1.0
	26-43	3-8	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	0.2-0.5
	43-60	5-12	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	0.2-0.5
Badgerpass----------	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	2-7	0-4	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	7-18	0-4	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	3.0-5.0
	18-37	0-4	1.60-1.70	42.34-141.14	0.04-0.06	0.5-2.0	2.0-4.0
	37-55	0-4	1.60-1.70	42.34-141.14	0.04-0.06	0.5-2.0	0.8-1.5
	55-67	0-4	1.70-1.80	141.14-423.30	0.03-0.05	0.5-2.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
258:							
Dystric Xerorthents----------	0-1	---	---	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	---	42.34-141.14	0.00-0.00	---	65-85
	2-3	---	1.55-1.65	42.34-141.14	0.00-0.00	---	60-80
	3-11	1-8	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	8.0-10
	11-24	1-8	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	4.0-6.0
	24-38	1-8	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-3.0
	38-60	1-8	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.2-0.8
260:							
Rock outcrop.							
Craneflat----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	0-3	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	8.0-10
	2-4	0-3	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	4-13	0-3	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	3.0-5.0
	13-19	0-3	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-3.0
	19-60	0-3	1.55-1.65	42.34-141.14	0.01-0.01	0.5-2.0	0.2-0.8
Dystric Xerorthents----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-5	3-8	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	2.0-4.0
	5-17	3-8	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	0.5-1.2
	17-60	3-8	1.50-1.60	14.11-42.34	0.05-0.07	0.5-2.0	0.2-0.8
261:							
Dystric Xeropsamments--------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	0-6	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	---
	6-18	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	---
	18-25	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	---
	25-41	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	---
	41-60	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	---
Typic Dystroxerepts----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	75-95
	1-3	4-10	1.50-1.60	14.11-42.34	0.12-0.14	1.0-2.0	6.0-8.0
	3-8	4-10	1.50-1.60	14.11-42.34	0.12-0.14	1.0-2.0	5.0-7.0
	8-20	4-10	1.50-1.60	14.11-42.34	0.12-0.14	1.0-2.0	1.0-2.0
	20-31	4-10	1.50-1.60	14.11-42.34	0.09-0.10	1.0-2.0	0.8-1.2
	31-60	4-10	1.50-1.60	14.11-42.34	0.05-0.06	1.0-2.0	0.2-0.8
Badgerpass----------	0-7	0-4	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	7.0-9.0
	7-18	0-4	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	3.0-5.0
	18-60	0-4	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	0.2-0.8
Rock outcrop.							
262:							
Humic Dystroxerepts----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-2	3-8	1.50-1.60	14.11-42.34	0.04-0.04	0.5-2.0	8.0-10
	2-5	3-8	1.50-1.60	14.11-42.34	0.04-0.04	0.5-2.0	8.0-10
	5-18	3-8	1.50-1.60	14.11-42.34	0.03-0.03	0.5-2.0	4.0-6.0
	18-60	3-8	1.50-1.60	14.11-42.34	0.03-0.03	0.5-2.0	0.2-3.0

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
262:							
Dystric Xerorthents----------	0-1	---	---	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	---	42.34-141.14	0.00-0.00	---	65-85
	2-3	---	1.55-1.65	42.34-141.14	0.00-0.00	---	60-80
	3-11	1-8	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	8.0-10
	11-24	1-8	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	4.0-6.0
	24-38	1-8	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-3.0
	38-60	1-8	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.2-0.8
Rock outcrop.							
264:							
Crazymule----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-12	2-4	1.55-1.65	42.34-141.14	0.07-0.09	1.0-3.0	8.0-10
	12-22	3-8	1.50-1.60	14.11-42.34	0.04-0.05	1.0-3.0	2.0-4.0
	22-34	3-8	1.50-1.60	14.11-42.34	0.11-0.12	1.0-3.0	0.8-1.5
	34-60	1-4	1.55-1.65	42.34-141.14	0.04-0.05	1.0-3.0	0.2-0.8
Canisrocks----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	2-3	0-3	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	4.0-8.0
	3-11	0-3	1.50-1.60	14.11-42.34	0.05-0.07	0.5-2.0	1.0-3.0
	11-23	0-3	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-2.0
	23-35	0-3	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-2.0
	35-60	0-3	1.55-1.65	42.34-141.14	0.02-0.02	0.5-2.0	0.5-1.0
267:							
Rock outcrop.							
Typic Cryorthents----------	0-5	1-3	1.70-1.80	141.14-423.30	0.02-0.04	0.5-2.0	5.0-9.0
	5-13	1-3	1.70-1.80	141.14-423.30	0.01-0.03	0.5-2.0	2.0-4.0
	13-28	2-7	1.50-1.60	14.11-42.34	0.03-0.04	0.5-2.0	1.0-3.0
	28-60	2-7	1.50-1.60	14.11-42.34	0.03-0.04	0.5-2.0	0.2-0.8
Xeric Dystrocryepts----------	0-2	---	0.05-0.30	42.34-141.14	---	---	70-90
	2-4	---	0.05-0.30	42.34-141.14	---	---	65-85
	4-13	2-6	1.70-1.80	42.34-141.14	0.05-0.06	0.5-2.0	3.0-8.0
	13-20	2-6	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	2.0-4.0
	20-30	2-6	1.55-1.65	141.14-423.30	0.03-0.05	0.5-2.0	1.5-3.0
	30-42	2-6	1.60-1.70	141.14-423.30	0.03-0.05	0.5-2.0	1.2-3.0
	42-48	2-6	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	1.2-3.0
	48-62	2-6	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	1.0-2.0
	62-78	2-6	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	0.5-1.5
	78-84	2-8	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	0.2-0.5
268:							
Rock outcrop.							
Canisrocks----------	0-0	---	1.55-1.65	42.34-141.14	---	---	70-90
	0-1	---	1.55-1.65	42.34-141.14	---	---	65-85
	1-4	1-4	1.55-1.65	42.34-141.14	0.03-0.70	---	6.0-10
	4-18	0-3	1.55-1.65	42.34-141.14	0.03-0.07	---	1.0-3.0
	18-28	0-3	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	28-34	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	1.0-2.0
	34-60	0-1	1.55-1.65	42.34-141.14	0.03-0.06	---	0.5-1.0

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
268:							
Glacierpoint	0-0	---	---	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-1	---	---	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-4	1-2	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	6.0-10
	4-16	1-2	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	2.0-3.5
	16-27	1-2	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-2.5
	27-46	0-2	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
	46-64	0-2	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
269:							
Canisrocks	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-2	0-5	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	7.0-9.0
	2-7	0-5	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	2.0-4.0
	7-20	0-5	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	1.0-3.0
	20-60	0-5	1.55-1.65	42.34-141.14	0.02-0.02	0.5-2.0	0.2-0.8
Rock outcrop.							
Glacierpoint	0-0	---	---	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-1	---	---	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-4	1-2	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	6.0-10
	4-16	1-2	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	2.0-3.5
	16-27	1-2	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-2.5
	27-46	0-2	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
	46-64	0-2	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
270:							
Rock outcrop.							
Typic Cryorthents	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-4	1-4	1.60-1.70	42.34-141.14	0.03-0.70	0.5-2.0	6.0-10
	4-18	0-3	1.60-1.70	42.34-141.14	0.03-0.07	0.5-2.0	1.0-3.0
	18-28	0-3	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	1.0-2.0
	28-34	0-1	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	1.0-2.0
	34-60	0-1	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	0.5-1.0
Vitrandic Dystrocryepts	0-3	1-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	7.0-9.0
	3-4	1-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	6.0-9.0
	4-8	1-4	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	3.0-5.0
	8-17	3-7	1.50-1.60	14.11-42.34	0.03-0.04	0.5-2.0	3.0-5.0
	17-60	1-4	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	0.2-0.8
271:							
Rock outcrop.							
Lithic Xerorthents	0-3	0-2	1.60-1.70	141.14-423.30	0.05-0.06	0.5-2.0	3.0-7.0
	3-7	0-2	1.60-1.70	141.14-423.30	0.02-0.02	0.5-2.0	0.2-3.0
	7-60	---	---	0.00-0.01	---	---	---
Waterwheel	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-6	0-3	1.60-1.70	42.34-141.14	0.04-0.06	0.5-2.0	9.0-12
	6-14	0-3	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-2.5
	14-28	0-3	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.5-1.5
	28-60	0-3	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.5-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
273:							
Nevadafalls	0-0	---	---	42.34-141.14	0.00-0.00	---	---
	0-6	3-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	3.0-5.0
	6-17	3-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	2.0-3.5
	17-31	3-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.8-1.5
	31-60	3-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.2-1.2
Waterwheel	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	1-6	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	6-11	0-4	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	3.0-5.0
	11-19	0-4	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.5-1.0
	19-60	0-4	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	0.2-0.8
274.							
Rock outcrop, domes							
275:							
Oxyaquic Dystroxerepts	0-1	---	0.05-0.30	42.34-141.14	---	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	---	---	65-85
	2-9	2-6	1.50-1.60	14.11-42.34	0.07-0.08	0.5-2.0	7.0-9.0
	9-19	1-6	1.50-1.60	14.11-42.34	0.05-0.07	0.5-2.0	3.0-5.0
	19-34	1-6	1.55-1.60	14.11-42.34	0.04-0.06	0.5-2.0	2.0-4.0
	34-46	1-6	1.55-1.60	14.11-42.43	0.03-0.04	0.5-2.0	0.5-3.0
	46-60	1-6	1.55-1.60	14.11-42.43	0.02-0.03	0.5-2.0	0.2-3.0
Dystric Xerorthents	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-6	0-3	1.60-1.70	42.34-141.14	0.04-0.06	0.5-2.0	9.0-12
	6-14	0-3	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-2.5
	14-28	0-3	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.5-1.5
	28-60	0-3	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.5-0.8
Vitrandic Xerorthents	0-8	0-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	3.0-7.0
	8-18	0-4	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	2.0-6.0
	18-24	0-4	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	1.0-3.0
	24-35	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	1.0-2.5
	35-50	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	0.5-1.5
	50-62	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	0.2-1.0
Rubble land.							
276:							
Happyisles	0-3	---	0.02-0.09	42.34-141.14	0.00-0.00	---	70-90
	3-7	5-12	1.55-1.65	14.11-42.34	0.08-0.10	0.0-2.9	1.0-4.0
	7-13	3-10	1.55-1.65	42.34-141.14	0.10-0.13	0.0-2.9	1.0-4.0
	13-17	5-12	1.50-1.60	14.11-42.34	0.10-0.13	0.0-2.9	1.0-4.0
	17-33	5-12	1.50-1.60	14.11-42.34	0.07-0.11	0.0-2.9	0.5-1.2
	33-60	3-8	1.60-1.70	42.34-141.14	0.07-0.11	0.0-2.9	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
276:							
Typic Dystroxerepts----------	0-1	4-12	1.50-1.60	14.11-42.34	0.07-0.12	0.0-2.9	65-85
	1-19	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	6.0-8.0
	19-28	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	5.0-7.0
	28-33	4-12	1.50-1.60	14.11-42.34	0.03-0.09	0.0-2.9	1.0-3.0
	33-50	4-12	1.50-1.60	42.34-141.14	0.05-0.06	0.0-2.9	0.8-1.2
	50-60	1-5	1.50-1.60	42.34-141.14	0.05-0.06	0.0-2.9	0.2-0.8
277:							
Tuolumne----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-5	0-4	1.70-1.80	141.14-423.30	0.03-0.05	0.5-2.0	0.5-5.0
	5-32	0-4	1.70-1.80	141.14-423.30	0.02-0.03	0.5-2.0	0.2-3.0
	32-60	0-4	1.60-1.70	42.34-141.14	0.02-0.03	0.5-2.0	0.2-3.0
Humic Dystroxerepts----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-15	0-4	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	7.0-9.0
	15-25	0-4	1.55-1.65	42.34-141.14	0.02-0.02	0.5-2.0	2.0-4.0
	25-60	0-4	1.60-1.70	42.34-141.14	0.01-0.01	0.5-2.0	0.2-0.8
278:							
Rock outcrop.							
Tuolumne----------	0-2	2-5	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	5.0-8.0
	2-10	2-4	1.55-1.65	14.11-42.34	0.05-0.07	0.5-2.0	1.0-3.0
	10-35	2-5	1.60-1.70	14.11-42.34	0.02-0.03	0.5-2.0	0.5-1.0
	35-60	1-4	1.70-1.80	141.14-423.30	0.02-0.04	0.5-2.0	0.2-0.8
Humic Dystroxerepts----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-10	0-3	1.60-1.70	42.34-141.14	0.03-0.05	0.5-2.0	7.0-9.0
	10-21	0-3	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	2.0-4.0
	21-60	0-3	1.60-1.70	42.34-141.14	0.01-0.03	0.5-2.0	0.2-0.8
Rubble land.							
279:							
Canisrocks----------	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	2-11	0-3	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	6.0-10
	11-21	0-3	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	2.0-4.0
	21-29	0-3	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-2.0
	29-36	0-3	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-2.0
	36-60	0-3	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	0.5-1.0
Xeric Dystroxerepts----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	0.0-0.0	65-85
	1-4	1-4	1.60-1.70	42.34-141.14	0.03-0.70	0.5-2.0	6.0-10
	4-18	0-3	1.60-1.70	42.34-141.14	0.03-0.07	0.5-2.0	1.0-3.0
	18-28	0-3	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	1.0-2.0
	28-34	0-1	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	1.0-2.0
	34-60	0-1	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	0.5-1.0

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
280:							
Typic Dystroxerepts----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-4	5-12	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	6.0-8.0
	4-8	5-12	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	5.0-7.0
	8-15	5-12	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	1.2-2.0
	15-24	5-12	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	1.0-1.5
	24-36	5-12	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	0.8-1.2
	36-60	5-12	1.50-1.60	14.11-42.34	0.09-0.10	0.5-2.0	0.2-0.8
Humic Dystroxerepts----------	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-3	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	3-8	0-4	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	7.0-9.0
	8-16	0-4	1.60-1.70	14.11-42.34	0.04-0.05	0.5-2.0	3.0-5.0
	16-30	2-6	1.50-1.60	14.11-42.34	0.05-0.06	0.5-2.0	1.0-3.0
	30-60	0-4	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.2-0.8
Rock outcrop.							
282:							
Clarkslodge------------------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-6	4-10	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	8.0-10
	6-19	6-10	1.50-1.60	14.11-42.34	0.07-0.09	0.5-2.0	6.0-8.0
	19-34	15-27	1.50-1.60	14.11-42.34	0.07-0.09	2.0-4.0	1.0-3.0
	34-60	15-27	1.45-1.55	4.23-14.11	0.16-0.18	3.0-5.0	0.2-0.8
Craneflat--------------------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-4	2-7	1.50-1.80	14.11-42.34	0.05-0.07	1.0-3.0	10-20
	4-11	2-7	1.55-1.65	42.34-141.14	0.04-0.05	1.0-3.0	2.0-5.0
	11-22	2-7	1.60-1.70	42.34-141.14	0.03-0.04	1.0-3.0	1.0-3.0
	22-30	2-7	1.55-1.65	42.34-141.14	0.04-0.05	1.0-3.0	1.0-3.0
	30-60	2-7	1.60-1.70	42.34-141.14	0.03-0.05	1.0-3.0	0.2-1.5
Nevadafalls------------------	0-0	---	---	42.34-141.14	0.00-0.00	---	---
	0-6	3-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	3.0-5.0
	6-17	3-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	2.0-3.5
	17-31	3-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.8-1.5
	31-60	3-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.2-1.2
283:							
Waterwheel-------------------	0-1	1-6	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	8.0-10
	1-7	1-6	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	7.0-9.0
	7-26	1-6	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.5-1.2
	26-60	1-6	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.5-0.8
Nevadafalls------------------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	75-95
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-6	1-4	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	7.0-9.0
	6-11	1-4	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	3.0-5.0
	11-21	1-4	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	1.0-3.0
	21-60	1-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	0.2-0.8
Rock outcrop.							

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
285:							
Waterwheel	0-0	---	0.05-0.30	42.32-141.14	---	---	70-90
	0-4	4-10	1.55-1.60	14.11-42.34	0.05-0.07	0.5-2.0	3.0-5.0
	4-8	4-10	1.55-1.60	14.11-42.34	0.05-0.07	0.5-2.0	2.0-4.0
	8-16	4-10	1.55-1.65	42.32-141.14	0.05-0.07	0.5-2.0	1.0-3.0
	16-60	4-10	1.50-1.60	14.11-42.34	0.03-0.04	0.5-2.0	0.2-1.5
Humic Dystroxerepts	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-6	0-6	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	4.0-8.0
	6-13	0-6	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	2.0-5.0
	13-24	0-6	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	1.0-4.0
	24-42	0-6	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	0.8-3.0
	42-55	0-6	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	0.5-3.0
	55-60	0-6	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-0.8
286:							
Nevadafalls	0-8	2-6	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	8.0-10
	8-21	4-12	1.50-1.60	14.11-42.34	0.08-0.10	1.0-3.0	4.0-6.0
	21-28	4-12	1.50-1.65	14.11-42.34	0.08-0.10	1.0-3.0	1.0-3.0
	28-60	2-6	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	0.2-0.8
Typic Dystroxerepts	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-3	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	3-16	2-6	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	6.0-8.0
	16-25	2-6	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	4.0-6.0
	25-35	2-6	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	1.0-3.0
	35-60	2-6	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	0.2-0.8
Ultic Palexeralfs	0-1	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-9	4-10	1.50-1.60	14.11-42.34	0.08-0.10	3.0-5.0	6.0-34
	9-14	4-10	1.50-1.60	14.11-42.34	0.09-0.11	3.0-5.0	7.0-9.0
	14-22	18-35	1.45-1.55	4.23-14.11	0.13-0.15	4.0-6.0	3.0-5.0
	22-32	12-40	1.40-1.50	0.42-1.41	0.17-0.19	5.0-7.0	1.0-3.0
	32-60	18-50	1.35-1.50	0.07-0.42	0.13-0.14	6.0-8.0	0.2-0.8
Rock outcrop.							
287:							
Badgerpass	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	2-3	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	3-11	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	8.0-10
	11-25	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	3.0-5.0
	25-60	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
Waterwheel	0-0	---	0.05-0.30	42.32-141.14	---	---	70-90
	0-1	---	0.05-0.30	42.32-141.14	---	---	65-85
	1-4	1-4	1.60-1.70	42.32-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	4-11	1-4	1.60-1.70	42.32-141.14	0.05-0.07	0.5-2.0	4.0-6.0
	11-22	1-4	1.60-1.70	42.32-141.14	0.05-0.07	0.5-2.0	2.0-4.0
	22-29	1-4	1.60-1.70	42.32-141.14	0.03-0.04	0.5-2.0	0.2-0.8
	29-60	1-4	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.5-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
288:							
Rock outcrop.							
Craneflat	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-4	2-7	1.50-1.80	14.11-42.34	0.05-0.07	1.0-3.0	10-20
	4-11	2-7	1.55-1.65	42.34-141.14	0.04-0.05	1.0-3.0	2.0-5.0
	11-22	2-7	1.60-1.70	42.34-141.14	0.03-0.04	1.0-3.0	1.0-3.0
	22-30	2-7	1.55-1.65	42.34-141.14	0.04-0.05	1.0-3.0	1.0-3.0
	30-60	2-7	1.60-1.70	42.34-141.14	0.03-0.05	1.0-3.0	0.2-1.5
Waterwheel	0-0	---	0.05-0.30	42.32-141.14	---	---	70-90
	0-1	---	0.05-0.30	42.32-141.14	---	---	65-85
	1-4	1-4	1.60-1.70	42.32-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	4-11	1-4	1.60-1.70	42.32-141.14	0.05-0.07	0.5-2.0	4.0-6.0
	11-22	1-4	1.60-1.70	42.32-141.14	0.05-0.07	0.5-2.0	2.0-4.0
	22-29	1-4	1.60-1.70	42.32-141.14	0.03-0.04	0.5-2.0	0.2-0.8
	29-60	1-4	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.5-0.8
289:							
Waterwheel	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-6	1-5	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	8.0-10
	6-15	1-5	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	6.0-8.0
	15-25	1-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	3.0-5.0
	25-36	1-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-3.0
	36-60	1-5	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	0.2-0.8
Craneflat	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	2-4	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	4-4	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	4-12	1-5	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	8.0-10
	12-23	1-5	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	3.0-5.0
	23-28	1-5	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	1.0-3.0
	28-60	1-5	1.50-1.60	14.11-42.34	0.03-0.04	0.5-2.0	0.2-0.8
290:							
Humic Dystroxerepts	0-0	---	1.55-1.65	42.34-141.14	0.00-0.00	---	70-90
	0-9	3-7	1.55-1.65	14.11-42.34	0.05-0.07	1.0-3.0	8.0-10
	9-20	3-7	1.55-1.65	14.11-42.34	0.04-0.06	1.0-3.0	5.0-7.0
	20-60	3-7	1.55-1.65	14.11-42.34	0.04-0.06	1.0-3.0	0.2-2.0
Tuolumne	0-3	0-4	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	7.0-9.0
	3-7	0-4	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	6.0-8.0
	7-12	0-4	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	5.0-7.0
	12-24	0-4	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	2.0-4.0
	24-39	0-4	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	1.0-3.0
	39-46	0-4	1.60-1.70	42.34-141.14	0.02-0.03	0.5-2.0	0.2-0.8
	46-60	0-4	1.60-1.70	42.34-141.14	0.02-0.03	0.5-2.0	0.2-0.8
Typic Xerorthents	0-4	2-9	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	7.0-9.0
	4-15	2-9	1.50-1.60	14.11-42.34	0.07-0.09	0.5-2.0	1.0-3.0
	15-33	2-9	1.50-1.60	14.11-42.34	0.03-0.03	0.5-2.0	0.2-0.8
	33-60	---	---	42.34-141.14	0.02-0.02	0.5-2.0	---

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
290:							
Ultic Haploxeralfs	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-80
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-6	10-18	1.50-1.60	4.23-14.11	0.08-0.10	0.5-2.0	7.0-9.0
	6-12	10-18	1.50-1.60	4.23-14.11	0.08-0.10	0.5-2.0	6.0-8.0
	12-30	20-27	1.45-1.55	4.23-14.11	0.14-0.15	2.0-4.0	2.0-4.0
	30-41	20-27	1.45-1.55	4.23-14.11	0.16-0.18	2.0-4.0	1.0-3.0
	41-60	20-27	1.45-1.55	4.23-14.11	0.16-0.18	2.0-4.0	0.2-0.8
291:							
Ultic Haploxeralfs	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-3	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	3-5	3-9	1.50-1.60	14.11-42.34	0.08-0.11	1.0-3.0	4.0-8.0
	5-12	3-9	1.50-1.60	14.11-42.34	0.08-0.11	1.0-3.0	1.0-3.0
	12-19	3-9	1.50-1.60	14.11-42.34	0.08-0.11	1.0-3.0	1.0-3.0
	19-22	6-9	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	0.2-1.0
	22-41	6-9	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	0.1-1.0
	41-57	6-9	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	0.1-1.0
	57-61	6-9	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	0.1-0.5
Typic Dystroxerepts	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-7	2-7	1.50-1.60	14.11-42.34	0.08-0.09	1.0-3.0	5.0-7.0
	7-16	2-7	1.50-1.60	14.11-42.34	0.07-0.09	1.0-3.0	4.0-6.0
	16-29	5-14	1.50-1.60	14.11-42.34	0.08-0.09	1.0-3.0	1.5-2.0
	29-39	5-14	1.50-1.60	14.11-42.34	0.08-0.09	1.0-3.0	1.0-3.0
	39-60	2-7	1.50-1.60	14.11-42.34	0.08-0.09	1.0-3.0	0.2-0.8
292:							
Humic Dystroxerepts	0-1	---	0.05-0.30	42.34-141.14	---	---	70-90
	1-1	---	0.05-0.30	42.34-141.14	---	---	65-85
	1-3	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	8.0-10
	3-4	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	4-7	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	6.0-8.0
	7-11	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	5.0-7.0
	11-19	0-4	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	2.0-4.0
	19-31	0-4	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-2.0
	31-60	0-4	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.2-0.8
Typic Haploxerults	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	2-4	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	4-7	6-14	1.55-1.65	14.11-42.34	0.06-0.09	1.0-2.0	7.0-9.0
	7-9	6-18	1.50-1.60	14.11-42.34	0.08-0.09	1.0-3.0	6.0-8.0
	9-15	15-35	1.45-1.55	4.23-14.11	0.15-0.17	3.0-5.0	2.0-4.0
	15-22	15-35	1.40-1.50	1.41-4.23	0.15-0.17	4.0-6.0	1.0-3.0
	22-60	20-40	1.40-1.50	1.41-4.23	0.15-0.17	4.0-6.0	0.5-1.0
293:							
Xeric Dystrocryepts	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-4	0-4	1.55-1.65	42.34-141.14	0.07-0.09	0.5-2.0	7.0-9.0
	4-20	0-4	1.55-1.65	42.34-141.14	0.07-0.09	0.5-2.0	4.0-6.0
	20-34	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	2.0-4.0
	34-47	0-4	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	0.8-1.5
	47-60	0-4	1.55-1.65	42.34-141.14	0.04-0.06	0.5-2.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
293:							
Vitrandic Dystrocryepts	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-2	4-9	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	8.0-13
	2-5	4-9	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	4.0-6.0
	5-18	4-9	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	2.0-5.0
	18-25	4-9	1.50-1.60	14.11-42.34	0.08-0.10	1.0-3.0	0.8-1.5
	25-36	4-9	1.55-1.65	42.34-141.14	0.04-0.05	1.0-3.0	0.5-1.2
	36-60	4-12	1.50-1.60	14.11-42.34	0.06-0.07	1.0-3.0	0.2-0.8
294:							
Waterwheel	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-6	0-3	1.60-1.70	42.34-141.14	0.04-0.06	0.5-2.0	8.0-10
	6-11	0-3	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	2.0-4.0
	11-26	0-3	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.5-1.0
	26-60	0-3	1.60-1.70	42.34-141.14	0.01-0.02	0.5-2.0	0.2-0.8
Typic Dystroxerepts	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-5	3-12	1.55-1.60	14.11-42.34	0.08-0.11	1.0-3.0	12-18
	5-12	3-12	1.55-1.60	14.11-42.34	0.08-0.11	1.0-3.0	2.0-6.0
	12-20	3-12	1.55-1.60	14.11-42.34	0.07-0.09	1.0-3.0	1.0-4.0
	20-28	3-12	1.55-1.60	14.11-42.34	0.04-0.06	1.0-3.0	0.5-1.8
	28-49	3-12	1.55-1.60	14.11-42.34	0.07-0.09	1.0-3.0	0.2-0.8
	49-60	---	1.55-1.60	0.01-0.42	---	---	---
295:							
Craneflat	0-5	0-6	1.50-1.60	42.34-141.14	0.05-0.06	0.5-2.0	8.0-10
	5-19	0-6	1.50-1.60	42.34-141.14	0.04-0.06	0.5-2.0	3.0-6.0
	19-60	0-6	1.50-1.60	42.34-141.14	0.04-0.05	0.5-2.0	0.2-0.8
Typic Dystrocryepts	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-9	3-9	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	8.0-10
	9-18	3-9	1.50-1.60	14.11-42.34	0.07-0.09	0.5-2.0	3.0-5.0
	18-31	3-9	1.50-1.60	14.11-42.34	0.06-0.07	0.5-2.0	1.0-3.0
	31-60	3-9	1.50-1.60	14.11-42.34	0.08-0.10	0.5-2.0	0.2-0.8
296:							
Ultic Palexeralfs	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	2-3	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	3-6	10-25	1.45-1.55	4.23-14.11	0.14-0.16	1.0-3.0	8.0-10
	6-12	10-25	1.45-1.55	4.23-14.11	0.14-0.16	1.0-3.0	6.0-8.0
	12-23	25-40	1.45-1.55	1.41-4.23	0.18-0.19	4.0-8.0	2.0-4.0
	23-32	25-40	1.45-1.55	1.41-4.23	0.18-0.19	6.0-9.0	2.0-4.0
	32-41	25-40	1.45-1.55	1.41-4.23	0.18-0.19	6.0-9.0	1.0-3.0
	41-60	25-40	1.40-1.50	1.41-4.23	0.18-0.20	6.0-9.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
296:							
Humic Dystroxerepts----------	0-1	---	0.05-0.30	42.34-141.14	0.09-0.11	---	70-90
	1-3	---	0.05-0.30	42.34-141.14	0.09-0.11	---	65-85
	3-6	5-14	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	8.0-10
	6-17	5-14	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	7.0-9.0
	17-22	5-14	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	4.0-6.0
	22-28	5-14	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	2.0-4.0
	28-37	5-14	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	1.0-3.0
	37-48	5-14	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	0.2-0.8
	48-70	2-6	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-0.8
	70-86	2-6	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	0.2-0.8
	86-106	2-6	1.55-1.65	42.34-141.14	0.08-0.10	0.5-2.0	0.2-0.8
297:							
Typic Xerorthents------------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-3	2-9	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	5.0-9.0
	3-6	2-9	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	5.0-9.0
	6-9	2-9	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	2.0-4.0
	9-16	2-9	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	1.0-3.0
	16-28	2-9	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	0.5-1.0
	28-60	2-9	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.2-0.8
Rock outcrop.							
Typic Xeropsamments----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	1-3	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	3-7	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	6.0-8.0
	7-12	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	3.0-5.0
	12-17	0-4	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	2.0-4.0
	17-21	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	1.0-3.0
	21-30	0-4	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.8-1.5
	30-38	0-4	1.60-1.70	42.34-141.14	0.10-0.12	0.5-2.0	0.5-1.0
	38-60	0-4	1.60-1.70	42.34-141.14	---	0.5-2.0	0.2-0.8
298:							
Tuolumne----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-6	0-3	1.60-1.70	42.34-141.14	0.04-0.06	0.5-2.0	8.0-10
	6-11	0-3	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	2.0-4.0
	11-26	0-3	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.5-1.0
	26-60	0-3	1.60-1.70	42.34-141.14	0.01-0.02	0.5-2.0	0.2-0.8
Typic Dystroxerepts----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-5	3-12	1.55-1.60	14.11-42.34	0.08-0.11	1.0-3.0	12-18
	5-12	3-12	1.55-1.60	14.11-42.34	0.08-0.11	1.0-3.0	2.0-6.0
	12-20	3-12	1.55-1.60	14.11-42.34	0.07-0.09	1.0-3.0	1.0-4.0
	20-28	3-12	1.55-1.60	14.11-42.34	0.04-0.06	1.0-3.0	0.5-1.8
	28-49	3-12	1.55-1.60	14.11-42.34	0.07-0.09	1.0-3.0	0.2-0.8
	49-60	---	1.55-1.60	0.01-0.42	---	---	---

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
299:							
Humic Dystroxerepts----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-4	0-5	1.70-1.80	141.14-423.30	0.02-0.04	0.5-2.0	5.0-9.0
	4-11	0-5	1.70-1.80	141.14-423.30	0.02-0.04	0.5-2.0	4.0-7.0
	11-22	0-5	1.70-1.80	141.14-423.30	0.02-0.04	0.5-2.0	2.0-4.0
	22-30	0-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.8-1.5
	30-60	0-5	1.70-1.80	141.14-423.30	0.02-0.04	0.5-2.0	0.2-0.8
Ultic Haplxoeralfs----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-8	3-20	1.50-1.60	14.11-42.34	0.07-0.09	2.0-4.0	7.0-9.0
	8-17	3-20	1.50-1.60	14.11-42.34	0.08-0.09	2.0-4.0	3.0-5.0
	17-28	5-20	1.50-1.60	14.11-42.34	0.07-0.09	2.0-4.0	1.0-3.0
	28-47	5-20	1.50-1.60	14.11-42.34	0.08-0.09	2.0-4.0	0.5-1.0
	47-60	3-20	1.50-1.60	14.11-42.34	0.08-0.10	2.0-4.0	0.2-0.8
300:							
Typic Dystroxerepts----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-2	4-12	1.50-1.60	14.11-42.34	0.09-0.11	2.0-4.0	8.0-10
	2-5	4-12	1.50-1.60	14.11-42.34	0.08-0.09	2.0-4.0	7.0-9.0
	5-9	4-12	1.50-1.60	14.11-42.34	0.08-0.09	2.0-4.0	2.0-4.0
	9-15	4-12	1.50-1.60	14.11-42.34	0.06-0.08	2.0-4.0	0.8-1.5
	15-20	4-12	1.50-1.60	14.11-42.34	0.08-0.10	2.0-4.0	0.2-0.8
	20-30	---	1.50-1.60	14.11-42.34	---	2.0-4.0	---
Ultic Haploxeralfs----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-10	3-8	1.50-1.60	14.11-42.34	0.07-0.09	1.0-2.0	8.0-10
	10-19	7-14	1.50-1.60	14.11-42.34	0.07-0.09	1.0-3.0	1.0-3.0
	19-60	15-25	1.45-1.55	4.23-14.11	0.13-0.14	3.0-5.0	0.2-0.8
301:							
Vitrandic Haploxerolls-------	0-1	---	0.05-0.30	43.34-141.14	0.00-0.00	---	70-90
	1-4	5-18	1.45-1.55	4.23-14.11	0.15-0.17	0.5-2.0	7.0-11
	4-7	5-18	1.45-1.55	4.23-14.11	0.14-0.16	0.5-2.0	6.0-9.0
	7-11	5-18	1.50-1.60	4.23-14.11	0.13-0.15	0.5-2.0	1.0-3.0
	11-19	5-18	1.45-1.55	4.23-14.11	0.15-0.17	0.5-2.0	1.0-3.0
	19-34	5-18	1.50-1.60	14.11-42.34	0.09-0.11	0.5-2.0	0.5-1.5
	34-57	5-18	1.50-1.60	4.23-14.11	0.13-0.15	0.5-2.0	0.2-0.8
	57-63	5-18	1.50-1.60	4.23-14.11	0.13-0.15	0.5-2.0	0.2-0.5
	63-69	2-18	1.70-1.80	141.14-423.30	0.03-0.06	0.5-2.0	0.0-0.2
302:							
Typic Haploxerults----------	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-3	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	3-5	13-20	1.45-1.55	4.23-14.11	0.14-0.16	1.0-3.0	8.0-10
	5-12	13-25	1.45-1.55	4.23-14.11	0.14-0.16	1.0-3.0	6.0-9.0
	12-22	20-30	1.40-1.50	1.41-4.23	0.18-0.20	3.0-5.0	2.0-4.0
	22-60	20-30	1.45-1.55	1.41-4.23	0.16-0.18	3.0-5.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
302:							
Ultic Haploxeralfs	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-10	3-8	1.50-1.60	14.11-42.34	0.07-0.09	1.0-2.0	8.0-10
	10-19	7-14	1.50-1.60	14.11-42.34	0.07-0.09	1.0-3.0	1.0-3.0
	19-60	15-25	1.45-1.55	4.23-14.11	0.13-0.14	3.0-5.0	0.2-0.8
303:							
Rock outcrop.							
Dystric Xeropsamments	0-0	---	1.50-1.60	4.23-14.11	0.00-0.00	---	70-90
	0-1	---	1.50-1.60	4.23-14.11	0.00-0.00	---	65-85
	1-3	1-6	1.50-1.60	4.23-14.11	0.05-0.07	0.5-2.0	8.0-10
	3-5	1-6	1.50-1.60	4.23-14.11	0.05-0.07	0.5-2.0	7.0-9.0
	5-14	1-6	1.50-1.60	4.23-14.11	0.05-0.07	0.5-2.0	3.0-5.0
	14-28	1-6	1.50-1.60	4.23-14.11	0.05-0.07	0.5-2.0	1.0-3.0
	28-37	1-6	1.50-1.60	4.23-14.11	0.05-0.06	0.5-2.0	0.2-0.8
	37-60	---	1.50-1.60	4.23-14.11	---	0.5-2.0	---
Humic Dystroxerepts	0-1	---	1.50-1.60	4.23-14.11	0.00-0.00	---	70-90
	1-2	2-7	1.50-1.60	4.23-14.11	0.05-0.06	0.5-2.0	7.0-9.0
	2-7	2-7	1.50-1.60	4.23-14.11	0.04-0.05	0.5-2.0	6.0-8.0
	7-13	2-7	1.50-1.60	4.23-14.11	0.04-0.05	0.5-2.0	2.0-4.0
	13-33	2-7	1.50-1.60	4.23-14.11	0.02-0.02	0.5-2.0	1.0-3.0
	33-60	2-7	1.50-1.60	4.23-14.11	0.02-0.02	0.5-2.0	0.2-0.8
Tuolumne	0-1	---	1.50-1.60	4.23-14.11	0.00-0.00	---	70-90
	1-9	2-6	1.50-1.60	4.23-14.11	0.05-0.07	0.5-2.0	7.0-9.0
	9-21	2-5	1.50-1.60	4.23-14.11	0.03-0.05	0.5-2.0	2.0-4.0
	21-29	2-5	1.50-1.60	4.23-14.11	0.03-0.04	0.5-2.0	1.0-3.0
	29-44	2-5	1.50-1.60	4.23-14.11	0.03-0.04	0.5-2.0	0.8-1.5
	44-60	2-5	1.50-1.60	4.23-14.11	0.03-0.04	0.5-2.0	0.2-0.8
304:							
Clarkslodge	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	1-3	4-18	1.55-1.60	4.23-14.11	0.07-0.10	2.0-4.0	5.0-9.0
	3-6	4-18	1.55-1.60	4.23-14.11	0.07-0.10	2.0-4.0	2.0-5.0
	6-12	5-18	1.55-1.60	4.23-14.11	0.08-0.10	2.0-4.0	1.2-2.5
	12-27	5-18	1.55-1.60	4.23-14.11	0.07-0.10	2.0-4.0	1.0-1.5
	27-35	5-18	1.50-1.60	4.23-14.11	0.07-0.09	2.0-4.0	0.5-1.0
	35-60	4-18	1.50-1.60	4.23-14.11	0.07-0.09	2.0-4.0	0.2-0.5
Rock outcrop.							
305:							
Rock outcrop.							
Waterwheel	0-3	1-4	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	8.0-10
	3-9	1-4	1.60-1.70	42.34-141.14	0.02-0.02	0.5-2.0	6.0-8.0
	9-11	1-4	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	2.0-4.0
	11-21	1-4	1.60-1.70	42.34-141.14	0.01-0.02	0.5-2.0	1.0-3.0
	21-60	1-4	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
305:							
Dystric Xeropsamments	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	0-6	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	---
	6-18	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	---
	18-25	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	---
	25-41	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	---
	41-60	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	---
306:							
Typic Cryopsamments	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-4	1-6	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	6.0-10
	4-15	1-6	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	2.0-4.0
	15-32	1-6	1.60-1.70	42.34-141.14	0.05-0.06	0.5-2.0	0.8-1.5
	32-43	1-6	1.60-1.70	42.34-141.14	0.04-0.06	0.5-2.0	0.5-1.0
	43-60	1-6	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	0.2-0.8
Humic Dystrocryepts	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-5	2-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	6.0-10
	5-13	2-6	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	2.0-5.0
	13-23	2-6	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	1.0-3.0
	23-60	12-16	1.45-1.55	4.23-14.11	0.12-0.14	0.5-2.0	0.2-1.0
307:							
Rock outcrop.							
Dystric Xeropsamments	0-0	---	1.50-1.60	4.23-14.11	0.00-0.00	---	70-90
	0-1	---	1.50-1.60	4.23-14.11	0.00-0.00	---	65-85
	1-3	1-6	1.50-1.60	4.23-14.11	0.05-0.07	0.5-2.0	8.0-10
	3-5	1-6	1.50-1.60	4.23-14.11	0.05-0.07	0.5-2.0	7.0-9.0
	5-14	1-6	1.50-1.60	4.23-14.11	0.05-0.07	0.5-2.0	3.0-5.0
	14-28	1-6	1.50-1.60	4.23-14.11	0.05-0.07	0.5-2.0	1.0-3.0
	28-37	1-6	1.50-1.60	4.23-14.11	0.05-0.06	0.5-2.0	0.2-0.8
	37-60	---	1.50-1.60	4.23-14.11	---	0.5-2.0	---
Dystric Xerorthents	0-3	1-4	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	8.0-10
	3-9	1-4	1.60-1.70	42.34-141.14	0.02-0.02	0.5-2.0	6.0-8.0
	9-11	1-4	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	2.0-4.0
	11-21	1-4	1.60-1.70	42.34-141.14	0.01-0.02	0.5-2.0	1.0-3.0
	21-60	1-4	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.2-0.8
309:							
Rock outcrop.							
Waterwheel	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	2-7	4-9	1.50-1.60	14.11-42.34	0.06-0.07	1.0-3.0	8.0-10
	7-17	4-9	1.50-1.60	14.11-42.34	0.05-0.06	1.0-3.0	3.0-5.0
	17-31	4-9	1.50-1.60	14.11-42.34	0.06-0.07	1.0-3.0	1.0-3.0
	31-60	4-9	1.50-1.60	14.11-42.34	0.05-0.06	1.0-3.0	0.2-0.8
Typic Dystroxerepts	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-3	3-8	1.50-1.60	14.11-42.34	0.05-0.06	1.0-3.0	8.0-10
	3-7	3-8	1.50-1.60	14.11-42.34	0.05-0.06	1.0-3.0	7.0-9.0
	7-27	3-8	1.50-1.60	14.11-42.34	0.03-0.04	1.0-3.0	2.0-4.0
	27-41	3-8	1.50-1.60	14.11-42.34	0.03-0.04	1.0-3.0	1.0-3.0
	41-60	3-8	1.50-1.60	14.11-42.34	0.03-0.04	1.0-3.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
310:							
Rock outcrop.							
Humic Dystroxerepts----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	1-4	3-7	1.55-1.65	42.34-141.14	0.05-0.06	0.5-2.0	8.0-10
	4-8	3-7	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	7.0-9.0
	8-30	3-7	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	2.0-4.0
	30-39	3-7	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	1.0-3.0
	39-60	3-7	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	0.2-0.8
Humic Lithic Haploxerepts----	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	2-10	2-5	1.60-1.70	42.34-141.14	0.02-0.02	1.0-3.0	5.0-10
	10-20	2-5	1.50-1.60	14.11-42.34	0.05-0.06	1.0-3.0	10-14
	20-60	---	---	0.01-0.01	0.00-0.00	---	---
311:							
Rock outcrop.							
Humic Dystroxerepts----------	0-1	2-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	8.0-10
	1-11	2-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	7.0-9.0
	11-30	2-5	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	1.0-5.0
	30-60	2-5	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	0.2-0.8
Humic Lithic Haploxerepts----	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	---
	2-10	5-10	1.50-1.60	14.11-42.34	0.05-0.07	1.0-3.0	5.0-10
	10-20	5-10	1.50-1.60	14.11-42.34	0.04-0.04	1.0-3.0	10-14
	20-60	---	---	0.00-0.01	0.00-0.00	---	---
313:							
Nevadafalls----------	0-0	---	---	42.34-141.14	0.00-0.00	---	---
	0-6	3-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	3.0-5.0
	6-17	3-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	2.0-3.5
	17-31	3-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.8-1.5
	31-60	3-5	1.55-1.65	42.34-141.14	0.04-0.05	0.5-2.0	0.2-1.2
Oxyaquic Dystrudepts---------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-10	5-10	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	7.0-9.0
	10-35	5-10	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	2.0-4.0
	35-48	5-10	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	1.0-3.0
	48-61	2-5	1.60-1.70	42.34-141.14	0.05-0.07	1.0-3.0	0.2-0.8
314:							
Badgerpass----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-6	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	8.0-10
	6-13	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	6.0-8.0
	13-24	0-4	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	3.0-5.0
	24-42	0-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	1.0-3.0
	42-55	0-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	0.5-1.0
	55-60	0-4	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
314:							
Dystric Xeropsamments--------	0-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	2-4	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	4-4	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	4-9	2-6	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	7.0-9.0
	9-25	2-6	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	2.0-4.0
	25-30	2-6	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	1.0-3.0
	30-60	2-6	1.55-1.65	42.34-141.14	0.08-0.10	0.5-2.0	0.2-0.8
Rock outcrop.							
315:							
Nevadafalls-------------------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	2-6	1.50-1.60	14.11-42.34	0.07-0.09	1.0-3.0	8.0-10
	2-14	2-6	1.50-1.60	14.11-42.34	0.05-0.07	1.0-3.0	2.0-4.0
	14-35	2-6	1.50-1.60	14.11-42.34	0.05-0.07	1.0-3.0	3.0-5.0
	35-60	2-6	1.50-1.60	14.11-42.34	0.04-0.05	1.0-3.0	0.2-0.8
Dystric Xeropsamments--------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	0-7	1-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	7-16	1-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	3.0-5.0
	16-26	1-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	1.0-3.0
	26-60	1-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	0.2-0.8
316:							
Dystric Xerorthents----------	0-4	1-6	0.05-0.30	42.34-141.14	0.04-0.05	0.5-2.0	8.0-10
	4-13	1-6	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	5.0-7.0
	13-23	1-6	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	1.0-3.0
	23-35	1-6	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	0.2-0.8
	35-393	---	1.60-1.70	0.00-0.04	---	0.5-2.0	---
Rock outcrop.							
Rubble land.							
318:							
Typic Dystroxerepts----------	0-4	4-10	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	8.0-10
	4-12	4-10	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	4.0-6.0
	12-27	4-10	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	2.0-4.0
	27-39	4-10	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	1.0-3.0
	39-57	---	---	14.11-42.34	---	---	---
Humic Dystroxerepts----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	1-2	3-8	1.55-1.65	14.11-42.34	0.06-0.08	1.0-3.0	8.0-12
	2-5	3-8	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	2.0-5.0
	5-14	3-8	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	2.0-5.0
	14-33	3-8	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	1.5-2.0
	33-46	3-8	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	0.0-0.5
	46-48	3-8	1.50-1.60	14.11-42.34	0.09-0.11	1.0-3.0	0.0-0.5
	48-54	6-14	1.50-1.60	14.11-42.34	0.13-0.15	2.0-4.0	0.0-0.5
	54-60	6-14	1.50-1.60	14.11-42.34	0.13-0.15	2.0-4.0	0.0-0.5

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
319:							
Humic Dystroxerepts----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	1-5	2-6	1.55-1.65	42.34-141.14	0.03-0.04	0.5-2.0	7.0-10
	5-13	2-6	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	2.0-5.0
	13-20	2-6	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	1.0-2.0
	20-35	2-6	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	0.8-1.5
	35-60	2-6	1.55-1.65	42.34-141.14	0.01-0.02	0.5-2.0	1.0-1.2
Typic Haploxerults----------	0-0	---	---	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	---	42.34-141.14	0.00-0.00	---	65-80
	1-2	---	---	42.34-141.14	0.00-0.00	---	60-80
	2-5	0-3	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	5-7	0-3	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	6.0-8.0
	7-12	6-16	1.50-1.60	14.11-42.34	0.08-0.10	2.0-4.0	3.0-5.0
	12-20	6-16	1.50-1.60	14.11-42.34	0.08-0.10	2.0-4.0	2.0-4.0
	20-31	6-16	1.50-1.60	14.11-42.34	0.08-0.10	2.0-4.0	1.0-3.0
	31-46	6-16	1.50-1.60	14.11-42.34	0.08-0.10	2.0-4.0	0.8-2.0
	46-53	0-3	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
	53-71	0-3	1.60-1.70	42.34-141.14	0.05-0.07	0.5-2.0	0.2-1.0
Inceptic Haploxeralfs--------	0-0	---	1.50-1.60	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	1.50-1.60	42.34-141.14	0.00-0.00	---	65-85
	1-4	1-6	1.50-1.60	14.11-42.34	0.08-0.09	0.5-2.0	7.0-9.0
	4-12	1-6	1.50-1.60	14.11-42.34	0.07-0.08	0.5-2.0	3.0-5.0
	12-22	1-6	1.50-1.60	14.11-42.34	0.07-0.08	0.5-2.0	2.0-4.0
	22-30	1-6	1.50-1.60	14.11-42.34	0.05-0.05	0.5-2.0	1.0-3.0
	30-60	1-6	1.50-1.60	14.11-42.34	0.01-0.02	0.5-2.0	0.2-0.8
320:							
Half Dome----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-4	2-9	1.55-1.65	42.34-141.14	0.04-0.05	1.0-3.0	8.0-10
	4-10	2-9	1.55-1.65	42.34-141.14	0.05-0.07	1.0-3.0	4.0-6.0
	10-20	2-9	1.50-1.60	14.11-42.34	0.05-0.06	1.0-3.0	2.0-4.0
	20-47	2-9	1.50-1.60	14.11-42.34	0.04-0.05	1.0-3.0	1.0-3.0
	47-61	2-9	1.60-1.70	42.34-141.14	0.05-0.06	1.0-3.0	0.2-0.8
Humic Dystroxerepts----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	65-85
	0-3	2-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	8.0-10
	3-7	2-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	7.0-9.0
	7-16	2-5	1.55-1.65	42.34-141.14	0.05-0.07	0.5-2.0	3.0-5.0
	16-22	2-5	1.55-1.65	42.34-141.14	0.02-0.03	0.5-2.0	2.0-4.0
	22-35	2-7	1.50-1.60	14.11-42.34	0.02-0.03	1.0-3.0	1.0-3.0
	35-60	2-7	1.50-1.60	14.11-42.34	0.05-0.07	1.0-3.0	0.2-0.8
Rock outcrop.							
321:							
Dystric Xeropsamments--------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	0.5-2.0	60-80
	0-8	1-5	1.60-1.70	42.34-141.14	0.06-0.08	0.5-2.0	7.0-9.0
	8-21	1-5	1.70-1.80	141.14-423.30	0.03-0.05	0.5-2.0	2.0-4.0
	21-61	3-6	1.55-1.65	42.34-141.14	0.06-0.08	0.5-2.0	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
321:							
Dystric Xerorthents----------	0-3	1-4	1.60-1.70	42.34-141.14	0.03-0.04	0.5-2.0	8.0-10
	3-9	1-4	1.60-1.70	42.34-141.14	0.02-0.02	0.5-2.0	6.0-8.0
	9-11	1-4	1.60-1.70	42.34-141.14	0.04-0.05	0.5-2.0	2.0-4.0
	11-21	1-4	1.60-1.70	42.34-141.14	0.01-0.02	0.5-2.0	1.0-3.0
	21-60	1-4	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.2-0.8
322:							
Typic Xerorthents----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-7	3-7	1.50-1.60	14.11-42.34	0.08-0.09	0.5-2.0	1.0-5.0
	7-24	3-7	1.50-1.60	14.11-42.34	0.07-0.09	0.5-2.0	0.2-2.0
	24-42	1-5	1.60-1.70	42.34-141.14	0.02-0.02	0.5-2.0	0.2-0.8
	42-60	1-5	1.70-1.80	141.14-423.30	0.01-0.02	0.5-2.0	0.1-0.5
323:							
Ultic Haploxeralfs----------	0-3	8-12	1.50-1.60	14.11-42.34	0.08-0.10	4.0-6.0	7.0-9.0
	3-5	10-18	1.50-1.60	14.11-42.34	0.08-0.10	4.0-6.0	5.0-7.0
	5-10	10-18	1.50-1.60	14.11-42.34	0.08-0.10	4.0-6.0	3.0-5.0
	10-21	12-18	1.50-1.60	14.11-42.34	0.08-0.10	4.0-6.0	2.0-4.0
	21-37	12-24	1.50-1.60	14.11-42.34	0.05-0.06	4.0-6.0	1.0-3.0
	37-60	15-24	1.45-1.55	4.23-14.11	0.07-0.08	4.0-6.0	0.2-0.8
Humic Dystroxerepts----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	60-80
	2-7	4-10	1.50-1.60	14.11-42.34	0.07-0.09	2.0-4.0	7.0-9.0
	7-15	4-14	1.50-1.60	14.11-42.34	0.09-0.11	2.0-4.0	2.0-4.0
	15-29	4-14	1.50-1.60	14.11-42.34	0.09-0.11	2.0-4.0	1.0-3.0
	29-60	6-14	1.50-1.60	14.11-42.34	0.08-0.10	2.0-4.0	0.2-0.8
324:							
Humic Haploxerepts----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-4	6-12	1.45-1.55	4.23-14.11	0.09-0.10	4.0-6.0	5.0-9.0
	4-8	6-12	1.45-1.55	4.23-14.11	0.07-0.08	4.0-6.0	2.0-4.0
	8-20	6-12	1.50-1.60	14.11-42.34	0.03-0.04	4.0-6.0	1.0-2.5
	20-30	6-12	1.45-1.55	4.23-14.11	0.06-0.07	4.0-6.0	1.0-2.5
	30-60	6-12	1.50-1.60	14.11-42.34	0.05-0.05	4.0-6.0	0.2-2.5
Rock outcrop.							
Ultic Haploxeralfs----------	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-6	7-14	1.45-1.55	4.23-14.11	0.08-0.09	3.0-5.0	2.0-5.0
	6-16	8-27	1.40-1.50	1.41-4.23	0.10-0.11	4.0-6.0	0.2-2.0
	16-29	8-27	1.40-1.50	1.41-4.23	0.11-0.12	4.0-6.0	0.2-0.5
	29-60	8-12	1.45-1.55	4.23-14.11	0.06-0.07	3.0-5.0	0.2-0.5
325.							
Urban land							

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
328:							
Clarkslodge	0-0	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	0-1	---	0.05-0.20	42.34-141.14	0.00-0.00	---	65-85
	1-5	8-18	1.50-1.60	4.23-14.11	0.12-0.14	3.0-5.0	20-34
	5-11	10-18	1.50-1.60	4.23-14.11	0.09-0.10	3.0-5.0	2.0-5.0
	11-20	10-18	1.50-1.60	4.23-14.11	0.09-0.10	3.0-5.0	0.5-1.5
	20-37	10-18	1.50-1.60	4.23-14.11	0.07-0.10	3.0-5.0	0.2-1.0
	37-60	8-18	1.50-1.60	4.23-14.11	0.10-0.11	3.0-5.0	0.1-0.8
Ultic Palexeralfs	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-4	12-25	1.45-1.55	4.23-14.11	0.13-0.14	1.0-3.0	6.0-34
	4-13	12-25	1.45-1.55	4.23-14.11	0.12-0.14	3.0-5.0	2.0-5.0
	13-31	12-25	1.45-1.55	4.23-14.11	0.13-0.14	3.0-5.0	0.5-1.0
	31-49	12-25	1.45-1.55	4.23-14.11	0.13-0.15	3.0-5.0	0.0-0.2
	49-60	12-25	1.45-1.55	4.23-14.11	0.13-0.15	3.0-5.0	0.0-0.2
401:							
Sentinel	0-1	0-0	0.02-0.09	42.34-141.14	0.00-0.00	0.0-0.0	70-90
	1-5	3-12	1.45-1.55	14.11-42.34	0.11-0.14	0.0-2.9	4.0-8.0
	5-20	5-12	1.45-1.55	14.11-42.34	0.10-0.13	0.0-2.9	1.0-5.0
	20-27	5-12	1.45-1.55	14.11-42.34	0.10-0.13	0.0-2.9	1.0-3.0
	27-41	3-10	1.45-1.55	14.11-42.34	0.07-0.10	0.0-2.9	0.5-2.0
	41-56	3-10	1.45-1.55	14.11-42.34	0.07-0.10	0.0-1.5	0.5-1.5
	56-66	3-8	1.55-1.65	42.34-141.14	0.07-0.10	0.0-1.5	0.0-0.8
412.							
Water-Riverwash							
501:							
Happyisles, sandy loam	0-3	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	3-7	3-17	1.50-1.60	14.11-42.34	0.09-0.11	0.0-2.9	1.0-4.0
	7-13	3-17	1.50-1.60	14.11-42.34	0.09-0.11	0.0-2.9	1.0-4.0
	13-17	3-17	1.50-1.60	14.11-42.34	0.09-0.11	0.0-2.9	1.0-4.0
	17-33	3-17	1.50-1.60	14.11-42.34	0.09-0.11	0.0-2.9	0.5-1.2
	33-60	3-7	1.55-1.65	42.34-141.14	0.06-0.08	0.0-2.9	0.2-0.8
Happyisles, loamy fine sand, overwash	0-3	---	0.02-0.09	42.34-141.14	0.00-0.00	---	70-90
	3-7	4-12	1.55-1.65	14.11-42.34	0.08-0.10	0.0-2.9	1.0-4.0
	7-13	3-10	1.55-1.65	42.34-141.14	0.10-0.13	0.0-2.9	1.0-4.0
	13-17	5-12	1.50-1.60	14.11-42.34	0.10-0.13	0.0-2.9	1.0-4.0
	17-33	5-12	1.50-1.60	14.11-42.34	0.07-0.11	0.0-2.9	0.5-1.2
	33-41	3-8	1.60-1.70	42.34-141.14	0.07-0.11	0.0-2.9	0.2-0.8
	41-62	5-12	1.55-1.65	42.34-141.14	0.07-0.11	0.0-2.9	0.2-0.8
502:							
Happyisles	0-3	---	0.02-0.09	42.34-141.14	0.00-0.00	---	70-90
	3-7	5-12	1.55-1.65	14.11-42.34	0.08-0.10	0.0-2.9	1.0-4.0
	7-13	3-10	1.55-1.65	42.34-141.14	0.10-0.13	0.0-2.9	1.0-4.0
	13-17	5-12	1.50-1.60	14.11-42.34	0.10-0.13	0.0-2.9	1.0-4.0
	17-33	5-12	1.50-1.60	14.11-42.34	0.07-0.11	0.0-2.9	0.5-1.2
	33-41	3-8	1.60-1.70	42.34-141.14	0.07-0.11	0.0-2.9	0.2-0.8
	41-62	5-12	1.55-1.65	42.34-141.14	0.07-0.11	0.0-2.9	0.2-0.8

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
504:							
Mollic Xerofluvents----------	0-2	---	0.02-0.09	42.34-141.14	0.02-0.07	---	70-90
	2-6	5-18	1.45-1.55	4.23-14.11	0.14-0.18	0.0-2.9	5.0-9.0
	6-8	3-7	1.55-1.65	42.34-141.14	0.08-0.11	0.0-2.9	1.0-3.0
	8-12	3-18	1.45-1.55	4.23-14.11	0.03-0.13	0.0-2.9	0.0-0.5
	12-23	3-7	1.55-1.65	42.34-141.14	0.10-0.13	0.0-2.9	0.0-0.5
	23-29	4-7	1.50-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.0-0.5
	29-49	3-5	1.55-1.65	42.34-141.14	0.03-0.13	0.0-2.9	0.0-0.5
	49-54	6-12	1.50-1.60	14.11-42.34	0.08-0.11	0.0-2.9	2.0-5.0
	54-68	6-12	1.55-1.65	14.11-42.34	0.08-0.11	0.0-2.9	1.0-3.0
510t:							
Rubble land.							
Lithnip----------	0-1	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	1.0-2.0
	1-5	12-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0
	5-15	---	---	0.00-0.01	---	---	---
Rock outcrop.							
551:							
Happyisles----------	0-3	---	0.02-0.09	42.34-141.14	0.00-0.00	---	70-90
	3-7	5-12	1.55-1.65	14.11-42.34	0.08-0.10	0.0-2.9	1.0-4.0
	7-13	3-10	1.55-1.65	42.34-141.14	0.10-0.13	0.0-2.9	1.0-4.0
	13-17	5-12	1.50-1.60	14.11-42.34	0.10-0.13	0.0-2.9	1.0-4.0
	17-33	5-12	1.50-1.60	14.11-42.34	0.07-0.11	0.0-2.9	0.5-1.2
	33-41	3-8	1.60-1.70	42.34-141.14	0.07-0.11	0.0-2.9	0.2-0.8
	41-62	5-12	1.55-1.65	42.34-141.14	0.07-0.11	0.0-2.9	0.2-0.8
Half Dome----------	0-1	4-12	1.50-1.60	14.11-42.34	0.07-0.12	0.0-2.9	1.0-3.0
	1-19	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	1.0-3.0
	19-28	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	0.0-0.5
	28-33	4-12	1.50-1.60	14.11-42.34	0.03-0.09	0.0-2.9	0.0-0.5
	33-50	4-12	1.50-1.60	42.34-141.14	0.05-0.06	0.0-2.9	0.0-0.5
	50-60	1-5	1.50-1.60	42.34-141.14	0.05-0.06	0.0-2.9	0.0-0.5
552:							
Mollic Xerofluvents----------	0-2	---	0.02-0.09	42.34-141.14	0.02-0.07	---	70-90
	2-6	3-18	1.45-1.55	4.23-14.11	0.14-0.18	0.0-2.9	5.0-9.0
	6-8	3-7	1.55-1.65	42.34-141.14	0.08-0.11	0.0-2.9	1.0-3.0
	8-12	3-18	1.45-1.55	4.23-14.11	0.03-0.13	0.0-2.9	0.0-0.5
	12-23	3-7	1.55-1.65	42.34-141.14	0.10-0.13	0.0-2.9	0.0-0.5
	23-29	4-7	1.50-1.60	42.34-141.14	0.08-0.11	0.0-2.9	0.0-0.5
	29-49	3-7	1.55-1.65	42.34-141.14	0.03-0.13	0.0-2.9	0.0-0.5
	49-54	6-12	1.50-1.60	14.11-42.34	0.08-0.11	0.0-2.9	2.0-5.0
	54-68	6-12	1.55-1.65	14.11-42.34	0.08-0.11	0.0-2.9	1.0-3.0

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
590:							
Terric Haplosaprists---------	0-3	12-18	0.20-0.80	1.41-42.34	0.16-0.20	0.0-2.9	8.0-14
	3-8	3-6	1.60-1.70	42.34-141.14	0.04-0.11	0.0-2.9	3.0-7.0
	8-12	3-6	1.60-1.70	42.34-141.14	0.04-0.11	0.0-2.9	1.0-5.0
	12-31	0-7	0.20-0.80	1.41-42.34	0.20-0.30	0.0-2.9	35-55
	31-35	10-20	1.45-1.55	4.23-14.11	0.10-0.16	0.0-2.9	5.0-9.0
	35-38	10-18	1.50-1.60	4.23-14.11	0.10-0.16	0.0-2.9	3.0-7.0
	38-46	15-20	0.20-0.80	4.23-14.11	0.20-0.30	0.0-2.9	2.0-6.0
	46-52	0-7	1.50-1.60	1.41-42.34	0.16-0.20	0.0-2.9	35-55
	52-58	10-18	1.50-1.60	14.11-42.34	0.10-0.13	0.0-2.9	5.0-9.0
	58-60	7-18	1.50-1.60	14.11-42.34	0.10-0.13	0.0-2.9	3.0-7.0
601:							
Half Dome, very bouldery-----	0-3	0-0	0.05-0.30	14.11-141.14	---	---	70-90
	3-5	4-12	1.50-1.60	14.11-42.34	0.07-0.12	0.0-2.9	1.0-3.0
	5-8	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	1.0-3.0
	8-15	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	0.2-1.0
	15-39	4-12	1.50-1.60	14.11-42.34	0.03-0.09	0.0-2.9	0.2-1.0
	39-63	4-12	1.50-1.60	14.11-42.34	0.05-0.06	0.0-2.9	0.2-1.0
Half Dome, cobbly----------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-10	4-12	1.50-1.60	14.11-42.34	0.07-0.12	0.0-2.9	1.0-3.0
	10-17	4-12	1.50-1.60	14.11-42.34	0.05-0.09	0.0-2.9	1.0-3.0
	17-29	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	0.0-0.5
	29-60	4-12	1.50-1.60	14.11-42.34	0.03-0.07	0.0-2.9	0.0-0.5
602:							
Half Dome--------------------	0-1	4-12	1.50-1.60	14.11-42.34	0.07-0.12	0.0-2.9	1.0-3.0
	1-19	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	1.0-3.0
	19-28	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	0.0-0.5
	28-33	4-12	1.50-1.60	14.11-42.34	0.03-0.09	0.0-2.9	0.0-0.5
	33-50	4-12	1.50-1.60	42.34-141.14	0.05-0.06	0.0-2.9	0.0-0.5
	50-60	1-5	1.50-1.60	42.34-141.14	0.05-0.06	0.0-2.9	0.0-0.5
610:							
Rubble land.							
Half Dome--------------------	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-10	4-12	1.50-1.60	14.11-42.34	0.07-0.12	0.0-2.9	1.0-3.0
	10-17	4-12	1.50-1.60	14.11-42.34	0.05-0.09	0.0-2.9	1.0-3.0
	17-29	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	0.0-0.5
	29-60	4-12	1.50-1.60	14.11-42.34	0.03-0.07	0.0-2.9	0.0-0.5
620:							
Half Dome, extremely stony sandy loam, warm----------	0-1	4-12	1.50-1.60	14.11-42.34	0.07-0.12	0.0-2.9	1.0-3.0
	1-19	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	1.0-3.0
	19-28	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	0.0-0.5
	28-33	4-12	1.50-1.60	14.11-42.34	0.03-0.09	0.0-2.9	0.0-0.5
	33-50	4-12	1.50-1.60	42.34-141.14	0.05-0.06	0.0-2.9	0.0-0.5
	50-60	1-5	1.50-1.60	42.34-141.14	0.05-0.06	0.0-2.9	0.0-0.5

Table 12.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
620:							
Half Dome, very cobbly sandy loam, warm	0-1	---	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-2	---	0.05-0.30	42.34-141.14	0.00-0.00	---	65-85
	2-10	4-12	1.50-1.60	14.11-42.34	0.07-0.12	0.0-2.9	1.0-3.0
	10-17	4-12	1.50-1.60	14.11-42.34	0.05-0.09	0.0-2.9	1.0-3.0
	17-29	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	0.0-0.5
	29-60	4-12	1.50-1.60	14.11-42.34	0.03-0.07	0.0-2.9	0.0-0.5
630:							
Rubble land.							
Half Dome	0-1	4-12	1.50-1.60	14.11-42.34	0.07-0.12	0.0-2.9	1.0-3.0
	1-19	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	1.0-3.0
	19-28	4-12	1.50-1.60	14.11-42.34	0.04-0.09	0.0-2.9	0.0-0.5
	28-33	4-12	1.50-1.60	14.11-42.34	0.03-0.09	0.0-2.9	0.0-0.5
	33-50	4-12	1.50-1.60	42.34-141.14	0.05-0.06	0.0-2.9	0.0-0.5
	50-60	1-5	1.50-1.60	42.34-141.14	0.05-0.06	0.0-2.9	0.0-0.5
701:							
Vitrandic Haploxerolls	0-1	0-0	0.05-0.30	42.34-141.14	0.00-0.00	---	70-90
	1-3	5-15	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	6.0-8.0
	3-12	5-15	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	2.0-4.0
	12-16	5-15	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	1.0-3.0
	16-24	5-15	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	1.0-2.0
	24-36	5-15	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	0.5-1.0
	36-50	5-15	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	0.2-0.8
	50-60	5-15	1.50-1.60	14.11-42.34	0.13-0.15	0.5-2.0	0.1-0.5
702:							
Vitrandic Dystroxerepts	0-8	5-10	1.55-1.60	14.11-42.34	0.09-0.12	0.0-2.9	5.0-9.0
	8-30	5-10	1.55-1.60	14.11-42.34	0.09-0.12	0.0-2.9	1.0-3.0
	30-50	5-10	1.55-1.60	14.11-42.34	0.04-0.06	0.0-2.9	0.5-0.5
	50-60	5-10	1.60-1.70	42.34-141.14	0.03-0.05	0.0-2.9	0.5-0.5
900.							
Rock outcrop							
DAM.							
Dam							
W.							
Water							

Table 13.—Erosion Properties of the Soils

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
101:						
Oxyaquic Xerofluvents	0-0	---	---	2	7	38
	0-2	.20	.28			
	2-4	.10	.10			
	4-10	.15	.17			
	10-17	.10	.10			
	17-28	.10	.10			
	28-39	.24	.32			
	39-43	.10	.10			
	43-57	.10	.10			
	57-60	.02	.02			
Riverwash	---	---	---	5	1	180
Fluvaquents	0-1	.10	.15	5	3	86
	1-4	.20	.28			
	4-6	.17	.24			
	6-10	.28	.37			
	10-60	.28	.37			
101t:						
Lithnip	0-1	.05	.28	1	8	0
	1-5	.10	.32			
	5-15	---	---			
Rock outcrop.						
Fishsnooze	0-1	.10	.24	2	6	48
	1-9	.10	.24			
	9-13	.10	.24			
	13-35	.05	.24			
	35-45	---	---			
102:						
Oxyaquic Xerofluvents	0-0	---	---	2	3	86
	0-2	.17	.24			
	2-4	.10	.10			
	4-10	.15	.17			
	10-17	.10	.10			
	17-28	.10	.15			
	28-39	.10	.15			
	39-43	.10	.15			
	43-57	.10	.15			
	57-60	.02	.02			
Riverwash	---	---	---	5	1	180
102t:						
Lithnip	0-1	.05	.28	1	8	0
	1-5	.10	.32			
	5-15	---	---			
Rock outcrop.						

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
102t:						
Fishsnooze	0-1	.10	.24	2	6	48
	1-9	.10	.24			
	9-13	.10	.24			
	13-35	.05	.24			
	35-45	---	---			
104:						
Aquandic Humaquepts	0-8	.02	.02	3	3	86
	8-18	.02	.02			
	18-26	.28	.32			
	26-68	.10	.10			
111t:						
Whittell	0-0	---	---	3	2	134
	0-7	.05	.20			
	7-20	.05	.24			
	20-32	.05	.24			
	32-42	---	---			
Jobsis	0-5	.05	.17	1	3	86
	5-9	.05	.17			
	9-17	.05	.17			
	17-20	.05	.17			
	20-30	---	---			
Rock outcrop.						
151:						
Elcapitan	0-1	---	---	3	7	38
	1-7	.28	.28			
	7-12	.24	.24			
	12-20	.24	.24			
	20-31	.28	.28			
	31-38	.32	.32			
	38-44	.20	.20			
	44-47	.20	.20			
	47-53	.10	.10			
	53-58	.20	.20			
	58-60	.20	.20			
152:						
Vitrandic Haploxerolls	0-2	.20	.24	5	3	86
	2-3	.10	.10			
	3-5	.24	.28			
	5-13	.24	.28			
	13-18	.28	.32			
	18-24	.05	.10			
	24-28	.02	.02			
	28-32	.02	.05			
	32-60	.05	.05			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
201:						
Leidig	0-0	---	---	5	7	38
	0-7	.17	.17			
	7-16	.28	.28			
	16-23	.32	.32			
	23-30	.43	.43			
	30-34	.28	.28			
	34-42	.28	.28			
	42-46	.49	.49			
	46-52	.28	.28			
	52-58	.32	.32			
	58-60	.24	.24			
210:						
Rubble land.						
Typic Cryorthents	0-2	.10	.17	4	3	86
	2-13	.15	.37			
	13-19	.15	.43			
	19-60	.10	.43			
Rock outcrop.						
Xeric Dystrocryepts	0-1	---	---	4	7	38
	1-5	.17	.24			
	5-13	.10	.28			
	13-28	.10	.28			
	28-60	.20	.28			
211:						
Xeric Dystrocryepts	0-1	---	---	4	7	38
	1-9	.10	.20			
	9-19	.05	.20			
	19-32	.05	.28			
	32-60	.05	.28			
Canisrocks	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
Oxyaquic Dystrocryepts	0-0	.15	.17	4	7	38
	0-9	.15	.20			
	9-16	.15	.24			
	16-23	.17	.24			
	23-60	.10	.28			
213:						
Canisrocks	0-0	---	---	4	7	38
	0-3	.05	.10			
	3-12	.10	.15			
	12-60	.05	.17			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
213:						
Glacierpoint	0-0	---	---	4	7	38
	0-1	---	---			
	1-9	.02	.10			
	9-15	.02	.10			
	15-20	.10	.20			
	20-29	.05	.17			
	29-37	.10	.24			
	37-60	.10	.24			
Vitrandic Dystrocryepts	0-0	---	---	4	7	38
	0-1	---	---			
	1-11	.17	.20			
	11-17	.20	.24			
	17-25	.20	.28			
	25-37	.15	.28			
	37-60	.15	.28			
214:						
Marmotland	0-0	---	---	4	7	38
	0-11	.24	.28			
	11-19	.37	.43			
	19-36	.37	.43			
	36-48	.43	.49			
	48-60	.43	.49			
Oxyaquic Dystrocryepts	0-2	.10	.10	4	3	86
	2-7	.10	.10			
	7-14	.15	.15			
	14-20	.15	.15			
	20-31	.15	.15			
	31-40	.10	.15			
	40-61	.05	.17			
Xeric Dystrocryepts	0-1	---	---	4	7	38
	1-2	---	---			
	2-16	.15	.17			
	16-23	.10	.10			
	23-36	.10	.15			
	36-63	.10	.28			
	63-69	.02	.10			
215:						
Typic Cryorthents	0-0	---	---	4	7	38
	0-1	---	---			
	1-3	.15	.20			
	3-12	.05	.10			
	12-18	.05	.10			
	18-22	.05	.15			
	22-60	.10	.28			
Rock outcrop.						
Rubble land.						
219:						
Rock outcrop.						
Rubble land.						

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
219:						
Canisrocks	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
221:						
Typic Cryorthents	0-2	.10	.17	4	3	86
	2-13	.10	.32			
	13-19	.15	.43			
	19-60	.10	.43			
Xeric Dystrocryepts	0-3	.28	.37	4	3	86
	3-19	.20	.43			
	19-60	.28	.43			
Oxyaquic Dystrocryepts	0-0	.15	.17	4	7	38
	0-9	.15	.20			
	9-16	.15	.24			
	16-23	.17	.24			
	23-60	.10	.28			
222:						
Canisrocks	0-0	---	---	4	7	38
	0-2	---	---			
	2-7	.05	.17			
	7-14	.02	.10			
	14-60	.02	.15			
Rubble land.						
Rock outcrop.						
Crazymule	0-0	---	---	4	7	38
	0-5	.10	.15			
	5-22	.05	.17			
	22-35	.05	.20			
	35-60	.32	.49			
223:						
Rock outcrop.						
Rubble land.						
Canisrocks	0-0	---	---	4	7	86
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
224:						
Rock outcrop.						

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
224:						
Crazymule	0-0	---	---	4	7	38
	0-5	.10	.15			
	5-22	.05	.17			
	22-35	.05	.20			
	35-60	.28	.43			
Vitrandic Cryorthents	0-2	---	---	4	7	38
	2-2	---	---			
	2-7	.32	.37			
	7-15	.20	.32			
	15-24	.15	.32			
	24-60	---	---			
225:						
Canisrocks	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
Rock outcrop.						
Rubble land.						
Vitrandic Dystrocryepts	0-1	---	---	4	7	38
	1-2	---	---			
	2-5	.17	.20			
	5-12	.05	.15			
	12-26	.05	.28			
	26-30	.05	.37			
	30-60	.02	.20			
227:						
Canisrocks	0-0	---	---	4	7	38
	0-2	.15	.24			
	2-6	.17	.28			
	6-17	.05	.20			
	17-25	.05	.20			
	25-34	.05	.17			
	34-60	.10	.24			
Crazymule	0-1	---	---	4	7	38
	1-2	---	---			
	2-12	.20	.28			
	12-22	.05	.24			
	22-34	.17	.32			
	34-60	.17	.43			
228:						
Xeric Dystrocryepts	0-4	.10	.10	4	7	86
	4-14	.05	.10			
	14-20	.05	.15			
	20-30	.02	.10			
	30-60	.02	.10			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
228:						
Vitrandic Eutrocryepts	0-6	.20	.24	4	3	86
	6-14	.20	.24			
	14-21	.17	.32			
	21-28	.28	.55			
	28-60	.17	.43			
229:						
Marmotland	0-0	.17	.20	4	3	86
	0-9	.10	.17			
	9-16	.15	.24			
	16-23	.17	.24			
	23-60	.10	.24			
Oxyaquic Dystrocryepts	0-0	---	---	4	3	86
	0-2	---	---			
	2-5	.24	.28			
	5-12	.15	.20			
	12-19	.15	.24			
	19-28	.15	.32			
	28-60	.10	.28			
231:						
Canisrocks	0-1	---	---	4	7	86
	1-1	---	---			
	1-2	---	---			
	2-6	.10	.10			
	6-10	.10	.15			
	10-17	.10	.28			
	17-26	.05	.17			
	26-35	.02	.10			
	35-60	.02	.10			
Typic Cryaquents	0-0	---	---	4	7	86
	0-1	---	---			
	1-3	.32	.43			
	3-9	.24	.55			
	9-17	.10	.28			
	17-60	.10	.28			
232:						
Canisrocks	0-0	---	---	4	7	86
	0-2	.10	.15			
	2-10	.10	.20			
	10-24	.02	.05			
	24-60	.02	.10			
Glacierpoint	0-0	---	---	4	7	86
	0-6	.10	.17			
	6-9	.10	.17			
	9-18	.10	.28			
	18-31	.05	.20			
	31-60	.10	.32			
234.						
Rock outcrop-Rubble land						

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
235:						
Canisrocks	0-1	---	---	4	7	38
	1-3	---	---			
	3-4	---	---			
	4-11	.10	.10			
	11-17	.10	.10			
	17-37	.05	.05			
	37-53	.05	.10			
	53-68	.05	.10			
Rock outcrop.						
Rubble land.						
237:						
Canisrocks	0-0	---	---	4	7	38
	0-3	.17	.20			
	3-8	.05	.05			
	8-13	.02	.05			
	13-27	.05	.10			
	27-60	.02	.05			
Clacierpoint	0-0	---	---	4	7	38
	0-4	.17	.20			
	4-17	.05	.10			
	17-27	.05	.10			
	27-60	.05	.17			
Vitrandic Cryorthents	0-1	.32	.32	4	2	134
	1-6	.10	.15			
	6-12	.17	.24			
	12-60	.15	.37			
238:						
Oxyaquic Cryorthents	0-3	.28	.28	4	3	86
	3-13	.28	.28			
	13-18	.24	.32			
	18-30	.20	.24			
	30-60	.10	.10			
Canisrocks	0-0	---	---	4	7	86
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
239:						
Crazymule	0-0	---	---	4	7	86
	0-5	.20	.24			
	5-13	.15	.28			
	13-23	.17	.37			
	23-60	.10	.37			
Canisrocks	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
241:						
Canisrocks	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.05	.05			
	4-18	.02	.02			
	18-28	.02	.02			
	28-34	.02	.02			
	34-60	.02	.02			
242:						
Rock outcrop.						
Canisrocks	0-0	---	---	4	7	38
	0-1	---	---			
	1-1	---	---			
	1-7	.02	.10			
	7-23	.02	.10			
	23-32	.05	.20			
	32-60	.02	.15			
Xeric Dystrocryepts	0-0	---	---	4	7	38
	0-5	.10	.10			
	5-20	.10	.20			
	20-35	.10	.15			
	35-47	.20	.24			
	47-60	.05	.05			
244:						
Typic Cryorthents	0-0	---	---	4	7	86
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
Rubble land.						
Rock outcrop.						
245:						
Rock outcrop.						
Canisrocks	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
Xeric Dystrocryepts	0-2	.17	.24	-	3	86
	2-4	.17	.24			
	4-11	.32	.37			
	11-60	.64	.64			
246.						
Rock outcrop, domes						

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
247:						
Canisrocks	0-2	---	---	4	7	86
	2-8	.02	.05			
	8-36	.05	.10			
	36-45	.02	.05			
	45-60	.02	.05			
Xeric Dystrocryepts	0-1	---	---	4	7	86
	1-2	---	---			
	2-10	.15	.17			
	10-21	.10	.10			
	21-31	.10	.10			
	31-42	.15	.15			
	42-58	.15	.17			
	58-60	.10	.20			
248:						
Canisrocks	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	---	---			
	2-5	.05	.10			
	5-13	.05	.17			
	13-32	.05	.15			
	32-60	.02	.10			
Rock outcrop.						
Glacierpoint	0-0	---	---	4	7	86
	0-1	---	---			
	1-4	.05	.17			
	4-16	.10	.20			
	16-27	.10	.20			
	27-46	.02	.02			
	46-64	.05	.10			
249:						
Rock outcrop.						
Canisrocks	0-1	---	---	4	7	86
	1-3	---	---			
	3-4	---	---			
	4-11	.10	.10			
	11-17	.10	.10			
	17-37	.05	.05			
	37-53	.05	.10			
	53-68	.05	.10			
250:						
Canisrocks	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
Xeric Dystrocryepts	0-0	---	---	4	7	86
	0-1	---	---			
	1-9	.10	.24			
	9-19	.10	.28			
	19-32	.05	.37			
	32-60	.05	.37			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
251:						
Glacierpoint	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.05	.17			
	4-16	.10	.20			
	16-27	.10	.20			
	27-46	.02	.02			
	46-64	.05	.10			
Typic Cryorthents	0-0	---	---	4	7	38
	0-4	.05	.17			
	4-10	.05	.10			
	10-16	.05	.10			
	16-30	.10	.20			
	30-60	.10	.28			
252:						
Rock outcrop.						
Canisrocks	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
Xeric Dystrocryepts	0-3	.15	.17	4	2	134
	3-15	.05	.10			
	15-35	.05	.15			
	35-47	.05	.15			
	47-61	.05	.17			
253:						
Canisrocks	0-1	---	---	4	7	38
	1-2	---	---			
	2-3	.20	.28			
	3-11	.05	.10			
	11-23	.05	.10			
	23-35	.05	.28			
	35-60	.05	.28			
Glacierpoint	0-0	---	---	4	7	86
	0-4	.15	.32			
	4-7	.15	.32			
	7-11	.10	.32			
	11-19	.05	.32			
	19-60	.02	.24			
Humic Dystrocryepts	0-0	---	---	4	7	38
	0-1	---	---			
	1-2	---	---			
	2-16	.10	.20			
	16-30	.05	.20			
	30-60	.02	.28			
256:						
Craneflat	0-1	---	---	4	7	38
	1-2	---	---			
	2-7	.05	.10			
	7-13	.05	.17			
	13-60	.10	.24			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
256:						
Rock outcrop.						
Rubble land.						
Waterwheel	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	---	---			
	2-6	.05	.15			
	6-14	.10	.28			
	14-28	.02	.10			
	28-60	.02	.15			
257:						
Badgerpass	0-1	---	---	4	7	38
	1-6	.15	.17			
	6-13	.15	.20			
	13-21	.17	.24			
	21-32	.17	.24			
	32-50	.17	.24			
	50-60	.05	.15			
Oxyaquic Dystroxerepts	0-11	.24	.32	4	5	56
	11-19	.24	.32			
	19-32	.17	.28			
	32-43	.37	.37			
	43-60	.24	.24			
258:						
Typic Dystroxerepts	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	---	---			
	2-3	.20	.20			
	3-11	.28	.28			
	11-26	.43	.43			
	26-43	.37	.37			
	43-60	.10	.32			
Badgerpass	0-2	---	---	4	7	38
	2-7	.10	.10			
	7-18	.05	.05			
	18-37	.02	.02			
	37-55	.02	.02			
	55-67	.02	.02			
Dystric Xerorthents	0-1	---	---	4	7	38
	1-2	---	---			
	2-3	---	---			
	3-11	.05	.10			
	11-24	.10	.20			
	24-38	.10	.20			
	38-60	.15	.32			
260:						
Rock outcrop.						
Craneflat	0-1	---	---	4	7	38
	1-2	.15	.20			
	2-4	.15	.20			
	4-13	.05	.10			
	13-19	.05	.10			
	19-60	.02	.15			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
260:						
Dystric Xerorthents	0-1	---	---	4	7	38
	1-1	---	---			
	1-5	.24	.28			
	5-17	.24	.28			
	17-60	.28	.32			
261:						
Dystric Xeropsamments	0-0	---	---	4	7	38
	0-6	.15	.17			
	6-18	.15	.17			
	18-25	.15	.17			
	25-41	.17	.20			
	41-60	.17	.24			
Typic Dystroxerepts	0-0	---	---	4	7	38
	0-1	---	---			
	1-3	.10	.17			
	3-8	.17	.24			
	8-20	.20	.32			
	20-31	.15	.32			
	31-60	.10	.37			
Badgerpass	0-7	.10	.17	4	2	134
	7-18	.10	.15			
	18-60	.17	.24			
Rock outcrop.						
262:						
Humic Dystroxerepts	0-0	---	---	4	7	38
	0-1	---	---			
	1-2	.05	.24			
	2-5	.05	.20			
	5-18	.05	.24			
	18-60	.05	.28			
Dystric Xerorthents	0-1	---	---	4	7	38
	1-2	---	---			
	2-3	---	---			
	3-11	.05	.10			
	11-24	.10	.20			
	24-38	.10	.20			
	38-60	.15	.32			
Rock outcrop.						
264:						
Crazymule	0-1	---	---	4	7	38
	1-2	---	---			
	2-12	.17	.24			
	12-22	.05	.32			
	22-34	.20	.37			
	34-60	.10	.20			
Canisrocks	0-1	---	---	4	7	38
	1-2	---	---			
	2-3	.15	.17			
	3-11	.10	.24			
	11-23	.05	.17			
	23-35	.02	.17			
	35-60	.02	.20			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
267:						
Rock outcrop.						
Typic Cryorthents	0-5	.05	.10	4	7	38
	5-13	.05	.15			
	13-28	.05	.32			
	28-60	.10	.37			
Xeric Dystrocryepts	0-2	---	---	4	7	38
	2-4	---	---			
	4-13	.02	.02			
	13-20	.02	.02			
	20-30	.02	.02			
	30-42	.02	.02			
	42-48	.10	.10			
	48-62	.05	.05			
	62-78	.10	.10			
	78-84	.10	.15			
268:						
Rock outcrop.						
Canisrocks	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.05			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
Glacierpoint	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.05	.17			
	4-16	.10	.20			
	16-27	.10	.20			
	27-46	.02	.02			
	46-64	.05	.10			
269:						
Canisrocks	0-0	---	---	4	7	38
	0-2	.10	.15			
	2-7	.05	.05			
	7-20	.02	.10			
	20-60	.02	.17			
Rock outcrop.						
Glacierpoint	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.05	.17			
	4-16	.10	.20			
	16-27	.10	.20			
	27-46	.02	.02			
	46-64	.05	.10			
270:						
Rock outcrop.						

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
270:						
Typic Cryorthents	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.05			
	4-18	.02	.10			
	18-28	.02	.15			
	28-34	.02	.15			
	34-60	.02	.17			
Vitrandic Dystrocryepts	0-3	.15	.15	4	2	134
	3-4	.10	.10			
	4-8	.10	.15			
	8-17	.05	.24			
	17-60	.05	.20			
271:						
Rock outcrop.						
Lithic Xerorthents	0-3	.05	.20	4	1	180
	3-7	.02	.20			
	7-60	---	---			
Waterwheel	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	---	---			
	2-6	.05	.15			
	6-14	.10	.28			
	14-28	.02	.10			
	28-60	.02	.15			
273:						
Nevadafalls	0-0	.10	.15	4	7	38
	0-6	.10	.15			
	6-17	.15	.17			
	17-31	.05	.10			
	31-60	.05	.17			
Waterwheel	0-0	---	---	4	7	38
	0-1	---	---			
	1-1	---	---			
	1-6	.15	.20			
	6-11	.10	.20			
	11-19	.10	.24			
	19-60	.10	.24			
274.						
Rock outcrop, domes						

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
275:						
Oxyaquic Dystroxerepts	0-1	---	---	4	7	38
	1-2	---	---			
	2-9	.10	.20			
	9-19	.10	.28			
	19-34	.10	.32			
	34-46	.05	.24			
	46-60	.02	.24			
Dystric Xerorthents	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	---	---			
	2-6	.05	.15			
	6-14	.10	.24			
	14-28	.05	.24			
	28-60	.05	.24			
Vitrandic Xerorthents	0-8	.10	.15	4	5	180
	8-18	.20	.32			
	18-24	.43	.43			
	24-35	.24	.28			
	35-50	.20	.24			
	50-62	.28	.28			
Rubble land.						
276:						
Happyisles	0-3	---	---	5	3	86
	3-7	.20	.24			
	7-13	.20	.24			
	13-17	.20	.24			
	17-33	.24	.28			
	33-60	.24	.28			
Typic Dystroxerepts	0-1	---	---	3	5	56
	1-19	.10	.20			
	19-28	.10	.20			
	28-33	.05	.24			
	33-50	.02	.10			
	50-60	.05	.28			
277:						
Tuolumne	0-1	---	---	4	7	38
	1-2	---	---			
	2-5	.10	.10			
	5-32	.02	.10			
	32-60	.02	.10			
Humic Dystroxerepts	0-1	---	---	4	7	38
	1-1	---	---			
	1-2	---	---			
	2-15	.02	.10			
	15-25	.02	.20			
	25-60	.02	.24			
278:						
Rock outcrop.						
Tuolumne	0-2	.05	.10	4	2	134
	2-10	.05	.17			
	10-35	.02	.10			
	35-60	.10	.17			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
278:						
Humic Dystroxerepts	0-1	---	---	4	2	134
	1-1	---	---			
	1-10	.05	.10			
	10-21	.02	.05			
	21-60	.02	.10			
Rubble land.						
279:						
Canisrocks	0-2	---	---	4	7	38
	2-2	---	---			
	2-11	.10	.10			
	11-21	.05	.10			
	21-29	.02	.10			
	29-36	.02	.10			
	36-60	.02	.15			
Xeric Dystrocryepts	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.02			
	4-18	.02	.02			
	18-28	.02	.05			
	28-34	.02	.02			
	34-60	.02	.05			
280:						
Typic Dystroxerepts	0-1	---	---	4	7	38
	1-2	---	---			
	2-4	.15	.17			
	4-8	.17	.20			
	8-15	.20	.24			
	15-24	.20	.24			
	24-36	.24	.28			
	36-60	.20	.28			
Humic Dystroxerepts	0-2	---	---	4	7	38
	2-2	---	---			
	2-3	---	---			
	3-8	.05	.10			
	8-16	.10	.17			
	16-30	.10	.32			
	30-60	.10	.28			
Rock outcrop.						
282:						
Clarkslodge	0-1	---	---	4	7	38
	1-2	---	---			
	2-6	.15	.20			
	6-19	.10	.24			
	19-34	.10	.20			
	34-60	.15	.32			
Craneflat	0-1	---	---	4	7	38
	1-1	---	---			
	1-2	---	---			
	2-4	.05	.15			
	4-11	.05	.20			
	11-22	.05	.15			
	22-30	.10	.24			
	30-60	.05	.10			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
282:						
Nevadafalls	0-0	---	---	4	7	38
	0-6	.10	.15			
	6-17	.15	.17			
	17-31	.05	.10			
	31-60	.05	.17			
283:						
Waterwheel	0-1	.15	.32	4	2	134
	1-7	.17	.32			
	7-26	.10	.37			
	26-60	.02	.15			
Nevadafalls	0-1	---	---	4	7	38
	1-2	---	---			
	2-6	.17	.20			
	6-11	.17	.20			
	11-21	.28	.32			
	21-60	.20	.24			
Rock outcrop.						
285:						
Waterwheel	0-0	---	---	4	7	38
	0-4	.10	.10			
	4-8	.10	.15			
	8-16	.05	.10			
	16-60	.02	.15			
Humic Dystroxerepts	0-1	---	---	4	7	38
	1-6	.15	.15			
	6-13	.17	.20			
	13-24	.17	.20			
	24-42	.15	.15			
	42-55	.10	.15			
	55-60	.10	.15			
286:						
Nevadafalls	0-8	.05	.10	4	2	134
	8-21	.15	.20			
	21-28	.17	.24			
	28-60	.15	.17			
Typic Dystroxerepts	0-1	---	---	4	7	38
	1-2	---	---			
	2-3	---	---			
	3-16	.10	.10			
	16-25	.15	.20			
	25-35	.24	.32			
	35-60	.20	.28			
Ultic Palexeralfs	0-1	---	---	4	7	38
	1-2	---	---			
	2-9	.28	.32			
	9-14	.32	.32			
	14-22	.32	.32			
	22-32	.32	.32			
	32-60	.20	.24			
Rock outcrop.						

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
287:						
Badgerpass	0-2	---	---	4	7	38
	2-2	---	---			
	2-3	---	---			
	3-11	.15	.17			
	11-25	.15	.15			
	25-60	.17	.24			
Waterwheel	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.10	.10			
	4-11	.10	.10			
	11-22	.05	.05			
	22-29	.05	.15			
	29-60	.02	.15			
288:						
Rock outcrop.						
Craneflat	0-1	---	---	4	7	38
	1-1	---	---			
	1-2	---	---			
	2-4	.05	.15			
	4-11	.05	.20			
	11-22	.05	.15			
	22-30	.10	.24			
	30-60	.05	.10			
Waterwheel	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.10	.10			
	4-11	.10	.10			
	11-22	.05	.05			
	22-29	.05	.15			
	29-60	.02	.15			
289:						
Waterwheel	0-1	---	---	4	7	38
	1-6	.10	.15			
	6-15	.05	.15			
	15-25	.05	.15			
	25-36	.05	.17			
	36-60	.05	.17			
Craneflat	0-2	---	---	4	7	38
	2-4	---	---			
	4-4	---	---			
	4-12	.05	.20			
	12-23	.05	.20			
	23-28	.05	.24			
	28-60	.05	.37			
290:						
Humic Dystroxerepts	0-0	---	---	4	7	38
	0-9	.15	.20			
	9-20	.05	.15			
	20-60	.10	.24			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
290:						
Tuolumne	0-3	.05	.10	4	2	134
	3-7	.02	.10			
	7-12	.02	.10			
	12-24	.02	.10			
	24-39	.05	.24			
	39-46	.05	.20			
	46-60	.05	.20			
Typic Xerorthents	0-4	.20	.24	4	7	38
	4-15	.17	.28			
	15-33	.05	.32			
	33-60	---	---			
Ultic Haploxeralfs	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	---	---			
	2-6	.15	.20			
	6-12	.10	.20			
	12-30	.10	.20			
	30-41	.15	.20			
	41-60	.17	.24			
291:						
Ultic Haploxeralfs	0-1	---	---	4	7	38
	1-2	---	---			
	2-3	---	---			
	3-5	.20	.24			
	5-12	.28	.32			
	12-19	.28	.32			
	19-22	.32	.32			
	22-41	.32	.32			
	41-57	.28	.28			
	57-61	.32	.32			
Typic Dystroxerepts	0-1	---	---	4	7	38
	1-2	---	---			
	2-7	.15	.20			
	7-16	.15	.24			
	16-29	.15	.24			
	29-39	.10	.20			
	39-60	.20	.32			
292:						
Humic Dystroxerepts	0-1	---	---	4	7	38
	1-1	---	---			
	1-3	.05	.10			
	3-4	.10	.10			
	4-7	.15	.20			
	7-11	.05	.10			
	11-19	.10	.15			
	19-31	.05	.17			
	31-60	.05	.28			
Typic Haploxerults	0-2	---	---	4	7	38
	2-4	---	---			
	4-7	.15	.24			
	7-9	.10	.17			
	9-15	.20	.24			
	15-22	.20	.32			
	22-60	.20	.28			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
293:						
Xeric Dystrocryepts	0-0	---	---	4	7	38
	0-4	.15	.17			
	4-20	.15	.17			
	20-34	.10	.10			
	34-47	.10	.20			
	47-60	.10	.20			
Vitrandic Dystrocryepts	0-0	---	---	4	7	38
	0-2	.20	.20			
	2-5	.20	.24			
	5-18	.20	.24			
	18-25	.20	.24			
	25-36	.10	.28			
	36-60	.10	.24			
294:						
Waterwheel	0-0	---	---	4	7	38
	0-1	---	---			
	1-2	---	---			
	2-6	.05	.10			
	6-11	.05	.10			
	11-26	.05	.20			
	26-60	.05	.02			
Typic Dystroxerepts	0-1	---	---	4	7	38
	1-5	.05	.05			
	5-12	.05	.05			
	12-20	.05	.10			
	20-28	.05	.20			
	28-49	.10	.20			
	49-60	---	---			
295:						
Craneflat	0-5	.02	.05	4	2	134
	5-19	.02	.05			
	19-60	.05	.10			
Typic Dystroxerepts	0-1	---	---	4	7	38
	1-9	.17	.24			
	9-18	.15	.20			
	18-31	.15	.24			
	31-60	.28	.32			
296:						
Ultic Palexeralfs	0-2	---	---	4	7	38
	2-3	---	---			
	3-6	.24	.28			
	6-12	.24	.28			
	12-23	.28	.28			
	23-32	.32	.32			
	32-41	.32	.32			
	41-60	.32	.32			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
296:						
Humic Dystroxerepts	0-1	---	---	4	7	38
	1-3	---	---			
	3-6	.15	.15			
	6-17	.20	.24			
	17-22	.17	.20			
	22-28	.17	.24			
	28-37	.20	.28			
	37-48	.20	.24			
	48-70	.20	.24			
	70-86	.24	.28			
	86-106	.32	.37			
297:						
Typix Xerorthents	0-1	---	---	4	7	38
	1-1	---	---			
	1-3	.05	.05			
	3-6	.05	.05			
	6-9	.05	.10			
	9-16	.05	.10			
	16-28	.05	.10			
	28-60	.02	.10			
Rock outcrop.						
Typic Xeropsamments	0-1	---	---	4	7	38
	1-1	---	---			
	1-3	.10	.10			
	3-7	.15	.15			
	7-12	.15	.15			
	12-17	.15	.15			
	17-21	.02	.02			
	21-30	.02	.02			
	30-38	.02	.02			
	38-60	---	---			
298:						
Tuolumne	0-0	---	---	4	7	38
	0-1	---	---			
	1-2	---	---			
	2-6	.05	.10			
	6-11	.05	.10			
	11-26	.05	.20			
	26-60	.05	.02			
Typic Dystroxerepts	0-1	---	---	4	7	38
	1-5	.05	.05			
	5-12	.05	.05			
	12-20	.05	.10			
	20-28	.05	.20			
	28-49	.10	.20			
	49-60	---	---			
299:						
Humic Dystroxerepts	0-1	---	---	4	7	38
	1-1	---	---			
	1-2	---	---			
	2-4	.02	.02			
	4-11	.02	.02			
	11-22	.02	.02			
	22-30	.10	.20			
	30-60	.05	.10			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
299:						
Ultic Haploxeralfs	0-0	---	---	4	7	38
	0-1	---	---			
	1-8	.15	.24			
	8-17	.17	.24			
	17-28	.15	.24			
	28-47	.20	.28			
	47-60	.32	.37			
300:						
Typic Dystroxerepts	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	.15	.20			
	2-5	.15	.20			
	5-9	.17	.24			
	9-15	.15	.28			
	15-20	.20	.28			
	20-30	---	---			
Ultic Haploxeralfs	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	---	---			
	2-10	.10	.20			
	10-19	.10	.20			
	19-60	.15	.20			
301:						
Vitrandic Haploxerolls	0-1	---	---	5	5	56
	1-4	.05	.05			
	4-7	.17	.17			
	7-11	.17	.17			
	11-19	.28	.28			
	19-34	.55	.55			
	34-57	.64	.64			
	57-63	.64	.64			
	63-69	.17	.17			
302:						
Typic Haploxerults	0-2	---	---	4	7	38
	2-2	---	---			
	2-3	---	---			
	3-5	.28	.28			
	5-12	.32	.32			
	12-22	.28	.28			
	22-60	.20	.24			
Ultic Haploxeralfs	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	---	---			
	2-10	.15	.24			
	10-19	.15	.24			
	19-60	.15	.20			
303:						
Rock outcrop.						

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
303:						
Dystric Xeropsamments	0-0	---	---	4	7	38
	0-1	---	---			
	1-3	.17	.24			
	3-5	.17	.24			
	5-14	.15	.17			
	14-28	.15	.20			
	28-37	.20	.32			
	37-60	---	---			
Humic Dystroxerepts	0-1	---	---	4	7	38
	1-2	.10	.17			
	2-7	.10	.24			
	7-13	.10	.24			
	13-33	.05	.28			
	33-60	.05	.32			
Tuolumne	0-1	---	---	4	3	86
	1-9	.10	.24			
	9-21	.05	.15			
	21-29	.10	.24			
	29-44	.10	.28			
	44-60	.10	.28			
304:						
Clarkslodge	0-0	---	---	4	7	38
	0-1	---	---			
	1-1	.10	.17			
	1-3	.15	.24			
	3-6	.15	.24			
	6-12	.15	.20			
	12-27	.17	.24			
	27-35	.24	.32			
	35-60	.28	.37			
Rock outcrop.						
305:						
Rock outcrop.						
Waterwheel	0-3	.02	.05	4	1	180
	3-9	.02	.05			
	9-11	.02	.05			
	11-21	.02	.05			
	21-60	.02	.05			
Dystric Xeropsamments	0-0	---	---	4	7	38
	0-6	.15	.17			
	6-18	.15	.17			
	18-25	.15	.17			
	25-41	.17	.20			
	41-60	.17	.24			
306:						
Typic Cryopsamments	0-0	---	---	4	2	134
	0-1	---	---			
	1-4	.05	.05			
	4-15	.10	.10			
	15-32	.15	.17			
	32-43	.15	.17			
	43-60	.10	.15			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
306:						
Humic Dystrocryepts	0-0	---	---	4	7	38
	0-5	.17	.24			
	5-13	.15	.17			
	13-23	.15	.20			
	23-60	.28	.43			
307:						
Rock outcrop.						
Dystric Xeropsamments	0-0	---	---	4	7	38
	0-1	---	---			
	1-3	.17	.24			
	3-5	.17	.24			
	5-14	.15	.17			
	14-28	.15	.20			
	28-37	.20	.32			
	37-60	---	---			
Dystric Xerorthents	0-3	.02	.05	4	1	180
	3-9	.02	.05			
	9-11	.02	.05			
	11-21	.02	.05			
	21-60	.02	.05			
309:						
Rock outcrop.						
Waterwheel	0-2	---	---	4	7	38
	2-7	.05	.17			
	7-17	.05	.15			
	17-31	.10	.20			
	31-60	.10	.28			
Typic Dystroxerepts	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	---	---			
	2-3	.05	.20			
	3-7	.05	.15			
	7-27	.02	.17			
	27-41	.02	.17			
	41-60	.05	.24			
310:						
Rock outcrop.						
Humic Dystroxerepts	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.02	.05			
	4-8	.02	.05			
	8-30	.02	.10			
	30-39	.02	.10			
	39-60	.05	.24			
Humic Lithic Haploxerepts	0-0	---	---	4	7	38
	0-2	---	---			
	2-2	---	---			
	2-10	.10	.20			
	10-20	.05	.24			
	20-60	---	---			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
311:						
Rock outcrop.						
Humic Dystroxerepts	0-1	.05	.17	4	2	134
	1-11	.05	.17			
	11-30	.05	.20			
	30-60	.05	.24			
Humic Lithic Haploxerepts	0-0	---	---	4	7	38
	0-2	---	---			
	2-2	---	---			
	2-10	.10	.20			
	10-20	.05	.24			
	20-60	---	---			
313:						
Nevadafalls	0-0	---	---	4	7	38
	0-6	.10	.15			
	6-17	.15	.17			
	17-31	.05	.10			
	31-60	.05	.17			
Oxyaquic Dystrudepts	0-0	---	---	4	7	38
	0-10	.20	.20			
	10-35	.24	.24			
	35-48	.24	.24			
	48-61	.24	.24			
314:						
Badgerpass	0-1	---	---	4	7	38
	1-6	.15	.15			
	6-13	.15	.17			
	13-24	.15	.17			
	24-42	.05	.05			
	42-55	.02	.05			
	55-60	.05	.05			
Dystric Xeropsamments	0-2	---	---	4	6	38
	2-4	---	---			
	4-4	---	---			
	4-9	.15	.17			
	9-25	.17	.20			
	25-30	.17	.20			
	30-60	.32	.32			
Rock outcrop.						
315:						
Nevadafalls	0-1	---	---	4	7	38
	1-2	.10	.15			
	2-14	.05	.17			
	14-35	.05	.15			
	35-60	.05	.20			
Dystric Xeropsamments	0-0	---	---	4	7	38
	0-7	.10	.10			
	7-16	.15	.17			
	16-26	.17	.24			
	26-60	.15	.24			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
316:						
Dystric Xerorthents	0-4	.15	.28	4	2	134
	4-13	.10	.28			
	13-23	.10	.32			
	23-35	.10	.32			
	35-393	---	---			
Rock outcrop.						
Rubble land.						
318:						
Typic Dystroxerepts	0-4	.10	.10	4	7	38
	4-12	.20	.24			
	12-27	.24	.28			
	27-39	.24	.28			
	39-57	---	---			
Humic Dystroxerepts	0-0	---	---	4	7	38
	0-1	---	---			
	1-2	.10	.10			
	2-5	.17	.20			
	5-14	.17	.20			
	14-33	.17	.20			
	33-46	.24	.28			
	46-48	.28	.32			
	48-54	.32	.32			
	54-60	.32	.32			
319:						
Humic Dystroxerepts	0-0	---	---	4	7	38
	0-1	---	---			
	1-5	.02	.02			
	5-13	.02	.05			
	13-20	.05	.17			
	20-35	.02	.17			
	35-60	.02	.17			
Typic Haploxerults	0-0	---	---	4	7	38
	0-1	---	---			
	1-2	---	---			
	2-5	.10	.10			
	5-7	.10	.10			
	7-12	.15	.20			
	12-20	.15	.17			
	20-31	.15	.20			
	31-46	.15	.20			
	46-53	.10	.10			
	53-71	.10	.10			
Inceptic Haploxeralfs	0-0	---	---	4	7	38
	0-1	---	---			
	1-4	.10	.20			
	4-12	.10	.32			
	12-22	.10	.32			
	22-30	.05	.24			
	30-60	.02	.32			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
320:						
Half Dome	0-1	---	---	4	7	38
	1-4	.10	.20			
	4-10	.15	.20			
	10-20	.10	.24			
	20-47	.05	.24			
	47-61	.17	.24			
Humic Dystroxerepts	0-0	---	---	4	7	38
	0-3	.10	.15			
	3-7	.10	.15			
	7-16	.15	.20			
	16-22	.05	.24			
	22-35	.02	.20			
	35-60	.15	.32			
Rock outcrop.						
321:						
Dystric Xeropsamments, thermic	0-0	---	---	4	7	38
	0-8	.05	.05			
	8-21	.05	.05			
	21-61	.20	.32			
Dystric Xerorthents	0-3	.02	.05	4	1	180
	3-9	.02	.05			
	9-11	.02	.05			
	11-21	.02	.05			
	21-60	.02	.05			
322:						
Typic Xerorthents	0-0	---	---	4	7	38
	0-7	.17	.24			
	7-24	.15	.24			
	24-42	.05	.28			
	42-60	.02	.24			
323:						
Ultic Haploxeralfs	0-3	.17	.24	4	3	86
	3-5	.17	.20			
	5-10	.17	.20			
	10-21	.15	.20			
	21-37	.10	.20			
	37-60	.05	.24			
Humic Dystroxerepts	0-1	---	---	4	7	38
	1-2	---	---			
	2-2	---	---			
	2-7	.05	.10			
	7-15	.20	.24			
	15-29	.20	.24			
	29-60	.17	.24			
324:						
Humic Haploxerepts	0-0	---	---	4	7	38
	0-4	.10	.20			
	4-8	.05	.17			
	8-20	.02	.17			
	20-30	.05	.20			
	30-60	.02	.15			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
324:						
Rock outcrop.						
Ultic Haploxeralfs	0-0	---	---	4	7	38
	0-6	.15	.37			
	6-16	.20	.55			
	16-29	.17	.43			
	29-60	.10	.49			
325.						
Urban land						
328:						
Clarkslodge	0-0	---	---	4	7	38
	0-1	---	---			
	1-5	.17	.24			
	5-11	.10	.24			
	11-20	.15	.28			
	20-37	.10	.24			
	37-60	.10	.28			
Ultic Palexeralfs	0-1	---	---	4	7	38
	1-4	.28	.37			
	4-13	.24	.37			
	13-31	.32	.43			
	31-49	.32	.37			
	49-60	.37	.43			
401:						
Sentinel	0-1	---	---	5	5	56
	1-5	.10	.10			
	5-20	.17	.17			
	20-27	.24	.24			
	27-41	.28	.28			
	41-56	.37	.37			
	56-66	.15	.15			
412.						
Water-Riverwash						
501:						
Happyisles, sandy loam	0-3	---	---	5	3	86
	3-7	.17	.24			
	7-13	.17	.24			
	13-17	.17	.24			
	17-33	.15	.20			
	33-60	.17	.24			
Happyisles, loamy fine sand, overwash	0-3	---	---	5	2	134
	3-7	.10	.10			
	7-13	.15	.15			
	13-17	.15	.15			
	17-33	.15	.15			
	33-41	.17	.17			
	41-62	.15	.15			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
502:						
Happyisles	0-3	---	---	5	3	86
	3-7	.10	.10			
	7-13	.15	.15			
	13-17	.15	.15			
	17-33	.15	.15			
	33-41	.17	.17			
	41-62	.15	.15			
504:						
Mollic Xerofluvents	0-2	---	---	5	5	56
	2-6	.37	.37			
	6-8	.05	.10			
	8-12	.20	.15			
	12-23	.05	.10			
	23-29	.05	.10			
	29-49	.05	.10			
	49-54	.10	.05			
	54-68	.10	.05			
510t:						
Rubble land.						
Lithnip	0-1	.05	.28	1	8	0
	1-5	.10	.32			
	5-15	---	---			
Rock outcrop.						
551:						
Happyisles	0-3	---	---	5	3	86
	3-7	.10	.10			
	7-13	.15	.15			
	13-17	.15	.15			
	17-33	.15	.15			
	33-41	.17	.17			
	41-62	.15	.15			
Half Dome	0-1	.02	.10	3	5	56
	1-19	.02	.10			
	19-28	.02	.10			
	28-33	.02	.10			
	33-50	.02	.10			
	50-60	.02	.10			
552:						
Mollic Xerofluvents	0-2	---	---	5	5	56
	2-6	.37	.37			
	6-8	.05	.10			
	8-12	.20	.15			
	12-23	.05	.10			
	23-29	.05	.10			
	29-49	.05	.10			
	49-54	.10	.05			
	54-68	.10	.05			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
590:						
Terric Haplosaprists	0-3	.05	.05	5	3	86
	3-8	.05	.10			
	8-12	.05	.10			
	12-31	.02	.02			
	31-35	.20	.20			
	35-38	.17	.17			
	38-46	.20	.20			
	46-52	.02	.02			
	52-58	.15	.15			
	58-60	.15	.15			
601:						
Half Dome, very bouldery	0-3	---	---	3	5	56
	3-5	.02	.10			
	5-8	.02	.10			
	8-15	.02	.10			
	15-39	.02	.10			
	39-63	.02	.10			
Half Dome, cobbly	0-1	---	---	3	4	86
	1-2	---	---			
	2-10	.02	.10			
	10-17	.02	.10			
	17-29	.02	.10			
	29-60	.02	.10			
602:						
Half Dome	0-1	.02	.10	3	5	56
	1-19	.02	.10			
	19-28	.02	.10			
	28-33	.02	.10			
	33-50	.02	.10			
	50-60	.02	.10			
610:						
Rubble land.						
Half Dome	0-1	---	---	3	5	56
	1-2	---	---			
	2-10	.02	.10			
	10-17	.02	.10			
	17-29	.02	.10			
	29-60	.02	.10			
620:						
Half Dome, extremely stony sandy loam, warm	0-1	.02	.10	5	8	0
	1-19	.02	.10			
	19-28	.02	.10			
	28-33	.02	.10			
	33-50	.02	.10			
	50-60	.02	.10			
Half Dome, very cobbly sandy loam, warm	0-1	---	---	5	5	56
	1-2	---	---			
	2-10	.02	.10			
	10-17	.02	.10			
	17-29	.02	.10			
	29-60	.02	.10			

Table 13.—Erosion Properties of the Soils—Continued

Map symbol and soil name	Depth (inches)	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
630:						
Rubble land.						
Half Dome	0-1	.02	.10	5	5	56
	1-19	.02	.10			
	19-28	.02	.10			
	28-33	.02	.10			
	33-50	.02	.10			
	50-60	.02	.10			
701:						
Vitrandic Haploxerolls	0-1	---	---	5	3	86
	1-3	.02	.02			
	3-12	.10	.10			
	12-16	.17	.17			
	16-24	.17	.17			
	24-36	.20	.20			
	36-50	.20	.20			
	50-60	.20	.20			
702:						
Vitrandic Dystroxerepts	0-8	.02	.05	4	4	86
	8-30	.02	.05			
	30-50	.02	.05			
	50-60	.02	.05			
900.						
Rock outcrop						
DAM.						
Dam						
W.						
Water						

Table 14.—Chemical Properties of the Soils

(Soil properties are measured or inferred from direct observations in the field or laboratory. Laboratory data for selected pedons are included in Appendix II. 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
	In	meq/100g	meq/100g	pH
101:				
Oxyaquic Xerofluvents	0-0	---	---	4.0-6.0
	0-2	11-22	---	5.6-6.0
	2-4	9.5-17	---	5.6-6.0
	4-10	5.6-13	---	5.6-6.0
	10-17	3.5-11	---	5.6-6.0
	17-28	2.3-7.8	---	5.6-6.0
	28-39	2.3-7.8	---	5.6-6.0
	39-43	1.6-6.6	---	5.6-6.0
	43-57	1.6-6.6	---	5.6-6.0
	57-60	11-22	---	5.6-6.0
Riverwash.				
Fluvaquents	0-1	12-22	---	5.6-6.0
	1-4	10-16	---	5.6-6.0
	4-6	6.2-12	---	5.6-6.0
	6-10	2.9-7.3	---	5.6-6.0
	10-60	2.3-5.5	---	5.6-6.0
101t:				
Lithnip	0-1	9.0-16	---	6.1-7.3
	1-5	9.0-16	---	6.1-7.3
	5-15	---	---	---
Rock outcrop.				
Fishsnooze	0-1	---	---	4.5-5.5
	1-9	---	---	4.5-5.5
	9-13	---	---	4.5-5.5
	13-35	---	---	4.5-5.5
	35-45	---	---	---
102:				
Oxyaquic Xerofluvents	0-0	---	---	4.0-6.0
	0-2	11-24	---	5.6-6.0
	2-4	9.5-18	---	5.6-6.0
	4-10	5.6-15	---	5.6-6.0
	10-17	3.5-13	---	5.6-6.0
	17-28	2.3-9.3	---	5.6-6.0
	28-39	2.3-9.3	---	5.6-6.0
	39-43	1.6-8.0	---	5.6-6.0
	43-57	1.6-8.0	---	5.6-6.0
	57-60	11-24	---	5.6-6.0
Riverwash.				
102t:				
Lithnip	0-1	9.0-16	---	6.1-7.3
	1-5	9.0-16	---	6.1-7.3
	5-15	---	---	---
Rock outcrop.				

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
102t:				
Fishsnooze	0-1	---	---	4.5-5.5
	1-9	---	---	4.5-5.5
	9-13	---	---	4.5-5.5
	13-35	---	---	4.5-5.5
	35-45	---	---	---
104:				
Aquandic Humaquepts	0-8	---	---	3.5-5.5
	8-18	---	6-11	3.5-5.5
	18-26	---	6-11	5.1-5.5
	26-68	1.2-4.8	---	5.6-6.0
111t:				
Whittell	0-0	---	---	---
	0-7	---	0-3	5.1-6.5
	7-20	---	0-2	5.1-6.5
	20-32	---	0-4	5.1-6.5
	32-42	---	---	5.1-6.5
Jobsis	0-5	---	2-6	4.5-5.5
	5-9	---	1-4	4.5-5.5
	9-17	---	0-3	4.5-5.5
	17-20	---	0-2	4.5-5.5
	20-30	---	---	---
Rock outcrop.				
151:				
Elcapitan	0-1	81-96	---	5.1-6.5
	1-7	4.1-20	---	5.6-6.0
	7-12	8.2-20	---	5.6-6.0
	12-20	8.2-20	---	5.6-6.0
	20-31	6.2-19	---	5.6-6.0
	31-38	5.2-17	---	5.6-6.0
	38-44	4.1-20	---	5.6-6.0
	44-47	8.2-20	---	5.6-6.0
	47-53	4.1-20	---	5.6-6.0
	53-58	8.2-20	---	5.6-6.0
	58-60	6.2-19	---	5.6-6.0
152:				
Vitrandic Haploxerolls	0-2	6.8-20	---	5.6-6.0
	2-3	2.3-7.3	---	5.6-6.0
	3-5	6.8-20	---	5.6-6.0
	5-13	6.8-12	---	5.6-6.0
	13-18	4.1-10	---	5.6-6.0
	18-24	2.9-7.3	---	5.6-6.0
	24-28	2.3-6.1	---	5.6-6.0
	28-32	1.5-5.5	---	5.6-6.0
	32-60	1.5-5.5	---	5.6-6.0

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
201:				
Leidig	0-0	---	---	---
	0-7	4.6-26	---	5.1-6.0
	7-16	4.6-26	---	5.1-6.0
	16-23	4.6-26	---	5.1-6.0
	23-30	4.6-17	---	5.1-6.0
	30-34	---	3-8	5.1-6.0
	34-42	---	3-8	5.1-6.0
	42-46	---	2-6	5.1-6.0
	46-52	---	2-6	5.1-6.0
	52-58	---	2-6	5.1-6.0
	58-60	---	1-6	5.1-5.5
210:				
Rubble land.				
Typic Cryorthents	0-2	---	4-10	5.1-5.5
	2-13	---	3-9	5.1-5.5
	13-19	---	2-7	5.1-5.5
	19-60	---	2-7	5.1-5.5
Rock outcrop.				
Xeric Dystrocryepts	0-1	---	---	---
	1-5	14-24	---	5.1-6.0
	5-13	6.3-14	---	5.1-6.0
	13-28	5.9-11	---	5.1-6.0
	28-60	---	3-5	4.5-5.5
211:				
Xeric Dystrocryepts	0-0	---	---	---
	0-1	---	---	---
	1-9	12-16	4-8	4.5-6.0
	9-19	4.0-10	1-4	4.5-6.0
	19-32	4.0-8.0	1-4	4.5-6.0
	32-60	4.0-7.0	2-5	4.5-6.0
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	2.0-8.0	4-10	4.5-5.5
	4-18	1.5-6.0	1-6	4.5-5.5
	18-28	1.8-6.0	1-6	4.5-5.5
	28-34	1.5-6.0	1-6	4.5-5.5
	34-60	2.0-6.0	1-6	4.5-5.5
Oxyaquic Dystrocryepts	0-0	---	7-12	4.5-5.5
	0-9	---	7-12	4.0-5.5
	9-16	---	5-10	4.0-5.5
	16-23	---	4-8	4.0-5.5
	23-60	---	2-6	4.0-5.5
213:				
Canisrocks	0-0	---	---	---
	0-3	12-18	---	4.5-5.5
	3-12	2.6-9.6	---	4.5-5.5
	12-60	0.9-5.7	---	4.5-5.5

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
213:				
Glacierpoint	0-0	---	---	---
	0-1	---	---	---
	1-9	13-21	---	5.1-6.0
	9-15	6.7-14	---	5.1-6.0
	15-20	4.9-12	---	5.1-6.0
	20-29	---	1-5	5.0-6.0
	29-37	---	1-5	4.5-6.0
	37-60	---	0-5	4.5-6.0
Vitrandic Dystrocryepts	0-0	---	---	---
	0-1	---	---	---
	1-11	6.0-12	1-6	4.5-6.0
	11-17	4.0-10	1-4	4.5-6.0
	17-25	1.0-6.0	0-3	4.5-6.0
	25-37	1.0-6.0	0-3	4.5-6.0
	37-60	1.0-6.0	0-3	4.5-6.0
214:				
Marmotland	0-0	---	---	---
	0-11	---	6-12	5.1-6.0
	11-19	---	6-12	5.1-6.0
	19-36	4.4-11	---	5.1-6.0
	36-48	3.3-6.7	---	5.1-6.0
	48-60	2.5-6.1	---	5.1-6.0
Oxyaquic Dystrocryepts	0-2	14-19	2-6	4.5-6.0
	2-7	5.0-10	1-4	4.5-6.0
	7-14	5.0-12	1-3	4.5-6.0
	14-20	5.0-10	1-2	4.5-6.0
	20-31	1.6-8.8	0-2	4.5-6.0
	31-40	1.6-8.8	0-2	4.5-6.0
	40-61	0.9-6.7	0-2	4.5-6.0
Xeric Dystrocryepts	0-1	---	---	---
	1-2	---	---	---
	2-16	---	6-10	4.5-5.5
	16-23	---	3-7	4.5-5.5
	23-36	---	1-5	4.5-5.5
	36-63	---	1-3	4.5-5.5
	63-69	---	0-2	4.5-5.5
215:				
Typic Cryorthents	0-0	---	---	---
	0-1	---	---	---
	1-3	---	5-10	4.5-5.0
	3-12	---	4-9	4.5-5.0
	12-18	---	2-7	4.5-5.0
	18-22	---	2-5	4.5-5.0
	22-60	---	1-5	4.5-5.0
Rock outcrop.				
Rubble land.				
219:				
Rock outcrop.				
Rubble land.				

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
219:				
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	2.0-7.0	5-9	4.5-5.5
	4-18	2.0-7.0	2-4	4.5-5.5
	18-28	2.0-7.0	2-3	4.5-5.5
	28-34	2.0-7.0	2-3	4.5-5.5
	34-60	2.0-7.0	1-2	4.5-5.5
221:				
Typic Cryorthents	0-2	---	8-15	5.1-5.5
	2-13	---	4-10	5.1-5.5
	13-19	---	3-6	5.1-5.5
	19-60	---	2-5	5.1-5.5
Xeric Dystrocryepts	0-3	16-26	---	4.5-6.0
	3-19	9.5-19	---	4.5-6.0
	19-60	---	2-7	4.5-6.0
Oxyaquic Dystrocryepts	0-0	---	7-12	4.5-5.5
	0-9	---	7-12	4.0-5.5
	9-16	---	5-10	4.0-5.5
	16-23	---	4-8	4.0-5.5
	23-60	---	2-5	4.0-5.5
222:				
Canisrocks	0-0	---	---	---
	0-2	---	---	---
	2-7	---	4-9	4.5-5.5
	7-14	---	2-5	4.5-5.5
	14-60	---	1-4	4.5-5.5
Rubble land.				
Rock outcrop.				
Crazymule	0-0	---	5-10	5.1-5.5
	0-5	---	5-10	5.1-5.5
	5-22	---	3-7	5.1-5.5
	22-35	---	2-6	5.1-5.5
	35-60	---	4-9	4.5-5.5
223:				
Rock outcrop.				
Rubble land.				
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	2.0-7.0	5-9	4.5-5.5
	4-18	2.0-5.0	2-4	4.5-5.5
	18-28	2.0-5.0	2-3	4.5-5.5
	28-34	2.0-5.0	2-3	4.5-5.5
	34-60	2.0-5.0	1-2	4.5-5.5
224:				
Rock outcrop.				

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
224:				
Crazymule	0-0	---	---	---
	0-5	---	6-10	5.1-5.5
	5-22	---	3-7	5.1-5.5
	22-35	---	2-6	5.1-5.5
	35-60	---	5-8	4.5-5.5
Vitrandic Cryorthents	0-2	---	---	---
	2-2	---	---	---
	2-7	---	6-10	5.1-5.5
	7-15	---	3-7	5.1-5.5
	15-24	---	1-4	4.5-5.5
	24-60	---	---	---
225:				
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	2.0-7.0	5-9	4.5-5.5
	4-18	2.0-5.0	2-4	4.5-5.5
	18-28	2.0-5.0	2-3	4.5-5.5
	28-34	2.0-5.0	2-3	4.5-5.5
	34-60	2.0-5.0	1-2	4.5-5.5
Rock outcrop.				
Rubble land.				
Vitrandic Dystrocryepts	0-1	---	---	---
	1-2	---	---	---
	2-5	---	5-12	4.5-5.5
	5-12	---	5-9	4.5-5.5
	12-26	---	3-7	4.5-5.5
	26-30	---	1-4	4.5-5.5
	30-60	---	1-3	4.5-5.5
227:				
Canisrocks	0-0	---	---	---
	0-2	13-23	---	5.1-6.0
	2-6	6.3-13	---	5.1-6.0
	6-17	3.8-10	---	5.1-6.0
	17-25	3.8-8.3	---	5.1-6.0
	25-34	---	1-5	5.1-5.5
	34-60	---	1-5	4.5-5.5
Crazymule	0-1	---	---	---
	1-2	---	---	---
	2-12	---	9-15	4.5-5.5
	12-22	---	6-10	4.5-5.5
	22-34	---	3-8	4.5-5.5
	34-60	---	1-5	4.5-5.5
228:				
Xeric Dystrocryepts	0-4	13-23	---	5.1-6.0
	4-14	6.3-12	---	5.1-6.0
	14-20	3.2-8.8	---	5.1-6.0
	20-30	---	1-3	4.5-6.0
	30-60	---	1-3	4.5-6.0

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
228:				
Vitrandic Eutrocryepts	0-6	---	---	4.5-6.5
	6-14	---	7-14	4.5-6.5
	14-21	8.6-23	---	4.5-6.5
	21-28	3.8-10	---	4.5-6.5
	28-60	2.6-6.8	---	4.5-6.5
229:				
Marmotland	0-0	---	8-14	4.5-5.5
	0-9	---	7-12	4.5-5.5
	9-16	---	5-10	4.5-5.5
	16-23	---	3-7	4.5-5.5
	23-60	---	1-5	4.5-5.5
Oxyaquic Dystrocryepts	0-0	---	---	---
	0-2	---	---	---
	2-5	---	2-10	4.0-6.0
	5-12	---	2-9	4.0-6.0
	12-19	---	2-9	4.0-6.0
	19-28	---	2-5	4.0-6.0
	28-60	---	2-7	4.0-6.0
231:				
Canisrocks	0-1	---	---	---
	1-1	---	---	---
	1-2	---	---	---
	2-6	---	1-5	4.5-5.5
	6-10	---	3-10	4.5-5.5
	10-17	---	2-5	4.5-5.5
	17-26	---	1-3	4.5-5.5
	26-35	---	1-3	4.5-5.5
	35-60	---	1-3	4.5-5.5
Typic Cryaquents	0-0	---	---	---
	0-1	---	---	---
	1-3	15-31	---	5.1-6.0
	3-9	14-26	---	5.1-6.0
	9-17	3.2-9.4	---	5.1-6.0
	17-60	1.1-5.9	---	5.1-6.0
232:				
Casinrocks	0-0	---	---	---
	0-2	---	5-10	4.5-6.0
	2-10	---	1-5	4.5-6.0
	10-24	---	1-5	4.5-6.0
	24-60	---	1-5	4.5-6.0
Glacierpoint	0-0	---	---	---
	0-6	11-24	---	4.5-6.5
	6-9	4.7-13	---	4.5-6.5
	9-18	2.9-11	---	4.5-6.5
	18-31	---	1-5	4.5-6.5
	31-60	---	1-3	4.5-6.5
234.				
Rock outcrop-Rubble land				

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
235:				
Canisrocks	0-1	---	---	---
	1-3	---	---	---
	3-4	---	---	---
	4-11	---	5-10	---
	11-17	---	3-8	---
	17-37	---	2-6	---
	37-53	---	1-3	---
	53-68	---	1-3	---
Rock outcrop.				
Rubble land.				
237:				
Canisrocks	0-0	---	---	---
	0-3	---	---	---
	3-8	---	2-6	4.5-5.5
	8-13	---	2-4	4.5-5.5
	13-27	---	2-4	4.5-5.5
	27-60	---	1-3	4.5-5.5
Glacierpoint	0-0	---	---	---
	0-4	13-25	---	5.6-6.5
	4-17	5.6-13	---	5.6-6.5
	17-27	3.2-11	---	5.1-6.5
	27-60	1.5-7.1	---	5.1-6.5
Vitrandic Cryorthents	0-1	---	4-10	3.5-5.0
	1-6	---	4-10	4.5-5.5
	6-12	---	2-5	4.5-5.5
	12-60	---	1-4	4.5-5.5
238:				
Oxyaquic Cryorthents	0-3	12-23	---	5.6-6.5
	3-13	8.2-16	---	5.6-6.5
	13-18	4.1-13	---	5.6-6.5
	18-30	1.7-4.6	---	5.6-6.5
	30-60	0.9-4.0	---	5.6-6.5
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	2.0-7.0	5-9	4.5-5.5
	4-18	2.0-5.0	2-4	4.5-5.5
	18-28	2.0-5.0	2-3	4.5-5.5
	28-34	2.0-5.0	2-3	4.5-5.5
	34-60	2.0-5.0	1-2	4.5-5.5
239:				
Crazymule	0-0	---	---	---
	0-5	12-22	---	5.1-6.0
	5-13	5.2-11	---	5.1-6.0
	13-23	3.8-9.9	---	5.1-6.0
	23-60	---	1-5	5.0-6.0

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
239:				
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	2.0-7.0	5-9	4.5-5.5
	4-18	2.0-5.0	2-4	4.5-5.5
	18-28	2.0-5.0	2-3	4.5-5.5
	28-34	2.0-5.0	2-3	4.5-5.5
	34-60	2.0-5.0	1-2	4.5-5.5
241:				
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	---	5-9	4.5-5.5
	4-18	---	2-4	4.5-5.5
	18-28	---	2-3	4.5-5.5
	28-34	---	2-3	4.5-5.5
	34-60	---	1-2	4.5-5.5
242:				
Rock outcrop.				
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-1	---	---	4.5-5.5
	1-7	---	4-11	4.5-5.5
	7-23	---	3-8	4.5-5.5
	23-32	---	1-5	4.5-5.5
	32-60	---	1-4	4.5-5.5
Xeric Dystrocryepts	0-0	---	---	---
	0-5	13-21	---	5.1-6.0
	5-20	4.9-12	---	5.1-6.0
	20-35	2.9-9.8	---	5.1-6.0
	35-47	1.8-5.6	---	5.1-6.0
	47-60	1.0-5.0	---	5.1-6.0
244:				
Typic Cryorthents	0-0	---	---	---
	0-1	---	---	---
	1-4	2.0-7.0	5-9	4.5-5.5
	4-18	2.0-5.0	2-4	4.5-5.5
	18-28	2.0-5.0	2-3	4.5-5.5
	28-34	2.0-5.0	2-3	4.5-5.5
	34-60	2.0-5.0	1-2	4.5-5.5
Rubble land.				
Rock outcrop.				
245:				
Rock outcrop.				
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	2.0-7.0	5-9	4.5-5.5
	4-18	2.0-5.0	2-4	4.5-5.5
	18-28	2.0-5.0	2-3	4.5-5.5
	28-34	2.0-5.0	2-3	4.5-5.5
	34-60	2.0-5.0	1-2	4.5-5.5

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
245:				
Xeric Dystrocryepts	0-2	---	7-13	5.1-5.5
	2-4	---	3-9	5.1-5.5
	4-11	---	2-7	5.1-5.5
	11-60	---	1-5	5.1-5.5
246.				
Rock outcrop, domes				
247:				
Canisrocks	0-2	---	---	---
	2-8	---	1-5	5.1-5.5
	8-36	---	1-5	5.1-5.5
	36-45	2.1-6.1	---	5.1-6.0
	45-60	2.1-5.0	---	5.1-6.0
Xeric Dystrocryepts	0-1	---	---	---
	1-2	---	---	---
	2-10	---	4-10	4.5-5.5
	10-21	---	3-8	4.5-5.5
	21-31	---	2-6	4.5-5.5
	31-42	---	1-5	4.5-5.5
	42-58	---	1-4	4.5-5.5
	58-60	---	1-3	4.5-5.5
248:				
Canisrocks	0-1	---	---	---
	1-2	---	---	---
	2-2	---	---	---
	2-5	---	3-9	4.5-5.5
	5-13	---	2-6	4.5-5.5
	13-32	---	1-4	4.5-5.5
	32-60	---	0-3	4.5-5.5
Rock outcrop.				
248:				
Glacierpoint	0-0	---	---	---
	0-1	---	---	---
	1-4	12-21	---	5.1-6.0
	4-16	5.2-9.6	---	5.1-6.0
	16-27	3.2-7.6	---	5.1-6.0
	27-46	---	1-2	5.0-6.0
	46-64	---	1-2	4.5-6.0
249:				
Rock outcrop.				
Canisrocks	0-1	---	---	---
	1-3	---	---	---
	3-4	---	---	---
	4-11	---	4-10	---
	11-17	---	3-8	---
	17-37	---	2-6	---
	37-53	---	1-4	---
	53-68	---	1-3	---

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
250:				
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	---	5-9	4.5-5.5
	4-18	---	2-4	4.5-5.5
	18-28	---	2-3	4.5-5.5
	28-34	---	2-3	4.5-5.5
	34-60	---	1-2	4.5-5.5
Xeric Dystrocryepts	0-0	---	---	---
	0-1	---	---	---
	1-9	---	9-15	4.5-6.0
	9-19	---	6-11	4.5-6.0
	19-32	---	3-7	4.5-6.0
	32-60	---	1-5	4.5-6.0
251:				
Glacierpoint	0-0	---	---	---
	0-1	---	---	---
	1-4	12-21	---	5.1-6.0
	4-16	5.2-9.6	---	5.1-6.0
	16-27	3.2-7.6	---	5.1-6.0
	27-46	---	0-3	5.0-6.0
	46-64	---	0-3	4.5-6.0
Typic Cryorthents	0-0	---	---	---
	0-4	---	7-13	5.1-5.5
	4-10	---	7-12	5.1-5.5
	10-16	---	4-9	5.1-5.5
	16-30	---	2-6	5.1-5.5
	30-60	---	2-5	5.1-5.5
252:				
Rock outcrop.				
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	2.0-7.0	5-9	4.5-5.5
	4-18	2.0-5.0	2-4	4.5-5.5
	18-28	2.0-5.0	2-3	4.5-5.5
	28-34	2.0-5.0	2-3	4.5-5.5
	34-60	2.0-5.0	1-2	4.5-5.5
Xeric Dystrocryepts	0-3	---	5-11	4.5-5.5
	3-15	---	4-10	4.5-5.5
	15-35	---	1-5	4.5-5.5
	35-47	---	1-4	4.5-5.5
	47-61	---	1-3	4.5-5.5
253:				
Canisrocks	0-1	---	---	---
	1-2	---	---	---
	2-3	---	6-13	4.0-5.0
	3-11	---	4-9	4.0-5.0
	11-23	---	3-6	4.0-5.0
	23-35	---	1-4	4.0-5.0
	35-60	---	1-3	4.0-5.0

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
253:				
Glacierpoint	0-0	---	---	---
	0-4	16-23	---	5.1-6.0
	4-7	5.7-15	---	5.1-6.0
	7-11	3.8-11	---	5.1-6.0
	11-19	---	1-6	5.1-6.0
	19-60	---	1-4	5.1-6.0
Humic Dystrocryepts	0-0	---	---	---
	0-1	---	---	---
	1-2	---	---	---
	2-16	11-20	---	4.5-6.0
	16-30	---	1-5	4.5-6.0
	30-60	---	1-3	4.5-6.0
256:				
Craneflat	0-1	---	---	---
	1-2	---	---	---
	2-7	---	6-12	3.5-5.5
	7-13	---	3-7	3.5-5.5
	13-60	---	1-4	3.5-5.5
Rock outcrop.				
Rubble land.				
Waterwheel	0-1	---	---	---
	1-2	---	---	---
	2-2	---	---	---
	2-6	17-27	---	5.1-6.5
	6-14	2.9-8.8	---	5.1-6.5
	14-28	1.8-6.5	---	5.1-6.5
	28-60	1.8-5.0	---	5.1-6.5
257:				
Badgerpass	0-1	---	---	---
	1-6	6.1-20	---	4.5-6.5
	6-13	4.4-15	---	4.5-6.5
	13-21	3.5-13	---	4.5-6.5
	21-32	2.6-10	---	4.5-6.5
	32-50	2.1-8.3	---	4.5-6.5
	50-60	0.9-7.1	---	4.5-6.5
Oxyaquic Dystroxerepts	0-11	19-29	---	5.1-6.0
	11-19	15-28	---	5.1-6.0
	19-32	12-26	---	5.1-6.0
	32-43	9.6-16	---	5.1-6.0
	43-60	6.8-16	---	5.1-6.0
258:				
Typic Dystroxerepts	0-1	---	---	---
	1-2	---	---	---
	2-2	---	---	---
	2-3	13-20	---	5.6-6.5
	3-11	12-18	---	5.6-6.5
	11-26	2.9-5.9	---	5.6-6.5
	26-43	---	2-5	5.1-6.5
	43-60	---	2-5	5.1-6.5

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
258:				
Badgerpass	0-2	---	---	---
	2-7	13-21	---	5.1-6.0
	7-18	6.7-14	---	5.1-6.0
	18-37	4.9-12	---	5.1-6.0
	37-55	2.3-6.7	---	5.1-6.0
	55-67	---	1-3	4.5-6.0
Dystric Xerorthents	0-1	---	---	---
	1-2	---	---	---
	2-3	---	---	---
	3-11	---	5-10	4.5-5.5
	11-24	---	3-8	4.5-5.5
	24-38	---	2-5	4.5-5.5
	38-60	---	1-4	4.5-5.5
260:				
Rock outcrop.				
Craneflat	0-1	---	---	---
	1-2	15-22	---	5.1-6.0
	2-4	13-20	---	5.1-6.0
	4-13	6.7-13	---	5.1-6.0
	13-19	2.9-9.2	---	5.1-6.0
	19-60	1.0-4.4	---	5.1-6.0
Dystric Xerorthents	0-1	---	---	---
	1-1	---	---	---
	1-5	6.3-14	---	5.1-6.0
	5-17	3.3-8.3	---	5.1-6.0
	17-60	2.5-7.1	---	5.1-6.0
261:				
Dystric Xeropsamments	0-0	---	---	---
	0-6	---	5-10	4.5-5.5
	6-18	---	3-8	4.5-5.5
	18-25	---	2-7	4.5-5.5
	25-41	---	2-6	4.5-5.5
	41-60	---	2-5	4.5-5.5
Typic Dystroxerepts	0-0	---	---	---
	0-1	---	---	---
	1-3	---	6-12	4.5-5.5
	3-8	---	5-10	4.5-5.5
	8-20	---	3-7	4.5-5.5
	20-31	---	3-6	4.5-5.5
	31-60	---	1-5	4.5-5.5
Badgerpass	0-7	---	4-10	4.5-5.5
	7-18	---	2-5	4.5-5.5
	18-60	---	1-3	4.5-5.5
Rock outcrop.				

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
262:				
Humic Dystroxerepts	0-0	---	---	---
	0-1	---	---	---
	1-2	16-26	---	5.1-6.5
	2-5	16-26	---	5.1-6.5
	5-18	9.8-19	---	5.1-6.5
	18-60	2.5-13	---	5.1-6.5
Dystric Xerorthents	0-1	---	---	---
	1-2	---	---	---
	2-3	---	---	---
	3-11	---	5-10	4.5-5.5
	11-24	---	3-7	4.5-5.5
	24-38	---	2-6	4.5-5.5
	38-60	---	1-5	4.5-5.5
Rock outcrop.				
264:				
Crazymule	0-1	---	---	---
	1-2	---	---	---
	2-12	16-24	---	5.1-6.5
	12-22	6.3-15	---	5.1-6.5
	22-34	3.8-9.5	---	5.1-6.5
	34-60	1.4-5.3	---	5.1-6.5
Canisrocks	0-1	---	---	---
	1-2	---	---	---
	2-3	---	4-12	3.5-5.0
	3-11	---	2-7	3.5-5.0
	11-23	---	1-5	3.5-5.0
	23-35	---	1-5	3.5-5.0
	35-60	---	1-5	3.5-5.0
267:				
Rock outcrop.				
Typic Cryorthents	0-5	---	2-9	5.1-5.5
	5-13	---	1-6	5.1-5.5
	13-28	---	3-8	5.1-5.5
	28-60	---	2-5	5.1-5.5
Xeric Dystrocryepts	0-2	---	---	---
	2-4	---	---	---
	4-13	9.0-14	2-7	4.5-6.0
	13-20	5.2-13	2-7	4.5-6.0
	20-30	4.3-11	2-7	4.5-6.0
	30-42	5.0-9.0	2-5	4.5-6.0
	42-48	7.0-11	2-5	4.5-6.0
	48-62	5.0-9.0	2-5	4.5-6.0
	62-78	4.0-8.0	2-5	4.5-6.0
	78-84	2.0-7.0	2-5	4.5-6.0
268:				
Rock outcrop.				

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
268:				
Canisrocks	0-0	---	---	---
	0-1	---	---	---
	1-4	2.0-7.0	4-9	4.5-5.5
	4-18	2.0-5.0	1-5	4.5-5.5
	18-28	2.0-5.0	1-4	4.5-5.5
	28-34	2.0-5.0	1-4	4.5-5.5
	34-60	2.0-5.0	1-3	4.5-5.5
Glacierpoint	0-0	---	---	---
	0-1	---	---	---
	1-4	12-21	---	5.1-6.0
	4-16	5.2-9.6	---	5.1-6.0
	16-27	3.2-7.6	---	5.1-6.0
	27-46	---	0-3	5.0-6.0
	46-64	---	0-3	4.5-6.0
269:				
Canisrocks	0-0	---	---	---
	0-2	---	4-9	4.0-6.0
	2-7	---	2-6	4.0-6.0
	7-20	---	2-5	4.0-6.0
	20-60	---	1-4	4.0-6.0
Rock outcrop.				
Glacierpoint	0-0	---	---	---
	0-1	---	---	---
	1-4	12-21	---	5.1-6.0
	4-16	5.2-9.6	---	5.1-6.0
	16-27	3.2-7.6	---	5.1-6.0
	27-46	---	0-3	5.0-6.0
	46-64	---	0-3	4.5-6.0
270:				
Rock outcrop.				
Typic Cryorthents	0-0	---	---	---
	0-1	---	---	---
	1-4	---	5-9	4.5-5.5
	4-18	---	2-4	4.5-5.5
	18-28	---	2-4	4.5-5.5
	28-34	---	2-3	4.5-5.5
	34-60	---	1-2	4.5-5.5
Vitrandic Dystrocryepts	0-3	14-21	---	5.1-6.0
	3-4	12-21	---	5.1-6.0
	4-8	7.0-14	---	5.1-6.0
	8-17	8.1-15	---	5.1-6.0
	17-60	1.4-5.0	---	5.1-6.0
271:				
Rock outcrop.				
Lithic Xerorthents	0-3	---	2-7	4.5-5.5
	3-7	---	2-5	4.5-5.5
	7-60	---	---	---

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
271:				
Waterwheel	0-1	---	---	---
	1-2	---	---	---
	2-2	---	---	---
	2-6	17-27	---	5.1-6.5
	6-14	2.9-8.8	---	5.1-6.5
	14-28	1.8-6.5	---	5.1-6.5
	28-60	1.8-5.0	---	5.1-6.5
273:				
Nevadafalls	0-0	---	---	---
	0-6	6.5-15	---	5.6-6.5
	6-17	4.0-11	---	5.1-6.0
	17-31	3.0-7.3	---	5.1-6.0
	31-60	2.0-6.7	---	5.1-6.0
Waterwheel	0-0	---	---	---
	0-1	---	---	---
	1-1	---	---	---
	1-6	13-21	---	5.1-6.0
	6-11	6.7-14	---	5.1-6.0
	11-19	1.8-5.6	---	5.1-6.0
	19-60	1.0-5.0	---	5.1-6.0
274.				
Rock outcrop, domes				
275:				
Oxyaquic Dystroxerepts	0-1	---	---	---
	1-2	---	---	---
	2-9	7.0-14	3-8	5.1-6.0
	9-19	5.0-12	2-4	5.1-6.0
	19-34	5.0-10	2-5	5.1-6.0
	34-46	3.0-8.0	2-4	5.1-6.0
	46-60	3.0-8.0	2-4	5.1-6.0
Dystric Xerorthents	0-1	---	---	---
	1-2	---	---	---
	2-2	---	---	---
	2-6	18-27	---	5.6-6.5
	6-14	3.1-8.8	---	5.6-6.5
	14-28	1.9-6.5	---	5.6-6.5
	28-60	1.9-4.7	---	5.6-6.5
Vitrandic Xerorthents	0-8	7.0-14	2-7	4.5-6.0
	8-18	10-18	2-6	4.5-6.0
	18-24	3.0-8.0	0-3	4.5-6.0
	24-35	3.0-10	0-3	4.5-6.0
	35-50	3.0-8.0	0-3	4.5-6.0
	50-62	3.0-8.0	0-3	4.5-6.0
Rubble land.				
276:				
Happyisles	0-3	---	---	---
	3-7	6.2-19	---	6.1-7.3
	7-13	4.7-16	---	5.6-6.5
	13-17	5.8-17	---	5.6-6.5
	17-33	4.6-11	---	5.6-6.5
	33-60	2.8-7.5	---	5.6-6.5

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
276:				
Typic Dystroxerepts	0-1	77-92	---	5.6-7.3
	1-19	15-27	---	5.6-7.3
	19-28	13-25	---	5.6-7.3
	28-33	5.3-16	---	5.6-7.3
	33-50	4.7-12	---	5.6-7.3
	50-60	1.5-6.5	---	5.6-7.3
277:				
Tuolumne	0-1	---	---	---
	1-2	---	---	---
	2-5	1.6-14	---	4.5-6.0
	5-32	0.9-9.8	---	4.5-6.0
	32-60	4.9-15	1-4	4.5-6.0
Humic Dystroxerepts	0-1	---	---	---
	1-1	---	---	---
	1-2	---	---	---
	2-15	13-21	---	5.1-6.0
	15-25	4.9-12	---	5.1-6.0
	25-60	1.0-5.0	---	5.1-6.0
278:				
Rock outcrop.				
Tuolumne	0-2	14-24	---	6.6-7.8
	2-10	4.4-11	---	6.1-7.3
	10-35	2.9-6.5	---	5.6-6.5
	35-60	1.4-5.3	---	5.1-6.5
Humic Dystroxerepts	0-1	---	---	---
	1-1	---	---	---
	1-10	13-20	---	5.1-6.0
	10-21	4.9-11	---	5.1-6.0
	21-60	1.0-4.4	---	5.1-6.0
Rubble land.				
279:				
Canisrocks	0-2	---	---	---
	2-2	---	---	---
	2-11	12-16	4-6	4.5-5.5
	11-21	4.0-8.0	0-3	4.5-5.5
	21-29	4.0-8.0	0-3	4.5-5.5
	29-36	4.0-7.0	0-3	4.5-5.5
	36-60	4.0-7.0	0-3	4.5-5.5
Xeric Dystrocryepts	0-0	---	---	---
	0-1	---	---	---
	1-4	12-16	4-6	4.5-5.5
	4-18	4.0-8.0	1-4	4.5-5.5
	18-28	4.0-8.0	1-2	4.5-5.5
	28-34	4.0-7.0	0-2	4.5-5.5
	34-60	4.0-7.0	0-2	4.5-5.5

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
280:				
Typic Dystroxerepts	0-1	---	---	---
	1-2	---	---	---
	2-4	14-23	---	5.1-6.0
	4-8	12-21	---	5.1-6.0
	8-15	5.9-12	---	5.1-6.0
	15-24	5.4-11	---	5.1-6.0
	24-36	4.8-10	---	5.1-6.0
	36-60	3.4-8.9	---	5.1-6.0
Humic Dystroxerepts	0-2	---	---	---
	2-2	---	---	---
	2-3	---	---	---
	3-8	13-21	---	5.1-6.0
	8-16	6.7-14	---	5.1-6.0
	16-30	3.8-11	---	5.1-6.0
	30-60	1.0-5.0	---	5.1-6.0
Rock outcrop.				
282:				
Clarkslodge	0-1	---	---	---
	1-2	---	---	---
	2-6	15-25	---	4.5-6.0
	6-19	12-22	---	4.5-6.0
	19-34	8.6-21	---	4.5-6.0
	34-60	6.1-15	---	4.5-6.0
Craneflat	0-1	---	---	---
	1-1	---	---	---
	1-2	---	---	---
	2-4	27-40	---	5.1-6.5
	4-11	5.7-16	---	5.1-6.5
	11-22	3.8-12	---	5.1-6.5
	22-30	3.8-12	---	5.1-6.5
	30-60	2.0-8.9	1-4	5.1-6.5
Nevadafalls	0-0	---	---	---
	0-6	6.5-15	---	5.6-6.5
	6-17	4.0-11	---	5.1-6.0
	17-31	3.0-7.3	---	5.1-6.0
	31-60	2.0-6.7	---	5.1-6.0
283:				
Waterwheel	0-1	15-25	---	5.1-6.5
	1-7	14-23	---	5.1-6.5
	7-26	2.1-7.7	---	5.1-6.5
	26-60	2.1-6.5	---	5.1-6.5
Nevadafalls	0-1	---	---	---
	1-2	---	---	---
	2-6	14-21	---	5.1-6.0
	6-11	7.0-14	---	5.1-6.0
	11-21	3.2-9.8	---	5.1-6.0
	21-60	1.4-5.0	---	5.1-6.0
Rock outcrop.				

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
285:				
Waterwheel	0-0	---	---	---
	0-4	6.0-12	---	4.5-6.0
	4-8	6.0-12	2-7	4.5-6.0
	8-16	5.0-10	2-7	4.5-6.0
	16-60	6.0-11	2-7	4.5-6.0
Humic Dystroxerepts	0-1	---	---	---
	1-6	7.7-21	---	4.5-6.5
	6-13	4.4-16	---	4.5-6.5
	13-24	---	1-5	4.5-6.5
	24-42	---	1-5	4.5-6.5
	42-55	---	1-5	4.5-6.5
	55-60	---	1-3	4.5-6.5
286:				
Nevadafalls	0-8	16-23	---	5.1-6.0
	8-21	10-19	---	5.1-6.0
	21-28	4.9-14	---	5.1-6.0
	28-60	2.0-6.1	---	5.1-6.0
Typic Dystroxerepts	0-1	---	---	---
	1-2	---	---	---
	2-3	---	---	---
	3-16	13-20	---	5.1-6.0
	16-25	9.3-16	---	5.1-6.0
	25-35	3.8-11	---	5.1-6.0
	35-60	2.0-6.1	---	5.1-6.0
Ultic Palexeralfs	0-1	---	---	---
	1-2	---	---	---
	2-9	---	---	5.1-6.0
	9-14	15-24	---	5.1-6.0
	14-22	15-28	---	5.1-6.0
	22-32	8.4-26	---	5.1-6.0
	32-60	7.7-22	---	5.1-6.0
Rock outcrop.				
287:				
Badgerpass	0-2	---	---	---
	2-2	---	---	---
	2-3	---	---	---
	3-11	15-22	---	5.1-6.0
	11-25	6.7-14	---	5.1-6.0
	25-60	1.0-5.6	---	5.1-6.0
Waterwheel	0-0	---	---	---
	0-1	---	---	---
	1-4	15-24	---	5.6-7.3
	4-11	9.5-18	---	5.6-7.3
	11-22	5.6-14	---	5.6-7.3
	22-29	1.5-5.8	---	5.6-7.3
	29-60	2.3-5.8	---	5.6-7.3

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
288:				
Rock outcrop.				
Craneflat	0-1	---	---	---
	1-1	---	---	---
	1-2	---	---	---
	2-4	27-40	---	5.1-6.5
	4-11	5.7-16	---	5.1-6.5
	11-22	3.8-12	---	5.1-6.5
	22-30	3.8-12	---	5.1-6.5
	30-60	2.0-8.9	1-4	5.1-6.5
Waterwheel	0-0	---	---	---
	0-1	---	---	---
	1-4	15-24	---	5.6-7.3
	4-11	9.5-18	---	5.6-7.3
	11-22	5.6-14	---	5.6-7.3
	22-29	1.5-5.8	---	5.6-7.3
	29-60	2.3-5.8	---	5.6-7.3
289:				
Waterwheel	0-1	---	---	---
	1-6	---	5-12	4.5-6.0
	6-15	---	4-10	4.5-6.0
	15-25	---	3-7	4.5-6.0
	25-36	---	1-6	4.5-6.0
	36-60	---	1-4	4.5-6.0
Craneflat	0-2	---	---	---
	2-4	---	---	---
	4-4	---	---	---
	4-12	---	5-11	4.5-6.0
	12-23	---	2-7	4.5-6.0
	23-28	---	2-5	4.5-6.0
	28-60	---	2-5	4.5-6.0
290:				
Humic Dystroxerepts	0-0	---	---	---
	0-9	---	8-14	4.5-6.0
	9-20	---	5-11	4.5-6.0
	20-60	---	2-6	4.5-6.0
Tuolumne	0-3	---	4-11	4.5-6.0
	3-7	---	4-10	4.5-6.0
	7-12	---	3-8	4.5-6.0
	12-24	---	2-6	4.5-6.0
	24-39	---	1-5	4.5-6.0
	39-46	---	1-5	4.5-6.0
	46-60	---	1-5	4.5-6.0
Typic Xerorthents	0-4	---	7-13	5.1-6.0
	4-15	---	2-6	5.1-6.0
	15-33	---	2-4	5.1-6.0
	33-60	---	---	5.1-6.0

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
290:				
Ultic Haploxeralfs	0-1	---	---	---
	1-2	---	---	---
	2-2	---	---	---
	2-6	18-27	---	5.1-6.0
	6-12	16-26	---	5.1-6.0
	12-30	14-26	---	5.1-6.0
	30-41	11-24	---	5.1-6.0
	41-60	8.2-17	---	5.1-6.0
291:				
Ultic Haploxeralfs	0-1	---	---	---
	1-2	---	---	---
	2-3	---	---	---
	3-5	11-25	---	6.1-7.3
	5-12	4.7-15	---	5.6-6.5
	12-19	4.7-13	---	5.6-6.5
	19-22	3.8-10	5-9	5.1-6.0
	22-41	3.3-8.9	5-9	5.1-6.0
	41-57	3.3-8.2	5-9	5.1-6.0
	57-61	2.9-7.0	5-12	5.1-6.0
Typic Dystroxerepts	0-1	---	---	---
	1-2	---	---	---
	2-7	11-20	---	5.1-6.5
	7-16	9.3-18	---	5.1-6.5
	16-29	6.4-14	---	5.1-6.5
	29-39	5.4-16	---	5.1-6.5
	39-60	2.0-7.0	---	5.1-6.5
292:				
Humic Dystroxerepts	0-1	---	---	---
	1-1	---	---	---
	1-3	14-22	---	4.5-6.0
	3-4	12-21	---	4.5-6.0
	4-7	11-19	---	4.5-6.0
	7-11	9.2-17	---	4.5-6.0
	11-19	4.4-12	---	4.5-6.0
	19-31	2.6-7.8	---	4.5-6.0
	31-60	0.9-5.0	---	4.5-6.0
Typic Haploxerults	0-2	---	---	---
	2-4	---	---	---
	4-7	14-25	---	4.5-6.0
	7-9	13-26	---	4.5-6.0
	9-15	11-26	---	4.5-6.0
	15-22	8.6-24	---	4.5-6.0
	22-60	8.8-20	---	4.5-6.0
293:				
Xeric Dystrocryepts	0-0	---	---	---
	0-4	---	4-10	4.5-5.5
	4-20	---	3-7	4.5-5.5
	20-34	---	2-6	4.5-5.5
	34-47	---	1-4	4.5-5.5
	47-60	---	1-4	4.5-5.5

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
293:				
Vitrandic Dystrocryepts	0-0	---	---	---
	0-2	18-31	---	5.5-6.5
	2-5	11-19	---	5.5-6.5
	5-18	7.2-17	---	5.5-6.5
	18-25	4.6-10	---	5.5-6.5
	25-36	4.0-9.4	---	5.5-6.5
	36-60	3.1-9.5	---	5.5-6.5
294:				
Waterwheel	0-0	---	---	---
	0-1	---	---	---
	1-2	---	---	---
	2-6	---	5-10	4.5-6.0
	6-11	---	2-6	4.5-6.0
	11-26	1.9-5.8	---	5.6-7.3
	26-60	1.1-5.1	---	5.6-7.3
Typic Dystroxerepts	0-1	---	---	---
	1-5	29-39	---	5.1-6.0
	5-12	6.3-19	---	5.1-6.0
	12-20	4.4-16	---	5.1-6.0
	20-28	3.3-11	---	5.1-6.0
	28-49	---	2-6	5.1-6.0
	49-60	---	---	---
295:				
Craneflat	0-5	15-23	---	5.1-6.0
	5-19	6.7-16	---	5.1-6.0
	19-60	1.0-6.1	---	5.1-6.0
Typic Dystroxerepts	0-1	---	---	---
	1-9	16-25	---	5.1-6.0
	9-18	8.1-16	---	5.1-6.0
	18-31	4.4-12	---	5.1-6.0
	31-60	2.5-7.5	---	5.1-6.0
296:				
Ultic Palexeralfs	0-2	---	---	---
	2-3	---	---	---
	3-6	19-32	---	5.1-6.0
	6-12	16-28	---	5.1-6.0
	12-23	15-28	---	5.1-6.0
	23-32	15-28	---	5.1-6.0
	32-41	13-26	---	5.1-6.0
	41-60	9.6-19	---	5.1-6.0
Humic Dystroxerepts	0-1	---	---	---
	1-3	---	---	---
	3-6	17-27	---	5.1-6.0
	6-17	16-25	---	5.1-6.0
	17-22	11-20	---	5.1-6.0
	22-28	7.3-17	---	5.1-6.0
	28-37	5.4-15	---	5.1-6.0
	37-48	3.4-9.8	---	5.1-6.0
	48-70	2.0-6.1	---	5.1-6.0
	70-86	2.0-6.1	---	5.1-6.0
	86-106	2.0-6.1	---	5.1-6.0

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
297:				
Typic Xerorthents	0-1	---	---	---
	1-1	---	---	---
	1-3	11-27	---	5.1-7.3
	3-6	11-27	---	5.1-7.3
	6-9	5.7-17	---	5.1-7.3
	9-16	3.8-15	---	5.1-7.3
	16-28	2.7-9.6	---	5.1-7.3
	28-60	2.0-8.8	---	5.1-7.3
Rock outcrop.				
Typic Xeropsamments	0-1	---	---	---
	1-1	---	---	---
	1-3	13-21	---	5.1-6.0
	3-7	12-19	---	5.1-6.0
	7-12	6.7-14	---	5.1-6.0
	12-17	4.9-12	---	5.1-6.0
	17-21	2.9-9.8	---	5.1-6.0
	21-30	2.3-6.7	---	5.1-6.0
	30-38	1.8-5.6	---	5.1-6.0
	38-60	1.0-5.0	---	5.1-6.0
298:				
Tuolumne	0-0	---	---	---
	0-1	---	---	---
	1-2	---	---	---
	2-6	---	5-10	4.5-6.0
	6-11	---	2-6	4.5-6.0
	11-26	1.9-5.8	---	5.6-7.3
	26-60	1.1-5.1	---	5.6-7.3
Typic Dystroxerepts	0-1	---	---	---
	1-5	29-39	---	5.1-6.0
	5-12	6.3-19	---	5.1-6.0
	12-20	4.4-16	---	5.1-6.0
	20-28	3.3-11	---	5.1-6.0
	28-49	---	2-6	5.1-6.0
	49-60	---	---	---
299:				
Humic Dystroxerepts	0-1	---	---	---
	1-1	---	---	---
	1-2	---	---	---
	2-4	---	2-8	4.5-5.5
	4-11	---	2-6	4.5-5.5
	11-22	---	1-4	4.5-5.5
	22-30	---	1-4	4.5-5.5
	30-60	---	0-2	4.5-5.5
Ultic Haploxeralfs	0-0	---	---	---
	0-1	---	---	---
	1-8	15-28	---	5.1-6.0
	8-17	8.1-21	---	5.1-6.0
	17-28	4.4-18	---	5.1-6.0
	28-47	3.3-13	---	5.1-6.0
	47-60	2.5-12	---	5.1-6.0

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
300:				
Typic Dystroxerepts	0-1	---	---	---
	1-2	---	---	---
	2-2	---	7-14	4.5-6.0
	2-5	---	6-12	4.5-6.0
	5-9	---	3-8	4.5-6.0
	9-15	---	2-6	4.5-6.0
	15-20	---	2-6	4.5-6.0
	20-30	---	---	---
Ultic Haploxeralfs	0-1	---	---	---
	1-2	---	---	---
	2-2	---	---	---
	2-10	16-26	---	5.1-6.5
	10-19	6.3-16	---	5.1-6.5
	19-60	6.8-15	---	5.1-6.5
301:				
Vitrandic Haploxerolls	0-1	---	---	4.0-6.0
	1-4	2.0-32	---	5.6-6.5
	4-7	2.0-29	---	5.6-6.5
	7-11	2.0-18	---	5.6-6.5
	11-19	1.0-18	---	5.6-6.5
	19-34	1.0-14	---	5.6-6.5
	34-57	1.0-12	---	5.6-6.5
	57-63	1.0-11	---	5.6-6.5
	63-69	1.2-9.7	---	5.6-6.5
302:				
Typic Haploxerults	0-2	---	---	---
	2-2	---	---	---
	2-3	---	---	---
	3-5	20-30	---	5.1-6.0
	5-12	17-30	---	5.1-6.0
	12-22	14-24	---	5.1-6.0
	22-60	8.2-16	---	5.1-6.0
Ultic Haploxeralfs	0-1	---	---	---
	1-2	---	---	---
	2-2	---	---	---
	2-10	16-26	---	5.1-6.5
	10-19	6.3-16	---	5.1-6.5
	19-60	6.8-15	---	5.1-6.5
303:				
Rock outcrop.				
Dystric Xeropsamments	0-0	---	---	---
	0-1	---	---	---
	1-3	15-23	---	5.1-6.0
	3-5	14-22	---	5.1-6.0
	5-14	7.0-15	---	5.1-6.0
	14-28	3.2-11	---	5.1-6.0
	28-37	1.4-6.1	---	5.1-6.0
	37-60	---	---	5.1-6.0

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
303:				
Humic Dystroxerepts	0-1	---	---	---
	1-2	---	4-12	4.5-6.0
	2-7	---	4-10	4.5-6.0
	7-13	---	3-7	4.5-6.0
	13-33	---	2-6	4.5-6.0
	33-60	---	1-4	4.5-6.0
Tuolumne	0-1	---	---	---
	1-9	---	7-14	4.5-5.5
	9-21	---	2-7	4.5-5.5
	21-29	---	2-6	4.5-5.5
	29-44	---	2-4	4.5-5.5
	44-60	---	1-4	4.5-5.5
304:				
Clarkslodge	0-0	---	---	---
	0-1	---	---	---
	1-1	---	---	---
	1-3	9.0-18	---	6.1-7.3
	3-6	7.9-16	---	6.1-7.3
	6-12	6.2-15	---	5.6-6.5
	12-27	5.4-14	---	5.6-6.5
	27-35	4.1-13	---	5.6-6.5
	35-60	3.2-11	---	5.6-6.5
Rock outcrop.				
305:				
Rock outcrop.				
Waterwheel	0-3	14-22	---	4.5-6.0
	3-9	11-19	---	4.5-6.0
	9-11	4.7-12	---	4.5-6.0
	11-21	2.9-9.8	---	4.5-6.0
	21-60	1.2-5.0	---	4.5-6.0
Dystric Xeropsamments	0-0	---	---	---
	0-6	---	5-10	4.5-5.5
	6-18	---	2-8	4.5-5.5
	18-25	---	2-7	4.5-5.5
	25-41	---	1-6	4.5-5.5
	41-60	---	1-5	4.5-5.5
306:				
Typic Cryopsamments	0-0	---	---	---
	0-1	---	---	---
	1-4	---	2-8	4.5-6.0
	4-15	---	1-4	4.5-6.0
	15-32	---	1-3	4.5-6.0
	32-43	---	0-2	4.5-6.0
	43-60	---	0-2	4.5-6.0
Humic Dystrocryepts	0-0	---	---	---
	0-5	---	6-10	5.1-5.5
	5-13	---	3-7	5.1-5.5
	13-23	---	2-6	5.1-5.5
	23-60	---	5-8	4.5-5.5

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
307:				
Rock outcrop.				
Dystric Xeropsamments	0-0	---	---	---
	0-1	---	---	---
	1-3	15-23	---	5.1-6.0
	3-5	14-22	---	5.1-6.0
	5-14	7.0-15	---	5.1-6.0
	14-28	3.2-11	---	5.1-6.0
	28-37	1.4-6.1	---	5.1-6.0
	37-60	---	---	5.1-6.0
Dystric Xerorthents	0-3	14-22	---	4.5-6.0
	3-9	11-19	---	4.5-6.0
	9-11	4.7-12	---	4.5-6.0
	11-21	2.9-9.8	---	4.5-6.0
	21-60	1.2-5.0	---	4.5-6.0
309:				
Rock outcrop.				
Waterwheel	0-2	---	---	---
	2-7	17-25	---	5.1-6.0
	7-17	8.6-16	---	5.1-6.0
	17-31	4.9-12	---	5.1-6.0
	31-60	2.9-7.5	---	5.1-6.0
Typic Dystroxerepts	0-1	---	---	---
	1-2	---	---	---
	2-2	---	---	---
	2-3	16-24	---	5.1-6.0
	3-7	15-23	---	5.1-6.0
	7-27	6.3-14	---	5.1-6.0
	27-41	4.4-12	---	5.1-6.0
	41-60	2.5-7.1	---	5.1-6.0
310:				
Rock outcrop.				
Humic Dystroxerepts	0-0	---	---	---
	0-1	---	---	---
	1-4	16-24	---	5.1-6.0
	4-8	15-22	---	5.1-6.0
	8-30	6.3-13	---	5.1-6.0
	30-39	4.4-11	---	5.1-6.0
	39-60	2.5-6.6	---	5.1-6.0
Humic Lithic Haploxerepts	0-0	---	---	---
	0-2	---	---	---
	2-2	---	---	---
	2-10	12-24	---	5.6-6.5
	10-20	20-37	---	5.6-6.5
	20-60	---	---	---

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
311:				
Rock outcrop.				
Humic Dystroxerepts	0-1	16-23	---	5.1-6.0
	1-11	14-21	---	5.1-6.0
	11-30	3.8-14	---	5.1-6.0
	30-60	2.0-5.5	---	5.1-6.0
Humic Lithic Haploxerepts	0-0	---	---	---
	0-2	---	---	---
	2-2	---	---	---
	2-10	11-27	---	4.5-6.5
	10-20	18-34	---	4.5-6.5
	20-60	---	---	---
313:				
Nevadafalls	0-0	---	---	---
	0-6	6.5-15	---	5.6-6.5
	6-17	4.0-11	---	5.1-6.0
	17-31	3.0-7.3	---	5.1-6.0
	31-60	2.0-6.7	---	5.1-6.0
Oxyaquic Dystrudepts	0-0	---	---	---
	0-10	16-24	---	5.1-6.0
	10-35	7.3-15	---	5.1-6.0
	35-48	5.4-13	---	5.1-6.0
	48-61	2.0-5.5	---	5.1-6.0
314:				
Badgerpass	0-1	---	---	---
	1-6	15-22	---	5.1-6.0
	6-13	12-19	---	5.1-6.0
	13-24	6.7-14	---	5.1-6.0
	24-42	2.9-9.8	---	5.1-6.0
	42-55	1.8-5.6	---	5.1-6.0
	55-60	1.0-5.0	---	5.1-6.0
Dystric Xeropsamments	0-2	---	---	---
	2-4	---	---	---
	4-4	---	---	---
	4-9	14-22	---	5.1-6.0
	9-25	5.7-13	---	5.1-6.0
	25-30	3.8-11	---	5.1-6.0
	30-60	2.0-6.1	---	5.1-6.0
Rock outcrop.				
315:				
Nevadafalls	0-1	---	---	---
	1-2	17-25	---	5.5-6.5
	2-14	6.1-14	---	5.5-6.5
	14-35	8.0-16	---	5.5-6.5
	35-60	2.1-6.5	---	5.5-6.5
Dystric Xeropsamments	0-0	---	---	---
	0-7	14-21	---	5.1-6.0
	7-16	7.0-14	---	5.1-6.0
	16-26	3.2-10	---	5.1-6.0
	26-60	1.4-5.5	---	5.1-6.0

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
316:				
Dystric Xerorthents	0-4	15-23	---	5.1-6.0
	4-13	10-18	---	5.1-6.0
	13-23	3.2-11	---	5.1-6.0
	23-35	1.4-6.1	---	5.1-6.0
	35-393	---	---	5.1-6.0
Rock outcrop.				
Rubble land.				
318:				
Typic Dystroxerepts	0-4	17-27	---	5.1-6.5
	4-12	10-20	---	5.1-6.5
	12-27	6.8-16	---	5.1-6.5
	27-39	---	2-8	5.1-6.5
	39-57	---	---	---
Humic Dystroxerepts	0-0	---	---	---
	0-1	---	---	---
	1-2	13-27	3-9	5.1-6.0
	2-5	6.3-16	3-7	5.1-6.0
	5-14	6.3-16	2-5	5.1-6.0
	14-33	5.3-10.0	1-5	5.1-6.0
	33-46	1.5-9.0	2-6	5.1-6.0
	46-48	1.5-12	4-9	5.1-6.0
	48-54	2.4-15	5-13	5.1-6.0
	54-60	14-19	2-6	5.1-6.0
319:				
Humic Dystroxerepts	0-0	---	---	---
	0-1	---	---	---
	1-5	14-23	2-8	5.0-6.0
	5-13	5.7-15	1-4	5.0-6.0
	13-20	---	1-4	5.0-6.0
	20-35	---	1-4	5.0-6.0
	35-60	---	1-4	5.0-6.0
Typic Haploxerults	0-0	---	---	---
	0-1	---	---	---
	1-2	---	---	---
	2-5	---	4-12	4.0-5.5
	5-7	---	4-10	4.0-5.5
	7-12	---	4-9	4.0-5.5
	12-20	---	4-9	4.0-5.5
	20-31	---	4-7	4.0-5.5
	31-46	---	4-8	4.0-5.5
	46-53	---	0-2	4.0-5.5
	53-71	---	0-2	4.0-5.5
Inceptic Haploxeralfs	0-0	---	---	---
	0-1	---	---	---
	1-4	14-22	---	5.1-6.0
	4-12	7.0-15	---	5.1-6.0
	12-22	---	2-9	4.5-6.0
	22-30	---	2-6	4.5-6.0
	30-60	---	2-5	4.5-6.0

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
320:				
Half Dome	0-1	---	---	---
	1-4	18-29	---	6.1-7.3
	4-10	11-21	---	6.1-7.3
	10-20	6.6-17	---	6.1-7.3
	20-47	4.4-15	---	6.1-7.3
	47-61	2.3-8.8	---	6.1-7.3
Humic Dystroxerepts	0-0	---	---	---
	0-3	18-27	---	6.1-7.3
	3-7	16-25	---	6.1-7.3
	7-16	8.7-17	---	6.1-7.3
	16-22	6.6-14	---	6.1-7.3
	22-35	4.4-13	---	6.1-7.3
	35-60	2.3-7.7	---	6.1-7.3
Rock outcrop.				
321:				
Dystric Xeropsamments	0-0	---	---	---
	0-8	15-23	---	5.6-6.5
	8-21	5.6-13	---	5.6-6.5
	21-61	2.7-6.5	---	5.6-6.5
Dystric Xerorthents	0-3	14-22	---	4.5-6.0
	3-9	11-19	---	4.5-6.0
	9-11	4.7-12	---	4.5-6.0
	11-21	2.9-9.8	---	4.5-6.0
	21-60	1.2-5.0	---	4.5-6.0
322:				
Typic Xerorthents	0-0	---	---	---
	0-7	5.0-12	---	5.6-7.3
	7-24	4.0-10	---	5.6-7.3
	24-42	2.0-7.0	---	5.6-7.3
	42-60	2.0-6.0	---	5.6-7.3
323:				
Ultic Haploxeralfs	0-3	18-29	---	5.6-7.3
	3-5	16-28	---	5.6-7.3
	5-10	12-24	---	5.6-7.3
	10-21	11-22	---	5.6-7.3
	21-37	9.1-23	---	5.6-7.3
	37-60	7.3-16	---	5.6-7.3
Humic Dystroxerepts	0-1	---	---	---
	1-2	---	---	---
	2-2	---	---	---
	2-7	17-28	---	6.0-7.3
	7-15	7.8-20	---	6.0-7.3
	15-29	5.6-17	---	6.0-7.3
	29-60	4.3-11	---	6.0-7.3
324:				
Humic Haploxerepts	0-0	---	---	---
	0-4	10-18	---	5.6-6.5
	4-8	6.0-12	---	5.6-6.5
	8-20	2.0-9.0	---	5.6-6.5
	20-30	2.0-9.0	---	5.6-6.5
	30-60	2.0-9.0	---	5.6-6.5

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
324:				
Rock outcrop.				
Ultic Haploxeralfs	0-0	---	---	---
	0-6	6.5-22	---	6.0-7.3
	6-16	4.7-22	---	6.0-7.3
	16-29	2.0-16	---	6.0-7.3
	29-60	3.0-9.5	---	6.0-7.3
325.				
Urban land.				
328:				
Clarkslodge	0-0	---	---	---
	0-1	---	---	---
	1-5	---	---	5.1-6.0
	5-11	8.7-20	---	5.1-6.0
	11-20	5.5-13	---	5.1-6.0
	20-37	4.5-12	---	5.1-6.0
	37-60	4.0-11	---	5.1-6.0
Ultic Palexeralfs	0-1	---	---	---
	1-4	---	---	5.1-7.0
	4-13	10-27	---	5.1-7.0
	13-31	8.0-15	4-11	5.1-7.0
	31-49	7.0-15	2-7	5.1-7.0
	49-60	8.0-15	2-6	5.1-7.0
401:				
Sentinel	0-1	---	---	3.0-5.0
	1-5	11-24	---	5.6-6.5
	5-20	5.8-19	---	5.6-6.5
	20-27	5.8-15	---	5.6-6.5
	27-41	3.5-12	---	5.6-6.5
	41-56	3.5-11	---	5.6-6.5
	56-66	1.6-7.5	---	5.6-6.5
412.				
Water-Riverwash				
501:				
Happyisles, sandy loam	0-3	---	16-57	3.0-5.0
	3-7	5.0-21	---	6.1-7.3
	7-13	4.7-19	---	5.6-6.5
	13-17	4.7-19	---	5.6-6.5
	17-33	3.5-13	---	5.6-6.5
	33-60	2.8-7.0	---	5.6-6.5
Happyisles, loamy fine sand, overwash	0-3	---	16-57	3.0-5.0
	3-7	5.6-19	---	6.1-7.3
	7-13	4.7-16	---	5.6-6.5
	13-17	5.8-17	---	5.6-6.5
	17-33	4.6-11	---	5.6-6.5
	33-41	2.8-7.5	---	5.6-6.5
	41-62	3.8-9.5	---	5.6-6.5

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
502:				
Happyisles	0-3	---	---	---
	3-7	6.2-19	---	6.1-7.3
	7-13	4.7-16	---	5.6-6.5
	13-17	5.8-17	---	5.6-6.5
	17-33	4.6-11	---	5.6-6.5
	33-41	2.8-7.5	---	5.6-6.5
	41-62	3.8-9.5	---	5.6-6.5
504:				
Mollic Xerofluvents	0-2	---	---	---
	2-6	---	8-16	5.1-5.5
	6-8	4.4-11	1-5	5.1-6.0
	8-12	1.5-10	1-5	5.1-6.0
	12-23	---	1-5	5.1-5.5
	23-29	---	1-5	5.1-5.5
	29-49	---	0-2	5.1-5.5
	49-54	---	2-8	5.1-5.5
	54-68	---	2-8	5.1-5.5
510t:				
Rubble land.				
Lithnip	0-1	9.0-16	---	6.1-7.3
	1-5	9.0-16	---	6.1-7.3
	5-15	---	---	---
Rock outcrop.				
551:				
Happyisles	0-3	---	---	---
	3-7	6.2-19	---	6.1-7.3
	7-13	4.7-16	---	5.6-6.5
	13-17	5.8-17	---	5.6-6.5
	17-33	4.6-11	---	5.6-6.5
	33-41	2.8-7.5	---	5.6-6.5
	41-62	3.8-9.5	---	5.6-6.5
Half Dome	0-1	5.3-16	---	5.6-7.3
	1-19	5.3-16	---	5.6-7.3
	19-28	2.0-9.5	---	5.6-7.3
	28-33	2.0-9.5	---	5.6-7.3
	33-50	2.0-9.5	---	5.6-7.3
	50-60	0.8-5.7	---	5.6-7.3
552:				
Mollic Xerofluvents	0-2	---	---	---
	2-6	---	10-16	5.1-5.5
	6-8	4.4-11	1-5	5.1-6.0
	8-12	1.5-10	1-5	5.1-6.0
	12-23	---	1-5	5.1-5.5
	23-29	---	1-5	5.1-5.5
	29-49	---	0-3	5.1-5.5
	49-54	---	2-8	5.1-5.5
	54-68	---	2-8	5.1-5.5

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
590:				
Terric Haplosaprists	0-3	---	12-19	5.1-5.5
	3-8	---	1-6	5.1-5.5
	8-12	---	2-7	5.1-5.5
	12-31	---	---	5.1-5.5
	31-35	---	9-15	5.1-5.5
	35-38	---	5-10	5.1-5.5
	38-46	---	7-13	5.1-5.5
	46-52	---	---	5.1-5.5
	52-58	---	6-12	5.1-5.5
	58-60	---	7-13	5.1-5.5
601:				
Half Dome, very bouldery	0-3	---	---	---
	3-5	5.3-16	---	5.6-7.3
	5-8	5.3-16	---	5.6-7.3
	8-15	3.3-11	---	5.6-7.3
	15-39	3.3-11	---	5.6-7.3
	39-63	3.3-11	---	5.6-7.3
Half Dome, cobbly	0-1	---	---	---
	1-2	---	---	---
	2-10	5.3-16	---	5.6-7.3
	10-17	5.3-16	---	5.6-7.3
	17-29	2.0-9.5	---	5.6-7.3
	29-60	2.0-9.5	---	5.6-7.3
602:				
Half Dome	0-1	5.3-16	---	5.6-7.3
	1-19	5.3-16	---	5.6-7.3
	19-28	2.0-9.5	---	5.6-7.3
	28-33	2.0-9.5	---	5.6-7.3
	33-50	2.0-9.5	---	5.6-7.3
	50-60	0.8-5.7	---	5.6-7.3
610:				
Rubble land.				
Half Dome	0-1	---	---	---
	1-2	---	---	---
	2-10	5.3-16	---	5.6-7.3
	10-17	5.3-16	---	5.6-7.3
	17-29	2.0-9.5	---	5.6-7.3
	29-60	2.0-9.5	---	5.6-7.3
620:				
Half Dome, extremely stony sandy loam, warm	0-1	5.3-16	---	5.6-7.3
	1-19	5.3-16	---	5.6-7.3
	19-28	2.0-9.5	---	5.6-7.3
	28-33	2.0-9.5	---	5.6-7.3
	33-50	2.0-9.5	---	5.6-7.3
	50-60	0.8-5.7	---	5.6-7.3

Table 14.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100g	meq/100g	pH
620:				
Half Dome, very cobbly sandy loam, warm	0-1	---	---	---
	1-2	---	---	---
	2-10	5.3-16	---	5.6-7.3
	10-17	5.3-16	---	5.6-7.3
	17-29	2.0-9.5	---	5.6-7.3
	29-60	2.0-9.5	---	5.6-7.3
630:				
Rubble land.				
Half Dome	0-1	5.3-16	---	5.6-7.3
	1-19	5.3-16	---	5.6-7.3
	19-28	2.0-9.5	---	5.6-7.3
	28-33	2.0-9.5	---	5.6-7.3
	33-50	2.0-9.5	---	5.6-7.3
	50-60	0.8-5.7	---	5.6-7.3
701:				
Vitrandic Haploxerolls	0-1	---	---	---
	1-3	15-24	---	5.6-6.0
	3-12	7.9-17	---	5.6-6.0
	12-16	3.0-16	---	5.6-6.5
	16-24	5.8-14	---	5.6-6.5
	24-36	4.6-12	---	5.6-6.5
	36-50	3.8-11	---	5.6-6.5
	50-60	3.1-9.9	---	5.6-6.5
702:				
Vitrandic Dystroxerepts	0-8	13-24	---	5.6-6.0
	8-30	5.8-14	---	5.6-6.5
	30-50	4.6-7.7	---	5.6-6.5
	50-60	4.9-7.7	---	6.1-6.5
900.				
Rock outcrop.				
DAM.				
Dam				
W.				
Water				

Table 15.—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	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
101:									
Oxyaquic Xerofluvents	A								
		January	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		February	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		March	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		April	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		May	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		June	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		Jul-Oct	---	---	---	---	---	---	---
		November	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		December	3.0-5.0	>6.0	---	---	None	Brief	Frequent
Riverwash	A								
		January	0.0	>6.0	---	---	None	Long	Frequent
		February	0.0	>6.0	---	---	None	Long	Frequent
		March	0.0	>6.0	---	---	None	Long	Frequent
		April	0.0	>6.0	---	---	None	Long	Frequent
		May	0.0	>6.0	---	---	None	Long	Frequent
		June	0.0	>6.0	---	---	None	Long	Frequent
		July	1.5-5.0	>6.0	---	---	None	---	---
		August	1.5-5.0	>6.0	---	---	None	---	---
		September	1.5-5.0	>6.0	---	---	None	---	---
		October	1.5-5.0	>6.0	---	---	None	---	---
		November	0.0	>6.0	---	---	None	Long	Frequent
		December	0.0	>6.0	---	---	None	Long	Frequent
Fluvaquents	D								
		January	0.0-1.2	>6.0	---	---	None	Very long	Frequent
		February	0.0-1.2	>6.0	---	---	None	Very long	Frequent
		March	0.0-1.2	>6.0	---	---	None	Very long	Frequent
		April	0.0-1.2	>6.0	---	---	None	Very long	Frequent
		May	0.0-1.2	>6.0	---	---	None	Very long	Frequent
		June	0.0-1.2	>6.0	---	---	None	Very long	Frequent
		July	0.0-1.7	>6.0	---	---	None	---	---
		August	0.0-1.7	>6.0	---	---	None	---	---
		September	0.0-1.7	>6.0	---	---	None	---	---
		October	0.0-1.7	>6.0	---	---	None	---	---
		November	0.0-1.2	>6.0	---	---	None	Very long	Frequent
		December	0.0-1.2	>6.0	---	---	None	Very long	Frequent

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
101t:									
Lithnip	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Fishsnooze	B								
		Jan-Dec	---	---	---	---	None	---	None
102:									
Oxyaquic Xerofluvents	A								
		January	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		February	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		March	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		April	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		May	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		June	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		Jul-Oct	---	---	---	---	---	---	---
		November	3.0-5.0	>6.0	---	---	None	Brief	Frequent
		December	3.0-5.0	>6.0	---	---	None	Brief	Frequent
Riverwash	A								
		January	0.0	>6.0	---	---	None	Long	Frequent
		February	0.0	>6.0	---	---	None	Long	Frequent
		March	0.0	>6.0	---	---	None	Long	Frequent
		April	0.0	>6.0	---	---	None	Long	Frequent
		May	0.0	>6.0	---	---	None	Long	Frequent
		June	0.0	>6.0	---	---	None	Long	Frequent
		July	1.5-5.0	>6.0	---	---	None	---	---
		August	1.5-5.0	>6.0	---	---	None	---	---
		September	1.5-5.0	>6.0	---	---	None	---	---
		October	1.5-5.0	>6.0	---	---	None	---	---
		November	0.0	>6.0	---	---	None	Long	Frequent
		December	0.0	>6.0	---	---	None	Long	Frequent
102t:									
Lithnip	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Fishsnooze	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
104:									
Aquandic Humaquepts	C								
		January	0.5-3.0	>6.0	---	---	None	Brief	Frequent
		February	0.5-3.0	>6.0	---	---	None	Brief	Frequent
		March	0.5-3.0	>6.0	---	---	None	Brief	Frequent
		April	0.5-3.0	>6.0	---	---	None	Brief	Frequent
		May	0.5-3.0	>6.0	---	---	None	Brief	Frequent
		June	0.5-3.0	>6.0	---	---	None	Brief	Frequent
		July	0.5-3.0	>6.0	---	---	None	---	---
		August	0.5-3.0	>6.0	---	---	None	---	---
		September	0.5-3.0	>6.0	---	---	None	---	---
		October	0.5-3.0	>6.0	---	---	None	---	---
		November	0.5-3.0	>6.0	---	---	None	Brief	Frequent
		December	0.5-3.0	>6.0	---	---	None	Brief	Frequent
111t:									
Whittell	C								
		Jan-Dec	---	---	---	---	None	---	None
Jobsis	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
151:									
Elcapitan	B								
		January	3.0-5.0	>6.0	---	---	None	Long	Occasional
		February	3.0-5.0	>6.0	---	---	None	Long	Occasional
		March	3.0-5.0	>6.0	---	---	None	Long	Occasional
		April	3.0-5.0	>6.0	---	---	None	Long	Occasional
		May	3.0-5.0	>6.0	---	---	None	Long	Occasional
		June	3.0-5.0	>6.0	---	---	None	Long	Occasional
		Jul-Oct	---	---	---	---	---	---	---
		November	3.0-5.0	>6.0	---	---	None	Long	Occasional
		December	3.0-5.0	>6.0	---	---	None	Long	Occasional
152:									
Vitrandic Haploxerolls	A								
		January	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		February	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		March	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		April	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		May	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		June	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		Jul-Oct	---	---	---	---	---	---	---
		November	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		December	5.0-6.0	>6.0	---	---	None	Brief	Occasional

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
201:									
Leidig	B								
		January	3.3-5.0	>6.0	---	---	None	Brief	Occasional
		February	3.3-5.0	>6.0	---	---	None	Brief	Occasional
		March	3.3-5.0	>6.0	---	---	None	Brief	Occasional
		April	3.3-5.0	>6.0	---	---	None	Brief	Occasional
		May	3.3-5.0	>6.0	---	---	None	Brief	Occasional
		June	3.3-5.0	>6.0	---	---	None	Brief	Occasional
		Jul-Oct	---	---	---	---	---	---	---
		November	3.3-5.0	>6.0	---	---	None	---	---
		December	3.3-5.0	>6.0	---	---	None	Brief	Occasional
210:									
Rubble land.									
Typic Cryorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Xeric Dystrocryepts	B								
		Jan-Dec	---	---	---	---	None	---	None
211:									
Xeric Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Oxyaquic Dystrocryepts	B								
		January	1.6-3.3	>6.0	---	---	None	---	None
		February	1.6-3.3	>6.0	---	---	None	---	None
		March	1.6-3.3	>6.0	---	---	None	---	None
		April	1.6-3.3	>6.0	---	---	None	---	None
		May	1.6-3.3	>6.0	---	---	None	---	None
		June	1.6-3.3	>6.0	---	---	None	---	None
		July	1.6-3.3	>6.0	---	---	None	---	None
		August	3.3-5.0	>6.0	---	---	None	---	None
		September	3.3-5.0	>6.0	---	---	None	---	None
		October	3.3-5.0	>6.0	---	---	None	---	None
		November	1.6-3.3	>6.0	---	---	None	---	None
		December	1.6-3.3	>6.0	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
213:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Glacierpoint	A								
		Jan-Dec	---	---	---	---	None	---	None
Vitrandic Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
214:									
Marmotland	B								
		January	5.0-6.0	>6.0	---	---	None	---	---
		February	5.0-6.0	>6.0	---	---	None	---	---
		March	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		April	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		May	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		June	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		Jul-Oct	---	---	---	---	---	---	---
		November	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		December	5.0-6.0	>6.0	---	---	None	Brief	Occasional
Oxyaquic Dystrocryepts	C								
		January	1.6-3.3	>6.0	---	---	None	---	---
		February	1.6-3.3	>6.0	---	---	None	---	---
		March	1.6-3.3	>6.0	---	---	None	---	---
		April	1.6-3.3	>6.0	---	---	None	Long	Frequent
		May	1.6-3.3	>6.0	---	---	None	Long	Frequent
		June	1.6-3.3	>6.0	---	---	None	Long	Frequent
		July	1.6-3.3	>6.0	---	---	None	---	---
		August	3.3-5.0	>6.0	---	---	None	---	---
		September	3.3-5.0	>6.0	---	---	None	---	---
		October	3.3-5.0	>6.0	---	---	None	---	---
		November	1.6-3.3	>6.0	---	---	None	---	---
		December	1.6-3.3	>6.0	---	---	None	---	---
Xeric Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
215:									
Typic Cryorthents	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Rubble land.									

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
219:									
Rock outcrop.									
Rubble land.									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
221:									
Typic Cryorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
Xeric Dystrocryepts	B								
		Jan-Dec	---	---	---	---	None	---	None
Oxyaquic Dystroxerepts	B								
		January	1.6-3.3	>6.0	---	---	None	---	---
		February	1.6-3.3	>6.0	---	---	None	---	---
		March	1.6-3.3	>6.0	---	---	None	---	---
		April	1.6-3.3	>6.0	---	---	None	Long	Frequent
		May	1.6-3.3	>6.0	---	---	None	Long	Frequent
		June	1.6-3.3	>6.0	---	---	None	Long	Frequent
		July	1.6-3.3	>6.0	---	---	None	---	---
		August	3.3-5.0	>6.0	---	---	None	---	---
		September	3.3-5.0	>6.0	---	---	None	---	---
		October	3.3-5.0	>6.0	---	---	None	---	---
		November	1.6-3.3	>6.0	---	---	None	---	---
		December	1.6-3.3	>6.0	---	---	None	---	---
222:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Rubble land.									
Rock outcrop.									
Crazymule	A								
		Jan-Dec	---	---	---	---	None	---	None
223:									
Rock outcrop.									
Rubble land.									
Canisrocks	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
224:									
Rock outcrop.									
Crazymule	A								
		Jan-Dec	---	---	---	---	None	---	None
Vitrandic Cryorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
225:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Rubble land.									
Vitrandic Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
227:									
Canisrocks	B								
		Jan-Dec	---	---	---	---	None	---	None
Crazymule	A								
		Jan-Dec	---	---	---	---	None	---	None
228:									
Xeric Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Vitrandic Eutrocryepts	A								
		January	1.6-3.3	>6.0	---	---	None	---	---
		February	1.6-3.3	>6.0	---	---	None	---	---
		March	1.6-3.3	>6.0	---	---	None	---	---
		April	1.6-3.3	>6.0	---	---	None	Long	Occasional
		May	1.6-3.3	>6.0	---	---	None	Long	Occasional
		June	1.6-3.3	>6.0	---	---	None	Long	Occasional
		July	1.6-3.3	>6.0	---	---	None	---	---
		August	1.6-3.3	>6.0	---	---	None	---	---
		September	1.6-3.3	>6.0	---	---	None	---	---
		October	1.6-3.3	>6.0	---	---	None	---	---
		November	1.6-3.3	>6.0	---	---	None	---	---
		December	1.6-3.3	>6.0	---	---	None	---	---

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
229:									
Marmotland	B								
		January	5.0-6.0	>6.0	---	---	None	---	---
		February	5.0-6.0	>6.0	---	---	None	---	---
		March	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		April	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		May	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		June	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		Jul-Oct	---	---	---	---	---	---	---
		November	5.0-6.0	>6.0	---	---	None	Brief	Occasional
		December	5.0-6.0	>6.0	---	---	None	Brief	Occasional
Oxyaquic Dystrocryepts	B								
		Jan-Dec	1.6-3.3	>6.0	---	---	None	---	None
231:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Typic Cryaquents	A								
		January	0.0-1.2	>6.0	---	---	None	---	None
		February	0.0-1.2	>6.0	---	---	None	---	None
		March	0.0-1.2	>6.0	---	---	None	---	None
		April	0.0-1.2	>6.0	---	---	None	---	None
		May	0.0-1.2	>6.0	---	---	None	---	None
		June	0.0-1.2	>6.0	---	---	None	---	None
		July	0.0-1.7	>6.0	---	---	None	---	None
		August	0.0-1.7	>6.0	---	---	None	---	None
		September	0.0-1.7	>6.0	---	---	None	---	None
		October	0.0-1.7	>6.0	---	---	None	---	None
		November	0.0-1.2	>6.0	---	---	None	---	None
		December	0.0-1.2	>6.0	---	---	None	---	None
232:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Glacierpoint	A								
		Jan-Dec	---	---	---	---	None	---	None
234.									
Rock outcrop-Rubble land									

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
235:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Rubble land.									
237:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Glacierpoint	B								
		Jan-Dec	---	---	---	---	None	---	None
Vitrandic Cryorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
238:									
Oxyaquic Cryorthents	B								
		January	1.6-3.3	>6.0	---	---	None	---	---
		February	1.6-3.3	>6.0	---	---	None	---	---
		March	1.6-3.3	>6.0	---	---	None	---	---
		April	1.6-3.3	>6.0	---	---	None	Long	Frequent
		May	1.6-3.3	>6.0	---	---	None	Long	Frequent
		June	1.6-3.3	>6.0	---	---	None	Long	Frequent
		July	1.6-3.3	>6.0	---	---	None	---	---
		August	1.6-3.3	>6.0	---	---	None	---	---
		September	1.6-3.3	>6.0	---	---	None	---	---
		October	1.6-3.3	>6.0	---	---	None	---	---
		November	1.6-3.3	>6.0	---	---	None	---	---
		December	1.6-3.3	>6.0	---	---	None	---	---
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
239:									
Crazymule	A								
		Jan-Dec	---	---	---	---	None	---	None
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
241:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
242:									
Rock outcrop.									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Xeric Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
244:									
Typic Cryorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
Rubble land.									
Rock outcrop.									
245:									
Rock outcrop.									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Xeric Dystrocryepts	B								
		Jan-Dec	---	---	---	---	None	---	None
246.									
Rock outcrop, domes									
247:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Xeric Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
248:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Glacierpoint	A								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
249:									
Rock outcrop.									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
250:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Xeric Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
251:									
Glacierpoint	B								
		Jan-Dec	---	---	---	---	None	---	None
Typic Cryorthents									
		Jan-Dec	---	---	---	---	None	---	None
252:									
Rock outcrop.									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Xeric Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
253:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Glacierpoint	B								
		Jan-Dec	---	---	---	---	None	---	None
Humic Dystrocryepts	B								
		Jan-Dec	---	---	---	---	None	---	None
256:									
Craneflat	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Rubble land.									

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
256:									
Waterwheel	A								
		Jan-Dec	---	---	---	---	None	---	None
257:									
Badgerpass	A								
		Jan-Dec	---	---	---	---	None	---	None
Oxyaquic Dystroxerepts	A								
		January	1.6-3.3	>6.0	---	---	None	---	---
		February	1.6-3.3	>6.0	---	---	None	---	---
		March	1.6-3.3	>6.0	---	---	None	---	---
		April	1.6-3.3	>6.0	---	---	None	Long	Frequent
		May	1.6-3.3	>6.0	---	---	None	Long	Frequent
		June	1.6-3.3	>6.0	---	---	None	Long	Frequent
		July	1.6-3.3	>6.0	---	---	None	---	---
		August	3.3-5.0	>6.0	---	---	None	---	---
		September	3.3-5.0	>6.0	---	---	None	---	---
		October	3.3-5.0	>6.0	---	---	None	---	---
		November	1.6-3.3	>6.0	---	---	None	---	---
		December	1.6-3.3	>6.0	---	---	None	---	---
258:									
Typic Dystrocryepts	B								
		Jan-Dec	---	---	---	---	None	---	None
Badgerpass	B								
		Jan-Dec	---	---	---	---	None	---	None
Dystric Xerorthents	B								
		Jan-Mar	---	---	---	---	---	---	---
		April	---	---	---	---	None	Extremely brief	Occasional
		May	---	---	---	---	None	Extremely brief	Occasional
		June	---	---	---	---	None	Extremely brief	Occasional
		Jul-Dec	---	---	---	---	---	---	---
260:									
Rock outcrop.									
Craneflat	A								
		Jan-Dec	---	---	---	---	None	---	None
Dystric Xerorthents	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
261:									
Dystric Xeropsamments	A								
		Jan-Dec	---	---	---	---	None	---	None
Typic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Badgerpass	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
262:									
Humic Dystroxerepts	B								
		Jan-Dec	---	---	---	---	None	---	None
Dystric Xerorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
264:									
Crazymule	A								
		Jan-Dec	---	---	---	---	None	---	None
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
267:									
Rock outcrop.									
Typic Cryorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
Xeric Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
268:									
Rock outcrop.									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Glacierpoint	A								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
269:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Glacierpoint	B								
		Jan-Dec	---	---	---	---	None	---	None
270:									
Rock outcrop.									
Typic Cryorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
Vitrandic Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
271:									
Rock outcrop.									
Lithic Xerorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
Waterwheel	A								
		Jan-Dec	---	---	---	---	None	---	None
273:									
Nevadafalls	A								
		Jan-Dec	---	---	---	---	None	---	None
Waterwheel	B								
		Jan-Dec	---	---	---	---	None	---	None
274.									
Rock outcrop, domes									

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
275:									
Oxyaquic Dystroxerepts	B								
		January	1.6-3.3	>6.0	---	---	None	---	---
		February	1.6-3.3	>6.0	---	---	None	---	---
		March	1.6-3.3	>6.0	---	---	None	---	---
		April	1.6-3.3	>6.0	---	---	None	Brief	Occasional
		May	1.6-3.3	>6.0	---	---	None	Brief	Occasional
		June	1.6-3.3	>6.0	---	---	None	Brief	Occasional
		July	1.6-3.3	>6.0	---	---	None	---	---
		Aug-Oct	---	---	---	---	---	---	---
		November	1.6-3.3	>6.0	---	---	None	---	---
		December	1.6-3.3	>6.0	---	---	None	---	---
Dystric Xerorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
Vitrandic Xerorthents	A								
		Jan-Mar	---	---	---	---	---	---	---
		April	---	---	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		June	---	---	---	---	None	Brief	Occasional
		Jul-Dec	---	---	---	---	---	---	---
Rubble land.									
276:									
Happyisles	B								
		Jan-Dec	---	---	---	---	None	---	None
Typic Dystroxerepts	B								
		Jan-Dec	---	---	---	---	None	---	None
277:									
Tuolumne	A								
		Jan-Dec	---	---	---	---	None	---	None
Humic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
278:									
Rock outcrop.									
Tuolumne	A								
		Jan-Dec	---	---	---	---	None	---	None
Humic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Rubble land.									

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
279:									
Canisrocks	A								
		Jan-Dec	---	---	---	---	None	---	None
Xeric Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
280:									
Typic Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Humic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
282:									
Clarkslodge	B								
		Jan-Dec	---	---	---	---	None	---	None
Craneflat	A								
		Jan-Dec	---	---	---	---	None	---	None
Nevadafalls	A								
		Jan-Dec	---	---	---	---	None	---	None
283:									
Waterwheel	A								
		Jan-Dec	---	---	---	---	None	---	None
Nevadafalls	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
285:									
Waterwheel	A								
		Jan-Dec	---	---	---	---	None	---	None
Humic Dystroxerepts	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
286:									
Nevadafalls	B								
		Jan-Dec	---	---	---	---	None	---	None
Typic Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Ultic Palexeralfs	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
287:									
Badgerpass	A								
		Jan-Dec	---	---	---	---	None	---	None
Waterwheel	A								
		Jan-Dec	---	---	---	---	None	---	None
288:									
Rock outcrop.									
Craneflat	A								
		Jan-Dec	---	---	---	---	None	---	None
Waterwheel	A								
		Jan-Dec	---	---	---	---	None	---	None
289:									
Waterwheel	A								
		Jan-Dec	---	---	---	---	None	---	None
Craneflat	B								
		Jan-Dec	---	---	---	---	None	---	None
290:									
Humic Dystrocryepts	B								
		Jan-Dec	---	---	---	---	None	---	None
Tuolumne	A								
		Jan-Dec	---	---	---	---	None	---	None
Typic Xerorthents	B								
		Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
291:									
Ultic Haploxeralfs	B	Jan-Dec	---	---	---	---	None	---	None
Typic Dystrocryepts	B	Jan-Dec	---	---	---	---	None	---	None
292:									
Humic Dystroxerepts	A	Jan-Dec	---	---	---	---	None	---	None
Typic Haploxerults	B	Jan-Dec	---	---	---	---	None	---	None
293:									
Xeric Dystrocryepts	A	Jan-Dec	---	---	---	---	None	---	None
Vitrandic Dystrocryepts	B	Jan-Dec	---	---	---	---	None	---	None
294:									
Waterwheel	B	Jan-Dec	---	---	---	---	None	---	None
Typic Dystroxerepts	A	Jan-Dec	---	---	---	---	None	---	None
295:									
Craneflat	A	Jan-Dec	---	---	---	---	None	---	None
Typic Dystrocryepts	B	Jan-Dec	---	---	---	---	None	---	None
296:									
Ultic Palexeralfs	B	Jan-Dec	---	---	---	---	None	---	None
Humic Dystrocryepts	B	Jan-Dec	---	---	---	---	None	---	None
297:									
Typic Xerorthents	A	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
297:									
Typic Xeropsamments	A								
		Jan-Dec	---	---	---	---	None	---	None
298:									
Tuolumne	B								
		Jan-Dec	---	---	---	---	None	---	None
Typic Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
299:									
Humic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs	A								
		Jan-Dec	---	---	---	---	None	---	None
300:									
Typic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs	A								
		Jan-Dec	---	---	---	---	None	---	None
301:									
Vitrandic Haploxerolls	C								
		January	0.8-2.5	>6.0	---	---	None	---	Rare
		February	0.8-2.5	>6.0	---	---	None	---	Rare
		March	0.8-2.5	>6.0	---	---	None	---	Rare
		April	0.8-2.5	>6.0	---	---	None	---	Rare
		May	0.8-2.5	>6.0	---	---	None	---	Rare
		June	0.8-2.5	>6.0	---	---	None	---	Rare
		July	---	---	---	---	None	---	Rare
		August	---	---	---	---	None	---	Rare
		September	---	---	---	---	None	---	Rare
		October	---	---	---	---	None	---	Rare
		November	0.8-2.5	>6.0	---	---	None	---	Rare
		December	0.8-2.5	>6.0	---	---	None	---	Rare
302:									
Typic Haploxerults	B								
		Jan-Dec	---	---	---	---	None	---	None
Ultic Haploxeralfs	A								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
303:									
Rock outcrop.									
Dystric Xeropsamments	A								
		Jan-Dec	---	---	---	---	None	---	None
Humic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Tuolumne	A								
		Jan-Dec	---	---	---	---	None	---	None
304:									
Clarkslodge	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
305:									
Rock outcrop.									
Waterwheel	A								
		Jan-Dec	---	---	---	---	None	---	None
Dystric Xeropsamments	A								
		Jan-Dec	---	---	---	---	None	---	None
306:									
Typic Cryopsamments	A								
		Jan-Dec	---	---	---	---	None	---	None
Humic Dystrocryepts	A								
		Jan-Dec	---	---	---	---	None	---	None
307:									
Rock outcrop.									
Dystric Xeropsamments	A								
		Jan-Dec	---	---	---	---	None	---	None
Dystric Xerorthents	A								
		Jan-Mar	---	---	---	---	---	---	---
		April	---	---	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		June	---	---	---	---	None	Brief	Occasional
		Jul-Dec	---	---	---	---	---	---	---

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
309:									
Rock outcrop.									
Waterwheel	A								
		Jan-Dec	---	---	---	---	None	---	None
Typic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
310:									
Rock outcrop.									
Humic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Humic Lithic Haploxerepts	B								
		January	---	---	---	---	---	---	None
		February	---	---	---	---	---	---	None
		March	---	---	---	---	---	---	None
		April	0.0-1.6	0.8-1.6	0.1-0.3	Long	Occasional	---	None
		May	0.0-1.6	0.8-1.6	0.1-0.3	Long	Occasional	---	None
		June	0.0-1.6	0.8-1.6	0.1-0.3	Long	Occasional	---	None
		July	0.0-1.6	0.8-1.6	0.1-0.3	Long	Occasional	---	None
		August	0.0-1.6	0.8-1.6	---	---	---	---	None
		September	---	---	---	---	---	---	None
		October	---	---	---	---	---	---	None
		November	---	---	---	---	---	---	None
		December	---	---	---	---	---	---	None
311:									
Rock outcrop.									
Humic Dystroxerepts	B								
		Jan-Dec	---	---	---	---	None	---	None
Humic Lithic Haploxerepts	B								
		January	---	---	---	---	---	---	None
		February	---	---	---	---	---	---	None
		March	---	---	---	---	---	---	None
		April	0.0-1.6	0.8-1.6	0.1-0.3	Long	Occasional	---	None
		May	0.0-1.6	0.8-1.6	0.1-0.3	Long	Occasional	---	None
		June	0.0-1.6	0.8-1.6	0.1-0.3	Long	Occasional	---	None
		July	0.0-1.6	0.8-1.6	0.1-0.3	Long	Occasional	---	None
		August	0.0-1.6	0.8-1.6	---	---	---	---	None
		September	---	---	---	---	---	---	None
		October	---	---	---	---	---	---	None
		November	---	---	---	---	---	---	None
		December	---	---	---	---	---	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
313:									
Nevadafalls	A								
		Jan-Dec	---	---	---	---	None	---	None
Oxyaquic Dystrudepts	B								
		January	1.6-3.3	>6.0	---	---	None	---	---
		February	1.6-3.3	>6.0	---	---	None	---	---
		March	1.6-3.3	>6.0	---	---	None	---	---
		April	1.6-3.3	>6.0	---	---	None	Brief	Occasional
		May	1.6-3.3	>6.0	---	---	None	Brief	Occasional
		June	1.6-3.3	>6.0	---	---	None	Brief	Occasional
		July	1.6-3.3	>6.0	---	---	None	---	---
		Aug-Oct	---	---	---	---	---	---	---
		November	1.6-3.3	>6.0	---	---	None	---	---
		December	1.6-3.3	>6.0	---	---	None	---	---
314:									
Badgerpass	A								
		Jan-Dec	---	---	---	---	None	---	None
Dystric Xeropsamments	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
315:									
Nevadafalls	A								
		Jan-Dec	---	---	---	---	None	---	None
Dystric Xeropsamments	A								
		Jan-Dec	---	---	---	---	None	---	None
316:									
Dystric Xerorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Rubble land.									
318:									
Typic Dystroxerepts	B								
		Jan-Dec	---	---	---	---	None	---	None
Humic Dystroxerepts	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
319:									
Humic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Typic Haploxerults	B								
		Jan-Dec	---	---	---	---	None	---	None
Inceptic Haploxeralfs	B								
		Jan-Dec	---	---	---	---	None	---	None
320:									
Half Dome	A								
		Jan-Dec	---	---	---	---	None	---	None
Humic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
321:									
Dystric Xeropsamments	A								
		Jan-Dec	---	---	---	---	None	---	None
Dystric Xerorthents	A								
		Jan-Mar	---	---	---	---	---	---	---
		April	---	---	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		June	---	---	---	---	None	Brief	Occasional
		Jul-Dec	---	---	---	---	---	---	---
322:									
Typic Xerorthents	A								
		Jan-Dec	---	---	---	---	None	---	None
323:									
Ultic Haploxeralfs	B								
		Jan-Dec	---	---	---	---	None	---	None
Humic Dystroxerepts	A								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
324:									
Humic Haploxerepts	B								
		January	---	---	---	---	None	---	Very rare
		February	---	---	---	---	None	---	Very rare
		March	---	---	---	---	None	---	Very rare
		April	---	---	---	---	None	---	Very rare
		May	---	---	---	---	None	---	Very rare
		Jun-Oct	---	---	---	---	---	---	---
		November	---	---	---	---	None	---	Very rare
		December	---	---	---	---	None	---	Very rare
Rock outcrop.									
Ultic Haploxeralfs	B								
		Jan-Dec	---	---	---	---	None	---	None
325.									
Urban land									
328:									
Clarkslodge	B								
		Jan-Dec	---	---	---	---	None	---	None
Ultic Palexeralfs	B								
		Jan-Dec	---	---	---	---	None	---	None
401:									
Sentinel	B								
		Jan-Dec	---	---	---	---	None	---	None
412:									
Water.									
Riverwash	---								
		January	0.0	>6.0	---	---	None	Long	Frequent
		February	0.0	>6.0	---	---	None	Long	Frequent
		March	0.0	>6.0	---	---	None	Long	Frequent
		April	0.0	>6.0	---	---	None	Long	Frequent
		May	0.0	>6.0	---	---	None	Long	Frequent
		June	0.0	>6.0	---	---	None	Long	Frequent
		July	1.5-5.0	>6.0	---	---	None	---	---
		August	1.5-5.0	>6.0	---	---	None	---	---
		September	1.5-5.0	>6.0	---	---	None	---	---
		October	1.5-5.0	>6.0	---	---	None	---	---
		November	0.0	>6.0	---	---	None	Long	Frequent
		December	0.0	>6.0	---	---	None	Long	Frequent

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
501:									
Happyisles, sandy loam	B								
		January	---	---	---	---	None	---	Rare
		February	---	---	---	---	None	---	Rare
		March	---	---	---	---	None	---	Rare
		April	---	---	---	---	None	---	Rare
		May-Oct	---	---	---	---	---	---	---
		November	---	---	---	---	None	---	Rare
		December	---	---	---	---	None	---	Rare
Happyisles, loamy fine sand, overwash	B								
		January	---	---	---	---	None	Brief	Occasional
		February	---	---	---	---	None	Brief	Occasional
		March	---	---	---	---	None	Brief	Occasional
		April	---	---	---	---	None	Brief	Occasional
		May-Oct	---	---	---	---	---	---	---
		November	---	---	---	---	None	Brief	Occasional
		December	---	---	---	---	None	Brief	Occasional
502:									
Happyisles	B								
		January	3.3-5.0	>6.0	---	---	None	---	Rare
		February	3.3-5.0	>6.0	---	---	None	---	Rare
		March	3.3-5.0	>6.0	---	---	None	---	Rare
		April	3.3-5.0	>6.0	---	---	None	---	Rare
		May	3.3-5.0	>6.0	---	---	None	---	---
		June	3.3-5.0	>6.0	---	---	None	---	---
		Jul-Oct	---	---	---	---	---	---	---
		November	3.3-5.0	>6.0	---	---	None	---	Rare
		December	3.3-5.0	>6.0	---	---	None	---	Rare
504:									
Mollic Xerofluvents	A								
		January	---	---	---	---	None	Brief	Frequent
		February	---	---	---	---	None	Brief	Frequent
		March	---	---	---	---	None	Brief	Frequent
		April	---	---	---	---	None	Brief	Frequent
		May-Oct	---	---	---	---	---	---	---
		November	---	---	---	---	None	Brief	Frequent
		December	---	---	---	---	None	Brief	Frequent

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
510t:									
Rubble land.									
Lithnip	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
551:									
Happyisles	B								
		January	---	---	---	---	None	---	Rare
		February	---	---	---	---	None	---	Rare
		March	---	---	---	---	None	---	Rare
		April	---	---	---	---	None	---	Rare
		May-Oct	---	---	---	---	---	---	---
		November	---	---	---	---	None	---	Rare
		December	---	---	---	---	None	---	Rare
Half Dome	A								
		Jan-Dec	---	---	---	---	None	---	None
552:									
Mollic Xerofluvents	A								
		January	---	---	---	---	None	Brief	Frequent
		February	---	---	---	---	None	Brief	Frequent
		March	---	---	---	---	None	Brief	Frequent
		April	---	---	---	---	None	Brief	Frequent
		May-Oct	---	---	---	---	---	---	---
		November	---	---	---	---	None	Brief	Frequent
		December	---	---	---	---	None	Brief	Frequent
590:									
Terric Haplosaprists	D								
		January	1.0-5.0	>6.0	---	---	None	Long	Occasional
		February	1.0-5.0	>6.0	---	---	None	Long	Occasional
		March	1.0-5.0	>6.0	---	---	None	Long	Occasional
		April	1.0-5.0	>6.0	---	---	None	Long	Occasional
		May	1.0-5.0	>6.0	---	---	None	Long	Occasional
		Jun-Nov	---	---	---	---	---	---	---
		December	1.0-5.0	>6.0	---	---	None	Long	Occasional
601:									
Half Dome, very bouldery	A								
		Jan-Dec	---	---	---	---	None	---	None
Half Dome, cobbly	A								
		Jan-Dec	---	---	---	---	None	---	None

Table 15.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
602:									
Half Dome	A	Jan-Dec	---	---	---	---	None	---	None
610:									
Rubble land.									
Half Dome	A	Jan-Dec	---	---	---	---	None	---	None
620:									
Half Dome, extremely stony sandy loam, warm	A	Jan-Dec	---	---	---	---	None	---	None
Half Dome, very cobbly sandy loam, warm	A	Jan-Dec	---	---	---	---	None	---	None
630:									
Rubble land.									
Half Dome	A	Jan-Dec	---	---	---	---	None	---	None
701:									
Vitrandic Haploxerolls	B	Jan-Dec	---	---	---	---	None	---	None
702:									
Vitrandic Dystroxerepts	B	Jan-Dec	---	---	---	---	None	---	None
900.									
Rock outcrop									
DAM.									
Dam									
W.									
Water									

Table 16.—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			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
101:						
Oxyaquic Xerofluvents	---	---	---	Moderate	Moderate	Moderate
Riverwash	---	---	---	Low	Moderate	Low
Fluvaquents	---	---	---	Moderate	High	Moderate
101t:						
Lithnip	Bedrock (lithic)	4-10	Indurated	Moderate	Moderate	Low
Rock outcrop.						
Fishsnooze	Bedrock (lithic)	20-40	Indurated	Moderate	High	High
102:						
Oxyaquic Xerofluvents	---	---	---	Moderate	Moderate	Moderate
Riverwash	---	---	---	Low	Moderate	Low
102t:						
Lithnip	Bedrock (lithic)	4-10	Indurated	Moderate	Moderate	Low
Rock outcrop.						
Fishsnooze	Bedrock (lithic)	20-40	Indurated	Moderate	High	High
104:						
Aquandic Humaquepts	---	---	---	Moderate	High	Low
111t:						
Whittell	Bedrock (paralithic)	20-39	Moderately cemented	Low	Low	Moderate
Jobsis	Bedrock (paralithic)	10-20	Weakly cemented	Low	High	High
Rock outcrop.						
151:						
Elcapitan	---	---	---	Moderate	Moderate	Moderate
152:						
Vitrandic Haploxerolls	---	---	---	Low	Moderate	Moderate

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
201:						
Leidig	---	---	---	Moderate	Moderate	Moderate
210:						
Rubble land	---	---	---	---	---	---
Typic Cryorthents	---	---	---	Moderate	Moderate	High
Rock outcrop	---	---	---	---	---	---
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	Moderate
211:						
Xeric Dystrocryepts	Dense material	34	Moderately cemented	Moderate	Moderate	High
Canisrocks	---	---	---	Moderate	Moderate	High
Oxyaquic Dystrocryepts	---	---	---	Moderate	Moderate	High
213:						
Canisrocks	---	---	---	Moderate	Moderate	High
Glacierpoint	---	---	---	Moderate	Moderate	High
Vitrandic Dystrocryepts	---	---	---	Moderate	Moderate	Moderate
214:						
Marmotland	Dense material	33	Moderately cemented	Moderate	Moderate	High
Oxyaquic Dystrocryepts	---	---	---	Moderate	Moderate	High
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	High
215:						
Typic Cryorthents	---	---	---	Moderate	Moderate	High
Rock outcrop.						
Rubble land.						
219:						
Rock outcrop.						
Rubble land.						
Canisrocks	---	---	---	Moderate	Moderate	High

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
221:						
Typic Cryorthents	---	---	---	Moderate	Moderate	High
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	High
Oxyaquic Dystrocryepts	---	---	---	Moderate	Moderate	High
222:						
Canisrocks	---	---	---	Moderate	Moderate	High
Rubble land.						
Rock outcrop.						
Crazymule	---	---	---	Moderate	Moderate	High
223:						
Rock outcrop.						
Rubble land.						
Canisrocks	---	---	---	Moderate	Moderate	High
224:						
Rock outcrop.						
Crazymule	---	---	---	Moderate	Moderate	High
Vitrandic Cryorthents	Bedrock (lithic)	24-26	Very strongly cemented	Moderate	Moderate	High
225:						
Canisrocks	---	---	---	Moderate	Moderate	High
Rock outcrop.						
Rubble land.						
Vitrandic Dystrocryepts	---	---	---	Moderate	Moderate	High
227:						
Canisrocks	---	---	---	Moderate	Moderate	High
Crazymule	Dense material	34	Strongly cemented	Moderate	Moderate	High

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
228:						
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	High
Vitrandic Eutrocryepts	Dense material	37	Moderately cemented	Moderate	Moderate	High
229:						
Marmotland	---	---	---	Moderate	Moderate	High
Oxyaquic Dystrocryepts	---	---	---	Moderate	Moderate	High
231:						
Canisrocks	---	---	---	Moderate	Moderate	High
Typic Cryaquents	---	---	---	Moderate	Moderate	High
232:						
Canisrocks	---	---	---	Moderate	Moderate	High
Glacierpoint	---	---	---	Moderate	Moderate	High
234:						
Rock outcrop.						
Rubble land.						
235:						
Canisrocks	---	---	---	Moderate	Moderate	High
Rock outcrop.						
Rubble land.						
237:						
Canisrocks	Bedrock (densic)	29	Strongly cemented	Moderate	Moderate	High
Glacierpoint	---	---	---	Moderate	Moderate	High
Vitrandic Cryorthents	Bedrock (densic)	13	Strongly cemented	Moderate	Moderate	High
238:						
Oxyaquic Cryorthents	---	---	---	Moderate	Moderate	Moderate
Canisrocks	---	---	---	Moderate	Moderate	High
239:						
Crazymule	Bedrock (densic)	24	Strongly cemented	Moderate	Moderate	High
Canisrocks	---	---	---	Moderate	Moderate	High

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
241:						
Canisrocks	---	---	---	Moderate	Moderate	High
242:						
Rock outcrop.						
Canisrocks	---	---	---	Moderate	Moderate	High
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	Moderate
244:						
Typic Cryorthents	---	---	---	Moderate	Moderate	High
Rubble land.						
Rock outcrop.						
245:						
Rock outcrop.						
Canisrocks	---	---	---	Moderate	Moderate	High
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	High
246.						
Rock outcrop, domes						
247:						
Canisrocks	---	---	---	Moderate	Moderate	High
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	High
248:						
Canisrocks	---	---	---	Moderate	Moderate	High
Rock outcrop.						
Glacierpoint	---	---	---	Moderate	Moderate	High
249:						
Rock outcrop.						
Canisrocks	---	---	---	Moderate	Moderate	High
250:						
Canisrocks	---	---	---	Moderate	Moderate	High
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	High

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
251:						
Glacierpoint	---	---	---	Moderate	Moderate	High
Typic Cryorthents	---	---	---	Moderate	Moderate	High
252:						
Rock outcrop.						
Canisrocks	---	---	---	Moderate	Moderate	High
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	High
253:						
Canisrocks	---	---	---	Moderate	Moderate	High
Glacierpoint	---	---	---	Moderate	Moderate	High
Humic Dystrocryepts	---	---	---	Moderate	Moderate	High
256:						
Craneflat	---	---	---	Moderate	Moderate	High
Rock outcrop.						
Rubble land.						
Waterwheel	---	---	---	Moderate	Moderate	High
257:						
Badgerpass	---	---	---	Moderate	Moderate	High
Oxyaquic Dystroxerepts	---	---	---	Moderate	Moderate	High
258:						
Typic Dystroxerepts	---	---	---	Moderate	Moderate	High
Badgerpass	---	---	---	Moderate	Moderate	Moderate
Dystric Xerorthents	---	---	---	Moderate	Moderate	High
260:						
Rock outcrop.						
Craneflat	---	---	---	Moderate	Moderate	High
Dystric Xerorthents	---	---	---	Moderate	Moderate	High

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
261:						
Dystric Xeropsamments	---	---	---	Moderate	Moderate	High
Typic Dystroxerepts	---	---	---	Moderate	Moderate	High
Badgerpass	---	---	---	Moderate	Moderate	High
Rock outcrop.						
262:						
Humic Dystroxerepts	---	---	---	Moderate	Moderate	High
Dystric Xerorthents	---	---	---	Moderate	Moderate	High
Rock outcrop.						
264:						
Crazymule	---	---	---	Moderate	Moderate	High
Canisrocks	---	---	---	Moderate	Moderate	High
267:						
Rock outcrop.						
Typic Cryorthents	---	---	---	Moderate	Moderate	High
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	High
268:						
Rock outcrop.						
Canisrocks	---	---	---	Moderate	Moderate	High
Glacierpoint	---	---	---	Moderate	Moderate	High
269:						
Canisrocks	---	---	---	Moderate	Moderate	High
Rock outcrop.						
Glacierpoint	---	---	---	Moderate	Moderate	High
270:						
Rock outcrop.						
Typic Cryorthents	---	---	---	Moderate	Moderate	High
Vitrandic Dystrocryepts	---	---	---	Moderate	Moderate	High

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
271:						
Rock outcrop.						
Lithic Xerorthents	Bedrock (lithic)	7	Very strongly cemented	Moderate	Moderate	High
Waterwheel	---	---	---	Moderate	Moderate	High
273:						
Nevadafalls	---	---	---	Moderate	Moderate	High
Waterwheel	---	---	---	Moderate	Moderate	High
274.						
Rock outcrop, domes						
275:						
Oxyaquic Dystroxerepts	---	---	---	Moderate	Moderate	High
Dystric Xerorthents	---	---	---	Low	Moderate	Moderate
Vitrandic Xerorthents	---	---	---	Moderate	Moderate	High
Rubble land.						
276:						
Happyisles	---	---	---	Moderate	Moderate	Moderate
Typic Dystroxerepts	---	---	---	Moderate	Moderate	Moderate
277:						
Tuolumne	---	---	---	Low	Moderate	High
Humic Dystroxerepts	---	---	---	Low	Moderate	High
278:						
Rock outcrop.						
Tuolumne	---	---	---	Low	Moderate	High
Humic Dystroxerepts	---	---	---	Low	Moderate	High
Rubble land.						
279:						
Canisrocks	---	---	---	Moderate	Moderate	High
Xeric Dystrocryepts	Dense material	34	Moderately cemented	Moderate	Moderate	High

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
280:						
Typic Dystroxerepts	---	---	---	Moderate	Moderate	High
Humic Dystroxerepts	---	---	---	Moderate	Moderate	High
Rock outcrop.						
282:						
Clarkslodge	---	---	---	Moderate	Moderate	High
Craneflat	---	---	---	Moderate	Moderate	High
Nevadafalls	---	---	---	Moderate	Moderate	High
283:						
Waterwheel	---	---	---	Moderate	Moderate	High
Nevadafalls	---	---	---	Moderate	Moderate	High
Rock outcrop.						
285:						
Waterwheel	---	---	---	Moderate	Moderate	Moderate
Humic Dystroxerepts	---	---	---	Moderate	Moderate	High
286:						
Nevadafalls	---	---	---	Moderate	Moderate	High
Typic Dystroxerepts	---	---	---	Moderate	Moderate	High
Ultic Palexeralfs	---	---	---	Moderate	Moderate	High
Rock outcrop.						
287:						
Badgerpass	---	---	---	Moderate	Moderate	High
Waterwheel	---	---	---	Moderate	Moderate	Moderate
288:						
Rock outcrop.						
Craneflat	---	---	---	Moderate	Moderate	High
Waterwheel	---	---	---	Moderate	Moderate	Moderate

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
289:						
Waterwheel	---	---	---	Moderate	Moderate	High
Craneflat	---	---	---	Moderate	Moderate	High
290:						
Humic Dystroxerepts	---	---	---	Moderate	Moderate	High
Tuolumne	---	---	---	Low	Moderate	High
Typic Xerorthents	---	---	---	Moderate	Moderate	High
Ultic Haploxeralfs	---	---	---	Moderate	Moderate	Moderate
291:						
Ultic Haploxeralfs	---	---	---	Moderate	Moderate	High
Typic Dystroxerepts	---	---	---	Moderate	Moderate	High
292:						
Humic Dystroxerepts	---	---	---	Low	Moderate	High
Typic Haploxerults	---	---	---	Moderate	Moderate	High
293:						
Xeric Dystrocryepts	---	---	---	Moderate	Moderate	High
Vitrandic Dystrocryepts	---	---	---	Moderate	Moderate	Moderate
294:						
Waterwheel	---	---	---	Low	Moderate	High
Typic Dystroxerepts	---	---	---	Low	Moderate	High
295:						
Craneflat	---	---	---	Moderate	Moderate	High
Typic Dystroxerepts	---	---	---	Moderate	Moderate	High
296:						
Ultic Palexeralfs	---	---	---	Moderate	Moderate	High
Humic Dystroxerepts	---	---	---	Moderate	Moderate	High

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
297:						
Typic Xerorthents	---	---	---	Low	Moderate	High
Rock outcrop.						
Typic Xeropsamments	---	---	---	Low	Moderate	High
298:						
Tuolumne	---	---	---	Low	Moderate	High
Typic Dystroxerepts	---	---	---	Moderate	Moderate	High
299:						
Humic Dystroxerepts	---	---	---	Moderate	Moderate	High
Ultic Haploxeralfs	---	---	---	Moderate	Moderate	High
300:						
Typic Dystroxerepts	---	---	---	Moderate	Moderate	High
Ultic Haploxeralfs	---	---	---	Moderate	Moderate	High
301:						
Vitrandic Haploxerolls	---	---	---	Moderate	Moderate	Moderate
302:						
Typic Haploxerults	---	---	---	Moderate	Moderate	High
Ultic Haploxeralfs	---	---	---	Moderate	Moderate	High
303:						
Rock outcrop.						
Dystric Xeropsamments	---	---	---	Low	Moderate	High
Humic Dystroxerepts	---	---	---	Low	Moderate	High
Tuolumne	---	---	---	Low	Moderate	High
304:						
Clarkslodge	---	---	---	Moderate	Moderate	High
Rock outcrop.						

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
305:						
Rock outcrop.						
Waterwheel	---	---	---	Moderate	Moderate	High
Dystric Xeropsamments	---	---	---	Moderate	Moderate	High
306:						
Typic Cryopsamments	---	---	---	Moderate	Moderate	High
Humic Dystrocryepts	---	---	---	Moderate	Moderate	High
307:						
Rock outcrop.						
Dystric Xeropsamments	---	---	---	Low	Moderate	High
Dystric Xerorthents	---	---	---	Moderate	Moderate	High
309:						
Rock outcrop.						
Waterwheel	---	---	---	Moderate	Moderate	High
Typic Dystroxerepts	---	---	---	Moderate	Moderate	High
310:						
Rock outcrop.						
Humic Dystroxerepts	---	---	---	Low	Moderate	High
Humic Lithic Haploxerepts	Bedrock (lithic)	10-20	Indurated	Moderate	Moderate	High
311:						
Rock outcrop.						
Humic Dystroxerepts	---	---	---	Low	Moderate	High
Humic Lithic Haploxerepts	Bedrock (lithic)	10-20	Indurated	Moderate	Moderate	High
313:						
Nevadafalls	---	---	---	Moderate	Moderate	High
Oxyaquic Dystrudepts	---	---	---	Moderate	Moderate	High

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
314:						
Badgerpass	---	---	---	Moderate	Moderate	High
Dystric Xeropsamments	---	---	---	Moderate	Moderate	High
Rock outcrop.						
315:						
Nevadafalls	---	---	---	Moderate	Moderate	Moderate
Dystric Xeropsamments	---	---	---	Moderate	Moderate	High
316:						
Dystric Xerorthents	---	---	---	None	Moderate	High
Rock outcrop.						
Rubble land.						
318:						
Typic Dystroxerepts	---	---	---	Moderate	Moderate	High
Humic Dystroxerepts	---	---	---	Moderate	Moderate	High
319:						
Humic Dystroxerepts	---	---	---	Moderate	Moderate	High
Typic Haploxerults	---	---	---	Moderate	Moderate	High
Inceptic Haploxeralfs	---	---	---	Moderate	Moderate	High
320:						
Half Dome	---	---	---	Moderate	Moderate	Moderate
Humic Dystroxerepts	---	---	---	Low	Moderate	Moderate
Rock outcrop.						
321:						
Dystric Xeropsamments	---	---	---	None	Moderate	Moderate
Dystric Xerorthents	---	---	---	None	Moderate	High
322:						
Typic Xerorthents	---	---	---	None	High	Moderate

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
323:						
Ultic Haploxeralfs	---	---	---	None	Moderate	Moderate
Humic Dystroxerepts	---	---	---	None	Moderate	Moderate
324:						
Humic Haploxerepts	---	---	---	None	Moderate	Moderate
Rock outcrop.						
Ultic Haploxeralfs	---	---	---	None	Moderate	Moderate
325.						
Urban land.						
328:						
Clarkslodge	---	---	---	Moderate	Moderate	High
Ultic Palexeralfs	---	---	---	Moderate	Moderate	High
401:						
Sentinel	---	---	---	Moderate	Moderate	Moderate
412.						
Water-Riverwash						
501:						
Happyisles, sandy loam	---	---	---	Moderate	Moderate	Moderate
Happyisles, loamy fine sand, overwash	---	---	---	Moderate	Moderate	Moderate
502:						
Happyisles	---	---	---	Moderate	Moderate	Moderate
504:						
Mollic Xerofluvents	---	---	---	Moderate	Moderate	High
510t:						
Rubble land.						
Lithnip	Bedrock (lithic)	4-10	Indurated	Moderate	Moderate	Low
Rock outcrop.						
551:						
Happyisles	---	---	---	Moderate	Moderate	Moderate
Half Dome	---	---	---	Moderate	Moderate	Moderate

Table 16.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
552:						
Mollic Xerofluvents	---	---	---	Moderate	Moderate	High
590:						
Terric Haplosaprists	---	---	---	Moderate	High	High
601:						
Half Dome, very bouldery	---	---	---	Moderate	Moderate	Moderate
Half Dome, cobbly	---	---	---	Moderate	Moderate	Moderate
602:						
Half Dome	---	---	---	Moderate	Moderate	Moderate
610:						
Rubble land.						
Half Dome	---	---	---	Moderate	Moderate	Moderate
620:						
Half Dome, extremely stony sandy loam, warm	---	---	---	Moderate	Moderate	Moderate
Half Dome, very cobbly sandy loam, warm	---	---	---	Moderate	Moderate	Moderate
630:						
Rubble land.						
Half Dome	---	---	---	Moderate	Moderate	Moderate
701:						
Vitrandic Haploxerolls	---	---	---	Moderate	Moderate	Moderate
702:						
Vitrandic Dystroxerepts	---	---	---	Moderate	Moderate	Moderate
900.						
Rock outcrop						
DAM.						
Dam						
W.						
Water						

Table 17.—Taxonomic Classification of the Soils

Soil name	Family or higher taxonomic class
Aquandic Humaquepts	Coarse-silty over sandy or sandy-skeletal, isotic, nonacid, mesic, Aquandic Humaquepts
Badgerpass	Sandy, isotic, frigid Humic Dystroxerepts
Canisrocks	Sandy-skeletal, isotic Typic Cryorthents
Clarkslodge	Coarse-loamy, isotic, frigid Ultic Haploxeralfs
Craneflat	Sandy-skeletal, isotic, frigid Humic Dystroxerepts
Crazymule	Loamy-skeletal, isotic Xeric Dystrocryepts
Dystric Xeropsamments	Isotic, frigid Dystric Xeropsamments
	Isotic, mesic Dystric Xeropsamments
	Isotic, thermic Dystric Xeropsamments
Dystric Xerorthents	Coarse-loamy, isotic, nonacid, frigid Dystric Xerorthents
	Sandy, isotic, frigid Dystric Xerorthents
	Sandy-skeletal, isotic, frigid Dystric Xerorthents
	Sandy-skeletal, isotic, mesic Dystric Xerorthents
	Sandy-skeletal, isotic, thermic Dystric Xerorthents
Elcapitan	Coarse-loamy, isotic, mesic Vitrandic Dystroxerepts
Fishsnooze	Loamy-skeletal, isotic Xeric Dystrocryepts
Fluvaquents	Isotic, mesic Fluvaquents
Glacierpoint	Sandy-skeletal, isotic Xeric Dystrocryepts
Half Dome	Loamy-skeletal, isotic, mesic Typic Dystroxerepts
Happyisles	Coarse-loamy, isotic, mesic Humic Dystroxerepts
Humic Dystrocryepts	Loamy-skeletal, isotic Humic Dystrocryepts
	Sandy-skeletal, isotic Humic Dystrocryepts
Humic Dystroxerepts	Coarse-loamy, isotic, frigid Humic Dystroxerepts
	Coarse-loamy, isotic, mesic Humic Dystroxerepts
	Coarse-loamy, isotic, thermic Humic Dystroxerepts
	Loamy-skeletal, isotic, frigid Humic Dystroxerepts
	Sandy, isotic, frigid Humic Dystroxerepts
	Sandy-skeletal, isotic, frigid Humic Dystroxerepts
	Sandy-skeletal, isotic, mesic Humic Dystroxerepts
Humic Haploxerepts	Loamy-skeletal, isotic, thermic Humic Haploxerepts
Humic Lithic Haploxerepts	Loamy-skeletal, isotic, mesic Humic Lithic Haploxerepts
Inceptic Haploxeralfs	Loamy-skeletal, isotic, frigid Inceptic Haploxeralfs
Jobsis	Sandy-skeletal, mixed, shallow Typic Cryorthents
Leidig	Coarse-loamy, isotic, mesic Vitrandic Dystroxerepts
Lithic Xerorthents	Sandy-skeletal, isotic, frigid Lithic Xerorthents
Lithnip	Loamy-skeletal, isotic, nonacid Lithic Cryorthents
Marmotland	Coarse-loamy, isotic Vitrandic Dystrocryepts
Mollic Xerofluvents	Isotic, mesic Mollic Xerofluvents
Nevadafalls	Coarse-loamy, isotic, frigid Humic Dystroxerepts
Oxyaquic Cryorthents	Coarse-loamy, isotic, nonacid Oxyaquic Cryorthents
Oxyaquic Dystrocryepts	Coarse-loamy, isotic Oxyaquic Dystrocryepts
	Loamy-skeletal, isotic Oxyaquic Dystrocryepts
	Sandy, isotic Oxyaquic Dystrocryepts
Oxyaquic Dystroxerepts	Fine-loamy, isotic, frigid Oxyaquic Dystroxerepts
	Loamy-skeletal, isotic, mesic Oxyaquic Dystroxerepts
Oxyaquic Dystrudepts	Coarse-loamy, isotic, frigid Oxyaquic Dystrudepts
Oxyaquic Xerofluvents	Isotic, mesic Oxyaquic Xerofluvents
Sentinel	Coarse-loamy, isotic, mesic Vitrandic Dystroxerepts
Terric Haplosaprists	Isotic, euic, mesic Terric Haplosaprists
Tuolumne	Sandy-skeletal, isotic, mesic Dystric Xerorthents
Typic Cryaquents	Sandy-skeletal, isotic Typic Cryaquents
Typic Cryopsamments	Isotic Typic Cryopsamments
Typic Cryorthents	Loamy-skeletal, isotic, acid Typic Cryorthents
	Loamy-skeletal, isotic, nonacid Typic Cryorthents
	Sandy-skeletal, isotic Typic Cryorthents
Typic Dystroxerepts	Coarse-loamy, isotic, frigid Typic Dystroxerepts
	Coarse-loamy, isotic, mesic Typic Dystroxerepts
	Loamy-skeletal, isotic, frigid Typic Dystroxerepts
	Loamy-skeletal, isotic, mesic Typic Dystroxerepts
	Sandy, isotic, frigid Typic Dystroxerepts
	Sandy-skeletal, isotic, frigid Typic Dystroxerepts

Table 17.—Taxonomic Classification of the Soils—Continued

Soil name	Family or higher taxonomic class
Typic Haploxerults	Coarse-loamy, isotic, frigid Typic Haploxerults
	Fine-loamy, isotic, mesic Typic Haploxerults
Typic Xeropsamments	Isotic, mesic Typic Xeropsamments
Typic Xerorthents	Loamy-skeletal, isotic, nonacid, mesic Typic Xerorthents
	Sandy-skeletal, isotic, mesic Typic Xerorthents
	Sandy-skeletal, isotic, thermic Typic Xerorthents
Ultic Haploxeralfs	Coarse-loamy, isotic, frigid Ultic Haploxeralfs
	Coarse-loamy, isotic, mesic Ultic Haploxeralfs
	Coarse-loamy, isotic, thermic Ultic Haploxeralfs
	Fine-loamy, isotic, mesic Ultic Haploxeralfs
	Loamy-skeletal, isotic, thermic Ultic Haploxeralfs
Ultic Palexeralfs	Fine-loamy, isotic, frigid Ultic Palexeralfs
	Fine-loamy, isotic, mesic Ultic Palexeralfs
Vitrandic Cryorthents	Sandy, isotic Vitrandic Cryorthents
	Sandy-skeletal, isotic, shallow Vitrandic Cryorthents
Vitrandic Dystrocryepts	Coarse-loamy, isotic Vitrandic Dystrocryepts
	Loamy-skeletal, isotic Vitrandic Dystrocryepts
	Sandy, isotic Vitrandic Dystrocryepts
Vitrandic Dystroxerepts	Loamy-skeletal, isotic, mesic Vitrandic Dystroxerepts
Vitrandic Eutrocryepts	Coarse-loamy, isotic Vitrandic Eutrocryepts
Vitrandic Haploxerolls	Coarse-loamy, isotic, mesic Vitrandic Haploxerolls
	Sandy, isotic, mesic Vitrandic Haploxerolls
Vitrandic Xerorthents	Coarse-loamy, isotic, nonacid, mesic Vitrandic Xerorthents
Waterwheel	Sandy-skeletal, isotic, frigid Dystric Xerorthents
Whittell	Sandy-skeletal, mixed Typic Cryorthents
Xeric Dystrocryepts	Coarse-loamy, isotic Xeric Dystrocryepts
	Loamy-skeletal, isotic Xeric Dystrocryepts
	Sandy, isotic Xeric Dystrocryepts
	Sandy-skeletal, isotic Xeric Dystrocryepts

Appendix I

Accessory Notes for Components of Detailed Soil Map Units

Map Unit 101

Component name: Oxyaquic Xerofluvents
Taxonomic unit notes:
- Typic Xerofluvents in recently overwashed areas are a similar component.
- Lateral drainageways that carry valley side runoff cross some areas of this map unit.

Map Unit 104

Component name: Aquandic Humaquepts
Remarks:
- Soils that have a thin organic surface horizon and are in very poorly drained areas are a similar component in this map unit.
- Lateral drainageways that carry valley side runoff cross some areas of this map unit.

Map Unit 151

Component name: Elcapitan
Remarks:
- Similar components include poorly drained Vitrandic Dystroxerepts in some channel positions, Vitrandic Dystroxerepts that do not have distinct stratification, and Vitrandic Dystroxerepts that have loamy sand surface textures.
- Lateral drainageways that carry valley side runoff cross some areas of this map unit.

Map Unit 152

Component name: Vitrandic Haploxerolls
Remarks:
- Fluventic Haploxerolls in areas lacking the influences of volcanic ash are a similar component.

Map Unit 201

Component name: Leidig
Remarks:
- Similar components include moderately well drained Vitrandic Dystroxerepts in bare positions adjacent to low stream terraces, lake terraces, or alluvial fans and Vitrandic Dystroxerepts that have gravelly spots.
- Lateral drainageways that carry valley side runoff cross some areas of this map unit.

Map Unit 210

Component name: Typic Cryorthents
Taxonomic unit notes:
- The vegetation consists of alpine grasses, white bark pine, and lodgepole pine.
- The soils formed in colluvial mantles and drainageways and in small discontinuous deposits among rock rubble.
- Tephritic surfaces occur on about 15 percent of the slopes that are less than 20 percent.
- Sheet erosion is common on slopes that are more than about 35 percent.
- Soils on the mid and lower slopes commonly have a surface layer of slopewash that is 1 to 2 centimeters thick.
- Except for slopewash layers, which are nonrepellent, the soils commonly are moderately or strongly water repellent in the surface horizon and very slightly or

slightly water repellent in the second horizon. Repellency typically is negligible below a depth of 30 to 40 centimeters.

Map Unit 210

Component name: Xeric Dystrocryepts
Taxonomic unit notes:
- The soils formed in colluvial mantles on slopes that are about or less than 45 percent.
- Sheet erosion is common on slopes steeper than about 35 percent. The soils on the mid and lower slopes commonly have a surface layer of slopewash that is 1 to 2 centimeters thick.
- Except for slopewash layers, which are nonrepellent, the soils commonly are moderately or strongly water repellent in the surface horizon and very slightly or slightly water repellent in the second horizon. Repellency usually is negligible below a depth of 30 to 40 centimeters.
- Tephritic surfaces occur on about 15 percent of the slopes that are about or less than 20 percent in steepness.

Map Unit 211

Component name: Canisrocks
Taxonomic unit notes:
- The soil occurs on moraines, especially below rock outcrop.
- The soil occurs on the steeper slopes and is more bouldery than other Typic Cryorthents in the same map unit.

Map Unit 211

Component name: Xeric Dystrocryepts
Taxonomic unit notes:
- The soils typically occur on slopes that are about or less than 20 percent.
- The soils tend to be less bouldery than Typic Cryorthents in the same map unit.
- The soils may be glacially compacted at a depth of about or less than 0.5 meter.
- The soils may contain volcanic ash and grade into Vitrandic Dystrocryepts.

Map Unit 211

Component name: Oxyaquic Dystrocryepts
Taxonomic unit notes:
- The soils occur mostly on sites having convergent water drainage, in springs supporting hydric vegetation, and in avalanche tracks.

Map Unit 213

Component name: Canisrocks
Taxonomic unit notes:
- This map unit is characterized by a high content of boulders at the surface.

Map Unit 214

Component name: Oxyaquic Dystrocryepts
Taxonomic unit notes:
- Lodgepole pine has encroached on meadows in many areas.
- As revealed by field characteristics, these mineral soils commonly are organic-rich in their surface horizons.
- The soils grade to Humic Cryaquepts in zones with a frigid temperature regime along the low elevation margin of the map unit.

Map Unit 214

Component name: Marmotland
Taxonomic unit notes:
- The soil may exhibit redoximorphic features at a depth of less than 1 meter.

Map Unit 215

Component name: Typic Cryorthents
Taxonomic unit notes:
- The soils are susceptible to debris avalanche on the steepest slopes.

Map Unit 221

Component name: Xeric Dystrocryepts
Taxonomic unit notes:
- The vegetation consists of lodgepole pine forest and brush (huckleberry oak).
- Where there is adequate amounts of volcanic ash, these soils grade to Vitrandic Dystrocryepts.

Map Unit 221

Component name: Typic Cryorthents
Taxonomic unit notes:
- The soils are subject to minor solifluction at the high elevations (about or more than 10,000 feet/3,048 meters).

Map Unit 221

Component name: Oxyaquic Dystrocryepts
Taxonomic unit notes:
- The soils occur mostly on sites having convergent water drainage, in springs supporting hydric vegetation, and in avalanche tracks.

Map Unit 222

Component name: Canisrocks
Taxonomic unit notes:
- The soil formed in colluvial mantles and in small discontinued deposits among rock rubble.
- Downslope creep is common.
- The soil commonly is moderately or strongly water repellent in the surface horizon and very slightly or slightly water repellent in the second horizon. Repellency typically is negligible below a depth of about 30 centimeters.

Map Unit 222

Component name: Crazymule
Taxonomic unit notes:
- This map unit most commonly supports underbrush.
- The vegetation is brush and lodgepole pine (40 percent cover).

Map Unit 224

Component name: Crazymule
Taxonomic unit notes:
- The soil surface typically is nearly flush with the upper surface of adjacent bedrock.

Map Unit 224

Component name: Vitrandic Cryorthents
Taxonomic unit notes:
- The soil surface typically is nearly flush with the upper surface of adjacent bedrock.

Map Unit 227

Component name: Canisrocks
Taxonomic unit notes:
- Thin (1 cm thick), discontinuous layers of volcanic ash were found above an elevation of 8,000 feet (2,438 meters).
- The soil typically is slightly water repellent to a depth of 20 centimeters.

Map Unit 227

Component name: Crazymule
Taxonomic unit notes:
- The soil is typically very slightly or slightly water repellent in the surface mineral horizon.
- The soil occurs more commonly under red fir forest than under lodgepole pine forest.

Map Unit 228

Component name: Xeric Dystrocryepts
Taxonomic unit notes:
- Pedons 111 and 118 derived from mixed metamorphic and granitoid till with volcanic ash.
- Rodent activity is common in these soils.

Map Unit 228

Component name: Vitrandic Eutrocryepts
Taxonomic unit notes:
- The soils commonly have a water table within 1 meter of the surface.

Map Unit 229

Component name: Marmotland
Taxonomic unit notes:
- Soils in valley bottoms and on ground moraines typically have Oxyaquic conditions at a depth of less than 1 meter.

Map Unit 231

Component name: Canisrocks
Taxonomic unit notes:
- The soil commonly has a tephritic surface and grades to Vitrandic Cryorthents.

Map Unit 231

Component name: Typic Cryaquents
Taxonomic unit notes:
- The soils commonly have a tephritic surface and grade to Aquandic Cryaquents.

Map Unit 237

Component name: Canisrocks
Taxonomic unit notes:
- The soil may have thin, discontinuous deposits of volcanic ash on the surface (tephritic surface), and it is mixed in the upper horizon.

Map Unit 237

Component name: Glacierpoint
Taxonomic unit notes:
- This soil tends to support the densest forest cover in this map unit.

Map Unit 238

Component name: Canisrocks
Taxonomic unit notes:
- The soil occurs in well drained, elevated areas on moraines.

Map Unit 238

Component name: Oxyaquic Cryorthents
Taxonomic unit notes:
- The soils occur in depressional and fluvial areas on moraines.

Map Unit 242

Component name: Canisrocks
Taxonomic unit notes:
- Till may be compacted at a depth of about 75 centimeters.

Map Unit 247

Component name: Canisrocks
Taxonomic unit notes:
- The soil dominantly occurs on young till (of Tioga age).

Map Unit 247

Component name: Xeric Dystrocryepts
Taxonomic unit notes:
- The soils occur dominantly on old (Tahoe and pre-Tahoe age) till on slopes that are about or less than 20 percent.

Map Unit 248

Component name: Glacierpoint
Taxonomic unit notes:
- The soil grades to Humic Dystroxerepts at low elevations in the map unit.

Map Unit 251

Component name: Glacierpoint
Taxonomic unit notes:
- This soil is more common on slopes that are about or less than 45 percent than on the steeper slopes.

Map Unit 251

Component name: Typic Cryorthents
Taxonomic unit notes:
- These soils extend to the steepest slopes in the map unit.

Map Unit 252

Component name: Canisrocks
Taxonomic unit notes:
- This soil occurs on the steepest slopes and at the highest elevations in the map unit.

Map Unit 252

Component name: Xeric Dystrocryepts
Taxonomic unit notes:
- These soils formed most commonly on old till (Tahoe and pre-Tahoe age) and on mountain slopes that are about or less than 30 percent.

Map Unit 253

Component name: Canisrocks
Taxonomic unit notes:
- This soil occurs at the highest elevations and on the steepest slopes in the map unit.

Map Unit 253

Component name: Glacierpoint
Taxonomic unit notes:
- This soil is more common on older till (pre-Tahoe age and Tahoe age) than on younger till (Tioga age).

Map Unit 253

Component name: Humic Dystrocryepts
Taxonomic unit notes:
- These soils most commonly occur on slopes that are about or less than 35 percent.

Map Unit 256

Component name: Craneflat
Taxonomic unit notes:
- Significant amounts of volcanic ash are common in soils in the Grand Canyon of the Tuolumne River.

Map Unit 257

Component name: Oxyaquic Dystrocryepts
Taxonomic unit notes:
- These soils may grade to Fluvaquentic Humaquepts, Aquandic Dystrudepts, or Fluvaquentic Dystrudepts.

Map Unit 268

Component name: Canisrocks
Taxonomic unit notes:
- This soil is dominant on the narrow, steeply sloping joints and fractures.

Map Unit 268

Component name: Glacierpoint
Taxonomic unit notes:
- Xeric Dystrocryepts develop more strongly in joints and fractures that are wider and less steep than those in which Typic Cryorthents occur.

Map Unit 269

Component name: Glacierpoint
Taxonomic unit notes:
- This soil is more common on slopes that are about or less than 45 percent than on the steeper slopes.

Map Unit 270

Component name: Vitrandic Dystrocryepts
Taxonomic unit notes:
- Without volcanic ash, Vitrandic Dystrocryepts would be classified as Xeric Dystrocryepts, with which they are closely associated.
- The discontinuous ash mantle on these soils is susceptible to rill erosion, even on sites that have slopes as low as 10 percent.

Map Unit 270

Component name: Typic Cryorthents
Taxonomic unit notes:
- On slopes that are about or less than 20 percent, these soils have few or no hornfels in their parent material.

Map Unit 275

Component name: Vitrandic Xerorthents
Taxonomic unit notes:
- These soils grade to Vitrandic Udifluvents and Vitrandic Udorthents.

Map Unit 282

Component name: Clarkslodge
Taxonomic unit notes:
- This soil is dominant in the more gently sloping areas of the map unit.

Map Unit 282

Component name: Craneflat
Taxonomic unit notes:
- This soil is dominant in the more steeply sloping areas of the map unit.

Map Unit 282
Component name: Nevadafalls
Taxonomic unit notes:
- This soil is dominant in the more steeply sloping areas of the map unit.

Map Unit 286

Component name: Nevadafalls
Taxonomic unit notes:
- Soils grade to Alfisols (Inceptic Haploxeralfs) in this map unit.

Map Unit 292

Component name: Humic Dystrocryepts
Taxonomic unit notes:
- These soils are dominant on smooth slopes that have weakly weathered surface stones and boulders and in included areas that have slopes of more than 35 percent.

Map Unit 292

Component name: Typic Haploxerults
Taxonomic unit notes:
- These soils commonly occur in stable interfluve positions and on smooth slopes that are about or less than 20 percent.

Map Unit 301

Component name: Vitrandic Haploxerolls
Taxonomic unit notes:
- Soils that have surface layers of fine sandy loam, sandy loam, or mucky loam are a similar component.
- Some soils that occur in subtle depressional drainageways are occasionally flooded.

Map Unit 305

Component name: Dystric Xeropsamments

Taxonomic unit notes:
- This soil component was inferred by extrapolation from comparable components in another map unit.

Map Unit 305

Component name: Waterwheel
Taxonomic unit notes:
- This soil was inferred by extrapolation from comparable components in other map units, which might have a different soil temperature regime.

Map Unit 328

Component name: Clarkslodge
Taxonomic unit notes:
- Soils that have a coarse-loamy particle-size class occur more commonly on the mid to upper backslopes and shoulders; fine-loamy soils occur more commonly on the more gently sloping lower backslopes.

Map Unit 501

Component name: Happyisles
Remarks:
- Typic Dystroxerepts that randomly occur where there is a thinner dark surface layer are a similar component.

Map Unit 502

Component name: Happyisles
Remarks:
- Typic Dystroxerepts that are in a higher position on alluvial fans are a similar component.

Map Unit 504

Component name: Mollic Xerofluvents
Remarks:
- Typic Xerofluvents in recently overwashed areas are a similar component.

Map Unit 551

Component name: Half Dome
Remarks:
- Similar components include soils with surface textures ranging from extremely bouldery sandy loam to loamy coarse sand.

Map Unit 551

Component name: Happyisles
Remarks:
- Similar components include Happyisles loamy fine sand, overwash, and soils that have surface textures ranging from bouldery sandy loam to loamy coarse sand.

Map Unit 552

Component name: Mollic Xerofluvents
Remarks:
- Typic Xerofluvents in recently overwashed areas are a similar component.

Map Unit 601

Component name: Half Dome

Remarks:
- Similar components include soils that have surface textures ranging from extremely bouldery sandy loam to cobbly loamy coarse sand.

Map Unit 602

Component name: Half Dome
Remarks:
- Similar components include soils that have surface textures ranging from extremely bouldery sandy loam to cobbly loamy coarse sand.

Map Unit 610

Component name: Half Dome
Remarks:
- Similar components include soils that have surface textures ranging from extremely bouldery sandy loam to cobbly loamy coarse sand.

Map Unit 620

Component name: Half Dome
Remarks:
- Similar components include soils that have surface textures ranging from extremely bouldery sandy loam to cobbly loamy coarse sand.

Appendix II

Physical and Chemical Analyses of Selected Soils

(Data are also available at http://ssldata.nrcs.usda.gov/)

Lab sample pedon ID	Site/pedon ID	Map unit (MU) symbol	Series typical (OSD) or taxonomic example (TUD) pedon	Component name	Lab data pedon number
90CA 043-013	790514	mu104	TUD	Aquandic Humaquepts	91P0404
91CA 043-003	790517	mu151			91P1074
91CA 043-006	790520	mu151			91P1077
91CA 043-005	790519	mu151			91P1076
90CA 043-012	790513	mu201			91P0403
91CA 043-008	790522	mu201			91P1079
91CA 043-004	790518	mu201			91P1075
97CA-109-010	790070	mu211			98P0211
97CA-109-011	790112	mu211			98P0212
97CA-109-015	790089	mu213	TUD	Vitrandic Dystrocryepts	98P0216
00CA-109-012	790325	mu214	OSD	Marmotland	01N0148
97CA-109-013	790095	mu214		Marmotland	98P0214
96CA-109-003	790005	mu214			97P0119
00CA-043-001	790224	mu214			00P0787
01CA-043-003	790375	mu214			02N0614
97CA-109-012	790098	mu214			98P0213
97CA-109-014	790122	mu219			98P0215
97CA-043-007	790086	mu224			98P0189
00CA-109-003	790260	mu225			00P0782
00CA-109-002	790259	mu225			00P0781
97CA-109-005	790109	mu228		Vitrandic Eutrocryepts	98P0206
97CA-109-001	790107	mu229		Marmotland	98P0202
97CA-109-017	790103	mu229	TUD	Oxyaquic Dystrocryepts	98P0303
97CA-109-004	790099	mu232			98P0205
97CA-043-003	790113	mu232			98P0185
96CA-109-008	790014	mu232			97P0124
00CA-109-001	790233	mu237	TUD	Vitrandic Cryorthents	00P0780
99CA-109-005	790204	mu237			99P0318
01CA-039-001	790418	mu237			02N0611
97CA-109-016	790100	mu239			98P0217
00CA-043-004	790225	mu242			00P0790
00CA-043-005	790226	mu242			00P0791
96CA-109-005	790007	mu247		Canisrocks	97P0121
96CA-109-011	790028	mu247			97P0127
96CA-109-007	779001	mu247			97P0123
96CA-109-006	790384	mu247			97P0122
01CA-043-007	790433	mu247			02N0618
96CA-109-012	790033	mu251			97P0128
97CA-043-019	790156	mu251			98P0201
96CA-109-013	790035	mu252	OSD	Canisrocks	97P0129
96CA-109-001	790002	mu252			97P0117
97CA-109-008	790081	mu252			98P0209
96CA-109-002	790003	mu252			97P0118
97CA-043-012	790163	mu252			98P0194
99CA-109-001	790214	mu253			99P0313
01CA-043-002	790368	mu253			02N0613
00CA-109-015	790341	mu256		Craneflat	01N0152
00CA-109-013	790338	mu256	OSD	Waterwheel	01N0149
00CA-109-014	790340	mu256			01N0151
01CA-043-001	790365	mu257		Badgerpass	02N0612
96CA-043-002	790048	mu258	OSD	Badgerpass	97P0131
99CA-109-008	790199	mu258			99P0320
00CA-109-009	790320	mu258			01N0144
00CA-109-010	790322	mu258			01N0145
96CA-109-010	790026	mu267	TUD	Xeric Dystrocryepts	97P0126
96CA-109-004	790006	mu269		Glacierpoint	97P0120
01CA-043-011	790432	mu269			02N0623
96CA-109-009	790024	mu269			97P0125

Physical and Chemical Analyses of Selected Soils—Continued

Lab sample pedon ID	Site/pedon ID	Map unit (MU) symbol	Series typical (OSD) or taxonomic example (TUD) pedon	Component name	Lab data pedon number
00CA-109-008	790319	mu273	OSD	Nevadafalls	01N0143
00CA-109-006	790280	mu275		Vitrandic Xerorthents	00P0785
00CA-109-005	790278	mu275			00P0784
97CA-109-009	790138	mu276			98P0210
00CA-043-003	790276	mu277		Tuolumne	00P0789
00CA-109-007	790281	mu277		Tuolumne	00P0786
01CA-043-004	790382	mu277		Tuolumne	02N0615
99CA-109-006	790193	mu278	OSD	Tuolumne	99P0314
01CA-043-008	790450	mu278			02N0619
00CA-109-004	790277	mu278			00P0783
97CA-043-008	790129	mu282	OSD	Craneflat	98P0190
00CA-043-002	790272	mu285		Waterwheel	00P0788
99CA-109-004	790182	mu285			99P0317
97CA-109-007	790094	mu285			98P0208
00CA-043-008	790329	mu285			01N0147
99CA-043-002	790180	mu290		Typic Xerorthents	99P0321
97CA-043-011	790151	mu291		Ultic Haploxeralfs	98P0193
99CA-109-002	790185	mu291		Ultic Haploxeralfs	99P0316
97CA-043-016	790128	mu292			98P0198
00CA-043-006	790227	mu293			00P0792
01CA-109-001	790429	mu293			02N0622
97CA-043-004	790073	mu294			98P0186
00CA-043-009	790337	mu295			01N0150
00CA-043-007	790229	mu295			00P0793
01CA-043-005	790388	mu296			02N0616
97CA-043-001	790124	mu296			98P0183
97CA-043-018	790154	mu296			98P0200
97CA-043-014	790069	mu297		Typic Xerorthents	98P0196
97CA-109-002	790132	mu298			98P0203
01CA-043-006	790426	mu300			02N0617
90CA 043-011	790512	mu301			91P0402
91CA 043-002	790516	mu301			91P1073
97CA-043-002	790142	mu304	OSD	Clarkslodge	98P0184
97CA-043-010	790134	mu304		Clarkslodge	98P0192
97CA-043-009	790135	mu304			98P0191
96CA-043-001	790042	mu306	TUD	Typic Cryopsamments	97P0130
97CA-043-015	790114	mu306			98P0197
99CA-109-007	790194	mu310	TUD	Humic Lithic Haploxerepts	99P0319
00CA-109-011	790324	mu313			01N0146
99CA-109-003	790184	mu318			99P0322
96CA-109-014	790056	mu318			97P0132
97CA-043-017	790075	mu319	TUD	Humic Dystroxerepts	98P0199
96CA-109-015	790057	mu319			97P0133
99CA-043-001	790173	mu322	TUD	Typic Xerorthents	99P0315
01CA-043-010	790452	mu324	TUD	Humic Haploxerepts	02N0621
01CA-043-009	790451	mu324			02N0620
97CA-109-003	790092	mu328	TUD	Ultic Palexeralfs	98P0204
97CA-043-005	790083	mu328			98P0187
97CA-109-006	790101	mu328			98P0207
97CA-043-013	790085	mu328			98P0195
97CA-043-006	790084	mu328			98P0188
90CA 043-010	790511	mu401			91P0401
91CA 043-009	790523	mu501			91P1080
91CA 043-001	790515	mu501			91P1072
91CA 043-007	790521	mu501			91P1078
90CA 043-005	790510	mu701			91P0400

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