

S O I L S U R V E Y

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BLUE RIM AREA

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Sublette County, Wyoming



UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

In cooperation with

UNITED STATES DEPARTMENT OF INTERIOR

Bureau of Land Management

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Major field work for this soil survey was done in the period June through October 1972. Soil names and descriptions were approved in 1972. Unless otherwise indicated, statements in the publication refer to conditions in the area in 1972. This survey was made cooperatively by the Soil Conservation Service and the Bureau of Land Management.

HOW TO USE THIS SOIL SURVEY

This soil survey contains information that can be applied in managing rangelands; in selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry, and recreation.

Locating Soils

All the soils of the Blue Rim Area are shown on the soil survey field sheets for this soil survey. The field sheets are aerial photographs, and the number on each sheet corresponds with a number on the Index to Field Sheets.

On each field sheet soil areas are outlined and are identified by symbols. All areas marked with the same symbol contain the same kinds of soils as defined under "Description of Soils." The soil symbol is inside the area if there is enough room; otherwise, it is outside and a pointer shows where the symbol belongs.

Finding and Using Information

The "Guide to Mapping Units" can be used to find information. This guide lists all the mapping units of the survey area by map symbol and gives the capability classification of each. It also shows the page where each soil is described and the range site in which the soil has been placed.

Individual colored maps showing the relative suitability or degree of limitation of soils for many specific purposes can be developed by using the soil map and the information in the text. Translucent material can be used as an overlay over the soil map and colored to show soils that have the same limitation or suitability. For example, soils that have a slight limitation for a given use can be colored green, those with a moderate limitation can be colored yellow, and those with a severe limitation can be colored red.

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SOIL SURVEY OF SUBLETTE COUNTY, WYOMING BLUE RIM AREA By James R. Stephens, Jr., Soil Conservation Service^{1/}

The Blue Rim Area consists of privately-owned, Federally-owned, and Stateowned land located in Sublette County, Wyoming. The northern part of the survey area is about 5 miles south of Boulder, Wyoming, on the south side of the New Fork River.

The area covers about 56,000 acres. The principal use of the lands within the area is rangeland. Other uses include wildlife habitat.

Elevations range from about 6,800 feet along the New Fork River on the western edge of the area to a little over 7,300 feet along the east side of the area. The area is bounded along the north side by Sand Springs Draw and the New Fork River. The east boundary is Highway 187 and the Blue Rim drift fence. The drift fence forms the south boundary and west boundary running up to the Big Piney Highway. In the central part of the west side the soil survey was extended west of the drift fence to the New Fork River. The soil survey was extended beyond the prescribed boundaries in other areas also to map soils and landscapes adjacent to the Blue Rim Area.

The Blue Rim Area is divided into two precipitation zones. These are 7 to 9 inch and 10 to 14 inch precipitation zones. The Blue Rim topographic break forms the boundary between these zones with the 7 to 9 inch area lying north and west of the Rim and the 10 to 14 inch zone lying south and east of the Rim. From the northern end of the Blue Rim break the 10 to 14 inch precipitation zone was extended north and west along Alkali Creek and Sand Springs Draw. The 7 to 9 inch precipitation zone is generally below 7,000 feet elevation, and the 10 to 14 inch zone is above 7,000 feet.

The area above the Blue Rim break is drained by North Alkali Draw leading to the southwest. The drainage in the very southeast corner runs to the southeast. The north part of the area above the Rim is drained by Alkali Creek and Sand Springs Draw running north and west to the New Fork River. The area below the Blue Rim break is drained by numerous intermittent streams and draws to the New Fork River. The New Fork River runs along part of the north and west sides of the Blue Rim Area.

How This Survey Was Made

Soil scientists made this survey to learn what kinds of soil are in the Blue Rim Area, where they are located, and how they can be used. The soil scientists went into the area knowing they likely would find many soils they had already seen and perhaps some they had not. They observed the steepness, length, and shape of slopes, the size and speed of streams, the kinds of native plants, the kinds of rock, and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers or horizons in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by the action of plant roots.

Halvor B. Ravenholt assisted in the field work. Clarence J. Fowkes and William R. Glenn assisted in the field correlation. All are soil scientists with the Soil Conservation Service. The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide uniform procedures. The soil series and the soil phase are the categories of soil classification most used in a local survey.

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town, geographic feature, or other feature near the place where a soil of that series was first observed and mapped. Bluerim and Vible, for example, are the names of two soil series whose type locations are in the Blue Rim Area. All the soils in the United States having the same series name are essentially alike in those characteristics that affect their behavior in the undisturbed landscape.

Soils of one series can differ in texture of the surface layer and in slope, stoniness, or some other characteristic that affects use of the soils by man. On the basis of such differences a soil series is divided into phases. The name of a soil phase indicates a feature that affects management. For example, the mapping unit Glendive-Havre complex, saline, is composed of saline phases of the Glendive and the Havre series.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of the individual soils, soil associations, complexes, and undifferentiated groups on aerial photographs. These photographs show woodland, drainages, landscape features, and other details that help in drawing boundaries accurately.

The areas shown on the field sheets are called mapping units. In some areas a mapping unit is nearly equivalent because it is not practical to show on such a map all the small, scattered bits of soil of some kind that have been seen within an area that is dominantly of a recognized soil phase. An example is Vible sandy loam.

Most mapping units of this survey area are made up of soils of different series or of different phases within one series. Three such kinds of mapping units are shown on the soil map of the Blue Rim Area--soil complexes, soil associations, and undifferentiated groups.

A soil complex consists of areas of two or more soils so intricately mixed or so small in size that they cannot be shown separately on the soil map. Each area of a complex contains some of each of the two or more dominant soils, and the pattern and relative proportions are about the same in all areas. Generally, the name of a soil complex consists of the names of the dominant soils joined by a hyphen. Laney-Glenderson complex is an example.

A soil association is made up of adjacent soils that occur as areas large enough to be shown individually on the soil map but are shown as one unit because the time and effort of delineating them separately cannot be justified. There is a considerable degree of uniformity in pattern and relative extent of the dominant soils joined by a hyphen. Bluerim-Tigon association is an example.

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An undifferentiated group is made up of two or more soils that could be delineated individually but are shown as one unit because, for the purpose of the soil survey, there is little value in separating them. The pattern and proportion of soils are not uniform. An area shown on the map may be made up of only one of the dominant soils or of two or more. If there are two or more dominant series represented in the group, the name of the group ordinarily consists of the names of the dominant soils joined by "and." Bluerim, Abston, and Milren soils, 3 to 15 percent slopes, is an example.

In most areas surveyed there are places where the soil material is so rocky, so shallow, so severely eroded, or so variable that it has not been classified by soil series. These places are shown on the soil map and are described in the survey, but they are called land types and are given descriptive names such as Shale rock land.

While a soil survey is in progress, soil scientists take soil samples needed for laboratory measurements and for engineering tests. Laboratory data from the same kind of soil in other places are also assembled.

Soil scientists observe how soils behave when used as a growing place for native and cultivated plants and as material for structures, foundations for structures, or covering for structures. They relate this behavior to properties of the soils. For example, they observe that filter fields for onsite disposal of sewage fail on a given kind of soil, and they relate this to the slow permeability of the soil or its high water table. They see that streets, road pavements, and foundations for houses are cracked on a named kind of soil; and they relate this failure to the high shrink-swell potential of the soil material. Thus, they use observation and knowledge of soil properties, together with available research data, to predict limitations or suitability of soils for present and potential uses.

After data have been collected and tested for the key, or benchmark, soils in a survey area, the soil scientists set up trial groups of soils. They test these groups by further study and by consultation with agronomists, range conservationists, engineers, and others. They then adjust the groups according to the results of their studies and consultation. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under current methods of use and management.

DESCRIPTIONS OF THE SOILS

This section describes the soil series and mapping units in the Blue Rim Area. Each soil series is described in detail and then, briefly, each mapping unit in that series. Unless it is specifically mentioned otherwise, it is to be assumed that what is stated about the soil series holds true for the mapping units in that series. Thus, to get full information about any one mapping unit it is necessary to read both the description of the mapping unit and the description of the soil series to which it belongs.

An important part of the description of each soil series is the soil profile; that is, the sequence of layers from the surface downward to rock or other underlying material. Each series contains two descriptions of this profile.

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The first is brief and in terms familiar to the layman. The second is much more detailed and is for those who need to make thorough and precise studies of soils. Color terms are for dry soil unless otherwise stated. The profile described in the series is representative for mapping units in that series. If the profile of a given mapping unit is different from the one described for the series, these differences are stated in describing the mapping unit or they are differences that are apparent in the name of the mapping unit.

As mentioned in the section, "How This Survey Was Made," not all mapping units are members of a soil series. Shale rock land, for example, does not belong to a soil series but, nevertheless, is listed in alphabetical order along with the soil series.

Following the name of each mapping unit is a symbol in parentheses. This symbol identifies the mapping unit on the soil map. Listed at the end of each description of a mapping unit is the range site in which the mapping unit has been placed. The page for the description of the mapping unit, the range site, or other interpretative group can be found by referring to the "Guide to Mapping Units" at the back of this survey.

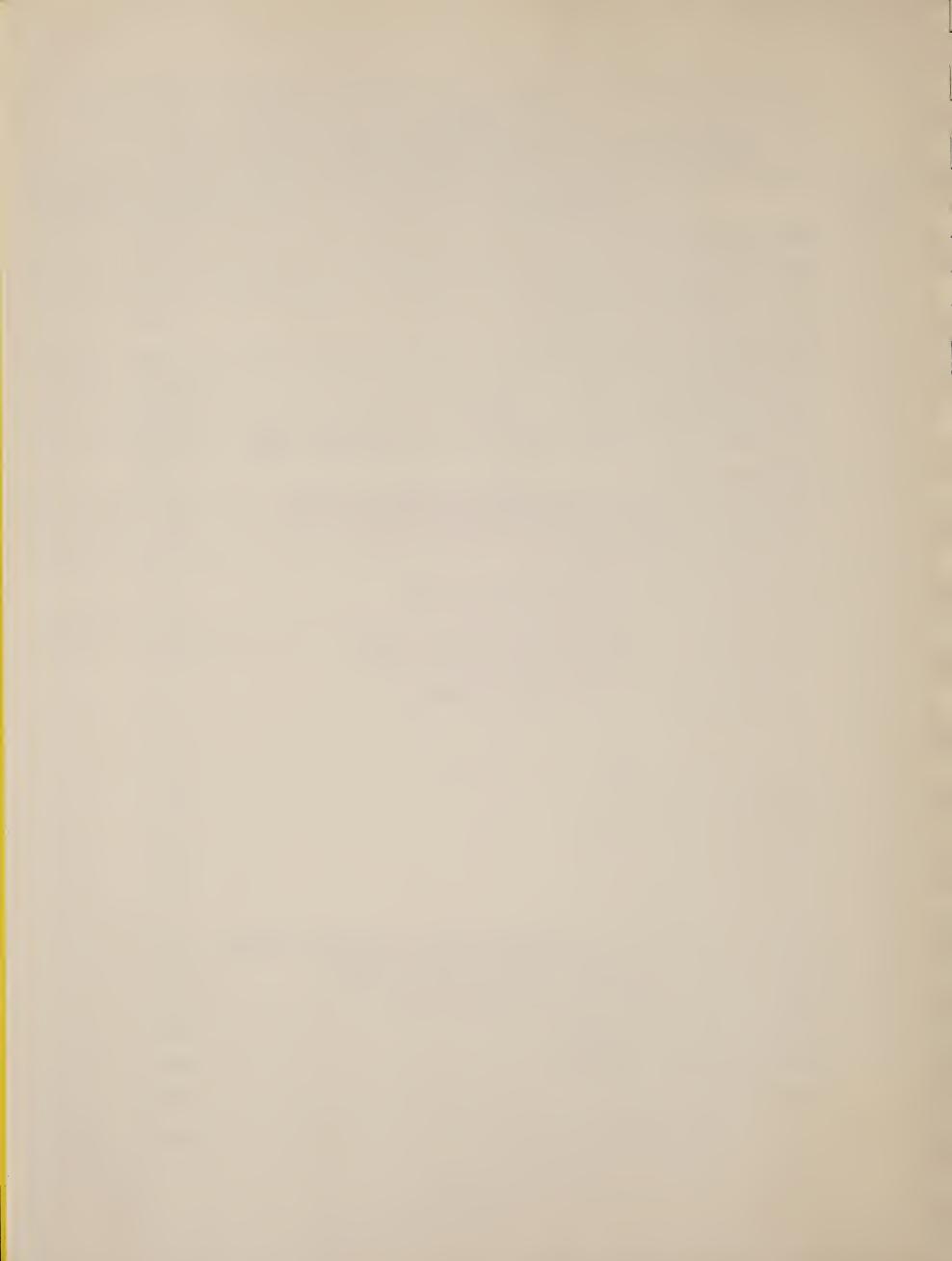
The acreage and proportionate extent of each mapping unit are shown in Table 1. Many of the terms used in describing soils can be found in the Glossary at the end of this survey, and more detailed information about the terminology and methods of soil mapping can be obtained from the Soil Survey Manual $(2)1^{/}$.

1/Numbers in parentheses refer to Literature Cited, p.

TABLE I

Approximate Acreage and Proportionate Extent of Mapping Units

Mapping Unit	Soil Name	Acreage	Percent of Area
102	Shale rock land	2,228	3.9
110	Natrargids	616	1.1
112	Rock land-Natrargids complex	816	1.4
113	Salorthids-Natrargids complex	652	1.2
250	Glendive-Havre complex, saline	444	0.8
251	Bluerim-Tigon association	6,700	12.0
252	Tigon-Bluerim association	8,704	14.5
253	Rallod-Onason-Rock outcrop complex, 10 to 30 percent slopes	1,628	2.9
254	Combined with 256	334	0.6
256	Bluerim-Abston and Milren soils, 3 to 15 percent slopes	2,368	3.1
257	Bluerim-Cotha association	3,340	6.0
258	Forelle-Havre association	1,160	2.0
259	Ryark-Relsob complex, 3 to 10 percent slopes	1,208	2.1
260	Ryark-Cothran association	2,716	4.8
261	Coalmont-Bluerim complex, 3 to 15 percent slopes	1,348	2.4
262	Cotha-Ryark complex, 3 to 15 percent slopes	872	1.5
263	Vible sandy loam	504	0,9
264	Fluvents	836	1.4
351	Laney-Glenderson complex	5,856	13.0
352	Fraddle-Ouard complex	952	1.6
354	Fraddle-Littsan association	1,860	3.3
355	Combined with 365	1,228	2.2
356	Koonich-Laney complex	764	1.2
357	Rock land, Huguston, and Youjay soils, 10 to 30 percent slopes	2,928	5.2
359	Rock land-Hatermus complex, 10 to 30 percent slopes	1,000	1.9
360	DeBone-Tresano complex, 6 to 10 percent slopes	1,024	1.9
361	Fraddle-Haterton association	1,900	3.4
365	Littsan-Bodorumpe association	1,876	3.3
	Water	236	.4
Total		56,098	100.0



ABSTON SERIES

The Abston series are well drained soils. They formed in residuum from alkaline shales on hillsides. Slopes are 6 to 15 percent. Elevation is 7,000 to 7,300 feet. Vegetation is big sagebrush, low sagebrush, thickspike wheatgrass, and Sandberg bluegrass. Precipitation is 10 to 12 inches, mean annual air temperature is about 36°F., and the frost-free season is 80 to 90 days.

In a representative profile the surface layer is yellowish brown, neutral sandy loam about 1 inch thick. The subsurface layer is light gray, neutral sandy loam about 2 inches thick. The upper part of the subsoil is brown, mildly alkaline clay about 2 inches thick. The lower part of the subsoil is grayish brown, strongly alkaline to very strongly alkaline clay to sandy clay loam about 12 inches thick. The substratum is brown to light brownish gray, very strongly alkaline sandy clay loam about 17 inches thick. Soft, alkaline, calcareous shale occurs at 34 inches.

The soil is slowly permeable. Available water capacity for the profile is 1.4 to 3.4 inches. Effective rooting depth is 20 to 40 inches. Typically, the soils have many fine, very fine, and medium roots to 5 inches; few fine and medium roots to 10 inches; and very few fine roots to 14 inches.

The Abston soils are used for rangeland and wildlife habitat.

The representative profile is located in the SW_4^1 , SW_4^1 , Sec. 19, T. 30 N., R. 108 W.

- Al O-linch Yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine crumb structure; soft, loose, nonsticky, nonplastic; many micro, very fine, fine, and medium roots; neutral, pH 6.8; abrupt smooth boundary.
- A2 1-3 inches Light gray (10YR 7/1) sandy loam, dark grayish brown (10YR 4/2) moist; vesicular crust; soft, very friable, slightly sticky, slightly plastic; many micro, very fine, fine, and medium roots; neutral, pH 7.0; abrupt smooth boundary.
- B2lt 3-5 inches Brown (10YR 5/3) clay, dark brown (10YR 4/3) moist; strong fine columnar parting to strong fine angular blocky structure; hard, firm, sticky, plastic; many very fine, fine, and medium roots; thick continuous waxy coatings on all ped faces; mildly alkaline, pH 7.4; clear wavy boundary.
- B22t 5-10 inches Grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; strong fine prismatic parting to strong fine angular blocky structure; hard, firm, sticky, plastic; few fine and medium roots; thick continuous waxy coatings on all ped faces; strongly alkaline, pH 9.0; clear wavy boundary.

- B3 10-17 inches Grayish brown (10YR 5/2) sandy clay loam, dark grayish brown (10YR 4/2) moist; moderate fine angular blocky structure; hard, firm, sticky, plastic; very few fine roots; thin discontinuous waxy coatings on ped faces; slightly effervescent; very strongly alkaline, pH 9.2; clear wavy boundary.
- Clca 17-28 inches Brown (10YR 5/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; massive; hard, firm, slightly sticky, slightly plastic; strongly effervescent; many fine seams of secondary lime; very strongly alkaline, pH 9.4; gradual wavy boundary.
- C2ca 28-34 inches Light brownish gray (10YR 6/2) sandy clay loam, dark grayish brown (10YR 4/2) moist; massive; hard, firm, slightly sticky, slightly plastic; strongly effervescent; many medium seams of secondary lime; very strongly alkaline, pH 9.4; gradual wavy boundary.

C3 34 inches Soft, alkaline, calcareous shale.

<u>Range of Characteristics</u>: Depth to bedrock ranges from 20 to 40 inches and usually occurs at depths of 26 to 36 inches. Depth to carbonates ranges from 10 to 20 inches. Thickness of solum ranges from 15 to 24 inches. Content of gravel ranges from 0 to 5 percent.

The hue of the A horizon is 2.5Y or 10YR. The value is 4 to 7 dry and 3 to 5 moist. The chroma is 1 to 4 dry and moist. The texture is typically sandy loam but may be fine sandy loam or very fine sandy loam. Reaction is neutral or mildly alkaline.

The hue of the B2lt and B22t horizons is 2.5Y or IOYR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist.

The hue of the B3 horizon is 2.5Y or 10YR. The value is 4 or 5 dry and 3 or 4 moist. The chroma is 2 or 3 dry and moist. The texture ranges from sandy clay loam to sandy clay. Reaction ranges from strongly alkaline to very strongly alkaline.

The hue of the Cca horizons is 5Y to 10YR. The texture is typically sandy clay loam but may range from very fine sandy loam to sandy clay loam.

The Abston soils are mapped with the Bluerim and Milren soils.

BLUERIM SERIES

The Bluerim series are well drained soils. They formed in residuum from calcareous sandy shale interbedded with arkosic sandstone on hillsides. Slopes are 3 to 20 percent. Elevation is 7,000 to 7,300 feet. Vegetation is big sagebrush thickspike wheatgrass, Sandberg bluegrass, and needleandthread. Precipitation is 10 to 12 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month. In a representative profile the surface layer is brown, mildly alkaline sandy loam about 3 inches thick. The upper part of the subsoil is brown, mildly alkaline sandy clay loam about 15 inches thick. The lower part of the subsoil is grayish brown, mildly alkaline sandy loam about 6 inches thick. The substratum is light olive brown, moderately alkaline sandy loam about 5 inches thick. Soft, calcareous sandy shale occurs at 29 inches.

The soil is moderately permeable. Available water capacity for the profile is 2.5 to 5.75 inches. Effective rooting depth is 20 to 40 inches. Typically, the soil has many very fine, fine, and medium roots to 3 inches; many fine and medium roots to 12 inches; few medium roots to 18 inches; and very few medium roots to 24 inches.

The Bluerim soils are used for rangeland and wildlife habitat.

The representative profile is located in the NW_4^1 , SE_4^1 , Sec. 3, T. 30 N., R. 108 W.

- Al 0-3 inches Brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; moderate medium and fine crumb structure; soft, very friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; paving on surface of 15 percent very fine gravel; mildly alkaline, pH 7.4; clear smooth boundary.
- B2lt 3-12 inches Brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; weak medium prismatic parting to moderate medium angular blocky structure; hard, friable, sticky, plastic; many fine and medium roots; thin nearly continuous waxy coatings on most ped faces; 10 percent very fine gravel; mildly alkaline, pH 7.6; clear smooth boundary.
- B22t 12-18 inches Brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; moderate medium angular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few medium roots; thin nearly continuous waxy coatings on most ped faces; 10 percent very fine gravel; mildly alkaline, pH 7.6; abrupt smooth boundary.
- B3 18-24 inches Grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak medium angular blocky structure; slightly hard, very friable, slightly sticky, nonplastic; very few medium roots; thin patchy waxy coatings on some ped faces; 10 percent very fine gravel; mildly alkaline, pH 7.8; clear smooth boundary.
- Cl 24-29 inches Light olive brown (2.5Y 5/4) sandy loam, olive brown (2.5Y 4/4) moist; massive; soft, very friable, slightly sticky, nonplastic; 10 percent very fine gravel; slightly effervescent in spots and seams; moderately alkaline, pH 8.4; gradual wavy boundary.
- C2 29 inches Soft, olive, calcareous sandy shale with seams and nests of secondary lime.

Range of Characteristics: Depth to bedrock ranges from 20 to 40 inches. Depth to calcareous materials ranges from 20 to 30 inches. Thickness of solum ranges from 15 to 28 inches. Content of coarse fragments ranges from 5 to 15 percent and consists of very fine gravel.

The hue of the Al horizon is 2.5Y or 10YR. The value is 4 or 5 dry and 3 or 4 moist. The chroma is 2 to 4 dry and moist. The texture is typically sandy loam but is fine sandy loam in some pedons. Reaction is neutral or mildly alkaline.

The hue of the B2t horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 3 or 4 dry and moist. The texture is sandy clay loam with 20 to 28 percent clay and more than 35 percent of the sand is fine sand or coarser. Reaction is neutral or mildly alkaline.

The hue of the B3 horizon is 2.5Y or 10YR. The value is 4 to 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is sandy loam with the clay content ranging from 12 to about 18 percent. Reaction is mildly alkaline or moderately alkaline.

The hue of the Cl horizon ranges from 5Y to 10YR. The texture ranges from sandy loam to sandy clay loam. Reaction is moderately or strongly alkaline. Very strongly alkaline reactions may occur in the soft shale of the C2 horizons at some locations.

<u>Bluerim-Cotha association</u> (257) - This association consists of about 50 percent Bluerim sandy loam, 6 to 15 percent slopes, and about 25 percent Cotha sandy loam, 6 to 15 percent slopes. The profile of the Bluerim soils is similar to the profile described as representative of the series. The profile of the Cotha soils is the same as the profile described as representative of the series. This unit occupies landscapes consisting of rolling and hilly uplands and a few narrow, rolling ridges. The Bluerim soils occur on concave surfaces and uniform, sloping areas. The Cotha soils occur on rounded or convex surfaces. This mapping unit occurs above the Blue Rim topographic break. Included are about 15 percent Tigon soils, 5 percent Onason soils, and about 5 percent Milren soils.

Runoff is medium to rapid, and erosion hazard is moderate to severe. Wind erosion hazard is severe

This association is used for rangeland and wildlife habitat. Bluerim soils--Loamy, 10 to 14 inch precipitation zone, range site; Cotha soils--Sandy, 10 to 14 inch precipitation zone, range site.

<u>Bluerim-Tigon</u> association (251) - This association consists of about 50 percent Bluerim sandy loam, 6 to 20 percent slopes, and about 30 percent Tigon sandy loam, 6 to 30 percent slopes. The profile of the Bluerim soils is the same as the profile described as representative of the series. The profile of the Tigon soils is similar to the profile described under the series headings. The soils of the association occupy ridges and hillsides. The landscapes are incised by many drainages. The Bluerim soils occur on the hillsides below the ridges. The Tigon soils occupy the ridges and upper sidehills above the Bluerim soils. This mapping unit occurs above the Blue Rim topographic break. Included are about 5 percent soils similar to Bluerim soils but reddish colored; about 5 percent soils similar to Bluerim soils but very strongly alkaline; about 5 percent Abston soils, and about 5 percent Cotha soils.

Runoff is medium to rapid and erosion hazard is moderate to severe. Wind erosion hazard is severe.

This association is used for rangeland and wildlife habitat. Bluerim soils--Loamy, 10 to 14 inch precipitation zone, range site. Tigon soils--Shallow Loamy, 10 to 14 inch precipitation zone, range site.

Bluerim, Abston, and Milren soils, 3 to 15 percent slopes (256) - This undifferentiated unit consists of about 30 percent Bluerim sandy loam, 6 to 15 percent slopes; 25 percent Abston sandy loam, 6 to 15 percent slopes; and about 25 percent Milren sandy loam, 3 to 10 percent slopes. There is considerable variation in composition of the individual areas, and all of the soils may or may not occur in each area. The profile of the Bluerim soils is similar to the profile described under the series headings. The profiles of the Abston and Milren soils are the same as the profiles described as representative for the respective series. The soils of this unit occupy undulating to hilly uplands and sloping alluvial fans. The Bluerim and Abston soils are usually intermingled on the hillsides on the upper portions of the landscapes. The Milren soils usually occur below these soils on alluvial fans. This mapping unit occurs above the Blue Rim topographic break. Included are about 10 percent soils similar to Abston soils with shale at 10 to 20 inches, about 5 percent soils similar to the Bluerim soils with very strongly alkaline reaction in the underlying sandy shale; and about 5 percent soils similar to the Milren soils but lacking very strongly alkaline materials below the subsoil.

Runoff is medium to rapid for Bluerim and Abston soils, and erosion hazard is moderate to severe. Runoff is slow to medium for Milren soils, and erosion hazard is slight to moderate. Wind erosion hazard is severe.

This association is used for rangeland and wildlife habitat. Bluerim soils--Loamy, 10 to 14 inch precipitation zone, range site. Abston soils--Clayey, 10 to 14 inch precipitation zone, range site. Milren soils--Clayey, 10 to 14 inch precipitation zone, range site.

BODORUMPE SERIES

The Bodorumpe series are well drained soils. They formed in wind-deposited sand undulating to hilly uplands. Slopes are 3 to 15 percent. Elevation is 6,700 to 7,000 feet. Vegetation is needleleaf sedge, needleandthread, rubber rabbitbrush, and thickspike wheatgrass. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is pale brown, neutral fine sand about 3 inches thick. The upper part of the underlying layer is pale brown mildly alkaline loamy fine sand about 22 inches thick. The lower part of the underlying layer is grayish brown mildly alkaline fine sand about 11 inches thick. Soft, calcareous, platy shale occurs at 36 inches. The soil is rapidly permeable. Available water capacity for the profile is 1.2 to 4.0 inches. Effective rooting depth is 20 to 40 inches. Typically, the soil has many very fine and fine roots to 7 inches and a few very fine roots to 36 inches.

The Bodorumpe soils are used for rangeland and wildlife habitat.

Representative profile is located in the NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 2, T. 30 N., R. 109 W.

- Al 0-3 inches Pale brown (10YR 6/3) fine sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky, nonplastic; neutral, pH 7.2; gradual wavy boundary.
- Cl 3-25 inches Pale brown (10YR 6/3) loamy fine sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky, nonplastic; mildly alkaline, pH 7.4; clear smooth boundary.
- C2 25-36 inches Grayish brown (10YR 5/2) fine sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky, nonplastic; mildly alkaline, pH 7.6; gradual wavy boundary.

IIC3 36 inches Soft, calcareous, platy shale; strongly effervescent, pH 8.8

Range of Characteristics: Depth to bedrock ranges from 20 to 40 inches. These soils are usually noncalcareous but some pedons may have carbonates immediately above the underlying shale.

The hue of the Al horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture ranges from fine sand to loamy fine sand and is typically fine sand. Reaction is neutral or mildly alkaline.

The hue of the C horizon is 2.5Y or 10YR. The value is 4 to 6 dry and 3 or 4 moist. The chroma is 2 or 3 dry and moist. The texture ranges from fine sand to loamy fine sand and is usually a loamy fine sand in the upper part of the C horizon and a fine sand in the lower part of the C horizon. Reaction is neutral or mildly alkaline.

The Bodorumpe soils are mapped in association with the Littsan soils.

COALMONT SERIES

The Coalmont series are well drained soils. They formed in residuum from soft shale on undulating to hilly uplands. Slopes are 3 to 15 percent. Elevation is 7,000 to 7,300 feet. Vegetation is low sagebrush, thickspike wheatgrass, and Sandberg bluegrass. Precipitation is 10 to 12 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In the representative profile the surface layer is brown, neutral fine sandy loam about 2 inches thick. The subsurface layer is light brownish gray, neutral sandy loam about 2 inches thick. The subsoil is about 20 inches thick. In sequence from the top the upper 5 inches is brown, neutral silty clay; the next 5 inches is brown, mildly alkaline clay loam; the next 7 inches is pinkish gray, strongly alkaline clay loam; and the lower 3 inches is brown, strongly alkaline clay loam. It is underlain by soft, calcareous shale at a depth of 24 inches.

Permeability is slow. Available water capacity for the profile is 3.5 to 8.25 inches. Effective rooting depth is 20 to 40 inches. Typically, the soil has abundant fine and very fine roots to 4 inches, plentiful fine and very fine roots to 9 inches, and few fine and very fine roots to 21 inches. Few coarse roots extend to depths of 24 inches.

The Coalmont soils are used for rangeland and wildlife habitat.

The representative profile is located in the SE_4^1 , NW_4^1 , Sec. 24, T. 31 N., R. 109 W.

- Al 0-2 inches Brown (10YR 5/3) fine sandy loam, dark brown (10YR 4/3) moist; weak fine crumb structure; soft, very friable, nonsticky, nonplastic; many fine and very fine roots; neutral, pH 7.2; clear smooth boundary.
- A2 2-4 inches Light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many fine and very fine roots; neutral, pH 6.8; abrupt smooth boundary.
- B2lt 4-9 inches Brown (7.5YR 5/2) silty clay, dark brown (7.5YR 4/2) moist; strong fine columnar parting to strong fine angular blocky structure; extremely hard, extremely firm, very sticky, plastic; many very fine and fine roots; thick continuous waxy coatings on all ped faces; neutral, pH 7.2; clear smooth boundary.
- B22t 9-14 inches Brown (7.5YR 5/2) clay loam, dark brown (2.5YR 4/2) moist; strong fine prismatic parting to strong fine angular blocky structure; extremely hard, very firm, sticky, plastic; few very fine, fine, and coarse roots; thick continuous waxy coatings on all ped faces; mildly alkaline, pH 7.6; clear smooth boundary.
- B23tca 14-21 inches Pinkish gray (7.5YR 6/2) clay loam, brown (7.5YR 5/2) moist; moderate fine prismatic parting to strong fine angular blocky structure; hard, firm, sticky, plastic; few very fine, fine, and coarse roots; thick nearly continuous waxy coatings on all ped faces; effervescent, many seams and nests of secondary lime; strongly alkaline, pH 8.6; clear smooth boundary.
 - B3ca 21-24 inches Brown (7.5YR 5/2) and pockets of grayish brown (2.5Y 5/2) clay loam, dark brown (10YR 4/3) moist; moderate fine

angular blocky structure; slightly hard, firm, sticky, plastic; few coarse roots; effervescent, many seams and soft masses of secondary lime; strongly alkaline, pH 9.0; gradual wavy boundary.

C 24 inches Olive, calcareous, soft shale.

<u>Range of Characteristics</u>: Depth to bedrock ranges from 20 to 40 inches. Depth to calcareous materials ranges from 12 to 24 inches. Thickness of the solum ranges from 18 to 24 inches. Content of coarse fragments is 0 to 5 percent and consists of small shale fragments.

The hue of the Al horizon is 2.5Y or 10YR. The value is 4 or 5 dry and 3 or 4 moist. The chroma is 2 or 3 dry and moist. Texture is typically fine sandy loam but may be very fine sandy loam. Reaction is neutral to mildly alkaline.

The hue of the B2t horizons ranges from 2.5Y to 7.5YR. The value is 4 or 5 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture ranges from clay loam to silty clay with about 38 to 45 percent clay content. Reaction is neutral to mildly alkaline.

The B23tca horizon and the B3ca horizon range in hue from 2.5Y to 7.5YR. The texture is typically clay loam with the clay content ranging from 30 to about 35 percent. Reaction is mildly alkaline to strongly alkaline.

<u>Coalmont-Bluerim complex, 3 to 15 percent slopes (261)</u> - This complex consists of about 40 percent Coalmont fine sandy loam, 3 to 15 percent slopes, and about 30 percent Bluerim sandy loam, 3 to 15 percent slopes. The profile of the Coalmont soils is the same as the profile described as representative of the series. The profile of the Bluerim soils is similar to the profile described under the series headings. The soils of this complex developed on rounded ridges and smooth hillsides in areas where the bedrocks are quite complex. The bedrocks usually are shale or sandy shale. The Coalmont and Bluerim soils occur in a complex pattern throughout the landscapes. The Coalmont soils occur where the bedrocks are clay shales. The Bluerim soils occur over sandstone or sandy shale bedrocks. This mapping unit occurs above the Blue Rim topographic break. Included are about 15 percent Abston soils, about 10 percent thin alkaline soils, and about 5 percent Tigon soils.

Runoff is medium to rapid and erosion hazard is moderate to severe. Wind erosion hazard is severe.

This complex is used for rangeland and wildlife habitat. Coalmont spils--Clayey, 10 to 14 inch precipitation zone, range site. Bluerim soils--Loamy, 10 to 14 inch precipitation zone, range site.

COTHA SERIES

The Cotha series are well drained soils. They formed in residuum from sandstone undulating to hilly uplands. Slopes are 3 to 15 percent. Elevation is 7,000 to 7,300 feet. Vegetation is needleandthread, big sagebrush, and thickspike wheat-grass. Precipitation is 10 to 12 inches, and the mean annual air temperature is

about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In the representative profile the surface layer is pale brown, neutral sandy loam about 4 inches thick. The upper part of the subsoil is brown to yellowish brown neutral sandy loam about 24 inches thick. The substratum is light yellowish brown neutral sandy loam about 6 inches thick. Soft, noncalcareous sandstone occurs at 34 inches.

Permeability is moderately rapid. Available water capacity for the profile is 2.25 to 5.25 inches. Effective rooting depth is 20 to 40 inches. Typically, the soil has many fine, very fine, and medium roots to 11 inches; few fine roots to 18 inches; and few very fine roots to 28 inches.

The Cotha soils are used for rangeland and wildlife habitat.

The representative profile is located near the center of Sec. 23, T. 31 N., R. 109 W.

- Al 0-4 inches Pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; weak fine crumb structure; loose, very friable, nonsticky, nonplastic; many very fine, fine, and medium roots; neutral, pH 6.8; clear smooth boundary.
- B2lt 4-11 inches Brown (10YR 5/3) sandy loam, dark brown (10YR 4/3) moist; weak medium prismatic parting to weak medium angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; thin discontinuous waxy coatings on some ped faces; neutral, pH 6.8; clear smooth boundary.
- B22t 11-18 inches Brown (10YR 5/3) sandy loam, dark brown (10YR 4/3) moist; weak medium prismatic parting to moderate medium angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine roots; thin discontinuous waxy coatings on some ped faces and clay bridging between sand grains; neutral, pH 7.0; clear smooth boundary.
- B3 18-28 inches Yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium angular blocky structure; soft, friable, slightly sticky, slightly plastic; very few fine roots; thin discontinuous waxy coatings in root channels and some clay bridging between sand grains; neutral, pH 7.0; gradual wavy boundary.
- Cl 28-34 inches Light yellowish brown (10YR 6/4) sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky, nonplastic; neutral, pH 7.2; gradual wavy boundary.

C2 34 inches Light yellowish brown, soft, noncalcareous, fine grained sandstone; few seams of calcium carbonate.

<u>Range in Characteristics</u>: Depth to bedrock ranges from 20 to 40 inches. The soils are noncalcareous throughout, although there may be a few seams of calcium carbonate in the underlying sandstone. Thickness of solum ranges from 16 to 30 inches. Content of coarse fragments ranges from 5 to 15 percent and is usually about 10 percent, consisting of one-fourth to one-half inch sandstone fragments.

The hue of the Al horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 3 or 4 moist. The chroma is 2 or 3 dry and moist. The texture is typically sandy loam but may be fine sandy loam in some pedons. Reaction is neutral or mildly alkaline.

The hue of the B2t horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is sandy loam ranging in clay content from 10 to about 16 percent. Reaction is neutral or mildly alkaline.

The hue of the B3 horizon is 2.5Y or 10YR. The value is 4 or 5 dry and 3 or 4 moist. The chroma is 3 or 4 dry and moist. The texture is usually a sandy loam but may be fine sandy loam in some pedons. Reaction is neutral or mildly alkaline.

The hue of the Cl horizon is 2.5Y or 10YR. Reaction ranges from neutral to mildly alkaline.

<u>Cotha-Ryark complex</u>, <u>3</u> to <u>15</u> percent <u>slopes</u> (<u>262</u>) - This complex consists of about 40 percent Cotha sandy loam, <u>3</u> to <u>15</u> percent slopes; about <u>25</u> percent Ryark loamy sand, <u>3</u> to <u>6</u> percent slopes; and about <u>20</u> percent Bluerim sandy loam, <u>3</u> to <u>15</u> percent slopes. The profiles of the Ryark soils and the Bluerim soils are similar to the profiles described under the respective series headings. These soils are intermingled in the landscapes. The underlying bedrock from which the soils are formed does not occur at uniform depths and evidently undulates. The undulating characteristic of the bedrock allows for the development of moderately deep and deep soils in the same landscape configuration. This mapping unit occurs above the topographic break of the Blue Rim but extends to the northwest toward the Newfork River from the northern end of the Blue Rim. Included are about 10 percent Relsob and about <u>5</u> percent Tigon soils. In some areas there are small areas of alkaline soils and small areas of reddish colored soils.

Runoff is slow to rapid and erosion hazard is moderate to severe. Wind erosion hazard is severe.

This complex is used for rangeland and wildlife habitat. Cotha and Ryark soils--Sandy, 10 to 14 inch precipitation zone, range site. Bluerim soils--Loamy, 10 to 14 inch precipitation zone, range site.

COTHRAN SERIES

The Cothran series are well drained soils. They formed in wind-deposited sands on uplands. Slopes are 3 to 6 percent. Elevation is 7,000 to 7,300 feet. Vegetation is low rabbitbrush, needleandthread, and thickspike wheatgrass. Precipitation is 10 to 12 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, and frost may occur in any month. In a representative profile the surface layer is pale brown, neutral fine sand about two inches thick. The underlying layer is grayish brown to brown, neutral loamy fine sand to neutral fine sand to 60 inches or more.

The soil is rapidly permeable. Available water capacity for the profile is 3.0 to 5.0 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many fine and very fine and few coarse roots to 4 inches, few fine and very fine roots to 12 inches, and very few very fine roots to 28 inches.

The Cothran soils are used for rangeland and wildlife habitat.

The representative profile is located in the southeast quarter of the NE $\frac{1}{4}$ of Sec. 28, T. 31 N., R. 108 W.

- Al 0-2 inches Pale brown (10YR 6/3) fine sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky, nonplastic; many very fine and fine and few coarse roots; neutral, pH 6.6; clear smooth boundary.
- Cl 2-28 inches Grayish brown (10YR 5/2) loamy fine sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky, nonplastic; many very fine and fine and few coarse roots to four inches, few very fine and fine roots to twelve inches, very few very fine roots to 28 inches; neutral, pH 6.8; gradual wavy boundary.
- C2 28-60 inches Brown (10YR 5/3) fine sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky, nonplastic; neutral, pH 6.8.

Range in Characteristics: These soils are usually noncalcareous throughout but may in some areas have weakly calcareous materials below depths of 48 to 50 inches. Content of coarse fragments ranges from 0 to 10 percent and consists of one-half inch sandstone fragments.

The hue of the Al horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 3 or 4 dry and moist. The texture is typically a fine sand but may range to loamy fine sand. Reaction is slightly acid to neutral.

The C horizons range in hue from 2.5Y to 7.5YR. The value is 4 to 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. These horizons may be thickly stratified fine sand to loamy fine sand. Reaction is neutral or mildly alkaline.

The Cothran soils are mapped with the Ryark soils.

DEBONE SERIES

The DeBone series are well drained soils. They formed in alluvium from alkaline shales on alluvial fans. Slopes are 6 to 10 percent. Elevation is 6,800 to 7,000 feet. Vegetation is big sagebrush, thickspike wheatgrass, Sandberg bluegrass, and low rabbitbrush. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36^oF. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is brown, mildly alkaline sandy loam to fine sandy loam about 8 inches thick. The subsurface layer is pinkish gray, neutral sandy loam about 2 inches thick. The upper part of the subsoil is brown, strongly alkaline sandy clay about 6 inches thick. The lower part of the subsoil is brown, very strongly alkaline sandy clay loam about 8 inches thick. The substratum is light brownish gray, very strongly alkaline sandy clay loam to 60 inches or more.

The soil is moderately slow to slowly permeable. Available water capacity for the profile is 3.5 to 6.5 inches. Effective rooting depth is 40 to 60 inches or more. Typically, the soil has many fine and medium and a few coarse roots to 8 inches, few fine, medium, and coarse roots to 16 inches, and very few medium roots to 24 inches.

The DeBone soils are used for rangeland and wildlife habitat.

The representative profile is located in the SE_4^1 , SW_4^1 , Sec. 24, T. 30 N., R. 109 W.

- All 0-2 inches Brown (10YR 5/3) sandy loam, dark grayish brown (10YR 4/2) moist; weak medium crumb structure; soft, very friable, slightly sticky, slightly plastic; many fine and medium and few coarse roots; mildly alkaline, pH 7.4; clear smooth boundary.
- Al2 2-8 inches Brown (10YR 5/3) fine sandy loam, dark brown (10YR 4/3) moist; weak coarse crumb structure; soft, very friable, slightly sticky, slightly plastic; many fine and medium and few coarse roots; mildly alkaline, pH 7.6; clear smooth boundary.
- A2 8-10 inches Pinkish gray (7.5YR 6/2) sandy loam, dark brown (7.5YR 4/2) moist; massive; slightly hard, very friable, slightly sticky, slightly plastic; few fine medium and coarse roots; neutral, pH 7.2; abrupt smooth boundary.
- B21t 10-16 inches Brown (7.5YR 5/2) sandy clay, dark brown (7.5YR 4/2) moist; moderate medium columnar parting to moderate medium angular blocky structure; very hard, firm, sticky, plastic; few fine medium and coarse roots; thick continuous waxy coatings on all ped faces; strongly alkaline, pH 9.0; clear smooth boundary.
- B22t 16-24 inches Brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; moderate medium prismatic parting to moderate medium angular blocky structure; very hard, firm, sticky, plastic; very few medium roots; thick nearly continuous waxy coatings on all ped faces; slightly effervescent in seams; very strongly alkaline, pH 9.4; clear smooth boundary.

Clca 24-60 inches Light brownish gray (10YR 6/2) sandy clay loam, dark grayish brown (10YR 4/2) moist; massive; hard, firm, sticky, plastic; violently effervescent, many fine threads of secondary lime; very strongly alkaline, pH 9.4.

Range in Characteristics: Depth to calcareous materials usually ranges from 8 to 20 inches, but some profiles may be calcareous to the surface. The thickness of solum ranges from 16 to 30 inches. Content of gravel is 0 to 5 percent. Exchangeable sodium percentage exceeds 15 percent in part of or all of the B2t horizons and the Cca horizons.

The hue of the A horizon is 2.5Y or 10YR. The value is 4 to 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is typically a sandy loam but may be fine sandy loam. Reaction is neutral or mildly alkaline.

The hue of the B2t horizons is 2.5Y to 7.5YR. The value is 4 or 5 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture ranges from sandy clay loam to sandy clay. The clay content of the upper part of the B2t horizon generally exceeds 40 percent. The clay content of the lower part of the B2t horizon usually ranges from 32 to 36 percent. Reaction is strongly alkaline or very strongly alkaline and usually increases with depth.

The hue of the C horizon is 2.5Y to 10YR. The texture is fine sandy loam to sandy clay loam. Reaction is strongly alkaline or very strongly alkaline.

DeBone-Tresano complex, 6 to 10 percent slopes (360) - This complex consists of about 45 percent DeBone sandy loam, 6 to 10 percent slopes, and about 25 percent Tresano sandy loam, 6 to 10 percent slopes. The profiles of these soils are the same as the profiles described under the respective series headings. This complex occupies rolling alluvial fans, usually between ridges adjacent to foothills. The DeBone and Tresano soils are intermingled in the landscape. This mapping unit occurs below the Blue Rim topographic break. Included are about 10 percent Laney soils, about 10 percent Fraddle soils, about 5 percent Youjay soils, and about 5 percent barren alkali areas.

Runoff is medium to rapid and the erosion hazard is moderate to severe. Wind erosion hazard is severe.

This complex is used for rangeland and wildlife habitat. DeBone soils--Loamy (7 to 9 inch precipitation zone), rangesite. Tresano soils--Loamy (7 to 9 inch precipitation zone), rangesite.

Fluvents (264) - This mapping unit consists of about 60 percent moderately well drained loamy sand and sandy loam alluvial soils and about 25 percent poorly drained silt loam and sandy loam alluvial soils. These soils occur on the floodplain of the Newfork River. The moderately well drained soils occupy the higher areas of the floodplain and have water tables at depths of 3 to 5 feet. The vegetation is western wheatgrass and big sagebrush. The poorly drained soils occupy the low bottoms, oxbows, and old stream meanders. The vegetation is sedges, redtop, and trees. Included is a total of about 15 percent riverwash and stream channels.

Runoff is slow and erosion hazard is slight.

This unit is used for rangeland, wildlife habitat, and recreation. Due to the complexity of the unit, no rangesite is assigned.

FORELLE SERIES

The Forelle series are well drained soils. They formed in alluvium and slope wash on alluvial fans. Slopes are 0 to 3 percent. Elevation is 7,000 to 7,300 feet. Vegetation is big sagebrush, thickspike wheatgrass, and Canby bluegrass. The precipitation is 10 to 12 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is grayish brown to brown, neutral to mildly alkaline clay loam about 4 inches thick. The upper part of the subsoil is brown, mildly alkaline sandy clay loam about 22 inches thick. The lower part of the subsoil is brown, strongly alkaline sandy clay loam about 6 inches thick. The substratum is brown, strongly alkaline clay loam to 60 inches or more.

The soil is moderately permeable. Available water capacity for the profile is 9.75 to 11.0 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many fine and medium roots to 4 inches, many fine and medium roots and few coarse roots to 16 inches, and a few coarse roots to 26 inches.

The Forelle soils are used for rangeland and wildlife habitat.

The representative profile is located in SE_4^1 , SW_4^1 , Sec. 29, T. 30 N., R. 108 W.

- All 0-2 inches Grayish brown (10YR 5/2) clay loam, dark brown (7.5YR 4/2) moist; weak medium crumb structure; slightly hard, firm, sticky, plastic; many medium and fine roots; neutral, pH 7.2; clear smooth boundary.
- Al2 2-4 inches Brown (10YR 5/3) clay loam, dark brown (7.5YR 4/2) moist; massive; slightly hard, firm, sticky, plastic; many fine and medium roots; mildly alkaline, pH 7.2; clear smooth boundary.
- B21t 4-16 inches Brown (7.5YR 5/2) sandy clay loam, dark brown (7.5YR 4/2) moist; moderate medium prismatic parting to strong medium angular blocky structure; very hard, very firm, very sticky, plastic; many fine and medium and few coarse roots; thick continuous waxy coatings on all ped faces; mildly alkaline, pH 7.4; clear smooth boundary.
- B22t 16-26 inches Brown (7.5YR 5/2) sandy clay loam, dark brown (7.5YR 4/2) moist; moderate fine prismatic parting to strong fine angular blocky structure; very hard, very firm, very sticky, plastic; few coarse roots; mildly alkaline, pH 7.6; clear smooth boundary.
- B3ca 26-32 inches Brown (7.5YR 5/2) sandy clay loam, dark brown (7.5YR 4/2) moist; moderate medium angular blocky structure; hard, firm, sticky, plastic; thin discontinuous waxy coatings on vertical ped faces; slightly effervescent, few fine nests and seams

of calcium carbonate; strongly alkaline, pH 8.6; gradual wavy boundary.

Cca 32-60 inches Brown (7.5YR 5/2) clay loam, dark brown (7.5YR 4/2) moist; massive; hard, firm, sticky, plastic; violently effervescent, many fine and medium seams and soft masses of calcium carbonate; strongly alkaline, pH 8.6.

Range in Characteristics: Depth to calcareous materials ranges from 16 to 30 inches. Content of gravel is 0 to 5 percent. Thickness of solum ranges from 16 to 36 inches.

The hue of the A horizon is 2.5Y or 10YR. The value is 4 or 5 dry and 3 or 4 moist. The chroma is 2 or 3 dry and moist. The texture is typically a clay loam but may range from silt loam to silty clay loam. Reaction is neutral or mildly alkaline.

The hue of the B2t horizons is 10YR or 7.5YR. The value is 4 or 5 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is a sandy clay loam with a clay content of from about 28 to 34 percent. Reaction is neutral or mildly alkaline.

The hue of the B3ca horizon is 10YR or 7.5YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 to 4 dry and moist. The texture is a sandy clay loam of about 30 percent clay. Reaction is moderately alkaline or strongly alkaline and few to many seams of secondary calcium carbonate are evident.

The hue of the Cca horizon is 2.5Y to 7.5YR. The texture ranges from fine sandy loam to clay loam. Reaction is moderately alkaline or strongly alkaline.

Forelle-Havre association (258) - This association consists of about 50 percent Forelle clay loam, 0 to 3 percent slopes, and about 30 percent Havre loam, 0 to 3 percent slopes. The profile of the Forelle soils is the same as the profile described as representative for the series. The profile of the Havre soils is similar to the profile described under the respective series headings. This association occupies nearly level floodplains and alluvial fans. The landscapes occur as narrow, meandering areas several miles long and from 100 feet to 1/8 of a mile wide. The Forelle soils occur on the alluvial fans positions adjacent to the uplands. The Havre soils occur on the narrow floodplains adjacent to intermittent stream channels. The principal area of this mapping unit is located along North Alkali Draw above the Blue Rim topographic break. Included are about 10 percent Glendive soils, about 5 percent Bluerim soils, and about 5 percent soils similar to the Forelle soils but having fine textured subsoils. In some areas the Bluerim soils make up 10 to 20 percent of the unit.

Runoff is slow and erosion hazard is slight.

This association is used for rangeland and wildlife habitat. Forelle soils--Loamy (10 to 14 inch precipitation zone) rangesite; Havre soils--Overflow (10 to 14 inch precipitation zone) rangesite.

FRADDLE SERIES

The Fraddle series are well drained soils. They formed in residuum from soft sandstone on uplands. Slopes are 3 to 20 percent. Elevation is 6,800 to 7,000 feet. Vegetation is big sagebrush, thickspike wheatgrass, and needleandthread. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In the representative profile the surface layer is pale brown, neutral sandy loam about 4 inches thick. The upper part of the subsoil is light yellowish brown, mildly alkaline sandy clay loam about 8 inches thick. The lower part of the subsoil is light olive brown, mildly alkaline sandy clay loam about 10 inches thick. The substratum is light yellowish brown, mildly alkaline sandy loam about 11 inches thick. Soft sandstone occurs at 33 inches.

The soil is moderately permeable. Available water capacity for the profile is 2.25 to 6.0 inches. Effective rooting depth is 20 to 40 inches. Typically, the soil has few very fine roots to 4 inches, many very fine roots to 12 inches, and few very fine roots to 22 inches.

The Fraddle soils are used for rangeland and wildlife habitat.

Representative profile is located in the SW_4^1 , SW_4^1 , Sec. 29, T. 31 N., R. 108 W.

- All 0-1 inch Pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; vesicular crust; soft, very friable, slightly sticky, slightly plastic; few very fine roots; neutral, pH 6.8; abrupt wavy boundary.
- Al2 1-4 inches Pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots; neutral, pH 6.8; clear wavy boundary.
- B2t 4-12 inches Light yellowish brown (10YR 6/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic parting to moderate medium subangular blocky structure; slightly hard, friable, sticky, slightly plastic; many very fine and fine roots; mildly alkaline, pH 7.6; clear wavy boundary.
- B3 12-22 inches Light olive brown (2.5Y 5/4) sandy clay loam, olive brown (2.5Y 4/4) moist; weak coarse prismatic parting to weak medium subangular blocky structure; slightly hard, friable, sticky, slightly plastic; few very fine and fine roots; mildly alkaline, pH 7.6; gradual wavy boundary.
- Cl 22-33 inches Light yellowish brown (2.5Y 6/4) sandy loam, olive brown (2.5Y 4/4) moist; massive; soft, very friable, slightly sticky, slightly plastic; mildly alkaline, pH 7.6; gradual wavy boundary.

C2 33 inches Soft sandstone with some thin seams of lime.

<u>Range in Characteristics</u>: Depth to bedrock ranges from 20 to 40 inches. These soils are usually noncalcareous throughout but a few pedons are weakly calcareous in the lower part of the C horizon or have thin seams of lime in the underlying sandstone. Thickness of solum ranges from 16 to 28 inches. The content of coarse fragments ranges from 0 to 5 percent and consists of one-half inch angular sandstone fragments.

The hue of the Al horizons is 2.5Y or 10YR. The value is 5 or 6 dry and 3 or 4 moist. The chroma is 2 or 3 dry and moist. The texture is typically a sandy loam but may be fine sandy loam. Reaction is neutral or mildly alkaline.

The hue of the B2t horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 3 or 4 dry and moist. The texture is a sandy clay loam of 20 to 28 percent clay, and more than 35 percent of the sand is fine sand or coarser. Reaction is neutral or mildly alkaline.

The hue of the B3 horizon is 2.5Y or 10YR. The value is 4 to 6 dry and 4 or 5 moist. The chroma is 3 or 4 dry and moist. The texture is typically sandy clay loam but may range from sandy clay loam to sandy loam. Reaction is neutral or mildly alkaline.

The hue of the C horizon is 5Y to 10YR. The texture is sandy loam to sandy clay loam. The reaction is mildly alkaline or moderately alkaline. In some profiles the lower part of the C horizon is calcareous.

Fraddle-Haterton association (361) - This association consists of about 40 percent Fraddle sandy loam, 3 to 20 percent slopes, about 25 percent Haterton fine sandy loam, 10 to 30 percent slopes, and about 20 percent Hatermus loam, 10 to 30 percent slopes. The profile of the Fraddle soils is similar to the profile described under the series headings. The profiles of the Haterton and Hatermus soils are the same as the profiles described as representative of the series. The landscapes consist of narrow, winding ridges and sidehills. The Fraddle soils occur on lower sidehills. The Haterton and Hatermus soils are intermingled on ridges and upper slopes of hillsides. This association occurs below the Blue Rim topographic break, primarily in the north central part of the area. Included are a total of about 10 percent Ouard and Youjay soils and about 5 percent Littsan soils. In section 29 of T. 31 N., R. 108 W., there are areas of this association with as much as 15 percent inclusion of a moderately deep loam soil with a weakly defined subsoil. Runoff is moderate to rapid for Fraddle soils, and erosion hazard is moderate to severe.

Runoff is rapid on Haterton and Hatermus soils, and erosion hazard is severe. Wind erosion hazard is severe on the Fraddle soils and Haterton soils.

This association is used for rangeland and wildlife habitat.

Fraddle soils--Loamy (7 to 9 inch precipitation zone) rangesite; Haterton and Hatermus soils--Shallow Loamy (7 to 9 inch precipitation zone) rangesite.

<u>Fraddle-Littsan association (354)</u> - This association consists of about 50 percent Fraddle sandy loam, 3 to 10 percent slopes, and about 25 percent Littsan fine sandy loam, 3 to 10 percent slopes. The profiles of these soils are similar to the profiles described under the respective series headings. The landscapes consist of a series of low ridges and undulating to rolling sidehills. The Fraddle soils occur on the lower sidehills. The Littsan soils occur on low ridges and upper sidehills. This association occurs below the Blue Rim topographic break along the Big Piney highway. Included are about 15 percent Bodorumpe soils, about 5 percent Haterton soils, and a total of about 5 percent Ouard and Youjay soils.

Runoff is slow to medium, and erosion hazard is slight to moderate. Wind erosion hazard is severe.

This association is used for rangeland and wildlife habitat. Fraddle soils--Loamy (7 to 9 inch precipitation zone) rangesite; Littsan soils--Sandy (7 to 9 inch precipitation zone) rangesite.

Fraddle-Ouard complex (352) - This complex consists of about 40 percent Fraddle sandy loam, 3 to 10 percent slopes, about 20 percent Ouard sandy loam, 3 to 10 percent slopes, and about 20 percent Youjay sandy loam, 3 to 10 percent slopes. The profiles of these soils are the same as the profiles described under the respective series headings. This complex occupies undulating to rolling uplands consisting of low ridges and sidehills, and the soils occur in a highly intermingled pattern. This mapping unit occurs below the Blue Rim topographic break, primarily north of the Big Piney highway. Included are about 10 percent Hatermus soils, about 5 percent Haterton soils, and about 5 percent barren alkali spots.

Runoff is slow to medium. Erosion hazard is slight to moderate. Wind erosion hazard is severe.

This complex is used for rangeland and wildlife habitat. Fraddle soils--Loamy (7 to 9 inch precipitation zone) rangesite. Ouard soils--Shallow Loamy (7 to 9 inch precipitation zone) rangesite. Youjay soils--Shallow Clayey (7 to 9 inch precipitation zone) rangesite.

GLENDERSON SERIES

The Glenderson series are well drained soils. They formed in alluvium derived locally from very strongly alkaline, interbedded sandstone, and shale on alluvial fans. Slopes are 0 to 3 percent. Elevation is 6,800 to 7,000 feet. Vegetation is big sagebrush, Gardner saltbush, needleleaf sedge, and thickspike wheatgrass. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In the representative profile the surface layer is light brownish gray, moderately alkaline sandy loam about 6 inches thick. The upper part of the underlying layer is light olive gray to light olive brown, very strongly alkaline sandy loam stratified with thin lenses of loam underlain by very strongly alkaline, very fine sandy loam or loam to 60 inches or more.

The soil is moderately permeable. Available water capacity for the profile is 3.5 to 5.0 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many fine, medium, and coarse roots to 6 inches, few fine and medium roots to 12 inches, and very few roots below 12 inches.

The Glenderson soils are used for rangeland and wildlife habitat.

The representative profile is located in the NE $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 33, T. 31 N., R. 108 W.

- Al 0-6 inches Light brownish gray (2.5Y 6/2) sandy loam, grayish brown (2.5Y 5/2) moist; weak coarse crumb structure; soft, very friable, slightly sticky, slightly plastic; many fine and medium coarse roots; slightly effervescent; moderately alkaline, pH 8.4; clear smooth boundary.
- Cl 6-12 inches Light olive gray (5Y 6/2) sandy loam, olive gray (5Y 4/2) moist; massive; soft, very friable, slightly sticky, slightly plastic; few fine and medium roots; slightly effervescent; very strongly alkaline, pH 9.4; clear smooth boundary.
- C2 12-38 inches Light olive brown (2.5Y 5/4) sandy loam stratified with thin lenses of loam, olive brown (2.5Y 4/3) moist; massive; soft, very friable, slightly sticky, slightly plastic; very few roots; slightly effervescent; very strongly alkaline, pH 9.6; clear smooth boundary.
- C3 38-48 inches Light olive gray (5Y 6/2) very fine sandy loam, olive gray (5Y 4/2) moist; massive; soft, very friable, slightly sticky, slightly plastic; slightly effervescent; very strongly alkaline, pH 9.6; clear smooth boundary.
- C4 48-60 inches Light olive gray (5Y 6/2) loam, olive gray (5Y 4/2) moist; massive; slightly hard, firm, sticky, plastic; violently effervescent; very strongly alkaline, pH 9.6.

<u>Range in Characteristics</u>: These soils are usually calcareous throughout but some pedons may be noncalcareous in the upper one or two inches. Content of coarse fragments ranges from 0 to 5 percent and consists primarily of onequarter to one-half inch angular sandstone fragments.

The hue of the A horizon is 5Y to 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is typically a sandy loam but may range from sandy loam to very fine sandy loam. Reaction ranges from mildly alkaline to strongly alkaline.

The hue of the C horizon ranges from 5Y to 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma ranges from 2 to 4 dry and is 2 or 3 moist. The texture is usually sandy loam to depths of 38 to 40 inches. Thick stratifications of very fine sandy loam are common below depths of 38 to 40 inches.

The Glenderson soils are mapped in complex with the Laney soils.

GLENDIVE SERIES

The Glendive series are well drained soils. They formed in sandy alluvium on floodplains. Slopes are 0 to 3 percent. Elevation is 7,000 to 7,200 feet.

Vegetation is big sagebrush, low rabbitbrush, and thickspike wheatgrass. Precipitation is 10 to 12 inches, and the mean annual air temperature is about 36^oF. The growing season is about 80 to 90 days, but frost may occur in any month.

A representative profile is brown or grayish brown sandy loam stratified with thin lenses of loam and very fine sandy loam. The soil is mildly to strongly alkaline.

Permeability is moderately rapid. Available water capacity for the profile is 7.75 to 9.0 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many fine, medium, and coarse roots to 16 inches and very few medium and coarse roots to 23 inches.

The Glendive soils are used for rangeland and wildlife habitat.

Representative profile is located in the SE_4^1 , SE_4^1 , Sec. 25, T. 31 N., R. 108 W.

- Al 0-3 inches Brown (10YR 5/3) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine crumb; soft, very friable, slightly sticky, slightly plastic; many fine medium and coarse roots; slightly effervescent; mildly alkaline, pH 7.8; clear smooth boundary.
- Cl 3-8 inches Brown (10YR 5/3) sandy loam, dark brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky, slightly plastic; many fine medium and coarse roots; slightly effervescent; moderately alkaline, pH 8.4; clear smooth boundary.
- C2 8-40 inches Grayish brown (10YR 5/2) sandy loam stratified with thin lenses of loam and very fine sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky, nonplastic; many fine medium and coarse roots to 16 inches, very few medium and coarse roots to 23 inches; slightly effervescent in seams and spots; moderately alkaline, pH 8.4; gradual wavy boundary.
- C3 40-60 inches Brown (10YR 5/3) sandy loam stratified with thin lenses of loam and very fine sandy loam, dark brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky, slightly plastic; slightly effervescent; strongly alkaline, pH 8.6.

<u>Range in Characteristics</u>: These soils are usually calcareous to the surface but may be noncalcareous in the upper two or three inches in some pedons. The content of gravel ranges from 0 to 5 percent.

The hue of the Al horizon is 2.5Y or 10YR. The value is 4 or 5 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture ranges from sandy loam to very fine sandy loam. Reaction is mildly alkaline or moderately alkaline.

The hue of the C horizons range from 5Y to 10YR. The value ranges from 4 to 6 dry and is 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is usually sandy loam stratified with thin lenses of loam, very fine sandy loam, and in some locations silt loam. The reaction is usually moderately alkaline but may be strongly alkaline in some horizons of some profiles.

<u>Glendive-Havre</u> complex, saline (250) - This complex consists of about 20 percent Glendive sandy loam, saline, 0 to 3 percent slopes; about 20 percent Havre loam, saline, 0 to 3 percent slopes; about 20 percent Glendive sandy loam, 0 to 3 percent slopes; and about 20 percent Havre loam, 0 to 3 percent slopes. The Glendive sandy loam and Haverson loam have the profiles described as representative for the respective series. The profile of the Glendive sandy loam, saline, is similar to the profile described as representative of the series except that it has a moderate to high accumulation of soluble salts, a fluctuating water table at 1.5 to 3 feet, and an available water capacity for the profile of 3.5 to 4.25 inches. The profile of the Havre loam, saline, is similar to the profile described as representative of the series except that it has a moderate to high accumulation of soluble salts, a fluctuating water table at 1.5 to 3 feet, and an available water capacity for the profile of 4.75 to 5.5 inches. The vegetation for the saline phases is inland saltgrass, greasewood, and alkali bluegrass. The soils occur in a highly intermingled pattern on nearly level floodplains along intermittent streams, primarily Sand Springs Draw and Alkali Creek. Included are about 10 percent wet soils, about 5 percent barren saline areas, and about 5 percent of ponded areas and stream channels.

Runoff for the soils in this complex is slow and the erosion hazard is slight.

This complex is used for rangeland and wildlife habitat. Glendive sandy loam, saline, and Havre loam, saline--Saline Subirrigated (10 to 14 inch precipitation zone) rangesite; Glendive sandy loam and Havre loam--Overflow (10 to 14 inch precipitation zone) rangesite.

HATERMUS SERIES

The Hatermus series are well drained soils. They formed in residuum from very strongly alkaline shale on ridges and upper hillsides. Slopes are 10 to 30 percent. Elevation is 6,800 to 7,000 feet. Vegetation is thickspike wheat-grass, Sandberg bluegrass, and Hood's phlox. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is light gray, strongly alkaline loam about 1 inch thick. The underlying layer is light brownish gray strongly alkaline clay loam to light olive gray very strongly alkaline loam about 17 inches thick. Soft, very strongly alkaline, calcareous shale occurs at 18 inches.

The soil is moderately permeable. Available water capacity for the profile is 0.75 to 2.0 inches. Effective rooting depth is 10 to 20 inches. Typically, the soils have few fine and very fine roots to 6 inches and very few fine roots to 10 inches. An occasional root may occur below 10 inches.

The Hatermus soils are used for rangeland and wildlife habitat.

Representative profile is located near the center of Sec. 29, T. 31 N., R. 108 W.

- Al 0-1 inch Light gray (2.5Y 7/2) loam, grayish brown (2.5Y 5/2) moist; weak thin platy structure; soft, friable, slightly sticky, slightly plastic; few very fine and fine roots; effervescent; strongly alkaline, pH 8.6; clear smooth boundary.
- Cl 1-10 inches Light brownish gray (2.5Y 6/2) clay loam, olive brown (2.5Y 4/3) moist; massive; slightly hard, friable, sticky, plastic; very few fine roots; violently effervescent; strongly alkaline, pH 9.0; gradual wavy boundary.
- C2ca 10-18 inches Light olive gray (5Y 6/2) loam, olive gray (5Y 4/2) moist; massive; slightly hard, friable, sticky, plastic; violently effervescent, many fine and medium threads, seams, and nests of secondary lime; very strongly alkaline, pH 9.4; clear smooth boundary.
- C3 18 inches Soft, light gray, very strongly alkaline, calcareous, platy shale.

<u>Range in Characteristics</u>: Depth to bedrock ranges from 10 to 20 inches. Content of coarse fragments ranges from 0 to 5 percent and consists of one-quarter to one-half inch shale fragments.

The hue of the profile ranges from 5Y to 10YR. The value is 5 to 7 dry and 4 to 6 moist. The chroma is 2 or 3 dry and moist. The texture ranges from very fine fandy loam to clay loam. Reaction is strongly alkaline to very strongly alkaline.

Hatermus soils are mapped in association or complex with the Fraddle soils, Haterton soils, and with Rock land.

HATERTON SERIES

The Haterton series are well drained soils. They formed in residuum from siltstone or shale on ridges and upper sidehills. Slopes are 10 to 30 percent. Elevation is 6,800 to 7,000 feet. Vegetation is thickspike wheatgrass, Hood's phlox, and Indian ricegrass. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In the representative profile the surface layer is light brownish gray, strongly alkaline fine sandy loam about 2 inches thick. The underlying layer is pale brown, strongly alkaline loam about 16 inches thick. Soft, platy shale occurs at 18 inches.

The soil is moderately permeable. Available water capacity for the profile is 1.5 to 3.75 inches. Effective rooting depth is 10 to 20 inches. Typically, the soil has few fine, medium, and coarse roots to 4 inches, few coarse roots to 10 inches, and very few coarse roots to 16 inches.

The Haterton soils are used for rangeland and wildlife habitat.

The representative profile is located in the NE $\frac{1}{4}$, SE $\frac{1}{4}$, Sec. 35, T. 31 N., R. 109 W.

- Al 0-2 inches Light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine crumb structure; soft, very friable, nonsticky, nonplastic; few fine, medium, and coarse roots; 10 percent fine shale chips; violently effervescent; strongly alkaline, pH 8.6; clear smooth boundary.
- Cl 2-18 inches Pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky, slightly plastic; few coarse roots; 15 percent fine shale chips; violently effervescent; strongly alkaline, pH 8.6; gradual wavy boundary.

C2 18 inches Soft, calcareous, olive, platy shale.

Range in Characteristics: Depth to bedrock ranges from 10 to 20 inches. Content of coarse fragments ranges from 5 to 15 percent and consists of one-quarter to one-half inch flat shale chips.

The hue of the soil ranges from 5Y to 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma ranges from 2 to 4 dry and moist. The texture ranges from very fine sandy loam to clay loam, but in the surface one or two inches it ranges from sandy loam to loam. The reaction is usually strongly alkaline but may range from moderately alkaline to strongly alkaline.

The Haterton soils are mapped in association with Fraddle and Hatermus soils.

HAVRE SERIES

The Havre series are well drained soils. They formed in alluvium on nearly level floodplains. Slopes are 0 to 3 percent. Elevation is 7,000 to 7,300 feet. Vegetation is big sagebrush and thickspike wheatgrass. Precipitation is 10 to 12 inches, and the mean annual air temperature is about 36°F. The growing season is 80 to 90 days but frost may occur in any month.

In the representative profile the surface layer is brown, moderately alkaline loam about 4 inches thick. The underlying layer is grayish brown to brown, strongly alkaline, stratified loam to clay loam to 60 inches or more.

The soil is moderately permeable. Available water capacity for the profile is 9.5 to 11.0 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many very fine, fine, medium, and coarse roots to 4 inches; few fine, medium, and coarse roots to 12 inches; and few coarse roots to 8 inches. There are very few coarse roots to 26 inches in some profiles.

The Havre soils are used for rangeland and wildlife habitat.

The representative profile is located in the SE_4^1 , SE_4^1 , Sec. 25, T. 31 N., R. 108 W.

- Al 0-4 inches Brown (10YR 5/3) loam, dark brown (10YR 4/3) moist; weak medium crumb structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine, fine, medium, and coarse roots; slightly effervescent; moderately alkaline, pH 8.2; clear smooth boundary.
- Cl 4-12 inches Grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, sticky, plastic; few fine, medium, and coarse roots; effervescent; strongly alkaline, pH 8.5; clear smooth boundary.
- C2 12-40 inches Grayish brown (10YR 5/2) clay loam stratified with lenses of sandy loam and loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, firm, sticky, plastic; few coarse roots to 18 inches, very few coarse roots to 26 inches; thin lenses of visible salt accumulation; effervescent; strongly alkaline, pH 8.5; clear smooth boundary.
- C3 40-60 inches Brown (10YR 5/3) loam stratified with lenses of clay loam, sandy loam, and very fine sandy loam, dark brown (10YR 4/3) moist; massive; slightly hard, firm, slightly sticky, slightly plastic; thin bands of visible soluble salt accumulation; effervescent; strongly alkaline, pH 8.5.

<u>Range in Characteristics</u>: These soils are usually calcareous to the surface but may be noncalcareous in the upper one to three inches in some pedons. Content of coarse fragments ranges from 0 to 5 percent and consists of very fine gravel.

The hue of the Al horizon is 2.5Y or 10YR. The value is 4 or 5 dry and 4 or 5 moist. The chroma is 3 or 4 dry and 2 or 3 moist. The texture is usually a loam but may range from very fine sandy loam to clay loam. Reaction is mildly alkaline to moderately alkaline.

The hue of the C horizon is 2.5Y to 10YR. The value is 4 or 5 dry and 4 or 5 moist. The chroma is 2 to 4 dry and 2 or 3 moist. The C horizon is stratified clay loam, loam, and sandy loams with a weighted clay percentage of 20 to 30 percent. Reaction is moderately alkaline to strongly alkaline, and thin lenses of soluble salt may occur in the lower part of the soil.

The Havre soils are mapped with the Glendive and Forelle soils.

HUGUSTON SERIES

The Huguston series are well drained soils. They formed in residuum from sandstone on ridges and upper hillsides. Slopes are 10 to 30 percent. Elevation is 6,800 to 7,000 feet. Vegetation is needleandthread, big sagebrush, and Letterman's needlegrass. Precipitation is 7 to 9 inches, and mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month. In a representative profile the surface layer is grayish brown, moderately alkaline sandy loam about 2 inches thick. The underlying layer is light olive brown, strongly alkaline sandy loam about 12 inches thick. Soft sandstone occurs at 14 inches.

The soil has moderately rapid permeability. Available water capacity for the profile is 1.0 to 2.75 inches. Effective rooting depth is 10 to 20 inches. Typically, the soil has many fine and medium roots to 6 inches, few fine roots to 10 inches, and very few fine roots to 14 inches.

The Huguston soils are used for rangeland and wildlife habitat.

The representative profile is located near the center of Sec. 16, T. 30 N., R. 108 W.

- Al 0-2 inches Grayish brown (2.5Y 5/2) sandy loam, dark grayish brown (2.5Y 4/2) moist; weak fine crumb structure; soft, friable, slightly sticky, slightly plastic; many fine and medium roots; slightly effervescent; moderately alkaline, pH 8.4; clear smooth boundary.
- Cl 2-6 inches Light olive brown (2.5Y 5/4) sandy loam, olive brown (2.5Y 4/4) moist; massive; soft, friable, slightly sticky, slightly plastic; many fine and medium roots; effervescent; strongly alkaline, pH 8.6; clear smooth boundary.
- C2 6-14 inches Light olive brown (2.5Y 5/4) sandy loam, olive brown (2.5Y 4/4) moist; massive; soft, friable, slightly sticky, slightly plastic; few fine roots; 25 percent fine sandstone fragments; effervescent; strongly alkaline, pH 8.6; gradual wavy boundary.
- C3 14 inches Soft, slightly calcareous sandstone.

Range in Characteristics: Depth to bedrock ranges from 10 to 20 inches. These soils are usually calcareous throughout but may be noncalcareous in the upper one or two inches in some pedons. Content of coarse fragments ranges from 15 to 25 percent, consisting of one-quarter to one-half inch angular sandstone fragments.

The hue of the Al horizon is 5Y to 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is typically a sandy loam but may range to very fine sandy loam. Reaction is moderately alkaline to strongly alkaline.

The hue of the C horizon ranges from 5Y to 10YR. The value ranges from 4 to 6 dry and is 4 or 5 moist. The chroma is 4 to 6 dry and 4 or 5 moist. The texture is typically a sandy loam but may range from coarse sandy loam to fine sandy loam with a clay content of about 10 to 16 percent. Reaction is moderately alkaline to strongly alkaline.

The Huguston soils are mapped with the Youjay soils and Rock land.

KOONICH SERIES

The Koonich series are well drained soils. They formed in alluvium on alluvial fans. Slopes are 0 to 3 percent. Elevation is 6,800 to 7,000 feet. Vegetation is needleandthread and big sagebrush. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is grayish brown, neutral sandy loam about 3 inches thick. The underlying layer is grayish brown to brown, neutral sandy loam about 20 inches thick. The substratum is light brownish gray, neutral fine sand to pale brown, neutral sand to 60 inches or more.

The soil has moderately rapid permeability. Available water capacity for the profile is 4.25 to 5.75 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many fine and very fine roots to 13 inches and few fine roots to 23 inches.

The Koonich soils are used for rangeland and wildlife habitat.

The representative profile is located in the NE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 8, T. 30 N., R. 108 W.

- Al 0-3 inches Grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine crumb structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; neutral, pH 6.8; clear smooth boundary.
- Cl 3-13 inches Grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; neutral, pH 6.8; clear smooth boundary.
- C2 13-23 inches Brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine roots; neutral, pH 6.8; clear smooth boundary.
- IIC3 23-40 inches Light brownish gray (10YR 6/2) fine sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; neutral, pH 7.0; gradual wavy boundary.

IIC4 40-60 inches Pale brown (10YR 6/3) sand, brown (10YR 4/3) moist; single
grain; loose, nonsticky, nonplastic; neutral, pH 7.0.

<u>Range in Characteristics</u>: These soils are usually noncalcareous throughout, but some pedons may have thin bands or lenses of weakly calcareous materials usually below depths of 40 inches. Content of coarse fragments ranges from 5 to 10 percent and consists of one-quarter to one-half inch angular sandstone fragments.

The hue of the Al horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is typically sandy

loam but may range from a coarse sandy loam to very fine sandy loam. Reaction is neutral to mildly alkaline.

The hue of the Cl and C2 horizons is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is usually sandy loam with a clay content of 10 to 16 percent. Reaction is typically neutral but may range to mildly alkaline.

Koonich-Laney complex (356) - This complex consists of about 45 percent Koonich sandy loam, 0 to 3 percent slopes, and about 25 percent Laney loam, 0 to 3 percent slopes. The profile of the Koonich soils is the same as the profile described as representative of the series. The profile of the Laney soils is similar to the profile described under the series headings. This complex occupies nearly level alluvial fans dissected by numerous drainages, and the Koonich and Laney soils are highly intermingled in the landscape. This complex occurs below the Blue Rim topographic break and in some areas extends from the base of the Blue Rim into the lower-lying areas. Included are about 20 percent sandy loam soils stratified with lenses of fine sand, about 5 percent Glenderson soils, and about 5 percent soils similar to the Laney soils but lacking very strongly alkaline reactions.

Runoff is slow and erosion hazard is slight. Wind erosion hazard is severe for the Koonich soils.

This complex is used for rangeland and wildlife habitat. Koonich soils--Sandy (7 to 9 inch precipitation zone) rangesite. Laney soils--Saline Upland (7 to 9 inch precipitation zone) rangesite.

LANEY SERIES

The Laney series are well drained soils. They formed in alluvium from alkaline sandy shale on alluvial fans. Slopes are 0 to 3 percent. Elevation is 6,800 to 7,000 feet. Vegetation is thickspike wheatgrass, needleleaf sedge, Gardner saltbush, and Sandberg bluegrass. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is light brownish gray, strongly alkaline loam about 3 inches thick. The underlying layer is light olive gray to olive gray, very strongly alkaline loam about 33 inches thick. The substratum is olive, strongly alkaline, stratified clay loam to olive, very strongly alkaline, stratified very fine sandy loam to 60 inches or more.

The soil has moderately slow permeability. Available water capacity is 5.0 to 5.75 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many fine and medium roots to 3 inches, few fine and medium roots to 12 inches, and very few fine roots below 12 inches.

The Laney soils are used for rangeland and wildlife habitat.

The representative profile is located one-quarter mile SE of the west quarter corner of Sec. 23, T. 31 N., R. 108 W.

- Al 0-3 inches Light brownish gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) moist; weak coarse crumb structure; soft, very friable, slightly sticky, slightly plastic; many fine and medium roots; slightly effervescent; strongly alkaline, pH 8.6; abrupt smooth boundary.
- Cl 3-12 inches Light olive gray (5Y 6/2) loam, olive gray (5Y 4/2) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and medium roots; effervescent; very strongly alkaline, pH 9.2; clear smooth boundary.
- C2 12-36 inches Olive gray (5Y 5/2) loam, olive gray (5Y 4/2) moist; weak coarse subangular blocky structure; hard, friable, sticky, plastic; very few roots; effervescent; very strongly alkaline, pH 9.4; clear smooth boundary.
- C3ca 36-47 inches Olive (5Y 5/3) clay loam stratified with thin lenses of fine sandy loam, loam, very fine sandy loam, olive (5Y 4/3) moist; massive; hard, firm, sticky, plastic; effervescent with a few fine threads of calcium carbonate; strongly alkaline, pH 9.0; gradual wavy boundary.
- C4ca 47-60 inches Olive (5Y 5/3) very fine sandy loam stratified with thin lenses of fine sandy loam and loam, olive (5Y 4/3) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; effervescent with a few fine threads of calcium carbonate; very strongly alkaline, pH 9.2.

Range in Characteristics: The content of gravel ranges from 0 to 5 percent.

The hue of the Al horizon ranges from 5Y to 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is typically a loam but may range from sandy loam to clay loam.

The hue of the C horizons is 5Y to 10YR. The value ranges from 4 to 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture ranges from very fine sandy loam to clay loam, and the lower C horizons are stratified with thin lenses of sandy loam, loam, and very fine sandy loam. The reaction is typically very strongly alkaline to depths of 36 inches and may be very strongly alkaline to 60 inches in many profiles.

Laney-Glenderson complex (351) - This complex consists of about 50 percent Laney loam, 0 to 3 percent slopes, and about 20 percent Glenderson sandy loam, 0 to 3 percent slopes. The profiles of these soils are the same as the profiles described under the respective series headings. This complex occupies nearly level alluvial fans, and the soils occur in a highly intermingled pattern in the landscapes. In most areas the landscapes extend from the base of the Blue Rim northeastward on long, broad alluvial fans which are dissected by numerous drainages. Included are about 20 percent DeBone soils, about 5 percent barren alkaline areas, and about 5 percent soils similar to the Laney soils except that they are fine textured. Runoff is slow to medium and erosion hazard is moderate to severe.

This complex is used for rangeland and wildlife habitat. Laney soils--Saline Upland (7 to 9 inch precipitation zone) rangesite. Glenderson soils--Loamy (7 to 9 inch precipitation zone) rangesite.

LITTSAN SERIES

The Littsan series are well drained soils. They formed in sandy wind-born deposits on undulating to rolling uplands. Slopes are 3 to 10 percent. Elevation is 6,800 to 7,000 feet. Vegetation is big sagebrush, needleandthread, Indian ricegrass, and thickspike wheatgrass. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is light brownish gray, neutral fine sandy loam about 2 inches thick. The subsoil is pale brown, mildly alkaline sandy loam about 12 inches thick. The substratum is pale brown, mildly alkaline sandy loam about 10 inches thick. Calcareous, soft shale occurs at 24 inches.

The soil has moderately rapid permeability. Available water capacity for the profile is 2.25 to 5.25 inches. Effective rooting depth is 20 to 40 inches. Typically, the soil has many fine and very fine roots to 10 inches, few fine roots to 16 inches, and very few fine roots to 22 inches.

The Littsan soils are used for rangeland and wildlife habitat.

The representative profile is located in the SW_4^1 , SW_4^1 , Sec. 36, T. 31 N., R. 109 W.

- Al 0-2 inches Light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine crumb structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; neutral, pH 7.2; clear smooth boundary.
- B21T 2-10 inches Pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; weak medium angular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine and fine roots; patches of thin waxy coatings on some ped faces, bridges between sand grains; mildly alkaline, pH 7.4; clear smooth boundary.
- B22t 10-14 inches Pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; weak medium angular blocky structure; soft, very friable, slightly sticky, slightly plastic; few fine roots; waxy coatings on sand grains and clay bridges between sand grains; mildly alkaline, pH 7.4; clear smooth boundary.
- Cl 14-24 inches Pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; weak medium angular blocky structure; soft, very friable, nonsticky, nonplastic; very few fine roots; mildly alkaline, pH 7.6; clear smooth boundary.

IIC2 24 inches Gray, calcareous, soft shale.

<u>Range in Characteristics</u>: Depth to bedrock ranges from 20 to 40 inches. These soils are usually noncalcareous throughout, but some pedons are weakly calcareous in the lower part of the C horizon. Thickness of solum ranges from 10 to 15 inches.

The hue of the A horizon is 2.5Y or 10YR. The value is 4 to 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is fine sandy loam or very fine sandy loam. The reaction is neutral or mildly alkaline.

The hue of the B2t horizons is 2.5Y or 10YR. The value is 5 to 6 dry and 4 or 5 moist. The chroma is 3 or 4 dry and 2 or 3 moist. The texture is a sandy loam with a 10 to 16 percent clay content. Reaction is neutral or mildly alkaline.

The hue of the C horizon is 5Y to 10YR. The texture ranges from sandy loam to loamy fine sand. The reaction is mildly alkaline or moderately alkaline.

Littsan-Bodorumpe association (365) - This association consists of about 45 percent Littsan sandy loam, 3 to 10 percent slopes, and about 30 percent Bodorumpe fine sand, 3 to 15 percent slopes. The profiles of these soils are the same as the profiles described under the respective series headings. This association occupies gently sloping to moderately steep uplands. The Littsan soils occur on the lower sidehill slopes and uniform sloping areas. The Bodorumpe soils normally occur on the upper sidehill slopes, on the rounded ridges, and in some areas on northeast slopes. This association occurs below the Blue Rim topographic break, primarily along the Big Piney highway. Included are about 10 percent Bodorumpe-like soils with bedrock below 40 inches, about 5 percent Haterton soils, about 5 percent Huguston soils, and a total of about 5 percent Youjay and Ouard soils.

Runoff is medium to rapid, and erosion hazard is moderate to severe. Wind erosion hazard is severe.

This association is used for rangeland and wildlife. Littsan soils--Sandy (7 to 9 inch precipitation zone) rangesite. Bodorumpe soils--Sands (7 to 9 inch precipitation zone) rangesite.

MILREN SERIES

The Milren series are well drained soils. They formed in alluvium on alluvial fans. Slopes are 3 to 10 percent. Elevation is 7,000 to 7,300 feet. Vegetation is big sagebrush, Sandberg bluegrass, and thickspike wheatgrass. Precipitation is 10 to 12 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is brown, mildly alkaline sandy loam about 2 inches thick. The subsurface layer is light brownish gray, neutral sandy loam about 1 inch thick. The upper part of the subsoil is brown, mildly alkaline clay about 13 inches thick. The lower part of the subsoil is brown, moderately alkaline sandy clay loam about 8 inches thick. The substratum is light brownish gray, very strongly alkaline sandy clay loam to 60 inches or more. The soil has moderately slow permeability. Available water capacity for the profile is 5.25 to 6.75 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many fine, very fine, and medium roots to 3 inches and few fine and medium roots to 10 inches, and very few, very fine roots to 16 inches.

The Milren soils are used for rangeland and wildlife habitat.

The representative profile is located in the NE $\frac{1}{4}$, SE $\frac{1}{4}$, Sec. 21, T. 30 N., R. 108 W.

- Al 0-2 inches Brown (10YR 5/3) sandy loam, very dark brown (10YR 3/3) moist; weak fine crumb structure; soft, very friable, nonsticky, nonplastic; many very fine, fine, and medium roots; mildly alkaline, pH 7.4; clear smooth boundary.
- A2 2-3 inches Light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak thin platy structure; soft, very friable, nonsticky, nonplastic; many very fine, fine, and medium roots; neutral, pH 7.2; abrupt smooth boundary.
- B21t 3-10 inches Brown (7.5YR 5/2) clay, dark brown (7.5YR 4/2) moist; moderate fine columnar parting to strong fine angular blocky structure; extremely hard, very firm, sticky, plastic; few fine and medium roots; thick continuous waxy coatings on all ped faces; mildly alkaline, pH 7.6; clear smooth boundary.
- B22t 10-16 inches Brown (7.5YR 5/2) clay, dark brown (7.5YR 4/2) moist; strong fine prismatic parting to strong fine angular blocky structure; extremely hard, firm, sticky, plastic; very few fine roots; thick continuous waxy coatings on all ped faces; mildly alkaline, pH 7.6; clear smooth boundary.
- B3 16-24 inches Brown (7.5YR 5/2) sandy clay loam, dark brown (7.5YR 4/2) moist; moderate fine and medium angular blocky structure; hard, friable, slightly sticky, slightly plastic; thin discontinuous waxy coatings on most ped faces; moderately alkaline, pH 8.4; clear smooth boundary.
- Cca 24-60 inches Light brownish gray (10YR 6/2) sandy clay loam, dark grayish brown (10YR 4/2) moist; massive; hard, firm, sticky, plastic; violently effervescent, many fine and medium seams of secondary lime; very strongly alkaline, pH 9.2.

Range in Characteristics: Depth to continuous secondary calcium carbonate accumulation is 18 to 30 inches. Thickness of solum ranges from 18 to 30 inches.

The hue of the Al horizon is 2.5Y or 10YR. The value is 4 or 5 dry and 3 or 4 moist. The chroma is 2 or 3 dry and moist. The texture is typically a sandy loam but may range to very fine sandy loam. Reaction is neutral or mildly alkaline.

The hue of the B2t horizon is 10YR or 7.5YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is clay or sandy clay with a clay content ranging from 36 to about 44 percent. Reaction is neutral or mildly alkaline.

The hue of the B3 horizon is 10YR or 7.5YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. Reaction is moderately alkaline or strongly alkaline.

The hue of the Cca horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist.

The Milren soils are mapped with the Bluerim and Abston soils.

NATRARGIDS

Natrargids are well drained soils. They formed in residuum from alkaline shale on hillsides and alluvial fans. Slopes are 3 to 15 percent. Elevation is 6,800 to 7,300 feet. Vegetation is low sagebrush, thickspike wheatgrass, and big sagebrush. Precipitation is 7 to 12 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

These are very strongly alkaline soils which vary considerably in depth and degree of development.

<u>Natrargids (110)</u> - This mapping unit consists of fine textured, very strongly alkaline soils of varying depth. The soils occur in a very complex pattern on sidehill slopes and alluvial fans. Included are very strongly alkaline, barren areas. Runoff is medium to rapid, and erosion hazard is moderate to severe. The soils of this unit are used for rangeland and wildlife habitat, and are in the Dense Clay (10 to 14 inch precipitation zone) rangesite.

ONASON SERIES

The Onason series are somewhat excessively drained soils. They formed in residuum from sandstone on ridges and upper hillsides. Slopes are 10 to 30 percent. Elevation is 7,000 to 7,300 feet. Vegetation is big sagebrush, Letterman's needle-grass, and nailwort. Precipitation is 10 to 12 inches, and the mean annual air temperature is about $36^{\circ}F$. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is grayish brown, neutral sandy loam about 3 inches thick. The underlying layer is grayish brown, neutral gravelly sandy loam about 8 inches thick. Soft, arkosic sandstone occurs at 11 inches.

The soil has moderately rapid permeability. Available water capacity for the profile is 0.75 to 2.0 inches. Effective rooting depth is 10 to 20 inches. Typically, the soil has many fine and very fine roots to 3 inches and few fine roots to 11 inches.

The Onason soils are used for rangeland and wildlife habitat.

The representative profile is located in the SE_4^1 , NE_4^1 , Sec. 25, T. 30 N., R. 108 W.

- Al 0-3 inches Grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine crumb structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine roots; neutral, pH 7.0; clear smooth boundary.
- Cl 3-11 inches Grayish brown (10YR 5/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, loose, nonsticky, nonplastic; few fine roots; 20 percent very fine gravel; neutral, pH 7.2; gradual wavy boundary.
- C2 11 inches Soft, noncalcareous, coarse grained, arkosic sandstone.

<u>Range in Characteristics</u>: Depth to bedrock ranges from 10 to 20 inches. Content of coarse fragments ranges from 15 to 25 percent and consists of very fine gravel.

The hue of A and C horizons is 2.5Y or 10YR. The value is 4 to 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. Reaction is neutral or mildly alkaline.

The Onason soils are mapped with the Rallod soils and with Rock outcrop.

OUARD SERIES

The Ouard series are well drained soils. They formed in residuum from shale on undulating to rolling ridges. Slopes are 3 to 10 percent. Elevation is 6,800 to 7,000 feet. Vegetation is big sagebrush, thickspike wheatgrass, Sandberg bluegrass, and needleandthread. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is brown, neutral sandy loam about 2 inches thick. The upper part of the subsoil is yellowish brown to brown, mildly alkaline sandy clay loam about 9 inches thick. The lower part of the subsoil is light brownish gray, strongly alkaline sandy clay loam about 5 inches thick. Soft, olive colored shale occurs at 16 inches.

The soil is moderately permeable. Available water capacity for the profile is 1.25 to 3.25 inches. Effective rooting depth is 10 to 20 inches. Typically, the soil has many fine and very fine roots to 7 inches, few fine and very fine roots to 11 inches, and very few roots below 11 inches.

The Ouard soils are used for rangeland and wildlife habitat.

The representative profile is located in the SW_4^1 , SW_4^1 , Sec. 29, T. 31 N., R. 108 W.

- Al 0-2 inches Brown (10YR 5/3) sandy loam, very dark brown (10YR 3/3) moist; weak fine crumb structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; neutral, pH 7.2; clear smooth boundary.
- B2lt 2-7 inches Yellowish brown (10YR 5/4) sandy clay loam, dark brown (10YR 4/3) moist; moderate medium prismatic parting to moderate fine angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many fine and very fine roots; thin nearly continuous waxy coatings on all ped faces; mildly alkaline, pH 7.4; clear smooth boundary.
- B22t 7-11 inches Brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; moderate medium angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; thin nearly continuous waxy coatings on all ped faces; mildly alkaline, pH 7.6; clear smooth boundary.
- B3ca 11-16 inches Light brownish gray (10YR 6/2) sandy clay loam, grayish brown (10YR 5/2) moist; weak coarse angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; very few roots; thin discontinuous waxy coatings on some ped faces; effervescent, many coarse threads, seams, and soft masses of secondary lime; strongly alkaline, pH 8.8; gradual wavy boundary.
- C 16 inches Soft, calcareous, olive shale.

<u>Range in Characteristics</u>: Depth to bedrock ranges from 10 to 20 inches. Depth to calcareous materials ranges from 7 to 14 inches. Thickness of solum ranges from 10 to 20 inches. The content of gravel is 0 to 5 percent.

The hue of the Al horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is typically a sandy loam but may range from a coarse sandy loam to very fine sandy loam. Reaction is neutral or mildly alkaline.

The hue of the B2t horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 3 to 5 dry and 3 or 4 moist. The texture is typically a sandy clay loam with a clay content ranging from 20 to about 28 percent. More than 35 percent of the sand is fine sand or coarser. Reaction is neutral or mildly alkaline.

The hue of the B3ca horizon is 5Y to 10YR. The value is 5 to 7 dry and 5 or 6 moist. The chroma is 2 or 3 dry and moist. The texture is typically a sandy clay loam but may range from a fine sandy loam to sandy clay loam. Reaction is moderately alkaline or strongly alkaline.

The Ouard soils are mapped with the Fraddle and Youjay soils.

RALLOD SERIES

The Rallod series are well drained soils. They formed in residuum from alkaline shale on ridges and upper hillsides. Slopes are 10 to 30 percent. Elevation is 7,000 to 7,300 feet. Vegetation is thickspike wheatgrass, Canby bluegrass, Hoods phlox, and low sage. Precipitation is 10 to 12 inches. and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is brown, mildly alkaline sandy loam about 3 inches thick. The upper part of the subsoil is brown, strongly alkaline sandy clay about 6 inches thick. The lower part of the subsoil is brown, very strongly alkaline sandy clay about 3 inches thick. Soft, variegated alkaline shale occurs at 12 inches.

The soil is slowly permeable. Available water capacity for the profile is 0.70 to 3.25 inches. Effective rooting depth is 10 to 20 inches. Typically, the soil has many fine medium and very fine roots to 3 inches, few fine and very fine roots to 9 inches.

The Rallod soils are used for rangeland and wildlife habitat.

The representative profile is located in SE_4^1 , NE_4^1 , Sec. 29, T. 30 N., R. 109 W.

- Al 0-3 inches Brown (10YR 5/3) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine crumb structure; loose, very friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; mildly alkaline, pH 7.6; clear smooth boundary.
- B2t 3-9 inches Brown (7.5YR 5/2) sandy clay, dark brown (7.5YR 4/2) moist; strong fine columnar parting to strong fine angular blocky structure; extremely hard, very firm, very sticky, plastic; few very fine and fine roots; thick continuous waxy coatings on all ped faces; strongly alkaline, pH 9.0; clear smooth boundary.
- B3ca 9-12 inches Brown (7.5YR 5/2) sandy clay, dark grayish brown (10YR 4/2) moist; strong fine angular blocky structure; extremely hard, very firm, very sticky, plastic; thick discontinuous waxy coatings on some ped faces; effervescent; very strongly alkaline, pH 9.2; gradual wavy boundary.

Cl 12 inches Soft, variegated colored, alkaline shale.

Range in Characteristics: Depth to bedrock ranges from 10 to 20 inches. These soils are usually noncalcareous in the Al and B2t horizons or depths of from 6 to 10 inches. Thickness of solum ranges from 10 to 15 inches.

The hue of the Al horizon is 2.5Y or 10YR. The value is 4 or 5 dry and 3 or 4 moist. The chroma is 2 or 3 dry and moist. The texture ranges from coarse sandy loam to very fine sandy loam.

The hue of the B2t horizon is 10YR or 7.5YR. The value is 4 or 5 dry and 4 or 5 , moist. The chroma is 2 or 3 dry and moist. The texture is sandy clay or clay with 38 to 44 percent clay. Reaction ranges from strongly alkaline to very strongly alkaline. Exchangeable sodium is more than 15 percent.

The hue of the B3ca horizon is 10YR or 7.5YR. The value is 4 to 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is sandy clay or clay with a clay content of 35 to 45 percent. Reaction is very strongly alkaline. Exchangeable sodium is more than 15 percent.

<u>Rallod-Onason-Rock outcrop complex</u>, <u>10 to 30 percent slopes</u> (253) - This complex consists of about 35 percent Rallod sandy loam, 10 to 30 percent slopes, about 25 percent Onason sandy loam, 10 to 30 percent slopes, and about 20 percent Rock outcrop. The profiles of these soils are the same as the profiles described under the respective series headings. This complex occurs on moderately steep to steep ridges and upper hillsides. In some areas the complex forms the sideslopes of steep drainages. In other areas the landscapes lead from high, rolling uplands to lower soil associations, forming a landscape break. The soils and Rock outcrop are intermingled in the landscapes. This complex occurs above the Blue Rim topographic break. Included are about 10 percent Tigon soils, about 5 percent Bluerim soils, and about 5 percent Coalmont soils.

Runoff is rapid and erosion hazard is severe. Wind erosion hazard is severe.

This complex is used for rangeland and wildlife habitat. Rallod soils--Shallow Clayey (10 to 14 inch precipitation zone) rangesite. Onason soils--Shallow Sandy (10 to 14 inch precipitation zone) rangesite. Rock outcrop--rangesite not assigned.

RELSOB SERIES

The Relsob series are well drained soils. They formed in alluvium on alluvial fans. Slopes are 3 to 10 percent. Elevation is 7,000 to 7,300 feet. Vegetation is needleandthread, big sagebrush, thickspike wheatgrass, and Indian ricegrass. Precipitation is 10 to 12 inches, and the mean annual air temperature is about $36^{\circ}F$. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is pale brown, neutral sandy loam about 2 inches thick. The upper part of the subsoil is pinkish gray, neutral sandy clay loam about 5 inches thick. The lower part of the subsoil is brown, neutral sandy clay loam about 9 inches thick. The upper part of the substratum is yellowish brown, neutral sandy loam about 8 inches thick. The lower part of the substratum is grayish brown, neutral gravelly sand to 60 inches or more.

The soil is moderately permeable. Available water capacity for the profile is 4.5 to 6.0 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many fine and very fine and few coarse roots to 7 inches, few very fine and coarse roots to 16 inches, and few fine roots to 24 inches.

The Relsob soils are used for rangeland and wildlife habitat.

The representative profile is located in NW_4^1 , SW_4^1 , Sec. 26, T. 31 N., R. 108 W.

- Al 0-2 inches Pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; weak fine crumb structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and few coarse roots; neutral, pH 6.8; clear smooth boundary.
- B21t 2-7 inches Pinkish gray (7.5YR 6/2) sandy clay loam, dark brown (7.5YR 4/2) moist; weak medium prismatic parting to moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and few coarse roots; thin patchy waxy coatings on ped faces, slight bridges between sand grains; neutral, pH 7.0; clear smooth boundary.
- B22t 7-16 inches Brown (7.5YR 5/4) sandy clay loam, dark brown (7.5YR 4/2) moist; weak medium prismatic parting to moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine, fine, and coarse roots; thin patches of waxy coatings on some ped faces, clay bridging between sand grains; neutral, pH 7.2; gradual wavy boundary.
- Cl 16-24 inches Yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; very weak coarse subangular blocky structure parting to single grained; soft, very friable, nonsticky, nonplastic; very few fine roots; neutral, pH 7.2; gradual wavy boundary.
- C2 24-60 inches Grayish brown (10YR 5/2) gravelly sand, dark grayish brown (10YR 4/2) moist; single grained; loose, nonsticky, nonplastic; neutral, pH 7.2.

<u>Range in Characteristics</u>: These soils are usually noncalcareous throughout, but thin lenses of calcareous materials may occur in the lower C horizons in some pedons.

The hue of the Al horizon is 10YR or 7.5YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is typically a sandy loam but ranges from a coarse sandy loam to fine sandy loam.

The hue of the B2t horizon is 10YR or 7.5YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 3 or 4 dry and 2 or 3 moist. The texture is typically a sandy clay loam with 20 to 26 percent clay. More than 35 percent of the sand fraction is fine sand or coarser. The content of very fine gravel is 5 to 10 percent. Reaction is neutral or mildly alkaline.

The hue of the Cl horizon is 2.5Y to 7.5YR. The texture is coarse sandy loam or fine sandy loam. The content of very fine gravel is 5 to 10 percent. Reaction is neutral or mildly alkaline.

The hue of the C2 horizon is 2.5Y to 7.5YR. The content of very fine gravel ranges from 35 to 50 percent. Reaction is neutral to mildly alkaline.

The Relsob soils are mapped with the Ryark soils.

Rock land-Hatermus complex, 10 to 30 percent slopes (359) - This complex consists of about 30 percent Rock land; about 25 percent Hatermus loam, 10 to 30 percent slopes; and about 20 percent Youjay sandy loam, 10 to 30 percent slopes. The Rock land consists of about 60 percent barren, red and variegated, very strongly alkaline shale and about 40 percent very shallow soils. The profiles of the Hatermus and Youjay soils are similar to the profiles described under their respective series headings. This complex occupies ridges and sidehill slopes. These landscapes usually extend from the base of the Blue Rim out into the lowerlying areas. They generally run in a north and south direction and are long and narrow. The Rock land and soils are intermingled in the landscapes. In some areas the west slopes of the landscapes are dissected leaving sizeable areas of nearly barren shale. Included are about 10 percent Huguston soils; about 10 percent moderately deep sandy soils on lee hillsides; and about 5 percent nearly barren, alkali soils in the form of slick spots.

Runoff is rapid and erosion hazard is severe. Wind erosion hazard on Youjay soils is severe.

This complex is used for rangeland and wildlife habitat. Rock land--Shale (7 to 9 inch precipitation zone) rangesite. Hatermus soils--Shallow Loamy (7 to 9 inch precipitation zone) rangesite. Youjay soils--Shallow Clayey (7 to 9 inch precipitation zone) rangesite.

Rock land, Huguston, and Youjay soils, 10 to 30 percent slopes (357) - This undifferentiated unit consists of about 30 percent Rock land; about 25 percent Huguston sandy loam, 10 to 30 percent slopes; and about 20 percent Youjay sandy loam, 10 to 30 percent slopes. There is considerable variation in composition of the individual areas, and all of the soils may not occur in each area. The Rock land consists of about 60 percent barren, red and variegated, very strongly alkaline shale and about 40 percent very shallow soils. The profiles of the Huguston and Youjay soils are similar to the profiles described under their respective series headings. This mapping unit occupies very strongly sloping ridges and sidehill slopes incised by many gullies and drainages and occurs primarily on the face of the Blue Rim topographic break. The Rock land and soils are highly intermingled in the landscapes. The inclusions in the mapping unit are many and varied. They consist of a total of about 25 percent thin fine textured soils, moderately deep sandy soils, gullied land, Laney soils, DeBone soils, and Fraddle soils.

Runoff is rapid and erosion hazard is severe. Wind erosion hazard on Huguston and Youjay soils is severe.

This unit is used for rangeland and wildlife habitat. Rock land--Shale (7 to 9 inch precipitation zone) rangesite. Huguston soils--Shallow Sandy (7 to 9 inch precipitation zone) rangesite. Youjay soils--Shallow Clayey (7 to 9 inch precipitation zone) rangesite.

Rock land-Natrargids complex (112) - This complex consists of about 50 percent Rock land and about 30 percent Natrargids. The Rock land consists of about 60 percent barren red shale and about 40 percent very shallow soils. The Natrargids are shallow to moderately deep, very strongly alkaline, fine textured red soils. The landscapes occur below the Blue Rim and consist of ridges and sidehill slopes of 6 to 20 percent gradient. The Rock land and the Natrargids occur in an intermingled pattern. Included are about 20 percent "slick spots" consisting of nearly barren alkali soils.

Runoff is rapid and erosion hazard is severe.

This complex is used for rangeland and wildlife habitat. Rock land--Shale (7 to 9 inch precipitation zone) rangesite. Natrargids--Dense Clay (7 to 9 inch precipitation zone) rangesite.

RYARK SERIES

The Ryark series are well drained soils. They formed in sandy alluvium on undulating to rolling alluvial fans. Slopes are 3 to 10 percent. Elevation is 7,000 to 7,300 feet. Vegetation is big sagebrush, needleandthread, and thickspike wheatgrass. Precipitation is 10 to 12 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is brown, neutral loamy sand about 2 inches thick. The subsoil is brown, neutral sandy loam about 16 inches thick. The upper part of the substratum is grayish brown, neutral loamy sand about 12 inches thick. The lower part of the substratum is light brownish gray, neutral gravelly sand to 60 inches or more.

The soil has moderately rapid permeability. Available water capacity for the profile is 3.75 to 5.25 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many fine and very fine roots to 10 inches, few fine and very fine roots to 30 inches.

The Ryark soils are used for rangeland and wildlife habitat.

The representative profile is located in SW_4^1 , NE_4^1 , Sec. 26, T. 31 N., R. 108 W.

- Al 0-2 inches Brown (10YR 5/3) loamy sand, dark brown (10YR 4/3) moist; weak fine subangular structure; loose, nonsticky, nonplastic; many very fine and fine roots; neutral, pH 7.0; clear smooth boundary.
- B21t 2-10 inches Brown (10YR 5/3) sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine roots; thin patchy waxy coatings on ped faces, clay bridges between sand grains; 4 percent very fine gravel; neutral, pH 7.2; clear smooth boundary.
- B22t 10-18 inches Brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine and fine roots; thin waxy coatings on ped faces, clay bridges between sand grains; 4 percent very fine gravel; neutral, pH 7.2; clear smooth boundary.

- 18-30 inches Grayish brown (10YR 5/2) loamy sand, dark grayish brown (10YR 4/2) moist; weak coarse subangular blocky structure; soft, loose, nonsticky, nonplastic; very few fine roots; 15 percent very fine gravel; neutral, pH 7.2; clear smooth boundary.
 30-60 inches Light brownish gray (10YR 6/2) gravelly sand, dark grayish
- C2 30-60 inches Light brownish gray (10YR 6/2) gravelly sand, dark gravish brown (10YR 4/2) moist; single grained; loose, nonsticky, nonplastic; neutral, pH 7.0.

Range in Characteristics: Thickness of solum ranges from 14 to 20 inches.

C1

The hue of the Al horizon is 2.5Y or 10YR. The value is 4 or 5 dry and 3 or 4 moist. The chroma is 2 or 3 dry and moist. The texture ranges from fine sand to loamy sand. Reaction is neutral or mildly alkaline.

The hue of the B2t horizon is 2.5Y to 7.5YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 3 or 4 dry and 2 or 3 moist. The texture is sandy loam or fine sandy loam. The clay content is about 10 to 16 percent. Content of very fine gravel is 0 to 10 percent. Reaction is neutral or mildly alkaline.

The hue of the C horizon ranges from 2.5Y to 7.5YR. The texture ranges from loamy sand to gravelly sand. Content of very fine gravel in the upper part of the C horizon is 10 to 15 percent, and in the lower part of the C it is 25 to 35 percent. Reaction is neutral or mildly alkaline.

Ryark-Cothran association (260) - This association consists of about 55 percent Ryark loamy sand, 3 to 6 percent slopes, and about 25 percent Cothran fine sand, 3 to 6 percent slopes. The profiles of these soils are similar to the profiles described under the respective series headings. This association occupies undulating alluvial fans and uplands. The Ryark series occurs on smoothly sloping areas and concave surfaces. The Cothran soils occur in the rounded portions of the landscapes. Included are about 10 percent Relsob soils and about 10 percent soils similar to the Ryark soils but with bedrock at depths of 36 to 40 inches.

Runoff is slow to moderate and erosion hazard is moderate to severe. Wind erosion hazard is severe.

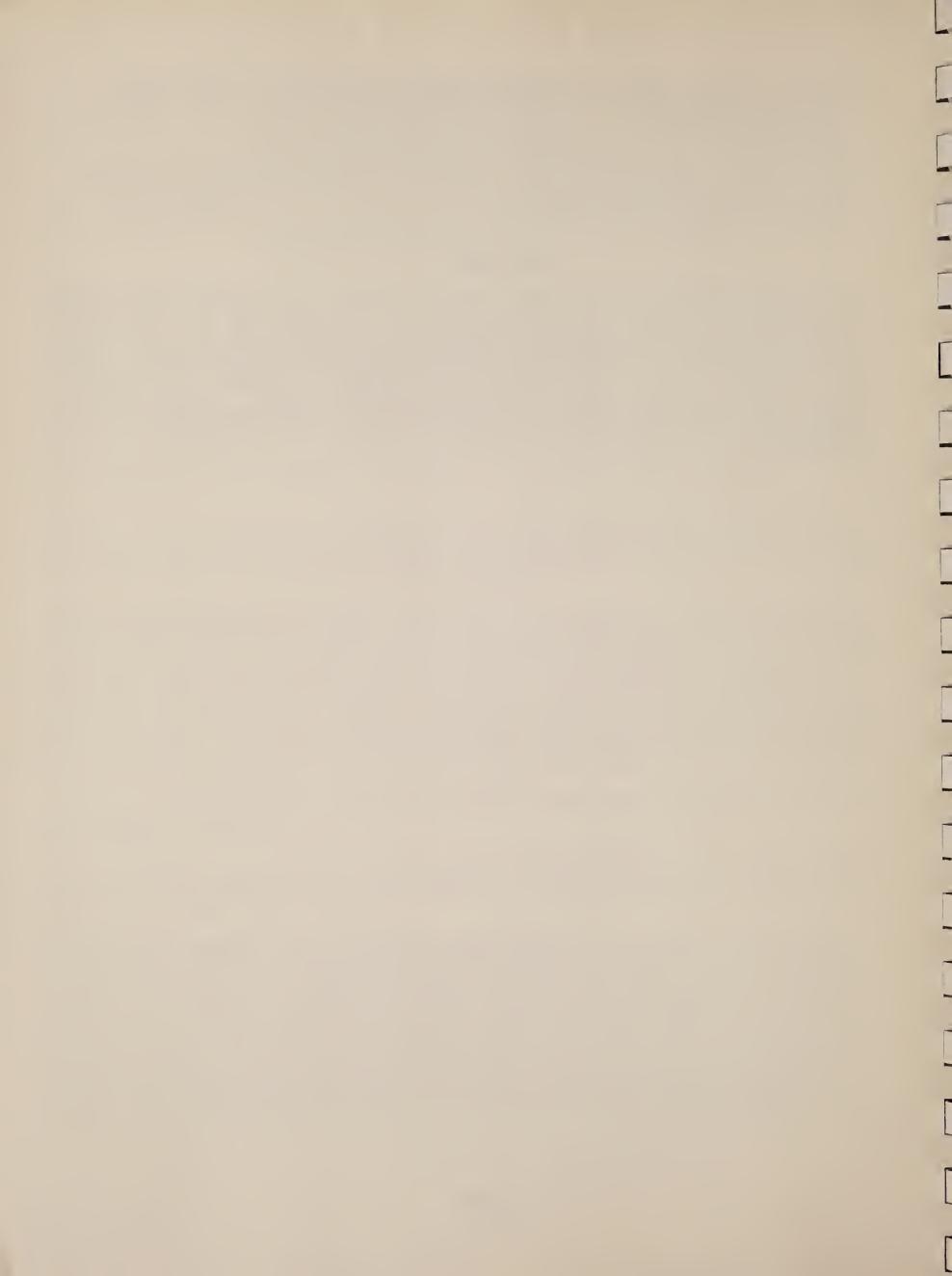
This association is used for rangeland and wildlife habitat. Ryark soils--Sandy (10 to 14 inch precipitation zone) rangesite. Cothran soils--Sands (10 to 14 inch precipitation zone) rangesite.

Ryark-Relsob complex, 3 to 10 percent slopes (259) - This complex consists of about 45 percent Ryark loamy sand, 3 to 10 percent slopes, and about 35 percent Relsob sandy loam, 3 to 10 percent slopes. The profiles of these soils are the same as the profiles described under the respective series headings. This complex occupies gently sloping to sloping alluvial fans that occur at the base of rolling uplands and the soils are intermingled in the landscapes. Included are about 10 percent soils similar to the Cothran soils but with bedrock at depths of 40 to 60 inches, about 5 percent Tigon soils, and about 5 percent Bluerim soils. This complex occurs primarily in the Alkali Creek-Sand Springs Draw area. Runoff is slow to medium and erosion hazard is moderate to severe. Wind erosion hazard is severe.

This complex is used for rangeland and wildlife habitat. Ryark soils--Sandy (10 to 14 inch precipitation zone) rangesite. Relsob soils--Loamy (10 to 14 inch precipitation zone) rangesite.

SALORTHIDS

These soils have high to very high accumulations of soluble salts. They formed in residuum or alluvium from saline materials on alluvial fans and footslopes. In many places the soils have been affected by fluctuating water tables. Slopes are 3 to 10 percent. Elevation is 6,800 to 7,000 feet. Vegetation is greasewood, Gardners saltbush, alkali grass, and scattered clumps of thickspike wheatgrass. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, and frost may occur in any month.



<u>Salorthids-Natrargids complex (113)</u> - This complex consists of soils with high to very high accumulations of soluble salts and very strongly alkaline soils and occurs on gently sloping alluvial fans and sloping footslopes. In most areas the landscapes occur adjacent to drainageways. The saline and alkaline soils form in a very complex, intermingled pattern in the landscapes displaying varying degrees of salinity and alkalinity. The principal areas of this unit are in the Alkali Creek area. Included in the complex are Youjay soils and DeBone soils. Sizeable areas in each landscape are barren.

Runoff is medium to rapid and erosion hazard is severe.

This complex is used for rangeland and wildlife habitat and is in Saline Lowland (7 to 9 inch precipitation zone) rangesite.

Shale Rock land (102) - This land type consists of about 85 percent barren shale and about 15 percent very shallow soils. It occurs primarily along the face of the Blue Rim and on ridges above the Blue Rim. A few areas occur at the base of the Blue Rim. Included are some sandy shales and thin strata of sandstone.

Runoff is rapid and erosion hazard is severe. These areas are high sediment producers.

This land type is used primarily for wildlife habitat. Rangesite not assigned.

TIGON SERIES

The Tigon series are well drained soils. They formed in residuum from cemented, arkosic sand and very fine gravel on ridges and upper sidehills. Slopes are 6 to 30 percent. Elevation is 7,000 to 7,300 feet. Vegetation is Indian ricegrass, Canby bluegrass, thickspike wheatgrass, and big sagebrush. Precipitation is 10 to 12 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is brown, neutral sandy loam about 2 inches thick. The subsoil is brown, neutral sandy clay loam about 13 inches thick. Cemented, noncalcareous, arkosic sand and very fine gravel occur at 15 inches.

The soil is moderately permeable. Available water capacity for the profile is 1.25 to 3.25 inches. Effective rooting depth is 10 to 20 inches. Typically, the soil has many very fine, fine, and medium roots to 2 inches; many very fine, fine, fine, and medium roots to 8 inches; and a few fine and coarse roots to 15 inches.

The Tigon soils are used for rangeland and wildlife habitat.

The representative profile is located in the NE_4^1 , SW_4^1 , Sec. 33, T. 30 N., R. 108 W.

- Al 0-2 inches Brown (10YR 5/3) sandy loam, very dark brown (10YR 3/3) moist; weak medium crumb structure; soft, very friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; 15 percent very fine gravel; neutral, pH 6.8; clear smooth boundary.
- B21t 2-8 inches Brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; weak medium prismatic parting to moderate medium angular blocky structure; slightly hard, friable, sticky, plastic; many very fine, fine, and medium roots; thin nearly continuous waxy coatings on ped faces; 10 percent very fine gravel; neutral, pH 6.6; clear smooth boundary.
- B22t 8-15 inches Brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; weak medium angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and coarse roots; thin discontinuous waxy coatings on ped faces; 20 percent very fine gravel; neutral, pH 6.6; gradual wavy boundary.
- C 15 inches Cemented, noncalcareous, arkosic sand and very fine gravel that breaks up fairly easy with a spade.

Range in Characteristics: Depth to cemented very fine gravel and sand ranges from 10 to 20 inches. Thickness of solum ranges from 10 to 20 inches.

The hue of the Al horizon is 2.5Y or 10YR, value is 5 or 6 dry and 3 or 4 moist; and chroma is 2 or 3 dry and moist. The texture is sandy loam or fine sandy loam. The reaction is slightly acid or neutral.

The hue of the B2t horizon is 10YR or 7.5YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 3 or 4 dry and 2 or 3 moist. The texture is sandy clay loam with a clay content of 20 to 26 percent and more than 35 percent fine sand or coarser. Content of very fine gravel is 10 to 20 percent. Reaction is neutral or mildly alkaline.

Tigon-Bluerim association (252) - This association consists of about 50 percent Tigon sandy loam, 6 to 30 percent slopes, and about 25 percent Bluerim sandy loam, 3 to 15 percent slopes. The profile of the Tigon soils is the same as the profile described as representative of the series. The profile of the Bluerim soils is similar to the profile described under the series heading. This association occupies landscapes composed of rolling to hilly ridges and sidehills. The Tigon soils occupy the ridges and upper sidehills, and the Bluerim soils occur on the lower hillsides. This association occurs above the Blue Rim topographic break. Included are about 15 percent Rallod soils, about 5 percent Onason soils, and about 5 percent soils similar to the Bluerim soils but with bedrock at depths below 40 inches. In some areas there are outcrops of alkaline shale and inclusions of reddish colored soils similar to the Bluerim soils.

Runoff is medium to rapid and erosion hazard is moderate to severe. Wind erosion hazard is severe.

This association is used for rangeland and wildlife habitat. Tigon soils--Shallow Loamy (10 to 14 inch precipitation zone) rangesite. Bluerim soils--Loamy (10 to 14 inch precipitation zone) rangesite.

TRESANO SERIES

The Tresano series are well drained soils. They formed in mixed alluvium on alluvial fans. Slopes are 6 to 10 percent. Elevation is 6,800 to 7,000 feet. Vegetation is big sagebrush, thickspike wheatgrass, Indian ricegrass, and needleandthread. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is grayish brown, mildly alkaline sandy loam about 7 inches thick. The upper part of the subsoil is brown, mildly alkaline sandy clay loam about 10 inches thick. The lower part of the subsoil is grayish brown, moderately alkaline sandy clay loam about 7 inches thick. The substratum is grayish brown, strongly alkaline sandy clay loam to 60 inches or more.

The soil is moderately permeable. Available water capacity for the profile is 8.0 to 9.5 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many fine and very fine roots to 3 inches; many very fine, fine, and medium roots to 7 inches; few fine and medium roots to 12 inches; and very few fine roots to 17 inches.

The Tresano soils are used for rangeland and wildlife habitat.

The representative profile is located in the NE $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 24, T. 30 N., R. 109 W.

- All 0-3 inches Grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; moderate fine crumb structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine roots; mildly alkaline, pH 7.4; clear smooth boundary.
- Al2 3-7 inches Grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; strong coarse crumb structure; soft, very friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; mildly alkaline, pH 7.4; clear smooth boundary.
- B21t 7-12 inches Brown (7.5YR 5/2) sandy clay loam, dark brown (7.5YR 4/2) moist; moderate medium prismatic parting to moderate medium angular blocky structure; hard, firm, sticky, plastic; few fine and medium roots; thin nearly continuous waxy coatings on ped faces; mildly alkaline, pH 7.6; abrupt smooth boundary.

B22t 12-17 inches Brown (7.5YR 5/2) sandy clay loam, dark brown (7.5YR 4/2) moist; moderate medium angular blocky structure; hard, firm, sticky, plastic; few fine roots; thin nearly continuous waxy coatings on ped faces; mildly alkaline, pH 7.6; clear smooth boundary.

- B3ca 17-24 inches Grayish brown (10YR 5/2) sandy clay loam, dark grayish brown (10YR 4/2) moist; weak medium angular blocky structure; slightly hard, friable, sticky, plastic; thin patchy waxy coatings on some ped faces; effervescent, few fine and medium seams and soft masses of calcium carbonate; moderate alkaline, pH 8.4; gradual wavy boundary.
- Clca 24-60 inches Grayish brown (10YR 5/2) sandy clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, sticky, plastic; violently effervescent, few fine and medium seams and soft masses of calcium carbonate; strongly alkaline, pH 8.6.

<u>Range in Characteristics</u>: Depth to calcareous material usually ranges from 14 to 28 inches. Thickness of solum ranges from 16 to 28 inches. Content of very fine gravel ranges from 5 to 15 percent throughout.

The hue of the Al horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is typically a sandy loam but may range from sandy loam to very fine sandy loam. Reaction is neutral or mildly alkaline.

The hue of the B2t horizon is 10YR or 7.5YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is sandy clay loam with clay content of from 28 to 34 percent and less than 35 percent of fine sand or coarser. Reaction is neutral or mildly alkaline.

The hue of the B3ca horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is sandy clay loam with clay content ranging from 20 to 28 percent. Reaction is moderately alkaline or strongly alkaline.

The hue of the Cca horizon is 2.5Y or 10YR. The texture ranges from sandy loam to sandy clay loam. Reaction is moderately alkaline or strongly alkaline.

The Tresano soils are mapped in complex with the DeBone soils.

VIBLE SERIES

The Vible series are well drained soils. They formed in sandy alluvium on alluvial fans. Slopes are 0 to 3 percent. Elevation is 7,000 to 7,300 feet. Vegetation is big sagebrush, needleandthread, thickspike wheatgrass, and Indian ricegrass. Precipitation is 10 to 12 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is pale brown, neutral sandy loam about 3 inches thick. The underlying layer is yellowish brown to brown, neutral sandy loam about 13 inches thick. The substratum is pale brown, neutral to mildly alkaline, coarse sand to 60 inches or more.

The soil is rapidly permeable. Available water capacity for the profile is 3.5 to 4.75 inches. Effective rooting depth is 60 inches or more. Typically, the soil has many very fine and fine roots to 10 inches, few fine roots to 14 inches, and a few very fine roots to 25 inches.

The Vible soils are used for rangeland and wildlife habitat.

The representative profile is located near the center of Sec. 13, T. 31 N., R. 109 W.

- Al 0-3 inches Pale brown (10YR 6/3) sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium crumb structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; neutral, pH 6.8; clear smooth boundary.
- Cl 3-10 inches Yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine and fine roots; neutral, pH 7.2; clear smooth boundary.
- C2 10-16 inches Brown (10YR 5/3) sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; few fine roots; 12 percent very fine gravel; neutral, pH 7.2; clear smooth boundary.
- C3 16-25 inches Pale brown (10YR 6/3) coarse sand, dark yellowish brown (10YR 4/4) moist; single grained; loose, nonsticky, nonplastic; very few roots; 12 percent very fine gravel; neutral, pH 7.0; gradual wavy boundary.
- C4 25-42 inches Pale brown (10YR 6/3) coarse sand, dark brown (10YR 4/3) moist; single grained; loose, nonsticky, nonplastic; 12 percent very fine gravel; neutral, pH 7.0; gradual wavy boundary.
- C5 42-60 inches Pale brown (10YR 6/3) coarse sand, dark brown (10YR 4/3) moist; single grained; loose, nonsticky, nonplastic; 15 percent very fine gravel; mildly alkaline, pH 7.4.

Range in Characteristics: These soils are typically noncalcareous throughout, but some pedons have thin lenses of calcareous materials at depths of 50 to 60 inches.

The hue of the Al horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 3 or 4 dry and moist. The texture is sandy loam or fine sandy loam. Content of very fine gravel is 5 to 15 percent. Reaction is slightly acid or neutral.

The hue of the C horizon is 2.5Y or 10YR. Content of very fine gravel is 10 to 15 percent. Reaction is neutral or mildly alkaline.

Vible sandy loam (263) - This soil occupies broad, nearly level alluvial fans on the benches above the Newfork River. The profile of this soil is the same as the profile described under the respective series heading. Included in mapping are about 20 percent Cothran soils and about 10 percent Ryark soils.

The runoff is slow and erosion hazard is slight to moderate. Wind erosion hazard is severe.

The Vible soils are used for rangeland and wildlife habitat. Sandy (10 to 14 inch precipitation zone) rangesite.

YOUJAY SERIES

The Youjay series are well drained soils. They formed in residuum from strongly alkaline shale on ridges and sidehills. Slopes are 3 to 30 percent. Elevation is 6,800 to 7,000 feet. Vegetation is big sagebrush, needleleaf sedge, and thickspike wheatgrass. Precipitation is 7 to 9 inches, and the mean annual air temperature is about 36°F. The growing season is about 80 to 90 days, but frost may occur in any month.

In a representative profile the surface layer is light gray, mildly alkaline sandy loam about 1 inch. The subsoil is very strongly alkaline clay loam about 13 inches thick. In sequence from the top the upper 4 inches are brown, the next 3 inches are light olive brown, and the lower 6 inches are olive. Soft, strongly alkaline shale occurs at 14 inches.

The soil is slowly permeable. Available water capacity for the profile is 0.75 to 2.25 inches. Effective rooting depth is 10 to 20 inches. Typically, the soil has few fine and very fine roots to 5 inches and very few roots to 8 inches.

The Youjay soils are used for rangeland and wildlife habitat.

The representative profile is located in the SW_4^1 , NE_4^1 , Sec. 32, T. 31 N., R. 108 W.

- A2 0-1 inch Light gray (10YR 7/1) sandy loam, dark grayish brown (10YR 4/2) moist; fine porous crust; slightly hard, very friable, nonsticky, nonplastic; few very fine and fine roots; mildly alkaline, pH 7.8; abrupt smooth boundary.
- B21t 1-5 inches Brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; moderate fine columnar parting to strong fine angular blocky structure; hard, firm, sticky, plastic; few very fine and fine roots; thin continuous waxy coatings on all ped faces; very strongly alkaline, pH 9.2; clear smooth boundary.
- B22tca 5-8 inches Light olive brown (2.5Y 5/4) clay loam, olive brown (2.5Y 4/4) moist; moderate fine prismatic parting to moderate fine angular blocky structure; hard, firm, sticky, plastic; very few roots; thin patchy waxy coatings on ped faces;

effervescent, many fine seams and soft masses of calcium carbonate; very strongly alkaline, pH 9.4; clear smooth boundary.

B3ca 8-14 inches Olive (5Y 5/3) clay loam, olive (5Y 4/3) moist; weak fine and medium angular blocky structure; slightly hard, firm, sticky, plastic; thin discontinuous waxy coatings on ped faces; violently effervescent, many medium and fine seams and soft masses of calcium carbonate; very strongly alkaline, pH 9.4; gradual wavy boundary.

C 14 inches Olive, soft, calcareous, strongly alkaline shale.

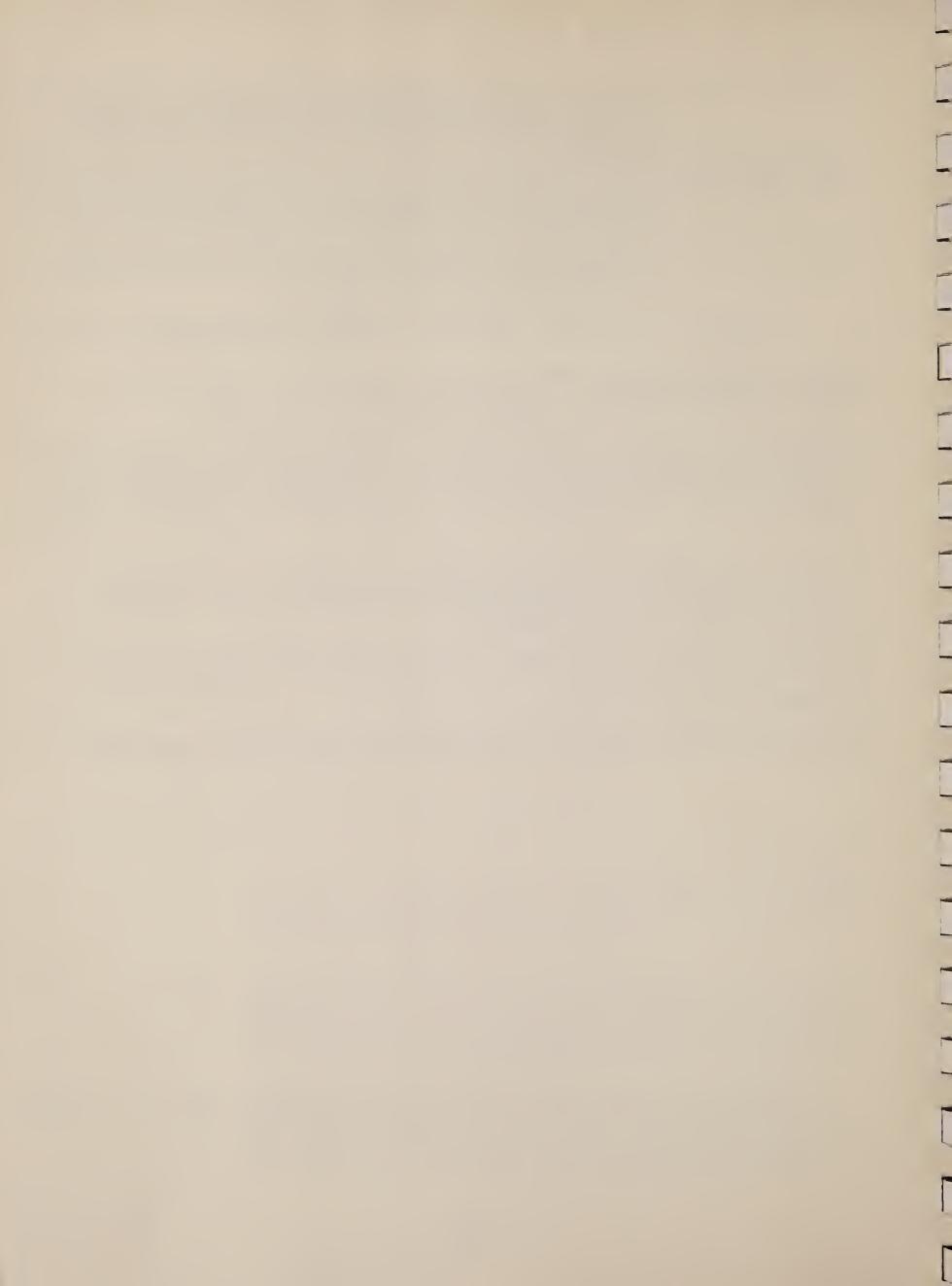
<u>Range in Characteristics</u>: Depth to bedrock ranges from 10 to 20 inches. Depth to calcareous materials ranges from 3 to 6 inches. Thickness of solum ranges from 8 to 15 inches. Content of gravel is 0 to 5 percent.

The hue of the A2 horizon is 2.5Y or 10YR. The value is 6 or 7 dry and 4 or 5 moist. The chroma is 1 or 2 dry and moist. The texture ranges from sandy loam to very fine sandy loam. Reaction is mildly alkaline or moderately alkaline.

The hue of the B2t horizon is 2.5Y or 10YR. The value is 5 or 6 dry and 4 or 5 moist. The chroma is 2 or 3 dry and moist. The texture is clay loam or silty clay loam with a clay content of 38 to 44 percent. The exchangeable sodium percentage is 15 to 30 percent.

The hue of the B3ca horizon ranges from 5Y to 10YR. The texture is loam or clay loam with a clay content of 24 to 30 percent. The exchangeable sodium percentage is 15 to 30 percent.

The Youjay soils are mapped with the Fraddle, Hatermus, Haterton, and Ouard soils.



USE AND MANAGEMENT OF THE SOILS

This section explains the land capability classification of the Soil Conservation Service and discusses the use and management of the soils of the Blue Rim area for rangeland, engineering uses, and recreation.

Capability Grouping

Capability grouping shows, in a general way, the suitability of soils for most kinds of field crops. The groups are made according to the limitations of the soils when used for field crops, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to crops requiring special management.

Those familiar with the capability classification can infer from it much about the behavior of soils when used for other purposes, but this classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for range, for forest trees, or engineering.

In the capability system all kinds of soils are grouped at three levels--the capability class, subclass, and unit. These are discussed in the following paragraphs.

CAPABILITY CLASSES, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use defined as follows:

Class I soils have few limitations that restrict their use.

- Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.
- Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.
- Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both.
- Class V soils are not likely to erode but have other limitations impractical to remove that limit their use largely to pasture, range, woodland, or wildlife.
- Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife.
- Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland or wildlife.

Class VIII soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife, water supply, or to esthetic purposes.

CAPABILITY SUBCLASSES are soil groups within one class; they are designated by adding a small letter--e, \underline{w} , \underline{s} , or \underline{c} --to the class numeral; for example, IIe. The letter <u>e</u> shows that the main limitation is risk of erosion unless closegrowing plant cover is maintained; \underline{w} shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); <u>s</u> shows that the soil is limited mainly because it is shallow, droughty, or stony; and <u>c</u>, used in only some parts of the United States, shows that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V can contain, at the most, only the subclasses indicated by \underline{w} , <u>s</u>, and <u>c</u> because the soils in class V are subject to little or no erosion though they have other limitations that restrict their use largely to pasture, range, woodland, wildlife, or recreation.

CAPABILITY UNITS are soil groups within the subclasses. The soils in one capability unit are enough alike to be suited to the same crops and pasture plants to require similar management and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about management of soils. Capability units are generally designated by adding an Arabic numeral to the subclass symbol; for example, IVe2 or VIe5. Thus, in one symbol the Roman numeral designates the capability class or degree of limitation, the small letter indicates the subclass or kind of limitation as defined in the foregoing paragraph, and the Arabic numeral specifically identifies the capability unit within each subclass.

The land capability classification for each mapping unit is shown in the Guide to Mapping Units and in the appropriate soil survey interpretation sheets. Mapping units designated as complexes are given a single land capability classification, but the land capability classification for components of other multiple soil units is given individually.

Range Sites and Condition Classes 1/

Different kinds of soil vary in their capacity to produce grass, forbs, and brush. Soils that produce about the same kinds and amounts of herbage within the same precipitation zone make up a range site.

Range sites are kinds of rangeland that differ in their ability to produce vegetation. The soils of any one range site produce about the same kind of climax vegetation. Climax vegetation is the stabilized plant community; it reproduces itself and does not change as long as the environment remains unchanged. Throughout the prairie and the plains the climax vegetation consists of the plants that

<u>l</u>/Perry D. Gruhlkey, Range Conservationist, Soil Conservation Service, assisted with this section and made the range inventory in the field. were growing there when the region was first settled. If cultivated crops are not grown, the most productive combination of forage plants on a rangesite is generally the climax vegetation.

Decreasers are plants in the climax vegetation that tend to decrease in relative amount under close grazing. They generally are the tallest and most productive perennial grasses and forbs and the most palatable to livestock.

Increasers are plants in the climax vegetation that increase in relative amount as the more desirable decreaser plants are reduced by close grazing. They are commonly shorter than decreasers and are generally less palatable to livestock.

Invaders are plants that cannot compete with plants in the climax plant community for moisture, nutrients, and light. Hence, invaders come in and grow along with increasers after the climax vegetation has been reduced by grazing. Many are annual weeds, some are shrubs that have some grazing value, but others have little value for grazing.

Four range condition classes are used to indicate the degree of departure from the potential, or climax, vegetation brought about by grazing or other uses. The classes show the present condition of the native vegetation on a rangesite in relation to the native vegetation that could grow there.

A range is in excellent condition if 76 to 100 percent of the vegetation is of the same kind as that in the climax stand. It is in good condition if the percentage is 51 to 75, in fair condition if the percentage is 26 to 50, and in poor condition if the percentage is less than 25.

Range condition is judged according to standards that apply to the particular rangesite. It expresses the present kind and amount of vegetation in relation to the climax plant community for that site.

Potential forage production depends on the rangesite. Current forage production depends on the range condition and the moisture available to plants during their growing season.

A primary objective of good range management is to keep rangeland in excellent or good condition. If this is done, water is conserved, yields are improved, and the soils are protected. The problem is recognizing important changes in the kind of cover on a rangesite. These changes take place gradually and can be misinterpreted or overlooked. Growth encouraged by heavy rainfall may lead to the conclusion that the range is in good condition when actually the cover is weedy and the long-term trend is toward lower production. On the other hand, some rangeland that has been closely grazed for short periods under the supervision of a careful manager may have a degraded appearance that temporarily conceals its quality and ability to recover.

Descriptions of Rangesites

In the following pages the soils or range sites of the Blue Rim area are described, and the climax plants and principal invaders on the sites are named. Also given is an estimate of the potential annual yield of air-dry herbage for each site when it is in excellent condition, in years with above average growing conditions, and in years with poor growing conditions. Also included is a statement about the feasibility of range improvement in each precipitation zone. The soils in each site can be determined by referring to the "Guide to Mapping Units" at the back of this soil survey.

Feasibility of Range Improvements for 10 to 14 Inch Precipitation Zone

Proper grazing use, deferred grazing, and planned grazing systems are feasible on all sites in this precipitation zone. To achieve these practices the following improvements should be considered:

1. Stockwater Development

Stockwater in this area is limited and needs improvement. There is a potential for numerous ponds to be developed to serve for livestock and wildlife and fish ponds. Ponds are most suited to Clayey, Dense Clay, Loamy, Overflow, and Saline Subirrigated rangesites. There is a potential for wells where ponds are not feasible. Water developed in this area can be piped to areas at lower elevations. Water should be developed so livestock do not travel over one mile to water.

2. Fencing

Fencing is feasible on all sites for livestock distribution and to permit implementation of planned grazing systems. The movement of antelope in the area should be considered in locating and designing fences.

3. Brush Control

Brush control is feasible on Sandy, Loamy, Clayey, Shallow Loamy, and Shallow Clayey rangesites where big and low sagebrush are over 30 percent of the total composition. With proper planning and consideration of sage grouse habitat most of the area in the above sites could be sprayed to improve vegetative composition and ground cover without detriment to wildlife habitat.

4. Seeding

Areas of Loamy and Clayey rangesites could be seeded to tame species for use as specialized pastures. If seeding tame species, crested wheatgrass would be most adapted.

5. Water Spreading

Where water runoff is plentiful, water spreading systems can be developed on selected areas of Loamy, Clayey, and Dense Clay rangesites.

Clayey (10 to 14 inch precipitation zone) rangesite.

This rangesite consists of well drained soils with thin sandy loam or fine sandy loam surface layers and clay or silty clay subsoils. Slopes are 3 to 15 percent. Precipitation is 10 to 12 inches. The soils are slowly to moderately slowly permeable. Available water capacity is 1.4 to 8.25 inches. Potential vegetation in excellent condition consists of about 65 percent of the following decreaser species: thickspike wheatgrass, bottlebrush squirreltail, Indian ricegrass, mutton bluegrass, and Letterman needlegrass; and about 35 percent of the following increaser species: prairie junegrass, Sandberg blue-grass, big sagebrush, and low sagebrush. If range condition deteriorates, woody plants and invading species become more dominant. The principal invaders are annuals (bushy birdsbeak).

In excellent condition this site produces about 1,400 pounds of air-dry herbage per acre in years with above average growing conditions and 600 pounds per acre in years with poor growing conditions.

Dense Clay (10 to 14 inch precipitation zone) rangesite.

This rangesite consists of well drained soils that are very strongly alkaline. The soils have thin sandy loam to clay loam surface layers and sandy clay to clay subsoils. Slopes are 3 to 15 percent. Precipitation is 10 to 12 inches. The soils are slowly permeable. Available water capacity is 1.0 to 5.5 inches.

Potential vegetation in excellent condition consists of about 65 percent of the following decreaser species; western wheatgrass, mutton bluegrass, bottlebrush squirreltail, and winterfat; and about 35 percent of the following increaser species; Sandberg bluegrass, phlox, and low sagebrush.

If range condition deteriorates, low sagebrush, rabbitbrush, and increasing forbs become more dominant. The principal invaders are annuals.

In excellent condition this site will produce about 1,000 pounds of air-dry herbage per acre in years with above-average growing conditions, and 450 pounds in years with poor growing condition.

Loamy (10 to 14 inch precipitation zone) rangesite.

This rangesite consists of well drained soils with sandy loam or clay loam surface layers and sandy clay loam or clay loam subsoils. Slopes are 0 to 20 percent. Precipitation is 10 to 12 inches. The soils are moderately permeable. Available water capacity is 2.5 to 11.0 inches.

Potential vegetation in excellent condition consists of about 50 percent of the following decreaser species: needleandthread, bluebunch wheatgrass, Canby bluegrass, Letterman needlegrass, Indian ricegrass, spike fescue, and mutton bluegrass; and about 50 percent of the following increaser species: thickspike wheatgrass, big sagebrush, Hoods phlox, Sandberg bluegrass, prairie junegrass, and low rabbitbrush. If range condition deteriorates, big sagebrush, Sandberg bluegrass, and invading species become more dominant. The principal invaders are annuals and pricklypear cactus.

In excellent condition this site will produce about 1,500 pounds of air-dry herbage per acre in years with above-average growing conditions and 700 pounds per acre in years with poor growing conditions. Overflow (10 to 14 inch precipitation zone) rangesite.

This rangesite consists of well drained soils that receive additional moisture from stream overflow or from adjacent slopes. The soils have loam or sandy loam surface layers and stratified sandy loam or loam underlying layers. Slopes are 0 to 3 percent. Precipitation is 10 to 12 inches. The soils are moderately rapid to moderately permeable. Available water capacity is 7.75 to 11.0 inches.

Potential vegetation in excellent condition consists of about 45 percent of the following decreaser species: basin wildrye, slender wheatgrass, needleandthread, Letterman needlegrass, and Canby bluegrass; and about 55 percent of the following increaser species: western wheatgrass, big sagebrush, eriogonum, low rabbitbrush, Sandberg bluegrass, and prairie junegrass. If range deteriorates, sagebrush, rabbitbrush, western wheatgrass, and invading species become more dominant. The principal invading plants are annuals and rubber rabbitbrush.

In excellent condition this site will produce about 2,200 pounds of air-dry herbage per acre in years with above-average growing conditions and 1,200 pounds per acre in years with poor growing conditions.

Saline Subirrigated (10 to 14 inch precipitation zone) rangesite.

This rangesite consists of somewhat poorly drained soils that are moderately to strongly saline and have a fluctuating water table in the root zone during most of the growing season. The soils have sandy loam or loam surface layers and stratified sandy loam or loam underlying layers. Slopes are 0 to 3 percent. Precipitation is 10 to 12 inches. Permeability is moderate to moderately rapid. Available water capacity is 3.5 to 5.5 inches. Depth to seasonal water table varies from near the surface to about 40 inches.

Potential vegetation in excellent condition consists of about 60 percent of the following decreaser species: alkali sacaton, basin wildrye, Nuttall alkaligrass, and alkali bluegrass; and about 40 percent of the following increaser species: inland saltgrass, greasewood, and arrowgrass. If range conditions deteriorate, greasewood and inland saltgrass become more dominant. The principal invader is foxtail barley.

In excellent condition this site will produce about 3,400 pounds of air-dry herbage per acre in years with above average growing conditions and 2,500 pounds per acre in years with poor growing conditions.

Sands (10 to 14 inch precipitation zone) rangesite.

This rangesite consists of well drained soils with fine sand surface layers and loamy fine sand underlying layers. Slopes are 3 to 6 percent. Precipitation is 10 to 12 inches. The soils are rapidly permeable. Available water capacity is 2.5 to 5.0 inches.

Potential vegetation in excellent condition consists of about 60 percent of the following decreaser species: needleandthread, thickspike wheatgrass, bottlebrush squirreltail, Indian ricegrass, and bluebunch wheatgrass; and about 40 percent of the following increaser species: threadleaf sedge, big sagebrush, Sandberg bluegrass, prairie junegrass, and phlox. If range condition deteriorates, woody species and invaders become more dominant. The principal invaders are annuals.

In excellent condition this site will produce about 1,700 pounds of air-dry herbage per acre in years with above-average growing conditions and 900 pounds per acre in years with poor growing conditions.

Sandy (10 to 14 inch precipitation zone) rangesite.

This rangesite consists of well drained soils with sandy loam or loamy sand surface layers and sandy loam subsoils or underlying layers. Slopes are 0 to 15 percent. Precipitation is 10 to 12 inches. The soils are moderately rapid to rapidly permeable. Available water capacity is 2.25 to 5.25 inches.

Potential vegetation in excellent condition consists of about 60 percent of the following decreaser species: needleandthread, bottlebrush squirreltail, Indian ricegrass, Canby bluegrass, and bluebunch wheatgrass; and about 40 percent of the following increaser species: thickspike wheatgrass, big sagebrush, thread-leaf sedge, prairie junegrass, and low rabbitbrush. If range condition deteriorates, big sagebrush and invading species become more dominant. The principal invaders are annuals, thistles, and broom snakeweed.

In excellent condition this site will produce about 1,500 pounds of air-dry herbage per acre in years with above-average growing conditions and 700 pounds per acre in years with poor growing conditions.

Shallow Clayey (10 to 14 inch precipitation zone) rangesite.

This rangesite consists of well drained soils that are underlain by bedrock at depths of 10 to 20 inches. The soils have sandy loam surface layers and sandy clay subsoils. Slopes are 10 to 30 percent. Precipitation is 10 to 12 inches. The soil is slowly permeable. Available water capacity is 0.70 to 3.25 inches.

Potential vegetation in excellent condition consists of 65 percent of the following decreaser species: bluebunch wheatgrass, bottlebrush squirreltail, Indian ricegrass, and mutton bluegrass; and about 35 percent of the following increaser species: Sandberg bluegrass, prairie junegrass, winterfat, low sagebrush, and phlox. If range condition deteriorates, increasing forbs (woody aster and goldenweed) and low sagebrush become more dominant. The principal invaders are annuals.

In excellent condition this site will produce 1,000 pounds of air-dry herbage per acre in years with above-average growing conditions and 500 pounds per acre in years with poor growing conditions.

Shallow Loamy (10 to 14 inch precipitation zone) rangesite.

This rangesite consists of well drained soils that are underlain by bedrock at depths of 10 to 20 inches. The soils have thin sandy loam surface layers and sandy clay loam subsoils. Slopes are 6 to 30 percent. Precipitation is 10 to 12 inches. The soils are moderately permeable. Available water capacity is 1.25 to 3.25 inches.

Potential vegetation in excellent condition consists of 65 percent of the following decreaser species: bluebunch wheatgrass, thickspike wheatgrass, Indian ricegrass, Letterman needlegrass, needleandthread, and bottlebrush squirreltail; and about 35 percent of the following increaser species: Sandberg bluegrass, prairie junegrass, big sagebrush, goldenweed, and phlox. If range condition deteriorates, increasing forbs such as goldenweed and phlox become more dominant. The principal invaders are annuals and dandelions. In excellent condition this site will produce about 1,200 pounds of air-dry herbage per acre in years with above-average growing conditions and 700 pounds per acre in years with poor growing conditions.

Shallow Sandy (10 to 14 inch precipitation zone) rangesite.

This rangesite consists of somewhat excessively drained soils that are underlain by bedrock at depths of 10 to 20 inches. The soils have sandy loam surface layers and gravelly sandy loam underlying layers. Slopes are 10 to 30 percent. Precipitation is 10 to 12 inches. The soils have moderately rapid permeability. Available water capacity is 0.75 to 2.0 inches.

Potential vegetation in excellent condition consists of about 65 percent of the following decreaser species: Indian ricegrass, needleandthread, bluebunch wheatgrass, and thickspike wheatgrass; and about 35 percent of the following increaser species: needleleaf sedge, Sandberg bluegrass, low rabbitbrush, and big sagebrush. If range conditions deteriorate, big sagebrush and increaser forbs become more dominant.

In excellent condition this site will produce about 1,200 pounds of airdry herbage per acre in years of above-average growing conditions and 700 pounds per acre in years with poor growing conditions.

Feasibility of Range Improvements for 7 to 9 Inch Precipitation Zone

Proper grazing use, deferred grazing, and planned grazing systems are feasible on all sites in this precipitation zone. To achieve these practices the following improvements should be considered:

1. Stockwater Development

Stockwater at present is extremely limited in this precipitation zone. Since primary grazing use is in the spring, stockwater should be located so livestock do not travel over 1 mile to water.

Indications from geologic information are that ground water is limited. Where possible, stockwater wells are practical and apply to all rangesites. Distribution of the well water can be made with the use of pipelines. Also, water can be piped into this precipitation zone from higher elevations and precipitation zones.

Ponds and pits are most practical for spring and early summer grazing use and are feasible on the following rangesites: Loamy, Dense Clay, and Saline Upland.

2. Fencing

Fencing is feasible on all sites for distribution of livestock and to permit implementation of planned grazing systems. Antelope travel patterns should be considered when locating and designing fencing.

3. Brush Control

On sandy and loamy rangesites with 30 percent or more composition of big sagebrush, brush control is feasible. Because of the amount and variety of shrubby species in this zone, the above sites could be sprayed to improve vegetative composition and ground cover without detriment to wildlife habitat.

Dense Clay (7 to 9 inch precipitation zone) rangesite.

This rangesite consists of well drained soils that are very strongly alkaline. The soils have thin sandy loam to clay loam surface layers and sandy clay to clay underlying layers or subsoils. Slopes are 3 to 10 percent. Precipitation is 7 to 9 inches. The soils are slowly to very slowly permeable. Available water capacity is 0.75 to 3.5 inches.

Potential vegetation in excellent condition consists of about 65 percent of the following decreaser species: western wheatgrass, bud sagebrush, Indian ricegrass, and winterfat; and about 35 percent of the following increaser species: Sandberg bluegrass, phlox, and low sagebrush. If range condition deteriorates, low sagebrush and increasing forbs become more dominant. The principal invaders are annuals.

In excellent condition this site produces about 600 pounds of air-dry herbage per acre in years with above-average growing conditions and 250 pounds per acre in years with poor growing conditions.

Loamy (7 to 9 inch precipitation zone) rangesite.

This rangesite consists of well drained soils with sandy loam surface layers and sandy clay loam subsoils. Slopes are 3 to 20 percent. Precipitation is 7 to 9 inches. The soils are moderately to slowly permeable. Available water capacity is 2.25 to 9.5 inches. The Glenderson soils are included in this rangesite.

Potential vegetation in excellent condition consists of about 45 percent of the following decreaser species: bluebunch wheatgrass, needleandthread, prairie junegrass, and winterfat; and about 55 percent of the following increaser species: thickspike wheatgrass, big sagebrush, low rabbitbrush, and Sandberg bluegrass. If range condition deteriorates, big sagebrush and annuals become more dominant. The principal invaders are annuals.

In excellent condition this site produces about 600 pounds of air-dry herbage per acre in years with above-average growing conditions and 300 pounds per acre in years with poor growing conditions. Saline Lowland (7 to 9 inch precipitation zone) rangesite.

This site consists of well drained soils that are moderately to strongly saline or very strongly alkaline. The surface layers and underlying layers or subsoils are variable in texture. Slopes are 3 to 10 percent. Precipitation is 7 to 9 inches. The soils are moderately to very slowly permeable. Available water capacity is 1.0 to 5.5 inches. Depth to water table is more than 40 inches.

Potential vegetation in excellent condition consists of about 55 percent of the following decreaser species: Gardners saltbush, alkali sacaton, bottlebrush squirreltail, and basin wildrye; and about 45 percent of the following increaser species: Sandberg bluegrass, greasewood, inland saltgrass, and rabbitbrush. If range condition deteriorates, greasewood becomes more dominant. Principal invaders are annuals.

In excellent condition this site produces about 2,000 pounds of air-dry herbage per acre in years with above-average conditions and about 800 pounds in years with poor growing conditions.

Saline Upland (7 to 9 inch precipitation zone) rangesite.

This rangesite consists of well drained soils that are saline and/or alkaline. The soils have loam surface layers and underlying layers. Slopes are 0 to 3 percent. Precipitation is 7 to 9 inches. The soils have moderately slow permeability. Available water capacity is 5.0 to 5.75 inches.

Potential vegetation in excellent condition consists of about 80 percent of the following decreaser species: Gardners saltbush, bud sagebrush, Indian ricegrass, and bottlebrush squirreltail; and about 20 percent of the following increaser species: Sandberg bluegrass, greasewood, and winterfat. If range condition deteriorates, annuals become more dominant and/or ground cover becomes less dense. The principal invaders are annuals.

In excellent condition this site produces about 600 pounds of air-dry herbage per acre in years with above-average growing conditions and 300 pounds per acre in years with poor growing conditions. Sands (7 to 9 inch precipitation zone) rangesite.

This rangesite consists of well drained soils with fine sand surface layers and loamy fine sand underlying layers. Slopes are 3 to 15 percent. Precipitation is 7 to 9 inches. The soils are rapidly permeable. Available water capacity is 1.2 to 4.0 inches.

Potential vegetation in excellent condition consists of about 50 percent of the following decreaser species: needleandthread, thickspike wheatgrass, Indian ricegrass, and bottlebrush squirreltail; and about 50 percent of the following increaser species: needleleaf sedge, phlox, spiny hopsage, and shadscale. If range conditions deteriorate, the woody species become more dominant. The principal invaders are annuals.

In excellent condition this site produces about 700 pounds of air-dry herbage per acre in years with above-average growing conditions and 350 pounds per acre in years with poor growing conditions.

Sandy (7 to 9 inch precipitation zone) rangesite.

This rangesite consists of well drained soils that have sandy loam or fine sandy loam surface layers and sandy loam subsoils or underlying layers. Slopes are 0 to 10 percent. Precipitation is 7 to 9 inches. The soils have moderately rapid permeability. Available water capacity is 2.25 to 5.75 inches.

Potential vegetation in excellent condition consists of about 55 percent of the following decreaser species: needleandthread, Indian ricegrass, and Canby bluegrass; and about 45 percent of the following increaser species: thickspike wheatgrass, big sagebrush, rabbitbrush, and Sandberg bluegrass. If range condition deteriorates, big sagebrush becomes more dominant. The principal invaders are thistles and other annuals.

In excellent condition this site produces about 600 pounds of air-dry herbage per acre in years with above-average growing conditions and 300 pounds per acre in years with poor growing conditions.

Shale (7 to 9 inch precipitation zone) rangesite.

This site consists of intermingled barren shale and soils that are less than 10 inches deep. The soils are well to somewhat excessively drained and have silty clay to clay surface layers and underlying layers. Slopes are 6 to 30 percent. Precipitation is 7 to 9 inches. Permeability of the soils is slow to very slow. Available water capacity is .25 to 1.5 inches.

Potential vegetation in excellent condition consists of about 80 percent of the following decreaser species: Gardners saltbush, thickspike wheatgrass, bottlebrush squirreltail, Indian ricegrass, and winterfat; and about 20 percent of the following increaser species: birdfoot sagebrush, phlox, and spineless horsebrush. If range condition deteriorates, birdfoot sagebrush, woody aster, and annuals become more dominant. The principal invaders are halogeton and other annuals.

In excellent condition this site produces about 350 pounds of air-dry herbage per acre in years with above-average growing conditions and about 150 pounds per acre in years with poor growing conditions.

Shallow Clayey (7 to 9 inch precipitation zone) rangesite.

This rangesite consists of well drained soils that are underlain by bedrock at depths of 10 to 20 inches. The soils have thin sandy loam surface layers and clay loam subsoils. Slopes are 3 to 30 percent. Precipitation is 7 to 9 inches. The soils are slowly permeable. Available water capacity for the profile is 0.75 to 2.25 inches.

Potential vegetation in excellent condition consists of about 60 percent of the following decreaser species: thickspike wheatgrass, bottlebrush squirreltail, bud sagebrush, Indian ricegrass, and Gardner saltbush; and about 40 percent of

the following increaser species: Sandberg bluegrass, low sagebrush, winterfat, big sagebrush, and forbs. If range condition deteriorates, increasing forbs and low sagebrush become more dominant. The principal invaders are annuals. -

In excellent condition this site will produce 450 pounds of air-dry herbage per acre in years with above-average growing conditions and 200 pounds per acre in years with poor growing conditions.

Shallow Loamy (7 to 9 inch precipitation zone) rangesite.

This rangesite consists of well drained soils that are underlain by bedrock at depths of 10 to 20 inches. The soils have loam, thin sandy loam, or thin fine sandy loam surface layers and loam, sandy clay loam, or clay loam subsoils or underlying layers. Slopes are 3 to 30 percent. Precipitation is 7 to 9 inches. The soils are moderately permeable. Available water capacity is 0.75 to 3.75 inches.

Potential vegetation in excellent condition consists of about 60 percent of the following decreaser species: bluebunch wheatgrass, Indian ricegrass, needleand-thread, thickspike wheatgrass, and winterfat; and about 40 percent of the following increaser species: Sandberg bluegrass, big sagebrush, goldenweed, and phlox. If range condition deteriorates, increasing forbs become more dominant. The principal invaders are annuals and dandelions.

In excellent condition this site produces about 450 pounds of air-dry herbage per acre in years with above-average growing conditions and 200 pounds per acre in years with poor growing conditions.

Shallow Sandy (7 to 9 inch precipitation zone) rangesite.

This rangesite consists of well drained soils that are underlain by bedrock at depths of 10 to 20 inches. The soils have sandy loam surface layers and underlying layers. Slopes are 10 to 30 percent. Precipitation is 7 to 9 inches. The soils have moderately rapid permeability. Available water capacity is 1.0 to 2.75 inches.

Potential vegetation in excellent condition consists of about 50 percent of the following decreaser species: Indian ricegrass, needleandthread, thickspike wheatgrass, winterfat, and bottlebrush squirreltail; and about 50 percent of the following increaser species: Sandberg bluegrass, threadleaf sedge, rabbitbrush, and phlox. If range condition deteriorates, increasing forbs become more dominant. The principal invaders are thistles and other annuals.

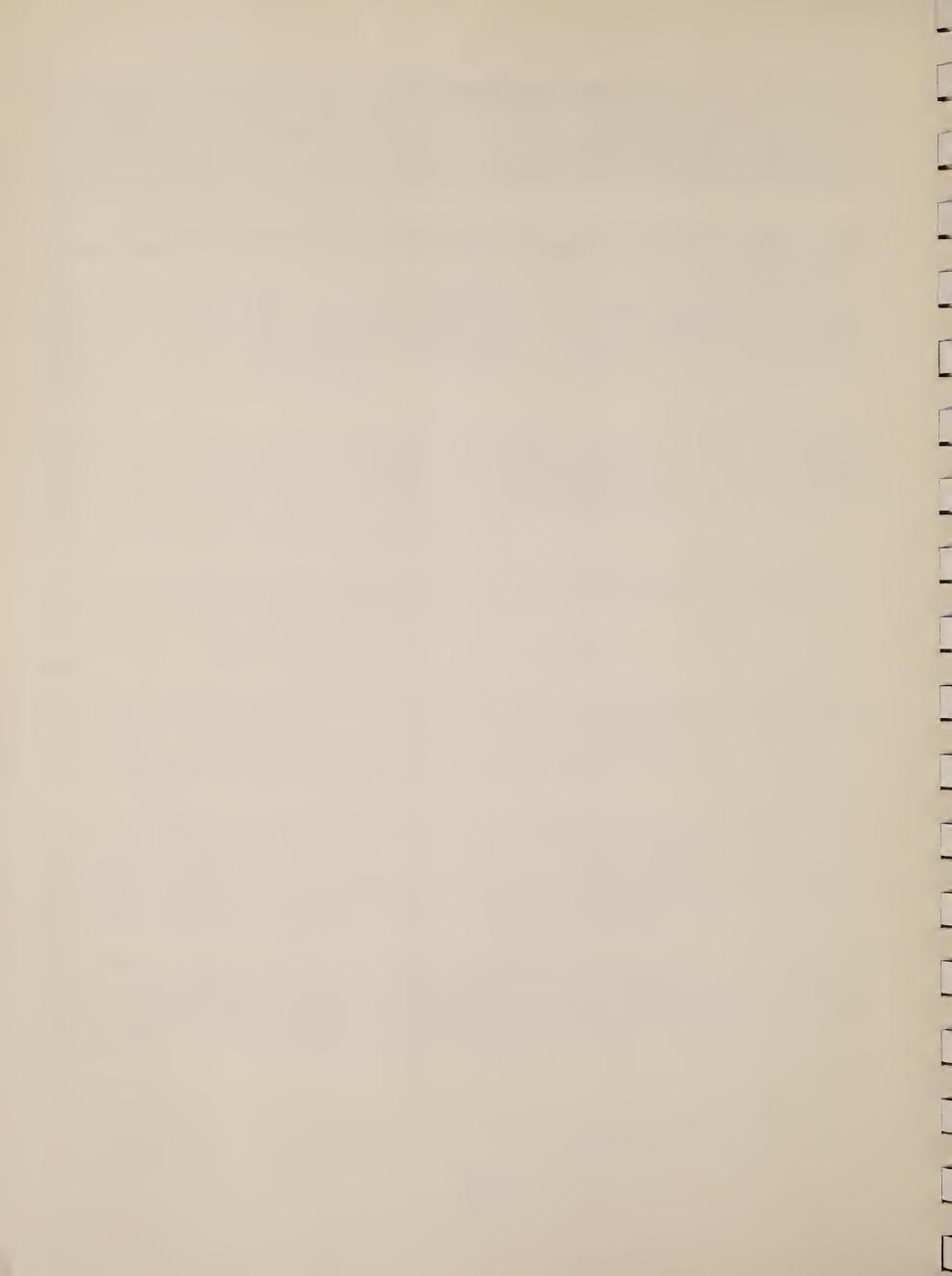
In excellent condition this site produces about 450 pounds of air-dry herbage per acre in years with above-average growing conditions and 200 pounds per acre in years with poor growing conditions. About 75 percent of this production is from plants which furnish forage for cattle, sheep, horses, and wildlife.

RANGE INVENTORY DATA

During the survey, the soils were identified and the mapping units were set up and tested. The soil scientists and range conservationists studied the vegetation, soil properties, and landscape features to assign a range site to each soil.

Most of the individual sites within the mapping units were checked by the range conservationists to determine the percent composition and to estimate the 1972 yield.

The data pertaining to the soils and range sites within a mapping unit are recorded in Table 2.



ENGINEERING USES OF THE SOILS

This section is useful to those who need information about soils used as structural material or as foundation upon which structures are built. Among those who can benefit from this section are planning commissions, town and city managers, land developers, engineers, contractors, and farmers.

Among properties of soils highly important in engineering are permeability, strength, compaction characteristics, soil drainage condition, shrink-swell potential, grain size, plasticity, and soil reaction. Also important are depth to the water table, depth to bedrock, and soil slope. These properties, in various degrees and combinations, affect construction and maintenance of roads, airports, pipelines, foundations for small buildings, irrigation systems, ponds and small dams, and systems for disposal of sewage and refuse.

Information in this section of the soil survey can be helpful to those who--

- 1. Select potential residential, industrial, commercial, and recreational areas.
- Evaluate alternate routes for roads, highways, pipelines, and underground cables.
- 3. Seek sources of gravel, sand, or clay.
- 4. Plan farm drainage systems, irrigation systems, ponds, terraces, and other structures for controlling water and conserving soil.
- 5. Correlate performance of structures already built with properties of the kinds of soil on which they are built for the purpose of predicting performance of structures on the same or similar kinds of soil in other locations.
- 6. Predict the trafficability of soils for cross-country movement of vehicles and construction equipment.
- 7. Develop preliminary estimates pertinent to construction in a particular area.

Most of the information in this section is presented in Tables 3, 4, and 5 and in the individual soil survey interpretations sheet for each series, which shows several estimated soil properties significant to engineering and/or interpretations for various engineering uses.

This information along with the field sheets and other parts of this publication can be used to make interpretations in addition to those given in Table 5 and in the interpretive sheets and also can be used to make other useful maps.

This information, however, does not eliminate need for further investigations at sites selected for engineering works, especially works that involved heavy loads or that require excavations to depths greater than those shown in the tables, generally depths greater than 6 feet. Also, inspection of sites, especially the small ones, is needed because many delineated areas of a given soil mapping unit may contain small areas of other kinds of soil that have strongly contrasting properties and different suitabilities or limitations for soil engineering.

Some of the terms used in this soil survey have special meaning to soil scientists that is not known to all engineers. The Glossary defines many of these terms commonly used in soil science.

Engineering Soil Classification Systems

The two systems most commonly used in classifying samples of soils for engineering are the Unified system used by the SCS engineers, Department of Defense, and others and the AASHO system adopted by the American Association of State Highway Officials(1).

In the Unified system soils are classified according to particle size distribution, plasticity, liquid limit, and organic matter. Soils are grouped in 15 classes. There are eight classes of coarse-grained soils identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils identified as Pt. Soils on the borderline between two classes are designated by symbols for both classes; for example, ML-CL.

The AASHO system is used to classify soils according to those properties that affect use in highway construction and maintenance. In this system a soil is placed in one of seven basic groups ranging from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. In group A-1 are gravelly soils of high bearing strength or the best soils for subgrade (foundation). At the other extreme, in group A-7 are clay soils that have low strength when wet and that are the poorest soils for subgrade. Where laboratory data are available to justify a further breakdown, the A-1, A-2, and A-7 groups are divided as follows: A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, and A-7-6. As additional refinement, the engineering value of a soil material can be indicated by a group index number. Group indexes range from 0 for the best material to 20 or more for the poorest. The AASHO classification for tested soils with group index numbers in parentheses is shown in Table 3; the estimated classification without group index numbers is given in Table 4 and in the individual soil survey interpretations sheets for all soils mapped in the survey area. USDA texture is determined by the relative proportions of sand, silt, and clay in soil material that is less than 2.0 millimeters in diameter. "Sand, silt, clay," and some of the other terms used in the USDA textural classification are defined in the Glossary.

Soil Properties Significant to Engineering

Several estimated soil properties significant in engineering(3) are given in Table 4 and in the interpretive sheets. These estimates are made for typical soil profiles by layers sufficiently different to have different significance for soil engineering. The estimates are based on field observations made in the course of mapping, on test data for these and similar soils, and on experience with the same kinds of soil in other counties. Following are explanations of some of the estimated properties: Depth to bedrock is distance from the surface of the soil to the upper surface of the rock layer.

Depth to seasonal high water table is distance from the surface of the soil to the highest level that ground water reaches in the soil in most years.

Soil texture is described in the standard terms used by the Department of Agriculture. These terms take into account relative percentages of sand, silt, and clay in soil material that is less than 2 millimeters in diameter. "Loam," for example, is soil material that contains 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the soil contains gravel or other particles coarser than sand, an appropriate modifier is added, as for example, "gravelly loamy sand." "Sand, silt, clay," and some of the other terms used in USDA textural classification are defined in the Glossary of this soil survey. Textural classes are abbreviated on the interpretive sheets.

Liquid limit and plasticity index indicate the effect of water on the strength and consistence of soil material. As the moisture content of a clayey soil is increased from a dry state, the material changes from a semisolid to a plastic state. If the moisture content is further increased, the material changes from a plastic to a liquid state. The plastic limit is the moisture content at which the soil material changes from the semisolid to plastic state and the liquid limit from a plastic to a liquid state. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which a soil material is plastic. Liquid limit and plasticity index are estimated in Table 4 and in the interpretive sheets, but in Table 3 the data on liquid limit and plasticity index are based on tests of soil samples.

Permeability is that quality of a soil that enables it to transmit water or air. It is estimated on basis of those soil characteristics observed in the field, particularly structure and texture. The estimates in Table 4 and in the interpretive sheets do not take into account lateral seepage or such transient soil features as plowpans and surface crusts.

Available water capacity is the ability of soils to hold water for use by most plants. It is commonly defined as the difference between the amount of water in the soil at field capacity and the amount at the wilting point of most crop plants.

Reaction is the degree of acidity or alkalinity of a soil expressed in pH values. The pH value and terms used to describe soil reaction are explained in the Glossary.

Salinity refers to the amount of soluble salts in the soil. It is expressed as the electrical conductivity of the saturation extract in mmhos. per centimeter at 25°C. Salinity affects the suitability of a soil for crop production, its stability when used as construction material, and its corrosiveness to metals and concrete.

Shrink-swell potential is the relative change in volume to be expected of soil material with changes in moisture content; that is, the extent to which the soil shrinks as it dries out or swells when it gets wet. Extent of shrinking

and swelling is influenced by the amount and kind of clay in the soil. Shrinking and swelling of soils causes much damage to building foundations, roads, and other structures. A <u>high</u> shrink-swell potential indicates a hazard to maintenance of structures built in, on, or with material having this rating.

Corrosivity, as used in Table 4 and in the interpretive sheets, pertains to potential soil-induced chemical action that dissolves or weakens uncoated steel or concrete. Rate of corrosion of uncoated steel is related to soil properties such as drainage, texture, total acidity, and electrical conductivity of the soil material. Corrosivity for concrete is influenced mainly by the content of sodium or magnesium sulfate but also by soil texture and acidity. Installations of uncoated steel that intersect soil boundaries or soil horizons are more susceptible to corrosion than installations entirely in one kind of soil or in one soil horizon. A corrosivity rating of <u>low</u> means that there is a low probability of soilinduced corrosion damage. A rating of <u>high</u> means that there is a high probability of damage so that protective measures for steel and more resistant concrete should be used to avoid or minimize damage.

Engineering Interpretations of Soils

The estimated interpretations(3) in Table 5 and in the soil survey interpretations sheets are based on the engineering properties of soils shown in Table 4 and in the section, "Estimated Soil Properties Significant to Engineering," of the interpretive sheets, on test data for soils in this survey area and others nearby or adjoining, and on the experience of engineers and soil scientists with the soils of Sublette County. In Table 5 and in the interpretive sheets ratings are used to summarize limitation or suitability of the soils for all listed purposes other than for drainage of cropland and pasture, irrigation, ponds and reservoirs, embankments, and terraces and diversions. For these particular uses the soil features not to be overlooked in planning, installation, and maintenance are listed.

Soil limitations are indicated by the ratings slight, moderate, and severe. <u>Slight</u> means soil properties generally favorable for the rated use, or in other words, limitations that are minor and easily overcome. <u>Moderate</u> means that some soil properties are unfavorable but can be overcome or modified by special planning and design. <u>Severe</u> means soil properties so unfavorable and so difficult to correct or overcome as to require major soil reclamation, special designs, or intensive maintenance.

Soil suitability is rated by the terms good, fair, and poor, which have, respectively, meanings approximately parallel to the terms slight, moderate and severe.

Following are explanations of some of the items included in the soil survey interpretations sheets and in Table 5.

Septic tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into natural soil. The soil material from a depth of 18 inches to 6 feet is evaluated. The soil properties considered are those that affect both absorption of effluent and construction and operation of the system. Properties that affect absorption are permeability, depth to water table or rock, and susceptibility to flooding. Slope is a soil property that affects difficulty of layout and construction and also the risk of soil erosion, lateral seepage, and downslope flow of effluent. Large rocks or boulders increase construction costs.

Sewage lagoons are shallow ponds constructed to hold sewage within a depth of 2 to 5 feet, long enough for bacteria to decompose the solids. A lagoon has a nearly level floor and sides or embankments of compacted soil material. The assumption is made that the embankment is compacted to medium density and the pond is protected from flooding. Properties are considered that affect the pond floor and the embankment. Those that affect the pond floor are permeability, organic matter, and slope; and if the floor needs to be leveled, depth to bedrock becomes important. The soil properties that affect the embankment are the engineering properties of the embankment material as interpreted from the Unified Soil Classification and the amounts of stone, if any, that influence the ease of excavation and compaction of the embankment material.

Shallow excavations are those that require digging or trenching to a depth of less than 6 feet; as for example, excavations for pipelines, sewer lines, phone and power transmission lines, basements, open ditches, and cemeteries. Desirable soil properties are good workability, moderate resistance to sloughing, gentle slopes, absence of rock outcrops or big stones, and freedom from flooding or a high water table.

Dwellings, as rated in the interpretive sheets, are not more than three stories high and are supported by foundation footings placed in undisturbed soil. The features that affect the rating of a soil for dwellings are those that relate to capacity to support load and resist settlement under load and those that relate to ease of excavation. Soil properties that affect capacity to support load are wetness, susceptibility to flooding, density, plasticity, texture, and shrink-swell potential. Those that affect excavation are wetness, slope, depth to bedrock, and content of stones and rocks.

Sanitary landfill is a method of disposing of refuse in dug trenches. The waste is spread in thin layers, compacted, and covered with soil throughout the disposal period. Landfill areas are subject to heavy vehicular traffic. Some soil properties that affect suitability for landfill are ease of excavation, hazard of polluting ground water, and trafficability. The best soils have moderately slow permeability, withstand heavy traffic, and are friable and easy to excavate. Unless otherwise stated the ratings in the interpretive sheets apply only to a depth of about 6 feet; and, therefore, limitation ratings of slight or moderate may not be valid if trenches are to be much deeper than that. For some soils reliable predictions can be made to a depth of l0 or 15 feet; regardless of that, every site should be investigated before it is selected.

Local roads and streets, as rated in Table 5 and in the interpretive sheets, have an all-weather surface expected to carry automobile traffic all year. They have a subgrade of underlying soil material; a base consisting of gravel, crushed rock, or soil material stabilized with lime or cement; and a flexible or rigid surface, commonly asphalt or concrete. These roads are graded to shed water and have ordinary provisions for drainage. They are built mainly from soil at hand, and most cuts and fills are less than 6 feet deep. Soil properties that most affect design and construction of roads and streets are load supporting capacity and stability of the subgrade and the workability and quantity of cut and fill material available. The AASHO and Unified classifications of the soil material, and also the shrink-swell potential, indicate traffic supporting capacity. Wetness and flooding affect stability of the material. Slope, depth to hard rock, content of stones and rocks, and wetness affect ease of excavation and amount of cut and fill needed to reach an even grade.

Road fill is soil material used in embankments for roads. The suitability ratings reflect (1) the predicted performance of soil after it has been placed in an embankment that has been properly compacted and provided with adequate drainage and (2) the relative ease of excavating the material at borrow areas.

Sand and gravel are used in great quantities in many kinds of construction. The ratings in Table 5 and in the interpretive sheets provide guidance about where to look for probable sources. A soil rated as a good or fair source of sand or gravel generally has a layer at least 3 feet thick, the top of which is within a depth of 6 feet. The ratings do not take into account thickness of overburden, location of the water table, or other factors that affect mining of the materials and neither do they indicate quality of the deposit.

Topsoil is used for topdressing an area where vegetation is to be established and maintained. Suitability is affected mainly by ease of working and spreading the soil material as for preparing a seedbed, natural fertility of the material or its response of plants when fertilizer is applied, and absence of substances toxic to plants. Texture of the soil material and its content of stone fragments are characteristics that affect suitability, but also considered in the ratings is damage that will result at the area from which topsoil is taken.

Pond reservoir areas hold water behind a dam or embankment. Soils suitable for pond reservoir areas have low seepage, which is related to their permeability and depth to fractured or permeable bedrock or other permeable material.

Embankments, dikes, and levees require soil material resistant to seepage and piping and of favorable stability, shrink-swell potential, shear strength, and compactibility. Presence of stones or organic material in a soil are among factors that are unfavorable.

Drainage of cropland and pasture is affected by such soil properties as permeability, texture, and structure; depth to claypan, rock, or other layers that influence rate of water movement; depth to the water table; slope, stability in ditchbanks; susceptibility to stream overflow; salinity or alkalinity; and availability of outlets for drainage.

Irrigation of a soil is affected by such features as slope; susceptibility to stream overflow, water erosion or soil blowing; soil texture; content of stones; accumulations of salts and alkali; depth of root zone; rate of water intake at the surface; permeability of soil layers below the surface layer and in fragipans or other layers that restrict movement of water; amount of water held available to plants; and need for drainage or depth to water table or bedrock.

TABLE	5	-	RANGE	INVENTORY	DATA

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												Grasses					-					-							-	نې . ا	and a second
Mapping Unit No.	Mapping Unit Name Shale Rock land	Total Acres	Soil Name and Percent	Outstanding Characteristic	Range Site Name	Site	blueg	Alkali sacaton Blue grama	Bottlebrush squirreltail	Canby bluegrass Indian ricegrass	Inland saltgrass Letterman	8	Needleleaf sedge	Nebraska sedge Plains reedgrass	Sandberg bluegrass	Jurnder Wneatgrass Thickspike wheatgrass	Tufted hairgrass Astragalus	Eriogonum	lenweed s phlox	Nailwort Prickly zilia	Pussytoes	Sandwort Big sarehmish	Bud sage	Gardner saltbush	Greasewood Low rabbitbrugh	Plants Tow sage pure	Prickly peer cactus a Rubber rabbitbrush	Shadscal .	Bushy birdsbeek	To	tal
102	Shale Rock land Natrargids	1	Shale Rockland Natrargids 80	Shale Alkaline	No site assigned		I	Γ			T											T			1						
112	Rock land-Natrargids complex		Rock land 50	Shale	Dense clay, 10 to 14" P. Z. Shale, 7 to 9" P. Z.				5	5					10	25 T		T	10				5	5 70 2		30		10	0	10	
	Salorthids-Natrargids complex		Salorthids & Natrargids 80	Alkaline Saline & alkaline	Dense clay, 7 to 9" P. Z. Saline lowland, 7 to 9" P. Z.				5						5	50 10			15			10	0 5	10 25 2		10		E		10	0
250	Glendive-Havre complex, saline		Glendive & Havre saline 40 Glendive sandy loam 20	Saline Sandy	Saline subirrig., 10 to 14" P.Z. Overflow, 10 to 14" P.Z.			t inven			30			15		0	5					1	110	2	25					5 10	
251	Bluerim-Tigon association	6,700	Havre loam 20	Loamy Mod er ately deep	Overflow, 10 to 14" p. Z. Loamy, 10 to 14" p. Z.	1			ntoried		16	1 51	1 .	1	51	201		51	101	4 -	1	1.00	i 1 - 1		1 . 77	1.15.1		1		9	0
				Shallow	Shallow loamy, 10 to 14" P. Z.	2				T 5	5	5 20	1	10 5	10	20 10 25 30			10 5 5 10	5	5	25 35 25 45			T	10				10 10 10	0 0
252	Tigon-Bluerim association	8,704	Tigon sandy loam 50	Shallow	Shallow loamy, 10 to 14" P. Z.	2				T T 5	1	5	'		10 15	20			10 0 10	5	Т				Т	10		5	5	10 10	0 0
				Moderately deep	Loamy, 10 to 14" p. Z.	2 1 2				5	15	5 10 5 10 5 5	'	5	15 5 5	20 15 10			T 15	5 10 10		15 15 40 40	2			10				10	0 0
	Rallod-Onason-Rock outcrop complex, 10 to 30% slopes		Onason sandy loam 25 Rock outcrop 20	Shallow Shallow Shale	Shallow clayey, 10 to 14" P.Z. Shallow sandy, 10 to 14" P.Z. No site assigned					20 5	15				5 5	10 10 5		5	10 T 20	10		40 20 10 35			T T	20		5		100 100 100	c
254 256	Bluerim, Abston, and Milren	1	Combined with mapping unit 2 Bluerim sandy loam 30	Moderately deep	Loamy, 10 to 14" F. Z.										E	2						•									
	soils, 3 to 15% slopes		Abston sandy loam25Milren sandy loam25	Alkaline De e p	Clayey, 10 to 14" P. Z. Clayey, 10 to 14" P. Z. Clayey, 10 to 14" P. Z.		Not	inven	toried	5 ; vegeta	ution s	similar to	o Abst	on sand) 10 y loam.	25 20		5	10 10	1		50 . 20			T	20	T	10		100 100)
257	Bluerim-Cotha association	3,340		Moderately deep	Loamy, 10 to 14" p. Z.	1 2				5 5		5 10		10	5	20 30			5 10 10	T	5	40 40	11	1	T 5		11			100)
258	Forelle-Havre association	1.160		Moderately deep	Sandy, 10 to 14" p. 2.	1 2				5 10		15 20		5		25 10			10	5	т 5	40 30 40			5					100)
- 7			Havre loam 30	Deep Deep	Loamy, 10 to 14" F. Z. Overflow, 10 to 14" P. Z.								5		10	25 25			10			35 70		5	5			5	5	100 100	
1 409	Ryark-Relsob complex, 3 to 10% slopes	1,208		Deep Deep	Sandy, 10 to 14" p. 2. Loamy, 10 to 14" p. 4.	1 2 1				30 		30 25			10	10			10 10	5 30	T	15 25			10		Т			100 100	1
260	Ryark-Cothran association	2,716		Deep	Loamy, 10 to 14" P. 4. Sandy, 10 to 14" P. 4.	2				20		10		5	10	20 55		5	1.0 5	5		35 5			Т		г			100 100	ł
				Deep sands	Sands, 10 to 14" p. 2.	2		5		T		25 20 45 50			2	10 30 15 10		5	5 10 T	10 10		35 15			20	10	5 5 T 10		T	100 100 100	1
261	Coalmont-Bluerim complex,	1,348	Coalmont fine sandy loam 40	Moderately deep	Clayey, 10 to 14" P. Z.	2 1				5		50	10	5	5	40		5	10		5	10			5	30	10			100	1
262	3 to 15% slopes	0		Moderately deep	Loamy, 10 to 14" p. Z.	2	1			10 10		5			5	90 25			15			35					5			100	F
202	Cotha-Ryark complex, 3 to 15% slopes	672	Ryark loamy sand 25	Moderately deep Deep Moderately deep	Sandy, 10 to 14" p. Z. Sandy, 10 to 14" p. Z. Loamy, 10 to 14" p. Z.		Not	invent	oried;	vegetat	tion si	milar to	1 1	sandy 1	loam of	f mappin	ng unit	257 5	10 10	5	-1	1.5		1	1 1		5	1		100	
263 264	Vible sandy loam		Vible sandy loam 70	Deep	Sandy, 10 to 14" P. Z.				Т	15		5 20			5	60 10		2	10 5	5 10	5	10 35			T T	T				100 100	
	Fluvents Laney-Glenderson complex		Fluvents Laney loam 50	Alkaline	Not assigned Saline upland, 7 to 9" P. Z.	1				Т			5		10	45			15				10 1	10		5				100	
			Glenderson sandy loam 20	Alkaline	Loamy, 7 to 9" p. Z.	2				5					15 15	40 35			10 15	T		20	10]	10 10 5	Т			10 5		100 100	
352	Fraddle-Ouard complex, 3 to 10% slopes	952	Ouard sandy loam 20	Moderately deep Shallow Shallow	Loamy, 7 to 9" P. Z. Shallow loamy, 7 to 9" P. Z. Shallow clayey, 7 to 9" P. Z.	E				5	Ţ	10 10 10 5		5	10 5	20 50 35 60		т	10 10 10 1	5	5	30 20 35		T	5	5				100 100 100	
354	Fraddle-Littsan association	1,860		Moderately deep	Loamy, 7 to 9". P. Z.	1 2				5		5 5 20	1 1	5	5	25 25			10 10			40 25			10 10					100 100	
355		1,228	Littsan fine sandy loam 25 Combined with mapping unit 3		Sandy, 7 to 9" P. Z.					15		20		5	5	10			5	5	Т	25 30			5	10				100 100	
	Koonich-Laney complex		Koonich sandy loam 45	Deep Alkaline	Sandy, 7 to 9" P. Z. Saline upland, 7 to 9" P. Z.					5			5		10 10	25 25			10 15			40		10	10	Т	,			100	
357	Rock land-Huguston and Youjay soils, 10 to 30% slopes		Rock land 30 Huguston sandy loam 25	Shale Shallow	Shalle, 7 to 9" P. Z. Shallow sandy, 7 to 9" P. Z. Shallow clayey, 7 to 9" P. Z.					10 T	10	20		5	10 5 5 10	15 5 25	5	5 20 10 5 5		15		5 25 20		10	10 10 5	15		15		100 100 100	
	10 to 30% slopes	1,000	Rock land 30 Hatermus loam 25 Youjay sandy loam 20	Shale Shallow Shallow	Shale, 7 to 9" P. Z. Shallow loamy, 7 to 9" P. Z. Shallow clayey, 7 to 9" P. Z.				5						5 15 10	40 25		5 5	30 10	5		15	8	85 5	5	15				100 100 100	
360	DeBone-Tresano complex, 6 to 10% slopes			Alkaline Deep	Loamy, 7 to 9" P. Z. Loamy, 7 to 9" P. Z.		Not i	invento	oried;	vegetat:	ion sin	milar to	Tresar	no sandy	yloam o 5	of mappi 20	ing uni	t 360.		5	тļ	40	i i	1	5	1	11	5		100	
361	Fraddle-Haterton association		Fraddle sandy loam 40 Haterton fine sandy loam 25	Moderately deep	Loamy, 7 to 9" P. Z. Shallow loamy, 7 to 9" P. Z.		Nat	in	T	5 T 10 vegetat		15	Hat	5	5	20 25	10		5	5	5	35			5	10 5	;	10		100 100 100	
365	Littsan-Bodorumpe association				Shallow loamy, 7 to 9" P. Z. Sandy, 7 to 9" P. Z.	1	NOT	Inven	i led;	5 5	lon si	imilar to	1 1	rton fin T	sand	30	of mapp		10	5		40		1	1 1		11			100	J
			Bodorumpe fine sand 30	Moderately deep	Sands, 7 to 9" P. Z.	2 3 1 2 3				5 5 15 5 20		20 25 30 40 35		5		10 20 20 10		2	15 10 5 10 5	5	5	40 35 5 5 25			Т 10	15	10 20			100 100 100	,
				L	· · ·	1					1			11					2			25					5	1	47		e : things ?



Soil Test Data

Table 3 contains engineering test data for some of the major soil series in the Blue Rim area. These tests were made to help evaluate the soils for engineering purposes. The engineering classifications given are based on data obtained by mechanical analyses and by tests to determine liquid limits and plastic limits.

Compaction (or moisture-density) data are important in earthwork. If a soil material is compacted at successively higher moisture content, assuming that the compactive effort remains constant, the density of the compacted material increases until the <u>optimum moisture content</u> is reached. After that, density decreases with increase in moisture content. The highest dry density obtained in the compactive test is termed <u>maximum dry density</u>. As a rule, maximum dry density.

Tests to determine liquid limit and plastic limit measure the effect of water on the consistence of soil material.

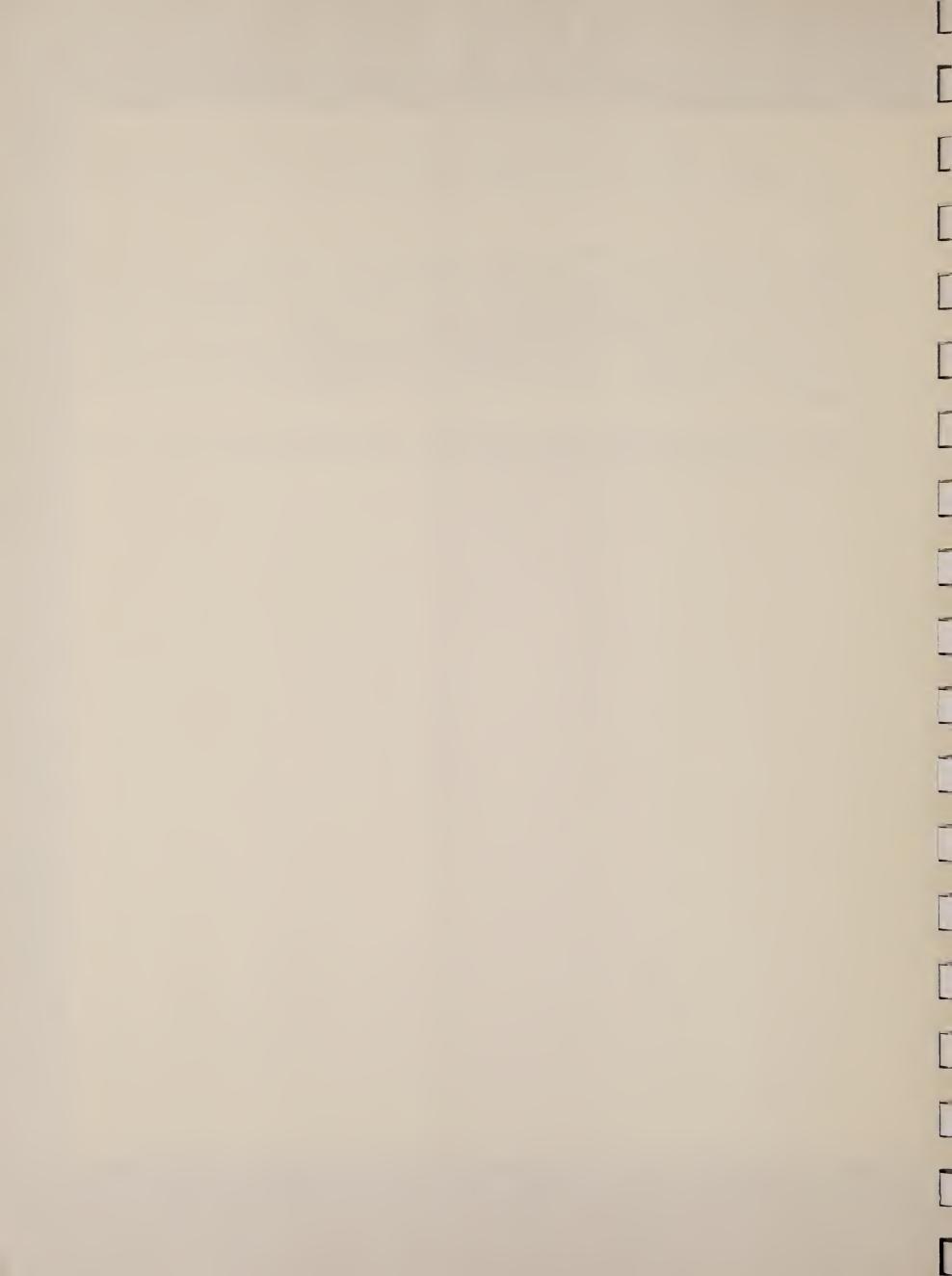


TABLE 3
ENGINEERING TEST DATA FOR SOIL SAMPLES TAKEN FROM ______ SOIL PROFILES

						Moist dens	1		Mechar	nical ar	nalysis			SX C	Classifica	ition
	Soil name and location	Parent material	Report No.	Depth	Horizon	e it	Moist.	P	ercentag	e pass	ing siev	e	id Limit	Plasticity Index		
						Maximum Dry Density	Optimum M	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 60 (0.25 mm.)	No. 200 (0.074 mm.)	Liquid	Plasti	AASHO	Unified
	Bluerim Center Sec. 25, T30N, R108W	Sandy clay loam materials from sandy shale	72-1087	Inches 3-10	B21t	pcf 119.2	Pct. 12.5	99	88	64		32.8	25	9	A-2-4(0)	
	Coalmont SE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 24, T31N, R109W	Clay loam materials from calcareous shale	72-1091	9-14	B22t	104.0	18.8	100	99	91		59.5	40	21	A-6(9)	
	Cothran SE ¹ ₄ , NE ¹ ₄ , Sec. 24, T31N, R109W	Wind born fine sands	72-1092	2-28	CI	110.0	12.7	100	100	70		12.0	NV <u>1</u> ∕	NP ²	′ A-2-4(0)	
	Fraddle Center Sec. 29, T31N, R108W	Sandy loam materials from sandy shales	72-1090	22-33	CI	112.2	15.8	100	99	60		25.2	39	13	A-2-6(0)	
- 75 -	Laney ¹ / ₄ mile SE of W ¹ / ₄ corner, Sec. 33, T31N, R108W	Medium textured, alkaline, alluvial fans	72-1089	12-36	C2	107.0	17.3	100	100	100		72.5	32	16	A-6(10)	
	Littsan SW 1 , SW 1 , Sec. 36, T31N, R109W	Sandy loam materials wind deposition	72-1093	2-14	B2t	112.8	10.3	100	100	85		30.7	19	2	A-2-4(0)	
	Relsob NW ¹ 4, SW ¹ 4, Sec. 26, T31N, R108W	Sandy clay loam materials locally transported	72-1085	2-16	B2t	126.6	9.6	99	92	66		32.5	20	5	A-2-4(0)	
	Ryark SW 1 , NE 1 , Sec. 26, T31N, R108W	Sandy loam materials of local origin	72-1088	2-18	B2t	125.8	9.2	100	96	63		25.1	17	NP	A-2-4(0)	
	Vible Center Sec. 13, T31N, R109W	Sandy loam materials, alluvial fans	72-1086	3-16	C1 & C2	131.2	7.4	99	88	48		2 5.4	19	4	A-2-4(0)	
	Vible Center Sec. 13, T31N, R109W	Very coarse sand, alluvial fans	72-1094	25-42	СЗ	114.1	9.0	98	89	34		5.0	NV	NP	А-І-Ь(О)	

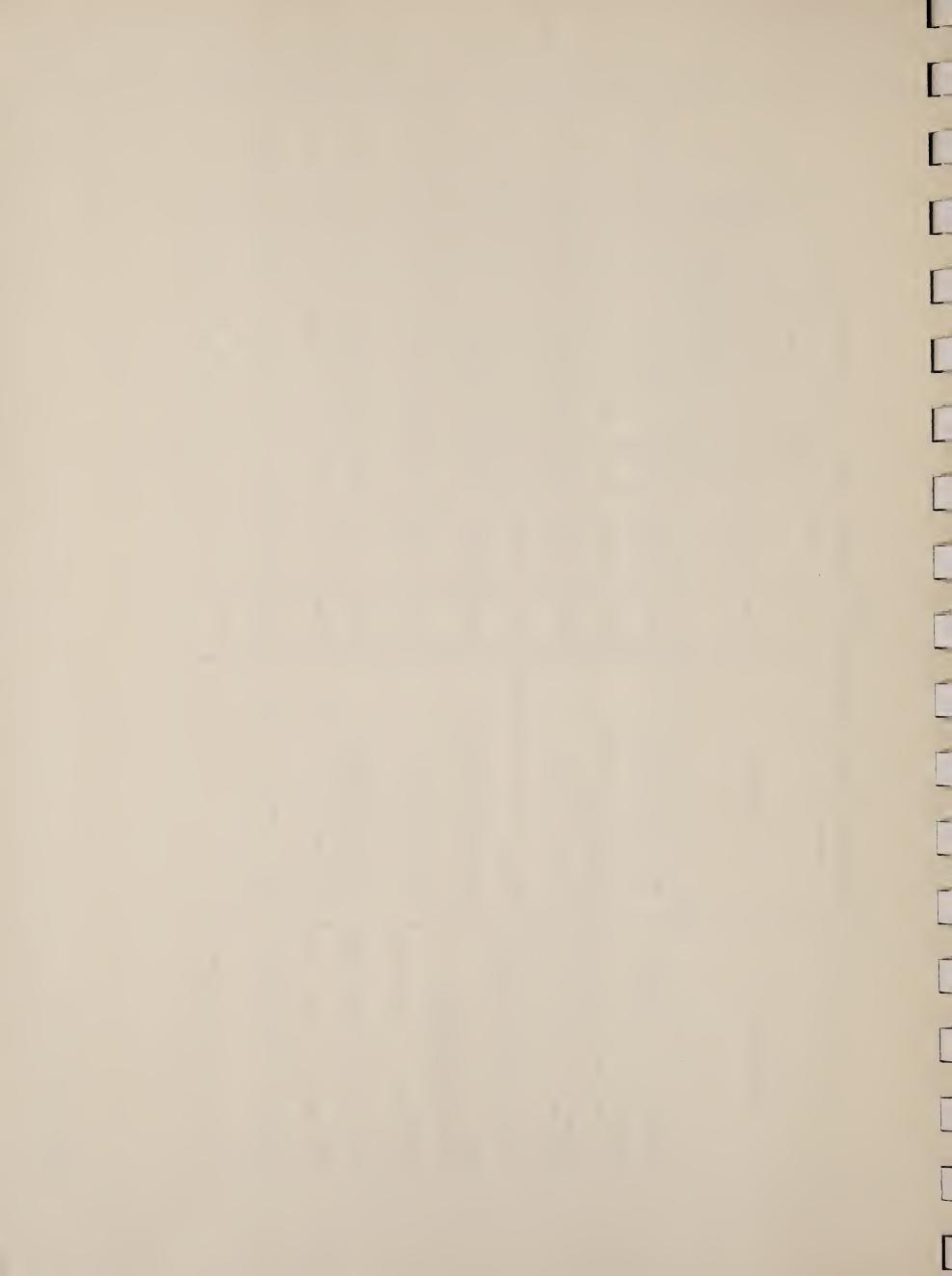


TABLE 4 - ESTIMATED SOIL FROPERTIES

Soil Series	Depth	USDA* Texture	Unified Classification	AASHO Classification	Fraction >3 Inch		t of Mate -Inch Fas			Liquid		Permeability	Available Water	Soil Reaction	Salinity	Shrink-Swell	Cor	rosivity	В	edrock	Hydro-	Potential
	(Inches)	Texture	olassification	Glassification	(Percent)	L ₄	10	4.	200	Limit	Index	(In./Hr.)	Capacity (In./In.)	(pH)	(Mmhos/Cm)	Potential	Steel	Concrete	Depth (In.)	Hardness	logical Group	Frost Action
Abston	0-10 10-34 34	c scl wb	CL CL 	A-6, A-7 A-6	0 0 	90-100 90-100	90-100 90-100	85-00 61-00	70-80 35-50	34-45 30-40	-5-29 11-15	.062 .062	.0810 .0608	6.6-9.0 8.5->9.0	2.0-4.0 4.0-8.0	High Moderate	High High	Low Moderate	20-40	Rippable	D	Low
Bluerim	0-18 18-29 29	scl sl wb	SM-SC, SC SM	A-2, A-6 A-2	0 0	95 - 100 95 - 100	75 - 90 75 - 90	n0+20 40-30	30-40 20-30	20-30 NP	5-15 JIP	0.5-2.0 0.0-0.5	.1416 .1113	6.6-7.8 7.4-9.0	0-4.0	Low Low	High High	Low Low	20-40	Rippable	В	Low
Bodorumpe	0 - 36 36	lfs, fs	SM	A-2	О	100	100	60~80	15-30	NP	NP	6.0-20.0	.0610	6.6-7.8		 Low	High	Low	20-40	Rippable	A	Low
Coalmont	0-4 4-24 24+	wb fsl, sl cl	SM CL	а-4 А-6	0 0	 90-100 90-100	 90-100 90-100	65-80 85-95	 35-50 55-75	 NP 35-45	 NP 15-25	 2.0-6.0 .066	 .1214 .1921	 6.6-7.8 6.6-9.0	2.0-4.0	Low Moderate	High High	Low Low	20 - 40	Rippable	С	Low
Cotha	0 - 34 34	wb sl wb	SM, SM-SC	 A-2 	0 	80-90 	 75-90 	45-65	20-35 	 15-25 	NP-5	2.0-6.0	.1113	6.6-7.8		Low	High	Low	20-40	Rippable	С	Low
Cothran	0-60	fs, lfs	SM, SP-SM	A-2	0	90-100	85-100	60-75	10-20	NP	NP	6.0-20.0	.0508	6.1-7.8		Low	High	Low	>60		A	Low
DeBone	0-10 10-60	sl, fsl scl	SM-SC, SC SC	A-4 A-6	0 0	90-100 90-100	90 - 100 90-100	60-75 80-90	35 - 45 35 - 50	10-20 30-40	5-10 11-20	2.0-6.0 .066	.1214 .0810	6.6-7.8 2.5->9.0	 2.0 _ 8.0	Low Mode ra te	High High	Low Moderate	>60	Rippable	D	Low
Fluvents	0-60	ls-sil	Too variab	le to estimate.	1	1	1	•	1	1	I	1		1	· · · ·				,	F 1		
Forelle	0 - 32 32 - 60	scl cl	SC CL	A-6 A-6	0-5 0	95 - 100 90 - 100	90 - 100 90-100	75 - 90 85-100	35 - 50 70 - 80	30-40 35-40	15-20 15-20	.6-2.0 .6-2.0	.1416	6.6-9.0 7.8-9.0		Moderate Moderate	High High	Low Low	>60		В	Low
Fraddle	0-22 22-33 33	scl sl wb	SC SM-SC, SC	A-6 A-2	0 C	90-100 90-100	00-100 90-100	70 - 85 50-70	35 - 50 20 - 30	30-40 20-40	11-15 5-15	.6-2.0 2.0-6.0	.1415 .1113	6.6-7.8 7.4-8.4	2.0-4.0	Moderate Low	High High	Low Low	20-40	Rippable	В	Low
Glenderson	0-60	sr-sl-l	SM-SC, CL	A-4	0	95-100	90 - 100	60-90	35-70	15-25	5-10	.6-2.0	.0608	7.4->9.0	4.C-8.0	Low	High	Moderate	>60		в	Low
Glendive	0-60	sr-sl-l	SM, CL	A-4	С	95-100	-0 - 100	60 -3 0 -	31-70	15-25	NP-10	2.0-6.0	.1315	7.4-9.0		Low	High	Low	> 60		B	Low
Glendive, saline	0–60	sr-sl-l	SM, CL	A-4	0	95-100	90-100	61-00	35-70	15-25	NP-10	.25	.0607	7.4-9.0	8.0-16.0	Low	High	High	> 60		Е	Moderate
Hatermus	0-18 18	cl, l wb	CL	A-6	0	90-100	9 0- 100	85-100		25-35	3115	.6-2.0	.0809	^R •5 - >9•0	2.0-4.0	Moderate	High	High:	10-20	Rippable	D	Lew
' Haterton	0-18 18+	l wb	ML-CL, CL	а-ч, л-б 	0	30-95	 75-90 	 65-85 	50-70	 20-35 	 5-10 	.6-2.0	.1615	7.3-9.0	2.0-4.0	Iow	High	Foderate	10-20	Rirrable	כ	Low
Havre	0–60	sr-l-cl	CL	A-6	с	100	00 - 100	.0-100	(c-?o	75-75	11-11	t	.1618	7.4-0.0	2.0-4.0	Moderate	Ftigh	Lev	>.0		в	Los
Havre, saline	0-60	sr-l-cl	CL	4-6	с	100	ાટ–ર જ	á. - .1	0-30	25-35	1-15	5	•08 - •09	7.7-3-0	8.0-14.0	Moderate	High	Moderate	>60		В	Low
Huguston	0-14 14+	sl wb	SM, SM-SC	A-1, A-2	0	70-80	60-75	35-50	00-30	10 - 13	NP-5	2.0-4.0	.1113	7.1-9.0	2.0-4.0	Low	High	Low	10-20	Rippable	D	Low
Koonich	0 - 23 23 - 60	sl s	SM-SC, SC SM, SM-SC	A-2 A-2	0	85-95 85-95	80-90 80-90	50-65 50-70	25-35 15-25	15-20 10-15	5-10 NP-5	7.0-5.0 6.0-30.0	.1113	6.6-2.3 6.6-7.3	2.0-4.0 2.0-4.0	Low Low	High. High	Low Low	>60		A	Low
Laney	0-36 36-60	1 cl	CL	A-6 A-6	0.0	90-100 '90-100	90-100 90-100	90-100 90-100	70-80 70-80	25 - 35 25 - 35	15-25 20-30	.26	.0809	8.5-> }.0	4.0-8.0	Moderate	High	Moderate	>60		с	Moderate
Littsan	0 - 24 24+	sl variable	SM, SM-SC	A-2	0	100	100	80-90	25-35	15-25	NF-5	.с-б.с	.0910 .1113	>9.0 6.6-7.8	4.0-8.0 2.0-4.0	Moderate Low	High High	Moderate Iow	20-40	Rippable	В	Low
Milren	0 - 16 16-60	c scl	CL SC	A-6 A-6	0	1C0 100	100 100	80-90 60-70	50-60 35-50	25 -3 5 20 - 30	15-25	.26	.1416	7.4-8.4	2.0-4.0	High	High	Low	>60		С	Low
Natrargids	10 -3 0 30+	sic variable	CL, CH	A-6, A-7	с		90-100		60 - 80	25 -5 5	15-20 20-40	•2-•6 •0f-•2	.0?09 .0?02	7.0->9.0 8.5->9.0	2.0-4.0 4.0-8.0	Moderate High	High High	Moderate Moderate	20-40	Ripµnble	Э	Lcw
Onason	0-11 11+	gr-sl wb	SM, SM-SC	 A-2	 0 - 5	70-80	6c-70	 35-50	15-30	 10 - 15	 :1F-5	6.0-20.0	.0310	6.6-7.3	<2.C	Low	High	Low	10-20	Rippable	с	Low
Ouard	0 -1 6 16+	scl wb	sc	A-2, A-6	0-5	95 - 100	90-100	60-70	30-40	20 - 30	10-15	.6-2.0	.1416	6.6-9.0	2.0-4.0	Moderate	High	Moderate			D	Low
Rallod	0 -1 2 12+	sc wb	CL	A-6, A-7	0	95 - 100	95 - 100	70-80	60-70	35-45	20-30	.062	•07 - •08	7.4->9.0	4.C-8.O	High	High	Moderate	10-20	Rippable	D	Low
Relsob	0-24 24-60	scl gr-s	SC, SM-SC SP-SM	A-2 A-2	0	85-100 50-60	80 - 95 40 - 50	60-80 20-35	25 - 35 5 - 10	15-25 0-5	5-10 NP	.6-2.0	.1416	6.6-7.3	<2.0	Low	High	Low	>60		в	Low
Ryark	0-18 18-60	sl grf-s	SC, SM-SC SP-SM	A-2 A-1	o c	85-100	80-100	50-70 30-50	20 - 35 5 - 10	15-25 0	NP 5-10 NP	6.0-20.0 2.C-6.0 6.0-20.0	.0406 .1113 .0406	6.6-7.3 6.6-7.3 6.6-7.3	<2.0 <2.0 <2.0	Low Low Low	High High High	Low Low Low	>60		A	Low
Salorthids	Тоо	variable –	to estimate.				'					.062	.0809	8.5-9.0	4.0->16.0	High	High	High	20-40	Rippable	с	Low
Tigon	0 - 15 1 5 +	scl wb	SC, SM-SC 	A-2, A-6	0-5 	75-90	70-85	55-70	24-45	20-30	5-15	.6-2.0	.1416	6.6-7.3	<2.0	Moderate	High	Low	10-20	Rippable	с	Low
Tresano	0-60	scl	sc	A-2, A-6	0-5	80-100	75-90	60-70	25-50	20-30	10-20	.6-2.0	.1416	7.4-9.0	2.0-4.0	Moderate	High	Low	> 60		в	Moderate
Vible	0 - 16 16 - 60	sl cos	SM, SM-SC, SC SP-SM	A-2 A-1	0 - 5 0-5		80-90 75 - 90	40-50 30-40	20- <i>3</i> 0 5-10	15-20 0	NP-10 NP	2.0-6.0	.1113	6.6-7.3	~2.0	Low	High	Low	>60		A	Low
Youjay	0-14 14+	cl wb	CL 	A-6	0-5 	90 - 100 95-100	95-100 	85-95	55-65 	30-40 	15-25	6.0-20.0 .26	1	6.6-7.8 7.4->9.0	<2.0 2.0-4.0	Low High	High High	Low Moderate	10-20	Rippable	D	Low
*c clay scl sandy clay 1 wb weathered be				fal fine sandy cl clay loam ls loamy sand	5	il silt r strat loam				nd ty clay welly	gri	sandy clay fine gravel coarse sand						l				

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POTENTIAL SLIDE HAZARD

The potential of any soil to slide is affected by the presence or absence of moisture, steepness of slope, soil texture, and properties of the bedrock that influence lubrication when wet.

The areas in the 7 to 9 inch precipitation zone that have a potential slide hazard are made up primarily by mapping unit 357. The soils formed on slopes of 10 to 30 percent; and, if the underlying shales become lubricated, minor slides might occur.

The areas in the 10 to 14 inch precipitation zone that are subject to sliding are made up of mapping units 253 and 261. Part of unit 253 is underlain by alkaline shale; and, if the fine textured soils and shale become lubricated, a slide hazard exists on the steeper slopes. There is evidence that some areas of unit 253 are snowpack areas. The part of unit 261 occupied by the Coalmont soils may be subject to sliding under above normal moisture conditions.

Most of the soils in the Blue Rim Area have a low slide hazard as they occur on slopes that are not conducive to sliding or have soil texture that resists slippage or do not receive enough moisture for lubrication. A potential for sliding exists along the edges of the alluvial fans that join the New Fork River if large quantities of irrigation water are applied on the alluvial fans.

USE OF SOILS FOR RECREATIONAL DEVELOPMENT

Knowledge of soils is necessary in planning, developing, and maintaining areas used for recreation. In the individual soil survey interpretations sheets the soils of the Blue Rim Area are rated according to limitations that affect their suitability for camp areas, playgrounds, picnic areas, and paths and trails.

The soils are rated as having slight, moderate, or severe limitations for the specified uses. For all of these ratings it is assumed that a good cover of vegetation can be established and maintained. A limitation of <u>slight</u> means that soil properties are generally favorable and limitations are so minor that they easily can be overcome. A <u>moderate</u> limitation can be overcome or modified by planning, by design, or by special maintenance. A <u>severe</u> limitation means that costly soil reclamation, special design, intense maintenance, or a combination of these is required.

Camp areas are used intensively for tents and small camp trailers and the accompanying activities of outdoor living. Little preparation of the site is required other than shaping and leveling for tent and parking areas. Camp areas are subject to heavy foot traffic and limited vehicular traffic. The best soils have mild slopes, good drainage, a surface free of rocks and coarse fragments, freedom from flooding during periods of heavy use, and a surface that is firm after rains but not dusty when dry.

Picnic areas are attractive natural or landscaped tracts used primarily for preparing meals and eating outdoors. These areas are subject to heavy foot traffic. Most of the vehicular traffic, however, is confined to access roads. The best soils are firm when wet but not dusty when dry, are free of flooding during the season of use, do not have slopes or stoniness that greatly increases cost of leveling sites or of building access roads.

Playgrounds are areas used intensively for baseball, football, badminton, and similar organized games. Soils suitable for this use need to withstand intensive foot traffic. The best soils have a nearly level surface free of coarse fragments and rock outcrops, good drainage, freedom from flooding during periods of heavy use, and a surface that is firm after rains but not dusty when dry. If grading and leveling are required, depth to rock is important.

Paths and trails are used for local and cross country travel by foot or horseback. Design and layout should require little or no cutting and filling. The best soils are at least moderately well drained, are firm when wet but not dusty when dry, are flooded not more than once during the season of use, have slopes of less than 15 percent, and have few or no rocks or stones on the surface.

SOIL SURVEY INTERPRETATIONS

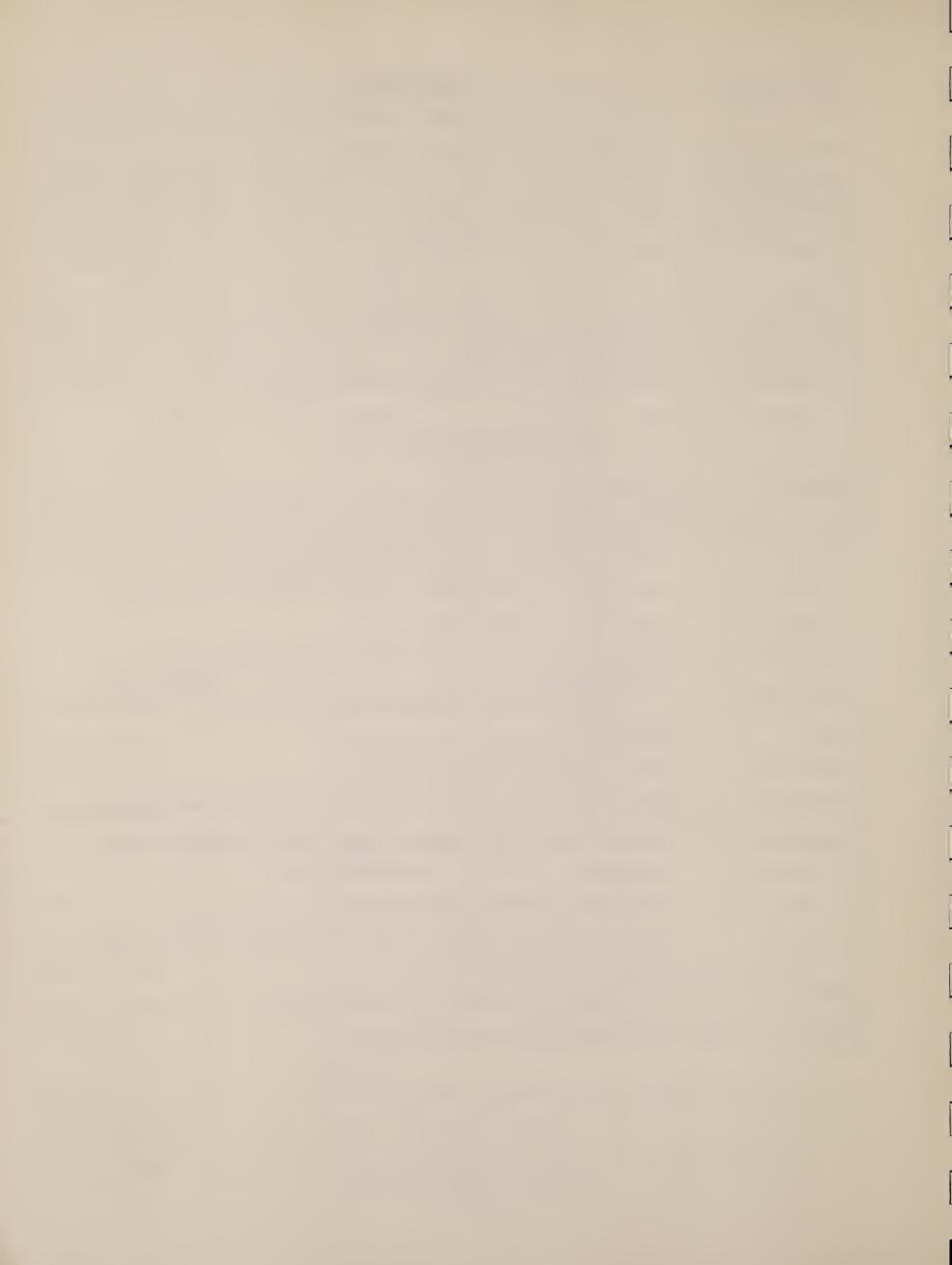
This section contains the Soil Survey Interpretation sheets for each soil series mapped in the Blue Rim Area. It also contains individual interpretive sheets for a few soil phases that differ significantly from their respective series. Also included is a list of key phrases that are used to explain the limitation and suitability ratings given in the interpretive sheets.

LIST OF KEY PHRASES

<u>Key</u> <u>Phrases</u>	Explanation
Area Reclaim	Borrow areas hard to reclaim.
Cemented Pan	Cemented pan too close to surface.
Complex Slope	Slopes short and irregular.
Compressible	Decrease in soil volume excessive under load.
Compaction Characteristic	Compaction characteristic of materials for compacted embankments
Corrosive	Soils corrode uncoated steel pipe.
Cutbanks Cave	Walls of cuts not stable.
Deep to Water	Deep to permanent water table during dry season.
Depth to Rock	Bedrock too close to surface.
Droughty	Soils cannot hold enough water for plants during dry periods.
Dusty	Soil particles detach easily and cause dust.
Erodes Easily	Water erodes soil easily.
Excess Alkali	Exchangeable sodium affects soil properties and restricts growth of plants.

<u>Key</u> Phrases	Explanation
Excess Humus	Contains too much organic matter.
Excess Lime	Carbonates restrict plant growth.
Excess Salt Fast Intake	Soluble salts restrict plant growth. Water infiltrates rapidly.
Favorable	Features of soil favorable.
Floods	Soil floods by stream overflow, runoff, or high tides.
Frost Action	Freezing may damage structures.
Hard to Pack	Difficult to compact.
Large Stones	Rock fragments 10 inches or more across.
Low Strength	Not enough strength to adequately support the load.
No Water	Too deep to ground water.
Not Needed	Practice not applicable.
Percs Rapidly	Water moves through soil too fast.
Piping	Water may form tunnels or pipelike cavities
Poor Outlets	Difficult or expensive to install outlets for drainage.
Rock Outcrops	Outcrops of fixed rock.
Rooting Depth	Soil is thin over layer that restricts root growth.
Shrink-Swell	Soil expands significantly on wetting and shrinks on drying
Slope	Slope is too great.
Slow Intake	Water infiltration restricted.
Slow Refill	Ponds fill slowly because of restricted soil permeability.
Small Stones	Contains many rock fragments less than 10 inches across.
Thin Layer	Inadequate thickness of suitable soil.
Too Clayey	Soil slippery and sticky when wet and slow to dry.
Too Sandy	Soft, loose soil material makes vehicular and foot traffic difficult.
Unstable Fill	Banks of fills likely to cave or slough.
Wet	Soil wet during period of use.

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CLASSIFICATION OF SOILS

Soils are classified in order that we can more easily remember their significant characteristics. Classification enables us to assemble knowledge about the soils, to see their relationship to one another and to the whole environment, and to develop principles that help us to understand their behavior and their response to manipulation. First, through classification, and then through use of soil maps, we can apply our knowledge of soils to specific fields and other tracts of land.

The narrow categories of classification such as those used in detailed soil surveys allow us to organize and apply knowledge about soils in managing farms, fields, and woodlands; in developing rural areas; in engineering work; and in many other ways. Soils are placed in broad classes to facilitate study and comparison in large areas such as countries and continents.

The system of soil classification currently used was adopted by the National Cooperative Soil Survey in 1965. Because this system is under continual study, readers interested in developments of the current system should search the latest literature available.

The current system of classification has six categories. Beginning with broadest, these categories are order, suborder, great group, subgroup, family, and series. In this system the criteria used as a basis for classification are soil properties that are observable and measurable. The properties are chosen, however, in order that the soils of similar kinds of morphology are grouped. In Table 6 the soil series of the Blue Rim Area are placed in four categories of the current system. Classes of the current system are briefly defined in the following paragraphs:

<u>Order</u> - Ten soil orders are recognized. The properties used to differentiate among soil orders are those that tend to give broad climatic groupings of soils. The two exceptions to this are the Entisols and Histosols which occur in many different climates. Each order is named with a word of three or four syllables ending in <u>sol</u> (Ent-i-sol).

<u>Suborder</u> - Each order is subdivided into suborders that are based primarily on those soil characteristics that seem to produce classes with the greatest genetic similarity. The suborders narrow the broad climatic range permitted in the orders. The soil properties used to separate suborders are mainly those that reflect either the presence or absence of waterlogging or soil differences resulting from the climate or vegetation. The names of suborders have two syllables. The last syllable indicates the order. An example is Argids (Arg is an abbreviation for the word "argillic" meaning silicate clay that has been accumulated in a soil horizon after being leached out of an overlying layer; and "id" from Aridisols, meaning mineral soils low in organic matter and formed under low rainfall.).

<u>Great Group</u> - Soil suborders are separated into great groups on the basis of uniformity in the kinds and sequence of major soil horizons and features. The horizons used to make separations are those in which clay, iron, or humus have accumulated; those that have pans that interfere with growth of roots, movement of water, or both; and thick, dark colored surface horizons. The features used are the self-mulching properties of clay, soil temperature, major differences in chemical composition (mainly calcium, magnesium, sodium, and potassium), dark red and dark brown colors associated with basic rocks, and the like. The names of great groups have three or four syllables and are made by adding a prefix to the name of the suborder. An example is Haplargids (Hapl meaning a simple set of horizons and argids. Arg is an abbreviation for the word "argillic" meaning silicate clay that has been accumulated in a soil horizon after being leached out of an overlying layer; and "id" from Aridisols, meaning mineral soils low in organic matter and formed under low rainfall.).

<u>Subgroup</u> - Great groups are subdivided into subgroups, one representing the central (typic) segment of the group, and others called intergrades that have properties of the group and also one or more properties of another great group, suborder, or order. Subgroups may also be made in those instances where soil properties intergrade outside of the range of any other great group, suborder, or order. The names of subgroups are derived by placing one or more adjectives before the name of the great group. An example is Typic Haplargids (a typical Haplargid).

Family - Soil families are separated within a subgroup primarily on the basis of properties important to the growth of plants or on the behavior of soils when used for engineering. Among the properties considered are texture, mineralogy, reactions, soil temperature, permeability, thickness of horizons, and consistence. A family name consists of a series of adjectives preceding the subgroup name. The adjectives are the class names for texture, mineralogy, and so on that are used as family differentiae. See Table 6. An example is the fine-loamy, mixed, frigid family of Typic Haplargids.

Soil Series	Degree and Kind	of Limitation for:	Suita	bility as	Source of:		Soil Features Affecting:						
	Shallow Excavations	Local Roads and Streets	Roadfill	Sand	Gravel	Topsoil	Pond Reservoir Areas	Embankments, Dikes, and Levees	Excavated Ponds Aquifer Fed	Drainage			
Abston	6-8%: Moderate - Depth to rock 8-15%: Moderate - Slope, depth to rock	Severe - Shrink-swell, low strength	Poor - Thin layer, low strength	Unsuited	+	Poor - Excess alkali	Depth to rock, slope	Low strength, thin layer	No water	Percs slowly, excess alkali, depth to rock			
Bluerim	3-8%: Moderate - Depth to rock 8-15%: Moderate - Slope, depth to rock 15+%: Severe - slope	3-8%: Moderate - Low strength 8-15%: Moderate - Slope, low strength 15+%: Severe - slope	Poor - Thin layer	Unsuited	Unsuited	3-8%: Fair - Too clayey 8-15%: Fair - Slope, too clayey 15+%: Poor - slope	Depth to rock, slope	Percs rapidly, low strength thin layer	, No water	Depth to rock			
Bodorumpe	Severe - Cutbanks cave	3-8%: Slight 8-15%: Moderate - Slope	Poor - Thin layer	Poor - ex-		Poor - too sandy	Percs rapidly, depth to rock, slope	Percs rapidly, thin layer, piping	No water	Depth to rock, cutbanks cave			
Coalmont	3-8%: Moderate - Too clayey, depth to rock 8-15%: Moderate - Slope, too clayey, depth to rock	Severe - Low strength	Poor - Thin layer, low strength			3-8%: Fair - Too clayey 8-15%: Fair - Slope, too clayey	Slope, depth to rock	Low strength, thin layer	No water	Depth to rock, percs slowly			
Cotha	Severe - Depth to rock	3-8%: Slight 8+%: Moderate - Slope	Poor - Thin layer	Poor	Unsuited	3-8%: Good 8-15%: Fair - slope	Percs rapidly, slope, depth to rock	Percs rapidly, piping	No water	Depth to rock			
Cothran	Severe - Cutbanks cave	Slight	Good	Fair to Poor	Unsuited	Poor - Too sandy	Percs rapidly	Fercs rapidly, piping	No water	Cutbanks cave			
DeBone	6-8%: Slight 8-10%: Moderate - slope	6-8%: Moderate - Shrink-swell, low strength 8-10%: Moderate - Slope, shrink-swell, low strength	Fair - Shrink-swell, low strength	Unsuited	Unsuited	Poor - excess alkali	Slope	Unstable fill	No water	Percs slowly, excess alkali			
Fluvents	Severe - Floods, wet	Severe - Floods, wet	Poor - Wet	Unswited	Finsuited	Foor - Wet	Peres rayidly	Unstable fill	Favorable	Poor outlets, floods, wet			
Forelle	Moderate - Too clayey	Moderate - Shrink-swell, low strength	Fair to poor - low strength	Unswited	Unsuited	Fair - Too clayey	Favorable .	Low strength	No water	Percs slowly			
Fraddle	3-8%: Moderate - Depth to rock 8-15%: Moderate - slope, depth to rock 15+%: Severe - Slope	3-8%: Moderate - Shrink-swell 8-15%: Mcderate - Slope, Shrink-swell 15-%: Severe - Slope	Foor - Thin layer	Unsuited	Unsuited	3-0%: Fair - Too clayey 8-15%: Fair - Slore, too clayey 15+%: Poor - Slore	Depth to rock, slope, percs rapidly	Low strength, percs rapidly	No water	Depth to rock			
Glenderson	Slight	Moderate - Low strength	Fair-Jow strength	Unsuited	Unsuited	Poor - Excess alkali	Percs rapidly	Unstable fill, percs rapidly	No water	Excess alkali			
Glendive	Severe - Floods	Severe - Floods	Fair - Low strength	Unsuited	Unsuited	Good	Fercs rapidly	Fercs rapidly, low strength	Deep to water	Floods			
	Severe-Wet, floods	Severe - Floods	Fair - Area reclaim, low strength	Unsuited	Unsuited	Poor-Excess salt	Percs rapidly	Unstable fill	Favorable	Floods, cutbank cave, excess sa			
Hatermus	10-15%: Severe - Depth to rock 15+%: Severe - Slope, depth to rock	10-15%: Moderate - Slope 15+%: Severe - Slope	Poor - Thin layer	Unsuited	Unsuited	Poor - Thin layer, excess alkali	Slope, depth to rock	Thin layer, low strength	No water	Depth to rock, Excess alkali			
Haterton	10-15%: Severe - Depth to rock 15+%: Severe - Slope, depth to rock	10-15%: Moderate - Slope 15+%: Severe - Slope	Pcor - Thin layer	Unsuited	l'nsuited	Poor - Thin layer	Depth to rock, slope	Thin layer, low strength	<u></u>	Depth to rock			
Havre	Severe - Floods	Severe - Floods	Fair - Shrink-swell, low strength	Unsuitea	Unsuited	Good	Favorable	Low strength, shrink-swell	Deep to water	Floods			
Havre, saline	Severe - Floods, wet	Severe - Floods	Fair - Area reclaim, shrink-swell, low strength	"nsuited	Unsuited	Poor - Excess salts	Favorable	Unstable fill	Favorable	Floods, excess salt			
Huguston	10-15%: Severe - Depth to rock 15+%: Severe - Slope, depth to rock	10-15%: Moderate - Slope, depth to rock 15+%: Severe - Slope	Poor - Thin layer	Poor	Unsuited	10-15%: Poor - Thin layer 15+%: Foor - Slope, thin layer	Depth to rock, slope, percs rapidly	Thin layer, percs rapidly, piring	No water	Depth to rock			
Koonich	Moderate - Floods	Moderate - Floods	Good	Unsuited	Unsuited	Good	Percs rapidly	Percs rapidly	Deep to water	Floods			
Laney	Moderate - Too clayey	Severe - Low strength	Poor - Area reclaim, low strength	Unsuited	Unsuited	Poor - Excess alkali	Favorabl e	Low strength, unstable fill	No water	Excess alkali			
Littsan	3-8%: Moderate - Depth to rock 8+%: Moderate - Slope, depth to rock	3-8%: Slight 2+%: Moderate - slope	Poor - Thin layer	Poor	Unsuited	Good	Slope, percs rapidly	Percs raridly	No water	Depth to rock			
Milren	3-8%: Moderate - Too clayey 8+%: Moderate - Slope, too clayey	Severe - Shrink-swell, low strength	Poor - Shrink-swell, low strength	Unsuited	Unsuited	Poor-Too clayey, excess alkali	Favorable	Unstable fill		Excess alkali, percs slowly			
Natrargids	Severe - Too clayey	Severe - shrink-swell, low strength	Poor - Shrink-swell, thin layer, low strength	Unsuited	Unsuited	Poor - Excess alkali, too clayey	Slope, depth to rock	Unstable fill	No water	Depth to rock, excess alkali, percs slowly			
Onascn	10-15%: Severe - Depth to rock 15+%: Severe - Slope, depth to rock	10-15%: Moderate - Depth to rock 15+%: Severe - Slope	Poor - Thin layer	Unsuited	Unsuited	10-15%: Poor - Small stones, thin layer 15+%: Poor - Slope, small stones, thin layer	Depth to rock, percs ragidly, slope	Thin layer, percs rapidly		Depth to rock			
Cuard	Severe - Depth to rock	Severe - Depth to rock	Poor - Thin layer	Unsuited	Unsuited	Poor - Thin layer	Depth to rock, slope	Thin layer, percs rapidly		Depth to rock, excess alkali			
Rallod	10-15%: Severe - Depth to rock 15+%: Severe - Slope, depth to rock	<pre>10-15%: Severe - Depth to rock, shrink- swell, low strength 15+%: Severe - Slope, depth to rcck, shrink-swell, low strength</pre>	0-25%: Poor-Shrink-swell, thin layer 25+%: Poor-Slope, shrink-swell, thin layer	Unsuited	Unsuited	thin layer 15+%: Poor - Slope, excess alkali,	Depth to rock, slope	Thin layer, unstable fill	No water	Depth to rock, excess alkali, percs slowly			
Relsob		3-8%: Slight 8+%: Fair - Slope	Fair - Low strength	Fair	Fəir	tkin layer Fair- Too clayey	Percs rapidly	Percs rapidly	No water	Favorable			
Ryark	3-8%: Moderate - Small stones	3-8%: Slight 8+%: Moderate - Slope	Good	Fair	Poor	3-8%: Good 8+%: Fair-Slope	Percs rapidly	Percs rapidly, hard to pack	No water	Favorable			
Salorthids		Severe - Low strength, shrink-swell	Poor - Area reclaim, low strength, shrink-swell	Unsuited	Unsuited	Poor - Excess salts	Favorable	Low strength, unstable fill	No water	Excess salts			
Tigon	15+%: Severe - Slope, depth to rock	15+%: Severe - Slope	Poor - Thin layer	Unsuited	Unsuited	Poor - Thin layer	Depth to rock, slope	Thin layer	No water	Depth to rock			
Tresano		<pre>6-8%: Moderate - Shrink-swell, low strength 8+%: Moderate - slope, low strength,</pre>	Poor - Low strength, shrink-swell	Unsuited	Unsuited	6-8%: Fair - Too clayey 8+%: Fair - Slope, too clayey	Slope	Low strength	No water	Percs slowly			
Vible	Slight	Slight	Good	Fair	Fair	Fair - Thin layer	Fercs rapidly	Percs rapidly	No water	Favorable			
Youjay		3-15%: Severe - Depth to rock, low strength, shrink-swell 15+%: Severe - Slope, depth to rock, shrink- swell, low strength		Unsuited	Unsuited	3-15%: Poor - Thin layer, excess alkali, too clayey 15+%: Poor - Slope, thin layer, too clayey, excess alkali	Slope, depth to rock	Thin layer, low strength	No water	Depth to rock, excess alkali			

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TABLE 6

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SCIL SERIES CLASSIFIED ACCORDING TO THE CURRENT SYSTEM OF CLASSIFICATION

Series	Family	Subgroup	Order
Abston	Fine, montmorillonitic	Borollic Natrargids	Aridisols
Bluerim	Fine-loamy, mixed	Borollic Haplargids	Aridisols
Bodorumpe	Mixed, frigid	Typic Torripsamments	Entisols
Coalmont	Fine, montmorillonitic	Borollic Paleargids	Aridisols
Cotha	Coarse-loamy, mixed	Borollic Haplargids	Aridisols
Cothran	Mixed, frigid	Ustic Torripsamments	Entisols
DeBone	Fine, montmorillonitic, frigid	Typic Natrargids	Aridisols
Forelle	Fine-loamy, mixed	Borollic Haplargids	Aridisols
Fraddle	Fine-loamy, mixed, frigid	Typic Haplargids	Aridisols
Glenderson	Coarse-loamy, mixed (calcareous), frigid	Typic Torrifluvents	Entisols
Glendive	Coarse-loamy, mixed (calcareous), frigid	Ustic Torrifluvents	Entisols
Hatermus	Loamy, mixed (calcareous), frigid, shallow	Typic Torriorthents	Entisols
Haterton	Loamy, mixed (calcareous), frigid, shallow	Typic Torriorthents	Entisols
Havre	Fine-loamy, mixed (calcareous), frigid	Ustic Torrifluvents	Entisols
Huguston	Loamy, mixed (calcareous), frigid, shallow	Typic Torriorthents	Entisols
Koonich	Sandy, mixed, frigid	Typic Torriorthents	Entisols
Laney	Fine-loamy, mixed (calcareous), frigid	Typic Torrifluvents	Entisols
Littsan	Coarse-loamy, mixed, frigid	Typic Haplargids	Aridisols
Milren	Fine, montmorillonitic	Borollic Paleargids	Aridisols
0nason	Loamy, mixed, nonacid, frigid, shallow	Ustic Torriorthents	Entisols
O uard	Loamy, mixed, frigid, shallow	Typic Haplargids	Aridisols
Rallod	Clayey, montmorillonitic, shallow	Borollic Natrargids	Aridisols
Relsob	Fine-loamy over sandy or sandy-skeletal, mixed	Borollic Haplargids	Aridisols
Ryark	Coarse-loamy, mixed	Borollic Haplargids	Aridisols
Tigon	Loamy, mixed, shallow	Borollic Haplargids	Aridisols
Tresano	Fine-loamy, mixed, frigid	Typic Haplargids	Aridisols
Vible	Sandy, mixed	Ustic Torriorthents	Entisols
Youjay	Clayey, montmorillonitic, frigid, shallow	Typic Natrargids	Aridisols

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GLOSSARY

- Alkali soil Generally, a highly alkaline soil. Specifically, an alkali soil has so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that the growth of most crop plants is low from this cause.
- Alluvial fan A sloping, fan-shaped mass of sediment deposited by a stream where it emerges from an upland onto a plain.
- Alluvium Soil material, such as sand, silt, or clay, that has been deposited on land by streams.
- Available water capacity The capacity of a soil to hold water in a form available to plants. Amount of moisture held in soil between field capacity, or about one-third atmosphere of tension, and the wilting coefficient, or about 15 atmospheres of tension.
- Calcareous soil Soil containing sufficient calcium carbonate (often with magnesium carbonate) to effervesce visibly when treated with cold 0.1 normal hydrochloric acid.
- Channery Fragments of thin, flat sandstone, limestone, schist, or hard shale up to 6 inches along the longer axis. A single piece is a fragment.
- Clay As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Coarse fragments Rock or mineral particles greater than 2.0 millimeters in diameter.
- Consistence, soil The feel of the soil and the ease with which a lump can be
 crushed by the fingers. Terms commonly used to describe consistence are:
 Loose Noncoherent when dry or moist; does not hold together in a mass.
 Friable When moist, crushes easily under gentle pressure between thumb and
 - forefinger, and can be pressed together into a lump.
 - Firm When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.
 - Plastic When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a 'wire' when rolled between thumb and forefinger. Sticky - When wet, adheres to other material and tends to stretch somewhat
 - and pull apart rather than to pull free from other material.
 - Hard When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.
 - Soft When dry, breaks into powder or individual grains under very slight pressure.
 - Cemented Hard and brittle; little affected by moistening.
- Control section (As used in the Soil Classification System of the National Cooperative Soil Survey in the United States) - Arbitrary depths of soil material within which certain diagnostic horizons, features, and other characteristics are used as differentiae in the classification of soils. The thickness

is specific for each characteristic being considered but may be different for different characteristics.

- Depth, effective soil The depth of soil material that plant roots can penetrate readily to obtain water and plant nutrients. It is the depth to a layer that differs sufficiently from the overlying material in physical or chemical properties to prevent or seriously retard the growth of roots.
- Drainage, soil As a natural condition of the soil, soil drainage refers to the frequency and duration of periods when the soil is free of saturation; for example, in well-drained soils the water is removed readily but not rapidly; in poorly drained soils the root zone is waterlogged for long periods unless artificially drained, and the roots of ordinary crop plants cannot get enough oxygen; in excessively drained soils the water. Strictly speaking, excessively drained soils are a result of excessive runoff due to steep slopes or low available water-holding capacity due to small amounts of silt and clay in the soil material.
- Erosion The wearing away of the land surface by wind (sandblast), running water, and other geological agents.
- Horizon, soil A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes. These are the major horizons:
 - 0 horizon The layer of organic matter on the surface of a mineral soil. This layer consists of decaying plant residues.
 - A horizon The mineral horizon at the surface or just below an O horizon. This horizon is the one in which living organisms are most active and, therefore, is marked by the accumulation of humus. The horizon may have lost one or more of soluble salts, clay, and sesquioxides (iron and aluminum oxides). B horizon - The mineral horizon below an A horizon. The B horizon is in part
 - B horizon The mineral horizon berow an A norizon. The bind bind of a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or some combination of these; (2) by prismatic or blocky structure; (3) by redder or stronger colors than the A horizon; or (4) by some combination of these. Combined A and B horizons are usually called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.
 - C horizon The weathered rock material immediately beneath the solum. In most soils this material is presumed to be like that from which the overlying horizons were formed. If the material is known to be different from that in the solum, a Roman numeral precedes the letter C.
 - R layer Consolidated rock beneath the soil. The rock usually underlies a C horizon but may be immediately beneath an A or B horizon.
- Landscape All of the natural features that distinguish one part of the earth's surface from another part, usually that portion of land or territory which the eye can comprehend in a single view, including all of its natural characteristics. In many places in this report "landscapes" are used to identify all of the features included within the delineated areas of complexes, associations, and undifferentiated groups.

- Mottled Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of drainage. Descriptive terms are as follows: Abundance - few, common, and many; size - fine, medium, and coarse; and contrast - faint, distinct, and prominent. The size measurements are these: Fine, less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; medium, ranging from 5 millimeters to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and coarse, more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.
- Parent material (soil) The horizon of weathered rock or partly weathered soil material from which soil has formed; horizon C in the soil profile.
- Permeability, soil The quality of a soil horizon that enables water or air to move through it. Terms used to describe permeability are as follows: Very slow, slow, moderately slow, moderate, moderately rapid, rapid, and very rapid.
- Planed slopes Landscapes or land surfaces that have been shaped by landforming processes, such as ancient streams, resulting in a plane.
- Planes Land surfaces that are nearly level or that slope uniformly with a minimum of depressions or elevations. If two points on the surface are connected with a straight line, the line would parallel the surface.
- Reaction, soil The degree of acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid, or "sour," soil is one that gives an acid reaction; an alkaline soil is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

	pН		pН
Extremely acidBelo	w 4.5	Neutral6.6	to 7.3
Very strongly acid4.5	to 5.0	Mildly alkaline7.4	to 7.8
Strongly acid5.1	to 5.5	Moderately alkaline7.9	to 8.4
Medium acid5.6		Strongly alkaline8.5	to 9.0
Slightly acid6.1	to 6.5	Very strongly alkaline9.1	and higher

- Residuum Unconsolidated, partly weathered mineral material that accumulates over disintegrating bedrock.
- Ridge A relatively narrow elevation which is prominent on account of the steep angle at which it rises.
- Saline soil A soil that contains soluble salts in amounts that impair growth of plants but that does not contain excess exchangeable sodium.
- Sand Individual rock or mineral fragments in soils having diameters ranging from 0.05 to 2.0 millimeters. Most sand grains consist of quartz, but they may be of any mineral composition. The textural class name of any soil that contains 85 percent or more sand and not more than 10 percent clay.
- Secondary carbonates The accumulation of calcium carbonate into specks, threads, soft concretions, etc. within a soil horizon. The horizon must have more carbonates than the parent material is presumed to have had.

Silt - Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). Soil of the silt textural class is 80 percent or more silt and less than 12 percent clay.

Slope classes -		
Slope Range (%)	Simple Slopes	Complex Slopes
0-3	nearly level	nearly level
3-6	gently sloping	undulating
6-10	sloping	rolling
10-20	moderately steep	hilly
20-40	steep	steep
over 40	very steep	very steep

- Soil profile A vertical section of the soil from the surface through all its horizons, including C horizons. See horizon, soil.
- Solum The upper part of a soil profile, above the parent material, in which the processes of soil formation are active. The solum in mature soil includes the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and other plant and animal life characteristic of the soil are largely confined to the solum.
- Structure, soil The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary particles. The principal forms of soil structure are - platy (laminated), prismatic (vertical axis of aggregates longer than horizontal), columnar (prisms with rounded tops), blocky (angular or subangular), and granular. Structureless soils are (1) single grain (each grain by itself, as in dune sand) or (2) massive (the particles adhering together without any regular cleavage, as in many claypans and hardpans).
- Subsoil Technically, the B horizon; roughly, the part of the solum below plow depth.
- Substratum Technically, the part of the soil below the solum.

Surface layer - The uppermost layer of the soil.

- Terrace (geological) An old alluvial plain, ordinarily flat or undulating, bordering a river, lake, or the sea. Stream terraces are frequently called second bottoms, as contrasted to floodplains, and are seldom subject to overflow. Marine terraces were deposited by the sea and are generally wide.
- Texture, soil The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Underlying layer - That part of the soil below the surface layer if no "B" horizon is present.

Water table - The highest part of the soil or underlying rock material that is wholly saturated with water. In some places an upper, or perched, water table may be separated from a lower one by a dry zone.

GUIDE TO MAPPING UNITS

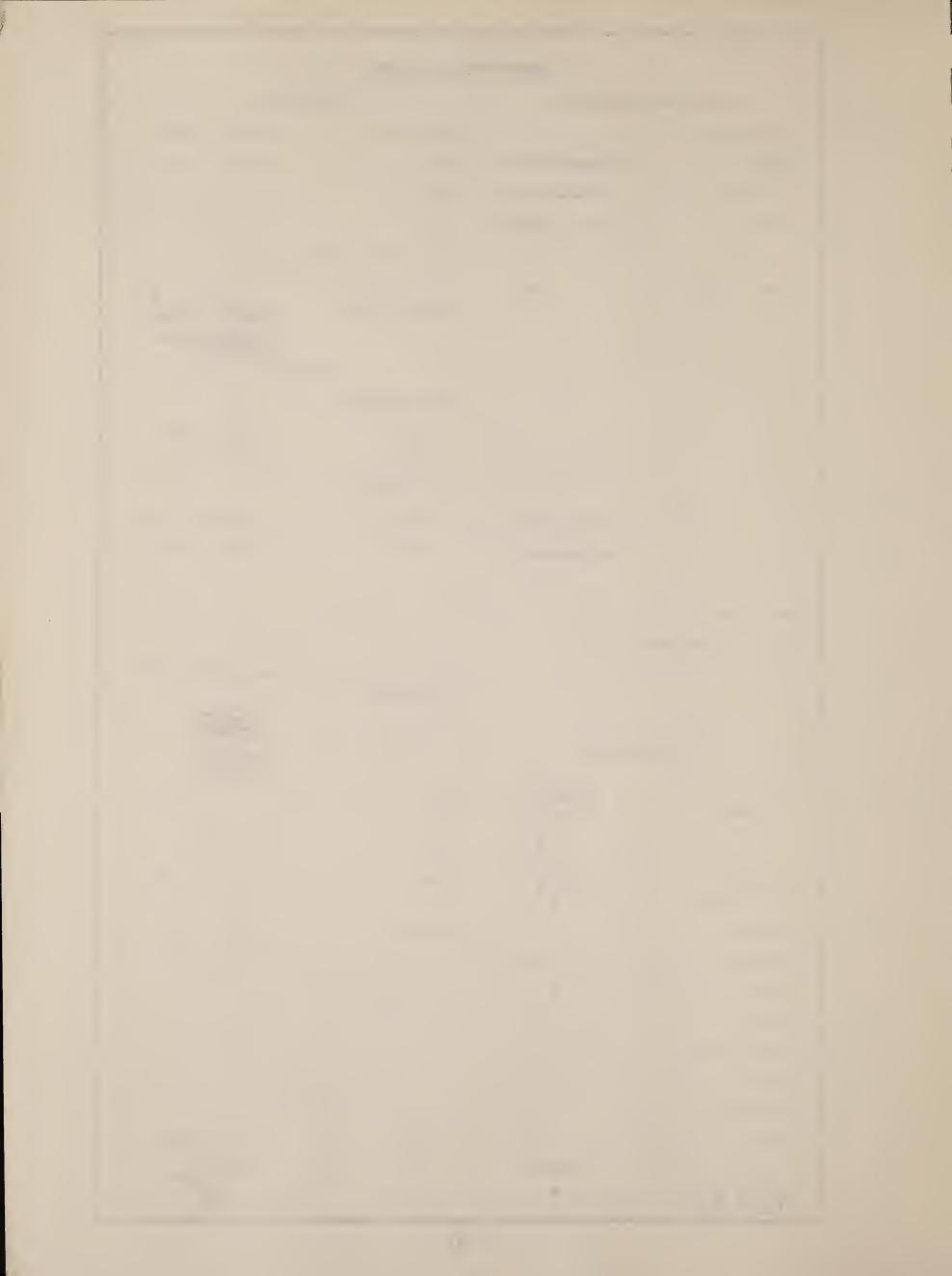
Dashes under Range Site or Capability Classification Headings Indicate the Mapping Unit was not Placed in the Specific Grouping

Мар	Mapping Unit	Described		Capability Classification			
Symbol	Mapping Unit	on Page	7 to 9" P.Z Name	• Page	10 to 14" P. Name	Z. Page	Dryland Symbol
102	Shale rock land	47					VIIIs83
110 112	Natrargids Rock land-Natrargids complex	37 43			Dense Clay	58	V e7 V e7
112	Rock land part	40	Shale	64			VITE/T
	Natrargids part		Dense Clay	62			
113	Salorthids-Natrargids complex	47	Saline Lowland	63			Vile71
250	Glendive-Havre complex, saline	26					VIws11
	Glendive, saline part Havre, saline part				Saline Subirr. Saline Subirr,	59	
i	Glendive part				Overflow	59 59	
	Havre part				Overflow	59	
251	Bluerim-Tigon association	9					
	Bluerim part				Loamy	58	VIe2
252	Tigon part Tigon-Bluerim association	4B			Shallow Loamy	60	VIIe14
252	Tigon part				Shallow Loamy	60	VIIe14
	Bluerim part				Loamy	58	VIe2
253	Rallod-Onason-Rock outcrop complex, 10 to						
	30% slopes	41				60	VIIe14
	Rallod part				Shallow Clayey Shallow Sandy	60 61	
	Onason part Rock outcrop part					01	
254	Combined with 256	10					
256	Bluerim-Abston, and Milren soils, 3 to 15%						
	slopes	10					
	Bluerim part				Loamy	5B	Vie2
	Abston part Milren part				Clayey Clayey	57 57	Vile71 Viel
257	Bluerim-Cotha association	g				57	, vici
	Bluerim part				Loamy	58	Vle2
	Cotha part				Sandy	60	VIe5
258	Forelle-Havre assocation	20			Loomu	50	VIC2
	Forelle part Havre part				Loamy Overflow	5B 59	
259	Ryark-Relsob complex, 3 to 10/ slopes	45				00	Vie5
	Ryark part				Sandy	60	
	Rclsob part				Loamy	5B	
260	Ryark-Cothran association	45			Sandy	60	Vle5
	Ryark part Cothran part				Sandy Sands	59	Viel5
261	Coalmont-Bluerim complex, 3 to 15% slopes	13					Viel
	Coalmont part				Clayey	57	
0.00	Bluerim part	15			Loamy	5B	111.5
262	Cotha-Ryark complex, 3 to 15% slopes Cotha part	15			Sandy	60	Vle5
	Ryark part	5			Sandy	60	
	Bluerim part				Loamy	5B	
263	Vible sandy loam	52			Sandy	60	Vle5
264 351	Fluvents	1B 33					 VIIs71
301	Laney-Glenderson complex Laney part	33	Saline Upland	63			VIIS/I
	Glenderson part		Loamy	62			
352	Fraddle-Ouard complex	23					VIIe14
	Fraddle part		Loamy	62			
	Ouard part		Shallow Loamy Shallow Clayey	65 64			
354	Youjay part Fraddle-Littsan association	22	Sharlow clayey	0.4			
	Fraddle part		Loamy	62			VIe2
	Littsan part		Sandy	64			Vle5
355	Combined with 365	35					111-5
356	Koonich-Laney complex Koonich part	32	Sandy	64			Vle5
	Laney part		Saline Upland	63			
357	Rock land-Huguston, and Youjay soils, 10 to	1					
	30% slopes	43		C A			
	Rock land part		Shale Shallow Sandy	64 65			VIIs17 VIIe14
	Huguston part Youjay part		Shallow Clayey	64			VIIel4
359	Rock land-Hatermus complex, 10 to 30% slopes	43					
	Rock land part		Shale	64			VIIs17
	Hatermus part		Shallow Loamy	65			VIIe14
360	Youjay part DeBone-Tresano complex, 6 to 10% slopes	18	Shallow Clayey	64			V e14 V e71
500	DeBone part		Loamy	62			011071
	Tresano part		Loamy	62			
361	Fraddle-Haterton association	22					1
	Fraddle part		Loamy Shallow Loamy	62 65			Vie2
	Haterton part Hatermus part		Shallow Loamy Shallow Loamy	65 65			VIIe14 VIIe14
365	Littsan-Bodorumpe association	35	Shartow Loany	03			11614
000	Littsan part		Sandy	64			Vle5
	Bodorumpe part		Sands	63			Viel5

CONVENTIONAL SIGNS

BOUNDARIES

WORKS AND STRUCT	JKES	BUUNDARIES
Highways and roads		National or state
Dual		County
Good motor		Reservation
Poor motor		Land grant
Trail	- 20 (20 - 20 - 20 - 20 - 20 - 20 - 20 -	Sinail park, cemetery, airport
Buildings		Land survey division corners
School	ţ.	Survey Area where fenced
• Courch	ł	unfenced
Mine and quarry	*	DRAINAGE
Gravel pit	6g	Streams, double-line
Power line		Perennial
Pipeline		Intermittent
Cemetery		Streams, single-line
Dams	ACT .	Perennial
Levee	·····	Intermittent
Tanks	. •	
Well, oil or gas	4	
Forest fire or lookout station	•	
Windmili	*	Qanals and ditches
		Lakes and ponds
		Perennial
SOIL SURVEY DA	TA	Intermittent
Soil boundary	251	۲ Spring عرب مح
and symbol		Marsh or swamp
Gravel	°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°	Wet spot
Stony	0	Alluvial fan
Stoniness Very stony	\$ \$	Drainage end
Rock outcrops	v v v	Wells, water o 🝝 flowing
Chert fragments	4 4 4 4 4	
Clay spot	*	
Sand spot	×	· ·
Gumbo or scabby spot	¢	
Made land	2	RELIEF
Severely eroded spot	an Anna Maria	Escarpments
Blowout, wind erosion	÷	Bedrock
Gullý	~~~~	Other
Saline Spot	+	Prominent peak



SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY

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SOIL SURVEY INTERPRETATIONS

KEYING ONLY RECORD CONTROL	SOIL SURVEY INTERPRETATIONS									
NO. WORO NO. MLRA 001 STATE 011										
	BOROLLIC NATRARGI	DS. FINE MONTMORILLONIT		M, SHALE. ON HILL	SIDES, SLOPES A	RE.6 TO:15 PERCENT	RECIPITATION JS: 10 TO: 12.			
2	INCHES, AND MEAN.	ANNUAL AIR. TEMPERATURE,	15 ABDUL 10 F. TITPICALI	THE CURCATL I	C ROOWN TO CRAVE	SH BROWN CLAYITO SANDY	BOUT 1 INCH THICK THE CLAY LOAM ABOUT 14 INCHES. NE SHALE AT A DEPTH OF 34			
	INCHES FOOTNOTE		ESTIMATED SOIL	PROPERTIES	FRACT,	PERCENT OF MATERIAL	LESS LIQUID PLAS-			
	DEPTH (IN.)			AASHO	> 3 IN. (PCT)	THAN 3 IN. PASSING S 4 10 40	200 LIMIT INOEX			
PROP 041 2 3	0-10	С SCL WB		A-6, A-7 A-6	0	90-100 90-100 85-9 90-100 90-100 60-8 =	0 35-50 30-40 11-15			
4		WD								
1 16	OEPTH PERMEA	I WATER CAPACITY	SOIL SALINITY REACTION (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY	ERÔSIÔN WIND FACTORS EROO. AFTF K T GROUP				
PROP 051	(IN.) (IN/I SAME 0.06-0	0.2 0.08-0.10	(pH) 6.6-9.0 2.0-4.0 8.5->9.0 4.0-8.0	HIGH MODERATE		RETE K T GROUP DW .32 3 3 ERATE .28				
	DEPTH AS									
5	ABOVE		HIGH WATER		CEMENTED PAN	BEDROCK	SUBSIDENCE HYD POTENTIAL			
PROP 061	FREQUENCY	FLOOOING	OEPTH KIND ONTH\$ (FT) >6	MONTHS	DEPTH HARONESS (IN)	OEPTH HARONESS (IN) 20-40 RIPPABLE	INITIAL TOTAL GRP ACTION (IN) (IN) O LOW			
	FOOTNOTES		Y FACILITIES	KEYING ONLY	FOOTNOTES	SOURC	E MATERIAL			
SEPTIC 071 2 3		SEVERE – DEPTI	H TO ROCK, PERCS SLOWLY		ROADFILL					
14 15 1 LAG DON 081		6-7%: SEVERE - DEP		SANO 201 2		UNSUITED				
22		7+%: SEVERE - SLOP	RE - SLOPE, DEPTH TO ROCK		SAND					
T R ENCH 091		SEVERE - DEPT	H_TO_ROCK	G R A V E L 211	· L	UNSUITED				
	SANITARY LANOFILL (TRENCH)			2 3 4	GRAVEL					
SANARE 10 1		6-8%: SLIGHT		SOIL 221		POOR - EXCESS ALKALI				
	LANDFILL (AREA)	8-15%: MODERATE - SLOPE			TOPSOIL					
COVER 11		6-8%: FAIR - TOO C 8-15%: FAIR - SLOP	PACK	FOOTNOTES		WATER MANAGEMENT				
	LANDFILL			PONORS 231 2 3 4	PONO	DEPTH TO ROCK, SLOPE				
	FOOTNOTES	COMMUNIT	Y DEVELOPMENT	01KES 241	AREA	LOW STRENGTH, THIN L	AYER			
EXCAV 12			SLOPE, DEPTH TO ROCK		EMBAN KMENTS DIKES ANO LEVEES		· · · · · · · · · · · · · · · · · · ·			
DWEL 13		6-8%: MODERATE - S	PONDAQ 251		NO WATER					
	2 DWELLINGS 3 WITHOUT 4 BASEMENTS	8-15%; MODERATE -	SLOPE, SHRINK-SWELL	3						
DWEL 14	5	6-8%: MODERATE - 0	DRAIN 261	FED	DEPTH TO ROCK, EXCESS ALKALI, PERCS SLOWLY					
	2 DWELLINGS 3 WITH 4 BASEMENTS	C-15%: MODERATE - SLOPE, DEFTH TO COCK			ORAINAGE					
BLDGS 15	5 1 2 SMALL	6-8%: MOOERATE - SHRINK-SWELL 8+%: SEVERE - SLOPE		IR R IG 271		EXCESS ALKALI, PERCS	SLOWLY, SLOPE			
	COMMERCIAL BUILDINGS		,		IRRIGATION					
ROADS 16	1 2 LOCAL	SEVERE - SHRINK-SWE	ELL, LOW STRENGTH	TERRAC 281	TERRACES	DEPTH TO ROCK				
	3 ROADS ANO 4 STREETS 5			4	DIVERSIONS					
REGION 17	FOOTNOTES	REGIONAL	INTERPRETATIONS	WATERW 291	GRASSED WATERWAYS					
	2									
REGION 18	1									
	3									
					-					

KEYING ONLY	UNIT NAME: ABSTON			(2) RECREATION				
RECORD CONTROL NO. WORD NO. CAMPS 301	UNIT MODIFIER:FOOTNOTE			KEYING DNLY	FDDTNDTE			
CAMPS 501		DERATE - PERCS SLOW ODERATE - SLOPE, PE	RCS SLOWLY, DUSTY	PLAYGRDU		SEVERE - SLOPE		
4	CAMP AREAS							
PICNIC 311	6-8%: MO	DERATE - DUSTY OOERATE - SLOPE, OU	STY	PATHS 331	MODERATE - OUSTY	MODERATE - OUSTY		
	PICNIC AREAS			3 AND 4 TRAILS				
4	FOOTNOTE		ND PREDICTED YIELDS	-CROPS AND PASTURE (H	GH LEVEL MANAGEMENT)			
CROPHD 451	CLASS-							
	DETERMINING PHASE	NIRR IRR. NIRR	IRR, NIRR IRF	R NIRR IRR. NII	R IRR NIRR IRR	NIRR IRR. NIRR IRR.		
CROPS 341	ALL	7E 7E						
	· · · · · · · · · · · · · · · · · · ·							
5								
7								
9								
	FOOTNOTE CLASS-		WOOI MANAGEMENT PROBLEM	DLAND SUITABILITY	PDTENTIAL PRODUCTIVITY			
	DETERMINING PHASE	ORD EROSIDN E SYM HAZARD L	QUIP. SEEDLING IMIT MORT'Y.	WINOTH. PLANT HAZARD COMPET.	IMPORTANT TREES	SITE TREES TO PLANT INDEX		
WDDDS 361	111105				NONE			
						•		
5								
9								
4								
Y F G	FODTNOTE			WIND BREAKS				
WINDBK 381	CLASS-OETERMINING PHASE	SPECIES NONE	HT	SPECIES HT	SPECIES	HT SPECIES HT		
2								
4								
V V 6	FOOTNOTE		WILDLIF	E HABITAT SUITABILITY R HABITAT ELEMENTS		POTENTIAL AS HABITAT FOR:		
	CLASS- DETERMINING	GRAIN & GRASS & SEED LEGUME	WILD HARDWD HERB. TREES		WETLAND SHALLOW DPENI PLANTS WATER WILDL	LANO WOODLAND WETLAND RANGELAND		
WILDLF 391	PHASE ALL	SEED LEGUME		FAIR	V. POOR V. POOR V. P	OOR V. PODR FAIR		
2								
4								
• • • • •	FOOTNOTE	POTENTIAL NA	IVE PLANT COMMUNIT	Y (RANGELAND OR FOREST	UNDERSTORY VEGETATION) ITION (DRY WEIGHT) BY CLASS DETER	RMINING PHASE		
PHASE 401			ALL					
	COMMON PLANT NAME	(NI SPN						
PLANT 411	THICKSPIKE WHEATGRASS	(NLSPN AGOA	40					
PLANT 411 2 3	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH	(NLSPN AGOA POFE ARTR2						
PLANT 411 2 3 4 5	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH INOIAN RICEGRASS LETTERMAN NEEOLEGRASS	(NLSPN AGOA POFE ARTR2 ORHY STLE4	40 10 10 5 5					
PLANT 411 2 3 4 5 6 7	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH INOIAN RICEGRASS LETTERMAN NEEOLEGRASS BOTTLEBRUSH SQUIRRELTA PRAIRIE JUNEGRASS	(NLSPN AGOA POFE ARTR2 ORHY STLE4 IL SIHY KOCR	40 10 10 5 5 5 5 5 5					
PLANT 411 2 3 4 5 6 7 7 8 8 9 9	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH INOIAN RICEGRASS LETTERMAN NEEDLEGRASS BOTTLEBRUSH SQUIRRELTA PRAIRIE JUNEGRASS	(NLSPN AGOA POFE ARTR2 ORHY STLE4 IL SIHY KOCR POSE CHVIH	$ \frac{40}{10} 10 5 $					
PLANT 411 22 33 44 55 66 77 8 9 9 421 421 421	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH INOIAN RICEGRASS LETTERMAN NEEOLEGRASS BOTTLEBRUSH SQUIRRELTA PRAIRIE JUNEGRASS SANDBERG BLUEGRASS LOW RABBITBRUSH	(NLSPN AGOA POFE ARTR2 ORHY STLE4 IL SIHY KOCR POSE	40 10 10 5 5 5 5 5 5 5 5 5 5 5		Image: Section of the section of t			
PLANT 411 2 3 4 5 6 7 8 9 421 421 6 2 3 3 4 4 4	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH INOIAN RICEGRASS LETTERMAN NEEOLEGRASS BOTTLEBRUSH SQUIRRELTA PRAIRIE JUNEGRASS SANDERG BLUEGRASS LOW RABBITBRUSH	(NLSPN AGOA POFE ARTR2 ORHY STLE4 IL SIHY KOCR POSE CHVIH	$ \frac{40}{10} 10 5 $		Image: Section of the section of t			
PLANT 411 22 33 44 55 66 77 88 9 421 421 22 33	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH INOIAN RICEGRASS LETTERMAN NEEOLEGRASS BOTTLEBRUSH SQUIRRELTA: PRAIRIE JUNEGRASS SANDBERG BLUEGRASS LOW.RABBITBRUSH	(NLSPN AGOA POFE ARTR2 ORHY STLE4 IL SIHY KOCR POSE CHVIH OTHER	$ \frac{40}{10} 10 5 $					
PLANT 411 2 3 4 5 6 7 8 9 4 4 5 6 7 7 8 8 9 4 2 7 7 8 8 9 4 2 7 7 8 8 9 4 4 5 7 7 8 8 9 4 4 5 7 7 8 8 9 9 1 4 4 5 7 7 8 8 9 9 1 4 4 5 7 7 8 8 9 9 1 4 4 5 7 7 8 8 9 9 1 4 4 5 7 7 8 8 9 9 1 4 4 1 5 7 7 8 8 9 9 1 4 4 1 5 7 7 8 8 9 9 1 4 2 1 7 7 8 8 9 9 1 4 2 1 7 7 8 8 9 9 1 4 2 1 7 7 8 8 9 9 1 4 2 1 7 7 7 8 8 9 9 1 7 7 7 8 8 9 9 1 7 7 7 8 8 9 9 9 1 7 7 7 8 8 9 9 9 1 7 7 7 7 7 7 7 8 8 9 9 9 1 7 7 7 7 7 7 7 7 7 7 7 7 7	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH INOIAN RICEGRASS LETTERMAN NEEDLEGRASS BOTTLEBRUSH SQUIRRELTA PRAIRIE JUNEGRASS LOW RABBITBRUSH OW RABBITBRUSH	(NLSPN AGOA POFE ARTR2 ORHY STLE4 IL SIHY KOCR POSE CHVIH OTHER ACC. DRY WT): FAVORABLE YEARS	$ \frac{40}{10} 10 5 $		Image: Section of the section of t			
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PLANT 411 2 3 4 5 6 7 7 8 8 9 421 6 7 7 8 8 9 421 7 2 3 3 4 4 4 5 5 4 2 1 7 7 8 8 9 9 421 5 7 7 8 8 9 9 421 7 7 7 8 8 9 9 421 7 7 7 7 7 7 7 8 8 9 9 4 4 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH INOIAN RICEGRASS LETTERMAN NEEOLEGRASS BOTTLEBRUSH SQUIRRELTA: PRAIRIE JUNEGRASS SANDBERG BLUEGRASS LOW.RABBITBRUSH POTENTIAL PRODUCTION (LBS./	(NLSPN AGOA POFE ARTR2 ORHY STLE4 IL SIHY KOCR POSE CHVIH OTHER OTHER	40 10 10 5 5 5 5 5 5 5 5 5 10 10 10 5 5 5 5 5 10 10 10 10 5 5 5 5 5 10 10 10 10 5 5 5 5 5 10 10 10 10 10 10 10 10 10 10	FOOTNOTES				
PLANT 411 2 3 4 5 6 7 8 9 4 4 5 4 4 5 7 8 9 1 4 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH INOIAN RICEGRASS LETTERMAN NEEOLEGRASS BOTILEBRUSH SQUIRRELTA: PRAIRIE JUNEGRASS LOW.RABBITBRUSH POTENTIAL PRODUCTION (LBS,	(NLSPN AGOA POFE ARTR2 ORHY STLE4 IL SIHY KOCR POSE CHVIH OTHER OTHER	40 10 10 5 5 5 5 5 5 5 5 10 10 10 5 5 5 5 5 10 10 10 10 5 5 5 5 10 10 10 10 10 10 10 10 10 10	FOOTNOTES				
PLANT 411 2 3 4 5 6 7 8 9 421 2 421 2 3 4 4 5 7 8 9 421 2 3 4 4 5 7 8 9 421 2 3 4 4 5 7 8 9 9 421 7 8 9 9 421 7 8 9 9 421 7 8 9 9 421 7 8 9 9 421 7 8 9 9 9 421 7 8 9 9 9 421 7 8 9 9 9 9 421 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9	THICKSPIKE WHEATGRASS MUTTON BLUEGRASS BIG SAGEBRUSH INOIAN RICEGRASS LETTERMAN NEEOLEGRASS BOTTLEBRUSH SQUIRRELTA: PRAIRIE JUNEGRASS SANDBERG BLUEGRASS 1 OW. RABBITBRUSH POTENTIAL PRODUCTION (LBS.,	(NLSPN AGOA POFE ARTR2 ORHY STLE4 IL SIHY KOCR POSE CHVIH OTHER OTHER	40 10 10 5 5 5 5 5 5 5 5 10 10 10 5 5 5 5 5 10 10 10 10 5 5 5 5 10 10 10 10 10 10 10 10 10 10	FOOTNOTES				

SCS-SOILS-5 REV, MAY 1972 FILE CODE SOILS-12

KEYING ONLY SOIL SURVEY INTERPRETATIONS CONTROL WORD NO. MLRA 001 RECORD UNIT NAME BLUERIM KIND OF UNIT <u>SERIES</u> UNIT DATE 1/73 REVISED UNIT MODIFIER NO. CLASSIFICATION AND BRIEF SOIL DESCRIPTION BOROLLIC HABLARGIDS, FINE-LOAMY, MIXED THE BURRIM SERIES ARE WELL ORAMY, MIXED PERCENT. PRECIPITATION ILS 10 TO 12 INCHES, AND MEAN ANNUAL TEMPERATURE IS ABOUT. 369F. TYPICALLY, THE SURFACE LAYER IS BROWN SANDY LOAM ABOUT S INCHES THICK. THE UPBER PART OF THE SUBSOIL IS BROWN SANDY CLAY LOAM ABOUT. 15, INCHES, THICK. THE LOWER PART OF THE SUBSOIL IS GRAYISH BROWN SANDY LOAM ABOUT 6 INCHES THICK. THE SUBSTRATUM IS LIGHT OUTVE BROWN SANDY, LOAM ABOUT 5 INCHES. THICK AND IS UNDERLAIN BY SOFT SANDY SHALE AT A DERTH OF 39 INCHES. ESTIMATED SOIL PROPERTIES MLRA(S) STATE 011 DESCR PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE PLAS-TICITY FRACT. >3 IN. LIQUID DEPTH AASHO UNIFIED LIMIT USDA TEXTURE INDEX 40 200 (IN.) (PCT) 60-70 40-55 20-30 NP 5-15 NP 75-90 75-90 95-100 30-40 A-2, A-6 0 SM-SC, SC SC1 PROP 0-18 20-30 0 95-100 SM A-2 18-29 12 ---WB 29 4 16 ERÓSIÓN WIND SOIL AVAILABI SHRINK-SWELL CORROSIVITY SALINITY PERMEABILITY FACTORS FROD. DEPTH WATER CAPACITY REACTION (MMHOS/CM) POTENTIAL GROUP CONCRETE LOW (IN/HR)K TEEL (IN.) (1N/IN)(pH) .24 3 3 6.6-7.8 LOW HIGH .14-.16 6-2.0 ROP 7.4-9.0 0-4.0 HIGH LOW .20 LOW 2.0-6.0 .11-.13 SAME DEPTH AS ABOVE CEMENTED PAN POTENTIAL SUBS BEDROCH HYD HIGH WATER TABL INITIAL (IN) TOTAL (IN) HARDNESS FROST FLOODING DEPTH MONTHS DEPTH (IN) HARDNESS GRP KIND DEPTH (IN) DURATION MONTHS (FT)FREQUENCY 20-40 LOW RIPPABLE PROP 061 NONE SOURCE MATERIAL KEYING ONLY FOOTNOTES SANITARY FACILITIES FOOTNOTES POOR - THIN LAYER 3-15%: SEVERE - DEPTH TO ROCK 15+%: SEVERE - SLOPE, DEPTH TO ROCK FILL SEPTIC 071 SEPTIC TANK ROADFILL ABSORPTION EIEL DS 15 3-7%: SEVERE - DEPTH TO ROCK 7+%: SEVERE - SLOPE, DEPTH TO ROCK UNSUITED SAND 201 1 LAGOON 081 234 SEWAGE SAND LAGOONS 14 TRENCH 091 15 UNSUITED GRAVEL 211 SEVERE - DEPTH TO ROCK 234 SANITARY GRAVEL LANDFILL (TRENCH) 15 3-8%: FAIR - TOO CLAYEY SO | 1 221 3-8%: SLIGHT 8-15%: MODERATE - SLOPE SANARE 101 8-15%: FAIR - SLOPE, TOO CLAYEY 2 SANITARY TOPSOIL 15+%; POOR - SLOPE 3 LANDFILL 15+%: SEVERE - SLOPE 4 (AREA) 4 3-8%: FAIR - THIN LAYER 8-15%: FAIR - SLOPE, THIN LAYER WATER MANAGEMENT COVER 111 FOOTNOTES DAILY DEPTH TO ROCK, SLOPE PONDRS 231 COVER FOR 15+%: POOR - SLOPE 2 POND LANDFILL **RESERVOIR** 10 4 AREA COMMUNITY DEVELOPMENT FOOTNOTES PERCS RAPIDLY, LOW STRENGTH, THIN LAYER 241 3-8%: MODERATE - DEPTH TO ROCK 8-15%: MODERATE - SLOPE, DEPTH TO ROCK 15+%: SEVERE - SLOPE DIKES EXCAV 121 EMBANKMENTS 2 SHALLOW 2 DIKES AND EXCAVATIONS LEVEES 15 PONDAQ 251 NO WATER 3-8%: SLIGHT 8-15%: MODERATE - SLOPE DWEL. 131 EXCAVATED DWELLINGS 2 3 PONDS WITHOUT 15+%: SEVERE - SLOPE AQUIFER BASEMENTS YF FED DEPTH TO ROCK 3-8%: MODERATE - DEPIH TO ROCK 8-15%: MODERATE - SLOPE, DEPTH TO ROCK 15+%: SEVERE - SLOPE DRAIN 26 DWEL 141 DWELLINGS DRAINAGE WITH 4 BASEMENTS 1 5 SLOPE, ROOTING DEPTH 15 IRRIG 271 3-4%: SLIGHT 4-8%: MODERATE - SLOPE BLDGS 151 2 SMALL 2 3 IRRIGATION COMMERCIAL 8+%: SEVERE - SLOPE 4 BUILOINGS 3-10%: DEPTH TO ROCK 3-8%: MODERATE - LOW STRENGTH 8-15%: MODERATE - SLOPE, LOW STRENGTH 15+%: SEVERE - SLOPE 281 TERRA ROADS 161 t. 10+%: SLOPE, DEPTH TO ROCK TERRACES LOCAL ROADS AND 13 AND 3 DIVERSIONS 4 4 STREETS WATERW 291 GRASSED REGIONAL INTERPRETATIONS FOOTNOTES 2 WATERWAYS REGION 17 REGION 181

KEYING ONLY RECORD CONTROL NO. WORO NO.	UNIT NAME: <u>BLUERIM</u> UNIT MODIFIER:			(2) RECREATION KEYING ONLY					
CAMPS 301	<u>3-8%:</u> 8-15%:	LIGHT MODERATE - SLOPE EVERE - SLOPE		PLAYGO 321 2 3	PLAYGROUNOS	FOOTNOTE 3-6%: MOOE 6+%: SEVER	RATE - SLOPE, E - SLOPE	DEPTH TO ROCK	
PICNIC 311 2 3 4	9-8%: S 	LIGHT MOOERATE - SLOPE EVERE - SLOPE		PATHS 331	PATHS ANO	3-15%: SLI 15-20%: MO	GHT DERATE - SLOPE		
	FOOTNOTE	CAPABIL	ITY AND PREDICTED		TRAILS				
CROPHO 451	CLASS- DETERMINING	CAPABILITY							
	PHASE	NIRR IRR. 1	NIRR IRR. NIRR	IRR. NIRR I	RR. NIRR	IRR. NIRR	IRR. NIRR		
CROPS 341	<u>3-6%</u> <u>6-9%</u>	6E 4E 6E 4E					IRR. NIRR	IRR. NIRR	IRR.
3	<u>10-15%</u> <u>15-20%</u> :	6E 6E							
5									
7									
351									
2									
-	CLASS-	ORD	MANAGEMENT P	WOODLAND SUITABIL		POTENTIAL PRODUCT		I	L]
	DETERMINING PHASE	SYM EROSION HAZARD	EQUIP. SEEOLIN LIMIT MORT'Y.	IG WINOTH. PL	ANT	MPORTANT TREES	SITE INDEX	TREES TO PL	ANT
WOOOS 361					7711 Ion † 0	NONE			
3									
5									
7									
371									
• • • •	FOOTNOTE			WIND BREAKS					
WINOBK 381	CLASS-DETERMINING PHASE	SPECI NONE		SPECIES	НТ	SPECIES	HT	SPECIES	HT
2									
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¥ ¥ 6	- FOOTNOTE		WII	DLIFE HABITAT SUITA	BILITY				
	CLASS- DETERMINING	GRAIN & GRA	SS & WILD HA	AL FOR HABITAT ELEMENTS		ND SHALLOW		AL AS HABITAT FOR	
- WILDLF 391	CLASS- DETERMINING PHASE ALL NIRR	SEED LEG	POTENTIA ISS & WILD HA IUME HERB. TI	AL FOR HABITAT ELEMENTS ARDWO CONIFER REES PLANTS	SHRUBS WETLA	IS WATER	OPENLAND WOODL WILDLIFE WILDL	AND WETLAND IFE WILDLIFE	RANGELAND
	DETERMINING PHASE	SEED LEG	POTENTIA ISS & WILD HA IUME HERB. TI	AL FOR HABITAT ELEMENTS ARDWO CONIFER REES PLANTS	SHRUBS WETLA	IS WATER	POTENT OPENLAND WOODL WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE	RANGELAND
	DETERMINING PHASE	SEED LEG	POTENTIA ISS & WILD HA IUME HERB. TI	AL FOR HABITAT ELEMENTS ARDWO CONIFER REES PLANTS	SHRUBS WETLA	IS WATER	OPENLAND WOODL WILDLIFE WILDL	AND WETLAND IFE WILDLIFE	RANGELAND
	DETERMINING PHASE	SEED LEG	POTENTIA ISS & WILD HA IUME HERB. TI IOR FAIR	AL FOR HABITAT ELEMENTS RDWO CONIFER REES PLANTS	SHRUBS WETLA PLANT FAIR V. PO	OR V. POOR	DPENLAND WOODI WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE	RANGELAND
2 3 4 5 7 7 6 PHASE 401	DETERMINING PHASE ALL NIRR	SEED LEG POOR PO POOR PO POTENTIAL PL SYM	POTENTIA SS & WILD HA HERB. TI JOR FAIR NATIVE PLANT COMMU ANT HBOL	AL FOR HABITAT ELEMENTS RDWO CONIFER PLANTS 	SHRUBS WETLA PLANT FAIR V. PO	OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
2 3 4 5 7 6 7 7 9 401 7 2 9 1 1 1	DETERMINING PHASE ALL NIRR FOOTNOTE	SEED LEG POOR PO POOR PO POTENTIAL PL SYM (NL	POTENTIA ISS & WILD HA IUME HERB. TI IOR FAIR NATIVE PLANT COMMU ANT IBOL SPN)	AL FOR HABITAT ELEMENTS RDWO CONIFER PLANTS 	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
PHASE 401 PLANT 411 2 PLANT 411 2 3 3	DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEDLEGRASS RLUEBUNCH WHEATGRASS	SEED LEG POOR PO POOR PO POTENTIAL PL SYM (NL STC STL	POTENTIA ISS & WILD HA UME HERB. TI IOR FAIR NATIVE PLANT COMMU NATIVE PLANT COMMU	AL FOR HABITAT ELEMENTS RDWO CONIFER PLANTS 	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
2 3 4 5 7 6 7 7 9 7 1 7 2 7 1 7 2 7 1 7 2 7 1 7 2 7 3 4 5 4	DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEOLEGRASS	SEED LEG POOR PO POOR PO POTENTIAL PL SYM (NL STC STL AGS POC	POTENTIA ISS & WILD HA IUME HERB. TI IOR FAIR NATIVE PLANT COMMU ANT IBOL SPN) 04 15 E4 10 P 10 A 10	AL FOR HABITAT ELEMENTS RDWO CONIFER PLANTS 	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
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2 3 4 5 7 6 PHASE 401 7 7 8 7	DETERMINING PHASE ALL NIRR - FOOTNOTE COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEDLEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS INDIAN RICEGRASS THICKSPIKE WHEATGRASS	SEED LEG POOR PO POTENTIAL POTENTIAL SYM (NL STC STL AGS POC ORH AGO AGS	POTENTIA ISS & WILD HA IUME HERB. TI IOR FAIR NATIVE PLANT COMMU ANT IBOL SPN) 04 15 E4 10 P 10 A 10 Y 5 A 20 R 5 R2. 15	AL FOR HABITAT ELEMENTS RDWO CONIFER PLANTS 	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
PHASE 401 PHASE 401 V 6 PLANT 411 2 PLANT 411 2 3 4 5 6 7 8	DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEDLEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS INDIAN RICEGRASS INDIAN RICEGRASS THICKSPIKE WHEATGRASS PRAIRIE JUNEGRASS	SEED LEG POOR PO POOR PO POTENTIAL PUTENTIAL SYM (NL STC STL AGS POC ORH AGO	POTENTIA ISS & WILD HA IUME HERB. TI IOR FAIR NATIVE PLANT COMMU ANT HBOL SPN) 04 15 E4 10 P 10 A 10 Y 5 A 20 R 5 R2. 15	AL FOR HABITAT ELEMENTS RDWO CONIFER PLANTS 	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
2 3 4 5 7 6 9 4 9 7 9 4 1 7 1 1 2 3 4 5 5 6 7 6 8 7 8 9 421 2 3 4 2 3 4 4	DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEDLEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS INDIAN RICEGRASS INDIAN RICEGRASS THICKSPIKE WHEATGRASS PRAIRIE JUNEGRASS	SEED LEG POOR PO POTENTIAL POTENTIAL SYM (NL STC STL AGS POC ORH AGO AGS	POTENTIA ISS & WILD HA IUME HERB. TI IOR FAIR NATIVE PLANT COMMU ANT IBOL SPN) 04 15 E4 10 P 10 A 10 Y 5 A 20 R 5 R2. 15	AL FOR HABITAT ELEMENTS RDWO CONIFER PLANTS 	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
2 3 4 5 5 6 7 8 9 421 1 2	DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEDLEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS INDIAN RICEGRASS INDIAN RICEGRASS THICKSPIKE WHEATGRASS PRAIRIE JUNEGRASS	SEED LEG POOR PO POTENTIAL POTENTIAL SYM (NL STC STL AGS POC ORH AGO AGS	POTENTIA ISS & WILD HA IUME HERB. TI IOR FAIR NATIVE PLANT COMMU ANT IBOL SPN) 04 15 E4 10 P 10 A 10 Y 5 A 20 R 5 R2. 15	AL FOR HABITAT ELEMENTS RDWO CONIFER PLANTS 	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
2 3 4 5 7 6 7 8 9 4 5	DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEDLEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS INDIAN RICEGRASS INDIAN RICEGRASS THICKSPIKE WHEATGRASS PRAIRIE JUNEGRASS	SEED LEG POOR PO POOR PO POTENTIAL PUTENTIAL SYM (NL: STC STL AGS POC ORH AGO C. DRY WT): FAVORABLE YEARS	POTENTIA ISS & WILD HA IUME HERB. TI IOR FAIR NATIVE PLANT COMMU ANT IBOL SPN) 04 15 E4 10 P 10 A 10 Y 5 A 20 R 5 R2. 15	AL FOR HABITAT ELEMENTS RDWO CONIFER PLANTS 	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
2 3 4 5 7 6 7 3 1 7 2 7 1 7 2 3 4 4 5 6 7 8 4 5 6 7 8 9 421 2 3 4 5 6 7 8 4 5 4 5 7 8 9 421 1 5 7 6 9 421 1 5 7 6 9 421 1 5 1 5 1 1 2 3 4 5 1 2 1 2 3 4	DETERMINING PHASE ALL NIRR ALL NIRR FOOTNOTE COMMON PLANT NAME COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEOLEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS INDIAN RICEGRASS INDIAN RICEGRASS PRAIRIE JUNEGRASS PRAIRIE JUNEGRASS BIG SAGEBRUSH POTENTIAL PRODUCTION (LBS./A	SEED LEG POOR PO POOR PO POTENTIAL PL SYM (NL STC STL AGS POC ORH AGO KOC ART OTH	POTENTIA SS & WILD HA JUME HERB. TI OOR FAIR NATIVE PLANT COMMU ANT HBOL SPN) 04 15 E4 10 P 10 A 10 Y 5 A 20 R 5 R2 15 ER 10 	AL FOR HABITAT ELEMENTS REES PLANTS	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
PHASE 401 Y 6 PLANT 411 Q 3 Y 2 PLANT 411 Q 3 Y 2 PLANT 411 Q 3 4 5 6 7 8 9 421 2 3 4 5 6 7 8 9 421 2 3 4 5 7 6 PROOUC 431 2 7 6 PROOUC 431 2 3 3 9 441	DETERMINING PHASE ALL NIRR ALL NIRR FOOTNOTE COMMON PLANT NAME COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEOLEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS INDIAN RICEGRASS INDIAN RICEGRASS PRAIRIE JUNEGRASS PRAIRIE JUNEGRASS BIG SAGEBRUSH POTENTIAL PRODUCTION (LBS./A	SEED LEG POOR PO POOR PO POTENTIAL PDTENTIAL SYM (NL STC STL AGS POC ORH AGO CORH AGO CORH AGO CORH CORH CORH CORH CORH CORH CORH COR	POTENTIA SS & WILD HA UUME HERB. TI IOR FAIR NATIVE PLANT COMMU NATIVE PLANT COMU	AL FOR HABITAT ELEMENTS RDWO CONIFER PLANTS 	SHRUBS WETLA PLANT FAIR V. PO FOREST UNDEF E COMPOSITION (OR	IS WATER OR V. POOR	OPENLAND WOOD WILDLIFE WILDI POOR	AND WETLAND IFE WILDLIFE V. POOR	RANGELAND
2 3 4 5 7 6 7 2 9 4 5 7 6 7 6 7 6 6 7 8 9 421 2 3 4 5 6 7 8 9 421 2 3 4 5 6 7 8 9 421 2 3 4 5 7 8 9 421 2 3 4 5 7 5 7 8 9 421 2 3 9 3 9 3 9 3 9 3 9 3 9 <td< td=""><td>DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEOLEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS INDIAN RICEGRASS INDIAN RICEGRASS INDIAN RICEGRASS PRAIRIE JUNEGRASS BIG SAGEBRUSH POTENTIAL PRODUCTION (LBS/A</td><td>SEED LEG POOR PO POOR PO POTENTIAL PDTENTIAL SYM (NL STC STL AGS POC ORH AGO CORH AGO CORH AGO CORH CORH CORH CORH CORH CORH CORH COR</td><td>POTENTIA SS & WILD HA UUME HERB. TI OOR FAIR NATIVE PLANT COMMU ANT BOL SPN) 04 15 E4 10 P 10 A 10 Y 5 A 20 R 5 R2. 15 ER 10 1.500 1.500 1.200 700</td><td>INITY (RANGELAND OR PERCENTAG</td><td>SHRUBS WETLA PLANT FAIR V. PO</td><td>IS WATER OR V. POOR ISTORY VEGETATI STORY VEGETATI WEIGHT) BY CLASS (ISTORY VEGETATI WEIGHT) BY CLASS (ISTORY VEGETATI ISTORY VEGETATI</td><td>OPENLAND WOOD WILDLIFE WILD POOR ON ON ETERMINING PHASE</td><td>AND WETLAND IFE WILDLIFE V. POOR </td><td>RANGELAND WILDLIFE FAIR</td></td<>	DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME COMMON PLANT NAME NEEDLEANDTHREAD LETTERMAN NEEOLEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS INDIAN RICEGRASS INDIAN RICEGRASS INDIAN RICEGRASS PRAIRIE JUNEGRASS BIG SAGEBRUSH POTENTIAL PRODUCTION (LBS/A	SEED LEG POOR PO POOR PO POTENTIAL PDTENTIAL SYM (NL STC STL AGS POC ORH AGO CORH AGO CORH AGO CORH CORH CORH CORH CORH CORH CORH COR	POTENTIA SS & WILD HA UUME HERB. TI OOR FAIR NATIVE PLANT COMMU ANT BOL SPN) 04 15 E4 10 P 10 A 10 Y 5 A 20 R 5 R2. 15 ER 10 1.500 1.500 1.200 700	INITY (RANGELAND OR PERCENTAG	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR ISTORY VEGETATI STORY VEGETATI WEIGHT) BY CLASS (ISTORY VEGETATI WEIGHT) BY CLASS (ISTORY VEGETATI ISTORY VEGETATI	OPENLAND WOOD WILDLIFE WILD POOR ON ON ETERMINING PHASE	AND WETLAND IFE WILDLIFE V. POOR 	RANGELAND WILDLIFE FAIR
PHASE 401 PHASE 401 Y 6 PLANT 411 1 2 PLANT 411 1 2 1 3 4 5 6 6 7 8 9 421 1 2 3 4 5 6 7 8 9 421 1 2 3 4 5 6 7 8 9 421 1 2 3 4 5 7 8 9 9 421 1 2 3 4 5 7 8 9 9 421 1 2 3 3 9 3 9 3 9 3 10 2	DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME COMMON PLANT NAME LETTERMAN NEEOLEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS INDIAN RICEGRASS INDIAN RICEGRASS INDIAN RICEGRASS PRAIRIE JUNEGRASS BIG SAGEBRUSH POTENTIAL PRODUCTION (LBS/A M. L.WATER FOR, IBRIGATION N	SEED LEG POOR PO POTENTIAL POTENTIAL SYM (NL STL AGS POC ORH AGO CORH CORH AGO CORH CORH CORH CORH CORH CORH CORH COR	POTENTIA SS & WILD HA UUME HERB. TJ IOR FAIR NATIVE PLANT COMMU NATIVE PLANT COMU	INITY (RANGELAND OR PERCENTAG	SHRUBS WETLA PLANT FAIR V. PO	IS WATER OR V. POOR ISTORY VEGETATI WEIGHT) BY CLASS (CONTROL 1000000000000000000000000000000000000	OPENLAND WOOD WILDLIFE WILD POOR ON DETERMINING PHASE	AND WETLAND IFE WILDLIFE V. POOR 	RANGELAND WILDLIFE FAIR

SCS-SOILS-5 REV. MAY 1972 FILE COOE SOILS-12

KEYING ONLY RECORO CONTROL NO. WORD NO. SOIL SURVEY INTERPRETATIONS UNIT NAME BODORUMPE NIT SERIES UNIT REVISED UNIT MODIFIER MLRA(S) 31 1/73 STATE CLASS DESCR ESTIMATED SOIL PROPERTIES FOOTNOTE PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE PLAS-TICITY INDEX FRACT. LIQUIÓ LIMIT **OEPTH** >3 IN. (PCT) AASHO USDA TEXTURE UNIFIED (IN.) 40 200 100 60-80 15-30 NP NP 0 100 PROP 041 0-36 LFS, FS SM A-2 ---WB 36 3 ERÓSIÓN FACTORS WINO EROO. SOIL AVAILAR! SHRINK-SWELL CORROSIVITY SALINITY PERMEABILITY DEPTH WATER CAPACITY REACTION POTENTIAL (MMHOS/CM) (IN.) (IN/HR) CONCRETE GROUP STEEL K (IN/IN)(pH) .10 3 6.6-7.8 LOW HIGH LOW 1_ 6.0-20.0 .06-.10 PROP 0.5 SAME DEPTH ABOVE POTENTIAL CEMENTEO PAN SUBSIDENCI HIGH WATER TABLE HYD FLOODING TOTAL HARONESS **OEPTH** HARDNESS INITIAL FROST ACTION MONTHS OEPTH OEPTH (FT) GRP KINO (IN)(IN) FREQUENCY DURATION (IN) MONTH: 20-40 RIPPABLE LOW PROP 061 NONE SOURCE MATERIAL SANITARY FACILITIES FOOTNOTES KEYING ONLY FOOTNOTES POOR - THIN LAYER SEPTIC 071 SEVERE - OEPTH TO ROCK FILL SEPTIC TANK ROAOFILL ABSORPTION FIELDS 3-7%: SEVERE - OEPTH TO ROCK, PERCS RAPIOLY 7+%: SEVERE - SLOPE, DEPTH TO ROCK, PERCS SAND POOR - EXCESS FINES AGOON 08 2 SEWAGE SAND RAPIDIY LAGOONS RAVEL 211 UNSULTED SEVERE - DEPTH TO ROCK, PERCS RAPIDLY TRENCH 091 SANITARY GRAVEL LANDFILL (TRENCH) 15 Ŷ 15 POOR - TOO SANDY SOIL 221 SEVERE - PERCS RAPIDLY SANARE 101 SANITARY TOPSOIL LANOFILL (AREA) POOR - TOO SANDY COVER 111 WATER MANAGEMENT FOOTNOTES DAILY PERCS RAPIDLY, DEPTH TO ROCK, SLOPE COVER FOR PONORS 231 PONO 4 LANDFILL RESERVOIR AREA 4 COMMUNITY DEVELOPMENT 15 FOOTNOTES PERCS RAPIDLY, PIPING, THIN LAYER OIKES 241 EXCAV 121 SEVERE - CUTBANKS CAVE 234 **FMBANKMENTS** SHALLOW OIKES ANO EXCAVATIONS LEVEE\$ 15 PONDAQ 251 3-8%: SLIGHT 8-15%; MODERATE - SLOPE NO WATER 131 DWEL EXCAVATEO 2 OWELLINGS PONDS AQUIFER 3 WITHOUT BASEMENTS FE0 DRAIN DEPTH TO ROCK, CUTBANKS CAVE 3-8%: MODERATE - OEPTH TO ROCK 8-15%: MODERATE - SLOPE, DEPTH TO ROCK 261 DWEL 141 2 3 DWELLINGS ORAINAGE WITH BASEMENTS 4 4 15 SLOPE, ERODES FASILY, ROOTING DEPTH 3-4%: SLIGHT 4-8%: MODERATE - SLOPE IRRIG 271 BLDGS 151 2 SMALL 2 IRRIGATION 3 COMMERCIAL 8+%: SEVERE - SLOPE BUILDINGS 4 15 15 TERRAC 281 2 3 DEPTH TO ROCK, TOO SANDY 3-8%: SLIGHT ROADS 161 TERRACES 2 LOCAL 8-15%: MODERATE - SLOPE ROADS ANO AND DIVERSIONS STREETS 14 15 WATERW 291 FOOTNOTES REGIONAL INTERPRETATIONS GRASSED WATERWAYS REGION 171 REGION 181 2 14

KEYING ONLY	JNIT NAME:BODORUMPE				PEC	(2) REAT <u>ION</u>							
RECORO CONTROL I NO. WORO NO.	JNIT MODIFIER:	A SANDY			KE	YING ONLY AYGO 321			% SEVE	RE - TOO SA	NOY	,	
	CAMP AREAS			· ·		2	PLAYGROUN		SEVEN				
PICNIC 311	SEVERE - TO	O SANDY			P A	THS 331	PATHS	SE/	ERE - TO	O SANDY			
2	PICNIC AREAS					3	ANO						
	FOOTNOTE	САРАВ	ILITY AND P	REDICTED	YIELDS - CF	OPS AND P	ASTURE (HIC	H LEVEL M	NAGEMEN	T)			
	CLASS- OETERMINING	CAPABILITY			1 150	NIRR	IRR. NIRI	R IRR.	NIRR	IRR. NIR	R IRR.	NIRR	IRR.
CROPS 341 /	PHASE	NIRR IRR. 7E 4E 7E 4E		R. NIRR	IRR.								
	10-15%	7E 6E											
5													
8					_								
Í	Demer Dilibility		EQUIP. LIMIT	AANAGEMENT SEEOL	PROBLEMS ING WIT		PLANT COMPET.	the second s	TAL PRODUC	TIVITY SITE INOEX		FREES TO PLAN	NT
W000\$ 361	PHASE	HAZARD		MORT	<u>Y. HA</u>			N0	DNE				
												•	
5													
8													
371													
4													
	FOOTNOTE CLASS-OETERMINING PHASE		PECIES	HT		SPECIES	S HT		SPECIES	HT		SPECIES	HT
WINOBK 381 2			NONE										
4				-+-+									
¥ ¥ 6	FOOTNOTE CLASS- DETERMINING		00400.2	POTE	WILDLIFE NTIAL FOR H HARDWO	HABITAT SI ABITAT ELEM CONIFER	ENTS SHRUBS	WETLANO	SHALLDW	OPENLAND	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILOLIFE
- WILOLF 391	DETERMINING PHASE ALL NIRR	GRAIN & SEED V. POOR	GRASS & LEGUME V. POOR	HERB. POOR	TREES	PLANTS	POOR	PLANTS V. POOR	WATER V. POOR	WILDLIFE V. POOR	WILDLIFE	V. POOR	POOR
2													
4 5 7 6				DI ANT CO	MINITY	RANGELAN	D OR FORES	UNDERSTO	RY VEGEL	ATION)			
PHASE 401	COMMON PLANT NAME		TIAL NATIV			PERCE	NTAGE COMPO	SITION (ORY WE	IGHT) BY CL	ASS OF TERMINI	IG PHASE		
PLANT 411	NEEDLEANDTHREAO		(NLSPN) STC04 AGDA	30									
3	SPINY HOPSAGE BOTTLEBRUSH SOUIRRELTAI	(1	GRSP SIHY	10)								
5	NEEDLELEAF SEOGE		CAEL2 POSE CHNA2		5	· · · · · · · · · · · · · · · · · · ·							
8	SHADSCALE		ATCO TESP2 OTHER		5								
PROOUC 431	POTENTIAL PRODUCTION (LBS.	AC. DRY WT): FAVORABLE Y NORMAL YEAR	EARS										
	l outre 1	UNFAVORABL	EYEARS	35	0	FOOTNOT	=\$		1.		<u></u>		<u></u>
NOTES 441	1 WATER FOR LARIGATION	I. NOT. AVALLAR	<u>LE AT. PRES</u>	ENI IMÉ	<u></u>	· ····································	······································	<u></u>		<u> </u>	<u></u>		<u></u>
		······································	<u></u>	<u></u>		<u></u>	······································	, , , <u>, , , , , , ,</u> , , , , , , , , ,					<u> </u>
	60	The Real Property of the Automatical Street, S	A A A A A A A A A A A A A A A A A A A	فساهل والساحية والمساحية	and the second s								

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SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY RECORD CONTROL

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSTRVATION SERVICE

NO. WORD NO. MLRA 001 STATE 011	MLRA(S) 3 STATE WYOMING		0.[] AUTHOR(S) JRS	KIND OF L	INIT <u>se</u> REVISEI	RIES DL UNIT		NAME COA	ALMONT		
CLASS 021 OESCR 031 2 3 4 4 5	BDROLLIC PALEARG THE COALMONT SER INCHES. TYPICAL ABOUT 2. INCHES T	ID BATET SUBLE DESCRIT 2105., FINE, MONTMORI 2105., ARE WELL DRAINE 1.LY, THE SURFACE LAY (HICK, THE SUBSOIL CLAY, LOAM; THE NEXT 1 OF 24 INCHES.	LLONITIC, I D SOILS FORMED IN ER IS BROWN FINE IS ABOUT 20 INCHE 7 INCHES IS DINK	RESIQUM F SANDY LOAM S THICK, I	ROM SHALE ON L ABOUT 2 INCHES N SEQUENCE FRO	JPLANDS. S THICK. DM THE TO	SLOPES THE SUB P. THE UP	<u>ARE 3.TQ.1</u> SURFACE.LA PER <u>5</u> .INCH	YER, IS, LIGH	HT BROWNISH G N SILTY CLAY:	RAY SANO	Y, LQAM
	ΟΕΡΤΗ	USDA TEXTURE	UNIFIED		AASHO		FRACT. >3 IN. (PCT)		CENT OF MATER HAN 3 IN. PASSIN 10		LIQUID LIMIT	PLAS- TICITY INDEX
PROP 041	0-4 4-24	FSL, SL CL	SM CL		A-4 A-6		0	90-100 90-100	90-100 6 90-100 8	5-80 35-50 5-95 55-75	NP 35-45	NP 15-25
4	24+	WB										
1 1 1 1 1 1	DEPTH PERMEA	WATER CAPA		SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CO STEEL	RROSIVITY	FAC	SION WIND TORS EROD		L	1
PROP 051	SAME 2.0-6 DEPTH	.0 .1214	6.6-7.8 6.6-9.0	NONE 2.0-4.0	LOW MOOERATE	HIGH	LO	W .20				
5	AS ABOVE											
	FREQUENCY	FLOODING	DEPTH MONTHS (FT)	HIGH WATER T KIND		CEMENTE DEPTH H (IN)	D PAN ARDNESS	DEPTH (IN)	HARDNESS	SUBSIDENCE INITIAL TOTA (IN) (IN)		POTENTIAL FROST ACTION
PROP 061			TARY FACILITIES		KEYING ONLY		INOTES 7	20-40	RIPPABLE	RCE MATERIAL	С	LOW
SEPTIC 071 2 3	SEPTIC TANK ABSORPTION	SEVERE - PERCS SLC	WLY, DEPTH TO ROC	К	FILL 191	ROAOFI		<u>POOR - TI</u>	HIN LAYER,	LOW STRENGTH		
4 ¥ ¥ 5 LA G O O N 08 1	FIELDS	3-7%: SEVERE - DE			4 ¥ ¥ 5 SAND 201		F	UNSUITEO				
	SEWAGE LAGOONS	7+%: SEVERE - SLC				 SAN(
TRENCH 091		MODERATE - TOO CLA	YEY		GRAVEL 211		· .	UNSUITED				
2 3 4 7 7 5	(TRENCH)				3 4 5	GRAVE	EL					
SANARE 101 2 3	P	3-8%: SLIGHT 8-15%: MODERATE -	SLOPE		SOIL 221 2 3	TOPSO			AIR - TOO C FAIR - TOO	LAYFY CLAYEY, SLOPE		
COVER 111		3-8%: MODERATE -			<u> </u>		TNOTES 7		WATE	R MANAGEMENT		
	LANDFILL	8-15%: MODERATE -	SLOPE, TOO CLAYE	Y, THIN LAY	PONDRS 231 2 3		, H	SLOPE, D	EPTH TO ROC			
	FOOTNOTES		NITY DEVELOPMENT	T0 000%	DIKES 241							
EXCAV 121 2 3 4	EXCAVATIONS	3-8%: MODERATE - 8-15%: MODERATE - SLOPE				DIKES /	AND	LUW SIKE	NGTH, THIN			•
DWEL 131	DWELLINGS	3-8%: MODERATE - 8-1 <u>5%: MODERATE -</u> SWELL			PONDAQ 251	EXCAVA	-	NO WATER				
	BASEMENTS				4	AQUIF FED	ER		OWLY, DEPTH			
2 3 4	DWELLINGS WITH BASEMENTS	3-8%: MODERATE - LOW STRENG -15%: Mode TE - STRENGTH	TH SLOVE, DENTH TO			DRAIN	AGE	PERCS SL		TO ROLK		
BLDGS 151	SMALL COMMERCIAL BUILOINGS	3-4%: MODERATE - 4-8%: MODERATE - STRENGTH 8+%: SEVERE - SLC	SLOPE, SHRINK-SWE		IRRIG 271 2 3 4	IRRIGA		PERCS SL	OWLY, SLOPE	, ROOTING DEF	TH	
Image: Non-Additional System Image: Non-Additional System <th< th=""><th>LOCAL ROADS AND STREETS</th><th>SFVERE - LOW STREN</th><th>GTH</th><th></th><th>TERRAC 281 2 3 4 5</th><th>TERRA ANI DIVERS</th><th></th><th></th><th></th><th></th><th></th><th></th></th<>	LOCAL ROADS AND STREETS	SFVERE - LOW STREN	GTH		TERRAC 281 2 3 4 5	TERRA ANI DIVERS						
	FOOTNOTES	REGIÓN	AL INTERPRETATION	S	WATERW 291	1						
R E G I O N 171					2 3 4 5	WATER	WAYS					
REGION 181												
3												

KEYING ÖNLY RECORO CONTROL NO. WORD NO. C AM P S 30 1 2	CAMP AREAS	RATE - SLOPE	P SLOWLY F	(2) CREATION KEYING ONLY LAYGO 321 2 3 4 4 2 ATHS 331 ANO 4 4 CROPS AND PASTURE (F	NOS 6+%: SEVER	T)	
CROPS 341	PHASE	6E 4E	RR. NIRR IRR.	NIRR IRR. N	RR IRR. NIRR	IRR. NIRR IRR.	NIRR IRR.
2 3	<u> </u>	6E 4E					
5 6 7							
8							
			WOODL	AND SUITABILITY			
	FOOTNOTE CLASS- DETERMINING PHASE SY	EPOSION FOULP	MANAGEMENT PROBLEMS	INDTH. PLANT IAZARO COMPET.	POTENTIAL PROOUC	IVITY SITE TI INDEX	REES TO PLANT
W000S 361	PRASE				NONE		
4							
6 7							
371							
	FOOTNOTE CLASS-DETERMINING PHASE	SPECIES		WIND BREAKS SPECIES HT	SPECIES	HT S	SPECIES HT
WINOBK 381		NONE					
	CLASS-	GRAIN & GRASS &	WILDLIFE POTENTIAL FOR WILD HARDWO	HABITAT SUITABILITY HABITAT ELEMENTS CONIFER SHRUBS	WETLAND SHALLOW PLANTS WATER	POTENTIAL AS OPENLAND WOODLAND WILDLIFE WILDLIFE	HABITAT FOR: WETLAND RANGELAND WILDLIFE WILDLIFE
WILOLF 39	OETERMINING PHASE ALL NIRR	GRAIN & GRASS & SEED LEGUME POOR POOR	HERB. TREES	CONIFER SHRUBS PLANTS FAIR	WETLAND SHALLOW PLANTS WATER V. POOR V. POOR	WILDLIFE WILDLIFE	WILDLIFE WILDLIFE
		POTENTIAL NATIV	E PLANT COMMUNITY	RANGELAND OR FORE	ST UNDERSTORY VEGET	TION)	
PHASE 40	COMMON PLANT NAME	SYMBOL (NLSPN)		FERCENTAGE COMP			
PLANT 41		AGOA POFE ARTR2	40 10 10				•
	4 INDIAN RICEGRASS 5 LETTERMAN NEEDLEGRASS	ORHY STLE4 SIHY	<u>5</u> <u>5</u> 5	•			
	7 PRAIRIE JUNEGRASS	KOCR POSE CHVIH2	<u> </u>				
42	2	OTHER	10.				
	3						
PRODUC 4		FAVURABLE TEARS	1,400	· · · · · · · · · · · · · · · · · · ·			
	2 3 SYM	NORMAL YEARS UNFAVORABLE YEARS	600	FOOTNOTES			
NOTES 4		<u>, </u>	· · · · · · · · · · · · · · · · · · ·	<u>, , , , , , , , , , , , , , , , , , , </u>	<u> </u>		
		<u> </u>	<u>, , , , , , , , , , , , , , , , , , , </u>	<u>→ → → → → → → → → → → → → → → → → → → </u>		<u></u>	<u></u>
	7	<u> </u>	<u> </u>	<u>, , , , , , , , , , , , , , , , , , , </u>	<u> </u>		

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SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEVING ONLY ς.

SOIL SURVEY INTERPRETATIONS

RECORD CONTROL		S	DIL SURVEY IN	ITERPRET	ATIONS	
NO. WORD NO. MLRA 001	MLRA(S)	<u>ц</u>		KIND OF UN	IT <u>SERIES</u> REVISED UNI	UNIT NAME COTHA
STATE 011	STATE WYOMIN	G RECORD N ND BRIEF SOIL DESCRIP	O AUTHOR(S) JRS	DATE 1 73	REVISED UNI	T MODIFIER
CLASS 021	DODOLL TO HADLADO	VMAD I 320000 201	ATYED .		<u></u>	
DESCR 031	THE COTHA SERIES	ARE WELL DRAINED SUCCEPTATION IS 10 TO	DILS FORMED IN RESIDUUM FR	<u>OM SANDSTONE ON U</u> IL TEMPERATURE IS	ABOUT 36°F	S ARE 3 TO 15 PERCENT. ELEVATION 1S 7.000 TO AND JHE GROWING SEASON IS 80 TO 90 DAYS.
3	TYPTCALLY THE	HREACE LAYER IS PAL	E BROWN SANDY LOAM, ABOUT, 4	INCHES THICK, T	HE SUBSOIL IS !	BROWN TO YELLOWISH BROWN SANDY LOAM ABOUT 24 INCHES
5	THICK	IRAIUM IS LIGHT YEL	ESTIMATED S		K AND 13 ONDER	
			ESTIMATED S	JIL PROPERTIES	FRACT	PERCENT OF MATERIAL LESS LIQUID PLAS-
	DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	>3 IN. (PCT)	THAN 3 IN. PASSING SIEVE
PROP 041	0-34	SL	SM, SM-SC	A-2	0	80-90 75-90 45-65 20-35 15-25 0-5
2		WB				
4						
5						
	DEPTH PERME	ABILITY AVAILABL WATER CAPA		Y SHRINK-SWELL	CORROSIVITY	FACTORS EROD.
		/HR) WATER CAPA (IN/IN)	(MMHOS/	CM) POTENTIAL	STEEL CON	CRETE K T GROUP
PROP 051	SAME 2.0-6	.0 .1113	6.6-7.8	LOW	HIGH	LOW .20 3 .3
	DEPTH					
5	AS ABOVE					
16					CEMENTED PAN	BEDROCK SUBSIDENCE UND POTENTIAL
		FLOOOING	HIGH WATI DEPTH KIN	O MONTHS D	EPTH HARDNESS	DEPTH HARDNESS INITIAL TOTAL GRP FROST
PROP 061	FREQUENCY	DURATION	MONTHS (FT)		(IN) 	(IN) (IN) (IN) (IN) ACTION 20-40 RIPPABLE C LOW
11 NOF 1001	FOOTNOTES	1 50.00	ITARY FACILITIES	KEYING ONLY	FOOTNOTES	
SEPTIC 071	1	SEVERE - DEPTH TO		FILL 191		POOR - THIN LAYER
2	SEPTIC TANK ABSORPTION			2 3	ROAOFILL	
4	FIELDS			4		
LAGOUN 081		3-7%: SEVERE - P	ERCS RAPIDLY, DEPTH TO ROC	K SANO 201		POOR
2	SEWAGE	7+%: SEVERE - SL ROCK	OPE, PERCS RAPIDLY, DEPTH	TO 2 3	SAND	
4		ROCK		4		
T RENCH091		SEVERE - PERCS RA	PIDLY, DEPTH TO ROCK	GRAVEL 211	L	UNSUITED
2	41		· · · · · · · · · · · · · · · · · · ·	2	GRAVEL	
4	LANDFILL (TRENCH)			4	GIVIT LE	
SANARE 101		SEVERE - PERCS RA		SOIL 221	1	3-8%: 6000
2	SANITARY			2	TOPSOIL	8-15%: FAIR - SLOPE
3				4	TO SOL	
COVER 111		3-8%: FAIR - THI	N LAYER	¥ 15		
2	DAILY	8-15%: FAIR - SL		PONDRS 231	FOOTNOTES	WATER MANAGEMENT
3	LANDFILL			2	POND	PERUS RAPIDLY, DEPIN TO ROLK, STUFE
* *5					RESERVOIR	
	FOOTNOTES		INITY DEVELOPMENT	1 15		
EXCAV 121	SHALLOW	<u>SEVERE - DEPTH TO</u>		2	EMBANKMENTS	PERCS RAPIDLY, PIPING
3				3	DIKES AND LEVEES	
15	il			PONDAQ 251		
DWEL 131	DWELLINGS		DEPTH TO ROCK, SLOPE - SLOPE, DEPTH TO ROCK	2	EXCAVATEO	NO WATER
3	WITHOUT			3	PONDS AQUIFER	
15				1 5	FEO	
DWEL 141	DWELLINGS	<u>SEVERE - DEPTH TO</u>	RUCK	DRAIN 261 2	L.	DEPTH TO ROCK
3	WITH			. 3	DRAINAGE	
	5			5		
BLDGS 151	SMALL	3-4%: MODERATE - 4-8%: MODERATE -	DEPTH TO ROCK SLOPE, DEPTH TO ROCK	IR R IG 271	1	SLOPE, ERODES EASILY, ROOTING DEPTH
3	COMMERCIAL	8+%: SEVERE - SL		3	IRRIGATION	
				750040000	ľ	
R O A D S 161		3-8%: SLIGHT 8+%: MODERATE -	SLOPE	TERRAC 281	TERRACES	
3	ROADS AND			3	AND DIVERSIONS	
4	JINEETS			5		
	FOOTNOTES	7 REGIÓN	AL INTERPRETATIONS	WATERW 291	GRASSEO	
REGION 171				2	WATERWAYS	
3				4		
REGION 181		*				

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KEYING	ONLY		UNIT NAME:	COTHA							(2)									
RECORD	CONTR		UNIT MODIFIER							RF	CREATIC	N								
		NO.		FOOTNOTE							EYING ON			FOOT	NOTE					
	MPS	2 3 4 5	CAMP AREAS	3-8%: SI 8-15%: M		E <u>- S</u> L()PE				LAYGD 3	21	YGROUNOS	3-6	%: MOD	ERATE - RE - SL	SLOPE, OPE	OEPTH 1	TO ROCK	
P		311 2 3 4 5	PICNIC AREAS	3-8%: SL 8-15%: M		E - SL(DPE			P	ATHS 3	2	PATHS ANO TRAILS		GHT					
10.0			FOOTNOTE	•	,	CAPA	BILITY A	ND PREC	DICTED Y	IELDS - C	ROPS AN	D PASTU	RE (HIGH	EVEL M	ANAGEM	ENT)				
	OPHO	451 2 ¥ 3	CLAS OETERM PHAS	INING		BILITY														
ICR	OPS	341	3-	6%	NIRR 6e	IRR. 4E	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
		2	6-		6E	4E		<u> </u>												<u> </u>
		3	10-	15%	_6F	6E														
		5																		
		6																		
		7																		

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	FOOTNOTE	-4	1		L	I	VOODLA		ABILITY				L						
	CLASS-	ORO			MANAG	EMENT PRO	BLEMS	10 00(11			POTENT	TAL PROOL							-
	PHASE	SYM	EROSION HAZARO	EQ LI	UIP. MIT	SEEOLING MORT'Y.	WING	OTH. ARO	PLANT COMPET.		IMPORTA			SIT	E EX	TRE	EES TO PL/	NT	
WOOOS 361											NONE					~~~~			
4		<u> </u>		_															
5																			
6													·						_
										-									-
													-	-					-
371																			-
3									·										
4									·····	+									_
5												-							
																			h
	FOOTNOTE							D BREA											
WINOBK 381	CLASS-OETERMINING PHASE		SP NO	ECIES		HT	SP	ECIES		HT	SP	ECIES		HT		SP E	CIES	HI	Ē
2		+	NU											+					
3																			_
4															<u> </u>				-
														+					
	FOOTNOTE							W1-1-1-4-											-
	CLASS-					WILD	LIFE HA	BITALS	UITABILIT	Υ									
	OFTEDMINING	ODA	1.0	00400.0	1010	POTENTIAL	FURHABI	TATELEN	MENTS						POTENTIAL	AS HAE	ITAT FOR:		

-	DE LERMINING PHASE	GRAIN & SEED	GRASS & LÉGUME	WILO HERB.	HAROWO TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLAND WILOLIFE	WOOOLANO WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILOLF 391	ALL NIRR	POOR	POOR	FAIR			FAIR	V. POOR	V. POOR	POOR		and the second	
									V. 100K	POON		V. POOR	FAIR
3													<u> </u>
4													
5													
Y Y 6													
	FOOTNOTE	POTEN	TIAL NATIV	E PLANT CO	MMUNITY (RANGELAND	OR FORES	UNDERSTO	RY VEGETA	TION			
			PLANT			PERCEN	TAGE COMPOS	ITION (ORY WEI	GHT) BY CLAS	SOFTERMINING	PHACE		
PHASE 401	COMMON PLANT NAME		SYMBOL						UNI) DI ULNO	OLI LIMBER	a i inde		
12			(NL\$PN)									· · · · · · · · · · · · · · · · · · ·	
PLANT A11	NEEDLEANDTHREAD		OTOOL										

PLANT	411	NEEDLEANDTHREAD	STC04	25				
	2	THICKSPIKE WHEATGRASS	AGDA	15				
	3	BLUEBUNCH WHEATGRASS	AGSP	10				
	4	INDIAN RICEGRASS	ORHY	10				
	5	CANBY BLUEGRASS	POCA	10				
	6	BIG SAGEBRUSH	ARTR2	10				
	7	BOTTLEBRUSH SOUIRRELTAIL	SIHY	5				
	8	LOW RABBITBRUSH	CHVIH2	5				
	9		OTHER	10				
	421							
	2							
	3							
	4							
	1 5							
	<u> </u>							
PROOUC	421	POTENTIAL PRODUCTION (LBS./AC. ORY WT):						
FR0000	1 2	FAVORABLE Y		1,500				
	2	NORMAL YEAR		1,200			•	
	10	UNFAVORABL	E TEARS	700				
NOTES					FOOTNOTES		6	
	2		a har a series		<u></u>			
	3	~~~~		<u></u>		and the state of the	A CONTRACTOR OF	La constant de la constant
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SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY

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SOIL SURVEY INTERPRETATIONS

NO. WORD NO							
MLRA 00 STATE 01	STATE WYO	34 MING RECORD N	O. AUTHOR(S) JRS	DATE 1/73	REVISED UNI	T MODIFIER	
CLASS 02	CLASSIFICATIO	ON AND BRIEF SOIL DESCRIP SAMMENTS, MIXED, FRIGID	TION				
DESCR 03	1 THE COTHRAN	SERIES ARE WELL ORAINED	SOILS FORMED IN WIND DEP	DSITED SANDS ON UP	LANDS. SLOPES	ARE 3.TO 6 PERCENT. ELEVATION IS 7.000 TO 7.3 GROWING SEASON IS 80 TO 90 DAYS. TYPICALLY, T	300. THE
	SURFACE LAYE	R. IS BROWN FINE SAND AB	OUT 2 INCHES THICK. THE	UNDERLYING LAYER I	S. GRAYISH . BROW	N. TO BROWN LOAMY, FINE SAND ITO FINE SAND TO 60 .	
		DRE • • + + - + - + - + - + - + - + - +		OIL PROPERTIES		and the president of the transformed state of the second state of	
	DEPTH	4		l little	FRACT.		
	(IN.)	USDA TEXTURE	UNIFIED	AASHO	> 3 IN. (PCT)	THAN SIN, PASSING SIEVE LIMIT LIC	DEX
PROP 04		FS, LFS	SM, SP-SM	A-2	0	90-100 85-100 60-75 10-20 NP N	١P
	5						
		AVAILABL	E SOIL SALINIT	Y SHRINK-SWELL	CORROSIVITY		
	DEPTH PI	ERMEABILITY WATER CAPA (IN/HR) (IN/IN)				FACTORS EROD. CRETE K T GROUP	
PROP 05		.0508	6.1-7.3	LOW		0W .10 5 1	
	DEPTH						
				ER TABLE	CEMENTED PAN	BEOROCK SUBSIDENCE UND POTEN	TIAL
		FLOODING	DEPTH KI	ND MONTHS D	EPTH HARDNESS	DEPTH HARDNESS INITIAL TOTAL GRP FROS	ST
PROP 06	FREQUENC 1 NONE	DURATION	MONTHS (FT) >6		(IN) 	(IN) (IN) (IN) ACTI >60 A LOW	
	FOOTNOT	SAN SAN	ITARY FACILITIES	KEYING ONLY	FOOTNOTES	SOURCE MATERIAL	
SEPTIC 07	1 2 SEPTIC TANK	SLIGHT		FILL 191		GOOD	
	ABSORPTION FIELDS	4	••••••••••••••••••••••••••••••••••••••	3	ROAOFILL		
	5			15			
	2 SEWAGE	SEVERE - PERCS RA	PIOLY	SAND 201 2		FAIR TO POOR	
	LAGOONS			3	SAND		
TRENCH 09		SEVERE - PERCS RA		GRAVEL 211	-	UNSUITEO	
	2 SANITARY	SEVERE - PERUS RA			0041/51	00301120	
	3 LANDFILL 4 (TRENCH)			4	GRAVEL		
SANARE 10	5	SEVERE - PERCS RA	PIOLY	SOIL 221	······	POOR - TOO SANOY	
	2 SANITARY 3 LANDFILL			2	TOPSOIL		
	(AREA)		· · · · · · · · · · · · · · · · · · ·	4			
COVER 11	1	POOR - TOD SANOY			FOOTNOTES	WATER MANAGEMENT	
	2 DAILY 3 COVER FOR			PONDRS 231	FOOTNOTES	PERCS RAPIDLY	
	4 LANDFILL 5		· · · · · · · · · · · · · · · · · · ·	2	POND RESERVOIR		
	FOOTNOT	ES COMML	INITY DEVELOPMENT	4 ¥ ¥5	AREA		
EXCAV 12	1 2 SHALLOW	SEVERE - CUTBANKS	CAVE	DIKES 241 2	EMBANKMENTS	PERCS RAPIDLY, PIPING	
	EXCAVATIONS			3	DIKES AND		
	5			¥ ¥ 5	LEVEES		
	2 DWELLINGS	SLIGHT		PONDAQ 251 2	EXCAVATED	NO WATER	-
	3 WITHOUT 4 BASEMENTS			3	PONDS AQUIFER		
DWEL 14	5			DRAIN 261	FEO	CUTBANKS CAVE	
	2 DWELLINGS	LSLIGHT				LUIDANNS LAVE	
	4 BASEMENTS			. 4	DRAINAGE		
BLDGS 15	5	3-4%: SLIGHT		IRRIG 271		ERODES EASILY, DROUGHTY, SLOPE	
	2 SMALL 3 COMMERCIAL	4-6%: MODERATE -	SLOPE	2	IRRIGATION		
	4 BUILDINGS			4			
ROADS 16	1	SLIGHT		TERRAC 281	TERRACE		
	3 ROADS AND				TERRACES AND		
	4 STREETS			45	DIVERSIONS	• \ c	
	FOOTNOT	ES 7 REGIÓN	AL INTERPRETATIONS	WATERW 291	GRASSEO		
REGION 17	1			3	WATERWAYS		
	3						
REGION 18	1						
	2						
	4						

						(2)									
KEYING ONLY RECORD CONTROL NO. WORD NO.	UNIT MODIFIER:				K	CREATION EVING ONLY]		FOOT		T00 8414	0110			
CAMPS 301 2 3	CAMP AREAS	TOO SANOY, (USTY		P	LAYGO 321 2 3		GROUNOS		VERE -	TOO SANG	<u>UY, OUS</u>	Ι <u>Υ</u>		
						4 7 5 ATHS 331				EVERE -	T00 SAN		TY		
PICNIC 311 2 3	PICNIC AREAS	TOO SANDY, I					F	PATHS ANO							
4	FOOTNOTE	CAPA	BILITY AND	PREDICTE	YIFLDS-C	ROPS AND		RAILS	LEVEL M	ANAGEMI	ENT)				
CROPHO 451	CLASS- DETERMINING	CAPABILITY													
CROPS 341 2	PHASE	NIRR IRR. 6e 4e	NIRR	IRR. NIR	R IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
5															
7															
351 2															
4 4 3	FOOTNOTE CLASS-		II	MANAGEMEN		ND SUITAE	BILITY		PÖTEN	TIAL PRODU		L			
	DETEDMINING	ORD SYM HAZARD				NDTH. ZARD	PLANT COMPET		IMPORT	ANT TREES		SITE INDEX	T	REES TO PL.	ANI
WOOOS 361 2 3										<u> </u>					
4															
37 1 2															
3									8						
5															ł
	FOOTNOTE		I		W	IND BREAK	<s< td=""><td></td><td></td><td>OF OF C</td><td>L</td><td></td><td></td><td>SPECIES</td><td>HT</td></s<>			OF OF C	L			SPECIES	HT
WIND BK 381	CLASS-DETERMINING PHASE		SPECIES NONE	HT	W	IND BREAK SPECIES	<u>(S</u>			SPECIES		HT		SPECIES	НТ
WINDBK 381	CLASS-DETERMINING PHASE				W	IND BREAM	< <u>S</u>			SPECIES				SPECIES	HT
WINDBK 381	CLASS-DETERMINING PHASE				WILDLIFE	SPECIES	UITABIL			SPEÇIES					
WINDBK 381 2 3 4 4 5	CLASS-DETERMINING PHASE	GRAIN &	GRASS &	POT	WILDLIFE ENTIAL FOR HA HARDWO	SPECIES HABITAT SI ABITAT ELEM CONIFER	UITABIL	TY	/ETLAND	SPECIES SHALLOW WATER	OPENL WILDL	POTE		HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 381 2 3 4 5	CLASS-DETERMINING PHASE		NONE	POT	WILDLIFE	SPECIES HABITAT SI ABITAT ELEM		UBS W	ETLAND	SHALLOW	WILDL	POTE AND WO IFE WI	ENTIAL AS	HABITAT FO WETLAND	R: RANGELANO WILDLIFE
WINDBK 3811 2 3 4 4 5 4 5 4 4 5 5 4 4 5 4 4 5 5 4 4 4 5 5 4 4 4 4 3 3 4 4	CLASS-DETERMINING PHASE	GRAIN & SEED	GRASS & LEGUME	POT WILD HERB.	WILDLIFE ENTIAL FOR HA HARDWO TREES	SPECIES HABITAT SI ABITAT ELEM CONIFER PLANTS	UITABIL ENTS SHRI	UBS W	VETLAND PLANTS	SHALLOW WATER	WILDL	POTE AND WO IFE WI	ENTHAL AS ODLANO LDLIFE	HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 381	CLASS-DETERMINING PHASE	GRAIN & SEED POOR	GRASS & LEGUME POOR TIAL NATIV	POT WILD HERB. FAIR	WILDLIFE NTIAL FOR HARDWO TREES	HABITAT SI HABITAT ELEM CONIFER PLANTS	UITABIL ENTS SHRI FA	UBS W F IR V	/ETLAND PLANTS , POOR	SHALLOW WATER V. POO		POTE AND WO IFE WI R	ENTIAL AS ODLANO LDLIFE	HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 381 2 3 4 5 4 5 4 5 4 5 4 4 5 4 4 2 3 1 2 3 4 4 5 5 5 5 1 4 5 5 1 2 5 1 2 5 1 2 5 5 1 4 5 5 1 1 2 1 3 1 4 5 5 1 1 2 1 3 1 1 2 1 3 1 1 2 1 3 1 1 2 1 3 1 1 4 1 5 5 1 1 5 5 1 1 1 2 1 1 3 1 1 4 1 5 5 1 1 1 2 1 1 3 1 1 4 1 5 5 1 1 1 5 5 1 1 1 1 1 1 1 1 1	CLASS-DETERMINING PHASE	GRAIN & SEED POOR POTEN	GRASS & LEGUME POOR TJAL NATIV PLANT SYMBOL (NLSPN)	POTI WILD HERB. FAIR E PLANT CO	WIŁDLIFE ENTIAL FOR H/ HARDWO TREES 	HABITAT SI HABITAT ELEM CONIFER PLANTS	UITABIL ENTS SHRI FA	UBS W F IR V	PETLAND PLANTS , POOR	SHALLOW WATER V. POO		POTE AND WO IFE WI R	ENTIAL AS ODLANO LDLIFE	HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 381 2 3 4 5 4 5 4 5 4 5 7 8 9 1 1 1 2 3 1 4 5 7 9 1 1 1 1 1 1 1 1 1 1 1 1 1	CLASS-DETERMINING PHASE CLASS- DETERMINING PHASE CLASS- DETERMINING PHASE ALL_NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANOTHREAO THICKSPIKE_WHEATGRASS	GRAIN & SEED POOR POTEN	GRASS & LEGUME POOR TIAL NATIV PLANT SYMBOL (NLSPN) STCO4 AGDA	POT WILD HERB. FAIR E PLANT CI	WILDLIFE NTIAL FOR HARDWO TREES	HABITAT SI HABITAT ELEM CONIFER PLANTS	UITABIL ENTS SHRI FA	UBS W F IR V	/ETLAND PLANTS , POOR	SHALLOW WATER V. POO		POTE AND WO IFE WI R	ENTIAL AS ODLANO LDLIFE	HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 3811 21 33 44 55 44 55 46 76 76 76 76 76 76 76 76 76 7	CLASS-DETERMINING PHASE CLASS- DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANOTHREAO THICKSPIKE WHEATGRASS INDTAN RICEGRASS NEEDLELEAF SEDGE PEATRIF JUNEGRASS	GRAIN & SEED POOR POTEN	GRASS & LEGUME POOR TJAL NATIY PLANT SYMBOL (NLSPN) STCO4 AGDA ORHY CAEL 2 KOCR	POT WILD HERB. FAIR E PLANT CI	WIEDLIFE ENTIAL FOR H/ HARDWO TREES 	HABITAT SI HABITAT ELEM CONIFER PLANTS	UITABIL ENTS SHRI FA	UBS W F IR V	/ETLAND PLANTS , POOR	SHALLOW WATER V. POO		POTE AND WO IFE WI R	ENTIAL AS ODLANO LDLIFE	HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 381 2 3 3 4 5 4 5 4 5 4 5 4 5 7 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1	CLASS-DETERMINING PHASE CLASS-DETERMINING PHASE CLASS- DETERMINING PHASE ALL NIRR ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANOTHREAO THICKSPIKE WHEATGRASS INDTAN RICEGRASS NEEDLELEAF SEDGE PRAIRIE JUNEGRASS SANDBERG BLUEGRASS BIG SAGEBRUSH	GRAIN & SEED POOR POTEN	GRASS & LEGUME POOR TIAL NATIV PLANT SYMBOL (NLSPN) STCO4 AGDA ORHY CAEL2 KOCR POSE ARTR2	POT WILD HERB. FAIR E PLANT CI	WILDLIFE INTIAL FOR HARDWO TREES DMMUNITY (F 25 25 10 5	HABITAT SI HABITAT ELEM CONIFER PLANTS	UITABIL ENTS SHRI FA	UBS W F IR V	/ETLAND PLANTS , POOR	SHALLOW WATER V. POO		POTE AND WO IFE WI R	ENTIAL AS ODLANO LDLIFE	HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 3811 21 33 44 55 44 55 46 75 76 76 76 77 78 78 78 78 78 78 78 78 78	CLASS-DETERMINING PHASE CLASS-DETERMINING PHASE CLASS- DETERMINING PHASE ALL_NIRR ALL_NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANOTHREAO THICKSPIKE WHEATGRASS INDTAN RICEGRASS NEEDLELEAF SEDGE PRAIRIE_JUNEGRASS SANDBERG_BLUEGRASS BIG_SAGEBRUSH LOW_RABBITBRUSH LOW_RABBITBRUSH	GRAIN & SEED POOR POTEN	GRASS & LEGUME POOR TJAL NATIV PLANT SYMBOL (NLSPN) STCO4 AGDA ORHY CAEL 2 KOCR POSE	POT WILD HERB. FAIR E PLANT CI	WILDLIFE ENTIAL FOR HA HARDWO TREES OMMUNITY (F 25 25 25 25 10 5 5 5 5	HABITAT SI HABITAT ELEM CONIFER PLANTS	UITABIL ENTS SHRI FA	UBS W F IR V	/ETLAND PLANTS , POOR	SHALLOW WATER V. POO		POTE AND WO IFE WI R	ENTIAL AS ODLANO LDLIFE	HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 3811 21 33 44 55 44 55 46 76 76 76 77 8 77 8 77 8 77 8 77 8 77 77	CLASS-DETERMINING PHASE CLASS-DETERMINING PHASE CLASS- DETERMINING PHASE ALL NIRR ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANOTHREAO THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEDLELEAF SEDGE PRAIRE JUNEGRASS SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH	GRAIN & SEED POOR POTEN	GRASS & LEGUME POOR TIAL NATIV PLANT SYMBOL (NLSPN) STCO4 AGDA ORHY CAEL 2 KOCR POSE ARTR2 CHVIH2	POT WILD HERB. FAIR E PLANT CI	WILDLIFE INTIAL FOR HA HARDWO TREES DMMUNITY (25 25 10 5 5 5 5 5	HABITAT SI HABITAT ELEM CONIFER PLANTS	UITABIL ENTS SHRI FA	UBS W F IR V	/ETLAND PLANTS , POOR	SHALLOW WATER V. POO		POTE AND WO IFE WI R	ENTIAL AS ODLANO LDLIFE	HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 381 2 3 3 4 5 4 5 4 5 4 6 7 8 7 8 7 8 7 8 9 12 12 12 12 12 12 12 12 12 12	CLASS-DETERMINING PHASE CLASS-DETERMINING PHASE CLASS- DETERMINING PHASE ALL NIRR ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANOTHREAO THICKSPIKE WHEATGRASS INDTAN RICEGRASS NEEDLELEAF SEDGE PRAIRIE JUNEGRASS SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH		GRASS & LEGUME POOR TIAL NATIV PLANT SYMBOL (NLSPN) STCO4 AGDA ORHY CAEL 2 KOCR POSE ARTR2 CHVIH2 OTHER	POT WILD HERB. FAIR E PLANT CI	WILDLIFE NTIAL FOR HA HARDWO TREES DMMUNITY (25 25 10 5 5 5 5 15	HABITAT SI HABITAT ELEM CONIFER PLANTS	UITABIL ENTS SHRI FA	UBS W F IR V	/ETLAND PLANTS , POOR	SHALLOW WATER V. POO		POTE AND WO IFE WI R	ENTIAL AS ODLANO LDLIFE	HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 3811 21 331 44 55 4 55 4 55 4 55 4 55 4 55 4 55 4 55 4 55 4 55 4 55 4 55 4 55 6 7 7 6 9 44 5 6 7 7 8 9 44 55 6 7 7 8 9 421 42 3 44 55 6 7 8 9 421 421 431 55 44 55 45 7 9 421 10 12	CLASS-DETERMINING PHASE CLASS-DETERMINING PHASE CLASS- DETERMINING PHASE ALL NIRR ALL NIRR COMMON PLANT NAME NEEDLEANOTHREA0 THICKSPIKE WHEATGRASS INDTAN RICEGRASS NEEDLELEAF SEDGE PRAIRIE JUNEGRASS SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH DOTENTIAL PRODUCTION (LBS,	GRAIN & SEED POOR POOR POTEN E E	GRASS & LEGUME POOR TIAL NATIY PLANT SYMBOL (NLSPN) STCO4 AGDA ORHY CAEL2 KOCR POSE ARTR2 CHVIH2 OTHER OTHER EARS S	POTI WILD HERB. FAIR E PLANT CO	WILDLIFE INTIAL FOR HA HARDWO TREES DMMUNITY (25 25 10 5 5 5 5 5 5 15 00 00 00 00	SPECIES HABITAT SI ABITAT ELEM CONIFER PLANTS RANGELAN PERCE	UITABIL ENTS SHRI FA	UBS W F IR V	/ETLAND PLANTS , POOR	SHALLOW WATER V. POO		POTE AND WO IFE WI R	ENTIAL AS ODLANO LDLIFE	HABITAT FO WETLAND WILDLIFE	R: RANGELANO WILDLIFE
WINDBK 3811 12 33 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 7 8 9 421 2 2 3 44 5 7 8 9 421 2 2 42 33 44 5 9 421 2 33 44 5	CLASS-DETERMINING PHASE CLASS-DETERMINING PHASE CLASS- DETERMINING PHASE ALL NIRR ALL NIRR FOOTNOTE COMMON PLANT NAME NEEDLEANOTHREAO THICKSPIKE WHEATGRASS INDTAN RICEGRASS NEEDLELEAF SEDGE PRAIRIE JUNEGRASS BIG_SAGEBRUSH LOW_RABBITBRUSH OPTENTIAL PRODUCTION (LBS, SYM.	GRAIN & SEED POOR POOR POTEN E CAC. DRY WTD: FAVORABLE Y NORMAL YEAR UNFAVORABLE Y	GRASS & LEGUME POOR TJAL NATIV PLANT SYMBOL (NLSPN) STCO4 AGDA ORHY CAEL2 KOCR POSE ARTR2 CHVIH2 OTHER CHVIH2 OTHER EARS S S E YEARS	POTI WILD HERB. FAIR E PLANT CO	WILDLIFE INTIAL FOR HA HARDWO TREES DMMUNITY (F 25 25 10 5 5 5 5 5 5 5 5 5 5 5 5 5	SPECIES HABITAT SI ABITAT ELEM CONIFER PLANTS 			VETLAND PLANTS . POOR NDERSTO DN(DRY, WEI	SHALLOW WATER V. POO RY VEGE GHT) BY CL	WILDL R POOL TATION ASS DETER	POTE AND WO IFE WI R	ENTHAL AS ODLANO LDLIFE 	HABITAT FO WETLAND WILDLIFE V. POOR	R: RANGELANO WILDLIFE
WINDBK 381 2 3 3 4 4 5 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 5 4 4 5 5 4 4 5 5 4 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5	CLASS-DETERMINING PHASE CLASS-DETERMINING PHASE CLASS- DETERMINING PHASE ALL NIRR ALL NIRR COMMON PLANT NAME NEEDLEANOTHREAO THICKSPIKE WHEATGRASS INDTAN RICEGRASS NEEDLELEAF SEDCE PRAIRIE JUNEGRASS SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH DOTENTIAL PRODUCTION (LBS, SYM. 1 EXCESSIVE PERMEABILI 2 WATER FOR IRRIGATION	GRAIN & SEED POOR POOR POTEN E CAC. DRY WTD: FAVORABLE Y NORMAL YEAR UNFAVORABLE Y	GRASS & LEGUME POOR TIAL NATIV PLANT SYMBOL (NLSPN) STCO4 AGDA ORHY CAEL 2 KOCR POSE ARTR2 CHVIH2 OTHER CAEL 2 KOCR POSE ARTR2 CHVIH2 OTHER CAEL 2 KOCR POSE ARTR2 CHVIH2 OTHER CAEL 2 KOCR POSE ARTR2 CHVIH2 OTHER CAEL 2 CHVIH2	POT WILD HERB. FAIR E PLANT CI	WILDLIFE NTIAL FOR HA HARDWO TREES DMMUNITY (25 25 10 5 5 5 5 5 15 -	SPECIES HABITAT SI ABITAT ELEM CONIFER PLANTS RANGELAN PERCE	UITABIL ENTS SHRI FA		VETLAND PLANTS . POOR NDERSTO DN (DRY WE)	SHALLOW WATER V. POO RY VEGE GHT) BY CL		POTE AND WO IFE WI R R R R R R R R R R R R R R R R R R R	ENTHAL AS ODLANO LDLIFE 	HABITAT FO WETLAND WILDLIFE V. POOR	R: RANGELANO WILDLIFE

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SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY RECORD CONTROL

RECORD CONTROL NO. WORD NO.			50	JIL SI	JKAF	Y IN I	ERPR	EIAI	IONS						
MLRA 001 STATE 011	MLRA(S)	34 WYOMING	RECORD N)L_JRS		OF UNIT	SERIES		NAME	DEBONE			
	CLASSIFIC	ATION AND B	RIEF SOIL DESCRIP	TION								·	. = 1		
DESCR 031	THE DEBO	NE SERIES A	INE, MONTMORILLC	SOILS FORM	1ED IN ALL	LUVIUM FRO	ALKALINE	SHALE ON U	ALLUVIAL P	ANS. SLO	PES ARE	6 TO 10 RE	RCENT.	LEVATI	ON I.S.
2	5,800 JO TYPICALL	<u>7,000 FEET</u>	ACE LAYER IS BRO	<u>IS,7 to,9</u> WN. SANDY,1) INCHES, OAM TO FI	MEAN ANNU	AL AIR TEM	8 INCHES	<u>S, АВОЦТ. ЗЕ</u> ТНІСК. ТН	E SUBSURE	THE GROW	ING SEASON	15,80 T(0,90 DA	YS.
4	LABOUT 2.	INCHES, THIC	K. THE SUBSOIL	I.S. BROWN, S	SANDY CLAY	Y TO SANDY	CLAY, LOAM	ABOUT 14	INCHES THT	CK THE	CLIDCTDAT	THA TO LITCH	T PDOUNT	UL CDAV	SANDY.
	-FOOTNOT	E	HES OR MORE		ESTI	MATED SOIL	PROPERTIE	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·				· · · · · · · · · · · · · · · · · · ·		····
	DEPTH (IN.)		A TEXTURE		UNIFIED		AAS		FRACT. >3 IN.	PE PE	RCENT OF N	ATERIAL LESS ASSING SIEVE		LIQUID	PLAS- TICITY
PROP 041	0-10		, FSL	CM_C	SC-SC		A-4		(PCT) 0	4	10	40	200	LIMIT	INDEX
2	10-60		SCL	S(A-4		0	90-100	<u>100</u> 90-100			10-20 30-40	5-10 11-20
4															
5	+								_						
	DEPTH	PERMEABILIT	TY AVAILABL WATER CAPAG		SOIL	SALINITY	SHRINK-SW		CORROSIVITY			WIND EROD.	<u>_</u>		
PRCP 051	(IN.)	(IN/HR)	(IN/IN)		(pH)	(MMHOS/CM)	POTENTI	SIEE		RETE K	TTO	ROUP			
2	SAME	2.0-6.0	.1214		<u>6-7.8</u> ->9.0	2.0-8.0	LOW MOOERA	E HIG		W .20		3			
3	DEPTH AS														
5	ABOVE	-									-				
	L		FLOODING			HIGH WATER T			TED PAN		DROCK		DENCE		TENTIAL
	FREQU	JENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDN	ESS INITIAL (IN)	TOTAL 1	CPD	FROST ACTION
PROP 0611	NOI				>6	_				60	RIPPAB				LOW
SEPTIC 071	F00	TNOTES 7	SANI EVERE – PERCS SL	TARY FACIL	ITIES		KEYING ON	FO FO	OTNOTES 7	FATR - 4		SOURCE MAT		<u> </u>	
	SEPTIC TA ABSORPT	ANK						2				LUW 2			
4	FIELDS							4	FILL						
LAGOON 081			-7%: MODERATE -		EPTH TO R	ОСК	SAND 2	5 01		UNSUITED				·	
2	SEWAGE LAGOON		+%: SEVERE - SL	OPE				2 3 SA	ND T						
4	,							4	. –						
TRENCH091	OA ALLT A D		LIGHT				GRAVEL	+{}		UNSUITE]				
3	SANITAR LANDFIL	_L						2 3 GRA	VEL						
4	(TRENC)	H }						4							
SANARE 101	SANITA		-8%: SLIGHT -10%: MDOERATE	- SLOPE			SOIL 2	21	1	POOR - E	XCESS AL	KALI			
3	LANDFII (AREA	LL						3 TOP:	601L						
COVER 111			00/ =>>>					4							
2	DAILY	8	<u>-8%: FAIR - TOO</u> -10%: FAIR - SL	OPE, TOO C	LAYEY		- ·		OTNOTES 7	······	WA	TER MANAGE	MENT		
3	COVER FO						PONDRS 2	2 PO		SLOPE					
¥ ¥5								3 RESER							
EXCAV 121	FOOT	NOTES	COMMUI -8%: SLIGHT	NITY DEVEL	OPMENT		DIKES 2	15							
	SHALLO EXCAVATIO	₩8.	-10%: MODERATE	- SLOPE				2 EMBAN	KMENTS	UNSTABLE					
4	CACAVATIO	0143						3 DIKES							
DWEL 131		6	-8%: MODERATE -	SHRINK-SW	ELL		PONDAQ	51		NO WATER					
2	DWELLIN WITHOU	GS 8.	-10%: MODERATE			ELL		2 EXCAV							
4	BASEMEN							4 AQU	FER						
DWEL 141	DWELLIN		- " MODERATE -				DRAIN 2	61		EXCESS A	LKALI, F	ERCS SLOWL	Y		
	WITH		-10%: MODERATE	SLOPE,_S	HAINY - SWE	ELL		2 3 DRAIN	IAGE						
4	BASEMEN							4	-						
BLDGS 151 2	SMALL		-8%: MODERATE - +%: SEVERE - SL		RINK-SWEL	_L		2		EXCESS A	lkali, s	LOPE, PERC	S SLOWLY		
3	COMMERCI. BUILOING	AL	Strent - St	×1 h				3 IRRIG	TION		•				
ROADS 161	JUIZONIO		9%	0110.7	(5)		TEDOL	5							
2	LOCAL	8-	-8%: MODERATE - -10%: MOOERATE	- SLOPE, S	HRINK-SWE	ELL, LOW	TERRAC 2	Z TERR	ACES						
3	ROADS AN STREETS	-	STRENGTH					3 AN 4 DIVER							
1 15							WATERW 2	5							
REGION 171	FOOTI	NOTES	REGIÒNA	LINTERPRE	TATIONS			2 GRAS							
								3 WATE	UTA 13						
4								3							
REGION 181							-								
3							-								

	UNIT NAME:		(2)			
KEYING ONLY RECORD CONTROL	UNIT MODIFIER:		RECREATION KEYING ONLY	FOOT		
NO. WORD NO. CAMPS 301	SEVERE - OUS	STY	PLAYGO 321	S	EVERE - SLOPE, OUSTY	
2	CAMP AREAS		3	PLAYGROUNDS		
4						
PICNIC 311	SEVERE - DU	STY	PATHS 331	PATHS	EVERE - OUSTY	
3	PICNIC AREAS		3	AND TRAILS		
4			REDICTED VIELDS - CROPS AND PA		MANAGEMENT)	
CROPHO 451	FOOTNOTE	CAPABILITY AND P	REDICTED TIELDS-CROTS AND TH			
	CLASS- DETERMINING	CAPABILITY				NIRR IRR.
	PHASE	NIRR IRR. NIRR IR	R. NIRR IRR, NIRR I	RR. NIRR IRR.	NIRR IRR. NIRR IRR.	
CROPS 341	6-10	<u>7E 7E</u>				
3						
5						
6						
8						
351						
2			WOODLAND SUITABI			
	FOOTNOTE CLASS-		MANAGEMENT PROBLEMS	POTER	ITIAL PRODUCTIVITY	TREES TO PLANT
		SYM EROSION EQUIP. SYM HAZARD LIMIT	SEEDLING WINDTH. F MORT'Y. HAZARD C	OMPET.	ANT TREES INDEX	
W0005 361					NONE	
2						
4						
6						
7						
9 371						
2						
3						
5			WIND BREAKS			
· · ·	FOOTNOTE CLASS-DETERMINING PHASE	SPECIES	HT SPECIES	HT	SPECIES HT	SPECIES HT
WINDBK 381		NONE				
2						
4						
	FOOTNOTE		WILDLIFE HABITAT SU	TABILITY	POTENTIAL A	AS HABITAT FOR:
	CLASS- DETERMINING	GRAIN & GRASS &	POTENTIAL FOR HABITAT ELEME WILD HARDWD CONIFER	SUDUDE WETLAND	SHALLOW OPENLANO WOOOLAND	WETLAND RANGELANO
-	PHASE	SEED LEGUME	HERB. TREES PLANTS	POOR V. POOR		V. POOR POOR
WILOLF 39	ALL NIRR	V. POOR V. POOR	POUR			
	3					
	5					
The second secon	6 FOOTNOTE	POTENTIAL NATIVE	PLANT COMMUNITY (RANGELAND	OR FOREST UNDERST	EIGHT) BY CLASS DETERMINING PHASE	
PHASE 40	COMMON PLANT NAMI	F SYMBOL				
The second secon	2	(NLSPN)	30			
	2 NEEDLEANDTHREAO	STC04 ORHY	20			
	3 INDIAN RICEGRASS 4 BLUEBUNCH WHEATGRASS	AGSP	5			
	5 PRAIRIE JUNEGRASS 6 SANDBERG BLUEGRASS	KOCR POSE	5			
	7 BIG SAGEBRUSH	ARTR2 CHVIH2	10			
		EUROT	5			
42	21	OTHER				
	3					
	5					
	6 POTENTIAL PRODUCTION (LBS.	AC. ORY WT):	700			
PRODUC 4	31	NORMAL YEARS	500			
	3	UNFAVORABLE YEARS	300 FOOTNOTE			
NOTES 4	41 1 WATER FOR IRRIGATION	N. NOT AVAILABLE AT PRES	SENTAL AND		<u></u>	
	3	<u></u>			<u></u>	
	4	<u></u>	<u>, , , , , , , , , , , , , , , , , , , </u>	<u></u>		<u>, ,] , , , , , , , , , , , , , , , , ,</u>
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SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY RECORD CONTRDL

SOIL SURVEY INTERPRETATIONS

ND. WORD NO. MLRA 001 STATE 011	MLRA(S)	34 NG RECORD N ND BRIEF SOIL DESCRIP	IO.[] AUTHOR(S)[JR\$	DATE 1/73	INIT [] REVISE	SERIES DL UNIT	UNIT MODIFIER	NAME	FORELLE		
CLASS 021 DESCR 031 2 3 3 4	BOROLLIC HAPLAR THE FORELLE SER TO 7,300 FEET. TYPICALLY, THE THICK. THE SU	GIDS., FINE-LOAMY, M) IES ARE WELL ORAINED PRECIPITATION IS. 10 SURFACE LAYER IS. GRA BSTRATUM IS BROWN CL	XEO	LUVIUM AND ANNUAL A CLAY LOAM	A ABOUT 4 INC	E IS ADOU HES THICK	T, 36°F,	AND THE UBSOIL IS	GROWING SEA	SON IS ABOUT.	80 T0 90 BOUT 28	DAYS.
¥ \$	FOOTNOTE	<u> </u>	ESTIM	ATED SOIL	PROPERTIES		t t to a sub-	<u></u>			· · · · · · · · · ·	1
	DEPTH (IN.)	USDA TEXTURE	UNIFIED		AASHD		FRACT. > 3 IN. (PCT)	FE PE	RCENT DF MATER HAN 3 IN. PASSIN	RIAL LESS	LIQUID LIMIT	PLAS- TICITY INDEX
PRDP 041	0-32	SCL	SC		A-6 A-6		0-5	95-100 90-100	90-100 75	-90 35-50	<u>30-40</u> 35-40	15-20
	32-60	CL	<u> </u>		A=0			90-100	90-100 05	70-00		12=20
5		•										
1 10		ABILITY AVAILABL WATER CAPA	CITY REACTION	SALINITY	SHRINK-SWELL POTENTIAL	CO	RROSIVITY		ÓSIÓN WIND CTORS EROD			
PROP 051	11110	/HR) (IN/IN) 2.0 .1416	(PH)	(MMHOS/CM)	MODERATE	STEEL HIGH	CONCE	W .2L		P		
2		2.0 .192			MODERATE	HIGH	LO	IW .32				
4	AS ABOVE								-			
16		FLOODING	H	HIGH WATER TA		CEMENTE	D PAN	BE	DROCK	SUBSIDENCE		POTENTIAL
	FREQUENCY	DURATION	MDNTHS (FT)	KIND	MONTHS	(IN)	ARDNESS	DEPTH (IN)	HARDNESS	INITIAL TOTA (IN) (IN)	GRP	FRDST ACTIDN
PRDP 061		7						>60		I I RCE MATERIAL	<u> </u>	LOW
SEPTIC 071	FOOTNOTES	MODERATE - PERCS	ITARY FACILITIES		KEYING ONLY FILL 191	FUU		FAIR TO	POOR - LOW			
	SEPTIC TANK ABSORPTION				234	ROAOFI						
5	FIELDS				SAND 201			UNSUITE				
LAGOON 081	SEWAGE		SLOPE, PERCS RAPIOL	.Y	201	SAN	, L-	UNSUITER)			
4	LAGOONS				4	3711	í. -					
TRENCH091	SANITARY	MODERATE - TOO CL	AYEY		GRAVEL 211			UNSUITE)			
3	LANDFILL (TRENCH)				3	GRAV						
SANARE 101		SLIGHT			SOIL 221			FAIR -	TOD CLAYEY			
2	SANITARY LANDFILL				2 3	TOPSO	IL F					
4]] (ANGA)		<u> </u>		4							
COVER 111 2 3	L. DAILY COVER FOR	G000			PONDRS 231	F00	INOTES 7	FAVORABI		R MANAGEMENT		
4	LANDFILL				23	PON RESERV						
	FOOTNDTES	COMML	INITY DEVELOPMENT		4	ARE						
E X C A V 121	SHALLOW	MODERATE - TOO CL	AYEY		DIKES 241 2	EMBANK		LOW STR	ENGTH			•
4					3	DIKES						
DWEL 131		MODERATE - SHRINK	-SWELL, LOW STRENGTH	4	PONDAQ 251			NO WATE	3			
2 3	WITHOUT				3	PONI	os T					
DWEL 141		HODEDATE SHDINK	-SWELL, LOW STRENGTH		DRAIN 261	FED		PERCS SI				
	DWELLINGS WITH	MODERATE - SHRTRA	-SWELL, LOW STREAM		2 3	DRAIN				*		
4	BASEMENTS				. 4		-					
BLDGS 151	SMALL	MODERATE - SHRINK	-SWELL, LOW STRENGTH	4	1R R I G 27 1 2	1	1	FAVORAB	.E			
3	COMMERCIAL BUILDINGS				3	IRRIGA	TION		×			
ROADS 161		MODERATE - LOW ST	RENGTH, SHRINK-SWELL		TERRAC 281							
2	ROADS AND				2	ANI) [~	
4	STREETS				4 V 5 WATERW 291	1						
REGION 171	FOOTNOTES	REGIÓN	AL INTERPRETATIONS		2	GRAS						
					3							
REGION 181					-		d-					
2												
1 14												

	NAME:FORELLE			REC	(2) REATION_				
CORO CONTROL UNIT	MODIFIER:			KE	YING ONLY		TNOTE	- TOO CLAYEY	
NO. WORD NO. CAMPS 301	MODERATE -	TOO CLAYEY			2	ROUNOS	: MODERATE -		
	AREAS			P	THS 331	MO	DERATE - TOO C	CLAYEY	
PICNIC 311	1 MODERATE - T	TOO CLAYEY			2 PA	THS			
PICNI	C AREAS						MANAGEMENT)		
5 F00		CAPABI	LITY AND PRE	DICTED YIELDS . C	OPS AND PASTUR				
CROPHD 451	CLASS- OETERMINING	CAPABILITY	NIRR IRR.	NIRR IRR.	NIRR IRR.	NIRR IRR.	NIRR IRF	R. NIRR I	RR. NIRR IRR.
CROPS 341 2	PHASE . 0-3	NIRR IRR. 6C 3C							
7									
351									
	OTNOTE		HAI	WOODL NAGEMENT PROBLEMS	AND SUITABILITY	POT	ENTIAL PRODUCTIVI	TY	TREES TO PLANT
	CLASS- OETERMINING	ORD EROSION SYM HAZARO	EQUIP. LIMIT	SEEOLING W MORT'Y. H	NOTH. PLANT ZARO COMPET.		RTANT TREES	SITE	TREESTOTEANT
W0005 361	PHASE	nazako					NONE		
2									
<u> </u>									
					WIND BREAKS				SPECIES
	OOTNOTE CLASS-OETERMINING PHASE		SPECIES NONE	HT	SPECIES	HT	SPECIES		
WIN OBK 381									
4									
	FOOTNOTE			POTENTIAL FOR	HABITAT SUITAB	WETLA	O SHALLOW	OPENLAND WOOL	THAL AS HABITAT FOR: DLANO WETLANO RANGELA DLIFF WILDLIFE WILDLIF
	CLASS- OETERMINING PHASE	GRAIN & SEED	GRASS & LEGUME	WILO HAROWO HERB. TREES	PLANTS	RUBS PLANT	S WATER	WILDLIFE WILL	LIFE WILDLIFE WILDLIF
WILOLF 391	ALL NIRR	POOR	POOR	FAIR					
3									
5 V 6	FOOTNOTE	POTE	TIAL NATIVE	PLANT COMMUNITY	TRANGELAND OR	FOREST UNDER	STORY VEGETA	TION) S OETERMINING PHA	ISE
IPHASE 401	FOOTNOTE COMMON PLANT NA	ME	PLANT SYMBOL (NLSPN)		- Chylerenter				
PLANT 411	NEEOLEANOTHREAD		STC04 STLE4	<u>15</u> 10					
	LETTERMAN NEEDLEGRASS		AGSP	10					
	CANBY BLUEGRASS			<u> </u>					
61	THICKSPIKE WHEATGRASS PRAIRIE JUNEGRASS		KOCR ARTR2	515					
421	BIG SAGEBRUSH		OTHER	10					
4									
	POTENTIAL PRODUCTION (LI		YEARS	1,500					
PROOUC 431		NORMAL YE	ARS	1,200	FOOTNOTES				
	SYM. SOILS. IN LOW AREAS	AND DEPRESSI	ONS SUBJECT.	TO BARE FLOODIN	G.,		<u></u>	<u>, , , , , , , , , , , , , , , , , , , </u>	······································
	1 SOILS IN LOW ARCAN								
NOTES 441 2 3	1 SOILS IN LOW AREAS 2 WATER FOR IRRIGATIO	ON NOT AVAILE	BLE AT, PRES			<u></u>	<u></u>	· · · · · · · · · · · · · · · · · · ·	<u></u>
NOTES 441	2 WATER FOR IRRIGATI	ON NOT AVAILE				·················			

SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY				(1)		U.S. OEPARTMENT OF AGR SOIL CONSERVATION	ICULTURE N SERVICE
RECORD CONTROL NO. WORD NO. MLRA 001	MLRA(S)	34	DIL SURVEY IN		IT SERIES		
STATE 011		ND BRIEF SOIL DESCRIP	TION		REVISED UNIT		
CLASS 021 DESCR 031 2 3 4 4	THE . ERADDLE SER 6., 800 TO . 7,000	IES ARE WELL DRAINED	SOILS FORMED IN RESIDUUM IS 7 TO 9 INCHES, AND TH	FROM SOFT SANDSTO	TEMPERATURE IS.	SLOPES ARE 3 TO 20 PERCENT. ELEVATION IS ABOUT 36°F. TYPICALLY, THE SURFACE LAYER I IVE BROWN SANDY CLAY LOAM ABOUT 18 INCHES T SOFT SANDSTONE AT A DEPTH OF 33 INCHES.	S.HICK.
1 15	-FOOTNOTE	· · · · · · · · · · · · · · · · · · ·	ESTIMATED S	OIL PROPERTIES	FRACT.	PERCENT OF MATERIAL LESS LIQUID	PLAS-
	DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	>3 IN. (PCT)	THAN 3 IN. PASSING SIEVE LIQUID 4 10 40 200	TICITY INDEX
PROP 041	0-22	SCLSL	SC SM-SC, SC	A-6 A-2	0	90-100 9D-100 70-85 35-50 30-40 90-100 90-100 50-70 20-30 20-40	<u>11-15</u> <u>5-15</u>
3	33	WB					
5		AVAILABL	F SDIL SALIAUT	Y SHRINK-SWELL	CORRDSIVITY	ERĎSIŐN WIND	
		ABILITY WATER CAPA /HR) (IN/IN)			STEEL CONC	RETE K T GROUP	
PP0P 051	5AME		<u>6.6-7.8</u> 7.4-8.4 2.0-4.	MDDERATE 0 LOW		LOW .24 3 3 LOW .20	
3	AS						
5	ADUVL		HIGH WAT	ER TABLE	CEMENTED PAN		TENTIAL
	FREQUENCY	FLOODING DURATION	DEPTH KI MONTHS (FT)	ND MONTHS D	EPTH HARDNESS (IN)	(IN) (IN) (IN) (IN)	FROST ACTION
PROP 061		7 SAN	ITARY FACILITIES	KEYING DNLY	FOOTNOTES	20-40 RIPPABLE - B SOURCE MATERIAL	LOW
SEPTIC 071	SEPTIC TANK	3-15%: SEVERE -		FILL 191		POOR - THIN LAYER	
	ABSORPTION			3	RDADFILL		
LAGOON Jal		3-7%: SEVERE - D	EPTH_TO_ROCK	SAND 201	L	UNSUITED	
2	SEWAGE LAGDDNS	7+%: SEVERE - SL	DPE, DEPTH TO ROCK		SAND		
T R F N C H 0 9 1			ROCK, PERCS RAPIDLY	GRAVEL 211		UNSUITED	
	SANITARY LANDFILL	SEVERE - DEPIN TO		2	GRAVEL		
	(TRENCH)			4			
SANARE 101 2 3	SANITARY LANDFILL	3-8%: SLIGHT 8-15%: MQDERATE 15+%: SEVERE - S		SOIL 221 2 3 4	TDPSDIL	3-8%: FAIR - TOO CLAYEY 8-15%: FAIR - SLOPE, TOO CLAYEY 15+%: POOR - SLOPE	
COVER 111		3-8%: EAIR - THI	N LAYER			WATER MANAGEMENT	
2	DAILY COVER FOR	8-15%: FAIR - SL 15+%: POOR - SLC	OPE, THIN LAYER	PONDRS 231	POND	DEPTH TO RDCK, SLOPE, PERCS RAPIDLY	
4				2 3	RESERVDIR		
EXCAV 121	FOOTNDTES	COMM	UNITY DEVELOPMENT	DIKES 241		PERCS RAPIDLY, LDW STRENGTH	
		8-15%: MODERATE 15+%: SEVERE - S	- SLOPE, OEPTH TD ROCK	2	EMBANKMENTS DIKES AND		
	5			4 V V 5 PONDAQ 251	LEVEES	ND WATER	
DWEL 13	DWELLINGS WITHOUT	3-8%: MODERATE - 8-15%: MODERATE 15+%: SEVERE - S	- SLDPE, SHRINK-SWELL	2	EXCAVATED PDNDS		
	4 BASEMENTS			4	AQUIFER FED		
DWEL 141	2 DWELLINGS	8-15+%: MODERATI	SHRINK-SWELL, OEPTH TD R - SLDPE, SHRINK-SWELL,	OCK DRAIN 261 2	DRAINAGE	DEPTH TO ROCK	
	4 BASEMENTS	DEPTH 15+%: SEVERE - S		4	DRAINAGE		
BLDGS 15	1	3-4%: MDDERATE - 4-8%: MDDERATE -	SHRINK-SWELL SLDPE, SHRINK-SWELL	IR RIG 271		SLDPE, ROOTING DEPTH	
	3 COMMERCIAL 4 BUILDINGS	8+%: SEVERE - SI		3	IRRIGATION		
ROADS 16	1	3-8%: MODERATE		TERRAC 281			
	4 STREETS	8-15%: MODERATE 15+%: SEVERE -	- SLOPE, SHRINK-SWELL SLOPE	3			
	5 FDDTNDTES	7 RECIN	VAL INTERPRETATIONS	WATERW 291	GRASSED		
REGION 17	- A Contraction of the second s			3	WATERWAYS		
	3						
REGION 18	1						
	3						

KEYING ONLY	UNIT NAME:FRACOLE				(2)								
RECORO CONTROL NO. WORO NO.	UNIT MODIFIER:			KE	REATION YING ONLY A Y GD 321		FDOTNE	%: MOOE	RATE -	SLOPE	, OEPTH	TO ROCK	
CAMPS 301 2		DDERATE - SLOPE			2	AYGROUN OS	6+%	SEVER	<u>re – sl</u>	OPE			
3	CAMP AREAS	VERE - SLUTE			4								
PICNIC 311	3-8%: SL	IGHT ODERATE - SLOPE		PA	THS 331 2	PATHS	3-1	5%: SLI	GHT DOERATE	- SLO	PE		
		VERE - SLOPE			3	AND TRAILS							
	FOOTNOTE	CAPABILITY	AND PREDICTE	D YIELDS - CR	OPS AND PASTI	JRE (HIGH I	LEVEL MA	NAGEMEN	T)			1	
CROPHD 451	CLASS-					_							
3	OETERMINING PHASE	NIRR IRR. NIRR	IRR. NI	RR IRR.	NIRR IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
CROPS 341		6E 4E 6E 4E											
3	10-15%	6E 6E 6E											
5						_							
7													
351													
					ND SUITABILITY	,							
	CLASS-	ORO EROSION		TPROBLEMS			POTENT	IAL PROOUC		SITE	т	REES TO PL	ANT
	OETERMINING PHASE	SYM HAZARO	LIMIT MO	RT'Y. HA	OTH. PLAN ZARO COMPE	T.		NE		INDEX			
WOODS 361													
37													
	CLASS-OETERMINING PHASE	SPECIES	нт	The second division of	ND BREAKS	HT	SF	PECIES		HT		SPECIES	НТ
WINDBK 38	2	NONE		<u> </u>									
				WILDLIFE	ABITAT SUITAB	ILITY					ENTENI AS	HABITAT FO	I
	CLASS- DETERMINING	GRAIN & GRAS	S& WILO	HARDWO	BITAT ELEMENTS CONIFER SI	IRUBS WI	ETLAND	SHALLOW WATER	OPENI	ANO W	OCOLANO VILDLIFE	WETLANO	RANGELANO
- WILDLF 39	PHASE	SEED LEGU POOR POO	ME HERB.	TREES	PLANTS 1	OOR V.	. POOR	V. POOR		OR		V. POOR	the state of the s
	2												
	5												
	FOOTNOTE	POTENTIAL N	ATIVE PLANT	OMMUNITY (F	ANGELAND OR PERCENTAGI	FOREST UN	NORY WEIG	Y VEGET	ATION)	RMINING P	HASE		
PHASE 40		AE SYMI (NLS	ROI		, engen ender								
PLANT 4	1 THICKSPIKE WHEATGRASS	AGD	Α	30 20									
	2 NEEDLEANDTHREAD 3 INDIAN RICEGRASS	ORH ART	Y	10 10									
	4 BIG SAGEBRUSH 5 BLUEBUNCH WHEATGRASS	AGS	P	5									
	6 PRAIRIE JUNEGRASS 7 SANDBERG BLUEGRASS	POS		5									
	8 LOW RABBITBRUSH 9 WINTERFAT		TOT	5									
	3 4 5												
	POTENTIAL PRODUCTION (LB	AC ORV WT).											
PRODUC 4	2 POTENTIAL PRODUCTION (LB	FAVORABLE YEARS		700 500									
	3	UNFAVORABLE YEAR			FOOTNOTES						~		
NOTES 4	41 .WATER.FOR IRRIGATIO	NOT AVAILABLE AT	F.P.RESENT.	<u></u>	· · · · · · · · · · · · · · · · · · ·	<u>,,,,,</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	<u></u>				1	
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	4	<u>, , , , , , , , , , , , , , , , , , , </u>					1		- L had				
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SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY

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SOIL SURVEY INTERPRETATIONS

PROF PERCENTY NOTES SALES SALES CONSTRUCT NOTES	
CLASS (PLALIDA ALD SALE SOL DESCRIPTION	
Close B2 TYPE CONSTLUENTS: CARACLE-LOW, NEXT. CALLER B23, PRICE Close B2 Called B2	
EESE 1201 The cancerson speries and Hall GRAND GRAND FOR THE AVAILUE OR VERY FOR HEP FORMAL CLARENCE AND ALL CLARENCE A	
Image: Instant and approximation of the second and approximate appr	AND SHALE
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PROF PERMEMALITY PONIONES South Status	INDEX
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I IS ABOVE FLOODING FLOODING HIGH WATER TALE CEMENTED PARK BEDRÖCK SUBS DEVECT PRECISION BURATION KONTINS IPTI MORE DEPTH HIGH WATER TALE DEPTH </td <td></td>	
Image: Non-Water Trade Description Description <thdescription<< td=""><td></td></thdescription<<>	
PLCOUND DEPTN AND DEPTN AND DEPTN AND CONTROL DEPTN MARDLESS	POTENTI
TPROPT DPSE >60 >60 >60 >60 >60 >60 >60 >60 >60 >60 >60 >60 >60 >60 >60 >60 >60 SOURCE MATERIAL 1 4 6 6 6 7 6	HYD POTENTIA GRP FROST
FOOTNOTEST SANITARY FACILITIES FEVRE OUV POOTNOTEST SUBRE MATERIAL SEPTIC 727 SEPTIC TAAK A BOSINPTION 1 122 SEPTIC TAAK A BOSINPTION 1 122 MODERATE - PERCS SLOWLY FILL 12 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	B LOW
SEPTIC 01 SEPTIC 101 MODERATE - PERCS SLOWLY FILL 101 101 4 4500PTION 4 FREDS MODERATE - PERCS SLOWLY FILL 101 FREDS FAR - LOW STRENGTH 4 45 FREDS	
12 22 SEPTIG TARK 1 2 RDAOFILL 1 4 FIELDS 4 5 RDAOFILL 1 4 FIELDS 5AND 4 1 1 5AND 23 5AND 1 1 5AND 23 5AND 1 1 5AND 1 UNSUITED 1 1 5AND 1 1 1 1 5AND 1 1 1 1 5AND 1 1 1 1 5ANTARY 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
1 1	
LAG000 06.1 SERAGE LAG000 05.1 SERAGE LAG000 05.1 HDDERATE - PERCS RAPIDLY SAN D VDL VDL SAN D VDL VDL VDL SAN D VDL	
SEARCE SEARCE 12 SAND T TERDHOH731 SANTARY SLIGHT GRAVEL LUNSUITED SANTARY SLIGHT GRAVEL GRAVEL LUNSUITED GOOD TOPSOIL GRAVEL FOOTNOTES MATER MANAGEMENT COVER FOR DALY GOOD FOOTNOTES WATER MANAGEMENT GOOD FOOTNOTES COMMUNITY DEVELOPMENT FOOTNOTES POND RESERVIR T TERDHOL7 SLIGHT SLIGHT DIKES RO LIVES GRAVELUNGS SLIGHT FOOTNOTES FOOTNOTES FOOTNOTES OPFEL SLIGHT SLIGHT DIKES RO LIVES	
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1 13 LANOFILL 13 GRAVEL 1 13 GRAVEL 14 14 1 15 SAN APE 101 SUIGHT SUIL 12 PORD - EXCESS ALKALI 1 1 14 15 FORMOTES FORMOTES FORMOTES FORMOTES FORMOTES FORMOTES POROTOTES WATER MANAGEMENT 1 15 LANOFILL 12 FORMOTES FORMOTES FORMOTES FORMOTES POROTOTES PORMOTES	
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COVER III GOOD FOOTNOTES WATER MANAGEMENT 3 COVER FOR LANDFILL 3 PONDRS [23] POND RESERVOIR A REA PERCS. RAPIOLY. 4 4 AREA 4 AREA 5 FOOTNOTES COMMUNITY DEVELOPMENT 1 4 6 7 1 1 1 6 7 SHALLOW 1 1 7 SHALLOW 1 1 1 8 SLIGHT 01KES 241 PRESERVOIR A REA PERCS. RAPIOLY. 9 SHALLOW 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <t< td=""><td></td></t<>	
PONDRS PONDRS POND Y Y Y Y	
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FOOTNOTES COMMUNITY DEVELOPMENT I AREA EXCAY 121 SHALLOW SLIGHT DIKES 75 A 3 DIKES 74 12 BUDGS 131 DWELLINGS SLIGHT PONDAQ WITHOUT SLIGHT PONDAQ 251 DWEL 131 DWELLINGS SLIGHT PONDAQ WITHOUT SLIGHT PONDAQ 251 DWEL 141 DWELLINGS NO WATER DWEL 141 DWELLINGS FEO DWEL 141 DWELLINGS FEO DWEL 141 DWELLINGS SLIGHT DRAIN 2 DWELLINGS SLIGHT DRAIN 261 4 4 AQUIFER FEO FEO 5 SLIGHT DRAIN 261 FEO 4 4 AQUIFER FEO FEO 5 SLIGHT IRRIG 14 FEO 0 4 BASEMENTS SLIGHT IRRIGATION 4 5 SLIGHT IRRIG 14 4 AGE IRRIG 14 6 14 SLIGHT IRRIG 7	
EXCAV 121 SHALLOW Image: Shalow Ima	
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V V V V V V V DWEL 141 DWELLINGS DWELLINGS DRAIN 261 261 DWEL DWELLINGS WITH DASEMENTS 261 261 DWEL A BASEMENTS A 4 DLDGS 151 SMALL SLIGHT IRRIG 271 COMMERCIAL BUILDINGS A 4 4 DWERCIAL BUILDINGS A 4	
DWEL 141 DWELLINGS SLIGHT DRAIN 261 22 WITH BASEMENTS WITH BASEMENTS 33 DRAINAGE EXCESS ALKALI Image: Comparison of the second se	
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BLDGS 151 SMALL EXCESS ALKALI, ERODES EASILY 2 3 COMMERCIAL BUILDINGS 3 1RRIGATION 4 4 4 4	
4 BUILDINGS 4 5 7 7 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	
4 BUILDINGS 4	
ROADS 161 MODERATE - LOW STRENGTH TERRAC 281	
2 LOCAL 2 TERRACES	
4 STREETS 4 DIVERSIONS	
1 15 V 15 WATERW 291	
FOOTNOTES REGIONAL INTERPRETATIONS	
R E G IO N 171 3 WATERWAYS 2 4 4	
R E G I O N 181	

KEYING ONLY RECORD CONTROL	UNIT NAME: <u>GLENDERSDN</u> UNIT MODIFIER:				(2) RECREATION							
NO. WORD NO. CAMPS 301		DUSTY			KEYING ONLY PLAYGD 321		FOD	-2%: MDDE	RATE – DU RATE – SL			
3	CAMP AREAS	e			3	41	_					
PICNIC 311	MODERATE -	DUSTY			PATHS 331		м	DDERATE -	DUSTY			
2	PICNIC AREAS				3	PATHS AND TRAILS						
	FOOTNOTE	CAP	BILITY AND	PREDICTED YIELD	S-CROPS AND		GH LEVEL	MANAGEME	ΙT)			
CROPHD 451	CLASS- DETERMINING	CAPABILITY										
CROPS 341 1	PHASE	NIRR IRR. 75 75	NIRR	IRR. NIRR IR	R. NIRR	IRR. NIF	R IRR.	NIRR	IRR. NI	RR IRR.	NIRR	IRR.
5												
7												
9 351												
	FOOTNOTE			WOO	DLAND SUITAB							
	CLASS- OFTERMINING	SYM EROSION		MANAGEMENT PROBLE P. SEEDLING	MS WINDTH.	PLANT		TIAL PRODUC	TIVITY SITE INDE		TREES TO PL	NT
W00DS 361	PHASE	HAZARI		MORT'Y.	HAZAKU	COMPET.	NI	DNE				
7 8 9												
371												
3												
5	FOOTNOTE				WIND BREAK	S						11
	CLASS-OETERMINING PHASE		SPECIES	HT	SPECIES	HT		SPECIES	HT		SPECIES	HT
WINDBK 381		-	NONE									
WINDBK 381												
2												
	FOOTNOTE CLASS-		NONE	WILDLI POTENTIAL FC	FE HABITAT SU R HABITAT ELEMI	UITABILITY ENTS					SHABITAT FOI	RANGELAND
	FOOTNOTE CLASS- DETERMINING PHASE	GRAIN & SEED V. POOR	NONE GRASS & LEGUME	WILDLI POTENTIAL FC WILD HARDW HERB. TREES	FE HABITAT SL DR HABITAT ELEMI D CONIFER		WETLAND PLANTS POOR	SHALLOW WATER V. POOR		POTENTIAL A: WOODLAND WILDLIFE	SHABITAT FOI WETLAND WILDLIFE V. POOR	RANGELAND WILDLIFE POOR
WILDLF391	FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR		NONE GRASS &	WILDLI POTENTIAL FO WILD HARDW HERB. TREES	FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS	UITABILITY ENTS SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLAND WILDLIFE	WOODLAND	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF 391	FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR	SEED V. POOR	GRASS & LEGUME V. POOR	WILDLI POTENTIAL FC WILD HARDW HERB. TREES POOR	FE HABITAT SL R HABITAT ELEM D CONIFER PLANTS 	UITABILITY ENTS SHRUBS PQOR	WETLAND PLANTS POOR	SHALLOW WATER V. PQOR	OPENLAND WILDLIFE V. POOR	WOODLAND	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF 391	FOOTNOTE CLASS- DETERMINING PHASE ALL_NIRR FOOTNOTE	SEED V. POOR POTEN	GRASS & LEGUME V. POOR TIAL NATIV PLANT	WILDLI POTENTIAL FC WILD HARDW HERB. TREES	FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS	UITABILITY ENTS SHRUBS PQOR	WETLAND PLANTS POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF 391	FOOTNOTE CLASS- DETERMINING PHASE ALL_NIRR FOOTNOTE FOOTNOTE COMMON PLANT NAME	SEED V. POOR POTEN	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN)	WILDLI POTENTIAL F(WILD HARDW HERB. TREES POOR	FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS	JITABIL TY ENTS SHRUBS PQOR	WETLAND PLANTS POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF391	FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE WHEATGRASS NEEDLEANDTHREAD	SEED V. POOR POTEN	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL	WILDLI POTENTIAL FO WILD HARDW HERB. TREES POOR E PLANT COMMUNIT 30 20 10	FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS	JITABIL TY ENTS SHRUBS PQOR	WETLAND PLANTS POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF 391 WILDLF 391 Y	FOOTNOTE CLASS- DETERMINING PHASE ALL_NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE_WHEATGRASS NEFDLEANDTHREAD INDIAN_RICEGRASS BIG SAGEBRUSH BI UEBUNCH_WHEATGRASS	SEED V. POOR POTEN	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STCO4 ORHY ARTR2 AGSP	WILDLI POTENTIAL F(WILD HARDW HERB. TREES POOR E PLANT COMMUNIT 30 20 10 10 5	FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS	JITABIL TY ENTS SHRUBS PQOR	WETLAND PLANTS POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF 391 WILDLF 391 Y	FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE WHEATGRASS NEEDLEANDTHREAD INDIAN RICEGRASS BIG SAGEBRUSH BI UEBUNCH WHEATGRASS PRAIRIE JUNEGRASS SANDBERG BLUEGRASS	SEED V. POOR POTEN	RASS & CRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STCO4 ORHY ARTR2 AGSP KOCR POSE	WILDLI POTENTIAL FC WILD HARDW HERB, TREES POOR E PLANT COMMUNIT 30 20 10 10 5 5 5	FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS	JITABIL TY ENTS SHRUBS PQOR	WETLAND PLANTS POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF 391 WILDLF 391 Y	FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR ALL NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE WHEATGRASS NEEDLEANDTHREAD INDIAN RICEGRASS BIG SAGEBRUSH BI UNEGRASS PRATIE JUNEGRASS	SEED V. POOR POTEN	RASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STCO4 ORHY ARTR2 AGSP KOCR	WILDLI POTENTIAL F(WILD HARDW HERB, TREES POOR E PLANT COMMUNIT 30 20 10 10 5 5	FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS	JITABIL TY ENTS SHRUBS PQOR	WETLAND PLANTS POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF391 WILDLF391 Y </th <th>FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE WHEATGRASS NEEDLEANDTHREAD INDIAN RICEGRASS BIG SAGEBRUSH BLUEBUNCH WHEATGRASS PRAIRIE JUNEGRASS PRAIRIE JUNEGRASS SAADBERG BLUEGRASS LOW RABBITBRUSH</th> <th>SEED V. POOR POTEN</th> <th>GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STCO4 ORHY ARTR2 AGSP KOCR POSE CHVIH2 EURDT</th> <th>WILDLI POTENTIAL FC WILD HARDW HERB, TREES POOR E PLANT COMMUNIT 30 20 10 10 5 5 5</th> <th>FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS</th> <th>JITABIL TY ENTS SHRUBS PQOR</th> <th>WETLAND PLANTS POOR</th> <th>SHALLOW WATER V. POOR</th> <th>OPENLAND WILDLIFE V. POOR</th> <th>WOODLAND WILDLIFE</th> <th>WETLAND WILDLIFE</th> <th>RANGELAND WILDLIFE</th>	FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE WHEATGRASS NEEDLEANDTHREAD INDIAN RICEGRASS BIG SAGEBRUSH BLUEBUNCH WHEATGRASS PRAIRIE JUNEGRASS PRAIRIE JUNEGRASS SAADBERG BLUEGRASS LOW RABBITBRUSH	SEED V. POOR POTEN	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STCO4 ORHY ARTR2 AGSP KOCR POSE CHVIH2 EURDT	WILDLI POTENTIAL FC WILD HARDW HERB, TREES POOR E PLANT COMMUNIT 30 20 10 10 5 5 5	FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS	JITABIL TY ENTS SHRUBS PQOR	WETLAND PLANTS POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF 391 WILDLF 391 V 6 V 7 PHASE 401 V 7 PLANT 411 V 7 PLANT 411 V 8 V 8 V 9 V 421	FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE WHEATGRASS NEEDLEANDTHREAD INDIAN RICEGRASS BIG SAGEBRUSH BLUEBUNCH WHEATGRASS PRAIRIE JUNEGRASS PRAIRIE JUNEGRASS SAADBERG BLUEGRASS LOW RABBITBRUSH	SEED V. POOR POTEN	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STCO4 ORHY ARTR2 AGSP KOCR POSE CHVIH2 EURDT	WILDLI POTENTIAL FC WILD HARDW HERB, TREES POOR E PLANT COMMUNIT 30 20 10 10 5 5 5	FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS	JITABIL TY ENTS SHRUBS PQOR	WETLAND PLANTS POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF 391 WILDLF 391 V 6 V 7 PHASE 401 V 7 PLANT 411 V 7 PLANT 411 V 8 V 8 V 9 V 421	FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE WHEATGRASS NEEDLEANDTHREAD INDIAN RICEGRASS BIG SAGEBRUSH BLUEBUNCH WHEATGRASS PRAIRIE JUNEGRASS PRAIRIE JUNEGRASS SAADBERG BLUEGRASS LOW RABBITBRUSH	SEED V. POOR POTEN POTEN	NONE GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STCO4 ORHY ARTR2 AGSP KOCR POSE CHVIH2 EURDT OTHER	WILDLI POTENTIAL FO WILD HARDW HERB. TREES POOR E PLANT COMMUNIT 30 20 10 10 10 5 5 5 5 5 5 5 5 5 5 5 5 5	FE HABITAT SL DR HABITAT ELEMI D CONIFER PLANTS	JITABIL TY ENTS SHRUBS PQOR	WETLAND PLANTS POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF 391 WILDLF 391 Y	FOOTNOTE CLASS- DETERMINING PHASE ALL_NIRR ALL_NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE_WHEATGRASS NEEDLEANDTHREAD INDIAN_RICEGRASS BIG_SAGEBRUSH BLUEBUNCH_WHEATGRASS PRAIRIE_JUNEGRASS SANDBERG_BLUEGRASS LOW_RABBITBRUSH WINTERFAT. POTENTIAL PRODUCTION (LBS./	SEED V. POOR POTEN	RASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STCO4 ORHY AGTA ARTR2 AGSP KOCR POSE CHVIH2 EURDT OTHER CHVIH2 EURDT	WILDLI POTENTIAL FO WILD HARDW HERB. TREES POOR E PLANT COMMUNIT 30 20 10 10 10 5 5 5 5 5 5 5 5 5 5 5 5 5	FE HABITAT SL R HABITAT ELEMI D CONIFER PLANTS 	JITABILITY ENTS SHRUBS POOR DOR FOREST NTAGE COMPOS	WETLAND PLANTS POOR	SHALLOW WATER V. POOR IRY VEGET/ IGHT) BY CLA	OPENLAND WILDLIFE V. POOR TION) SS DETERMININ	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF391 WILDLF391 Y </th <th>FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR ALL NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE WHEATGRASS NEEDLEANDTHREAD INDIAN RICEGRASS BIG SAGEBRUSH BLUEBUNCH WHEATGRASS SANDBERG BLUEGRASS LOW RABBITBRUSH WINTERFAT. POTENTIAL PRODUCTION (LBS./ SYM. 1WATER_FOR_IRRIGATION</th> <th>SEED V. POOR POTEN POTEN AC. DRY WT): FAVORABLE Y NORMAL YEAR UNFAVORABLE NOT .AVAILAB</th> <th>RASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STC04 ORHY AGDA STC04 ORHY AGDA STC04 ORHY AGDA STC04 ORHY AGDA STC04 ORHY ARTR2 AGSP KOCR POSE CHVIH2 EURDT OTHER CHVIH2 EURDT OTHER SY E YEARS SS E Y EARS</th> <th>WILDLI POTENTIAL FO WILDLIA FO WILDLIA FO HERB. TREES POOR </th> <th>FE HABITAT SL R HABITAT ELEMI D CONIFER PLANTS Y (RANGELANI PERCEI PERCEI</th> <th>JITABILITY ENTS SHRUBS POOR DOR FOREST NTAGE COMPOS</th> <th>WETLAND PLANTS POOR</th> <th>SHALLOW WATER V. POOR IRY VEGET/ IGHT) BY CLA</th> <th>OPENLAND WILDLIFE V. POOR TIQN) SS DETERMININ SS DETERMININ</th> <th>WOODLAND WILDLIFE</th> <th>WETLAND WILDLIFE</th> <th>RANGELAND WILDLIFE POOR</th>	FOOTNOTE CLASS- DETERMINING PHASE ALL NIRR ALL NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE WHEATGRASS NEEDLEANDTHREAD INDIAN RICEGRASS BIG SAGEBRUSH BLUEBUNCH WHEATGRASS SANDBERG BLUEGRASS LOW RABBITBRUSH WINTERFAT. POTENTIAL PRODUCTION (LBS./ SYM. 1WATER_FOR_IRRIGATION	SEED V. POOR POTEN POTEN AC. DRY WT): FAVORABLE Y NORMAL YEAR UNFAVORABLE NOT .AVAILAB	RASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STC04 ORHY AGDA STC04 ORHY AGDA STC04 ORHY AGDA STC04 ORHY AGDA STC04 ORHY ARTR2 AGSP KOCR POSE CHVIH2 EURDT OTHER CHVIH2 EURDT OTHER SY E YEARS SS E Y EARS	WILDLI POTENTIAL FO WILDLIA FO WILDLIA FO HERB. TREES POOR	FE HABITAT SL R HABITAT ELEMI D CONIFER PLANTS Y (RANGELANI PERCEI PERCEI	JITABILITY ENTS SHRUBS POOR DOR FOREST NTAGE COMPOS	WETLAND PLANTS POOR	SHALLOW WATER V. POOR IRY VEGET/ IGHT) BY CLA	OPENLAND WILDLIFE V. POOR TIQN) SS DETERMININ SS DETERMININ	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE POOR
WILDLF 391 WILDLF 391 Y	FOOTNOTE CLASS- DETERMINING PHASE ALL_NIRR ALL_NIRR FOOTNOTE COMMON PLANT NAME THICKSPIKE_WHEATGRASS NEEDLEANDTHREAD INDIAN RICEGRASS BIG SAGEBRUSH BLUEBUNCH_WHEATGRASS PRAIRIE_JUNEGRASS SANDBERG_BLUEGRASS LOW_RABBITBRUSH WINTERFAT. POTENTIAL PRODUCTION (LBS./ SYM_ 1	AC. DRY WT): FAVORABLE Y NORMAL YEAP UNFAVORABLE NOT .AVAILAR	NONE GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) AGDA STCO4 ORHY ARTR2 AGSP KOCR POSE CHVIH2 EURDT OTHER CHVIH2 EURDT OTHER CHVIH2 EURDT OTHER SS E YEARS SS E YEARS	WILDLI POTENTIAL F(C) WILDLI POTENTIAL F(C) WILDLI POOR TREES POOR	FE HABITAT SL R HABITAT ELEMI D CONIFER PLANTS Y (RANGELANI PERCEI PERCEI	JITABIL TY ENTS SHRUBS POOR DOR FOREST NTAGE COMPOS	WETLAND PLANTS POOR	SHALLOW WATER V. POOR ORY VEGET/ IGHT) BY CLA	OPENLAND WILDLIFE V. POOR	WOODLAND WILDLIFE	WETLAND WILDLIFE V. POOR	RANGELAND WILDLIFE POOR

U.S. OEPARTMENT OF AGRICULTURE SOLL CONSERVATION SERVICE (1) SCS-SOILS-S REV. MAY 1972 FILE CODE SOILS-12
 KEYING ONLY

 CORD
 CONTROL

 0.
 WORD
 NO.

 MLRA
 001
 SOIL SURVEY INTERPRETATIONS RECORD KIND OF UNIT SERIES UNIT AUTHOR(S) JRS DATE 2/73 REVISED UNIT MODIFIER NO. UNIT NAME GLENDIVE MLRA(S) MLRA(S) 34 STATE WYOMING RECORD NO. AUTHOR(S) JRS DATE 2/73 REVISED UNIT MAME GLENDIVE CLASSIFICATION AND BRIEF SOIL DESCRIPTION USTIC TORRIFLUVENTS, COARSE-LOAMY, MIXED (CALCAREOUS), FRIGID USTIC TORRIFLUVENTS, COARSE-LOAMY, MIXED (CALCAREOUS), FRIGID THE GLENDIVE SERIES ARE WELL DRAINED SOILS FORMED IN SANDY ALLUVIUM ON FLOODPLAINS. SLOPES ARE 0 TO 3 PERCENT, ELEVATION IS 7,000 TD THE GLENDIVE SERIES ARE WELL DRAINED SOILS FORMED IN SANDY ALLUVIUM ON FLOODPLAINS. SLOPES ARE 0 TO 3 PERCENT, ELEVATION IS 7,000 TD THE GLENDIVE SERIES ARE WELL DRAINED SOILS FORMED IN SANDY ALLUVIUM ON FLOODPLAINS. SLOPES ARE 0 TO 3 PERCENT, ELEVATION IS 7,000 TD 7,200 FEET. PRECIPITATION IS 10 TO 12 INCHES. THE MEAN ANNUAL AIR TEMPERATURE IS ABOUT 36°F, AND, THE GROWING SEASON IS ABOUT 80 TO 90 0 DAYS. TYPICALLY, THE PROFILE IS BROWN OR GRAYISH BROWN SANDY LOAM STRATIFIED WITH THIN LENSES OF LOAM AND VERY FINE SANDY LOAM TO 60 INCHES OR MORE. STATE 011 CLASS 021 DESCR + 5 ESTIMATED SOIL PROPERTIES FOOTNOT PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE PLAS-TICITY LIQUID LIMIT FRACT. DEPTH >3 IN. (PCT) AASHO UNIFIED USDA TEXTURE (IN.) 40 INDEX 95-100 90-100 60-90 35-70 15-25 NP-10 SM, CL A-4 0 041 SR-SL-L ROP 0-60 3 16 WINO EROD. ERÓSIÓN SOIL REACTION AVAILAB SHRINK-SWELL CORROSIVITY SALINITY PERMEABILITY FACTORS DEPTH WATER CAPACITY POTENTIAL (IN/HR) (MMHOS/CM) GROUP KT STEEL CONCRETE (IN.) (IN/IN)(pH) LOW .24 5 3 HIGH LOW 7.4-9.0 .13-.15 2.0-6.0 PROP 051 SAME 2 DEPTH 3 AS ABOVE POTENTIAL FROST ACTION BEDROCI SUBSIDENC CEMENTEO PAN HYD GRP HIGH WATER TAB INITIAL TOTAL FLOODING DEPTH HARDNESS DEPTH HARDNESS MONTHS DEPTH (FT) KINO (1N) (IN) (IN) FREQUENCY DURATION MONTHS LOW >60 OCCASIONAL VERY BRIEF MAY-JUNE PROP 061 >6 SOURCE MATERIAL FOOTNOTES SANITARY FACILITIES KEYING ONLY FOOTNOTES FAIR - LOW STRENGTH FILL 191 SEVERE - FLOODS SEPTIC 071 SEPTIC TANK ROADFILL ABSORPTION 3 1 FIELDS 1 SAND 201 П UNSUITED SEVERE - FLOODS LAGOON 08 2 SEWAGE SAND LAGOONS 15 UNSUITED GRAVEL 211 T TRENCH091 SEVERE - FLOODS Ш 2 SANITARY GRAVEL LANDFILL 4 (TRENCH) 221 2 3 GOOD Ţ SEVERE - FLOODS SOIL SANARE 101 SANITARY TOPSOIL LANDFILL (AREA) 15 GOOD COVER 111 WATER MANAGEMENT FOOTNOTES DAILY PONDRS 231 PERCS RAPIDLY 3 COVER FOR POND LANDFILL 4 RESERVOIR 4 AREA 15 COMMUNITY DEVELOPMENT FOOTNOTES PERCS RAPIDLY, LOW STRENGTH DIKES 241 SEVERE - FLOODS EXCAV 121 2 EMBANKMENTS SHALLOW 3 DIKES AND EXCAVATIONS LEVEES 15 PONDAQ 251 DEEP TO WATER SEVERE - FLOODS DWEL 131 EXCAVATED 2 DWELLINGS PONDS WITHOUT AQUIFER 4 BASEMENTS FEO 15 DRAIN 261 FLOODS SEVERE - FLOODS DWEL 141 DWELLINGS 2 DRAINAGE WITH 4 BASEMENTS 1 15 FLOODS IRRIG 271 SEVERE - FLOODS BLDGS 151 2 SMALL IRRIGATION COMMERCIAL 13 BUILDINGS 1 TERRAC 281 SEVERE - FLOODS ROADS 161 TERRACES 2 LOCAL ROADS ANO 2 AND DIVERSIONS STREETS 14 4 15 WATERW 291 ---REGIONAL INTERPRETATIONS GRASSED FOOTNOTES 2 WATERWAYS REGION 171 4 REGION 181

KEY RECORO NO,	WORC C AM P PICN CROP	TROL NO. S 301 2 2 3 4 Y 5 IC 311 4 Y 5 6 2 3 4 Y 5 341 2 3 4 Y 5 341 2 3 4 Y 5 6 7 8 Y 9 351 2	UNIT NAME:GLEND UNIT MODIFIER:FOOTNOTE CAMP AREAS PICNIC AREAS PICNIC AREAS CLASS- OETERMINING PHASE 1 0-3	FLOODS		PREDICTE	F F D YIELDS - 1	(2) CREATION KEYING ONLY 2LAY GD 321 2ATHS 331 2ATHS 331 CROPS AND NIRR NIRR	Z PLAYGROU PLAYGROU PATHS AND TRAILS		2%: MODE 3%: MODE	RATE - FLOC RATE - SLOF	2E, FLOODS	NIRR	
	<u> </u>	1 3	FOOTNOTE			MAN AGEMEN	WOODL	AND SUITAE	BILITY	POTEN	TIAL PRODUC	TIVITY		_1	
			OETERMINING	ORO EROSION SYM HAZARO		P. SEEC		INOTH. AZARD	PLANT COMPET.		ANT TREES	SITE		FREES TO PLA	NT
	W000	DS 361 2 3				MUR					NONE				
		4 5 6 7 8													
		9 371 2 3													
		4													
	1	1 6	FOOTNOTE	l	SPECIES			WIND BREAF	(S HT		SPECIES			SPECIES	HT
	WIND	BK 381			NONE										
		3													
		¥ 6						HABITAT SI							
			CLASS- OETERMINING	GRAIN &	GRASS &	POTI WILO	HAROWO	CONIFER	IENTS	WETLAND	SHALLOW		OTENTIAL AS WOODLAND WILDLIFE	HABITAT FOR WETLAND	RANGELAND
-	WILD	LF 391	PHASE	SEED	LEGUME	HERB.	TREES	PLANTS	SHRUBS FAIR	PLANTS POOR	WATER V. POOR	WILOLIFE POOR	WILDLIFE	WILDLIFE V. POOR	WILDLIFE FAIR
		4													
		• • •	FOOTNOTE	POTEN	TIAL NATIV	E PLANT C	DMMUNITY	RANGELAN	D OR FORES		RY VEGETA	ATION) S\$ OETERMINING	PHASE		
	PHA	SE 40	COMMON PLANT NAMI	1	PLANT SYMBOL (NLSPN)										
	PLA	NT 41			AGSM ELCI2		20								
			CANBY BLUEGRASS		POCA STCO4		0								
			SLENDER WHEATGRASS		AGTR KOCR		5								
	-		BIG SAGEBRUSH SILVER SAGEBRUSH		ARTR2 ARCAI3		5								
		42			OTHER		20								
	IPRO	OUC 43	POTENTIAL PRODUCTION (LBS.	AC. ORY WT): FAVORABLE Y	FARS	2,2	00								
	1		<u>1</u> 2 3	NORMAL YEAR UNFAVORABL	IS .	1.8	00	E O O O O O O O O O O O O O O O O O O O	10						
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SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

KEYING ONLY RECORO CONTROL NO. WDRO NO. MLRA 001 STATE 011 SOIL SURVEY INTERPRETATIONS MLRA(S) UNIT NAME GLENDIVE, SALINE CLASS THE GLENDIVE, SALINE, RHASE IS SOMEWHAT, RODRLY, DRAINED. THE SOIL FORMED IN SANDY ALLUVIUM DN. FLODDPLAINS., SLOPES ARE 0 TD 3 PERCENT. ELEVATION IS 7.000 TO 7.200 FEET. PRECIPITATION IS 10 TO 12 INCHES, THE MEAN ANNUAL AIR TEMPERATURE IS ABOUT 36°F., AND THE GROWING SEASON IS ABOUT 80 TO 90 DAYS. TYPICALLY, THE PROFILE IS BROWN DR. GRAYISH BROWN, SANDY LDAM STRATIFIED WITH THIN LENSES DF. LDAM, AND VERY DESCR 3 - FOOTNO ESTIMATED SOIL PROPERTIES OEPTH PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE FRACT. USOA TEXTURE (IN.) UNIFIEO PLAS-AASHO LIQUIO >3 IN. (PCT) TICITY LIMIT PROP 041 10 40 0-60 200 SR- SL-L SM, CL A-4 95-1D0 90-10D 6D-9D 35-70 0 15-25 NP-1D 3 16 AVAILABLE WATER CAPACITY PERMEABILITY SOIL OEPTH SALINITY EROSION WINO EROO. SHRINK-SWELL CORROSIVITY REACTION (IN/HR) (IN.) FACTORS (MMHOS/CM) POTENTIAL (IN/IN)(pH) STEEL CONCRETE PROP GROUP .2-.6 .06-.07 7.4-9.0 8.0-16.0 LOW HIGH HIGH .24 SAME 5 3 OEPTH AS ABOVE HIGH WATER TABL FLOODING CEMENTEO PAN SUBSIDENCE BEOROC OEPTH (FT) POTENTIAL HYO MONTHS FREQUENCY DCCASIONAL KINO OEPTH **HARON ESS** DURATION VERY BRIEF OEPTH HARONESS INITIAL TOTAL FROST MONTH GRP PROP 061 (IN) (IN) MAY-JUNE 1.5-3 APPARENT MAY- OCT 60 B MODERATE FOOTNOTES SANITARY FACILITIES KEYING ONLY FOOTNOTES SOURCE MATERIAL SEPTIC SEVERE - FLDDDS, WET FAIR - AREA RECLAIM, LOW STRENGTH SEPTIC TANK FILL 191 ABSORPTION ROAOFILL FIELOS \$ 5 LAGOON 08 SEVERE - FLDDDS, WET SANO 201 UNSUITEO SEWAGE 2 LAGOONS SAND 15 TRENCH091 SEVERE - FLODDS, WET GRAVEL 211 SANITARY 11 UNSUITED LANGELLE GRAVEL (TRENCH) T 15 SANARE 101 SEVERE - FLOODS, WET SOIL 221 П PODR - EXCESS SALT SANITARY 2 LANOFILL TOPSOIL (AREA) COVER 111 L GOOD OAILY FOOTNOTES WATER MANAGEMENT COVER FOR PONORS 231 LANOFILL PERCS RAPIDLY PONO 15 RESERVOIR AREA FOOTNOTES' COMMUNITY DEVELOPMENT 15 EXCAV 121 SEVERE - WET, FLOODS OIKES 241 UNSTABLE FILL SHALLOW. 2 EMBANKMENTS EXCAVATIONS DIKES ANO 15 LEVEES PONOAQ 251 131 2 OWEL SEVERE - FLODDS FAVORABLE OWELLINGS 2 EXCAVATED WITHOUT PONOS AQUIFER 3 BASEMENTS 15 4 FEO. OWEL 141 SEVERE - FLODDS, WET DRAIN DWELLINGS 261 FLOODS, CUTBANKS CAVE, EXCESS SALTS WITH DRAINAGE BASEMENTS 11 4 15 BLDGS 151 SEVERE - FLOODS IRRIG 271 FLOODS, EXCESS SALT 234 SMALL COMMERCIAL 234 IRRIGATION BUILDINGS 15 ROADS 161 15 SEVERE - FLOODS TERRAC 281 2 LOCAL ROADS AND 2 TERRACES 4 AND DIVERSIONS STREETS 15 WATERW 291 FOOTNOTES 7 REGIONAL INTERPRETATIONS GRASSED REGION 171 WATERWAYS 4 14 REGION 181

KEYING ONLY RECORD CONTROL NO. WORD NO. CAMPS 301	UNIT NAME: <u>GLENOIVE</u> UNIT MODIFIER: <u>SALINE</u> <u>FOOTNOTE</u> SEVERE - 1	WET, FLOOOS			(2) RECREATION KEYING ONLY PLAY GD 32		F00T	2% MODE	RATE - FLO	000S, WET	0 1/F 7	
	CAMP AREAS					2 3 9 4 5		-3%: MODE	RATE - SLO	JPE, FLUUU	5, WE	
PICNIC 311 2 3	PICNIC AREAS	- WET, FLOOO	S		PATHS 33		M	DOERATE -	WET			
				PREDICTED YIEL		4 TRAILS			(TT')			
CROPHD 451	CLASS-		BILITYANU		US - CRUPS AND	PASTURE (III						
2	DETERMINING PHASE	CAPABILITY	NIRR II	RR. NIRR	IRR. NIRR	IRR. NII	R IRR.	NIRR	IRR. NIF	R IRR.	NIRR	IRR.
CROPS 341	1 0-3	6s 4s										
3												
5											++	
8											++	
351												
	FOOTNOTE				ODLAND SUITA	BILITY	Dorru				1	
	CLASS- DETERMINING	ORD EROSION	EQUIP.	MANAGEMENT PROBL SEEDLING MORT'Y.	EMS WINDTH. HAZARD	PLANT COMPET.		TIAL PRODUCT ANT TREES	SITE INDEX		TREES TO PLA	NT
WOODS 361		STM HAZARD		MORT		COM LT.	N	ONE				
5												
7												
9 37 1												
2 3												
	FDOTNOTE CLASS-DETERMINING PHASE		SPECIES	HT	WIND BREAT SPECIES	KS HT		SPECIES	HT		SPECIES	HT
WINDBK 381			NONE									
	FODTNOTE			WILDI	IFE HABITAT S	UITABILITY				OTENTIAL AS	UADITAT COD	
	CLASS- DETERMINING	GRAIN &	GRASS &	WILD HARD	FOR HABITAT ELEN	SHRUBS	WETLAND PLANTS	SHALLO₩ WATER	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF 391	PHASE ALL NIRR	SEED POOR	LEGUME	HERB. TRE GOOD		6000	FAIR	FAIR	POOR		FAIR	G000
5								SV VECETA	TION			
A	FOOTNOTE		PLANT	PLANT COMMUN	IY (RANGELAN PERCI	D OR FOREST ENTAGE COMPOS	ITION (DRY WEI	GHT) BY CLAS	S OFTERMINING	G PHASE		
		E	SYMBOL (NLSPN) SPAI	45								
PLANT 41			ELCI2 DIST	10								
	INLAND SEDGE		CAIN11 SARCO	10								
			PUAI	5								
	NUTTALL ALKALIGRASS		MUAS	5								
	NUTTALL ALKALIGRASS			5								
42	NUTTALL ALKALIGRASS		MUAS									
	NUTTALL ALKALIGRASS		MUAS									
	NUTTALL ALKALIGRASS ALKALI MUHLI ALKALI MUHLI ALKALI MUHLI	/AC. DRY WT): _	MUAS OTHER	5								
PRODUC 43	NUTTALL ALKALIGRASS ALKALI MUHLI ALKALI MUHLI P	FAVORABLE Y	MUAS OTHER EARS	5 3.400 3.000								
PRODUC 43	NUTTALL ALKALIGRASS ALKALI MUHLI ALKALI MUHLI P P P P D TENTIAL PRODUCTION (LBS. SYML	FAVORABLE Y NORMAL YEAR UNFAVORABL	MUAS OTHER EARS S E YEARS	5 3.400 3.000 2.500 ENT	FOOTNOT	<u>. 1 </u>						
PRODUC 43	NUTTALL ALKALIGRASS ALKALI MUHLI ALKALI MUHLI PDTENTIAL PRODUCTIDN (LBS. SYM.	FAVORABLE Y NORMAL YEAR UNFAVORABL	MUAS OTHER EARS S E YEARS	5 3 • 400 3 • 000 2 • 500 ENT. •	<u> </u>	<u> </u>	<u></u>	<u></u>	<u></u>			
PRODUC 43	NUTTALL ALKALIGRASS ALKALI MUHLI ALKALI MUHLI P	FAVORABLE Y NORMAL YEAR UNFAVORABL	MUAS OTHER EARS S E YEARS BLE, AT .PRES	5 3 • 400 3 • 000 2 • 500 ENT. •	<u> </u>	· · · · · · · · · · · · · · · · · · ·	<u> </u>	<u></u> <u> </u>	····		1	

SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY

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RECORO CONTROL]	SC	IL SURVE	y inte	ERPRE	TATIONS	5
NO. WORD NO. MLRA 001	MLRA(S)	34			KIND OF U	INIT SERIES	S UNIT NAME HATERMUS
STATE 011	STATE WYOM	AING RECORD NO) AUTHOR(S)	JRS	DATE 2/73	REVISED U	NIT MODIFIER
CLASS 021	CLASSIFICATION AN	ND BRIEF SOIL DESCRIPT	(CALCARFOUS), FRIG	TD. SHALLOW			
DESCR 031	. THE HATERMUS S	SERIES ARE WELL DRAIN	ED. SOLLS, FORMED, IN	RESIDUUM F	ROM. VERY. STR	RONGLY ALKALINE	E. SHALE ON RIDGES AND UPPER HILLSIDES. SLOPES ARE
2	. 10 TO. 30 PERCE	ENT. ELEVATION IS 6,	800 TO 7.000 FEET.		TION IS 7 TO	<u>9, INGHES, MEA</u> HT. GRAY LOAM A	AN, ANNUAL AIR TEMPERATURE IS ABOUT 300F. AND THE
4						IS UNDERLAIN	BY SOFT, VERY STRONGLY ALKALINE SHALE AT A DEPTH OF.
	FOOTNOTE	CLAY, LOAM TO LIGHT (C	ESTIM	ATED SOIL PI	ROPERTIES	<u></u> .	
	DEPTH	USDA TEXTURE	UNIFIED		AASHO	FRAC > 3	THAN 3 IN PASSING SEVE
	(IN.)	USDA TEXTORE	ONTILD		ANSILO	(PC1	T) 4 10 40 200 LIMIT INDEX
PROP 041		CL, L	CL		A-6	0	
2	18	WB					
4		•••					
5							
	DEPTH PERMEA	ABILITY AVAILABLE WATER CAPAC		SALINITY	SHRINK-SWELL	CORROSIVI	TY ERÔSIÓN WIND FACTORS EROD.
	(IN.) (IN/	(IN/IN)	(pH)	(MMHOS/CM)	POTENTIAL	STEEL CO	DNCRETE K T GROUP
PROP 051	SAME .6-2.0	.0809	85->9.0	2.0-4.0	MODERATE	HIGH	HIGH . 28 1 4L
2							
4	AS ABOVE						
5							
		FLOODING	bite and the second	IIGH WATER TAB	the second se	CEMENTED PAN DEPTH HARDNES	BEDROCK SUBSIDENCE HYD POTENTIAL S DEPTH HARDNESS INITIAL TOTAL CRP FROST
	FREQUENCY	DURATION	MONTHS (FT)	KIND	MONTHS	(IN)	(IN) (IN) (IN) ORF ACTION
PROP 061	NONE		>6	1			10-20 RIPPABLE D LOW
	FOOTNOTES	the second se	TARY FACILITIES		KEYING ONLY	FOOTNOTES	
SEPTIC 071	SEPTIC TANK	10-15%: SEVERE - 1 15+%: SEVERE - SLO		=	FILL 191		POOR - THIN LAYER
3	ABSORPTION				3	ROADFILL	
4	FIELDS				¥ ¥5		
LAGDON 081		SEVERE - DEPTH TO	ROCK, SLOPE		SAND 201		UNSUITED
2	SEWAGE LAGOONS				2	SAND	
4					4		
T RENCH 091		10-25%: SEVERE - [DEPTH TO ROCK		GRAVEL 211		UNSUITED
2	SANITARY	25+%: SEVERE - SLO			2	ODAVEL	
4	LANDFILL (TRENCH)				3	GRAVEL	
5			AL 005		SOIL 221		
SANARE 101	SANITARY	10-15%: MODERATE - 15+%: SEVERE - SLO			21		POOR - THIN LAYER, EXCESS ALKALI
3					3	TOPSOIL	
15			· _ · · · · · · · · · · · · · · · · · ·		1 15		
COVER 111		10-15%: POOR - TH				FOOTNOTES	WATER MANAGEMENT
3	COVER FOR	15+%: PUUK - SLUF	C, ININ LAICK		PONDRS 231		DEPTH TO ROCK, SLOPE
4	LANDFILL				2	POND	
		0.000			4	AREA	
EXCAV 121	FOOTNOTES	10-15%: SEVERE -	NTY DEVELOPMENT		DIKES 241		THIN LAYER. LOW STRENGTH
2	SHALLOW	15+%: SEVERE - SL			2		
2 3 4	EXCAVATIONS				3	DIKES AND LEVEES	
DWEL 131		10-15%: MOOERATE -	\$LOPE		PONDAQ 251		NO WATER
2	DWELLING\$	15+%: SEVERE - SL			2	EXCAVATED	
23	WITHOUT BASEMENTS				3	PONDS AQUIFER	
5					15	FED.	
DWEL 141	DWELLINGS	10-15%: SEVERE - 15+%: SEVERE - SL			DRAIN 261		DEPTH TO ROCK, EXCESS ALKALI
2	WITH	June Devene - SL			3	DRAINAGE	
4	BASEMENTS				4		
BLDGS 151		SEVERE - SLOPE			IRRIG 271		ROOTING DEPTH, SLOPE, EXCESS ALKALI
2	COMMERCIAL				2	IRRIGATION	
4	BUILDINGS				4		
ROAOS 161		10-15%: MODERATE			TERRAC 281		
2	LOCAL ROADS AND	15+%: SEVERE - SL	OPE		2	TERRACES AND	
4	STREETS				4	DIVERSIONS	
1 15					¥ 15 WATERW 291		ri
	FOOTNOTES	REGIÓNA	L INTERPRETATIONS		2	GRASSED	
REGION 171					3	WATERWAYS	
3					1 15		
REGION 181					1		
2					-		
4					1		

KEYING ÖNLY RECORD CONTROL NO. WORD NO. C A M P S 30 1 2 3 4 4 Y 5 PICNIC 311 2 3 4 Y 5	UNIT NAME: HATERMUS UNIT MODIFIER: -FOOTNOTE 10-15%: SEVER CAMP AREAS L 10-15%: SEVER DICNIC AREAS	RE - SLOPE, DUSTY VERE - OUSTY RE - 40USTY	(2) RECREATIO REYING ONL PLAYGD 3 PLAYGD 3 PATHS 4 PATHS 4 PATHS 4 PATHS 4 PATHS 4 PATHS 4 PATHS 4 PATHS 4 PATHS 4 PATHS 4	Y FOOTh 21 SE 2 PLAYGROUNDS 4 SE 31 10 2 PATHS 3 ANO 4 TRAILS	VERE - OEPTH TO ROCK, SL D-15%: MOOERATE - DUSTY 5-25%: MODERATE - SLOPE 5+%: SEVERE - SLOPE	
CROPHD451 2 CROPS341 CROPS341 2 3 4 5 6 7 8 9	OETERMINING PHASE N	CAPABILITY	PREDICTED YIELDS - CROPS AN	IRR. NIRR IRR.		IRR. NIRR IRR.
351 2 4 2 3 4 5 6 7 8 4 371	FOOTNOTE CLASS- DETERMINING PHASE CLASS- ORC SYM	EROSION FOUE	WOODLAND SUIT MANAGEMENT PROBLEMS 	PLANT IMPORTA COMPET.	TIAL PRODUCTIVITY INT TREES SITE INOEX	TREES TO PLANT
WINDBK 381	FOOTNOTE CLASS-DETERMINING PHASE FOOTNOTE CLASS- DETERMINING PHASE ALL	GRAIN & GRASS & SEED LEGUME V. POOR V. POOR	WIND BRE WIND BRE HT SPECIES WILDLIFE HABITAT POTENTIAL FOR HABITAT EL WILD HARDWD CONIFER HERB. TREES PLANTS POOR	SUITABILITY EMENTS SHRUBS WETLANO PLANTS	PECIES HT PECIES HT SHALLOW OPENLANO WATER WILOLIFE WILOLI V. POOR V. POOR	IFE WILDLIFE WILDLIFE
PHASE 401 Y 6 PLANT 411 Y 7 PLANT 411 Y 7 8 9 44 55 6 7 8 9 421 2 33 44	FOOTNOTE COMMON PLANT NAME BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS LETTERMAN NEEDLEGRASS SANDBERG BLUEGRASS NEEDLEANDTHREAD NEEDLELEAF SEDGE BIG SAGEBRUSH LOW RABBITBRUSH	POTENTIAL NATIV PLANT SYMBOL (NLSPN) AGSP AGOA STLE4 POSE STC04 CAEL2 ARTR2 CHVIH2 OTHER	E PLANT COMMUNITY (RANGEL A PER 30 15 10 10 5 5 5 5 5 15	IND OR FOREST UNDERSTOR	RY VEGETATION) GHT) BY CLASS OFTERMINING PHASE	
PRODUC 431 PRODUC 431 2 433 NOTES 441 3 4 5 6 6 7		DRY WT): FAVORABLE YEARS NORMAL YEARS UNFAVORABLE YEARS		TES		

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RECORD CONTROL		SC	DIL SURVEY I	NTERPRET	ATIONS	
NO, WORD NO. MLRA 001	MLRA(S)	34		KIND OF U	NIT	UNIT NAME HATERTON
STATE 011	STATE WYOMI		O. AUTHOR(S) JE	RS DATE 2/73	REVISED UNI	T MODIFIER
CLASS 021	TYPIC TOPPIOPTH	ENTS LOAMY MIXED (CALCAREOUS), ERIGID, SH	ALLOW		
	THE HATEDTON SE	DIES ARE WELL DRAINE	D SOTIS FORMED IN RESIDU	JUM FROM STLTSTONE	OR SHALE ON RID	GES AND UPPER SIDEHILLS. SLOPES ARE 10 TO 30 TE GROWING SEASON IS 80 TO 90 DAYS. TYPICALLY,
2	THE SURFACE LAY	ER IS LIGHT BROWNISH	GRAY FINE SANDY LOAM AN	BOUT 2 INCHES THICK	THE UNDERLY I	NG LAYER IS PALE BROWN LOAM ABOUT 16 INCHES
4	THICK AND, IS UN	DERLAIN BY SOFT SHAL	E AT A OEPTH OF 18 INCH	S.		
	FOOTNOTE	<u></u>	ESTIMATED	SOIL PROPERTIES		
	DEPTH	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN.	THAN 3 IN PASSING SIEVE CIQUID TICITY
	(IN.)	OUDA TEXTORE			(PCT)	4 10 40 200 LINET INDEX
PROP 041	0-18	<u>L</u>	ML-CL, CL	A-4, A-6	0	80-95 75-90 65-85 50-70 20-35 5-10
2	18+	<u>WB</u>				
4						
16						
	OEPTH PERME/	ABILITY AVAILABL		ITY SHRINK-SWELL	CORROSIVITY	FACTORS EROD.
		(HR) WATER CAPAC (IN/IN)	CITY REACTION (MMHC (pH) (MMHC	S/CM) POTENTIAL	STEEL CON	CRETE K T GROUP
PROP 1151	.6-2	.0 .1618	7.8-9.0 2.0-	4.0 LOW	HIGH MOC	DERATE . 28 1 3
2	SAME DEPTH					
4	AS					
5	ABOVE					
		FLOODING		ATER TABLE	CEMENTED PAN	BEDROCK SUBSIDENCE HYD POTENTIAL
	FREQUENCY	DURATION	DEPTH MONTHS (FT)	KIND MONTHS I	DEPTH HARDNESS (IN)	DEPTH HARDNESS INITIAL TOTAL GRP FROST (IN) (IN) (IN) (IN) GRP ACTION
PROP 061	NONE	UNATION	>6			10-20 RIPPABLE 0 LOW
	FODTNOTES	SAN	TARY FACILITIES	KEYING DNLY	FOOTNOTES	SOURCE MATERIAL
SEPTIC 071		10-15%: SEVERE -	DEPTH TO ROCK	FILL 191	Ĺ	POOR - THIN LAYER
2	SEPTIC TANK	15+%: SEVERE - SI	OPE, OEPTH TO ROCK	2	ROADFILL	
4	FIELDS					
LACUDN 081				SAND 201		UNSUITEO
2	SEWAGE	SEVERE - OEPTH TO	RUCK, SLUFE	2	L.	
1 3	LAGOONS			3	SAND	
				5	-	
TRENCH 091		10-25%:		GRAVEL 211	Ĺ	UNSUITED
	SANITARY LANDFILL	25+%: <u>SEVERE</u> SI	OPE, DEPTH TO ROCK	3	GRAVEL	
4	(TRENCH)			4		
SANARE 101		10-15%: MODERATE	- SLOPE	SOIL 221		POOR - THIN LAYER
2	SANITARY	15+%: SEVERE - S		2	TOPSDIL	
	LANDFILL (AREA)			4	TOT SOIL	
¥ ¥5				5		
COVER 111	DAILY	10-15%: POOR - TI 15+%: POOR - SLO	HIN LAYER PE. THIN LAYER	· · ·	FOOTNOTES	WATER MANAGEMENT
3	COVER FCR			PONDRS 231	POND	DEPTH TO ROCK, SLOPE
	LANDFILL			3	RESERVOIR	
	FOOTNOTES	7 COMMI	INITY DEVELOPMENT	4	AREA	
EXCAV 121	FOUTHOTES	10-15%: SEVERE -	A house an experimental and a set of the set	DIKES 241		THIN LAYER, LOW STRENGTH
12	SHALLOW		LOPE, DEPTH TO ROCK	2	EMBANKMENTS DIKES AND	· · · · ·
3	EXCAVATIONS			3	LEVEES	
15			01.005	PONDAQ 251		
DWEL 131	DWELLINGS	10-15%: MODERATE 15+%: SEVERE - S	- SLOPE	2	EXCAVATED	NO WATER
3	WITHOUT			3	PONDS AQUIFER	
¥ 15				5	FED	
DWEL 141		10-15%: SEVERE -		DRAIN 261		DEPTH TO ROCK
2	DWELLINGS WITH	15+%: SEVERE - S	LOPE, DEPTH TO ROCK	2 3	DRAINAGE	
4	BASEMENTS			4		
BLDGS 151		SEVERE - SLOPE		IRRIG 271		ROOTING DEPTH, SLOPE
2	SMALL			2		
3	COMMERCIAL BUILDINGS			3	IRRIGATION	
15				TERRAC 201		
ROADS 161	LOCAL	10-15%: MODERATE 15+%: SEVERE - S		TERRAC 281	TERRACES	
3	ROADS AND			3	AND	
4	STREETS			4	DIVERSIONS	
	FOOTNOTES		AL INTERPRETATIONS	WATERW 291	GRASSED	
REGION 171	POUTNUTES	REGION		2 3	WATERWAYS	
2				4		
3				15	L	1
REGION 181						
2 3			· · · · · · · · · · · · · · · · · · ·			
			-			

KEYING ONLY	UNIT NAME: HATERTO	Ν	R	(2) ECREATION			
RECORD CONTROL NO. WORO NO. CAMPS 301	UNIT MODIFIER	ODERATE - SLOPE		KEYING ONLY PLAYGD 321	FOOTNOTE	DEPTH TO ROCK, SLOPE	
	CAMP AREAS	ERE - SLOPE		2 3 PLAYGROU	20 NOS		
PICNIC 311	<u>10-15%:</u> M	ODERATE - SLOPE ERE - SLOPE	F	PATHS 331	10-15%: SI 15-25%: M	ODERATE - SLOPE	
3	PICNIC AREAS			3 AND 4 TRAIL	S	ERE - SLOPE	
CROPHD 451	CLASS-	CAPABILITY AND	PREDICTED YIELDS	CROPS AND PASTURE (I	IGH LEVEL MANAGEMEN	VT)	
	OETERMINING PHASE	CAPABILITY	IRR. NIRR IRR.	NIRR IRR. N	RR IRR NIRR	IRR. NIRR IRR.	NIRR IRR.
CROPS 341	ALL	7E					
5							
8							
351							
		DRD EROSION EQUIF	MANAGEMENT PROBLEMS		POTENTIAL PROOUC	SITE	TREES TO PLANT
WOODS 361	PHASE	SYM EROSION EQUIF	MORT'Y. H	INDTH. PLANT AZARO COMPET.	NONE		
5							
7							
371							
3 4 5							
¥ 6	FOOTNOTE			WIND BREAKS SPECIES HT	SPECIES		SPECIES HT
WINOBK 381		SPECIES NONE					
3							
5 7 7 6	FOOTNOTE		WILDLIFE	HABITAT SUITABILITY			HABITAT FOR:
	CLASS- DETERMINING PHASE	GRAIN & GRASS & SEEO LEGUME	WILO HARDWO HERB. TREES	ABITAT ELEMENTS CONIFER PLANTS SHRUBS	WETLAND SHALLOW PLANTS WATER	OPENLANO WOODLAND WILOLIFE WILDLIFE	WETLANO RANGELAND WILOLIFE WILDLIFE
WILOLF 391	ALL	V. POOR V. POOR	P00R	POOR	V. POOR V. POOR	V. POOR	V. POOR POOR
4							
¥ ¥ 6		POTENTIAL NATIV	E PLANT COMMUNITY	RANGELAND OR FORES	TUNDERSTORY VEGET	ATION) SS DETERMINING PHASE	
PHASE 401	COMMON PLANT NAME						
PLANT 411		AGSP AGDA STLE4	30 15 10				
	SANDBERG BLUEGRASS	POSE STC04	105				
	NEEDLELEAF SEDGE	CAEL2 ARTR2 CHVIH2	<u> </u>				
42		OTHER	15				
PROOUC 43		FAVORABLE YEAKS	<u>450</u> 350				
	SYM.	UNFAVORABLE YEARS	200	FOOTNOTES			1
NOTES 44		<u>, , , , , , , , , , , , , , , , , , , </u>	<u>, , , , , , , , , , , , , , , , , , , </u>	<u> </u>	<u> </u>		
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NO. WORD NO. MLRA 001 STATE 011		34 NG RECORD N	O AUTHOR(S) JRS	KIND OF	UNIT S RÉVISE	ERIES DU UNIT	UNIT MODIFIER	NAME	HAVRE			
CLASS 021 DESCR 031 2 3 4	USTIC TORRIFLUM THE HAVRE SERIE PRECIPITATION I FACE LAYER IS B	ND BRIEF SOIL DESCRIP ENTS, FINE-LOAMY, M S ARE WELL DRAINED S 10 TO 12 INCHES, 1 ROWN LOAM ABOUT 4 II	IXEO (CALCAREQUS), SOILS FORMED,IN AL MEAN,ANNUAL AIR TE NCHES THICK, THE	UNDERLYING	LAYER IS GRA	YISH BROWN	TO BROW	<u>SEASDN,1</u> NISTRATIE	S BUILO LED, LOAM	90,0AYS,.,.T 1.TQ.CLAY,LC	AM TO 60	(<u>a i THE.</u>). INCHE	SUR-
5	FOOTNOTE	······	EST	TIMATED SOIL	PROPERTIES					· · · · · · · · · · · · · · · · · · ·		<u></u>	→ <u>↓ ↓ ↓ ↓ ↓ ↓</u> • → <u>↓</u> ↓ <u>↓</u> ↓ <u>↓</u> •
	OEPTH (IN.)	USDA TEXTURE	UNIFIED		AASHO		FRACT. >3 IN.	T	HAN 3 IN. P	ATERIAL LESS ASSING SIEVE		LIQUIO LIMIT	PLAS- TICITY
PROP 041	0-60	SR-L-CL	CL		A-6		(PCT) 0	4	10 90-100	40 <u>80-100</u> 60	200)-80 2	25-35	INOEX 11-15
5		•											
		ABILITY AVAILABL /HR) WATER CAPA (IN/IN)		SALINITY (MMHOS/CM)	SHRINK-SWEL POTENTIAL		RROSIVITY	FA	CTORS	WINO EROD. GROUP			
PROP 051	SAME .6-2		7.4-9.0	2.0-4.0	MOOERATE		LOI			4L			
3 4	DEPTH AS												
5	ABOVE			HIGH WATER 1		CEMENTE			OROCK	SUBSI	DENCE		OTENTIAL
	FREQUENCY	FLOOOING OURATION	DEPTH MONTHS (FT)		MONTHS		ARDNESS	OEPTH (IN)	HARDN		TOTAL	HYD P GRP	FROST ACTION
PROP 061	FOOTNOTES	VERY BRIEF	ITARY FACILITIES		KEYING ONLY	E E001	NOTES 7	>60	<u> </u>	SOURCE MATE	L	В	LOW
	SEPTIC TANK	SEVERE - FLOODS			FILL 191			FAIR - S		ELL, LOW ST			
	ABSORPTION FIELDS					ROAOFII							
LAGUON 081:	SEWAGE	SEVERE - FLOOOS			SAND 201			UNSUITEC)				
3	LAGOONS		۵ - ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲			3 SANC							
T RENCH 091	SANITARY	SEVERE - FLODOS			L RAVEL 21		· [UNSUITED	1				
23	LANOFILL (TRENCH)					3 GRAVE							
SANARE 101	SANITARY	SEVERE - FLOODS			SOIL 22	1		GOOD					
	LANDFILL (AREA)					3 TOP SOI	L						
COVER 111	DAILY	G00D					NOTES 7			ATER MANAGE	MENT		
23	COVER FOR LANOFILL				PONDRS 23		<u> </u>	FAVORABL			-171 ba 14 1		
15	FOOTNOTES 7		NITY DEVELOPMENT			AREA							
EXCAV 121	SHALLOW	SEVERE - FLOODS			DIKES 24	1		LOW STRE	NGTH, SH	RINK-SWELL			
3	EXCAVATIONS	-				3 OIKES A 4 LEVEE	ND						
DWEL 131	OWELLINGS	SEVERE - FLOODS			PONDAQ 25	1		DEEP TO	WATER				
	WITHOUT BASEMENTS					3 POND 4 AQUIF	S ER						
DWEL 141	DWELLINGS	SEVERE - FLOODS			DRAIN 26	1	·	FLOODS					
23	WITH BASEMENTS					3 DRAINA 4	GE						
BLOGS 151	SMALL	SEVERE - FLOODS			IRRIG 27	1		FLOODS					
	COMMERCIAL BUILDINGS						10N						
ROADS 161	LOCAL	SEVERE - FLOODS			TERRAC 28	1							
3	ROAOS ANO STREETS					3 AND 4 DIVERSI							
5	FOOTNOTES	PECIÓN	AL INTERPRETATIONS		WATERW 29	5							
REGION 171	FUUTIVUTES	IL CIUM				3 WATERW							
3													
REGION 181													
4													

KEYING ONLY	UNIT NAME:			(2)			
RECORD CONTROL NO. WORO NO.	UNIT MODIFIER:		K	CREATION TING ONLY	FOOTNOTE	ATE - FL000S	
CAMPS 301	SEVERE - FL	_00DS		AYGO 321 2 3 PLAYGROUN	3+%: MODERA	TE - SLOPE, FLOOOS	
	CAMP AREAS			4 FLATGROOM			
PICNIC 311	MODERATE -	FLOOOS	P ,	ATHS 331 2 PATHS	SLIGHT		
	PICNIC AREAS			ANO 4 TRAILS			
	FOOTNOTE	CAPABILITY AND	PREDICTED YIELDS - C	OPS AND PASTURE (HI	GH LEVEL MANAGEMENT)	
CROPHO 451	CLASS- OETERMINING	CAPABILITY				IRR. NIRR IRR. NIRR IRR.	
CROPS 341 1	PHASE 0-3	NIRR IRR. NIRR II 6E 3C	RR. NIRR IRR.	NIRR IRR. NIR	R IRR NIRR		
5							
9 351							
	FOOTNOTE		WOODLA				
	CLASS- OETERMINING	EROSION EQUIP.	MANAGEMENT PROBLEMS	IOTH. PLANT ZARO COMPET.	POTENTIAL PRODUCTI IMPORTANT TREES	SITE TREES TO PLANT	
W0005 361	PHASE 3	HAZARO LIMIT	MORT'Y. HA		NONE		
5							
7							
371							
5			w	IND BREAKS			
WINOBK 381	CLASS-OETERMINING PHASE	SPECIES NONE		SPECIES HT	SPECIES	HT SPECIES	НТ
	FOOTNOTE CLASS-		WILDLIFE POTENTIAL FOR H.	ABITAT SUITABILITY		POTENTIAL AS HABITAT FOR:	1.410
-	OETERMINING PHASE	GRAIN & GRASS & SEED LEGUME	WILO HAROWO HERB. TREES	CONIFER SHRUBS PLANTS	WETLANO SHALLOW PLANTS WATER POOR V. POOR	OPENLANO WOOOLANO WETLAND RANGE WILOLIFE WILDLIFE WILDLIFE WILDL	LIFE
WILOLF 391	ALL NIRR	POOR POOR	FAIR	FAIR			
3 4 5							
V V 6	FOOTNOTE	POTENTIAL NATIVE	PLANT COMMUNITY (RANGELAND OR FORES	UNDERSTORY VEGETA	TION)	
PHASE 401	COMMON PLANT NAME			FERGENTAGE COMPOS	interest and a second second second		
PLANT 411	WESTERN WHEATGRASS BASIN WILDRYE	AGSM ELCI2	<u>20</u> 15			· ·	
3	CANBY BLUEGRASS	POCA STCO4	10	•			
5	SLENDER WHEATGRASS PRAIRIE JUNEGRASS	AGTR KOCR	<u>10</u> 5				
8	BIG SAGEBRUSH STIVER SAGEBRUSH	ARTR2 ARCAI3 OTHER	520				
421							
3							
5	POTENTIAL PRODUCTION (LBS./)						
PRO OUC 431	PUTENTIAL PRODUCTION (LBS/)	FAVORABLE YEARS	2,200				
3	SYM.	UNFAVORABLE YEARS	1,200	FOOTNOTES			
NOTES 441 2 3	I a second second second second		<u>, , , L </u>	<u>, , , , , , , , , , , , , , , , , , , </u>		A CONTRACTOR OF A CONTRACTOR O	
		······································					
6			······································				

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SCS-SOILS-S REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY

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SOIL SURVEY INTERPRETATIONS

KEYING ONLY RECORD CONTROL]	SO	IL SURVEY I	NTERPRET	TATIONS			
NO. WORO NO. MLRA 001 STATE 011	MLRA(S)	34 NG RECORD NO.	AUTHOR(S) J	KIND OF U RS DATE 2/73	NIT <u>PHASE</u> REVISED UNIT	UNIT NAME HAV MODIFIER SALINE		
CLASS 021 DESCR 031	Lesses and a state	AND BRIEF SOIL DESCRIPTION	<u>SN</u>			IS A SLOPES ARE 0 TO 3 PE		IS
2	.7.000 .T.0. 7.300. TYPICALLY, THE	EEET. , PRECIPITATION , 1 SURFACE LAYER IS BROWN	S JO TO J2 INCHES, ME	AN ANNUAL AIR TEMPE THICK. THE UNDERLY	RATURE IS ABOUT	369E., AND THE GROWING S MYISH BROWN TO BROWN STRA	EASON IS 80 TO 90	DAYS
4		R_MQRE,		SOIL PROPERTIES	<u></u>		<u> </u>	_k_k
	DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN.	PERCENT OF MATERIAL L THAN 3 IN. PASSING SIE		PLAS- TICITY INDEX
PROP 041	0-60 SI	R- L- CL	CL	A-6	(PCT) 0	100 90-100 80-100		11-15
5 V 6		AVAILABLE	SOIL SALIN	NITY SHRINK-SWELL	CORROSIVITY			<u> </u>
	(IN.) (IN	WATER CAPACIT (/HR) (IN/IN)	Y REACTION (MMHO	DS/CM) POTENTIAL	STEEL CONCI	المتحدين والمتحديث والمتحدين والتحديثي فتتحد والمتحد		
PROP 0.51 2 3	SAME	6 .0809	7.9-9.0 8.0-	16.0 MODERATE	HIGH MODE	RATE .28 5 4L		
4	AS ABOVE							
4 46		FLOODING	Contraction of the Contraction o	ATER TABLE	CEMENTED PAN DEPTH HARDNESS		SUBSIDENCE HYD F	OTENTIAL FROST
PROP 061	FREQUENCY DCCASIDNAL	DURATION VERY BRIEF	MONTHS (FT)		(IN)		N) (IN) GRP B	ACTION
SEPTIC 071	FOOTNOTES	SANITA	ARY FACILITIES	KEYING ONLY FILL 191	FOOTNOTES 7	SOURCE FAIR - AREA RECLAIM, SH	MATERIAL IRINK-SWELL, LOW S	TRENGTH
	SEPTIC TANK ABSORPTION FIELDS				ROADFILL			
LAGOON 081		SEVERE - FLOODS, WET	Г	SAND 201		UNSUITED		
3	SEWAGE LAGOONS				SAN D			
T RENCH 091		SEVERE - FLOOOS, WET	Γ	GRAVEL 211		UNSUITED		
	SANITARY LANDFILL (TRENCH)			3	GRAVEL			
SANARE 101	1	SEVERE - FLODDS, WET		SOIL 221		POOR - EXCESS SALT		
	SANITARY LANDFILL (AREA)			2 3 4	TOPSOIL			
COVER 111	DAILY	GOOD		. 15	FOOTNOTES	WATER MA	NAGEMENT	
2 3 4	COVER FOR LANDFILL			PONDRS 231	POND	FAVORABI E		
¥ ¥5	FOOTNOTES	7 COMMUNI	TY DEVELOPMENT	3 4 V V 5	RESERVOIR AREA			
E X C A V 121 2 3	SHALLOW EXCAVATIONS	SEVERE - FLOODS, WET		DIKES 241 2 3	EMBANKMENTS DIKES AND	UNSTABLE FILL		•
4	EXCAVATIONS			4	LEVEES			
DWEL 131 2 3	UWELLINGS WITHOUT	SEVERE - FLOODS		PONDAQ 251 2 3	EXCAVATED PONOS	FAVORABLE		
4				4	AQUIFER FED			
DWEL 141	DWELLINGS WITH	SEVERE - WET, FLOODS)	DRAIN 261 2 . 3	DRAINAGE	FLOODS, EXCESS SALT		
4 8 4 9 5 8 L D G S 151	BASEMENTS			4 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		FLOODS - EXCESS SALT		
	SMALL COMMERCIAL	SEVERE - FLOODS				LOUDS - EVESS SALT		
ROADS 161	BUILDINGS	SEVERE - FLOODS		4 TERRAC 281				
	LOCAL ROADS AND				TERRACES AND			
4	STREETS	1		WATERW 291	DIVERSIONS			
REGION 171 22 3	FOOTNOTES	REGIDNAL	INTERPRETATIONS		GRASSED WATERWAYS			
REGION 181			· · · · · · · · · · · · · · · · · · ·					

CAMPS 301 SEVERE - WET, FLOOOS PLAYGD 321	DINOTE 0-2%: MODERATE - FLOODS, WET 2-3%: MODERATE - SLOPE, FLOODS, WET
3 CAMP AREAS 3 PLAYGRDUNDS	
2 2 PATHS 3 PICNIC AREAS 3 4 4 4	MODERATE - WET
CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LÉVEL	MANAGEMENT)
Image: 2 constraint of the second	NIRR IRR. NIRR IRR. NIRR IRR.
CROPS 341 1 0-3 6S 4S 1	
CLASS- DED MANAGEMENT PRD LITY	NTIAL PRODUCTIVITY
DETERMINING PHASE SYM HAZARD LIMIT MDRT'Y. HAZARD COMPET.	TANT TREES SITE TREES TO PLANT INDEX
WOODS 361	NONE
CLASS-DETERMINING PHASE SPECIES HT SPECIES HT	SPECIES HT SPECIES HT
WINDBK 381 NONE 2	
FDDTNOTE WILDLIFE HABITAT SUITABILITY PDTENTIAL FOR HABITAT ELEMENTS	PDTENTIAL AS HABITAT FOR:
CLASS- DETERMINING GRAIN & GRASS & WILD HARDWD CONIFER SHRUBS WETLAND PHASE SEED LEGUME HERB. TREES PLANTS SHRUBS PLANTS	SHALLDW DPENLAND WOODLANO WETLAND RANGELAND WATER WILDLIFE WILDLIFE WILDLIFE WILDLIFE
WILDLF 391 ALL NIRR POOR GOOD GOOD FAIR 2	FAIR POOR FAIR GOOD
POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTO PLANT PERCENTAGE COMPOSITION (DRY WE	
PHASE 401 COMMON PLANT NAME PLANT PERCENTAGE COMPOSITION(DRY WE SYMBOL (NLSPN)	IGHT) BY CLASS DETERMINING PHASE
PLANT 411 ALKALI SACATON SPAI 45 2 BASIN WILDRYE ELCI2 10	
3 INLAND SALTGRASS DIST 10 4 INLANO SEOGE CAIN11 10	· · · · · · · · · · · · · · · · · · ·
5 GREASEWOOD SARCO 10 6 ALKALI MUHLY MUAS 5 7 NUTTALL ALKALIGRASS PUAI 5	
8 0THER 5 9 9 5	
PDTENTIAL PRODUCTION (LBS./AC. DRY WT): FAVORABLE YEARS 3,400	
2 NORMAL YEARS 3,000	
NOTES 441 1 WATER FOR IRRIGATION NOT AVAILABLE AT PRESENT.	
SYM. FOOTNOTES	

SCS-SOILS-S REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY RECORD CONTRDL

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

RECORD CONTRDL		SC	DIL SURVE	ey inte	ERPRET	ΓΑΤΙΟ	ONS						
NO. WORD NO. MLRA 001 STATE 011	MLRA(S)	34 IG RECORD N	O.I AUTHOR(S) JRS	KIND OF U					HUGUS	TON		
	CLASSIFICATION AN	D BRIEF SOIL DESCRIP			·····				· · · · · · · · · · · · · · · · · · ·		10 70 20		
2	LEVATION TO 6 8	11ES ARE WELL DRAINE 00 TD 7,000 FEET. TYPICALLY, THE SURE	PRECIPITATION IS '	7 TO 9 INCHES	. MFAN ANNUA	AL AIR TEN	1PERATURI	IS ABOL	11. 30 Th	AND THE	GROWING S	LASUN I.	ABUUI
3	SANDY LOAM ABOUT	12. INCHES, THICK AN	D. IS_UNDERLAIN_BY	SOFT SANDSTO	NE AT A DEPT	H. OF 14	INCHES.				<u>يو من او را مورخ عار</u> اس بر ال <u>المورخ عار</u> الم ال ال ال ال ال ال		
	FOOTNOTE	· · · · · · · · · · · · · · · · · · ·		TIMATED SOIL P			FRACT.			MATERIAL LES	S	LIQUID	PLAS-
	OEPTH (IN.)	USDA TEXTURE	UNIFIED		AASHO		>3 IN. (PCT)	4	10	PASSING SIEVE	200	LIMIT	TICITY
PRDF 041	0-14 14+	SL WB	SM, SM-SC		A-1, A-2		0	70-8D	6D-75	35-5D	20-30	10-15	NP-5
3													
6		AVAILABL	SOIL				RROSIVITY	EI EI	RŐSIŐN	WIND			
	DEPTH PERMEA (IN.) (IN/	(IR) (IN/IN)		SALINITY (MMHOS/CM)	SHRINK-SWELL PDTENTIAL	STEEL	CONCE	ETE K		EROD. GROUP			
PROP 051	2.0-6 SAME	.0 .1113	7.9-9.D	2.0-4.0	LOW	HIGH	LO	W .20					
3	DEPTH AS						_]			
5	ABOVE					CEMENTE	D PAN		EDROCK		BSIDENCE	P	DTENTIAL
	FREQUENCY	FLOODING DURATION	DEPTH MONTHS (FT)	HIGH WATER TAI			ARDNESS	DEPTH (IN)	HARD		AL TOTAL	GRP	FRD ST ACTION
PRDP 1061	NONE		NONE		1			1D-20	RIPP	ABLE		D	LOW
SEPTIC 0/1	FOOTNOTES	10-15%: SEVERE -	TARY FACILITIES		KEYING ONLY FILL 191	F001	NOTES 7	P00R -	THIN LAY	SOURCE MA			
2	SEPTIC TANK L ABSORPTIDN	15+%: SEVERE - SL	DPE <u>, DEPTH TO RDC</u>	<u>K</u>	2	ROAOFI							
	FIELDS	SEVERE - DEPTH TD		S RAPIDLY	SAND 201			POOR					
	SEWAGE LAGOONS				2 3	SAN							
4					4							-	
TRENCH 091	SANITARY	10-25%: SEVERE - 25+%: SEVERE - SL			GRAVEL 211 2 3	GRAVI		UNSUITE	<u>.</u>		•••••••		
3	LANDFILL (TRENCH)	RAPIDLY			4		-						
SANARE 101	SANITARY	10-15%: SEVERE - 15+%: SEVERE - SL		Y	SOIL 221	As one language				- THIN LAYE SLOPE, THIN			
3					3	1							
COVER 111		10-15%: POOR - TH 15+%: POOR - SLOF								WATER MANA	GEMENT		
	COVER FOR				PONDRS 231 2	PONI		DEPTH T	O ROCK,	SLOPE, PER	RCS_RAPID	L.Y	
15		1 001111			3								
EXCAV 121	FOOTNOTES	10-15%: <u>SEVERE</u> - 15+%: SEVERE - SI			DIKES 241	EMBANK		THIN LA	YER, PER	RCS RAPIDL'	Y, PIPING	i	
3	EXCAVATIONS	15+%: SEVERE - 31	UFE, DEFIN TO ROC		3	DIKES	AND						
DWEL 131		10-15%: MODERATE		ROCK	PDNDAQ 251			NO WATE	R				
	WITHOUT	<u>15+%: SEVERE – SI</u>	_OPE		2 3	PDNI	os [
DWEL 141		10-15%: SEVERE -	DEPTH TO ROCK		DRAIN 261	FEC		DEPTH T	TO_ROCK				
	DWELLINGS WITH	15+%: SEVERE - SI		СК	23	DRAIN	AGE						
					19.910 27.1			0000	(81.005	POOTING D	COTU		
BLDGS 151		SEVERE - SLOPE			IR RIG 271 2 3			COMPLE)	SLUPE,	ROOTING D			
	BUILDINGS				4								
ROADS 161	LOCAL	10-15%: MODERATE 15+%: SEVERE - S		D ROCK	TERRAC 281	TERRA	-						
	STREETS				3	DIVERS							
	FDOTNOTES	REGIDN	AL INTERPRETATION	IS	WATERW 291	GRAS	SEO						
REGION 171					3	WATER							
	3												
R E G I O N 18 1	2												
	4												

KEYING ONLY RECORD CONTROL NO. WORD NO. C A M P S 301 2 3 3 3	UNIT NAME: HUGUSTON UNIT MODIFIER: FOOTNOTE 10-15%: MODI 15+%: SEVER	DERATE - SLOPE RE - SLOPE		(2) <u>CCREATION</u> <u>KEYING ONLY</u> <u>PLAY GD 321</u> <u>3</u> PL/	YGROUNOS	DTE /ERE - SLOPE, DEPTH	H TO ROCK
4 Y PICNIC 2 3 4			PREDICTED YIELDS - (¥ ¥ 5	PATHS 15- ANO 25- TRAILS	-15%: SLIGHT -25%: MODERATE - 1 *%: SEVERE - SLOP ANAGEMENT)	SLOPE E
CROPHO451 2 4 3 CROPS 341 2	CLASS- DETERMINING	CAPABILITY		NIRR IRR.	NIRR IRR.	NIRR IRR. NII	RR IRR. NIRR IRR.
3 4 5 6 7 7 7 8 8 9 9							
	FOOTNOTE CLASS- DETERMINING DETERMINING SY	EPOSION FOILIP	ANAGEMENT PROBLEMS	AND SUITABILITY	T IMPORTAL	IAL PRODUCTIVITY NT TREES SITE INDE:	
WOODS 361 2 3 4 4 5 6	PHASE 33						
7 8 9 371 2 3 3 4							
WINDBK 381	FDOTNOTE CLASS-DETERMINING PHASE	SPECIES NONE	HT	WIND BREAKS SPECIES	HT S	PECIES HT	SPECIES HT
	CLASS- DETERMINING	GRAIN & GRASS & SEED LEGUME	WILDLIFE POTENTIAL FOR WILD HARDWD HERB. TREES	HABITAT SUITAB HABITAT ELEMENTS CONIFER SH PLANTS SH	RUBS WETLANO PLANTS	SHALLDW OPENLAND WATER WILDLIFE	WILOLIFE WILDLIFE WILDLIFE
WILDLF 391		V. POOR V. POOR	P00R	P	QOR V. POOR	V. POOR V. POOR	V. POOR POOR
PHASE 400 PLANT 41	NEEDLEANDTHREAD INDIAN RICEGRASS NEEOLELEAF SEOGE	POTENTIAL NATIVE PLANT SYMBOL (NLSPN) STC04 ORHY CAEL2 CHVIH2 AG0A POSE	<u>30</u> <u>10</u> <u>10</u> <u>10</u> <u>5</u> <u>5</u>		COMPDSITION(DRY WEIG		YG PHASE
	WINTERFAT BIG_SAGEBRUSH SHADSCALE 2 3 4	EUROT ARTR2 ATCO OTHER	5 5 15				
PROOUC 43	2 3 SYM.	C. DRY WT): FAVORABLE YEARS NORMAL YEARS UNFAVORABLE YEARS	450 350 200	FOOTNOTES			
	1						

SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY RECORD CONTROL .

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

NO.		ORD LRA	NO.	MLRA(S)		34					ם אואס	0F 11		ERTES		T NAME	KOC	NICH		
			011	STATE	WYOMIN	IG.	SOIL DESCRIP		AUTHOR	S) JRS	DATE 2/	73	REVISED	UNIT	MODIFIEF					
		A Ś Ś S C R	021	TYPIC TO	RRIORTHE	NTS. SA	ANDY, MIXED,	ERIGID								CENT /				0.5557
			2	PRECIPIT	ATION, IS	5.7.TO	WELL DRAINED	N ANNUAL	AIR TEMP	ERATURE IS A	<u>BQUT, 36°</u> F	· · · A	AND THE GI	ROWING S	EASON IS	ABOUT 8	80 TO 90	DAYS. T	PICALLY,	THE
			4	THICK	THE SUBS	TRATUM	SH BROWN SAND	WNISH GR	AY FINE S	ANO TO BROWN	SAND. TO	60,I	NG LAYER	MORE.	ISH BROW	N, TO, BRO	<u>0wn, san</u> (Y. LQAM AB	<u>)UT, 20, IN</u>	CHES
	L	<u> </u>	1 15	FOOTNOTE			<u> </u>		ES	TIMATED SOIL F	ROPERTIE	S	· · · · · · · · · · · · · · · · · · ·		<u> </u>	<u></u>			·····	In Antonio America Instituto de
				DEPTH (IN.)		USDA TEX	TURE		UNIFIED		AAS			FRACT. >3 IN.		ERCENT OF THAN 3 IN.	PASSING SI	EVE	LIQUID LIMIT	PLAS- TICITY
	PR	0 P	041	0-23		SL		SI	M-SC, SC		A-2			(PCT) 0	4 85-95	10 80-90	40 50-65	200	15-20	INDEX 5-10
			2	23-60		S		SM	I, SM-SC		A2			0	85-95	80-90	50-71	0 15-25	10-15	NP-5
			4																	
	l	1	6		Deplied		AVAILABL		SOIL						L F	RÓSIŐN	WIND		1	
				DEPTH (IN.)	PERMEA (IN/I		WATER CAPAC (IN/IN)		REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SW POTENT		STEEL	ROSIVITY	F.	ACTORS	EROD. GROUP			
	PR	0 P	051	SAME		-6.0	<u>.1113</u> .0507		6-7.3	2.0-4.0	LOW		HIGH	LO	IW of	20 5	3			
			3	DEPTH AS	0.0-	-20.0	.0207		,,0-/,,	2,0-4,0	LUW		птон							
			5	ABOVE												_				
	1	. <u>.</u>	1.0			FLOO	DING	·		HIGH WATER TA			CEMENTE			EOROCK		SUBSIDENCE		POTENTIAL
	IP R	0.0	061	FREQU	J <u>ENCY</u> ARE		DURATION	MONTHS		I KINO	MONTHS		DEPTH HA	ARDNESS	DEPTH (IN)	HARD		VITIAL TOTA (IN) (IN)	onr	FROST ACTION
		<u></u>	1001		ARE	<u>1</u> V	ERY BRIEF	LMAY-AUG TARY FAC		l	KEYING OF	NIVI	E00.7	NOTES	>60	ł				LOW
	SEI	TIC	071	SEPTIC TA		SLIGH						191	10011	11-	GOOD					
		†	3	ABSORPTI	ION 1							3	ROADFIL	.L. L.						
		1	15	FIELDS	· · · · ·							15								
		GOON	2	SEWAGE	-	SEVERI	E - PERCS RAF	IDLY, FL	.0005		SAND	201	04415		UNSUITE	D				
			4	LAGOON	15			·	·····=			3	SAND							
	TR	ENCH	091			SEVER	E - PERCS RAF	IDLY			GRAVEL	¥5 211			UNSUITE	0				
			2	SANITAR LANDFIL	.L 📮							3	GRAVE							
	C A A		15	(TRENC)								4								
	SAP	ARE	2	SANITAR		SEVERI	E - PERCS RAP	IDLY			SOIL	221	******		GOOD					
			3	LANDFII (AREA)					· · · · · · · · · · · · · · · · · · ·			3	TOPSOIL							
	co	/ER		DAULY	[POOR -	- TOO SANDY					15		10750 7		1	NATED M	ANACEMENT		
			23	DAILY COVER FO	OR [PONDRS			NOTES /	PERCS F	APIDLY		ANAGEMENT		
			4	LANOFIL	.L.				·			2	POND	IR						
			1.01	FOOT	NOTES		Party and a state of the state	ITY DEVE	LOPMENT			4	AREA							
	EX	CAV	2	SHALLO		MODERA	ATE - FLOODS				DIKES	241	EMBAN KM		PERCS F	RAPIDLY				
			3	EXCAVATIO								3	OIKES AN							
	DW	E L	131	DWELLIN		SEVER	E - FLOODS				PONDAQ		EVOLUT		DEEP_TO	WATER				
			3	WITHOU'	т [2	EXCAVAT PONDS							
	D W	1	15	BASEMEN	12							4	AQUIFE FED	.к						
	DW	_ L_	141 2 3	DWELLIN	GS	SEVERI	E - FLOODS				DRAIN	261			FLOODS					
			4	WITH BASEMEN	TS							3	DRAINAG							
	BLI) G S		04441		SEVERI	E - FLOODS				IRRIG	271			FLOODS					
			2	SMALL COMMERCI	AL [2	IRRIGATI	ON						
			4	BUILDING								4								
	R U /	103	161 2 3	LOCAL		MODERA	ATE - FLOODS				TERRAC	2	TERRAC							
			4	ROADS AN STREET								3	AND DIVERSIC							
			15	FOOT	NOTES 1		PECIDNA	I INTERR	RETATIONS		WATERW									
	REO	GION	171	FUUT	NOTES	-	IL GIONA	E INTERF	NETATION:			234	GRASSE WATERW/							
			3									4		F						
	REO	SION	181																	
			2																	
L			14								1									

Image: State of the state o	
WOODLAND SUITABILITY POTENTIAL PRODUCTIVITY TREES TO PLANT WOODS 361 NONE EROSION EQUIP. SEEDLING WINDTH. PLANT IMPORTANT TREES SITE TREES TO PLANT WOODS 361 NONE IMIN EROSION ELMIT WORTY. HAZARD COMPET. IMPORTANT TREES SITE TREES TO PLANT WOODS 361 NONE IMIN IMIN IMIN PLANT IMPORTANT TREES SITE TREES TO PLANT WOODS 361 NONE IMIN IMIN IMORTY. HAZARD IMPORTANT TREES SITE TREES TO PLANT WOODS 361 NONE IMIN IMORTY. IMORTY. HAZARD IMORY IMPORTANT TREES IMPORTANT IMPO	
DETERMINING PHASE OND PHASE EROSON SYM EROSON HAZARD EQUIP. LIMIT SEEDLING MORTY. WINDTH. HAZARD PLANT COMPET. IMPORTANT TREES SITE INDEX TREES TO PLANT WOOOS 361 NONE - - - NONE -	
WOODS 361 NONE Image: second se	
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371	
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CLASS-OETERMINING PHASE SPECIES HT SPECIES SPECIES <	HT
CLASS- POTENTIAL FOR HABITAT ELEMENTS POTENTIAL AS HABITAT FOR:	
PHASE SEED LEGUME HERB. TREES PLANTS SHOUS PLANTS WATER WILDLIFE	GELAND DLIFE
	AIR
POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)	
PLANT PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS OF TERMINING PHASE Image: Plant symbol Image: Plant symbol Image: Plant symbol Image: Plant symbol	
PLANT 411 NEEDLEANDTHREAD STC04 30	
2 INDIAN RICEGRASS ORHY 10 3 THICKSPIKE WHEATGRASS AGDA 10	
4 LOW RABBITBRUSH CHVIH2 10	
6 BOTTLEBRUSH SOUIRRELTAIL SIHY 5	
7 PRAIRIE_JUNEGRASS KOCR 5 8 NEEDLELEAF SEDGE CAEL2 5	
Image: Point of the state o	
0THER 10	
PRODUC[43] POTENTIAL PRODUCTION (LBS./AC. DRY WT): FAVORALE YEARS TOO	
1 2 NORMAL YEARS 500 1 1 3 UNFAVORABLE YEARS 300	
NOTES 441	

SCS-SOILS-S REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY

SOIL SURVEY INTERPRETATIONS

RECORD CONTROL]	SOIL SURVEY	INTERPRET	ATIONS		
NO. WDRO ND. MLRA 001	MLRA(S)	34 RECORD NO AUTHOR(S)		REVISED UNIT	UNIT NAME LANEY	
STATE 011	OLACCIFICATION AN	ID DDIEE SOIL DESCRIPTION				
CLASS 021 0ESCR 031		ENTS, FINE-LOAMY, MIXED (CALCAREQUS), FI				
2	6,800,T0 7,000 F	FEET. PRECIPITALION. 15 7. 10 9. UNCHES.	CRAW LOAM AROUT 2 INCHE	S THICK THE U	NDERLYING LAYER IS LIGHT O	LIVE GRAY TO DLIVE GRAY
4	LOAM ABOUT 33 TH	NCHES THICK THE SUBSTRATUM IS OLIVE	STRAILLED. CLAY. LUAM IL	LO RALLE LELL VER.	Y FINE SANDY LOAM TO 60 IN	WILLS . MILL HIS HER ST.
		ESTIM	ATED SOIL PROPERTIES	FRACT.	PERCENT DF MATERIAL LE	
	DEPTH (IN.)	USOA TEXTURE UNIFIED	AASHO	>3 IN. (PCT)	THAN 3 IN. PASSING SIEVE 4 10 40	200 LIMIT TICITY 200
PROP 041	0-36	L CL	A-6	0	90-100 90-100 90-100 90-100 90-100 90-100	70-80 25-35 15-25 70-80 25-35 20-30
	36-60	CL CL	A=0			
4						
6	OEPTH PERMEA	AVAILABLE SDIL	SALINITY SHRINK-SWELL	CORROSIVITY	ERDSION WIND	
	OEPTH PERMEA (IN.) (IN/	I WATER CAPACITY I REACTION 1	(MMHOS/CM) PDTENTIAL	STEEL CDNC		
PROP 051	SAME .206		+.0-8.0 MODERATE		ERATE -24 5 4L	
2	OEPTH					
4	ADOVE					
16		FLDDDING	IGH WATER TABLE	CEMENTED PAN		JBSIDENCE HYD POTENTIAL IAL TDTAL CRP FROST
	FREQUENCY	DURATION MONTHS (FT)		DEPTH HARDNESS (IN)	DEPTH HARONESS INIT (IN) (IN) (IN)) (IN) GRP ACTION
PROP 061				FOOTNDTES	SOURCE N	
SEPTIC 071	FOOTNOTES	SANITARY FACILITIES	KEYING ONLY FILL 191	FUUTNUTES	POOR - LOW STRENGTH, AR	
	SEPTIC TANK			ROADFILL		
4	FIELDS		4		-	
LAGOON 081		SLIGHT	SAND 201		UNSUITED	
2				SAND		
4			G R A V E L 211	-	UNSUITED	
T R ENC H 0 9 1	SANITARY	MODERATE - TOO CLAYEY		GRAVEL		
3	(TRENCH)		4	GRAVEL		
SANARE 101		SLIGHT	SOIL 221		POOR - EXCESS ALKALI	
2	SANITARY		2			
4	(AREA)		4			
COVER 11		FAIR - TOO CLAYEY	·····	FOOTNOTES		IAGEMENT
	COVER FOR		PONORS 231	POND	FAVORABLE	
				RESERVDIR AREA		
	FOOTNOTES		01KES 241		LOW STRENGTH, UNSTABLE	FILL
EXCAV 12	2 SHALLOW	MODERATE - TOO CLAYEY		EMBANKMENTS DIKES AND		
	4		× * * 5	LEVEES		
DWEL 13	1	MODERATE - SHRINK-SWELL, FROST ACTIO	N. LOW PONDAQ 251		NO WATER	
		STRENGTH	2 3	PDNDS		
	4 BASEMENTS		4			
DWEL 14		MODERATE - SHRINK-SWELL, FROST ACTIO STRENGTH			EXCESS ALKALI	
	3 WITH 4 BASEMENTS		3			
	5	MODERATE - SHRINK-SWELL, LOW STRENGT	TH, FROST IRRIG 271		EXCESS ALKALI, ERODES	EASILY, PERCS SLOWLY
	SMALL COMMERCIAL	ACTION				
	4 BUILDINGS		4			
ROADS 16		SEVERE - LOW STRENGTH	TERRAC 281			
	2 LOCAL 3 ROADS AND					
	4 STREETS		WATERW 291	3		
	FOOTNOTES	REGIONAL INTERPRETATIONS		-		
REGION 17	1		4	ANIENWAIS		
	3			2		
REGION 18	2					
	3					
hanness and a second se						

	G ONLY CONTRO		UNIT NAME:LAN	Υ			(2) RECREATION						
NO.	WORD	NO.	FOOTNOTE	DUSTY			KEYING ONL PLAYGD 32		F00T)-2%: SE	VERE - DI	USTY OPE, DUSTY	
		3	CAMP AREAS					3 PLAYGROU					
P	PICNIC	5	SEVERE -	DUSTY			PATHS 3			ODERATE	- DUSTY		
		2	PICNIC AREAS					3 ANO 4 TRAIL					
		5	FODTNOTE	CAP	ABILITY AND	PREDICTED YIE	DS - CROPS AND	5	1	ANAGEME	NT)		
C	ROPHO	451	CLASS- DETERMINING	CAPABILITY									
	ROPS	341	PHASE	NIRR IRR. 75 —	NIRR	IRR. NIRR	IRR. NIRR	IRR. N	IRR IRR.	NIRR	IRR.	NIRR IRR.	NIRR IRR.
		2	•										
		4											
		7											
		9 351											
		2	FOOTNOTE				OODLAND SUITA	BILITY					
		Í	CLASS- DETERMINING	ORD SYM EROSIO HAZAR	N EQUII	MANAGEMENT PROI SEEDLING MORT'Y.	WINOTH. HAZARD	PLANT COMPET.		TIAL PROOUG	S	ITE DEX	TREES TO PLANT
	W000\$	361	PHASE NONE	HAZAK		mUNT te		OUMI E 17	N	ONE			
		3											
		5											
	_	7 8 9											
		371											
		3											
		5	FOOTNOTE				WIND BREA	KS		00=0150			SPECIES HT
	WINDBK	381	CLASS-DETERMINING PHASE		SPECIES	HT	SPECIES	нт		SPECIES			
		2											
		5				wir	LIFE HABITAT						
		ľ	FOOTNOTE CLASS- OETERMINING	GRAIN &	GRASS &	POTENTIAL WILD HAI	FOR HABITAT ELE	MENTS	WETLAND	SHALLOW	OPENLA	ND WOODLAND	HABITAT FOR: WETLANO RANGELAND WILDLIFE WILDLIFE
-	WILDLE	391	PHASE	SEED V. POOR	LEGUME V. POOR	HERB. TR	EES PLANTS	POOR	PLANTS V. POOR	WATER V. POOR	WILDLIF		V. POOR POOR
		2											
		5							T UNDEDOTO	RY VECET	ATION		
	DUARE	140.1	FOOTNOTE		PLANT SYMBOL	E PLANT COMMU	VIIY (RANGELA PERI	CENTAGE COMPO	ST UNDERSTU DSITION (DRY WE	IGHT) BY CLA	ASS DETERMI	NING PHASE	
	PHASE	2	COMMON PLANT NAM	h	(NLSPN) ATNU2	50							
		23	BOTTLEBRUSH SOUIRRELTA	IL	SIHY ORHY	10							
		4	THICKSPIKE WHEATGRASS BUD SAGEBRUSH SANDBERG BLUEGRASS		AGDA ARSP5 POSE	<u>5</u> 5 5							•
		2	WINTERFAT		EUROT	5							
		421							-				
		3									_		
		5											
and the second s	1	11		AC DOV WT).		600							
	PRODU	C 431	POTENTIAL PRODUCTION (LBS	FAVORABLE NORMAL YEA	RS	450							
		C 431 2 V 3	POTENTIAL PRODUCTION (LBS	FAVORABLE NORMAL YEA UNFAVORAB	RS LE YEARS	450 300	FOOTNOT						
	PRODU	C 431 2 V 3 441		FAVORABLE NORMAL YEA	RS LE YEARS	450						<u>]</u>	
		C 431 2 ¥ 3 441		FAVORABLE NORMAL YEA	RS LE YEARS	450			متصورة الأردية				

The fact water

NO. WORD NO.			JIL SURVE	Y HNTI			
MLRA 001 STATE 011	STATE WYOM	34 1ING RECORD N	IO AUTHOR(S)	JRS] KIND OF DATE 2/73		SERIES UNIT NAME LITTSAN
	TYPIC HAPLARGI	AND BRIEF SOIL DESCRIP DS. COARSE-LOAMY, MI	XED ERIGIO				
		WEARLINITON TO V ID	17 INCHES. MEAN ARRU	AL AIR TEM	PERATURE IS	S ON UPLA	MOS. SLOPES ARE 3 TO 10 PERCENT. ELEVATION IS 6,800 TO
	INCHES THICK	THE SUBSTRATION IS P.	ALE BROWNISH GRAY, FI	NE SANUY L	UAM ABDUT 2	INCHES T	HICKS. THE SUBSALL IS PALE BROWN SANDY LOAM ABOUT 12 UNCERLAIN BY SOFT SHALE AT A DEPTH OF 24 INCHESS
	FOOTNOTE		ESTIM	ATED SOIL F	ROPERTIES	<u></u>	
	OEPTH (IN.)	USDA TEXTURE	UNIFIED		OHZAA		FRACT. PERCENT OF MATERIAL LESS LIQUID PLAS- > 3 IN. THAN 3 IN. PASSING SIEVE LIMIT TICITY
PROP 041	0-24	SL VARIABLE	SM, SM-SC		A-2		0 100 100 80-90 25-35 15-25 NP-5
3							
5							
		EABILITY AVAILABL WATER CAPA		SALINITY	SHRINK-SWEL	L CO	DROSIVITY ERÓSIÓN WINO
PROP 051		V/HR) (IN/IN) -6.0 .1113	(pH)	(MMHOS/CM)	POTENTIAL LOW	STEEL HIGH	FACTORS EROD. CONCRETE K T GROUP LOW •24 3 3
	SAME DEPTH			2:0-4:0	LOW		
4	AS ABOVE						
16		EL DODINO		IGH WATER TAE		CEMENTE	O PAN BEOROCK SUBSIDENCE UND POTENTIAL
	FREQUENCY	FLOODING DURATION	DEPTH MONTHS (FT)	KIND	MONTHS	and the state of the balance of the state of	IARDNESS DEPTH HARDNESS INITIAL TOTAL (IN) (IN) (IN) (IN)
PROP 061	NONE	1	>6				20-40 RIPPABLE B LOW
SEPTIC 071	FOOTNOTES	SANI SEVERE - OEPTH TO	TARY FACILITIES		KEYING ONLY FILL 191	F001	INDTES SOURCE MATERIAL
	SEPTIC TANK ABSORPTION				2	ROAOFII	
LAG00N081	FIELDS				4	_	
	SEWAGE LAGOONS				SAND 201		POOR
4	LAGOONS				3		
TRENCH091	SANITARY	SEVERE - PERCS RAP	IDLY		GRAVEL 211	1	UNSUITED
3	LANDFILL (TRENCH)				3		il
SANARE 101		SEVERE - PERCS RAP			SOIL 221		
2	SANITARY					TOPSOI	G000
4	(AREA)				4		
COVER 111 2 3	DAILY	FAIR - THIN LAYER	-			FQOT	NOTES WATER MANAGEMENT
	COVER FOR LANOFILL				PONDRS 231	POND	SLOPE, PERCS RAPIDLY
	FOOTNOTES	і	ITY DEVELOPMENT		3		
EXCAV 121	SHALLOW	3-8%: MODERATE -			DIKES 241	END AND A	PERCS_RAPIDLY
3	EXCAVATIONS	OTZO: MOULATE - S	LOFE, DEFIN TO ROCK			OIKES A	ND
DWEL 131		3-8%: SLIGHT			PONDAQ 251	<u>11 eres</u> eres eres eres eres eres eres ere	
2	OWELLINGS WITHOUT	8+%: MODERATE - S	LOPE				
4	BASEMENTS				4	AQUIFE	
DWEL 141	DWELLINGS	3-8%: MODERATE - 8+%: MODERATE - S	DEPTH TO ROCK LOPE, DEPTH TO ROCK		DRAIN 261		L DEPTH TO ROCK
4	WITH BASEMENTS				3	DRAINAC	3E
BLDGS 151	SMALL	MODERATE - SLOPE,	DEPTH TO ROCK		IRRIG 271		SLOPE, ROOTING DEPTH, ERODES EASILY
	COMMERCIAL				2	IRRIGATI	
ROADS 161		3-8%: SLIGHT			4 7 7 7 5 7 5 7 5 7 5 7 5 7 5		
	LOCAL ROADS AND	8+%: MODERATE - SI	LOPE		1ERRAC 281 2 3	TERRAC	
4	STREETS				4	AND DIVERSIO	
	FOOTNOTES 7	REGIONAL	INTERPRETATIONS		WATERW 291	GRASSE	0
REGION 171					2 3	WATERWA	
3					1 15		
REGION 181							
3							

KEYING ONLY RECORD CONTROL NO. WORD NO. C A M PS 301	UNIT NAME: LITTSAN UNIT MODIFIER:	E – SLOPE	(2) RECREATION KEYING ONLY PLAYGO 32	Ĺ	FOOTNOTE 3-6% MODERATE - S 6+% SEVERE - SLOP	SLOPE, DEPTH TO ROCK
3 4 9 5 PICNIC 311 2 3 4 4 5	CAMP AREAS	E – SLOPE		2 PATHS 3 ANO 4 TRAILS	SLIGHT	
CROPHD 451 2	CLASS- DETERMINING CA		REDICTED YIELDS · CROPS AND			NIRR IRR. NIRR IRR.
CROPS 341	PHASE NIF		R. NIRR IRR. NIRR	IRR. NIRR	IRR. NIRR IRR.	
3 4 5						
6 7 8 9						
351			WOODLAND SUITA	B(LITY	POTENTIAL PROOUCTIVITY	
	CLASS-ORD DETERMINING SYM PHASE	HAZARO LIMIT	AANAGEMENT PROBLEMS SEEOLING WINOTH. MORT'Y. HAZARO	PLANT COMPET.	SI SI	ITE TREES TO PLANT
W000S 361 2 3						
5						
	5					
WINOBK 38	CLASS-OETERMINING PHASE	SPECIES	WIND BRE/ HT SPECIES	HT	SPECIES	HT SPECIES HT
	Z 3 4 5					
4 17	6 CLASS- DETERMINING	GRAIN & GRASS &	WILDLIFE HABITAT POTENTIAL FOR HABITAT EL WILO HARDWO CONIFEF HERB TREES PLANTS	EMENTS R SHRUBS WE	TLAND SHALLOW OPENLA LANTS WATER WILDLI	FE WILDLIFE WILDLIFE WILDLIFE
	PHASE 1 ALL 2	SEED LEGUME POOR POOR	HERB. TREES PLANTS	FAIR V.	POOR V. POOR POO	IR V. POOR FAIR
			PLANT COMMUNITY (RANGEL)	AND OR FOREST UN	DERSTORY VEGETATION	
PHASE 4	COMMON PLANT NAME	SYMBOL (NLSPN)		RCENTAGE COMPOSITIO	N (DRY WEIGHT) BY CLASS DE TERM	
	NEEDLEANDTHREAD 2 INDIAN RICEGRASS 3 THICKSPIKE WHEATGRASS	STC04 ORHY AGDA CHVIH2	30 10 10 10			
	4 LOW RABBITBRUSH 5 BLUEBUNCH WHEATGRASS 6 BOTTLEBRUSH SQUIRRELTAIL 7 PRAIRIE JUNEGRASS	AGSP SIHY KOCR	<u>5</u> <u>5</u> <u>5</u> 5			
	BIG SAGEBRUSH 21 SPINY HOPSAGE	CAEL2 ARTR2 GRSP OTHER	5 5 10			
	2 3 4 5					
PRODUC	POTENTIAL PRODUCTION (LBS./A)	NOPHAL VEARS	700			
NOTES	SYM.	UNFAVORABLE YEARS				
	2 3 4 5					
			<u> </u>			

D. WORO NO. MLRA 001	MLRA(S			IL SURV						-				
STATE 011	STATE	WYOMING	RECORD NO.	AUTHOR	(S) JRS	DATE 2/73	UNIT <u>s</u> REVISE		MODIFIER	TNAME	MILF	REN		
CLASS 021 DESCR 031	BOROLLI	C PALEARGIDS	FINE. MONTMORILL	ONITIC					.1		<u></u>	I		
	RRECIPI	TATION IS 10 TA	WELL DRAINED SC 0.12 INCHES, MEA	AN ANNUAL AIR T	EMPERATURE	S ABOUT 36°F	. AND JTH	- GROWINI	SEASON	IS ABOU	T 80 TO 90	2VAD C	TYPICALL	IV ·
4	SOIL IS	BROWN CLAY TO	NI SANDY LOAM ABC SANDY, CLAY LOAM	1_ABOUT 21 INCH	ES. THICK	HE. SUBSTRATU	M. IS, LIGH	BROWNI:	H GRAY S	SANDY ICL	AY LOAM TO) 60. INC	HES OR MO	THE . ORE
		<u>E</u>		ES	TIMATED SOIL	PROPERTIES	<u></u>							
	OEPTH (IN.)	USDA TE	XTURE	UNIFIED		AASHO		FRACT. >3 IN.		THAN 3 IN.	MATERIAL LES PASSING SIEVE		LIQUID	PL TI(
PROP 041	0-16	C		CL.		A-6		(PCT) O	4	10	40 80-90	200	25-35	15-
2 3 4	16-60	SCL		SC		A=6		0		100	60-70	35-50	20-30_	
5														-
6	0.50.7.4	PERMEABILITY	AVAILABLE	SOIL	SALINITY	SHRINK-SWELL		ROSIVITY	E	RÓSION	WIND			
	DEPTH (IN.)	(IN/HR)	WATER CAPACITY (IN/IN)	(REACTION (pH)	(MMHOS/CM)	POTENTIAL	STEEL	CONCR	- F/	ACTORS	EROD. GROUP			
PROP 051 2	SAME	<u>,20-,6</u> ,20-,6	.1416	7.4-8.4	2.0-4.0 2.0-4.0	HIGH	HIGH	LO	.3	7 5	5			
3	OEPTH AS		.0/0/		2.004.0	MODERATE				2 2	5			
5	ABOVE													
		FLOO	DOING		HIGH WATER T		CEMENTE			EOROCK		BSIDENCE		POTEN
PROP 061		UENCY	DURATION	MONTHS (FT)	KINO	MONTHS	(IN)	ARDNESS	DEPTH (IN)	HARD	NESS INITI/ (IN)		GNE	FR0 ACT
ir NOF 1001		ONE I		RY FACILITIES	<u> </u>			NOTES 7	> 60		SOURCE MA			LO
SEPTIC 071	SEPTIC	SEVER	RE - PERCS_SLOWL			FILL 191	FUUT		_POOR -	SHRINK-	SWELL, LOW		тн	
2 3	ABSORP	TION	· · · · · · · · · · · · · · · · · · ·			2	ROADFIL	[]						
15	FIELD					¥ ¥5								
LAGOON 081	SEWAG	GE 7+%:	MODERATE — SL SEVERE — SLOPE			SAND 201			UNSUITE	D				
2 3 4	, LAGOO	INS				3	SANO	-						
TRENCH091		MODER	RATE - TOO, CLAYE	Y		GRAVEL 211		·	UNSUITE	:n				
2	SANITA LANDFI					2	GRAVE							
4	(TREN	CH)				4		_						
SANARE 101 2	SANITA		SLIGHT MODERATE - SLO	PF		SOIL 221			POOR -	TOO CLA	YEY, EXCES	S ALKAL	[]	
3	LANDF (ARE)	1LL				3	TOPSOI	L						
4 75 COVER 111			- TOO CLAYEY			1 15								····· ·····
	DAIL' COVER F	Y L				PONORS 231	FOOT	NOTES 7			ATER MANA	GEMENT		,
3	LANDFI						POND		FAVORAB				· · ·	
	FOO	TNOTES 7	COMMUNIT	Y DEVELOPMENT		4	RESERVO							
EXCAV 121	SHALL	3-8%:	MODERATE - TO	O CLAYEY		DIKES 241	THO MILLI		UNSTABL	E FILL				
2 3 4	EXCAVAT		MODERATE - TOO	CLAYEY, SLOPE		2	EMBANKM OIKES A	VD					*	•
DWEL 131							LEVEE							
	DWELLI	IGS	RE - SHRINK-SWEL	h		PONDAQ 251	EXCAVAT		NO WATE	R				
4	BASEME					3	PONDS AQUIFE							
DWEL 141		SEVER	RE - SHRINK-SWEL	L		DRAIN 261	FED.	t	EXCESS	ALKALI	PERCS SLO	WLY		
23	DWELLIN						DRAINAC							
4	BASEME					1 15		-						
BLDGS 151 2 3	SMALL	. 8+%:	SEVERE - SHRII SEVERE - SLOPE			IRRIG 271			EXCESS	ALKALI,	PERCS SLO	WLY		
4	COMMERC BUILDIN	IAL				3	IRRIGATI	ON						
ROADS 161		SEVER	RE - SHRINK-SWELL	L. LOW STRENGTH	-	TERRAC 281								
2	LOCAL ROADS A					2 3	TERRAC							
4	STREET	rs				4	DIVERSIO							
	F00"	INOTES 7	REGIONAL I	NTERPRETATIONS		WATERW 291	GRASSE	D.	wo-mo					
REGION 171							WATERW.							
2 3						1 15								
REGION 181														

KEYING ONLY	UNIT NAME: MILREN			(2)		
RECORD CONTROL NO. WORD NO.	UNIT MODIFIER:		KEY	EATION ING ONLY Y GD 321	FOOTNOTE	TE - PERCS SLOWLY, SLOPE
CAMPS 301	3-8%: SLIGHT 8+%: MODERATI			2	6+%: SEVERE -	- SLOPE
	CAMP AREAS			3 PLAYGROUND	5	
PICNIC 311	3-8%: SLIGHT		РАТ	H S 331 2 PATHS	SLIGHT	
2	PICNIC AREAS	e - SLUPE		AND 4 TRAILS		
			PREDICTED YIELDS - CRO	Y Y 5	H LEVEL MANAGEMENT)	
CROPHD 451	CLASS-	CAPABILITY				
	UETERMINING		RR. NIRR IRR.	NIRR IRR. NIRR	IRR. NIRR IRF	R. NIRR IRR. NIRR IRR.
CROPS 341	ALL 6	the second se				
3						
5						
7						
351						
2						
	FOOTNOTE CLASS- OETERMINING		MANAGEMENT PROBLEMS	D SUITABILITY	POTENTIAL PRODUCTIVIT	TY SITE TREES TO PLANT
	PHASE	I EDUCIÓN I EGITIP	SEEDLING WIND MORT'Y. HAZ/	TH. PLANT IRD COMPET.	IMPORTANT TREES	INDEX
WOODS 361	NONE					
7						
9 37 1						
2 3						
5						
	FOOTNOTE CLASS-DETERMINING PHASE	SPECIES		D BREAKS ECIES HT	SPECIES	HT SPECIES HT
WINDBK 381	NONE					
3						
5						
	CLASS-		POTENTIAL FOR HAB		WETLAND SHALLOW OF	POTENTIAL AS HABITAT FOR: PENLAND WOODLAND WETLAND RANGELAND
-	CLASS- DETERMINING PHASE	GRAIN & GRASS & SEED LEGUME	HERB. TREES	CONIFER SHRUBS	WETLAND SHALLOW OF PLANTS WATER W POOR POOR	PENLAND WOODLAND WETLAND RANGELAND ILDLIFE WILDLIFE WILDLIFE FAIR FAIR FAIR
WILDLF 391		FAIR FAIR	FAIR	FAIR		
		POTENTIAL NATIVE	PLANT COMMUNITY /RA	NGELAND OR FOREST	UNDERSTORY VEGETATIC	
		PUTENTIAL NATIVE PLANT SYMBOL		PERCENTAGE COMPOSIT	TION (ORY WEIGHT) BY CLASS DE	ETERMINING PHASE
PHASE 401		(NLSPN) ARTR2	10			
PLANT 41	BIG SAGEBRUSH MUTTON BLUEGRASS THICKSPIKE WHEATGRASS	POFE AGDA	10			
	BOTTLEBRUSH SQUIRRELTAIL	SIHY ORHY	5			
		STLE4 KOCR	5	·		
	SANDBERG BLUEGRASS	POSE ARAR8	5			
42		OTHER	10			
PRODUC 43	POTENTIAL PRODUCTION (LBS./AC.	FAVURABLE YEARS	1,400			
	3	NORMAL YEARS UNFAVORABLE YEARS	1,100 600	O'OTINOTI 55		
NOTES 44	SYM					<u>ى بەر بەر بەر بەر بەر بەر بەر بەر بەر بەر</u>
	2	<u> </u>		· · · · · · · · · · · · · · · · · · ·		<u></u>
	4	<u> 1 1 1 1 1 1 1 1 1 1</u>				<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>
	7	<u>I a la de la construction de la</u>		CONTRACTOR OF THE OWNER	A CONTRACTOR OF	and the state of the second state of the sta

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MLRA 001 STATE 011														
	STATE	WYOMING WYOMING CATION AND BRIEF	RECORD NO	AUTHOR	(S)JRS	DATE 2	Z3 REVI	SERIES	T MODIFIE	IT NAME [0	NASON		
CLASS 021 DESCR 031 2 3 4	USTIC THE ONA	DRRIORTHENTS, L SON SERIES ARE D TO 7,300 FEET CYPICALLY, THE DUT & INCHES TH	QAMY, MIXED, N WELL DRAINED, S PRECIPITATI SURFACE LAYER	ONACID, FRIGID, QILS.FORMED IN F QN. IS 10.TO.12 J IS.GRAYISH BROWN	RESIDUUM FRC	M. SANDSTON	E ON RIDG R TEMPERAT NCHES THI	TURE IS AE	LSIDES. OUT. 36°F	SLOPES	HE GROWI	IGI SEASON	IS 80 TO	1.90.1
5	FOOTNOT	E		ES	TIMATED SOIL	PROPERTIE		<u></u>	<u></u>	<u></u>	<u></u>			
	DEPTH (IN.)	USDA TEX		UNIFIED		AAS		FRACT. >3 IN. (PCT)	4		MATERIAL L PASSING SIE 40		LIQUID LIMIT	PLAS
PROP 041	0-11	GR-SL WB		SM, SM-SC		A=2		0-5	70-80				10-15	INDE: NP
3														
5		•												
	DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACIT (IN/IN)	Y REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SW POTENTI	1		F	ACTORS	WIND EROD. GROUP			
PROP 051 2	SAME	6.0-20.0	.0810	6.6-7.3	<2.0	LOW	HI			0_1	3			
3	DEPTH AS ABOVE													
	ADUVL				HIGH WATER T			TED PAN		BEDROCK		SUBSIDENCE		
	FREQ	FLOO	DING DURATION	DEPTH MONTHS (FT)		MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)		NESS INI	TIAL TOTA N) (IN)		OTENTI FROST ACTION
PROP 061		INF	CANIT.	ARY FACILITIES					10-20	RIPF	ABLE	_		LOW
SEPTIC 071	SEPTIC T	10-15	%: SEVERE - D			FILL	91	DOTNOTES	POOR -	THIN LA		MATERIAL		
2 3	ABSORP1 FIELD	ION LINA			Δ		2 3 ROAO 4)FILL						
LAG00N 081			E - SLOPE, PER	CS RAPIDLY, DEPI	H TO ROCK	SAND	01	[UNSUIT	ED		·		
3	SEWAG LAGOO						2 3 4	AND						
T R EN C H 0 9 1		SEVER	E - DEPTH TO R	OCK, PERCS RAPID		GRAVEL	11		UNSUIT	FD				
2 3	SANITA LANDFI	RY					2 3 GR/	AVEL						
SANARE 101	(TRENC					SOIL	4 15 21							
	SANITA LANDF	RY 15+%:	SEVERE - P	PE, PERCS RAPIDLY	YY		2	SOIL				STONES, TH MALL STON		
4 ¥ ¥5	(ARE/						4							
COVER 111 2 3	DAILY COVER F	15+%:	POOR - THI POOR - SLOPE			PONDRS		OTNOTES				AGEMENT		
4	LANDFI						2 PC	ND RVOIR	SLOPE,	DEPTH T	O ROCK,	PERCS RAP		-
	F00			TY DEVELOPMENT			4 AF	REA						
E X C A V 121 2 3	SHALLO	W 15+%:	SEVERE - OI SEVERE - SLOI	EPTH TO ROCK PE, DEPTH TO ROC	K	DIKES	+	IKMENTS S AND	THIN L	AYER, PE	RCS RAPI	<u>)LY</u>		
4	EXONITION							EES						
DWEL 131	DWELLIN	GS 15+%:	SEVERE - DI	EPTH TO ROCK PE, DEPTH TO ROC	K	PONDAQ	2 EXCA	VATED	NO WAT	ER				
3	WITHOU BASEMEN						4 AOL	NDS HFER ED						
DWEL 141	DWELLIN	GS 15+%:	SEVERE - DI	PTH TO ROCK PE, DEPTH TO ROC	К.	DRAIN	61	<u> </u>	DEPTH	TO_ROCK				
3 4 5	WITH BASEMEN						4	NAGE						
BLDGS 151	SMALL	SEVERI	- SLOPE, DEP	TH TO ROCK		IR ŘIG Ž	7 <u>1</u> 2		SLOPE,	ROOTING	DEPTH, I	ROUGHTY_		
	COMMERC BUILDIN	IAL						ATION						
ROADS 161	LOCAL		6: MODERATE -			TERRAC								
3	ROADS A STREET	ND	SEVERE - SLOP	<u>'E</u>			3 A	RACES ND RSIONS						
15			probus	INTEROPERATION		WATERW 2	91							
REGION 171	1001	NOTES	REGIONAL	INTERPRETATIONS				SSED RWAYS						
2 3 4						1-1-1	4							
REGION 181														
2														

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KEYING ONLY RECORD CONTROL	UNIT NAME:ONASON	l				(2) RECREATIO	N						
NO. WORO NO.	FOOTNOTE	MODERATE -	SLODE			KEYING ONL	.Y]	F0	OTNOTE				
2 2	<u>15+%:</u> SE	VERE - SLO				PLAYGD 3	21		SEVERE -	SLOPE, DE	PTH TO RO	<u>CK</u>	
4	CAMP AREAS						3 PLAYGE	OUND\$					
PICNIC 311	10-15%:	MODERATE -	SLOPE			PATHS 3	31		10-15%:	SLIGHT			
		VERE - SLO					2 PA1 3 AN		15-25%:	MODERATE EVERE - SL			
4									<u> 201/00</u>	<u> </u>			
CROPHD 451	FOOTNOTE	CA	PABILITY A	ND PREDIC	TED YIEL	DS - CROPS AN	DPASTURE	(HIGH LEVEL	MANAGEM	ENT)			
	CLASS- DETERMINING	CAPABILITY											
	PHASE	NIRR IRR	the second s	IRR.	NIRR	RR, NIRR	IRR.	NIRR IRR.	NIRR	IRR.	NIRR I IRF	NIRR	IRR.
CROPS 341	ALL	7E											
3			_										
5													
7													
9													
351													
* * 3	FOOTNOTE	1			I	DULAND SUITA	BILITY						
	CLASS-	ORD EROSI		MANAGEM	ENT PROBLI	EMS WINDTH.			NTIAL PRODU			TREES TO PL	ANT
	PHASE	SYM HAZA	RD LIN		IORT'Y.	HAZARD	PLANT COMPET.	IMPOR	TANT TREES	IND			-401
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	NONE								NONE				
3													
5													
7													
9													
371												hailih	
3													
5													
• • • • • • • • • • • • • • • • • • •	FOOTNOTE					WIND BREA							
WINDBK 381	FOOTNOTE CLASS-OETERMINING PHASE NONE		SPECIES	H	T	WIND BREA SPECIES	KS HT		SPECIES	HT		SPECIES	HT
WINDBK 381	CLASS-OETERMINING PHASE		SPECIES	H	T				SPECIES	HT		<u>SPECIES</u>	HT
WINDBK 381 2 33	CLASS-OETERMINING PHASE		SPECIES	H	T				SPECIES	HT		\$PECIES	HT
WINDBK 381	CLASS-OETERMINING PHASE NONE		SPECIES	H		SPECIES			SPECIES	HT		SPECIES	HT
WINDBK 381 22 33 44 5	CLASS-OETERMINING PHASE NONE FOOTNOTE CLASS-			P(WILDLI DTENTIAL FO	SPECIES FE HABITAT S DR HABITAT ELEM	UITABILITY		SPECIES		POTENTIAL A	S HABITAT FO	R;
WINDBK 381 2 3 4 4 5 4 5 4 5	CLASS-OETERMINING PHASE NONE	GRAIN & SEED	GRASS & LEGUME		WILDLI	SPECIES FE HABITAT S IR HABITAT ELEN O CONIFER	UITABILITY	WETLANO	SPECIES SHALLOW WATER	OPENLAND WILDLIFE	POTENTIAL A	SHABITAT FO WETLANO WILDLIFE	
WINDBK 381 2 3 4 4 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CLASS-OETERMINING PHASE NONE FOOTNOTE CLASS- DETERMINING		GRASS & LEGUME	P(WILDLI DTENTIAL FO HARDW	SPECIES FE HABITAT S IR HABITAT ELEN O CONIFER		WETLANO	SHALLOW	OPENLAND WILDLIFE	POTENTIAL A	SHABITAT FO	R: RANGELAND
WINDBK 381 2 33 4 4 5 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	CLASS-OETERMINING PHASE NONE FOOTNOTE CLASS- DETERMINING PHASE	SEED	GRASS & LEGUME	P(WILD HERB.	WILDLI DTENTIAL FO HARDW TREES	SPECIES FE HABITAT S DR HABITAT ELEM 0 CONIFER 3 PLANTS	UITABILITY IENTS SHRUBS	WETLANO PLANTS	SHALLOW	OPENLAND WILDLIFE	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 2 3 4 4 5 ¥ ¥ 6 8 1 2 3 4 4 2 3 4 4 2 3 4 4 5 5 5	CLASS-OETERMINING PHASE NONE FOOTNOTE CLASS- DETERMINING PHASE	SEED	GRASS & LEGUME	P(WILD HERB.	WILDLI DTENTIAL FO HARDW TREES	SPECIES FE HABITAT S DR HABITAT ELEM 0 CONIFER 3 PLANTS	UITABILITY IENTS SHRUBS	WETLANO PLANTS	SHALLOW	OPENLAND WILDLIFE	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 2 3 4 4 5 4 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CLASS-OETERMINING PHASE NONE FOOTNOTE CLASS- DETERMINING PHASE	SEED V. POOR	GRASS & LEGUME V. POOR	P(WILD HERB. POOR	WILDLI DTENTIAL FO HARDW TREES	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 2 3 4 4 5 4 6 8 9 1 5 7 8 9 1 2 3 3 4 4 5 5 7 8 9 1 2 7 8 9 1 2 7 8 9 1 7 8 9 1 7 8 9 1 7 8 9 1 7 8 9 1 7 8 9 1 7 8 9 1 7 8 7 8 7 8 7 8 7 8 7 7 8 7 8 7 7 8 7 8 7 7 8 7 8 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 7 8 7 7 7 8 7 7 8 7 7 8 7 7 7 8 7 7 8 7 7 8 7 8 7 7 8 7 7 8 7 8 7 7 8 7 8 7 7 8 8 7 8 7 8 7 8 7 8	CLASS-OETERMINING PHASE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL	SEED V. POOR	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL	P(WILD HERB. POOR	WILDLI DTENTIAL FO HARDW TREES	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 2 3 4 4 5 4 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CLASS-OETERMINING PHASE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL FOOTNOTE FOOTNOTE COMMON PLANT NAME	SEED V. POOR	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN)	P(WILD HERB. POOR	WILDLI DTENTIAL FC HARDW TREES	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 WINDBK 381 2 3 4 5 V V 6 VILDLF 391 VILDLF 391 2 3 4 5 V V 6 VILDLF 391 2 4 5 V V 6 2 2 4 5 2 2 2 2 4 5 5 2 2 2 2 2 2 2 2 2 2 2 2 2	CLASS-OETERMINING PHASE NONE FOOTNOTE CLASS- DETERMINIG PHASE ALL FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS	SEED V. POOR	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP	P(WILD HERB. POOR	WILDLI DTENTIAL FO HARDW TREES COMMUNIT	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 2 33 4 5 4 5 7 8 9 9 12 12 14 15 14 15 14 15 12 12 12 14 15 12 12 14 15 14 15 12 12 14 15 12 12 14 15 12 12 12 12 12 12 14 15 12 12 12 12 14 15 15 12 12 12 12 12 12 12 12 12 12	CLASS-OETERMINING PHASE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS NEEDLEANDTHREAD THICKSPIKE WHEATGRASS	SEED V. POOR POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STCO4 AGDA	P(WILD HERB. POOR	WILDLI DTENTIAL FC HARDW TREES COMMUNIT 20 15 10 10	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 WINDBK 381 2 3 4 5 V V 6 VILDLF 391 VILDLF 391 2 3 4 5 V V 6 VILDLF 391 2 4 5 V V 6 2 2 4 5 2 2 2 4 5 5 2 2 2 2 4 5 5 2 2 2 2 2 4 5 5 5 5 5 5 5 5 5 5 5 5 5	CLASS-OETERMINING PHASE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL FOOTNOTE FOOTNOTE COMMON PLANT NAME IND IAN RICEGRASS BLUEBUNCH. WHEATGRASS NEEDL FANDTHREAD	SEED V. POOR POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STC04	P(WILD HERB. POOR	WILDLI DTENTIAL FO HARDW TREES COMMUNIT	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 2 3 4 4 5 4 4 5 4 5 4 6 7 8 8 9 1 2 3 4 5 4 5 7 7 6 7 7 7 8 9 1 2 1 2 1 3 1 2 2 1 2 2 1 2 2 2 1 2 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	CLASS-OETERMINING PHASE NONE PHASE CLASS- DETERMINING PHASE ALL FOOTNOTE FOOTNOTE FOOTNOTE FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS NEEDLEANDTHREAD THICKSPIKE WHEATGRASS BOTTLEBUSH SQUIRRELTAI NEEDLELEAF SEDGE PRAIRIE JUNEGRASS	SEED V. POOR POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STCO4 AGDA SIHY CAEL2 KOCR	P(WILD HERB. POOR	WILDLI DTENTIAL FC HARDW TREES COMMUNIT 20 15 10 10 5	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 2 33 4 4 5 4 5 7 7 8 8 7 8 8 7 8 8 7 8 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 7 8 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7	CLASS-OETERMINING PHASE NONE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS NEEDLEANDTHREAD THICKSPIKE WHEATGRASS BOTTLEBRUSH SQUIRRELTAI NEEDLELEAF SEDGE PRAIRIE JUNEGRASS SANDBERG BLUEGRASS LOW RABBITBRUSH	SEED V. POOR POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STCO4 AGDA SIHY CAEL2	P(WILD HERB. POOR	WILDLI DTENTIAL FC HARDW TREES COMMUNIT 20 15 10 10 5 5 5 5	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 WINDBK 381 2 3 4 5 V V 6 VILDLF 391 VILDLF 391 2 3 4 5 V V 6 VILDLF 391 2 2 3 4 5 V 0 6 V 1 0 1 2 3 4 5 5 6 7 8 9 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	CLASS-OETERMINING PHASE NONE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL FOOTNOTE FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS BLUEBUNCH WHEATGRASS BLUEBUNCH WHEATGRASS BOTTLEBRUSH SQUIRRELTAI NEEDLELEAF SEDGE PRAIRIE JUNEGRASS SANDBERG BLUEGRASS	SEED V. POOR POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STCO4 AGDA SIHY CAEL2 KQCR POSE	P(WILD HERB. POOR	WILDLI DTENTIAL FO HARDW TREES COMMUNIT COMMUNIT 20 15 10 10 5 5 5 5	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 VINDBK 381 2 3 4 4 5 V 6 V 6 V 6 V 6 V 6 V 6 V 6 V 6	CLASS-OETERMINING PHASE NONE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS NEEDLEANDTHREAD THICKSPIKE WHEATGRASS BOTTLEBRUSH SQUIRRELTAI NEEDLELEAF SEDGE PRAIRIE JUNEGRASS SANDBERG BLUEGRASS LOW RABBITBRUSH	SEED V. POOR POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STC04 AGDA SIHY CAEL2 KOCR POSE CHVIH2	P(WILD HERB. POOR	WILDLI DTENTIAL FC HARDW TREES COMMUNIT 20 15 10 10 10 5 5 5 5 5 5 5 5 5 5 5	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 WINDBK 381 2 3 4 4 5 4 5 4 6 7 8 7 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1	CLASS-OETERMINING PHASE NONE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS NEEDLEANDTHREAD THICKSPIKE WHEATGRASS BOTTLEBRUSH SQUIRRELTAI NEEDLELEAF SEDGE PRAIRIE JUNEGRASS SANDBERG BLUEGRASS LOW RABBITBRUSH	SEED V. POOR POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STC04 AGDA SIHY CAEL2 KOCR POSE CHVIH2	P(WILD HERB. POOR	WILDLI DTENTIAL FC HARDW TREES COMMUNIT 20 15 10 10 10 5 5 5 5 5 5 5 5 5 5 5	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 VINDBK 381 VINDBK 381 VINDBK 381 VINDBK 381 VINDLF 391 VINDLF	CLASS-OETERMINING PHASE NONE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS NEEDLEANDTHREAD THICKSPIKE WHEATGRASS BOTTLEBRUSH SQUIRRELTAI NEEDLELEAF SEDGE PRAIRIE JUNEGRASS SANDBERG BLUEGRASS LOW RABBITBRUSH	SEED V. POOR POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STCO4 AGDA SIHY CAEL2 KQCR POSE CHVIH2 OTHER	POOR WILD HERB. POOR	WILDLI WILDLI OTENTIAL FO HARDW TREES 	SPECIES FE HABITAT S IR HABITAT ELEM O CONIFER PLANTS 	UITABILITY IENTS SHRUBS POOR	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
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WINDBK 381 Image: Stress st	CLASS-OETERMINING PHASE NONE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL ALL FOOTNOTE FOOTNOTE FOOTNOTE FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS BLUEBUNCH WHEATGRASS BUTELEANDTHREAD THICKSPIKE WHEATGRASS BOTILEBRUSH SQUIRRELTAI NEEDLELEAF SEDGE PRAIRIE JUNEGRASS LOW RABBITBRISH SKUNKBUSH POTENTIAL PRODUCTION (LBS./A	SEED V. POOR POTE POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STCO4 AGDA SIHY CAEL2 KOCR POSE CHVIH2 OTHER OTHER S	POOR WILD HERB. POOR	WILDLI WILDLI OTENTIAL FO HARDW TREES 	SPECIES FE HABITAT S R HABITAT ELEN CONIFER PLANTS Y (RANGELAN PERCE	UITABILITY IENTS SHRUBS POOR DOR FORES NTAGE COMPO	WETLANO PLANTS V • POOR	SHALLOW WATER V. POOR	OPENLAND WILDLIFE V. POOR	POTENTIAL A WOODLAND WILDLIFE	SHABITAT FO WETLANO WILDLIFE	R: RANGELAN D WILÐLIFE
WINDBK 381 I 2 33 I 4 I 5 V 6 WILDLF 391 I 1 V 6 V 1	CLASS-OETERMINING PHASE NONE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL ALL FOOTNOTE FOOTNOTE FOOTNOTE FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS BLUEBUNCH WHEATGRASS BUTELEANDTHREAD THICKSPIKE WHEATGRASS BOTILEBRUSH SQUIRRELTAI NEEDLELEAF SEDGE PRAIRIE JUNEGRASS LOW RABBITBRISH SKUNKBUSH POTENTIAL PRODUCTION (LBS./A	SEED V. POOR POTE POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STCO4 AGDA SIHY CAEL2 KOCR POSE CHVIH2 OTHER OTHER S	POOR WILD HERB. POOR	WILDLI WILDLI OTENTIAL FO HARDW TREES 	SPECIES FE HABITAT S R HABITAT ELEN CONIFER Y (RANGELAN PERCE Y FOOTNOTE	UITABILITY UITABILITY IENTS SHRUBS POOR D OR FORE: NTAGE COMPO	WETLANO PLANTS V. POOR	SHALLOW WATER V. POOR INTY VEGET/ IGHT) BY CLA	ATION) SS DE TERMININ	POTENTHAL A WOODLAND WILDLIFE	S HABITAT FO WETLANO WILDLIFE V. POOR	R: RANGELAN D WILDLIFE POOR
WINDBK 381 I 2 33 I 4 I 5 V 15 V 15 V 15 V 12 I 12 V 16 V 17 I 12 I 1 I 1 I 1 I 1 I 1 I 1 I 1 I 1 I 1 I	CLASS-OETERMINING PHASE NONE NONE FOOTNOTE CLASS- DETERMINING PHASE ALL ALL FOOTNOTE FOOTNOTE FOOTNOTE FOOTNOTE COMMON PLANT NAME INDIAN RICEGRASS BLUEBUNCH WHEATGRASS BLUEBUNCH WHEATGRASS BUTELEANDTHREAD THICKSPIKE WHEATGRASS BOTILEBRUSH SQUIRRELTAI NEEDLELEAF SEDGE PRAIRIE JUNEGRASS LOW RABBITBRISH SKUNKBUSH POTENTIAL PRODUCTION (LBS./A	SEED V. POOR POTE POTE	GRASS & LEGUME V. POOR TIAL NATIV PLANT SYMBOL (NLSPN) ORHY AGSP STCO4 AGDA SIHY CAEL2 KOCR POSE CHVIH2 OTHER OTHER S	POOR WILD HERB. POOR	WILDLI WILDLI OTENTIAL FO HARDW TREES 	SPECIES FE HABITAT S R HABITAT ELEN CONIFER Y (RANGELAN PERCE Y FOOTNOTE	UITABILITY UITABILITY IENTS SHRUBS POOR D OR FORE: NTAGE COMPO	WETLANO PLANTS V. POOR	SHALLOW WATER V. POOR INTY VEGET/ IGHT) BY CLA	ATION) SS DE TERMININ	POTENTHAL A WOODLAND WILDLIFE	S HABITAT FO WETLANO WILDLIFE V. POOR	R: RANGELAN D WILDLIFE POOR

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

NO. WORD NO. MLRA 001 STATE 011	CLASSIFICATION	AND BRIEF SOIL DESCRIPTIC	AUTHOR(S)	JRS	DATE 2/73	UNIT <u>s</u> REVISE	ERIES				UARD		
CLASS 021 DESCR 031 2 3 4 4	TYPIC HAPLARGI THE OURARDISER EET PRECIPI	DS, LOAMY, MIXED, FRIGI JES ARE WELL DRAINED, SO TATION IS 7 TO 9 INCHES YER IS BROWN SANDY LOAM ND IS UNDERLAIN BY SOFT	D., SHALLOW. ILS FORMED IN RES MEAN ANNUAL AIR ABOUT 2 INCHES T SHALE AT A DEBTH	HICK THE	SUBSOIL IS	YELLOWISH		TOMING SEAS	ALL ALL ALL	sphil an	10 90 DA	YS. TYP	PICALLY,
1 15	FOOTNOTE	ND.IS UNQERLAIN BY SOFT	FSTIMUE ATTA DEPTH	ATED SOIL E	PROPERTIES	<u></u>		-		<u></u>	<u></u>	<u>untan</u>	· · · · · · · · · · · · · · · · · · ·
	OEPTH (IN.)	USDA TEXTURE	UNIFIED		AASHO		FRACT.	PER	CENT OF MA AN 3 IN. PAS	TERIAL LES	SS		PLAS-
PROP 041	0-16	SCL	SC		A-2, A-6		(PCT) 0-5	4	10	40	200	LIMIT	TICITY
2	16+	WB								6070	30-40	20 -3 0	10-15
4													
¥ \$6	DEPTH PERMI	EABILITY AVAILABLE	SOIL	SALINITY	SHRINK-SWELL	0.00	ROSIVITY	ERŌS		ND T			
PROP 051	(IN•) (I)	N/HR) WATER CAPACITY (IN/IN)	(pH)	(MMHOS/CM)	POTENTIAL	STEEL	CONCR	FAC1		OD.			
	SAME	.0 .1416	6.6-9.0	2.0-4.0	MODERATE	HIGH	MODE	RATE .28	1	3			
4	AS ABOVE]			
		El écour		GH WATER TAE		CEMENTED			20.01/				
	FREQUENCY	FLOODING DURATION	DEPTH MONTHS (FT)	KINO		the second s	RDNESS	DEPTH (IN)	HARDNES	S INITIA			OTENTIAL FROST ACTION
PROP 061	FOOTNOTES		Y FACILITIES			Canal Section 1		10-20	RIPPABL			D	LOW
SEPTIC 071	SEPTIC TANK	SEVERE - DEPTH TO ROO			KEYING DNLY FILL 191	FOOT		POOR - TH		URCE MA	TERIAL		
3	ABSORPTION FIELDS				2	ROAOFILI	╴└┼╴						
LAGOON 081		SEVERE - DEPTH TO ROC	K		SAND 201			UNSUITED					
	SEWAGE LAGOONS				2	SAND	L						
T RENCH 091					4								
	SANITARY LANDFILL	SEVERE - DEPTH TO ROC	K		G R A V E L 211 2 3	004451		UNSUITED					
4	(TRENCH)				4	GRAVEL							
SANARE 101	SANITARY	3-8%: SLIGHT 8+%: MODERATE - SLOP	E		SOIL 221			POOR - TH	IN LAYER				
4	LANDFILL (AREA)				3	TOPSOIL							
COVER 111	DAILY	POOR - THIN LAYER			4 1 1 1 1 1 1 1								
3	COVER FOR LANDFILL				PONDRS 231	POND		DEPTH TO F		ER MANAC	JEMEN I		
¥ ¥5	FOOTHOTES				3	RESERVOI	R H						
EXCAV 121	FOOTNOTES SHALLOW	COMMUNITY SEVERE - DEPTH TO ROC	DEVELOPMENT		V 15 DIKES 241			THIN LAYER	PERCS	RAPIDLY			
	EXCAVATIONS				2	EMBANKMEI DIKES ANI						*	
DWEL 131		SEVERE - DEPTH TO ROCI	<		4 1 15 PONDAQ 251	LEVEES							
	DWELLINGS WITHOUT					EXCAVATE. PONDS	0	NO WATER					
DWEL 141	BASEMENTS				1 15	AQUIFER FED							
	DWELLINGS WITH	SEVERE - DEPTH TO ROCH	·		DRAIN 261			DEPTH TO R	OCK, EXC	ESS ALK	ALI.		
4	BASEMENTS				3	DRAINAGE	-						
BLDGS 151 2	SMALL	SEVERE - DEPTH TO ROCH			IRRIG 271			COMPLEX SL	OPE, ROO	TING DE	РТН		
4	COMMERCIAL BUILDINGS				3	IRRIGATIO	N						
ROADS 161	LOCAL	SEVERE - DEPTH TO ROCK			TERRAC 281	****							
3	ROADS AND STREETS					TERRACES AND DIVERSION							
¥_\$	FOOTNOTES 7	RECIÓNAL INC			WATERW 291	UTT LINSION							
REGION 171	TOURIDIES /	INEGIONAL IN	TERPRETATIONS		23	GRASSED WATERWAY	7						
2 3 4					¥ \$								
REGION 181 2 3													

VENUE ONLY	UNIT NAME:OUARO				(2) RECREA									
KEYING ONLY CORO CONTROL IO, WORO NO.	UNIT MODIFIER:				KEYING PLAYG	ONLY		FOOTNO	% SEVE	RE – DE	PTH TO	ROCK		
CAMPS 301 2	3-8%: SL 8+%: MODI	IGHT ERATE - SLOPE				2	YGROUNDS		SEVER	<u>F - SLC</u>	<u>PE, DE</u>	<u>PTH TO </u>	ROCK	
	CAMP AREAS					4 5								
PICNIC 311	3-8%: SL	IGHT ERATE - SLOPE			PATH		PATHS		I GHT					
	PICNIC AREAS						AND TRAILS							
4	FOOTNOTE	CAPABI	LITY AND PR	EDICTED YI	ELDS - CROP	SAND PASTU	RE (HIGH	ILEVEL M	NAGEMEN	T)				
CROPHD 451	CLASS-	CAPABILITY												
	OETERMINING PHASE	NIRR IRR.	NIRR IRR.	NIRR	IRR. N	IRR IRR.	NIRR	IRR	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
CROPS 341	ALL	7E												
3														
5							_							
7														
9 351														
2					WOODLAND	SUITABILITY		POTENI	TAL PROOUC		T			
	CLASS- DETERMINING	ORO EROSION	EQUIP.	SEEOLIN	IG WINOTH	I. PLAN O COMPI	T T		NT TREES		SITE	Т	REES TO PL	.ANT
W0005 [361	PHASE NONE	SYM HAZARO	LIMIT	MORT'Y	• NAZAR	CONIT		NQ	NE					
2														
4														
6														
8														
371														
						BREAKS			SPECIES		I HT		SPECIES	
	CLASS-OETERMINING PHASE	S	PECIES	HT	SPE	CIES	HT							
WINDBK 38							-+-+							
	FOOTNOTE			POTEN	TIAL FOR HABI	BITAT SUITA	BILITY			0.051		ENTIAL AS	HABITAT F	OR: RANGELA
	CLASS- OETERMINING	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HAROWO	ONIFER SLANTS	SHRUBS	WETLANO PLANTS	SHALLOW WATER	WILOU	LIFE	VILOLIFE	WETLAND WILOLIF	WILDLIF R POOR
WILDLF 39			V. POOR	POOR		P	OOR	V. POOR	V. POOR					
	2									_				
	5						FOREST	UNDERST	DRY VEGE	TATION)				
	FOOTNOTE	POTEN	PLANT SYMBOL	PLANT COM	MMUNITY (RA	PERCENTA	SE COMPOS	ITION (ORY WI	IGHT) BY CL	ASS OETE	RMINING	PHASE	Į	
PHASE 4	2	AME	(NLSPN)		0									
PLANT 4	11 BLUEBUNCH WHEATGRASS		AGSP AGOA	1	5									
	3 LETTERMAN NEEDLEGRASS 4 SANDBERG BLUEGRASS		STLE4 POSE STCO4	1	0									
	5 NEEDLEANDTHREAD		CAEL2 ARTR2		5									
	6 NEEDLELEAF SEDGE			the second s	15	•								
	7 BIG SAGEBRUSH		OTHER										_	
			OTHER											· · · · · · · · · · · · · · · · · · ·
1 1 1														
1 1 1														
	ZI BIG_SAGEBRUSH 8 9 9 - 21 - 2 - 3 - 4 - 5 - 6 - POTENTIAL PRODUCTION (4)	PAYUNADLL	EARS		50									
1 1 1	ZI BIG_SAGEBRUSH 9	.BS./AC. ORY WT): FAVORABLE Y NORMAL YEAN UNFAVORABL	EARS	3	50	OOTNOTES								
	ZI BIG SAGEBRUSH 9 - - 21 - - 21 - - 21 - - 21 - - 31 - - 5 - - 7 6 - 131 POTENTIAL PRODUCTION (1) 2 - - 7 3 -	NORMAL YEAL	EARS	3	50	OOTNOTES			· · · · · · · · · · · · · · · · · · ·					
PRODUC	ZI BIG_SAGEBRUSH 8	NORMAL YEAL	EARS	3	50	OOTNOTES								
PRODUC	ZI BIG_SAGEBRUSH 8	NORMAL YEAL	EARS	3	50	OOTNOTES								

SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-1

KEYING ONL' RECORD CONT SOIL SURVEY INTERPRETATIONS CONTRO WORO NO. MLRA(S) KIND OF UNIT SERIES UNIT AUTHOR(S) JRS DATE 2/73 REVISED UNIT MODIFIER MLRA(S) 34 STATE wyoming RECORD NO. AUTHOR(S) JRS DATE(2/73 REVISED ON FIGURE 1990 ON FIGURE 19 34 UNIT NAME RALLOD STATE DESCR PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE USDA TEXTURE LIQUID LIMIT PLAS-TICITY UNIFIEO >3 IN. (PCT) (IN.) 4 AASHO 10 INDE> 4 40 ROP 041 0-12 SC CL A-6, A-7 0 95-100 95-100 70-80 60-70 35-45 20-30 12+ WB AVAILABI PERMEABILITY SOIL WIND EROD. ERÓSIÓN DEPTH SALINITY SHRINK-SWELL CORROSIVITY WATER CAPACITY REACTION (IN/HR) FACTORS (IN.) (MMHOS/CM) POTENTIAL (IN/IN) (pH) STEEL CONCRETE GROUP K .06-.20 4.0-8.0 .07-.08 7.4->9.0 **HIGH** HIGH MODERATE .20 1 3 SAME j DEPTH ABOVE 5 HIGH WATER TAB CEMENTEO PAN BEOROCK FLOODING POTENTIAL HYO DEPTH (IN) OEPTH (FT) MONTHS KINO HARDNESS OEPTH HARDNESS INITIAL TOTAL FROST FREQUENCY GRP DURATION MONTHS (IN PROP 061 NONE >6 10-20 RIPPABLE LOW FOOTNOTES SANITARY FACILITIES KEYING ONLY SOURCE MATERIAL FOOTNOTES 7 10-15%: SEVERE - OEPTH TO ROCK, PERCS SLOWLY 15+%: SEVERE - SLOPE, DEPTH TO ROCK, PERCS SEPTIC 071 FILL 10-25%: POOR - SHRINK-SWELL, THIN LAYER 25+%: POOR - SLOPE, SHRINK-SWELL, THIN LAYER SEPTIC TANK ABSORPTION SLOWLY ROAOFILL FIELDS 1 5 AGOON SEVERE - SLOPE, DEPTH TO ROCK SAND UNSUITED SEWAGE 2 LAGOONS SAND 15 GRAVEL 211 10-25%: SEVERE - DEPTH TO ROCK 25+%: SEVERE - SLOPE, DEPTH TO ROCK UNSUITED SANITARY LANDFILL GRAVEL (TRENCH) 1 5 SANARE 101 10-15%: MODERATE - SLOPE 15+%: SEVERE - SLOPE SOIL 10-15%: POOR - EXCESS ALKALI, THIN LAYER 15+%: POOR - SLOPE, EXCESS ALKALI, THIN LAYER SANITARY LANDFILL TOPSOIL (AREA) 4 15 10-15%: POOR - THIN LAYER 15+%: POOR - SLOPE, THIN LAYER DAILY WATER MANAGEMENT FOOTNOTES COVER FOR PONDRS 231 DEPTH TO ROCK, SLOPE LANDFILL POND RESERVOIR AREA COMMUNITY DEVELOPMENT FOOTNOTES EXCAV 121 10-15%: SEVERE - DEPTH TO ROCK 15+%: SEVERE - SLOPE, DEPTH TO ROCK 41 DIKES THIN LAYER, UNSTABLE FILL SHALLOW EMBANKMENTS EXCAVATIONS 3 DIKES ANO LEVEES DWE 10-15%: SEVERE - DEPTH TO ROCK, SHRINK-SWELL 15+%: SEVERE - SLOPE, DEPTH TO ROCK, SHRINK-PONDAQ NO WATER DWELLINGS EXCAVATED WITHOUT 3 4 SWELL PONDS BASEMENTS AQUIFER FED. DWEL 41 16-15%: SEVERE - DEPTH TO ROCK, SHRINK-SWELL 15+7: SEVERE - SLOPE, DEPTH TO ROCK, SHRINK-DRAIN EXCESS ALKALI, DEPTH TO ROCK, PERCS SLOWLY OWELLINGS WITH SWELL ORAINAGE BASEMENTS 15 \$ 5 BLDGS 151 SEVERE - SLOPE, DEPTH TO ROCK, SHRINK-SWELL RRIG ROOTING DEPTH, SLOPE, EXCESS ALKALI SMALL COMMERCIAL IRRIGATION BHILOINGS 4 ŧ. ROADS 161 L 10-15%: SEVERE - DEPTH TO ROCK, SHRINK-SWELL, LOW STRENGTH 15+%: SEVERE - SLOPE, DEPTH TO ROCK, SHRINK-TERRAC 281 LOCAL TERRACES ROADS AND AND DIVERSIONS 3 STREETS 4 SWELL, LOW STRENGTH 4 WATERV 291 REGIONAL INTERPRETATIONS FOOTNOTES / GRASSED REGION 171 WATERWAYS REGION 181

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						(2)							
KEYING ONLY RECORD CONTROL	UNIT NAME: RALLON)			RECE	REATION							
NO. WORD NO CAMPS 30	FDOTNDTE	10DERATE -	01.005		KEY	ING ONLY]	the second s	FDOTNOTE				
	15+%: SE	VERE - SLOP	E			YGD 321		Щ.	SEVERE -	SLOPE, OE	PTH TO ROCH	(
						3	PLAYG	ROUNDS					
PICNIC 311						¥ ¥ 5							
	15+%: SEV				PA1	HS 331	ΡΔ		10-15%:	SLIGHT MODERATE	SLODE		
	PICNIC AREAS					3	A	ND 🗌	25+%: S	EVERE - SL	OPE		
						4		AILS					
CRDPHD 451	CLASS-	CA	PABILITY A	ND PREDICTED	YIELDS - CRC	IPS AND F	PASTURE	(HIGH LEV	EL MANAGEM	ENT)			
		CAPABILITY										-	
	PHASE	NIRR IRR	NIRR	IRR. NIRR	IRR,	NIRR	IRŘ.		R. NIRR	IRR.	NIRR IRR.	NIRR	IRR.
CRDPS 341		_7E	-									- HINN	
4		+											
351													
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• • • • • • • • • •	FOOTNOTE				WOODLAND	SUITARI							
	CLASS- DETERMINING	ORD	N 1	MANAGEMENT F	ROBLEMS			P0	FENTIAL PRODU				
	PHASE	SYM EROSIL HAZAF		UIP. SEEDLI MIT MORT'			PLANT COMPET.	IMPC	RTANT TREES	SIT	EX	TREES TO PL	ANT
WODDS 361									NONE				
3													
4													
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8													
9													
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	FODTNOTE	L			WIND	BREAKS		<u> </u>					
WINDBK 381	CLASS-DETERMINING PHASE NONE		SPECIES	HT	SPEC		H	T	SPECIES	НТ		SPECIES	HT
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4													
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	FOOTNOTE			W	LDLIFE HAB	TAT SUIT	FABILITY	(
	CLASS- DETERMINING	GRAIN &	GRASS &	Y	AL FOR HABIT	NIFER		WETLAND	SHALLOW	DPENLAND	WOOOLAND		RANGELAND
- WILDLF 391	PHASE ALL	SEED	LEGUME	HER8.	TREES PL	ANTS	SHRUBS	PLANTS	WATER	WILDLIFE	WILDLIFE	WETLAND	WILOLIFE
2		V. POOR	V. POOR	POOR			POOR	V. POOR	V. POOR	V. POOR		V. POOR	POOR
5													
	FOOTNOTE	POTEN	TIAL NATIN	E PLANT COMM	UNITY (RANG	ELAND	DR FORF	ST UNDERST	ORY VEGET	ATION)			
PHASE 401	COMMON PLANT NAME		PLANT SYMBOL			PERCENT	AGE COMP	OSITION (DRY W	EIGHT) BY CLA	SS OETERMININ	IG PHASE		
2			(NLSPN)										
2	THICKSPIKE WHEATGRASS		AGOA ORHY	40									
3	WINTERFAT BOTTLEBRUSH SQUIRRELTAIL		EUROT	10									
5	MUTTON BLUEGRASS		SIHY POFE	5									
	GARDNER SALTBUSH NEEDLELEAF SEDGE		ATNU2 CAEL2	5									
8	SANDBERG BLUEGRASS		POSE	5									
421	LOW RABBITBRUSH		CHVIH2 ARAR8	5									
2			OTHER	5									
4													
5													
PRDDUC 431	POTENTIAL PRODUCTION (LBS./A	CORY WT):	200	1 000									
2		FAVORABLE YI NORMAL YEARS		<u> </u>									
¥ ¥ 3	SYM.	UNFAVORABLE	YEARS	500	FOOT	NOTES					T		
NOTES 441	1 WHERE SURFACE LAYER IS	THIN, AREA	S HAVE SE	VERE LIMITAT	10NT.00. CL	AYEY .	1.1.1.1.1.1						
3		<u></u>		<u> </u>		<u></u>							
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RECORD CONTROL NO. WORD NO.	1		:	SOIL	SURV	EY IN	NTEF	RPF	RE	TATIC	ONS						
MLRA 001 STATE 011		WYOMING	34 RECOR	D NO.T	AUTHOR	R(S) JRS) OF L	JNIT <u>se</u> Revised	RIES		T NAME [REL	SOB		
CLASS 021	CLASSIFIC BOROLLIC	CATION A	ND BRIEF SOIL DESC	RIPTION	DY. OR SANDY-	SKELETAL	MIXED.									1	
DESCR 031	PRECIPIT	ATION IS	S ARE WELL DRAIN	D SOILS	FORMED IN A	EMPERATUR	ON ALLUV		FANS.	AND THE	ARE 3. T	0 1.0. PER		ELEVATIO	N 15 7,000	TYDICALL	V TUE
4	JUNFALL,	TRATUM I	S YELLOWISH BROW	<u>Lidam a</u> Isandy	LOAM TO GRAY	<u>ISH BROW</u>	<u>. THE SL</u> N. GRAVEL	LY S	L IS AND 1	PINKISH C	IRAY TO	BROWN, SAI	DY. CLAY	LOAM A	BOUT 14. IN	ICHES THE	CK
	FOOTNOT	E	· · · · · · · · · · · · · · · · · · ·	······	ES	TIMATED S	OIL PROF	ERTI	ËS		FRACT.	P	ERCENT OF				L
	DEPTH (IN.)		USDA TEXTURE		UNIFIED			AA	SHO		>3 IN. (PCT)		THAN 3 IN.			LIQUID LIMIT	PLAS TICIT INDE
PROF 041 2	0-24		SCL GR-S		SC, SM-SC SP-SM				-2		0	<u>85–100</u> 50–60	80 <u>-95</u> 40 <u>-</u> 50	60-80	25-35	15-25	5-10 NP
3																	
5			AVAIL		SOIL												
	DEPTH (IN.)	Permea (IN/	WATER C.	PACITY	REACTION (pH)	SALINIT (MMHOS/	1 .	IRINK-S POTEN		COR STEEL	ROSIVITY	F/	ROSION CTORS	WIND EROD. GROUP			
P P.O P 051 2	SAME	.6-2.		16 06	6.6-7.3	<2.0		LOW		HIGH	LOI	1 .28	3 5	53			
4	DEPTH AS ABOVE																
16	ADUVE									05454750			_				
	FREO	UENCY	FLOODING DURATION	MOR	DEPT			MONTH	15	CEMENTED DEPTH HA (IN)	RDNESS	DEPTH (IN)	EDROCK HARD		SUBSIDENCE	LGRP	OTENTIA FROST ACTION
PROP 061	N N	ONE			>6							>60				В	LOW
SEPTIC 071	SEPTIC T		3-8%: SLIGHT		FACILITIES		F I	YING (191	FOOTM	IOTES	FAIR -	LOW STR		MATERIAL		
3	ABSORPT	TION	8+%: MODERATE	- SLOPE					2	ROAOFIL							
LAGOON 081			3-7%; SEVERE -	PERCS	RAPIDLY	•	SA	N D	201			FAIR					
2	SEWAG LAGOOI		7+%: SEVERE -			Y			23	SAND							
4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7							0.0	1	4								
2	SANITAI		SEVERE - PERCS	KAPIDLY	100 SANDY		G K	AVEL	211	GRAVEL		FAIR					
¥ ¥5	(TRENC	:H)							4		-						
SANARE 101 2	SANITA		SEVERE - PERCS	RAPIDLY.			50	IL	221		Ц	FAIR -	TOO CLA	YEY			
	LANDFI (AREA		· · · · · · · · · · · · · · · · · · ·						3 4 5	TOPSOIL							
COVER 111	DAILY	, [POOR - TOO SAND	Y, SMALL	STONES				10	FOOTN	OTES		W	ATER MA	NAGEMENT		
3	COVER F						PO	NDRS	1 12 11	POND	1+	PE CS R	AFIDLY				
<u> </u>	FOOT	INOTES 7	COM		EVELOPMENT				3	RESERVOI AREA	R						
EXCAV 121	SHALLO	μ	3-8%: MODERATE 8+%: MODERATE	- SMALL	STONES		יום	(ES	¥5 241 2	EMBANKME		PERCS R	APIDLY				
23	EXCAVATI	ONS							4	DIKES AN LEVEES	D _						
DWEL 131	DWELLIN		3-8%: SLIGHT	01.005			PO	NDAQ		EVOLUTE		NO WATE	R				
2 3 4	WITHOU BASEMEN	т	8+%: MODERATE	SLUPE					23	EXCAVATE PONDS AQUIFEI							
DWEL 243			3-8%: SLIGHT	_			DR	X A IN	15 261	FED		FAVORAB	LE				
	DWELLIN WITH BASEMEN	L	8+ MODERATE	- SLOPE					2	DRAINAGI	E				,		
BLDGS 151	DASEMEN		3-4%: SLIGHT						4								
	SMALL		<u>4-8%:</u> MOOERATE 8+%: SEVERE -					₹IG	271 2 3	IRRIGATIO	IN I	FAVORAB	LE				
	BUILDING	SS							4				-				
ROADS 161 2 3	LOCAL ROADS AN		3-8%: SLIGHT 8+%: FAIR - SL	PE			TER	RAC	2	TERRACE	S						
4	STREET								3	AND DIVERSION	IS						-
	FOOT	NOTES 7	REGIČ	NAL INTE	RPRETATIONS	S	WA	TERW	291	GRASSEE	, 4						
R E G I O N 171 2 3									3	WATERWA							
REGION 181									5								
4																	

					(2)							
KEYING ONLY RECORD CONTRDL	UNIT NAME:			F	ECREATION	1		NOTE				
NO. WDRO NO. CAMPS 301	FDDTNDTE	GHT			KEYING ONLY PLAYGD 321			-6%: MOD	ERATE - SL			
	8+%: MODE	RATE - SLOPE				-11		+%:SEVE	RE - SLOPE			
4	CAMP AREAS											
PICNIC 311	3-8%: SLI	GHT			PATHS 331		5	LIGHT				
	8+%: MODE	RATE - SLOPE										
4	PICNIC AREAS	4				TRAILS						
5	FOOTNDTE	CAPABILIT	TY AND P	REDICTED YIELDS	CROPS AND	PASTURE (H	IGH LEVEL I	ANAGEME	NT)			
CRDPHD 451	CLASS-											
2	OETERMINING	CAPABILITY				100 011		NIRR	IRR. NII	RR IRR.	NIRR	IRR.
ICROPS 341	PHASE	NIRR IRR, NIE	R IRI	R. NIRR IRR.	NIRR	IRŔ. NII	RR IRR.	NIKK			NINA	1((1%)
2												
3												
5												
6												
8												
351												
	FOOTNOTE		м	WOOD ANAGEMENT PROBLEM	LAND SUITAE	BILITY	POTEN	TIAL PRODUC	TIVITY			
	DETERMINING	ORO EROSION	EQUIP. LIMIT	SEEOLING	WINDTH.	PLANT CDMPET.		ANT TREES	SITE		TREES TO PLA	ANT
WDDDS 361	PHASE NONE	HAZARO	LIMIT	MORT'Y.	HAZARD	COMPET.		NONE				
2	NUNE											
3												
5												
6												
8												
371												
2											· · · · · · · · · · · · · · · · · · ·	
4												
5						(0						
	FODTNOTE CLASS-DETERMINING PHASE	SPECI	FS	HT	WIND BREAT	IS HT		SPECIES	HT		SPECIES	HT
WINDBK 381	NDNE											
2												
4												
V V 6				WILDLIE	E HABITAT S					L		
	CLASS-			PDTENTIAL FOR	HABITAT ELEM	IENTS				WODOLAND	WETLAND	R: RANGELAND
	DETERMINING PHASE	GRAIN & GRA	ASS & GUME	WILO HAROWD HERB. TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLDW WATER	DPENLAND WILDLIFE	WILDLIFE	WILDLIFE	WILDLIFE
WILDLF 391			IR	FAIR		FAIR	PDDR	POOR	FAIR		POOR	FAIR
						D OD CODES	TIMOEDCTO	DV VEGET	ATIONY		<u> </u>	
	FOOTNOTE	POTENTIAL	ANT	PLANT COMMUNITY	PERCE	INTAGE COMPO	SITION (DRY WE	IGHT) BY CLA	SS DETERMININ	G PHASE	1	
PHASE 40		E SYI	_ANT									
PLANT 41	1	AG	ida 🛛	20								
	NEEDLEANDTHREAD BIG SAGRBRUSH		TCO4	15								
	BLUEBUNCH WHEATGRASS	AG	SSP	10								
	CANBY BLUEGRASS		DCA	<u>10</u> 10								
	INDIAN RICEGRASS		RHY DCR	5	-							
	9		THER	10								
42	2											
					_							
	5											
	PDTENTIAL PRODUCTION (LBS.	AC. ORY WT).										
PRDOUC 43	1	FAVORABLE YEARS	-	1,500								
	2	UNFAVORABLE YEA	RS	700	FOOTNOT	-8						
NOTES 44	SYM.										1	
	2			<u> </u>		· <u> </u>				<u> </u>	<mark>└╢╷╷╷╷╷╷╷╷</mark>	
	3 4	<u> </u>	<u></u>				<u></u>		<u>.</u>			
	6			<u></u>		L. L	<u></u>					<u></u>
	7			<u></u>	<u></u>	<u> </u>				<u></u>	<u>, , , , , , , , , , , , , , , , , , , </u>	

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SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY

KEYING ONLY RECORO CONTROL	1	SC	IL SURVEY IN	TERPRETA	HONS	
NO. WORD NO.	MLRA(S)	34		KIND OF UNIT	SERIES	UNIT NAME RYARK
MLRA 001 STATE 011	STATE WYOMI	NG RECORD NO	AUTHOR(S) JRS	DATE 2/73 RE	VISED UNIT	MODIFIER
CLASS 021	CLASSIFICATION A	ND BRIEF SOIL DESCRIPT	IUN IIXED			TO TO TO PERCENT. ELEVATION IS 7 000 TO 7,300
DESCR 031	THE RVARK SERIE	S ARE WELL DRAINED SC	DILS FORMED IN SANUT ALLUT	IUM ON ALLUVIAL FANS	F AND THE	E 3 TO 10 PERCENT. ELEVATION 1S 7,000 TO 7.300 GROWING SEASON IS ABOUT 80 TO 90 DAYS, TYPI Y LOAM ABOUT 16 INCHES THICK. THE UPPER PART OF
2	FEET PREGIPIT	ATION IS 10 TO 12 IN	DAMY SAND ABOUT 2 INCHES	THICK, THE SUBSOIL I	S BROWN SAND	Y LOAM ABOUT 16 INCHES THICK. THE UPPER PART OF TRATUM IS LIGHT BROWNISH GRAY GRAVELLY SAND TO
4	THE SUBSTRATIM.	IS GRAYISH BROWN LOAD	MY. SAND ADUUL IZ INVILUTION	LAWIN & J HITLE LEGATION OF THE REAL	F. OF. THE SUBS	TRATUM IS LIGHT BROWNISH GRAY GRAVELLY SAND TO
1 5	60, INCHES OR MO) <u>RE., , , , , , , , , , , , , , , , , , , </u>	ESTIMATED	OIL PROPERTIES		
	DEPTH	USDA TEXTURE	UNIFIED	AASHO	FRACT.	THAN 3 IN. PASSING SIEVE
	(IN.)	USDA TEXTUNE			(PCT)	4 10 40 200 Limit INDEX 85-100 80-100 50-70 20-35 15-25 5-10
PROP 041	0-18	SL	SC, SM-SC SP-SM	A-2 A-1	00	60-75 55-70 30-50 5-10 0 NP
2	18-60	GRF-S	31-31			
3						
5						ERŐSIŐN WIND
	1	EABILITY AVAILABLE WATER CAPAG	DITY DEACTION		CORROSIVITY	FACTORS EROD.
	(IN.) (I	N/HR) (IN/IN)	(pH) (MMHUS/		STEEL CONC	
PROP 051		0-6.0 .1113	6.6-7.3 <2.0 6.6-7.3 <2.0			DW _20 5 3 DW _15 5 3
2	SAME 6.	0-20.0 .0406	0.0-7.0			
4	AS					
5					EMENTED PAN	BEDROCK SUBSIDENCE HYD POTENTIAL
Land Land Land Land Land Land Land Land		FLOODING		ND MONTHS DEPT	H HARDNESS	DEPTH HARDNESS INITIAL TOTAL GRP FROST
	FREQUENCY	DURATION	MONTHS (FT)	(IN)		(IN) (IN) (IN) ACTION >60 A LOW
PROP 061	NONE				FOOTNOTES	SOURCE MATERIAL
	FOOTNOTES	1	ITARY FACILITIES	FILL 191	FUUTIVUTES	GOOD
SEPTIC 071	SEPTIC TANK	3-8%: SLIGHT 8+%: MODERATE - SI	OPE	2	POADEUL	
2	ABSORPTION			3	ROADFILL	
	FIELDS			SAND 201	· · · · ·	FAIR
LAGUUN081		3-7%: SEVERE - PE 7+%: SEVERE - SLO	RCS RAPIDLY	SAND 201	1	FAIR
		/+%: SEVERE - SLU	PE, PERLO RAFIDET	3	SAND	
	4			15	-	
T RENCH 09	1	SEVERE - PERCS RAP	IDLY, TOO SANDY	GRAVEL 211	L	POOR
	2 SANITARY 3 LANDFILL			3	GRAVEL	
	4 (TRENCH)			4		
SANARE 10	5	SEVERE - PERCS RAP	TOLY	SOIL 221		3-8%: GOOD
SANANEIO	2 SANITARY			2	TOPSOIL	8+%: FAIR - SLOPE
	3 LANDFILL 4 (AREA)			4		
	5		VÁRAS DOT 3			WATER MANAGEMENT
COVER 11	DAILY	POOR - SMALL STONE	5, 100 SANDI	PONDRS 231	FOOTNOTES	PERCS RAPIDLY
	3 COVER FOR 4 LANDFILL			2	POND	
	4 LANDFILL			3	RESERVOIR AREA	
	FOOTNOTES		UNITY DEVELOPMENT	1 15		
EXCAV 12	1	1 2-8% MODERATE -	SMALL STONES	DIKES 241	EMBANKMENTS	PERCS RAPIDLY, HARD TO PACK
	2 SHALLOW 3 EXCAVATIONS	U 8+%: MODERATE -	SLOPE, SMALL STONES	3	DIKES AND LEVEES	
	4			15	FE AE ES	
	31	3-8%: SLIGHT		PONDAQ 251 2	EXCAVATED	NO WATER
	2 DWELLINGS 3 WITHOUT	8+%: MODERATE -	SLOPE	3	PONDS	
	4 BASEMENTS			4	AQUIFER FED	
	41	3-8%: SLIGHT		DRAIN 261	[FAVORABLE
	2 DWELLINGS	8+%: MODERATE -	SLOPE	2	ORAINAGE	
	3 WITH 4 BASEMENTS			4		
	15	2 10/ 01 10/17		IRRIG 271		ERODES EASILY, FAST INTAKE
	51 2 SMALL	4-8%: SLIGHT	SLOPE		IRRIGATION	
	3 COMMERCIAL 4 BUILDINGS	8+%: SEVERE - SL	OPE	4	nation inter	
	5			TERRAC 281		
ROADS 1		3-8%: SLIGHT 8+%: MODERATE -	SLOPE	2	TERRACES	
	3 ROADS AND	S 1 1 9 1 1 1 9 1 1 1 1 1 1 1 1		3	AND DIVERSIONS	
	4 STREETS			WATE PW 201		
	FOOTNOTE	REGI	DNAL INTERPRETATIONS	WATERW 291 2	GRASSED	
REGIONI				3	WATERWAYS	
	2			4		
	4					
REGIONI	81					
	3					
	14					

RECOI	C A	CONTROL ORD N MPS 3 CNIC 3 CNIC 3 CNIC 3 DPHD 45	1 3-8%: SL1 2 8+%: MODE 3 8+%: MODE 1 8+%: MODE 2 8+%: MODE 3 8+%: MODE 3 8+%: MODE 4 8+%: MODE 5 8+%: MODE 4 8+%: MODE 5 8+%: MODE 4 8+%: MODE 2 CLASS-	RATE - SLOPE GHT RATE - SLOPE		DICTED YIELD	(2) RECREATIO KEYING ONL PLAYGD 3 PATHS 3 PATHS 3 OS - CROPS AND	Y 21 2 3 4 5	6+%: SET	DOERATE - SLOPE /ERE - SLOPE /ENT).		
		* 1*	DETERMINING PHASE	NIRR IRR.	NIRR IRR.	NIRR		100				
	CR	DPS 34	1 ALL	6E			R. NIRR	IRR. NIRR	IRR. NIRR	IRR. NIRR	IRR. NIRR	IRR.
		++-	3									
			5									
			7									
		35										
	-		2									
			FOOTNOTE	<u> </u>	1 I	WOO	DLAND SUITAL	BILITY				
			DETERMINING	ORD ERDSION SYM HAZARD	EQUIP.	GEMENT PROBLE	WINDTH. HAZARD	PLANT	POTENTIAL PRODU	SITE	TREES TD PLA	NT
	WDI	DDS 36	NONE	IAZAKU		MORT'Y.	HAZARD	CDMPET.	NONE	INDEX		
	-											
	+	37										
	-											
	TWIN	D B K 38	CLASS-DETERMINING PHASE	S	PECIES	нт	WIND BREAK SPECIES	S HT	SPECIES	HT	SPECIES	HT
		Y E										
			CLASS-			POTENTIAL FOR	E HABITAT SU HABITAT ELEME	ITABILITY NTS		POTENT	AL AS HABITAT FOR:	
-	WIL 1	LF 391	DETERMINING PHASE ALL	SEED	GRASS & WILD LEGUME HERE	3. TREES	CONIFER PLANTS	SHRUBS WETL PLA	AND SHALLDW NTS WATER	OPENLAND WOOD WILDLIFE WILD	AND WETLAND F	RANGELAND WILDLIFE
		2		FAIR	FAIR FAI	R		FAIR POO	R POOR	FAIR -		FAIR
	+	4										
		1 6	FOOTNOTE									
	IPH A	SE 401		PUTENTI	PLANT	I COMMUNITY	(RANGELAND PERCEN	OR FOREST UNDE	RSTORY VEGETA	TION) S DETERMINING PHASE		
	1 1	1 2	COMMON PLANT NAME		SYMBDL (NLSPN)							
	IP I A	N T I 4 1 1	NEEDI CANOTUDEAO									
	PLA	2	THICKSPIKE WHEATGRASS		STCO4	<u>25</u> 15						
		23	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS		AGDA DRHY AGSP	15 10 10						
		2 3 4 5 6	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS BIG SAGEBRUSH		AGDA DRHY AGSP POCA ARTR2	15						
		2 3 4 5 6 7 8	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS		AGDA DRHY AGSP POCA ARTR2 SIHY HVIH2	15 10 10 10 10 5 5 5						
		2 3 4 5 6 7	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS BIG SAGEBRUSH BOTTLEBRUSH SQUIRRELTAIL		AGDA DRHY AGSP POCA ARTR2 STHY	15 10 10 10 10 10 5						
		2 3 4 5 6 7 8 8	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS BIG SAGEBRUSH BOTTLEBRUSH SQUIRRELTAIL		AGDA DRHY AGSP POCA ARTR2 SIHY HVIH2	15 10 10 10 10 5 5 5						
		2 3 4 5 6 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 1 7 8 1 7 8 1 7 8 1 7 9 1 4 2 1 3 1 7 1 8 1 9 1 4 2 1 3 1 7 1 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS BIG SAGEBRUSH BOTTLEBRUSH SQUIRRELTAIL		AGDA DRHY AGSP POCA ARTR2 SIHY HVIH2	15 10 10 10 10 5 5 5						
		2 3 4 5 6 7 8 9 421 2 3 3 4 4 5 5	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS BIG SAGEBRUSH BOTTLEBRUSH SOUIRRELTAIL LOW RABBITBRUSH POTENTIAL PRODUCTION (LBS/AC		AGDA RHY AGSP 20CA ARTR2 SIHY HVIH2 ITHER ITHER	15 10 10 10 5 5 10						
		2 3 4 5 6 7 8 9 421 2 3 4	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS BIG SAGEBRUSH BOTTLEBRUSH SOUIRRELTAIL LOW RABBITBRUSH POTENTIAL PRODUCTION (LBS/AC	. DRY WT): FAVORABLE YEAF	AGDA DRHY AGSP POCA ARTR2 IHY HVIH2 DTHER SHVIH2 DTHER	15 10 10 10 5 5 10 ,500 ,200						
		2 3 4 5 6 7 8 9 421 2 3 3 4 4 5 5	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS BIG SAGEBRUSH BOTTLEBRUSH SOUIRRELTAIL LOW RABBITBRUSH POTENTIAL PRODUCTION (LBS/AC	. DRY WT): FAVORABLE YEAR	AGDA DRHY AGSP POCA ARTR2 IHY HVIH2 DTHER SHVIH2 DTHER	15 10 10 10 5 5 10 , 500	FOOTNOTES					
		2 3 4 5 6 7 7 8 9 4 21 2 3 4 4 5 5 7 6 6 9 9 4 21 2 3 1 4 4 5 5 9 9 9 4 21 1 2 2 3 1 4 4 5 9 9 9 4 2 1 2 2 3 3 1 4 9 9 9 4 4 5 9 9 9 1 4 9 9 9 1 4 9 9 1 1 1 1 1 1 1 1	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS BIG SAGEBRUSH BOTTLEBRUSH SOUIRRELTAIL LOW RABBITBRUSH POTENTIAL PRODUCTION (LBS./AC	. DRY WT): FAVORABLE YEAF	AGDA DRHY AGSP POCA ARTR2 IHY HVIH2 DTHER SHVIH2 DTHER	15 10 10 10 5 5 10 5 10 5 5 10 5 10 5 10 5 10 5 10 5 10 5 5 10 5 10 10 5 5 10 10 5 5 10 10 10 10 10 10 10 10 10 10						
		2 3 4 5 6 7 7 8 8 9 4 21 1 2 3 3 4 4 5 5 7 7 8 8 9 9 4 21 1 2 3 3 4 4 5 5 7 7 7 8 8 9 9 4 21 1 2 2 3 3 4 4 5 5 6 6 6 7 7 7 7 7 7 8 8 9 9 4 4 1 2 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 1 2 1 1 2 1 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 2 1 2 1 1 2 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 2 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 2 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 1 2 1 2 1 2 1 2 1 2 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1 2 1	THICKSPIKE WHEATGRASS INDIAN RICEGRASS BLUEBUNCH WHEATGRASS CANBY BLUEGRASS BIG SAGEBRUSH BOTTLEBRUSH SOUIRRELTAIL LOW RABBITBRUSH POTENTIAL PRODUCTION (LBS./AC	. DRY WT): FAVORABLE YEAF	AGDA DRHY AGSP 20CA ARTR2 DIHY HV IH2 DTHER S ARS ARS	15 10 10 10 5 5 10 5 0 5 0	<u> </u>	······································				

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RECORD CONTROL]	S	OIL SURVE	ey inte	ERPRE	TATIO	ONS					
NO. WORD NO. MLRA 001 STATE 011	STATE WYOMI CLASSIFICATION A	ND BRIEF SOIL DESCRIP	TION	S) JRS	KIND OF 1 DATE 2/73	JNIT <u>s</u> RÉVISE	SERIES DU UNIT		NAME	TIGON		
CLASS 021 DESCR 031 2 3 4 4	THE TIGON SERIE SLOPES ARE 6 TO AND THE GROWING SANDY CLAY LOAM	GIDS, LOAMY, MIXED, S ARE WELL DRAINED S 30 PERCENT, ELEVAT SEASON IS ABOUT 80 ABOUT 13 INCHES THI	SOILS,FORMED,IN, RES TION, IS, 7,000,TO, 7, TO, 90,DAYS, , TYPIC ICK, AND, IS, UNDERLAJ	300 FEET. F CALLY, THE SU	EMENTED, AR RECIPITATIO JRFACELLAYER D, NONCALCA	KQSIC SAN N IS 10 T IS BROWN REOUS, AF	ID, AND ,VE TO, 12, INC SANDY, L RKOSIC, SA	RY,FINE,GR HES, MEAN DAM ABOUT ND AND VE	ANNUAL AI 2 INCHES RY FINE GR	R TEMPERATURE THICK THE S AVEL AT A DEF	E.IS ABOUT SUBSOIL IS 2TH OF 15	T. 36°F. S. BROWN
	FOOTNOTE	<u> </u>	EST	IMATED SOIL P	ROPERTIES				CENT OF MATE			PLAS-
	OEPTH (IN.)	USDA TEXTURE	UNIFIED		AASHO		FRACT. >3 IN. (PCT)		IAN 3 IN. PASS		LIQUID	TICITY
PROP 041	0-15	SCL	SC, SM-SC		A-2, A-6		0-5	<u></u>		5-70 25-45	20-30	5-15
3	15+	WD										
5												
		ABILITY AVAILABL /HR) WATER CAPA (IN/IN)	CITY REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CC STEEL		FAC RETE K	ISION WIN TORS ERC T GRO	D.		
PROP 051 2	SAME	.0 .1416	6 6.6-7.3	<2.0	MODERATE	HIGH		W .20	1 3			
4	DEPTH AS											
5	ABOVE					OFMENT			ROCK	CUPEDENCE	· · · · · · · · · · · · · · · · · · ·	00751171
PROP 061	FREQUENCY	FLOODING DURATION	DEPTH MONTH\$ (FT) >6	HIGH WATER TAE	MONTHS	CEMENTE DEPTH H (IN) 	IARDNESS	DEPTH (IN) 10-20	HARDNESS	(IN) (IN	AL GRP	POTENTI FROST ACTION
	FOOTNOTES		ITARY FACILITIES		KEYING ONLY	F00				URCE MATERIAL		
SEPTIC 0/1 2 3 4	SEPTIC TANK ABSORPTION FIELDS	6-15%: SEVERE - 1 15+%: SEVERE - SI	DEPTH T <u>O ROCK</u> LOPE, DEPTH T <u>O ROC</u> H	K	FILL 191 2 3 4	ROADFI		<u>POOR – T</u>	HIN LAYER			
LAGOON 081		6-7%: SEVERE - DE	EPTH TO ROCK		SAND 201			UNSUITED				
2	SEWAGE LAGOONS	7+%: SEVERE - SL(4	23	SAN						
TRENCH 091	SANITARY	6-25%: SEVERE - (GRAVEL 211			UNSUITED				
3	LANDFILL (TRENCH)	SEVERE - SI	UEPTH_IU_KUC	N	3	GRAV	EL -					
SANARE 101	(TRENOIT?	6-15%: MODERATE -	- SLOPE		SOIL 221			P00R - T	HIN LAYER			
23	SANITARY LANDFILL (AREA)	15+%: SEVERE - SI			2 3 4 5		HL					
COVER 111	DAILY	6-15%: POOR - TH				1	TNOTES 7		WAT	ER MANAGEMEN	Τ	
23	COVER FOR LANDFILL		C, THIN LATER		PONDRS 231	PON		DEPTH TO	ROCK SL			
1 15					2 3	RESERV	/OIR					
EXCAV 121	FOOTNOTES	COMMU	JNITY DEVELOPMENT DEPTH TO ROCK		DIKES 241			THIN LAY	ER			
2 3 4 5	SHALLOW EXCAVATIONS	15+%: SEVERE - SI		K	2 3 4 V V 5		AND					
DWEL 131	DWELLINGS	6-15%: SEVERE - 1	DEPTH TO ROCK LOPE, DEPTH TO ROCI		PONDAQ 251	EXCAVA	TED	NO WATER				
23	WITHOUT BASEMENTS		Ore, Derin TO ROC	N	3	PONI AQUIE	DS FER					
DWEL 141		6-15%: SEVERE - 1			DRAIN 261)	DEPTH_TO	ROCK			
2 3	OWELLINGS WITH	15+%: SEVERE - SI	LOPE, DEPTH TO ROC	К	2	-10	AGE					
4	BASEMENTS				4							
BLDGS 151 2	SMALL	6-8%: SEVERE - DI 8+%: SEVERE - SL	EPTH TO ROCK OPE, DEPTH TO ROCK		IRRIG 271]		SLOPE, R	OOTING DE	РТН		
3	COMMERCIAL BUILDINGS				3]						
ROADS 161	LOCAL	6-15%: MODERATE - 15+%: SEVERE - S			TERRAC 281		CES					
3	ROADS AND STREETS	121/0: SEVERE - SI			3							
15	v + 11 ka ka 1 V				WATERW 291							
REGION 171	FOOTNOTES	REGIÓN	AL INTERPRETATIONS		2	GRAS						
23					4							
REGION 181												

RECORO NO.		P S	NO.	UNIT NAME:	IGHT	E – SLO SLOPE)PE			TK		Y 21 2	GROUNDS	F007		SLOPE, DE	PTH TO RO	оск	
	PICN	VIC		6-8%: SL 8-15%: PICNIC AREAS	ODERATE	E – SL(SLOPE	DPE			P	ATHS 33	2 P 3	ATHS AND RAILS	1		LIGHT MODERATE VERE - SI			
				FOOTNOTE		CAP	BILITY A	ND PRED	ICTED YIE	LDS - CI	ROPS AND	D PASTUR	e (high	LEVEL	ANAGEM	ENT)			
	CROP		2	CLASS- DETERMINING	CAPA	BILITY			-										
			3	PHASE	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRŔ.	NIRR	IRR.	NIRR	IRR.	NIRR IR	R. NIRR	IRR.
	CROI	P <u>S</u>	2	ALL	7 <u>E</u>														
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		-	5			-													
			7			1													
			9																
			2		-	1													
			3	FOOTNOTE		L	1		W	OODLA	ND SUITA	BILITY		I					
				CLASS- OETERMINING		EROSION	EQU	JIP.	EMENT PROB	WIN	DTH.	PLANT			IAL PRODU	SI	TE	TREES TO PL	ANT
	W00	DS	361	PHASE NONE	SIM	HAZARD	LÌN	UT	MORT'Y.	HAZ	CARD	COMPET.			ONE	1NE	DEX		· · · · · · · · · · · · · · · · · · ·
			2																
			4																
		_	6																
			8							1									
			79 371																
			2																
			4																
			6	FOOTNOTE							ND BREAT	/6							
	WIND	DVI		CLASS-DETERMINING PHASE NONE			SPECIES		HT		PECIES		нт	SI	PECIES			SPECIES	HT
			2	NUNC															
			3																
			5			-													
			ł	CLASS-					WILDI POTENTIAL			UITABILI'	<u>[Y</u>		******		POTENTIAL	AS HABITAT FO	R:
-				DETERMINING PHASE	GRA	AIN & EEO	GRASS & LEGUME	WILD HERB	HARE TRE		CONIFER PLANTS	SHRUB	S WE	LANO ANTS	SHALLOW WATER	OPENLANC WILDLIFE		WETLANO WILDLIFE	RANGELAND WILDLIFE
	WILD	LF	391	ALL		POOR	V. POOR	P00	R			POOR	V.	POOR	V. POOR	V. POOF		V. POOR	POOR
			3																
			5					1											
	*		61		_														
	*		6	FOOTNOTE		POTENT	TAL NATIV	E PLAN	T COMMUN	ITY (RA	NGELAN	D OR FOR	EST UNI	ERSTOR	Y VEGET/	TION)	NO DHVGE		
	PHAS		101	FOOTNOTE COMMON PLANT NAM		POTENT	PLANT SYMBOL	E PLAN	TCOMMUN	ITY (RA	NGELAN	D OR FOR NTAGE CON	EST UNC	ERSTOR	Y VEGETA HT) BY CLA	TION) SS OE TERMINI	NG PHASE		
	PHAS PLAT		101 2 411	COMMON PLANT NAM		POTENT	PLANT SYMBOL (NLSPN) AGSP	E PLAN	20		NGELAN	D OR FOR NTAGE CON	EST UNI	ERSTOR	Y VEGET/ HT) BY CLA	TION) SS OE TERMINI	NG PHASE		
	1		101 12 411 2 3	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS		POTENT	PLANT SYMBOL (NLSPN)	E PLAN			NGELAN	D OR FOR NTAGE COM		ERSTOR (DRY WEIG	Y VEGET/ HT) BY CLA	(TION) SS OE TERMINI	NG PHASE		
	1		101 2 411 2	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD		POTENT	PLANT SYMBÖL (NLSPN) AGSP AGDA ORHY STCO4	E PLAN	20		NGELAN	D OR FOR		ERSTOR (DRY WEIG	Y VEGETA HT) BY CLA	TION) S OF TERMINI	NG PHASE		
	1		101 2 411 2 3 4	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD LETIERMAN NEEDLEGRASS NEEDLELEAF SEDGE		POTENT	PLANT SYMBOL (NLSPN) AGSP AGDA ORHY STC04 STLE4 CAEL2		20 15 10 10		NGELAN	D OR FOR		ERSTOR (DRY WEIG	Y VEGET/	TION) SO ETERMINI	NG PHASE		
	1	NT	101 2 411 2 3 4 5 6 7 8	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD LETTERMAN NEEDLEGRASS NEEDLELEAF SEDGE SANDBERG BLUEGRASS BIG SAGEBRUSH		POTENT	PLANT SYMBOL (NLSPN) AGSP AGDA ORHY STC04 STLF4 CAEL2 POSE ARTR2		20 15 10 10 5 5 5 5 5		NGELAN	D OR FOR NTAGE COM		ERSTOR DRY WEIG	Y VEGET/ HT) BY CLA	TION) SS OE TERMINI	NG PHASE		
	1	NT	101 2 411 2 3 4 5 6 7 8 9 4 21	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD LETTERMAN NEEDLEGRASS SANDBERG BLUEGRASS		POTENT	PLANT SYMBOL (NLSPN) AGDA ORHY STC04 STLF4 CAEL2 POSE ARTR2 CHVIH2 PURSH		20 15 10 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		NGELAN PERCE	D OR FOR NTAGE COM		ERSTOR (DRY WEIG	Y VEGET/ HT) BY CLA	TION) SOETERMINI	NG PHASE		
	1	NT	101 12 411 2 3 4 5 6 7 8 9 421 2 3	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD LETTERMAN NEEDLEGRASS NEEDLELEAF SEDGE SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH		POTENT	PLANT SYMBOL (NLSPN) AGSP AGDA ORHY STCO4 STLE4 CAEL2 POSE ARTR2 CHVIH2		20 15 10 10 5 5 5 5 5 5 5 5		NGELAN Perce	D OR FOR NTAGE COM		ERSTOR (DRY WEIG	Y VEGET/ HT) BY CLA	TION) SS OE TERMINI	NG PHASE		
	1	NT	401 411 2 411 2 3 3 4 5 6 6 7 7 8 9 4 2 1 2 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD LETTERMAN NEEDLEGRASS NEEDLELEAF SEDGE SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH		POTENT	PLANT SYMBOL (NLSPN) AGDA ORHY STC04 STLF4 CAEL2 POSE ARTR2 CHVIH2 PURSH		20 15 10 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		NGELAN PERCE	D OR FOR NTAGE COM		ERSTOR DRY WEIG	Y VEGET/ HT) BY CLA	TION) SOETERMINI	NG PHASE		
			401 2 411 2 3 4 5 6 7 8 9 4 2 3 4 5 6 7 8 9 4 5 6 7 8 9 4 5 6 7 8 9 4 5 6 7 8 9 4 5 6 7 7 8 9 4 5 6 7 7 8 9 1 6 6 7 7 8 7 7 8 9 1 7 6 6 7 7 8 7 7 8 7 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD LETTERMAN NEEDLEGRASS NEEDLELEAF SEDGE SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH BITTERBRUSH	Ε		PLANT SYMBOL (NLSPN) AGDA ORHY STC04 STLF4 CAEL2 POSE ARTR2 CHVIH2 PURSH		20 15 10 5 5 5 5 5 5 5 5 5 15		NGELAN	D OR FOR NTAGE COM		ERSTOR (DRY WEIG	Y VEGET/ HT) BY CLA		NG PHASE		
	1		401 2 411 2 3 4 5 6 7 8 9 4 2 3 4 5 6 7 8 9 4 5 6 7 8 9 4 5 6 7 8 9 4 5 6 7 8 9 4 5 6 7 7 8 9 4 5 6 7 7 8 9 1 6 6 7 7 8 7 7 8 9 1 7 6 6 7 7 8 7 7 8 7 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD LETTERMAN NEEDLEGRASS NEEDLELEAF SEDGE SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH	E /AC. ORY W FAYOR/ NORMA	T): ABLE YEARS	PLANT SYMBOL (NLSPN) AGSP AGDA ORHY STC04 STC04 STC04 STC04 STC04 STC04 STC04 CAEL2 POSE ARTR2 CHVIH2 PURSH OTHER		20 15 10 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		NGELAN PERCE	D OR FOR NTAGE COM		ERSTOR DRY WEIG	Y VEGET/ HT) BY CLA		NG PHASE		
	PLAN	NT	401 401 411 2 3 4 5 6 7 7 8 9 421 2 3 4 5 6 9 421 2 3 4 5 6 9 421 2 3 4 5 6 6 3 4 5 6 6 7 7 8 9 9 421 2 3 4 5 6 6 6 7 7 7 8 9 9 4 7 7 7 7 8 9 9 4 7 7 7 7 7 7 7 7 7 7 7 7 7	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD LETTERMAN NEEDLEGRASS NEEDLELEAF SEDGE SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH BITTERBRUSH	E /AC. ORY W FAYOR/ NORMA	(T): ABLE YE	PLANT SYMBOL (NLSPN) AGSP AGDA ORHY STC04 STC04 STC04 STC04 STC04 STC04 STC04 CAEL2 POSE ARTR2 CHVIH2 PURSH OTHER		20 15 10 5 5 5 5 5 5 5 5 15		PERCE	NTAGE COM		ERSTOR DRY WEIG	Y VEGET/ HT) BY CLA		NG PHASE		
			401 401 411 2 3 4 5 6 7 7 8 9 421 2 3 4 5 6 9 421 2 3 4 5 6 9 421 2 3 4 5 6 6 3 4 5 6 6 7 7 8 9 9 421 2 3 4 5 6 6 6 7 7 7 8 9 9 4 7 7 7 7 8 9 9 4 7 7 7 7 7 7 7 7 7 7 7 7 7	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD LETTERMAN NEEDLEGRASS NFEDLELEAF SEDGE SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH BITTERBRUSH POTENTIAL PRODUCTION (LBS,	E /AC. ORY W FAYOR/ NORMA	T): ABLE YEARS	PLANT SYMBOL (NLSPN) AGSP AGDA ORHY STC04 STC04 STC04 STC04 STC04 STC04 STC04 CAEL2 POSE ARTR2 CHVIH2 PURSH OTHER		20 15 10 5 5 5 5 5 5 5 15 1,200 900		NGELAN PERCE	NTAGE COM		ERSTOR DRY WEIG	Y VEGET/ HT) BY CLA		NG PHASE		
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	PLAN		401 2 411 2 411 2 4 4 5 6 7 8 9 421 2 3 4 5 6 7 8 9 421 2 3 4 5 6 7 8 9 4 4 5 6 7 8 9 4 4 5 6 7 8 9 4 4 5 6 7 8 9 4 4 5 6 7 8 9 4 4 5 6 7 8 9 9 4 4 5 6 7 8 9 9 4 4 5 6 7 8 9 9 4 4 5 6 7 8 9 9 4 4 5 6 7 8 9 9 4 4 5 6 6 7 8 9 9 4 4 5 6 6 7 8 9 9 4 4 5 6 6 7 8 8 9 9 4 4 5 6 6 7 8 8 9 9 4 4 5 6 6 7 7 8 8 9 9 4 4 5 6 6 7 8 8 9 9 4 4 5 6 6 7 8 8 9 9 4 4 5 6 6 7 8 8 9 9 4 4 5 6 6 7 8 8 9 4 4 5 6 6 7 8 8 8 9 4 4 5 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	COMMON PLANT NAM BLUEBUNCH WHEATGRASS THICKSPIKE WHEATGRASS INDIAN RICEGRASS NEEOLEANDTHREAD LETTERMAN NEEDLEGRASS NFEDLELEAF SEDGE SANDBERG BLUEGRASS BIG SAGEBRUSH LOW RABBITBRUSH BITTERBRUSH POTENTIAL PRODUCTION (LBS,	E /AC. ORY W FAYOR/ NORMA	T): ABLE YEARS	PLANT SYMBOL (NLSPN) AGSP AGDA ORHY STC04 STC04 STC04 STC04 STC04 STC04 STC04 CAEL2 POSE ARTR2 CHVIH2 PURSH OTHER		20 15 10 10 5 5 5 5 5 5 5 5 15 15 1,200 900 700 -			NTAGE CON			HT) BY CLA				

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SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY

SOIL SURVEY INTERPRETATIONS

(1)

NO.	WOR	D	NO.																			
	MLR	A	001	MLRA(S		34				()		KIND	OF U		SERIES		[NAME		TRES	ANO		
	STAT		011	STATE CLASSIFI	CATION AN	D BRIEF	SOIL DESCRIPT	ION														
	CLAS		21	TYDIC U	ADLADCTOS	ETNE	LOAMY, MIXED WELL, ORAINED	EPICID		MIXED AL				AL FANS	SLOPES	ARE 6 TO	10 PERC	FNL	ELEVAT	ION IS	5.800 T	0.7.000
	DESC	, N 10	2	FFFT	PRECIPITA	ATTON IS	5 7 TO 9 INCH	ES. MEAN	ANNUAL A	IR TEMPE	ERATURI	E IS AB	OUT. 3	369 F Al	ND THE GR	OWING SE	ASON IS.	ABOUT	<u>80</u> T0	90 DAY	S. LIYP	ICALLY,
			3	THE CUD	EACE LAVE	D 15 CE	RAYISH BROWN	ςανήν Ισα	M AROUT	7 INCHES	S THICH	C. THE	SUBS	SOTI IS E	BROWN TO .	GRAYISH	Brown Sa	NDY, C	LAY LO	AM .ABUU	L . L/. IN	CHES
			15										E.C.		<u>i l t_i i i i i i i i i i i i i i i i i i i</u>					<u></u>	<u></u>	
				FOOTNOT	TE			<u> </u>	E21	I,MATED S	UIL PR	UPERIN	<u>= </u>		FRACT.		RCENTOF				LIQUID	PLAS-
				DEPTH (IN.)		USDA TEXT	TURE		UNIFIED			AA	SHO		> 3 IN. (PCT)	4	THAN 3 IN. F 10	ASSING 4		200	LIMIT	TICITY
	PROF	F To	141	0-60		SCL			SC			A-2.	A-6		0-5	80-100		60-7			20-30	10-20
			2																			
			3			•																
		_	5																			-
	L		6		PERMEA		AVAILABLE		SOIL	SALINI		SHRINK-S	WELL	Cr			RÓSION	WIND		l		1
				DEPTH (IN.)	(IN/I		WATER CAPAC (IN/IN)	ITY R	EACTION (pH)	(MMHOS/	1	POTEN		STEEL	CONCR		CTORS	EROD. GROUP				
	PROI	P [0	51		.6-2.0	0	.1416	7.	4-9.0	2.0-4.	.0	MODERA	TE	HIGH	LO			3				
			2	SAME DEPTH													++-		-			
			4	AS																		
			5	ABOVE																		
	1	L	10		L	FLOO		i		HIGH WAT				CEMENTI			EDROÇK			DENCE	HYD	POTENTIAL FROST
				FRE	QUENCY		DURATION	MONTHS	DEPTH (FT)	ł KI	ND	MONTH	is I	DEPTH H (IN)	ARDNESS	DEPTH (IN)	HARDI	VESS	INITIAL (1N)	TOTAL (IN)	GRP	ACTION
	PROP	PT	061		IONE	-	bonning	mon mo	>6							>60					B	LOW
				FO	OTNOTES 7		SANI	TARY FACI	LITIES			KEYINC		F00	TNOTES 7			SOUR	CE MATI	ERIAL		
	SEP	TIC	071	050710		MODER	ATE - PERCS S	LOWLY				FILL	191			POOR -	LOW STRE	NGTH	<u>SHRIN</u>	K-SWELL		
	1 -1		-17	SEPTIC ABSORP	- + +	·							2	ROAOF								
	+ -		4	FIEL									4				; <u> </u>					
	LAGU	JON	0611			6-7%:	MODERATE -	SLOPE				SAND	201			UNSUITE	D					
			2	SEWA			SEVERE - SLC						2	SAN	n F							
			4	LAGO	UN2								4									
	TREN	NCU	15			SI TCH	т					GRAVEI	211			UNSUITE						
	11.	мСü	2	SANIT	ARY	_SL16H.	I						2			QNSOTTE						
			3	LANDF (TREM	1								3	GRAV	EL L							
	+-+		15									0.11	15			(00/						
	SANA	ARE	101	SANIT	TARY		SLIGHT MODERATE					SOIL	221		L		FAIR - S			AYEY		
			3	LAND	FILL			· · · · · · · · · · · · · · · · · · ·					3	TOPS								
	+ +		14	(ARI	EA)								4									
	COV	ER	111	DAII			GOOD							FOO	TNOTES 7		٧	ATER	MANAG	EMENT		
	+ +-		3	COVER		Q+%:	FAIR - SLOPE					PONDR	+ + - 1			SLOPE						
			4	LANDI	FILL								2	PON RESER								
	- <u>I</u> 1.		10			1	0.011411						4	ARE								
	EXC	AV	121	F0	OTNOTES /		SLIGHT	NITY DEVE	LUPMENT			DIKES	241			LOW STR	RENGTH					
			2	SHAL		8+%:	MODERATE -	LOPE					2	EMBANK								•
	++		3	EXCAVA	TIONS								3	DIKES LEVE								
	1		15									PONDA	1 251									
	DWE	L	131		LINGS	MODER	ATE - SHRINK-	SWELL				TONDA	2	EXCAV		NO WATE						
			3	WITH	OUT								3	PON AQUI								
	-		4	BASEM	IEN 15								15	FE								
	DWE	L	141	DWELL		MODER	ATE - SHRINK-	-SWELL, E	ROST ACT	ION		DRAIN	261		1	PERCS	SLOWLY					
			3	WI WI	TH							· · ·	2	DRAIN	AGE							
			4 ₹5	BASEM	MENTS .								4		-							
	BLD	GS	151				MOD RATE -	SHRINK-S	WELL, SL	OPE, FRO	ST	IRRIG	271			SLOPE						
			2				ACT LON SEVERI - SLO)PE					2	IRRIGA	TION							
			4	BUILD		V / /0i _							4		-							
	ROA	DS	161			6-8%.	MODERATE -	SHRINK-S	WELL, LO	W STRENG	TH _	TERRA	C 281									
	1		2	LOC		8+%:	MODERATE -	SLOPE, SH	RINK-SWE	LL, LOW			2	TERR. AN								
			3	ROADS STRE			STRENGTH						4	DIVER								
			15									WATER	¥5 W 291						·			
				FC	OTNOTES	1	REGIÓN	AL INTERP	RETATION	15			231									
	REG	10 N	171										3	WATE	RWAYS							
			3										15		F							
	REG	10 N	181																			
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KEYING ONLY ECORD CONTROL NO. WORD NO.	UNIT NAME:TRESANO UNIT MODIFIER:		RECRE KEYIN	ONLY	FDDTNDTE		
CAMPS 301	6-8% 5110	SHTSLOPE	PLAY	2	SEVERE - SLO	5 <u>F</u>	
3	CAMP AREAS	······································		A PLAYGROUM			
PICNIC 311	6-8%: SLIC	GHT	PATH	5 331 2 PATHS	SLIGHT		
2	PICNIC AREAS	ATE - SLOPE		3 ANO TRAILS			· · · · · · · · · · · · · · · · · · ·
			PREDICTED YIELDS - CROP	¥ 5	GH LEVEL MANAGEMENT)	
CROPHD 451	CLASS-		FREDICIED HEEDS ONO				
2	DETERMINING + PHASE	CAPABILITY	RR. NIRR IRR.	IRR IRR. NIF	R IRR. NIRR I	RR- NIRR IRR- N	IRR IRR.
CROPS 341	ALL	6E					
3							
5							
7							
351							
	FOOTNOTE CLASS-		MANAGEMENT PROBLEMS		POTENTIAL PROOUCTI	VITY TREES	TO FLANT
	DETERMINING PHASE	SYM HAZARO LIMIT	. SEEOLING WINDTH MORT'Y. HAZAR	PLANT COMPET.	IMPORTANT TREES	INDEX	
WOODS 361	NONE				NONE		
3							
5							
7							
371							
	FODTNOTE	SPECIES	WIND HT SPE	BREAKS	SPECIES	HT SPEC	HES HT
WINOBK 38		3F 20123					
	CLASS-		POTENTIAL FOR HABIT		WETLAND SHALLOW	POTENTIAL AS HAB	TLAND RANGELANO
	OETERMINING PHASE	GRAIN & GRASS & SEED LEGUME	HERB. TREES P	NIFER SHRUBS	WETLAND SHALLOW PLANTS WATER POOR POOR	WILOLIFE WILOLIFE WIL	DLIFE WILDLIFE
WILDLF 39		POOR POOR	FAIR	FAIR			
	3						
				GELAND OR FORES	UNDERSTORY VEGETA	TION)	
law-re-L-			E PLANT COMMUNITY (RAM	PERCENTAGE COMPO	SITION (DRY WEIGHT) BY CLASS	DETERMINING PHASE	
PHASE 40	2	(NLSPN)	30				
	2 NEEDLEANDTHREAD	STC04	20				
	3 INDIAN RICEGRASS 4 BIG SAGEBRUSH 5 BLUEBUNCH WHEATGRASS	ARTR2 AGSP	10				
	BLUEBUNCH WHEATGRASS 6 PRAIRIE JUNEGRASS 7 SANDBERG BLUEGRASS	KOCR POSE	5				
	8 WINTERFAT 9 LOW RABBITBRUSH	EUROT CHVIH2	5				
4		OTHER	5				
	3						
	5						
PRODUC 4	POTENTIAL PRODUCTION (LB	S./AC. DRY WT): FAVORABLE YEARS	700				
	2 3	NORMAL YEARS UNFAVORABLE YEARS	500 300 FC	DTNOTES			
NOTES 4	SYM, 11		• • • • • • • • • • • • • • • • • • •			<u>, , , , , , , , , , , , , , , , , , , </u>	<u></u>
	2	<u></u>	<u></u>		<u> </u>	<u>, , , , , , , , , , , , , , , , , , , </u>	<u> </u>
	4 5 6	<u>, , , , , , , , , , , , , , , , , , , </u>		<u> </u>	· · · · · · · · · · · · · · · · · · ·	<u>, , , , , , , , , , , , , , , , , , , </u>	
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SCS-SOILS-5 REV. MAY 1972 FILE CODE SOILS-12 KEYING ONLY .

RECORO CONTROL				S	DIL	SURV	EY IN	TER	PRE	TATI	DNS						
ND, WDRD NO. MLRA 001			34						KIND OF		SERIES	UNI	T NAME	VI8	BLE		
STATE 011		WYOMING		SOIL DESCRIP		AUTHOR	(S) JRS	DAT	E 2/73	REVISE	DU UNIT	MODIFIER					
CLASS 021	USTIC	ORRIORTH	ENTS. SA	ANDY. MIXED.	ERIGID			· · · · · · · · · · · · · · · · · · ·									
DESCR 031	THE VIB	<u>LE SERIE:</u> PRECIPITA	<u>S, ARE, WE</u> ATION IS	ELL DRAINED. S. 10 TO. 12 II	<u>BOILS, F</u> NCHES,	ORMED: IN SA	ANDY ALLU	<u>IVIUM.ON</u> IPERATURE	ALLUVIA IS ABO	UT. 36°E	SLOPES AF	<u>RELOTO 3</u> GROWING	SEASON T	S ABOUT	/ATION IS. 7	7 <u>000 TO</u>	7.300
3	CALLY,	THE SURFA	ACE LAY	ER I.S. PALE BI	ROWN SA	NDY. LOAM A	BOUT 3. IN	CHES	HE: UNDI	RLYING LA	YER IS Y	LLOWISH	BROWNI TO	BROWN	SANDY LOAN	A ABOUT . 1	3
5	, INLHES ,		THE '20R:	STRATUM IS PA		WN_LUARSE		DU INCHES							┶╍╡╼┋╴╻╴╻╴╻╴╞╶╺ ╆┈╡╌┨─╞╼╲┉┺╼┷╍┢╾┲		
	P FOOTNOT OEPTH	E		•		ES	<u>TIMATED S</u>	OIL PROP	ERTIES		FRACT.	PE	ERCENT OF I	MATERIAL	LESS		PLAS-
	(IN.)		USDA TEX	TURE		UNIFLED			AASHD		>3 IN. (PCT)		THAN 3 IN. F 10			LIQUID LIMIT	TICITY
PROP 041	0-16		SL			SM, SM-SC,	sc		A-2		0-5	90-100	80-90		200	15-20	INDEX
2			COS			SP-SM			A-1		0-5	90-100	75-90		5-10	0	NP
4																	
5															_		
	DEPTH	PERMEA	BILITY	AVAILABL WATER CAPA		SOIL REACTION	SALINIT	Y SH	RINK-SWEL	L CC	RROSIVITY		ROSION	WIND ERDD.			
	(IN.)	(IN/		(IN/IN)		(pH)	(MMHOS/	CM) P	OTENTIAL	STEEL	CONC			GRDUP			
PROP 051	SAME	2.0-6		.1113		6.6-7.3 6.6-7.8	<u> </u>		LOW LOW	HIGH HIGH		DW .20		33			
3	DEPTH AS						~~~~~		LUW								
5	ABOVE									-							
6							HIGH WATE	FRITARIE		CEMENTE	D PAN	R	EDROCK		SUBSIDENCE		
		NUEL AL	FL00[· • • • • • • • • • • • • • • • • • • •	DEPTH			MONTHS	DEPTH H	ARDNESS	DEPTH	HARDN		NITIAL TOTA	L GRP	POTENTIAL FRD ST
PRDP 061		ONE		DURATION	MONT	HS (FT) >6				(IN)		(IN) 			(IN) (IN)	A	LOW
		TNOTES 7		SANI	TARY F	ACILITIES		[KF	YING ONLY		INOTES 7				MATERIAL		
SEPTIC 071		TT T	SLIGH	and the second se				FIL	L 19		<u> </u>	GOOD					
2 3	SEPTIC ABSORP	TION								ROADFI							
4	FIELD	20								4	-						
LAGOON 081			SEVER	E - PERCS RAI	PIDLY			S A I	ND 20	1		FAIR					
2	SEWA0 LAGOD									SAN (b						
4		-							+	5							
TRENCH091		L	SEVERE	E – PERCS RAI	PIDLY.			G R .	AVEL 21	1		FAIR					
2	SANITA LANDF									GRAVI							
4	(TREN	CH)							+·	4							
SANARE 101	CANIT		SEVERI	E - PERCS RAP	PIDLY			SD	L 22	1		FAIR -	THIN LAY	ER.			
2	SANIT/ LANDF									3 TOPSO							
	(ARE	A)				·····				5	-						
COVER 111	DAIL	, L	POOR -	- TOO SANDY							INOTES 7		W	ATER MA	ANAGEMENT		
3	COVER	FOR						PÖ	NDRS 23	1		PERCS R					
4	LANDF			·····						3 RESERV							
	F00	TNDTES		COMMU	NITY DE	VELOPMENT				4 ARE/							
EXCAV 121		Ľ	SLIGH					DIK	ES 24	1		PERCS R	APIDLY				
	SHALL EXCAVAT																•
4		ŀ									es 🗌						
DWEL 131	DWELLI	NGS	SLIGH	Τ				POI	NDAQ 25	1		NO WATE	R				
	WITHO	דע ד									IS C						
4	BASEME	NTS															
DWEL 141	DWELLI	2014	SLIGHT	τ				DR	AIN 26	1	T.	FAVORAB	LE				
23	WITH									Z 3 DRAINA	GE						
4	BASEME	NTS															
BLDGS 151	SMALI	Ц	SLIGH	т				I.R.F	RIG 27	1	L	DROUGHT	Y, ERODE	ES EASTI	LY, FAST I	NTAKE	
	COMMER	DIAL								3 IRRIGAT	TION						
4	BUILDIN	IGS								4	-						
ROADS 161	LOCA	Ц	SLIGH	T				TEF	RAC 28	1							
3	ROADS	ND								3 AND							
4	STREE	TS							• •	5	ONS						
	FOO	TNOTES 7		, REGIDNA		RPRETATION	S	WA	TERW 29	1	ED						
REGION 171				nearonr						3 WATERN							
											H						
REGION 181																	
	-																

KEY RECORD NO.	WÖR CAMI PICN CROF	NTROL CO NO PS 30 VIC 31 VIC 31 VIC 31 V PS 34 V PS 34	CAMP AREAS CAMP AREAS CAMP AREAS CAMP AREAS SLIGHT PICNIC AREAS CLASS- OETERMINING PHASE ALL ALL ALL	CAPABILITY NIRR IRR. 6E	ABILITY AND			(2) RECREATION KEYING ONLY PLAYGD 32 PLAYGD 32 PATHS 33 PATHS 33 CCROPS AND CCROPS AND CCROPS AND CCROPS AND	PLAYGRO 1 2 3 1 2 2 2 4 5 1 2 2 4 5 2 4 5 2 4 5 2 4 5 2 4 5 2 4 5 5 2 4 5 5 5 6 7 7 8 8 8 8 8 8 8 8 8	JNDS	SLIGHT	NT)	DP E	NIRR	IRR.
			3												
	W O O		DETERMINING PHASE 1 NONE 2	ORO SYM HAZAR		MANAGEMEN P. SEE T MO	WOOI IT PROBLEM OLING RT'Y.	DLAND SUITAE	PLANT COMPET.	IMPORT	YTIAL PRODUC		X	TREES TO PL	ANT
			5 6					WIND BREAK	(5						
	WIN		2		SPECIES	HT		SPECIES	HT		SPECIES	HT		SPECIES	HT
			CLASS- OETERMINING	GRAIN &	GRASS &	POT WILO	ENTIAL FOR	R HABITAT ELEM	ENTS	WETLANO	SHALLOW	OPENLAND	WOODLAND	WETLANO	R: RANGELAND WILOLIFE
-	WIL	DLF 39	PHASE	SEED FAIR	LEGUME	HERB.	TREES	PLANTS	SHRUBS FAIR	PLANTS POOR	WATER POOR	WILDLIFE FAIR	WILDLIFE	POOR	WILOLIFE FAIR
			2 3 4 5 6								RY VEGET				
	РНА	SE 40	COMMON PLANT NAME		SYMBOL	- LEONLY	Counter 111	(RANGELAN PERCE	NTAGE COMPO	SITION (DRY WE	IGHT) BY CLA	SS OETERMININ	G PHASE	[
			2 1 NEEDLEANDTHREAD 2 THICKSPIKE WHEATGRASS 3 INDIAN RICEGRASS 4 BLUEBUNCH WHEATGRASS 5 CANBY BLUEGRASS 6 BIG SAGEBRUSH 7 BOTTLEBRUSH SQUIRRELTAIL 4 LOW RABBITBRUSH 9		(NLSPN) STC04 AGDA ORHY AGSP POCA ARTR2 SIHY CHVIH2 OTHER		25 15 10 10 10 10 5 5 10								
		┟╼╼╂┟	3												
			5 6												
	PRO		POTENTIAL PRODUCTION (LBS/	AC. ORY WT): FAVORABLE I NORMAL YEAI UNFAVORABL	S	1,	500 200 700	FOOTNOTE	\$,				
	NOT				<u>, , , , , , , , , , , , , , , , , , , </u>				. <u>1</u> <u>1</u> . <u>1</u> <u>1</u> .				<u> </u>	<u></u>	

SCS-SOILS-S REV. MAY 1972

REV. MAY 1972 FILE CODE SOLLS-12			(1)			SUL CONSERVATION SERVICE
KEYING DNLY RECORD CONTROL		SOIL	SURVEY INT	ERPRET	ATIONS	· · · · ·
NO. WORD NO. MLRA 001	MLRA(S)	34			NIT SERIES	UNIT NAME YOUJAY
STATE 011	STATE WYOMING	RECORD NO.				
	TYPIC NATRABCIDS	CLAVEY MONTHODILLONIT	IC, FRIGID, SHALLOW	OM STRONELY ALK		RIDGES AND SIDEHTILS, SLOPES ARE 3 TO 30 PERCENT.
2	FIEVATION TO 6 8	AND TO 7 NOO FEET PRECI	PITATION IS 7 TO 9 INCL	HES. MEAN ANNUA	I AIR IEMPERALU	IRE, IS ABOUT 369F., AND THE GROWING SEASON IS ABOUT THE SUBSOIL IS BROWN TO LIGHT OLIVE BROWN CLAY
3	80, TO .90, DAYS.	TYPICALLY, THE SURFACE L NCHES THICK AND IS UNDERL	AIN BY SOFT STRONGLY	ALKALINE SHALE	AT A DEPTH OF	4. INCHES
	FODTNOTE	<u></u>	ESTIMATED SOIL	PROPERTIES		
	DEPTH	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN.	THAN 3 IN. PASSING SIEVE
PROP 041	(IN.) 0-14	CL	CL		(PCT) D-5	4 10 40 200 LIMIT INDEX 95-100 95-100 85-95 55-65 30-40 15-25
2		WB				
3						
5 7 6						
	DEPTH PERMEA	WATER CAPACITY	SOIL SALINITY REACTION (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY	FACTORS EROD.
PROP 051	(IN.) (IN/	(10//10)	(pH) (MM/103/0M/			CRETE K T GROUP
	SAME					
4	AS ABOVE					
5					CEMENTED PAN	BEOROCK SUBSIDENCE UND POTENTIAL
		FLOODING	HIGH WATER DEPTH KINO		DEPTH HARDNESS	DEPTH HARDNESS INITIAL TOTAL GRP FRDST
PROP 061	FREQUENCY	DURATION MC	NTHS (FT) >6		(IN)	(IN) (IN) (IN) ACTION 10-20 RIPPABLE D LOW
	FOOTNOTES	SANITARY	FACILITIES	KEYING ONLY	FODTNOTES	SOURCE MATERIAL
SEPTIC 071	SEPTIC TANK	3-15%: SEVERE - PERCS 15+%: SEVERE - SLOPE,	SLOWLY, DEPTH TO ROCK	FILL 191		3-25%: POOR - THIN LAYER 25+%: POOR - SLOPE, THIN LAYER
3	ABSORPTION	ROCK		3	ROAOFILL	
4	FIELDS			SAND 201		
LAGOON 081	SEWAGE	3-7%: SEVERE - DEPTH T 7+%: SEVERE - SLOPE, D		2	L	UNSUITED
3	LAGOONS			3	SAND	
TRENCH 091		3-25%: SEVERE - DEPTH		GRAVEL 211		UNSUITED
2	SANITARY	25+%; SEVERE - SLOPE,		2	GRAVEL	
4	LANDFILL (TRENCH)			4		
SANARE 101		3-8%: SLIGHT		SO1L 221	L	3-15%: POOR - EXCESS ALKALI, TOO CLAYEY,
2	LANDFILL	8-15%: MODERATE - SLOP 15+%: SEVERE - SLOPE	<u>E</u>	2	TOPSOIL	THIN LAYER 15+%: POOR - EXCESS ALKALI, SLOPE, TOO CLAYEY,
4	(AREA)			4		THIN LAYER
COVER 111	DAILY	3-15%: POOR - THIN LA		·	FOOTNOTES	
3	CDVER FOR LANDFILL			PONDRS 231	POND	SLOPE, DEPTH TO ROCK
15				3	RESERVOIR	
	FOOTNOTES	and an and and and all and	DEVELOPMENT	DIKES 241		THIN LAYER, LOW STRENGTH
EXCAV 121	SHALLOW	3-15%: SEVERE - DEPTH 15+%: SEVERE - SLOPE,		2	EMBANKMENTS	
	EXCAVATIONS			3	DIKES AND LEVEES	
DWEL 131		3-15%: SEVERE - DEPTH	TO ROCK, SHRINK-SWELL	PONDAQ 251		NO WATER
2	DWELLINGS WITHOUT	LOW STRENGTH		- 2	EXCAVATED PONDS	
4	BASEMENTS	SWELL, LOW STR	ENGTH	4	AQUIFER FED	
DWEL 141	DWELLINGS	3-15%: SEVERE - DEPTH LOW STRENGTH	TO ROCK, SHRINK-SWELL		l	EXCESS ALKALI, DEPTH TO ROCK
	WITH	15+%: SEVERE - SLOPE,			DRAINAGE	
4	BASEMENTS	SWELL, LUW STR		10010 271		ROOTING DEPTH, SLOPE, EXCESS ALKALI, PERCS
BLDGS 151	SMALL	3-8%: SEVERE - DEPTH LOW STRENGTH		IRRIG 271	-	SLOWLY
3	COMMERCIAL BUILDINGS	8+%: SEVERE - SLOPE. SWELL, LOW_STRE		1 1 1 4	IRRIGATION	
ROADS 161		3-15%: SEVERE - DEPTH		TERRAC 281		
	LOCAL ROADS AND	LOW STRENGTH		2		
4	STREETS	SWELL, LOW STR		4	DIVERSIONS	
	FOOTNOTES	7 REGIONAL IN	TERPRETATIONS	WATERW 291		
REGION 171	1			2 3	WATERWAYS	
2				¥ ¥5		
REGION 181						
2	1					
4						

(1)

KEYING ONLY	UNIT NAME: <u>you</u> j	IAY		(2)		
RECORD CONTROL NO. WORD NO.	UNIT MODIFIER:			ECREATION KEYING ONLY	FOOTNOTE	
CAMPS 301	15+%: SE	SEVERE - DUSTY VERE - SLOPE, DUSTY		PLAYGD 321	6+%: SEVERE.	E - TOO CLAYEY, DEPTH TO ROCK - SLOPE, TOO CLAYEY, DEPTH TO ROCK
	CAMP AREAS			3 PLAYGRC		
PICNIC 311		EVERE - DUSTY		PATHS 331 2 PATH	1 <u>3-25%:</u> SEVER	RE - TOO CLAYEY E - SLOPE, TOO CLAYEY
	PICNIC AREAS			3 ANO		
CROPHO 451	FOOTNOTE	CAPABILITY AN	D PREDICTED YIELDS -	CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)	
	CLASS- DETERMINING	CAPABILITY				
CROPS 341	PHASE ALL	NIRR IRR. NIRR	IRR. NIRR IRR.	NIRR IRR. N	IIRR IRR. NIRR IR	R. NIRR IRR. NIRR IRR.
4 5 6						
9						
	CLASS- DETERMINING	ORO EROSION EQU	MANAGEMENT PROBLEMS		POTENTIAL PRODUCTIVI	TY TREES TO PLANT
WOODS 361	DETERMINING PHASE NONE	SYM HAZARD LIM	T MORT'Y. H	VINOTH. PLANT IAZARD COMPET.	IMPORTANT TREES	INDEX
4						1
6 7			·			
8 • • 9 371						
4						
• • • • • • •	FOOTNOTE			WIND BREAKS	1	HT SPECIES HT
WINOBK 381	CLASS-DETERMINING PHASE NONE	SPECIES	HT	SPECIES HT	SPECIES	HT SPECIES HT
5						
	CLASS- OETERMINING		WILDLIFE POTENTIAL FOR F WILD HAROWD	HABITAT SUITABILITY IABITAT ELEMENTS CONIFER	WETLAND SHALLOW OF	POTENTIAL AS HABITAT FOR: PENLAND WOODLAND WETLAND RANGELAND
- WILOLF 391	PHASE	GRAIN & GRASS & SEED LEGUME V. POOR V. POOR	HERB. TREES	CONIFER SHRUBS	PLANTS WATER W	ILDLIFE WILDLIFE WILDLIFE WILDLIFE
4						
¥ ¥ 6	FODTNOTE	POTENTIAL NATIV	E PLANT COMMUNITY (RANGELAND OR FORES	T UNDERSTORY VEGETATIO	N) TERMINING PHASE
PHASE 401	COMMON PLANT NAME					
PLANT 411	THICKSPIKE WHEATGRASS BOTTLEBRUSH SOUIRRELTAIL		30 10			
4	BUD SAGEBRUSH INDIAN RICEGRASS	ARSP5 ORHY	10 5 5			
5	GARDNER SALTBUSH SANDBERG BLUEGRASS LOW SAGEBRUSH	ATNU2 POSE ARAR8	5			
8	WINTERFAT BIG SAGEBRUSH	EUROT ARTR2	10			
421		OTHER	10			
4		•				
	POTENTIAL PRODUCTION (LBS./					
PROOUC 431	TOTERTIAL TROOPORTOR (LDS)	FAVORABLE YEARS NDRMAL YEARS	450 350			
NOTES 441	SYM. 1 SURFACE SOIL IS THIN	UNFAVORABLE YEARS		FOOTNOTES		
NUIES 441	I SUKFACE SUIL IS ININ	MIN MALAS MAT DEVELD			Y H H B I I I I I I I I I I I I I I I I I	
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