APPENDIX A

SOIL UNIT DESCRIPTIONS
Custom Soil Resource Report for Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
Preface

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

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

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

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

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

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

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How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.
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Soil Map
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The soil surveys that comprise your AOI were mapped at 1:24,000. Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
Survey Area Data: Version 7, Oct 5, 2009

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 27, 2010—Sep 7, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
### Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
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<tr>
<td>1</td>
<td>Abracon loam, 1 to 3 percent slopes</td>
<td>75.7</td>
<td>1.3%</td>
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<tr>
<td>2</td>
<td>Abracon loam, 3 to 8 percent slopes</td>
<td>6.5</td>
<td>0.1%</td>
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<td>6</td>
<td>Ashley loam, 0 to 2 percent slopes</td>
<td>200.2</td>
<td>3.5%</td>
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<tr>
<td>9</td>
<td>Badland-Montwel complex, 50 to 90 percent slopes</td>
<td>75.3</td>
<td>1.3%</td>
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<tr>
<td>23</td>
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<td>74.5</td>
<td>1.3%</td>
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<tr>
<td>24</td>
<td>Blackston loam, 2 to 4 percent slopes</td>
<td>35.4</td>
<td>0.6%</td>
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<td>25</td>
<td>Blackston loam, 4 to 8 percent slopes</td>
<td>33.7</td>
<td>0.6%</td>
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<tr>
<td>61</td>
<td>Crib loam, 1 to 3 percent slopes</td>
<td>18.4</td>
<td>0.3%</td>
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<tr>
<td>63</td>
<td>Dams</td>
<td>12.0</td>
<td>0.2%</td>
</tr>
<tr>
<td>71</td>
<td>Firstgap loam, 2 to 20 percent slopes</td>
<td>76.7</td>
<td>1.3%</td>
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<td>77</td>
<td>Gerst-Rock outcrop complex, 4 to 40 percent slopes</td>
<td>199.7</td>
<td>3.5%</td>
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<td>89</td>
<td>Green River loam, 0 to 2 percent slopes, rarely flooded</td>
<td>194.7</td>
<td>3.4%</td>
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<td>91</td>
<td>Greybull clay loam, 4 to 20 percent slopes</td>
<td>134.6</td>
<td>2.3%</td>
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<td>Greybull loam, 4 to 8 percent slopes</td>
<td>193.7</td>
<td>3.4%</td>
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<td>95</td>
<td>Hanksville silty clay loam, 2 to 25 percent slopes</td>
<td>7.8</td>
<td>0.1%</td>
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<td>108</td>
<td>Honlu very cobbly sandy loam, 8 to 15 percent slopes</td>
<td>0.0</td>
<td>0.0%</td>
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<td>131</td>
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<td>0.9%</td>
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<td>0.0%</td>
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<td>153</td>
<td>Motto-Muff-Rock outcrop complex, 2 to 25 percent slopes</td>
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<td>0.0%</td>
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<td>160</td>
<td>Nakoy loamy fine sand, 1 to 5 percent slopes</td>
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<td>0.2%</td>
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<td>162</td>
<td>Nolava-Nolava, wet complex, 0 to 2 percent slopes</td>
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<td>163</td>
<td>Nolava-Nolava, wet complex, 2 to 4 percent slopes</td>
<td>764.7</td>
<td>13.3%</td>
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</table>
Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a soil series. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

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

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

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

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

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.
Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties

1—Abracon loam, 1 to 3 percent slopes

Map Unit Setting
- **Elevation**: 5,300 to 5,500 feet
- **Mean annual precipitation**: 8 to 12 inches
- **Mean annual air temperature**: 45 to 49 degrees F
- **Frost-free period**: 110 to 140 days

Map Unit Composition
- **Abracon and similar soils**: 85 percent
- **Minor components**: 15 percent

Description of Abracon

Setting
- **Landform**: Fan remnants
- **Down-slope shape**: Concave
- **Across-slope shape**: Convex
- **Parent material**: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
- **Slope**: 1 to 3 percent
- **Depth to restrictive feature**: More than 80 inches
- **Drainage class**: Well drained
- **Capacity of the most limiting layer to transmit water (Ksat)**: Moderately high to high (0.60 to 2.00 in/hr)
- **Depth to water table**: More than 80 inches
- **Frequency of flooding**: None
- **Frequency of ponding**: None
- **Calcium carbonate, maximum content**: 40 percent
- **Maximum salinity**: Nonsaline (0.0 to 2.0 mhos/cm)
- **Sodium adsorption ratio, maximum**: 10.0
- **Available water capacity**: High (about 9.6 inches)

Interpretive groups
- **Farmland classification**: Prime farmland if irrigated
- **Land capability classification (irrigated)**: 2e
- **Land capability (nonirrigated)**: 7e
- **Hydrologic Soil Group**: B
- **Ecological site**: Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)

Typical profile
- 0 to 8 inches: Loam
- 8 to 12 inches: Loam
- 12 to 52 inches: Loam
- 52 to 60 inches: Loam

Minor Components

**Cobbra**
- **Percent of map unit**: 5 percent
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Solirec  
Percent of map unit: 5 percent

Clapper  
Percent of map unit: 5 percent

2—Abracon loam, 3 to 8 percent slopes

Map Unit Setting  
Elevation: 5,500 to 6,000 feet  
Mean annual precipitation: 8 to 12 inches  
Mean annual air temperature: 45 to 49 degrees F  
Frost-free period: 110 to 140 days

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

Description of Abracon

Setting  
Landform: Fan remnants  
Landform position (two-dimensional): Toeslope  
Landform position (three-dimensional): Tread  
Down-slope shape: Concave  
Across-slope shape: Linear  
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities  
Slope: 3 to 8 percent  
Depth to restrictive feature: More than 80 inches  
Drainage class: Well drained  
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)  
Depth to water table: More than 80 inches  
Frequency of flooding: None  
Frequency of ponding: None  
Calcium carbonate, maximum content: 40 percent  
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)  
Sodium adsorption ratio, maximum: 10.0  
Available water capacity: High (about 9.6 inches)

Interpretive groups  
Farmland classification: Not prime farmland  
Land capability classification (irrigated): 3e  
Land capability (nonirrigated): 7e  
Hydrologic Soil Group: B  
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)
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Typical profile
0 to 4 inches: Loam
4 to 10 inches: Loam
10 to 51 inches: Loam
51 to 60 inches: Loam

Minor Components
Clapper, very cobbly loam
Percent of map unit: 8 percent
Ecological site: Semidesert Stony Loam (Utah Juniper-Pinyon) (R034XY247UT)
Other vegetative classification: Semidesert Stony Loam (Utah Juniper-Pinyon) (034XY247UT_2)

Hanksville
Percent of map unit: 7 percent
Ecological site: Desert Clay (Shadscale) (R034XY104UT)
Other vegetative classification: Desert Clay (Shadscale) (034XY104UT_2)

6—Ashley loam, 0 to 2 percent slopes

Map Unit Setting
Elevation: 5,000 to 5,700 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Ashley
Setting
Landform: Flood plains
Landform position (three-dimensional): Dip, talf
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Coarse-loamy alluvium over fragmental alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Moderate (about 6.2 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 3w
Land capability (nonirrigated): 6w
Hydrologic Soil Group: C
Ecological site: Semiwet Streambank (Narrowleaf cottonwood) (R034XY019UT)

Typical profile
0 to 7 inches: Loam
7 to 16 inches: Loam
16 to 30 inches: Very fine sandy loam
30 to 36 inches: Sandy loam
36 to 60 inches: Cobbles, error

Minor Components
Turzo, clay loam
Percent of map unit: 8 percent
Landform: Terraces
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Nolava
Percent of map unit: 7 percent
Landform: Fan remnants
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

9—Badland-Montwel complex, 50 to 90 percent slopes

Map Unit Setting
Elevation: 5,200 to 5,800 feet
Mean annual precipitation: 5 to 10 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days

Map Unit Composition
Badland: 55 percent
Montwel and similar soils: 30 percent
Minor components: 15 percent

Description of Badland
Setting
Landform: Ridges, erosion remnants, hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Properties and qualities
- **Slope:** 50 to 90 percent
- **Depth to restrictive feature:** 0 to 2 inches to paralithic bedrock
- **Depth to bedrock:** More than 80 inches
- **Drainage class:** Somewhat excessively drained
- **Capacity of the most limiting layer to transmit water (Ksat):** Very low to moderately high (0.00 to 0.20 in/hr)
- **Calcium carbonate, maximum content:** 15 percent
- **Gypsum, maximum content:** 10 percent
- **Maximum salinity:** Very slightly saline to strongly saline (4.0 to 20.0 mmhos/cm)
- **Sodium adsorption ratio, maximum:** 30.0
- **Available water capacity:** Very low (about 0.1 inches)

Interpretive groups
- **Farmland classification:** Not prime farmland
- **Land capability (nonirrigated):** 8e
- **Hydrologic Soil Group:** D

Typical profile
- **0 to 2 inches:** Clay
- **2 to 12 inches:** Weathered bedrock

Description of Montwel

Setting
- **Landform:** Hills
- **Landform position (two-dimensional):** Backslope
- **Landform position (three-dimensional):** Side slope
- **Down-slope shape:** Convex
- **Across-slope shape:** Convex
- **Parent material:** Colluvium over residuum derived from shale, siltstone, and sandstone

Properties and qualities
- **Slope:** 50 to 90 percent
- **Depth to restrictive feature:** 20 to 40 inches to paralithic bedrock
- **Drainage class:** Well drained
- **Capacity of the most limiting layer to transmit water (Ksat):** Moderately low to moderately high (0.06 to 0.20 in/hr)
- **Depth to water table:** More than 80 inches
- **Frequency of flooding:** None
- **Frequency of ponding:** None
- **Calcium carbonate, maximum content:** 15 percent
- **Gypsum, maximum content:** 10 percent
- **Maximum salinity:** Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
- **Sodium adsorption ratio, maximum:** 10.0
- **Available water capacity:** Moderate (about 6.4 inches)

Interpretive groups
- **Farmland classification:** Not prime farmland
- **Land capability (nonirrigated):** 8e
- **Hydrologic Soil Group:** C
- **Ecological site:** Desert Very Steep Shallow Loam (Shadscale) (R034XY133UT)

Typical profile
- **0 to 2 inches:** Clay loam
- **2 to 12 inches:** Clay loam
- **24 to 36 inches:** Silty clay loam
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36 to 40 inches: Weathered bedrock

Minor Components

Denco
Percent of map unit: 5 percent
Ecological site: Desert Clay (Shadscale) (R034XY104UT)
Other vegetative classification: Desert Clay (Shadscale) (034XY104UT_2)

Mikim, loam
Percent of map unit: 5 percent
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)

Rock outcrop
Percent of map unit: 5 percent

23—Blackston loam, 0 to 2 percent slopes

Map Unit Setting
Elevation: 4,900 to 5,700 feet
Mean annual precipitation: 5 to 10 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Blackston

Setting
Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium and slope alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.0 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Low (about 5.2 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2s
Land capability (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
0 to 8 inches: Loam
8 to 19 inches: Loam
19 to 28 inches: Gravelly loam
28 to 36 inches: Extremely cobbly loam
36 to 44 inches: Extremely cobbly sandy loam
44 to 60 inches: Extremely cobbly loamy sand

Minor Components
Nolava
Percent of map unit: 8 percent
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Turzo, clay loam
Percent of map unit: 7 percent
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

24—Blackston loam, 2 to 4 percent slopes

Map Unit Setting
Elevation: 4,900 to 5,700 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Blackston
Setting
Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium and slope alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Low (about 5.2 inches)

Interpretive groups
   Farmland classification: Prime farmland if irrigated
   Land capability classification (irrigated): 2e
   Land capability (nonirrigated): 7e
   Hydrologic Soil Group: B
   Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
   0 to 8 inches: Loam
   8 to 19 inches: Loam
   19 to 28 inches: Gravelly loam
   28 to 36 inches: Extremely cobbly loam
   36 to 44 inches: Extremely cobbly sandy loam
   44 to 60 inches: Extremely cobbly loamy sand

Minor Components
   Nolava
       Percent of map unit: 8 percent
       Ecological site: Desert Loam (Shadscale) (R034XY106UT)
   Turzo, clay loam
       Percent of map unit: 7 percent
       Ecological site: Desert Loam (Shadscale) (R034XY106UT)

25—Blackston loam, 4 to 8 percent slopes

Map Unit Setting
   Elevation: 4,900 to 5,700 feet
   Mean annual precipitation: 5 to 8 inches
   Mean annual air temperature: 45 to 47 degrees F
   Frost-free period: 110 to 125 days

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

Setting
Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium and slope alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Low (about 5.2 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 3e
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
0 to 8 inches: Loam
8 to 19 inches: Loam
19 to 26 inches: Gravelly loam
28 to 36 inches: Extremely cobbly loam
36 to 44 inches: Extremely cobbly sandy loam
44 to 60 inches: Extremely cobbly loamy sand

Minor Components
Nolava
Percent of map unit: 8 percent

Hiko springs
Percent of map unit: 7 percent

61—Crib loam, 1 to 3 percent slopes

Map Unit Setting
Elevation: 4,900 to 6,300 feet
Mean annual precipitation: 5 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days

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

Description of Crib

Setting
Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium over glaciofluvial deposits derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 55 percent
Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Moderate (about 7.8 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 4w
Land capability (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)

Typical profile
0 to 11 inches: Loam
11 to 42 inches: Clay loam
42 to 60 inches: Extremely cobbly sandy clay loam

Minor Components

Lambsen
Percent of map unit: 8 percent

Crib, strongly saline
Percent of map unit: 7 percent
Landform: Strath terraces
63—Dams

Map Unit Composition

Dams: 100 percent

71—Firstgap loam, 2 to 20 percent slopes

Map Unit Setting

Elevation: 5,000 to 5,300 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

Map Unit Composition

Firstgap and similar soils: 85 percent
Minor components: 15 percent

Description of Firstgap

Setting

Landform: Structural benches, hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium over residuum derived shale and siltstone

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Gypsum, maximum content: 60 percent
Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water capacity: Moderate (about 7.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R03XY106UT)
Typical profile
0 to 5 inches: Loam
5 to 14 inches: Gypsiferous loam
14 to 25 inches: Gypsiferous clay loam
25 to 32 inches: Channery clay loam
32 to 48 inches: Clay loam
48 to 52 inches: Weathered bedrock

Minor Components

Uffens, loam
Percent of map unit: 5 percent
Ecological site: Desert Alkali Bench (Castlevally saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevally Saltbush) (034XY101UT_2)

Riemod
Percent of map unit: 5 percent

Greybull
Percent of map unit: 5 percent

77—Gerst-Rock outcrop complex, 4 to 40 percent slopes

Map Unit Setting
Elevation: 5,400 to 6,000 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days

Map Unit Composition
Gerst and similar soils: 50 percent
Rock outcrop: 35 percent
Minor components: 15 percent

Description of Gerst
Setting
Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum derived from shale and sandstone

Properties and qualities
Slope: 4 to 40 percent
Depth to restrictive feature: 6 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
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Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Very low (about 1.8 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability (nonirrigated): Te
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034XY233UT)
Other vegetative classification: Semidesert Shallow Loam (Utah Juniper-Pinyon)
(034XY233UT_2)

Typical profile
0 to 2 inches: Loam
2 to 12 inches: Parachannery loam
12 to 22 inches: Weathered bedrock

Description of Rock Outcrop

Setting
Landform: Ledges, cliffs, erosion remnants, escarpments
Down-slope shape: Convex
Across-slope shape: Convex

Properties and qualities
Slope: 4 to 40 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Available water capacity: Very low (about 0.0 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability (nonirrigated): 8s
Hydrologic Soil Group: D

Typical profile
0 to 60 inches: Bedrock

Minor Components

Mespun
Percent of map unit: 9 percent

Denco, silty clay loam
Percent of map unit: 6 percent
Ecological site: Desert Clay (Shadscale) (R034XY104UT)
Other vegetative classification: Desert Clay (Shadscale) (034XY104UT_2)
89—Green River loam, 0 to 2 percent slopes, rarely flooded

Map Unit Setting
- **Elevation:** 4,600 to 5,000 feet
- **Mean annual precipitation:** 5 to 8 inches
- **Mean annual air temperature:** 45 to 47 degrees F
- **Frost-free period:** 110 to 125 days

Map Unit Composition
- **Green river and similar soils:** 85 percent
- **Minor components:** 15 percent

Description of Green River

Setting
- **Landform:** Flood plains
- **Landform position (three-dimensional):** Talf, dip
- **Down-slope shape:** Linear
- **Across-slope shape:** Concave
- **Parent material:** Alluvium derived from sandstone and shale

Properties and qualities
- **Slope:** 0 to 2 percent
- **Depth to restrictive feature:** More than 80 inches
- **Drainage class:** Moderately well drained
- **Capacity of the most limiting layer to transmit water (Ksat):** Moderately high to high (0.60 to 2.00 in/hr)
- **Depth to water table:** About 24 to 48 inches
- **Frequency of flooding:** Rare
- **Frequency of ponding:** None
- **Calcium carbonate, maximum content:** 15 percent
- **Gypsum, maximum content:** 2 percent
- **Maximum salinity:** Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
- **Sodium adsorption ratio, maximum:** 13.0
- **Available water capacity:** Low (about 5.4 inches)

Interpretive groups
- **Farmland classification:** Not prime farmland
- **Land capability classification (irrigated):** 4w
- **Land capability (nonirrigated):** 7w
- **Hydrologic Soil Group: C**
- **Ecological site:** Alkali Bottom (Alkali sacaton) (R034XY002UT)

Typical profile
- **0 to 2 inches:** Loam
- **2 to 60 inches:** Stratified coarse sand to loam
Minor Components

Ashley

Percent of map unit: 5 percent

Wyasket, silty clay loam

Percent of map unit: 5 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Alkali Bottom (Alkali sacaton) (R034XY002UT)

Shotnick, sandy loam

Percent of map unit: 5 percent

91—Greybull clay loam, 4 to 20 percent slopes

Map Unit Setting

Elevation: 4,800 to 5,000 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

Map Unit Composition

Greybull and similar soils: 85 percent
Minor components: 15 percent

Description of Greybull

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum derived from shale

Properties and qualities

Slope: 4 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Very slightly saline to moderately saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water capacity: Moderate (about 6.7 inches)
Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)

Typical profile
0 to 3 inches: Clay loam
3 to 9 inches: Loam, clay loam
9 to 26 inches: Clay loam, loam
26 to 36 inches: Weathered bedrock

Minor Components

Firstgap
Percent of map unit: 4 percent

Muff
Percent of map unit: 4 percent

Uffens, loam
Percent of map unit: 4 percent
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)

Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)

Nolava
Percent of map unit: 3 percent

93—Greybull loam, 4 to 8 percent slopes

Map Unit Setting
Elevation: 4,700 to 5,200 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Greybull

Setting
Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum derived from shale

Properties and qualities
Slope: 4 to 8 percent
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Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 3 percent
Maximum salinity: Nonsaline to very slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Low (about 5.6 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)

Typical profile
0 to 7 inches: Loam
7 to 39 inches: Loam
39 to 49 inches: Weathered bedrock

Minor Components
Turzo, clay loam
Percent of map unit: 8 percent
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Nolava
Percent of map unit: 7 percent

95—Hanksville silty clay loam, 2 to 25 percent slopes

Map Unit Setting
Elevation: 4,800 to 6,100 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days

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

Description of Hanksville

Setting
Landform: Hills
Landform position (three-dimensional): Side slope
Custom Soil Resource Report

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum from shale

Properties and qualities
Slope: 2 to 25 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.01 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 10 percent
Maximum salinity: Nonsaline to moderately saline (2.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water capacity: Low (about 4.7 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)

Typical profile
0 to 3 inches: Silty clay loam
3 to 33 inches: Silty clay
33 to 37 inches: Weathered bedrock

Minor Components
Leeko
Percent of map unit: 5 percent

Uffens, loam
Percent of map unit: 5 percent
Ecological site: Desert Alkali Bench (Castlevale saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevale Saltbush) (034XY101UT_2)

Greybull
Percent of map unit: 5 percent

109—Honlu very cobbly sandy loam, 8 to 15 percent slopes

Map Unit Setting
Elevation: 5,500 to 6,800 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Map Unit Composition
Honlu and similar soils: 85 percent
Minor components: 15 percent

Description of Honlu
Setting
Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Moderate (about 7.3 inches)

Interpretive groups
Farmland classification: Not prime farmland
Hydrologic Soil Group: B
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)

Typical profile
0 to 5 inches: Very cobbly sandy loam
5 to 15 inches: Gravelly loam
15 to 60 inches: Gravelly loam

Minor Components
Nolava
Percent of map unit: 5 percent
Cliff
Percent of map unit: 5 percent
Utaline
Percent of map unit: 5 percent
131—Lind loam, 0 to 2 percent slopes

Map Unit Setting
Elevation: 4,900 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Lind

Setting
Landform: Structural benches, fan remnants
Down-slope shape: Linear, concave
Across-slope shape: Linear, convex
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 3 percent
Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Moderate (about 8.8 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 4w
Land capability (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
0 to 5 inches: Loam
5 to 11 inches: Loam
11 to 56 inches: Loam
56 to 60 inches: Sandy loam
Minor Components

Nolava wet
Percent of map unit: 5 percent

Hiko springs
Percent of map unit: 5 percent

Lind moderately saline
Percent of map unit: 5 percent

132—Lind loam, 2 to 4 percent slopes

Map Unit Setting
Elevation: 4,900 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

Map Unit Composition
Lind and similar soils: 90 percent
Minor components: 10 percent

Description of Lind

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

Properties and qualities
Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 3 percent
Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Moderate (about 9.0 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 4w
Land capability (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
0 to 6 inches: Loam
6 to 19 inches: Loam
19 to 60 inches: Loam

Minor Components
Nolava, wet
Percent of map unit: 5 percent
Lind, moderately saline
Percent of map unit: 5 percent

133—Mespun fine sand, 4 to 25 percent slopes

Map Unit Setting
Elevation: 5,000 to 6,000 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days

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

Description of Mespun
Setting
Landform: Fan remnants, hills
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Convex, linear
Parent material: Eolian deposits derived from sandstone

Properties and qualities
Slope: 4 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.9 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability (nonirrigated): 7c
Hydrologic Soil Group: A
Custom Soil Resource Report

Ecological site: Semidesert Sand (Fourwing Saltbush) (R034XY214UT)
Other vegetative classification: Semidesert Sand (Fourwing Saltbush) (034XY214UT_1)

Typical profile
0 to 9 inches: Fine sand
9 to 60 inches: Loamy fine sand, fine sand

Minor Components

Begay
Percent of map unit: 3 percent

Reepo
Percent of map unit: 3 percent

Yarts, fine sandy loam
Percent of map unit: 3 percent
Landform: Alluvial flats
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush) (R034XY216UT)
Other vegetative classification: Semidesert Sandy Loam (Fourwing Saltbush) (034XY216UT_2)

Milok
Percent of map unit: 3 percent

Montwel, very cobbly clay loam
Percent of map unit: 3 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)

153—Motto-Muff-Rock outcrop complex, 2 to 25 percent slopes

Map Unit Setting
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

Map Unit Composition
Motto and similar soils: 40 percent
Muff and similar soils: 35 percent
Rock outcrop: 10 percent
Minor components: 15 percent

Description of Motto

Setting
Landform: Hills, structural benches
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Slope alluvium over residuum derived from shale and sandstone
Properties and qualities
Slope: 2 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mhos/cm)
Sodium adsorption ratio, maximum: 60.0
Available water capacity: Very low (about 2.6 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)

Typical profile
0 to 2 inches: Very flaggy loam
2 to 12 inches: Clay loam
12 to 14 inches: Clay loam
14 to 17 inches: Extremely channery clay loam
17 to 21 inches: Unweathered bedrock

Description of Muff
Setting
Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium over residuum derived from shale

Properties and qualities
Slope: 2 to 8 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 3 percent
Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mhos/cm)
Sodium adsorption ratio, maximum: 40.0
Available water capacity: High (about 10.9 inches)

Interpretive groups
Farmland classification: Not prime farmland
Custom Soil Resource Report

Land capability (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Bench (Castlevale saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevale Saltbush) (034XY101UT_2)

Typical profile
0 to 2 inches: Gravelly sandy loam
2 to 7 inches: Sandy loam
7 to 14 inches: Sandy clay loam, clay loam
14 to 29 inches: Sandy clay loam, clay loam, loam
29 to 39 inches: Weathered bedrock

Description of Rock Outcrop

Setting
Landform: Ledges, cliffs, erosion remnants, escarpments
Down-slope shape: Convex
Across-slope shape: Convex

Properties and qualities
Slope: 2 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Available water capacity: Very low (about 0.0 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability (nonirrigated): 8s
Hydrologic Soil Group: D

Typical profile
0 to 60 inches: Bedrock

Minor Components
Badland
Percent of map unit: 3 percent

Uffens, sandy loam
Percent of map unit: 3 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)

Cadrina, extremely channery loam
Percent of map unit: 3 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)

Montwel, clay loam
Percent of map unit: 2 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)

Crustown
Percent of map unit: 2 percent

Jenrid
Percent of map unit: 2 percent
160—Nakoy loamy fine sand, 1 to 5 percent slopes

Map Unit Setting
- **Elevation:** 4,700 to 5,300 feet
- **Mean annual precipitation:** 5 to 8 inches
- **Mean annual air temperature:** 45 to 47 degrees F
- **Frost-free period:** 110 to 125 days

Map Unit Composition
- **Nakoy and similar soils:** 85 percent
- **Minor components:** 15 percent

Description of Nakoy

Setting
- **Landform:** Fan remnants
- **Down-slope shape:** Concave
- **Across-slope shape:** Convex
- **Parent material:** Eolian deposits over alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
- **Slope:** 1 to 5 percent
- **Depth to restrictive feature:** More than 80 inches
- **Drainage class:** Well drained
- **Capacity of the most limiting layer to transmit water (Ksat):** High (2.00 to 6.00 in/hr)
- **Depth to water table:** More than 80 inches
- **Frequency of flooding:** None
- **Frequency of ponding:** None
- **Calcium carbonate, maximum content:** 30 percent
- **Maximum salinity:** Nonsaline (0.0 to 2.0 mmhos/cm)
- **Sodium adsorption ratio, maximum:** 10.0
- **Available water capacity:** Very high (about 12.4 inches)

Interpretive groups
- **Farmland classification:** Prime farmland if irrigated
- **Land capability classification (irrigated):** 3e
- **Land capability (nonirrigated):** 7e
- **Hydrologic Soil Group:** B
- **Ecological site:** Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)

Typical profile
- **0 to 14 inches:** Loamy fine sand
- **14 to 25 inches:** Sandy loam, fine sandy loam
- **25 to 72 inches:** Sandy loam, fine sandy loam
- **72 to 80 inches:** Sandy loam
Minor Components

Hiko springs
Percent of map unit: 8 percent

Tipperary
Percent of map unit: 7 percent

162—Nolava-Nolava, wet complex, 0 to 2 percent slopes

Map Unit Setting

Elevation: 4,800 to 5,500 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

Map Unit Composition

Nolava and similar soils: 60 percent
Nolava, wet, and similar soils: 25 percent
Minor components: 15 percent

Description of Nolava

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Very high (about 16.3 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2c
Land capability (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Typical profile
0 to 10 inches: Loam
10 to 19 inches: Loam
19 to 34 inches: Clay loam, loam
34 to 60 inches: Loam, clay loam

Description of Nalava, Wet

Setting
- Landform: Fan remnants
- Down-slope shape: Concave
- Across-slope shape: Convex
- Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
- Slope: 0 to 2 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Moderately well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: About 42 to 72 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 40 percent
- Gypsum, maximum content: 2 percent
- Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 10.0
- Available water capacity: Very high (about 16.6 inches)

Interpretive groups
- Farmland classification: Prime farmland if irrigated
- Land capability classification (irrigated): 2c
- Land capability (nonirrigated): 7c
- Hydrologic Soil Group: B
- Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
- 0 to 7 inches: Loam
- 7 to 17 inches: Loam
- 17 to 60 inches: Clay loam, loam

Minor Components
- Shotnick, sandy loam
  - Percent of map unit: 8 percent
- Nakoy
  - Percent of map unit: 7 percent
163—Nolava-Nolava, wet complex, 2 to 4 percent slopes

Map Unit Setting

- **Elevation:** 4,700 to 5,500 feet
- **Mean annual precipitation:** 5 to 8 inches
- **Mean annual air temperature:** 45 to 47 degrees F
- **Frost-free period:** 110 to 125 days

Map Unit Composition

- **Nolava and similar soils:** 65 percent
- **Nolava, wet, and similar soils:** 20 percent
- **Minor components:** 15 percent

Description of Nolava

Setting

- **Landform:** Fan remnants
- **Down-slope shape:** Concave
- **Across-slope shape:** Convex
- **Parent material:** Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities

- **Slope:** 2 to 4 percent
- **Depth to restrictive feature:** More than 80 inches
- **Drainage class:** Well drained
- **Capacity of the most limiting layer to transmit water (Ksat):** Moderately high to high (0.60 to 2.00 in/hr)
- **Depth to water table:** More than 80 inches
- **Frequency of flooding:** None
- **Frequency of ponding:** None
- **Calcium carbonate, maximum content:** 40 percent
- **Gypsum, maximum content:** 2 percent
- **Maximum salinity:** Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
- **Sodium adsorption ratio, maximum:** 10.0
- **Available water capacity:** Very high (about 13.9 inches)

Interpretive groups

- **Farmland classification:** Prime farmland if irrigated
- **Land capability classification (irrigated):** 2e
- **Land capability (nonirrigated):** 7e
- **Hydrologic Soil Group:** B
- **Ecological site:** Desert Loam (Shadscale) (R034XY106UT)

Typical profile

- **0 to 13 inches:** Loam
- **13 to 20 inches:** Loam
- **20 to 40 inches:** Loam, clay loam
- **40 to 46 inches:** Loam, clay loam
- **46 to 65 inches:** Sandy clay loam
Description of Nolava, Wet

Setting
Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 42 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Very high (about 16.6 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2e
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
0 to 7 inches: Loam
7 to 17 inches: Loam
17 to 60 inches: Clay loam, loam

Minor Components
Shotnick, sandy loam
Percent of map unit: 5 percent

Abracon, loam
Percent of map unit: 5 percent

Nakoy
Percent of map unit: 5 percent

164—Nolava loam, 4 to 8 percent slopes

Map Unit Setting
Elevation: 4,700 to 5,500 feet
Custom Soil Resource Report

Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Nolava

Setting
  * Landform: Fan remnants
  * Down-slope shape: Concave
  * Across-slope shape: Convex
  * Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
  * Slope: 4 to 8 percent
  * Depth to restrictive feature: More than 80 inches
  * Drainage class: Well drained
  * Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
  * Depth to water table: More than 80 inches
  * Frequency of flooding: None
  * Frequency of ponding: None
  * Calcium carbonate, maximum content: 40 percent
  * Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
  * Sodium adsorption ratio, maximum: 10.0
  * Available water capacity: Very high (about 18.0 inches)

Interpretive groups
  * Farmland classification: Not prime farmland
  * Land capability classification (irrigated): 3e
  * Land capability (nonirrigated): 7e
  * Hydrologic Soil Group: B
  * Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
  * 0 to 4 inches: Loam
  * 4 to 8 inches: Loam
  * 8 to 43 inches: Clay loam, loam
  * 43 to 60 inches: Loam, clay loam

Minor Components

Turzo, clay loam
  * Percent of map unit: 8 percent
  * Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Utaline
  * Percent of map unit: 7 percent
166—Ohtog-Parohtog complex, 0 to 2 percent slopes

Map Unit Setting
Elevation: 4,600 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

Map Unit Composition
Ohtog and similar soils: 60 percent
Parohtog and similar soils: 30 percent
Minor components: 10 percent

Description of Ohtog

Setting
Landform: Alluvial flats
Landform position (three-dimensional): Rise, talf
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: High (about 9.9 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2c
Land capability (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Loamy Bottom (Basin Big Sagebrush) (R034XY009UT)

Typical profile
0 to 8 inches: Loam
8 to 28 inches: Loam
28 to 60 inches: Clay loam
Description of Parohtog

Setting
Landform: Alluvial flats
Landform position (three-dimensional): Talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: High (about 9.5 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2c
Land capability (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Loamy Bottom (Basin Big Sagebrush) (R034XY009UT)

Typical profile
0 to 10 inches: Loam
10 to 60 inches: Stratified sandy loam to clay loam

Minor Components
Shotnick, loamy sandy
Percent of map unit: 5 percent

Hiko springs
Percent of map unit: 3 percent

Tipperary
Percent of map unit: 2 percent

181—Pits, gravel

Map Unit Composition
Pits, gravel: 85 percent
Custom Soil Resource Report

Minor components: 15 percent

Description of Pits, Gravel

Interpretive groups
Farmland classification: Not prime farmland
Land capability (nonirrigated): 8s
Hydrologic Soil Group: A

Typical profile
0 to 6 inches: Extremely gravelly sand
6 to 60 inches: Extremely gravelly sand, extremely gravelly coarse sand, very gravelly coarse sand

Minor Components

Utaline, very gravelly sandy loam
Percent of map unit: 6 percent

Honlu, sandy loam
Percent of map unit: 6 percent
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034XY212UT)

Hiko springs, fine sandy loam
Percent of map unit: 3 percent
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)

189—Riemed loam, 2 to 4 percent slopes

Map Unit Setting
Elevation: 4,800 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Riemed

Setting
Landform: Fan remnants, strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Custom Soil Resource Report

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Very high (about 17.6 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2e
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
0 to 2 inches: Loam
2 to 11 inches: Loam
11 to 48 inches: Clay loam, loam
48 to 60 inches: Clay loam, loam

Minor Components
Hiko springs
Percent of map unit: 8 percent
Blackston
Percent of map unit: 7 percent

192—Robido-Uver complex, 1 to 4 percent slopes

Map Unit Setting
Elevation: 4,700 to 6,400 feet
Mean annual precipitation: 7 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days

Map Unit Composition
Robido and similar soils: 45 percent
Uver and similar soils: 40 percent
Minor components: 15 percent

Description of Robido
Setting
Landform: Flood plains
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale
Properties and qualities
Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: Occasional None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water capacity: Moderate (about 8.0 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 3w
Land capability (nonirrigated): 6w
Hydrologic Soil Group: B
Ecological site: Semiwet Streambank (Narrowleaf cottonwood) (R034XY019UT)

Typical profile
0 to 3 inches: Fine sandy loam
3 to 8 inches: Loam
8 to 29 inches: Sandy loam, fine sandy loam
29 to 60 inches: Extremely cobbly loamy sand, extremely cobbly sand

Description of Uver

Setting
Landform: Flood plains
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived quartzite, sandstone, limestone, and shale

Properties and qualities
Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: Occasional None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 2.1 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 6w
Land capability (nonirrigated): 6w
Hydrologic Soil Group: A
Ecological site: Semiwet Streambank (Narrowleaf cottonwood) (R034XY019UT)

Typical profile
0 to 6 inches: Loam
6 to 15 inches: Extremely cobbly loamy sand
15 to 60 inches: Extremely cobbly sand

Minor Components

Ashley
Percent of map unit: 8 percent

Riverwash
Percent of map unit: 6 percent
Landform: Flood plains
Landform position (three-dimensional): Dip, talf
Down-slope shape: Linear
Across-slope shape: Concave

Gooseneck
Percent of map unit: 1 percent

206—Shotnick sandy loam, 2 to 4 percent slopes

Map Unit Setting
Elevation: 4,700 to 5,500 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Shotnick

Setting
Landform: Alluvial flats
Landform position (three-dimensional): Talf, rise
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Eolian deposits and alluvium derived from sandstone, limestone, and shale

Properties and qualities
Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 1 percent
Custom Soil Resource Report

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Very high (about 14.5 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2e
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)

Typical profile
0 to 8 inches: Sandy loam
8 to 60 inches: Sandy loam, fine sandy loam

Minor Components

Cakehill
Percent of map unit: 3 percent

Uffens, loam
Percent of map unit: 3 percent
Landform: Alluvial flats
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Sand (Fourwing Saltbush) (034XY102UT_1)

Tipperary
Percent of map unit: 2 percent

Umbo silty clay loam, silty clay loam
Percent of map unit: 2 percent
Ecological site: Wet Saline Meadow (Inland saltgrass) (R034XY024UT)

Jenrid
Percent of map unit: 2 percent

Nakoy
Percent of map unit: 2 percent

Badland
Percent of map unit: 1 percent

207—Shotnick sandy loam, 4 to 8 percent slopes

Map Unit Setting
Elevation: 4,700 to 5,500 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

Map Unit Composition
Shotnick and similar soils: 85 percent
Custom Soil Resource Report

Minor components: 15 percent

Description of Shotnick

Setting
- Landform: Alluvial flats
- Landform position (three-dimensional): Talf, rise
- Down-slope shape: Concave
- Across-slope shape: Concave
- Parent material: Eolian deposits and alluvium derived from sandstone, limestone, and shale

Properties and qualities
- Slope: 4 to 8 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Gypsum, maximum content: 1 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 5.0
- Available water capacity: Very high (about 15.0 inches)

Interpretive groups
- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 3e
- Land capability (nonirrigated): 7e
- Hydrologic Soil Group: B
- Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)

Typical profile
- 0 to 4 inches: Sandy loam
- 4 to 60 inches: Fine sandy loam, sandy loam

Minor Components

Turzo, clay loam
- Percent of map unit: 9 percent
- Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Jenrid
- Percent of map unit: 6 percent

209—Shotnick-Walkup complex, 0 to 2 percent slopes

Map Unit Setting
- Elevation: 4,700 to 5,500 feet
- Mean annual precipitation: 5 to 12 inches
- Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days

Map Unit Composition
Shotnick and similar soils: 65 percent
Walkup and similar soils: 25 percent
Minor components: 10 percent

Description of Shotnick
Setting
Landform: Alluvial flats
Landform position (three-dimensional): Rise, talf
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Eolian deposits and alluvium derived from sandstone, limestone, and shale

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Very high (about 13.7 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2s
Land capability (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)

Typical profile
0 to 8 inches: Sandy loam
8 to 56 inches: Fine sandy loam, sandy loam
56 to 60 inches: Loamy sand

Description of Walkup
Setting
Landform: Alluvial flats
Landform position (three-dimensional): Talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, shale, and quartzite

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
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Depth to water table: About 42 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Moderate (about 6.8 inches)

Interpretive groups
Farm land classification: Prime farmland if irrigated
Land capability classification (irrigated): 2s
Land capability (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)

Typical profile
0 to 7 inches: Fine sandy loam
7 to 60 inches: Sandy loam

Minor Components
Stygee, silty clay loam
Percent of map unit: 4 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)

Tipperary
Percent of map unit: 3 percent

Umbo, silty clay loam
Percent of map unit: 2 percent
Ecological site: Wet Saline Meadow (inland saltgrass) (R034XY024UT)

Shotnick, moderately deep
Percent of map unit: 1 percent
Landform: Alluvial flats
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)

240—Turzo clay loam, 4 to 8 percent slopes

Map Unit Setting
Elevation: 4,600 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Setting
- Landform: Alluvial flats
- Landform position (three-dimensional): Taif, rise
- Down-slope shape: Concave
- Across-slope shape: Concave
- Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale

Properties and qualities
- Slope: 4 to 8 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Gypsum, maximum content: 2 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 13.0
- Available water capacity: High (about 10.2 inches)

Interpretive groups
- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 3e
- Land capability (nonirrigated): 7e
- Hydrologic Soil Group: B
- Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
- 0 to 11 inches: Clay loam
- 11 to 32 inches: Clay loam
- 32 to 60 inches: Loam

Minor Components
- Blackston
  - Percent of map unit: 5 percent
- Chalkcliff
  - Percent of map unit: 5 percent
- Shotnick, sandy loam
  - Percent of map unit: 5 percent

243—Turzo-Umbo complex, 0 to 2 percent slopes

Map Unit Setting
- Elevation: 4,600 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

Map Unit Composition
Turzo and similar soils: 65 percent
Umbo and similar soils: 20 percent
Minor components: 15 percent

Description of Turzo
Setting
Landform: Alluvial flats
Landform position (three-dimensional): Talf, rise
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water capacity: High (about 10.2 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2c
Land capability (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
0 to 9 inches: Clay loam
9 to 32 inches: Clay loam
32 to 60 inches: Loam

Description of Umbo
Setting
Landform: Alluvial flats
Landform position (three-dimensional): Talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
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Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: High (about 11.4 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2c
Land capability (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
0 to 10 inches: Clay loam
10 to 52 inches: Clay loam
52 to 60 inches: Clay loam

Minor Components
Turzo, loam
Percent of map unit: 4 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Loka
Percent of map unit: 4 percent
Wyasket, silty clay loam
Percent of map unit: 4 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Alkali Bottom (Alkali sacaton) (R034XY002UT)
Jenrid
Percent of map unit: 3 percent

244—Turzo-Umbo complex, 2 to 4 percent slopes

Map Unit Setting
Elevation: 4,600 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F

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Frost-free period: 110 to 125 days

Map Unit Composition
Turzo and similar soils: 65 percent
Umbo and similar soils: 25 percent
Minor components: 10 percent

Description of Turzo
Setting
Landform: Alluvial flats
Landform position (three-dimensional): Talf, rise
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale

Properties and qualities
Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water capacity: High (about 10.2 inches)

Interpretive groups
Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2e
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile
0 to 11 inches: Clay loam
11 to 32 inches: Clay loam
32 to 60 inches: Loam

Description of Umbo
Setting
Landform: Alluvial flats
Landform position (three-dimensional): Talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale

Properties and qualities
Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)

*Depth to water table:* About 42 to 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 15 percent

*Gypsum, maximum content:* 2 percent

*Maximum salinity:* Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)

* Sodium adsorption ratio, maximum:* 10.0

*Available water capacity:* High (about 11.4 inches)

**Interpretive groups**

*Farmland classification:* Prime farmland if irrigated

*Land capability classification (irrigated):* 2e

*Land capability (nonirrigated):* 7e

*Hydrologic Soil Group:* B

*Ecological site:* Desert Loam (Shadscale) (R034XY106UT)

**Typical profile**

- 0 to 10 inches: Clay loam
- 10 to 52 inches: Clay loam
- 52 to 60 inches: Clay loam

**Minor Components**

*Jenrid*

  *Percent of map unit:* 4 percent

*Tipperary*

  *Percent of map unit:* 3 percent

*Turzo, loam*

  *Percent of map unit:* 3 percent

  *Ecological site:* Alkali Flat (Greasewood) (R034XY006UT)

  *Other vegetative classification:* Alkali Flat (Black Greasewood) (034XY006UT_1)

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251—Umbo clay loam, 0 to 2 percent slopes

**Map Unit Setting**

*Elevation:* 4,600 to 5,600 feet

*Mean annual precipitation:* 5 to 8 inches

*Mean annual air temperature:* 45 to 47 degrees F

*Frost-free period:* 110 to 125 days

**Map Unit Composition**

*Umbo and similar soils:* 85 percent

*Minor components:* 15 percent
Description of Umbo

Setting
Landform: Alluvial flats
Landform position (three-dimensional): Talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: High (about 10.5 inches)

Interpretive groups
Farm land classification: Not prime farmland
Land capability classification (irrigated): 4w
Land capability (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

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

Minor Components
Wyasket, loam
Percent of map unit: 8 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Wet Saline Streambank (Coyote willow) (R034XY026UT)
Other vegetative classification: Wet Saline Streambank (Sandbar Willow) (034XY026UT_3)

Jenrid
Percent of map unit: 7 percent
254—Utaline very gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting

Elevation: 4,700 to 5,700 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

Map Unit Composition

Utaline and similar soils: 85 percent
Minor components: 15 percent

Description of Utaline

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Low (about 5.3 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Typical profile

0 to 3 inches: Very gravelly sandy loam
3 to 7 inches: Very gravelly loam
7 to 60 inches: Very gravelly loam
Minor Components

Nolava
Percent of map unit: 8 percent

Hiko springs
Percent of map unit: 7 percent

255—Utaline very gravelly sandy loam, 8 to 25 percent slopes

Map Unit Setting
- Elevation: 4,700 to 5,700 feet
- Mean annual precipitation: 5 to 8 inches
- Mean annual air temperature: 45 to 47 degrees F
- Frost-free period: 110 to 125 days

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

Description of Utaline

Setting
- Landform: Fan remnants
- Down-slope shape: Concave
- Across-slope shape: Convex
- Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
- Slope: 8 to 25 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 40 percent
- Gypsum, maximum content: 1 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 5.0
- Available water capacity: Low (about 5.3 inches)

Interpretive groups
- Farmland classification: Not prime farmland
- Land capability (nonirrigated): 7e
- Hydrologic Soil Group: B
- Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Typical profile
0 to 3 inches: Very gravelly sandy loam
3 to 7 inches: Very gravelly loam
7 to 60 inches: Very gravelly loam

Minor Components
Greybull, clay loam
Percent of map unit: 5 percent

Hiko springs
Percent of map unit: 5 percent

Nolava
Percent of map unit: 5 percent

275—Wyasket loam, 0 to 2 percent slopes

Map Unit Setting
Elevation: 4,600 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Wyasket

Setting
Landform: Flood plains, drainageaways
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water capacity: Very high (about 20.8 inches)
Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 6w
Land capability (nonirrigated): 6w
Hydrologic Soil Group: D
Ecological site: Wet Saline Streambank (Coyote willow) (R034XY026UT)
Other vegetative classification: Wet Saline Streambank (Sandbar Willow) (034XY026UT_3)

Typical profile
0 to 9 inches: Loam
9 to 22 inches: Silty clay loam, silt loam
22 to 60 inches: Clay loam, silt loam, silty clay loam

Minor Components

Umbo, silty clay loam
Percent of map unit: 5 percent
Ecological site: Wet Saline Meadow (Inland saltgrass) (R034XY024UT)

Green river, loam
Percent of map unit: 5 percent
Ecological site: Alkali Bottom (Alkali sacaton) (R034XY002UT)

Turzo, loam
Percent of map unit: 5 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)

276—Wyasket loam, 2 to 4 percent slopes

Map Unit Setting
Elevation: 4,600 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Wyasket

Setting
Landform: Flood plains, drainageways
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite
Properties and qualities
Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water capacity: Very high (about 20.8 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 6w
Land capability (nonirrigated): 6w
Hydrologic Soil Group: D
Ecological site: Wet Saline Streambank (Coyote willow) (R034XY026UT)
Other vegetative classification: Wet Saline Streambank (Sandbar Willow) (034XY026UT_3)

Typical profile
0 to 9 inches: Loam
9 to 22 inches: Silty clay loam, silt loam
22 to 60 inches: Clay loam, silt loam, silty clay loam

Minor Components
Green river, loam
  Percent of map unit: 5 percent
  Ecological site: Alkali Bottom (Alkali sacaton) (R034XY002UT)
Umbo, silty clay loam
  Percent of map unit: 5 percent
  Ecological site: Wet Saline Meadow (Inland saltgrass) (R034XY024UT)
Green river, fine sandy loam
  Percent of map unit: 5 percent
  Ecological site: River Floodplain (Fremont cottonwood) (R034XY011UT)
  Other vegetative classification: River Flood Plain (Fremont Cottonwood) (034XY011UT_1)

277—Wyasket peat, 0 to 2 percent slopes, ponded

Map Unit Setting
Elevation: 4,800 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

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

Description of Wyasket

Setting
Landform: Flood plains, drainageways
Landform position (three-dimensional): Dip, talf
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water capacity: High (about 9.0 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 7w
Land capability (nonirrigated): 7w
Hydrologic Soil Group: D
Ecological site: Wet Saline Streambank (Coyote willow) (R034XY026UT)
Other vegetative classification: Wet Saline Streambank (Sandbar Willow) (034XY026UT_3)

Typical profile
0 to 4 inches: Slightly decomposed plant material
4 to 13 inches: Silt loam
13 to 26 inches: Silty clay loam
26 to 60 inches: Silty clay loam

Minor Components

Sugun, sandy loam
Percent of map unit: 8 percent

Ashley
Percent of map unit: 7 percent
285—Water

Map Unit Setting

Mean annual precipitation: 5 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days

Map Unit Composition

Water: 90 percent
Minor components: 10 percent

Minor Components

Riverwash

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Concave

Fluvaquents

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Present Plant Community (034XYPC1UT)
References


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APPENDIX B

FUGITIVE DUST REGULATIONS
R307-205-1. Purpose.
R307-205 establishes minimum work practices and emission standards for sources of fugitive emissions and fugitive dust for sources located in all areas in the state except those listed in section IX, Part H of the state implementation plan or located in a PM10 nonattainment or maintenance area.

R307-205 applies statewide to all sources of fugitive emissions and fugitive dust, except for agricultural or horticultural activities specified in 19-2-114(1)-(3) and any source listed in section IX, Part H of the state implementation plan or located in a PM10 nonattainment or maintenance area.

The following definition applies throughout R307-205:
"Material" means sand, gravel, soil, minerals or other matter that may create fugitive dust.

Fugitive emissions from sources which were constructed on or before April 25, 1971, shall not exceed 40% opacity. Fugitive emissions from sources constructed or modified after April 25, 1971, shall not exceed 20% opacity.

R307-205-5. Fugitive Dust.
(1) Storage and Handling of Materials. Any person owning, operating or maintaining a new or existing material storage, handling or hauling operation shall minimize fugitive dust from such an operation. Such control may include the use of enclosures, covers, stabilization or other equivalent methods or techniques as approved by the director.
(2) Construction and Demolition Activities.
(a) Any person engaging in clearing or leveling of land greater than one-quarter acre in size, earthmoving, excavation, or movement of trucks or construction equipment over cleared land greater than one-quarter acre in size or access haul roads shall take steps to minimize fugitive dust from such activities. Such control may include watering and chemical stabilization of potential fugitive dust sources or other equivalent methods or techniques approved by the director.
(b) The owner or operator of any land area greater than one-quarter acre in size that has been cleared or excavated shall take measures to prevent fugitive particulate matter from becoming airborne. Such measures may include:
(i) planting vegetative cover,
(ii) providing synthetic cover,
(iii) watering,
(iv) chemical stabilization,
(v) wind breaks, or
(vi) other equivalent methods or techniques approved by the director.
(c) Any person engaging in demolition activities including
razing homes, buildings, or other structures or removing paving material from roads or parking areas shall take steps to minimize fugitive dust from such activities. Such control may include watering and chemical stabilization or other equivalent methods or techniques approved by the director.

(1) The director may require persons owning, operating or maintaining any new or existing road, or having right-of-way easement or possessory right to use the same, to supply traffic count information as determined necessary to ascertain whether or not control techniques are adequate or additional controls are necessary.
(2) Any person who deposits materials that may create fugitive dust on a public or private paved road shall clean the road promptly.

(1) Fugitive dust, construction activities, and roadways associated with mining activities are regulated under the provisions of R307-205-7 and not by R307-205-5 and 6.
(2) Any person who owns or operates a mining operation shall minimize fugitive dust as an integral part of site preparation, mining activities, and reclamation operations.
(3) The fugitive dust control measures to be used may include:
(a) periodic watering of unpaved roads,
(b) chemical stabilization of unpaved roads,
(c) paving of roads,
(d) prompt removal of coal, rock minerals, soil, and other dust-forming debris from roads and frequent scraping and compaction of unpaved roads to stabilize the road surface,
(e) restricting the speed of vehicles in and around the mining operation,
(f) revegetating, mulching, or otherwise stabilizing the surface of all areas adjoining roads that are a source of fugitive dust,
(g) restricting the travel of vehicles on other than established roads,
(h) enclosing, covering, watering, or otherwise treating loaded haul trucks and railroad cars, to minimize loss of material to wind and spillage,
(i) substitution of conveyor systems for haul trucks and covering of conveyor systems when conveyed loads are subject to wind erosion,
(j) minimizing the area of disturbed land,
(k) prompt revegetation of regraded lands,
(l) planting of special windbreak vegetation at critical points in the permit area,
(m) control of dust from drilling, using water sprays, hoods, dust collectors or other controls approved by the director,
(n) restricting the areas to be blasted at any one time,
(o) reducing the period of time between initially disturbing the soil and revegetating or other surface stabilization,
(p) restricting fugitive dust at spoil and coal transfer and loading points,
(q) control of dust from storage piles through use of enclosures, covers, or stabilization and other equivalent methods or techniques as approved by the director, or
other techniques as determined necessary by the director.


(1) Fugitive dust, construction activities, and roadways associated with tailings piles and ponds are regulated under the provisions of R307-205-8 and not by R307-205-5 and 6.

(2) Any person owning or operating an existing tailings operation where fugitive dust results from grading, excavating, depositing, or natural erosion or other causes in association with such operation shall take steps to minimize fugitive dust from such activities. Such controls may include:
   (a) watering,
   (b) chemical stabilization,
   (c) synthetic covers,
   (d) vegetative covers,
   (e) wind breaks,
   (f) minimizing the area of disturbed tailings,
   (g) restricting the speed of vehicles in and around the tailings operation, or
   (h) other equivalent methods or techniques which may be approvable by the director.

KEY: air pollution, fugitive emissions, mining, tailings
Date of Enactment or Last Substantive Amendment: July 7, 2005
Notice of Continuation: March 4, 2010
Authorizing, and Implemented or Interpreted Law: 19-2-101; 19-2-104; 19-2-109
APPENDIX C

VERNAL CITY NOISE ORDINANCE
Section 9.16.030 Prohibited noises.

The following acts among others, are declared to be loud, disturbing and unnecessary noises in violation of the ordinance codified in this chapter, but the enumeration shall not be deemed to be exclusive, namely:

A. Horns, Signaling Devices, Etc.
1. a. The sounding of any horn or signaling device on any automobile, motorcycle, street car or other vehicle on any street or public place of the City, except as a danger warning,
   b. The creation by means of any signaling device of any unreasonably loud or harsh sound, and
   c. The sounding of any such device for an unnecessary and unreasonable period of time,
2. a. The use of any signaling device except one operated by hand or electricity,
   b. The use of any horn, whistle or other device operated by engine exhaust, and
   c. The sounding of any horn when the traffic is for any reason held up;
B. Radios, Television sets, Etc. Using, operating, or permitting to be played, used or operated, any radio receiving set, musical instrument, or other machine or device for the producing or amplifying of sound in such manner as to disturb the peace, quiet and comfort of the neighboring inhabitants or at any time with louder volume than is necessary for convenient hearing for the person or persons who are in the room, vehicle, chamber or location at which such machine or device is operated and who are voluntary listeners thereto. The operation of any such set, instrument, machine or device between the hours of 11:00 p.m. and 7:00 a.m. or in such a manner as to be plainly audible at a distance of fifty (50) feet from the building, structure or vehicle in which it is located, shall be prima facie evidence of violation of this section;
C. Yelling, Shouting, Etc. Yelling, shouting, hooting, whistling or singing in residential or noise sensitive places or from any public place or on the public streets, at any time or place so as to unreasonably annoy or disturb the quiet, comfort, or repose of persons of ordinary sensitivities in any office, or in any dwelling, hotel or other type of residence, or of any persons of ordinary sensitivities in the vicinity; Yelling, shouting, hooting, whistling or singing at any time or place between the hours of 11:00 p.m. and 7:00 a.m. or in such a manner as to be plainly audible at a distance of fifty (50) feet from the location at which the noise is occurring shall be prima facie evidence of violation of this section.
D. Animals, Birds, Etc. The keeping of any animal or bird which by causing frequent or long continued noise disturbs the comfort or repose of any persons of ordinary sensitivities in the vicinity;
E. Motor vehicle.
1. No person shall drive or move or cause or knowingly permit to be driven or moved a motor vehicle or combination of vehicles at any time in such a manner as to exceed the following noise limits for the category of motor vehicle shown in the following table. Noise shall be measured at a distance of at least twenty-five feet (seven and one-half meters) from the near side of vehicle being monitored and at a height of at least four feet (1.2 meters) above the immediate surrounding surface.
2. The following maximum levels shall apply:
   a. Motor vehicle with a manufacturer's gross vehicle weight rating (GVWR) or gross combination weight rating (GCWR) of 10,000 pounds or more or any combination of vehicles towed by such motor vehicles.
      i. Speed limit 40 mph or less: 90 decibels.
      ii. Speed limit over 40 mph: 94 decibels.
   b. Any other vehicle or any combination of vehicles towed by any motor vehicle.
      i. Speed limit over 40 mph or less: 80 decibels.
      ii. Speed limit over 40 mph: 84 decibels.
3. This section shall apply to the total noise from a vehicle or combination of vehicles and shall not be construed as limiting or precluding the enforcement of any other provision of this chapter relating to motor vehicle mufflers for noise control.
4. Sound level measurement. Sound level measurement shall be made with a sound level meter.
5. No person shall operate or cause to be operated any motor vehicle unless the exhaust system of the vehicle is:
   a. free from defects which affect sound reduction;
   b. equipped with a muffler or other noise dissipative device; and
   c. not equipped with any cut-out, by-pass or similar device.

http://www.vernalcity.org/monode/Title_9/16/030.html|9/24/2013 10:45:32 AM|
Section 9.16.030 Prohibited noises.

6. Dynamic braking devices, commonly referred to as Jacobs Brakes. No motor vehicle shall be operated with a dynamic braking device engaged except for the aversion of imminent danger.

7. Responsibility for enforcement. The Chief of Police or his authorized representative shall have primary, but not exclusive, enforcement responsibility for this chapter as it relates to vehicular noise sources, and joint enforcement responsibility with appropriate law enforcement agencies as it relates to vehicular noise sources.

F. Defect in Vehicle or Load. The use of any automobile, motorcycle, or vehicle so out of repair, so loaded, or in such manner as to create loud and unnecessary grating, grinding, rattling or other noise;

G. Loading, Unloading, Opening Boxes. The creation of a loud and excessive noise in connection with loading or unloading of any vehicle, the opening and destruction of bales, boxes, crates and containers, and the loading or unloading of trash between the hours of 9:00 p.m. and 7:00 a.m.;

H. Construction or Repairing of Buildings. The erection (including excavation), demolition, alteration or repair of any building other than between the hours of 7:00 a.m. and 9:00 p.m. on weekdays, except in the case of urgent necessity in the interest of public health and safety, and then only with a permit from the Building Inspector, which permit may be granted for a period not to exceed three (3) days or less while the emergency continues, and which permit may be renewed for periods of three (3) days or less while the emergency continues. If the Building Inspector determines that the public health and safety will not be impaired by the erection, demolition, alteration or repair of any building or excavation of streets and highways between the hours of 9:00 p.m. and 7:00 a.m., and if he further determines that loss or inconvenience would result to any party in interest, he may grant permission for such work to be done within the hours of 9:00 p.m. and 7:00 a.m., upon application being made at the time the permit for the work is awarded or during the progress of the work;

I. Schools, Courts, Churches, Hospitals. The creation of any excess noise on any street adjacent to any school, institution of learning, church or court while the same are in use, or adjacent to any hospital, which unreasonably interferes with the workings of such institution, or which disturbs or unduly annoys patients in the hospital, provided conspicuous signs are displayed on such streets indicating that the same is a school, hospital or court street;

J. Metal Rails, Pillars and Columns, Transportation Thereof. The transportation of rails, pillars or columns of iron, steel or other material, over and along streets and other public places upon carts, trays, cars, trucks, or in any other manner so loaded as to cause loud noises or as to disturb the peace and quiet of such streets or other public places;

K. Piledrivers, Hammers, Etc. The operation between the hours of 9:00 p.m. and 7:00 a.m. of any piledriver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other appliance, the use of which is attended by loud or unusual noise;

L. Machinery. The operation of any noise-creating machinery or other machinery outside of an industrial zone, which causes noise audible on adjoining property due to the explosion of operating gases or fluids, noise created from electrical harnessing, unless the noise from such machinery is muffled and such machinery is equipped with a muffler device sufficient to deaden such noise. (Ord. 91-17 § 3; as amended during 1993 recodification)
APPENDIX D

AGENCY AND PUBLIC COORDINATION
Interested Parties

Subject: Proposed Vernal Unit Efficiency Project - Steinaker Canal Enclosure in Uintah County, Utah

Dear Ladies and Gentleman;

The Bureau of Reclamation’s Provo Area Office, in cooperation with Uintah Water Conservancy District (District), proposes to rehabilitate the Steinaker Canal by enclosing it from the Steinaker Reservoir spillway to approximately 12 miles south of the spillway. Enclosed with this letter is an exhibit of the canal alignment.

Currently, the canal carries approximately 250 cubic feet per second of irrigation water to users in the Ashley Valley area. The District is developing the Vernal Unit Efficiency Project that would rehabilitate the canal by enclosing the entire canal in a pressurized pipe from Steinaker Reservoir to its end. Because of funding limitations, the District desires to enclose the canal in phases as funding becomes available; however, the Environmental Assessment (EA) is being developed for the entire 12-miles of the canal enclosure.

The purpose of the project is to:

- Improve water conveyance
- Improve water quality
- Increase public safety
- Reduce interference to canal operations from adjacent private development
- Reduce maintenance of the canal right-of-ways (ROWs)
- Prevent trash and debris from entering the canal
- Conserve water by preventing evaporation and seepage
- Provide added security to irrigation water delivery facilities

Steinaker Dam and Reservoir are located in Uintah County, Utah, about 3.5 miles north of Vernal, Utah. Steinaker Dam, a feature of the Vernal Unit of the Central Utah Project, was completed in 1962. Steinaker Reservoir is an offstream facility which receives diversions from Ashley Creek via the Steinaker Feeder Canal. Releases from Steinaker Dam are discharged into the Steinaker Canal. The reservoir has a total capacity of 38,173 acre-feet of water and a surface area of 820 acres.
An EA will be prepared as required by the National Environmental Policy Act (NEPA), and the Council on Environmental Quality and the Department of the Interior regulations implementing NEPA. This EA will analyze the potential impacts of the proposed action. As required by the NEPA implementing regulations, if potentially significant impacts to the human environment are identified, an Environmental Impact Statement will be prepared. If no significant impacts are identified, Reclamation will issue a Finding of No Significant Impact.

Reclamation encourages public participation throughout the NEPA process. The public has two opportunities to provide formal comments: during this initial public meeting and 30-day scoping period and again following release of the draft EA.

This letter begins the scoping process. The purpose of this letter is to give notice of the proposed action and invite interested parties to comment on the EA’s scope of analysis or raise specific issues that interested parties feel should be analyzed in the EA. This letter is being sent to municipalities, organizations or agencies, and property owners within 1,000 feet of the canal corridor who may have an interest in the proposed action.

Comments may be provided at the public scoping meeting or be submitted to our office by close of business July 18, 2013. Written comments should be addressed to:

Bureau of Reclamation
Attention: Mr. Peter Crookston (PRO-774)
302 East 1860 South
Provo, Utah 84606-7317
E-mail: pcrookston@usbr.gov

At the conclusion of the scoping period, a draft EA will be prepared and made available to the interested public for review and comment. It is expected that this draft EA review period will occur in August 2013.

You are welcome to attend a public open house to learn more about the project on June 18, 2013, at the Uintah County Library located at 204 East 100 North, Vernal, Utah, from 5:00 to 7:00 p.m.

If you need further information, please contact Mr. Crookston at 801-379-1152 or for TTY (Teletype) access; please contact the Federal Relay Service at 800-877-8339.

Sincerely,

Curtis A. Pledger
Area Manager

Enclosure
Interested Persons, Organizations, and Agencies (See Enclosed List)

Subject: Draft Environmental Assessment (Draft EA) – Steinaker Service Canal Modification Project (Project) in Uintah County, Utah

Dear Interested Persons:

In compliance with the National Environmental Policy Act (NEPA) requirements, the Bureau of Reclamation, Provo Area Office has completed the Draft EA. The Draft EA fulfills the requirements of NEPA as well as the Council on Environmental Quality and Department of the Interior regulations implementing NEPA. The Draft EA states the action that will be implemented and describes the effects of enclosing the Steinaker Service Canal (Canal).

Reclamation proposes to authorize and provide funding to the Uintah Water Conservancy District (District) to modify the Canal by enclosing it in a pressurized pipe. The Canal starts at Steinaker Reservoir spillway and conveys water approximately 12 miles south to its end. Because of funding limitations, the District desires to enclose the Canal in phases as funding becomes available; however, the Draft EA is being developed for the entire 12 miles of Canal.

Steinaker Dam and Reservoir are located in Uintah County, Utah, about 3.5 miles north of Vernal, Utah. Steinaker Dam, a feature of the Vernal Unit of the Central Utah Project, was completed in 1962. Steinaker Reservoir is an offstream facility which receives diversions from Ashley Creek via the Steinaker Feeder Canal. Releases from Steinaker Dam are discharged into the Canal. Currently, the Canal carries approximately 250 cubic feet per second of irrigation water to users in the Ashley Valley area.

Reclamation encourages public participation throughout the NEPA process. The public have had two opportunities to provide formal comments: during the initial 30-day comment period and public scoping meeting held on June 18, 2013, at the public library in Vernal, and again now with a 30-day comment period with the publication of the Draft EA.

We invite interested parties to comment on the Draft EA. Comments may be provided to our office until January 31, 2014. This letter is being sent to municipalities, organizations or agencies, and property owners who may have an interest in the Project.
Written comments should be addressed to the Bureau of Reclamation:

Bureau of Reclamation
Attention: Mr. Peter Crookston (PRO-774)
302 East 1860 South
Provo, UT 84606-7317
E-mail: pcrookston@usbr.gov

Comments may also be submitted via e-mail to pcrookston@usbr.gov. The Draft EA is available on the internet at www.usbr.gov/uc/envdocs/index.html. If you prefer a CD or hard copy, they are available upon request by contacting Mr. Crookston at 801-379-1152.

At the conclusion of the comment period, comments received on the Draft EA will be considered, and if no further analysis is necessary the EA will be finalized and a Finding of No Significant Impact will be prepared.

We look forward to your comments. If you have any further questions, please contact Mr. Crookston at 801-379-1152.

Sincerely,

Curtis A. Pledger
Area Manager
APPENDIX E

PUBLIC COMMENT SUMMARY
Steinaker Canal Rehabilitation Project
Public Scoping Questionnaire
June 18, 2013

* Note: Providing your contact information is voluntary. Please note that any contact information provided will be public record and published as part of the Steinaker Canal Rehabilitation Environmental Assessment.

CONTACT INFORMATION (OPTIONAL)

Name: ____________________________

Address, State and Zip: ____________________________

Email and Phone Number: ____________________________

Would you like to be added to the project email list? _________

PLEASE ANSWER A FEW QUESTIONS TO TELL US HOW WE ARE DOING

How did you hear about this meeting?

Do you have any suggestions for improving future meetings?

COMMENTS

1. Are you affected by the rehabilitation of the Steinaker Canal? Yes  No
   If so, please explain: ____________________________

2. How close do you live to the canal? Please circle:
   A few hundred feet  ¼ mile  ½ mile  1 mile
   Other: ____________________________

3. Are you opposed, in favor or indifferent to rehabilitating the canal? Please circle.
   Opposed  In Favor  Indifferent

4. Do you benefit and or receive water from the canal for irrigation use? Yes  No

5. Do you feel that rehabilitating the canal will have environmental impacts? If so, please explain:
   ____________________________

6. Please provide any additional comments that you feel would be helpful to the study team.
   ____________________________

Thank You for Your Attendance and Comments!
<table>
<thead>
<tr>
<th>Comment</th>
<th>Name</th>
<th>Address</th>
<th>Email</th>
<th>Phone</th>
<th>Date</th>
<th>Word Count</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dave Dallas</td>
<td>423-621-0516</td>
<td>16 Jun 13</td>
<td>No</td>
<td>Mail</td>
<td>Yes, water user</td>
<td>Yes</td>
<td>Yes, a letter from the USBR stating that the...</td>
</tr>
<tr>
<td>Gayle E. Burkhalter</td>
<td>LEIS 1250 NE</td>
<td>16 Jun 13</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes, water user</td>
<td>1/2 by</td>
<td>Opposed, yes</td>
</tr>
<tr>
<td>Doug Ziegler</td>
<td>1004 N 1300th W</td>
<td>16 Jun 13</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes, the owner of the property</td>
<td>A few hundred feet</td>
<td>Opposed</td>
</tr>
<tr>
<td>Gary L. Rehfeldt</td>
<td>2205 S 1200th W</td>
<td>16 Jun 13</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes, there is a letter from the department</td>
<td>A few hundred feet</td>
<td>Opposed</td>
</tr>
<tr>
<td>Jeanne Grass</td>
<td>5080 NE 500th N</td>
<td>16 Jun 13</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>A few hundred feet</td>
<td>Opposed</td>
</tr>
<tr>
<td>Brad Warner</td>
<td>3251 S 500th W</td>
<td>16 Jun 13</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes, The canal, using my property, shows land on both sides with bridges across, In favor</td>
<td>A few possible working plans</td>
<td>No, this would be the property's greatest benefit in staying out of the water. The current facility has a lot of problems and is not going to work.</td>
</tr>
<tr>
<td>Todd Thoevin</td>
<td>620 E 1000th S</td>
<td>16 Jun 13</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>In favor</td>
<td>No, Small project</td>
</tr>
<tr>
<td>Carol Edwards</td>
<td>1290 N 1200th W</td>
<td>16 Jun 13</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>In favor</td>
<td>No, What will be downsized and who are the beneficiaries?</td>
</tr>
<tr>
<td>James B. Hayes</td>
<td>4705 S 500th W</td>
<td>16 Jun 13</td>
<td>No</td>
<td>Mail</td>
<td>Yes</td>
<td>In favor</td>
<td>Yes, Will prevent flooding, Will present flooding our property or at this location</td>
</tr>
<tr>
<td>Rex Penney</td>
<td>475 S 500th W</td>
<td>16 Jun 13</td>
<td>No</td>
<td>Mail</td>
<td>Yes</td>
<td>In favor</td>
<td>Yes, No way</td>
</tr>
<tr>
<td>Delmar Bars</td>
<td>630 E 1200th S</td>
<td>16 Jun 13</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>In favor</td>
<td>Yes, Possible, particularly as the USBR property</td>
</tr>
<tr>
<td>Jennifer Basulto</td>
<td>351 W 500th S</td>
<td>16 Jun 13</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>Yes</td>
<td>Best possible location for the USBR</td>
</tr>
<tr>
<td>Fred Edmister</td>
<td>1105 S Appleton Way, UT 84058</td>
<td>16 Jun 13</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>In favor</td>
<td>Yes, Lift gate</td>
</tr>
</tbody>
</table>

Steinaker Canal Rehabilitation
Uintah Water Conservancy District & USBR
Review and Response Comments from Open House - June 18, 2013
<table>
<thead>
<tr>
<th>Comment Name</th>
<th>Address</th>
<th>Email &amp; Phone #</th>
<th>Date</th>
<th>Would you like to visit the project area?</th>
<th>How did you hear about the event?</th>
<th>Are you or is someone in your household directly affected by this project?</th>
<th>How close are you to the canal?</th>
<th>Are you aware of plans in progress to rehabilitate the canal?</th>
<th>Do you benefit from irrigation water from the canal?</th>
<th>Do you feel that rehabilitation of the canal will have environmental benefits?</th>
<th>Please provide any other comments or responses that you feel would be helpful to the study team</th>
<th>Type</th>
<th>Response / Clarification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steiner homes</td>
<td>3792 South Ave.</td>
<td><a href="mailto:marnie@home.com">marnie@home.com</a></td>
<td>435-760-2371</td>
<td>Yes</td>
<td>Letter</td>
<td>No</td>
<td>A few hundred feet</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Helpful in improving water</td>
</tr>
<tr>
<td>David Elder</td>
<td>125 W 10000 S</td>
<td><a href="mailto:davidd@hotmail.com">davidd@hotmail.com</a></td>
<td>801-689-5444</td>
<td>Yes</td>
<td>Mail</td>
<td>No</td>
<td>The property borders the canal</td>
<td>A few hundred feet</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Helping in removing some noise and some dirt from the canal</td>
</tr>
<tr>
<td>John Nobles</td>
<td>4205 South 12800 W</td>
<td><a href="mailto:jnoble12@comcast.net">jnoble12@comcast.net</a></td>
<td>435-760-4128</td>
<td>Yes</td>
<td>E-mail</td>
<td>Yes</td>
<td>As an irrigation, a fire harbor, a link to the canal</td>
<td>In forever</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Changing, improving on open canal</td>
</tr>
<tr>
<td>Carlos Johnson</td>
<td>2500 E 11600 S</td>
<td><a href="mailto:cjohnson@gmail.com">cjohnson@gmail.com</a></td>
<td>801-690-5993</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>The property is the only one</td>
<td>In forever</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Helpful in improving water</td>
</tr>
<tr>
<td>Animathen</td>
<td>5050 E 6000 S</td>
<td><a href="mailto:animathen@gmail.com">animathen@gmail.com</a></td>
<td>435-760-3828</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>The property is the only one</td>
<td>A few hundred feet</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Helping in improving water</td>
</tr>
<tr>
<td>Saint Edgar</td>
<td>1000 E 11600 S</td>
<td><a href="mailto:saintedgar@gmail.com">saintedgar@gmail.com</a></td>
<td>435-760-3828</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>The property is the only one</td>
<td>A few hundred feet</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Helping in improving water</td>
</tr>
<tr>
<td>Paul Patients</td>
<td>2500 W 5000 S</td>
<td>paul patients</td>
<td>435-760-3828</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>The property is the only one</td>
<td>A few hundred feet</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Helping in improving water</td>
</tr>
<tr>
<td>Paul Patients</td>
<td>5050 E 6000 S</td>
<td>paul patients</td>
<td>435-760-3828</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>The property is the only one</td>
<td>A few hundred feet</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Helping in improving water</td>
</tr>
<tr>
<td>John Smitty</td>
<td>1500 W 5000 S</td>
<td><a href="mailto:johnsmitty@gmail.com">johnsmitty@gmail.com</a></td>
<td>435-760-3828</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>The property is the only one</td>
<td>A few hundred feet</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Helping in improving water</td>
</tr>
<tr>
<td>John Smitty</td>
<td>5050 E 6000 S</td>
<td><a href="mailto:johnsmitty@gmail.com">johnsmitty@gmail.com</a></td>
<td>435-760-3828</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Helping in improving water</td>
</tr>
<tr>
<td>John Smitty</td>
<td>4205 S 1700 W</td>
<td><a href="mailto:johnsmitty@gmail.com">johnsmitty@gmail.com</a></td>
<td>435-760-3828</td>
<td>Yes</td>
<td>Mail</td>
<td>Yes</td>
<td>The property is the only one</td>
<td>In forever</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Helping in improving water</td>
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<tr>
<td>Comment Name</td>
<td>Address</td>
<td>Email &amp; Phone #</td>
<td>Date</td>
<td>Please provide any comments that you feel would be helpful to the study team</td>
<td>Type</td>
<td>Response / Clarification</td>
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<tr>
<td>Craig Bonito</td>
<td>398 E. 1500 S., Salt Lake City, UT 84124</td>
<td><a href="mailto:clintont@justin.gov">clintont@justin.gov</a> 801-230-6076</td>
<td>15-Jul-13</td>
<td>&quot;It is unclear if the activities conducted as part of the Steinaker Canal rehabilitation project will have any impact on the aforementioned sites. This task reference to these deadends, &quot;out of use and removed&quot; storage tanks.</td>
<td>Agency</td>
<td>The EA will evaluate the location of the three tanks and determine if an impact is anticipated.</td>
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<tr>
<td>Amy Delonge</td>
<td>2100 W. Greenlawn Village, Salt Lake City, UT 84119</td>
<td>801-997-5333 x 128</td>
<td>18-Jul-13</td>
<td>Addresses NHA with regards to migratory birds as well as mitigation and section 7 responsibilities. Regarding the Endangered Species Act they comment that the Use Indian rezones is threatened under the EDA and that it occurs within the proposed project area. They would also like the EA to confirm with them on actions that may jeopardize any proposed species.</td>
<td>Agency</td>
<td>The LA will address the USFWS comments. A biological assessment will be written into the EA for T&amp;K species.</td>
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<tr>
<td>Chris Meurer</td>
<td>3031 S. Rio Grande St., Salt Lake City, UT 84115</td>
<td><a href="mailto:cmeurer@justin.gov">cmeurer@justin.gov</a> 801-340-7725</td>
<td>4-Jan-13</td>
<td>&quot;We look forward to the results of the testing to determine the effects of the proposed project to the Steinaker Canal. The canal is new, has risks, and will need to be judged for eligibility to the National Register.&quot;</td>
<td>Agency</td>
<td>The Cultural Resource report will address these found along the canal.</td>
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<td>Paul and Jackie Johnson</td>
<td>1147 W. 800 S, Vernal, UT 84078-4616</td>
<td></td>
<td>10-Jul-13</td>
<td>They are concerned that the elevation of the Steinaker Canal will possibly dry up the flow to their well that is used to irrigate their property. They also do not want their water right to be infringed upon. They are concerned that the raising of the water table will cause or impact many old established trees within the &quot;wetted zone&quot; of the canal that arevolve shade and wind breaks.</td>
<td>Public</td>
<td>Existing water rights are not anticipated to be impacted by this project. The purpose of this project is to line the drainage system. The EA will evaluate the vegetation and groundwater impacts of the project.</td>
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<tr>
<td>Suzanne Call</td>
<td>No address provided</td>
<td><a href="mailto:suzanne.hall@yahn.com">suzanne.hall@yahn.com</a></td>
<td>8-Jul-13</td>
<td>The property owner is asking what will happen to the water that is saved from evaporation and seepage, what sections they will have to the project will be a portion open for the &quot;old canal&quot;, and what assurances they will have that the water will be used to water their community. They also inquire what the price will be and who will pay for it. What effect piping the water will have on the surrounding water table, if the water is piped, what will happen to the drainage, and what type of, if any, standing and benefits the area of the water to an out-of-town contractor, and what the environmental impact of piping the canal will be.</td>
<td>Public</td>
<td>No transportation of the existing water rights are proposed, and the amount of diversion will remain approximately equal (within the range) to historic conditions. This is not a new appropriation, rather it is water that has always been available to the users of the Canal water service rights. Actively, with the open Canal, it has not been possible to deliver the full allotment or right to all users. The District will continue to supply water to the Central Canal irrigation as per their water rights. What is known to the community is the &quot;old canal&quot; is actually the Central Canal and is used for irrigation purposes. The Central Canal has allowed the public to use it for recreational purposes. A cost analysis of the project is not part of the scope of an environmental assessment. The purpose of this project is to continue to deliver to the existing users. The project is not delivering water to &quot;out-of-town&quot; contractors.</td>
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<tr>
<td>Cady Johnson</td>
<td>2150 W. 1500 S., Vernal, UT 84078</td>
<td><a href="mailto:cindyjohnson@yahoo.com">cindyjohnson@yahoo.com</a></td>
<td>27-Jul-13</td>
<td>They comment that no cost-benefit analysis has been provided for public review, they want to know if sewage has been sampled based on analysis of discharge measurements, what species have been harmed, that the most dollar build, and how minor water loss justify the huge proposed transmission. They also comment that the share price of Ashley Water Users should be tracked and published to identify specific activity by shareholders. They ask if the proposed conservation measure qualifies as a potentially Created Source (CSC), where the defense department is prioritizing operations on the canal enclosed, and if Vernal City government and Ashley Valley residents will have water power over the proposal.</td>
<td>Public</td>
<td>Seepage will be evaluated in the EA. A cost analysis for the project or the cost for water shares is not part of the environmental assessment. The purpose of the project is a reAuthorization mission, reorders canal means piping to eliminate the loss of irrigation water. Water rights are associated with this water. The project will ensure the delivery of water for future years.</td>
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Steinaker Canal Rehabilitation
Uintah Water Conservesory District & USBR
Review and Response Comments from Letters Received - July, 2013