CLASSIFICATION OF SEMIARID SOILS OF THE UPPER RIO PUERCO WATERSHED, NEW MEXICO

BY

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CLASSIFICATION OF SEMIARID SOILS OF THE UPPER RIO PUERCO WATERSHED, NEW MEXICO

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PREFACE

Developed in the 1960's, Soil Taxonomy - the U.S. System of soil classification is being adopted for use in many countries. Although about 1,000 man/years went into its development before publication in 1975, Soil Taxonomy is still in evolution as data accumulate from soils of different regions and new knowledge about soils expose taxonomic problems.

This dissertation sets out to classify the soils of the erosion riddled, highly overgrazed and deteriorated semiarid rangelands of the Upper Rio Puerco Watershed, New Mexico. In addition it attempts to evaluate the efficiency of Soil Taxonomy as a system for classifying arid and semiarid soils, using the enormous soil data gathered from the study area. Apparent deficiencies in the use of Soil Taxonomy for classifying soils of dry regions were exposed, and proposals for their corrections made. Further research and data are needed to confirm other indications of problems. This study also indicated that lack of adequate laboratory data and/or sole dependence on field estimates of classification criteria result in incorrect soil classifications. Therefore, the effective and precise use of Soil Taxonomy both locally and internationally depends very much on the availability of supportive laboratory facilities and data.

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INTRODUCTION

The Study Area

The Rio Puerco Watershed is a semiarid basin in the north central part of New Mexico. The basin is well known for the magnitude of gully erosion, soil degradation and sedimentation problems which started decades ago. These problems are related to overgrazing and cyclic fluctuation in the climate of the area which have adverse effects on vegetation and plant cover of the basin. Therefore, a soil-vegetation inventory and correlation study was proposed for the area, along with other studies and programs meant to reduce and control erosion, keep sediments at their sources and rehabilitate damaged rangelands in the basin. The result of this soil-vegetation study would be used to arrive at the proper livestock levels for the different rangeland sites, improve plant cover and vegetation, maintain good vegetation stabilization practices and ultimately reduce soil erosion in the area.

The soil-vegetation study is restricted to a small part of the watershed called the Upper Rio Puerco Watershed. The Upper Rio Puerco Watershed, referred to in this study as the study area, is in the north central part of the state and covers an area of about 207,175 hectares of which 159,080 hectares (about 77%) are public lands administered by Bureau of Land Management (BLM). Though the study area includes only about 10% of the total Rio Puerco Watershed, 80% of the total land administered by BLM in the Rio Puerco Watershed are concentrated in this area.

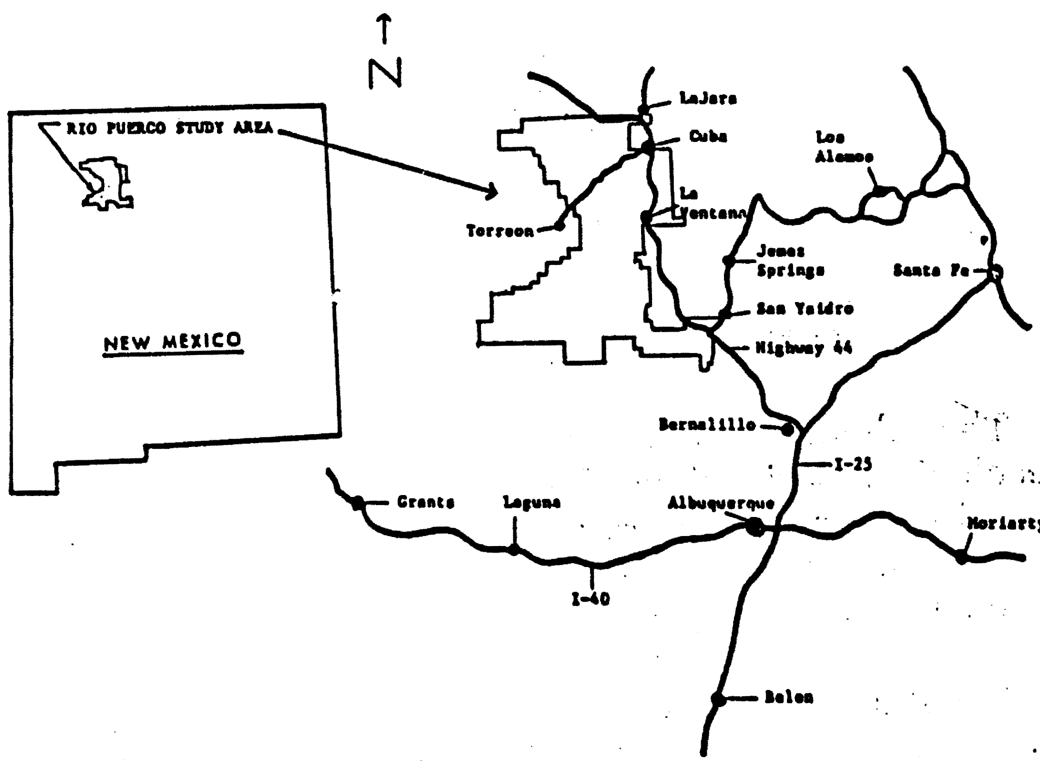

Figure 1. Upper Rio Puerco Watershed, Northwest New Mexico. (Adapted from Francis,1986)

Purpose of Study

The soil survey (USDA-SCS) reports for the counties in the study area are considered not specific enough and therefore, limiting for the soil information required for the soil-vegetation study. Therefore, large scale, high intensity and site specific soil information was collected from the sites sampled for the complementary vegetation data required for the soil-vegetation study. About two hundred and fifty soil pedons were described in the field and sampled for laboratory characterization. The purpose of this study is to evaluate the soil resources of the study area and to present this information in a form that is adaptable to the intended soil-vegetation correlation study.

Objectives of Study

The primary objectives of this study is to evaluate the soil resource of the Upper Rio Puerco Watershed, and to classify these soils according to Soil Taxonomy (Soil Survey Staff, 1975).

Also, the amount of soil data collected for this study is uncommon for this size of site. Taking advantage of this wealth of soil data, the secondary objectives of this study are:

(1) to evaluate the adequacy of Soil Taxonomy (Soil Survey Staff, 1975) as a system for classifying soils of the semiarid regions, using Upper Rio Puerco Watershed as a case study, and

(2) to compare soil classification results based solely on field estimation of soil morphological characteristics with those based also on complementary laboratory data.

CHAPTER II

LITERATURE REVIEW

Description of the Rio Puerco Watershed, New Mexico

The Rio Puerco Watershed is a basin in north-central New Mexico. Dortignac (1961) described the watershed as situated west of the Jemez mountains, Albuquerque, and Belen, within 6 northwestern New Mexico counties [Figure 1]. The watershed which is irregular in outline, covers 1.6 million hectares. The principal drainage, the Rio Puerco, rises in the western slopes of the San Pedro Mountains and takes a southerly course. Bryan (1928) described the Rio Puerco as a tributary of the Rio Grande and one of the longest streams in New Mexico. He gave the length from its source to its junction with the Rio Grande at San Acacia as 240 kilometers but added that Rio Puerco is strictly an ephemeral stream except for the first 16 kilometers of its course where the flow is perennial or intermittent. The Rio Puerco has two tributaries, the Rio San Jose and Arroyo Chico. Both enter from the west, originating near the continental divide, and are also ephemeral streams (Dortignac, 1963). Calkins (1937) reported that "none of these streams furnishes water later than the latter part of June, and all the land may be considered as only semi-irrigated or flood-irrigated."

Elevations for the watershed range from 1520 to 3050 meters (5,000 to 10,600 feet) above sea level. The average annual precipitation varies from 203 millimeters (8 inches) at 1520 meters elevation to about

635 millimeters (25 inches) near the headwaters above 3050 meters (10,600 feet), with about 75 percent (three-fourths) of the basin receiving less than 406 millimeters (14 inches), and only 5 percent receiving more than 508 millimeters (20 inches) of precipitation annually (Dortignac, 1961; 1963). The climate of the watershed is therefore arid and semi-arid (Widdison, 1959; Hanson, 1962; Stone, 1967).

The vegetation of the Rio Puerco Watershed was described by Dortignac (1961) as evenly divided between pino-juniper (Pinus edulis - Juniperous spp.) woodland and grassland. Sagebrush (Arlenvesia spp.) and forests occupy between 3 to 4 percent of the watershed each. Branson and Janicki (1986) listed the vegetation types as saltbush, pinyon-juniper woodland, ponderosa pine, and spruce-fir forest. Based on historical records and reconnaissance surveys (Widdison, 1959; Dortignac, 1961), and more recent research by Branson and Janicki (1986), changes in amount of cover, kinds, and species composition or dominance of vegetation are occurring in the area with time and use of the watershed.

Soils of the area are derived predominantly from sandstones and shales (mostly of cretaceous origin) with the exception of about 308,000 hectares on Rio San Jose, where the surface is covered by lava flows (Dortignac, 1961). Soils developed on the shale have little soil development (lack of soil horizonation), mainly devoid of organic matter, and generally grade from a mixture of clay and silt at the surface to the parent rock at shallow depths. The clay is smectitic and usually exhibits distinct swelling and dispersion when wetted, resulting in low infiltration rates and rapid runoff. In contrast, the sandstone

Figure 2. Rio Puerco River Showing Channel Entrenchment

have sandy soil with high infiltration rates. The valleys along the streams channels are underlain by thick alluvial deposits which consist mainly of silt and clay (Burkham, 1966). The inherent characteristics of the soil and geology in the Rio Puerco are important factors to the watershed deterioration (Dortignac, 1961), particularly gully erosion

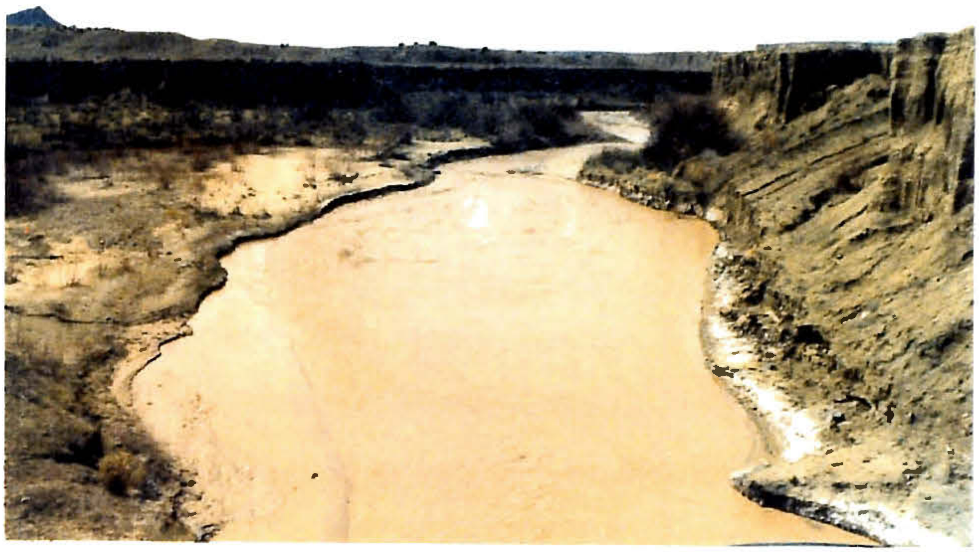

Figure 3. Rio Puerco River Showing High Sediment Loads

and sedimentation damages which seriously threaten the future of the watershed. The United States Department of Interior, Bureau of Land Management (1977) stated that wind and water erosion associated with sandstone and shale parent materials (respectively), low available soil moisture, and soil textures with high sand or clay contents, are the most common naturally occurring problems of the area. Francis (1986) explained that the sandy soils have excessive drainage, making them subject to wind erosion when dry, while the clayey textured soils have high shrink-swell potentials, slow infiltration rates and reduced available soil moisture for plant growth. Also, "cracks develop in the soil or parent material because of the expansion and contraction that accompany alternate wetting and drying. Water enters and concentrates in these cracks as well as in holes formed by burrowing animals, and form underground conduits or tunnels called "pipes". Runoff enters the pipe openings at the surface of the soil and travels as far as 30.5 meters (100 feet) underground before it reaches an arroyo wall. This waterflow erosion eventually results in the collapse of the overlying soil and the extension and widening of the gullies (Dortignac, 1963).

For the magnitude of erosion problems, the Rio Puerco Watershed has been described as "a land chiefly characterized by the spectacular nature of the gully erosion everywhere present" (Calkins, 1937); "a basin riddled with huge gullies" (Dortignac, 1963); a typical example of extreme range deterioration (Widdison, 1959); as one of the most eroded and overgrazed river basins in the arid West (Sheridan, 1981); and as a watershed where soil dislodgement and movement may surpass that of any other watershed in the country (Dortignac, 1961). The monetary cost of this menace "runs into many millions of dollars annually through reduction in reservoir capacities; aggradation of river channels, choking of irrigation canals, ditches, and drains; detrimental deposit on land, crops, and in dwelling or other buildings; and water wastage through evapotranspiration from nonbenefitial vegetation growing on sediment deposits", (Burkham, 1966). Dortignac (1961) also listed more specific "downstream damage" resulting from the sediment problem in Rio Puerco, the decline of irrigation in the area as a result and the subsequent abandonment of several villages in the watershed. Bryan (1928) stated that "agricultural and grazing values of the country have decreased and many small towns and numerous ranches abandoned".

History of Problem

The enormity of the erosion and sedimentation problems of the Rio Puerco attracts government and private concern, as well as the interest of many scholars. Dortignac (1961; 1963) stated that the Rio Puerco has since 1276 experienced at least seven or eight major dry cycles of varying length and severity. The most recent and one of the most severe started in 1942. Despite this cyclic fluctuation in climate of the area, the watershed has a long history of settlement (Calkins, 1937), and had good cover of grass over much of the area. Dortignac (1963) reported that "near the turn of the century the farmers in the middle Rio Puerco Basin were sufficiently productive that the region was known as the bread basket of New Mexico". He cited "mute evidence" that support that the vegetation was once in harmony with the erosive soil under this semi arid climate with its recurrent, protracted droughts. Although before this time, a process of dessication and erosion had already begun, the severe erosion in the watershed probably had its modern beginning between 1885 and 1890 and these dates coincide with those in which large number of livestock were introduced into the area (Bryan, 1928). There is a consensus among scholars therefore, that overgrazing inaugurated the current destructive erosion cycle but that the ultimate course is related to the cyclic fluctuation in climate. Bohrer (1979) concluded that "historic overgrazing has created extremely dry conditions for plants due to the removal of litter, loss of soil cover, and the trampling of ground that prohibits rainfall from reaching the roots of plants".

Conservation and rehabilitation work in the Rio Puerco area began in the 1930's under the auspices of the Works Progress Administration (Burkham, 1966). Because of the extremely poor condition of the Rio Puerco watershed, a large portion; 75,735 hectares (48%) were acquired by Federal Government under the Bankhead-Jones Farm Tenant Act of 1937 or similar land authorization, (USDI, BLM, 1985). Acquisition allowed the government to control soil erosion, preserve the natural resources, and protect the lands which are public. By the late 1950's, all the public land now covered by the Rio Puerco Watershed were consolidated under the BLM. In cooperation with the United States Geological Survey (USGS) and the USDA Forrest Service Rocky Mountain Forrest and Range Experimentation Station, the BLM participated in a ten year (1957-1966) study of hydrology, climate and the effect of land management practices in the area. That study provided the basis for the range and watershed practices in the areas (Burkham, 1966). Additional studies, on specific problems geared towards reducing and controlling erosion, keeping sediments at its source, and rehabilitating damaged lands, have continued to be funded since the late 1970. The most common land improvement practices are sediment control structures, water spreading, ripping, pitting, terracing and vegetation modification. By 1962, the Rio Puerco was targeted as one of the priority areas in the west for reduction of erosion and in conjunction with the "frail lands" program, the BLM approved a project meant to reduce erosion and sediment yield from the Rio Puerco. It was estimated that seven years and $1,116,300 would be needed to implement the rehabilitation plan proposed for this project which included building of hundreds of retention dams, reservoirs, dikes and diversion structures, and thousands of acres of contour furrowing, brush removal, chainings and reseedings (Burkham, 1966). In 1972, the project was evaluated and a determination was made that grazing systems would be given highest priority among watershed management tools. This began the shift from watershed stabilization projects to grazing management (USDI BLM, 1985), and laid the foundation for the management proposal contained in the Rio Puerco Grazing Environmental Statement (USDI BLM, 1977) and other environmental impact statements for surrounding areas (USDI BLM, 1985).

Definition and Scope of This Study

This dissertation is one of the studies needed to develop, evaluate, and monitor improved management of the vegetation, livestock and wildlife resources while improving soil stability and water quality (USDI BLM, 1977) for the Upper Rio Puerco Watershed, also referred to as the study area. The Upper Rio Puerco Watershed is 64 kilometers northwest of Albuquerque, and includes 80% of the public lands managed by BLM in the Rio Puerco basin (Sheridan, 1981). Elevation within the study area range from 1,662 to 2,742 meters (5,450 to 9,000 feet). The average annual precipitation from four stations during a 20 year period ranges from 216 millimeter (8.5 inches) to 322.6 millimeter (12.7 inches). These were from stations elevations ranging from 1,844 to 2,195 meters (6,000 to 7,200 feet) respectively (NOAA, 1984). Peak rainfall occurs during July and August, while rainfall during the months of July, August, September and October (Summer rain) is characterized by high intensity, short duration and uneven distributions (Burkham, 1966), and accounts for one-half of the annual precipitation of the area (Branson and Janicki, 1986). Twenty-year temperature records indicate that maximum summer temperature approaches 38°C and the minimum winter temperature approaches -4°C. July was the only month on record without frost; the average frost free growing season ranged from 109 days at higher northern elevations to 170 days at the lower southern elevations (Francis, 1986).

In 1975, the BLM conducted a resource inventory of the public land in the watershed. The BLM discovered that forage capacity was inadequate to support overall livestock numbers permitted to the ranchers under the specific grazing privileges. Moreover, BLM found out that about 55 percent of the area (109,420 hectares) was undergoing "moderate" to "severe" soil erosion. Also, the vegetation of the area was characterized by instability. The BLM projected that the vegetation in "poor" condition will increase from the today's 28,635 hectares to 34,689 hectares by the year 2,000 if the current grazing practices continue. It was also projected that the land suffering "moderate" to "severe" soil erosion will increase to 146,024 hectares (75% of the public land in the area). To halt the downward spiral of Rio Puerco (especially the study area) soils and vegetations, the BLM proposed a new grazing management plan (USDI BLM 1977) and funds specific studies aimed at better understanding of the basic capability of the vegetation and soils of these lands and the needs and desires of the people who use them (Sheridan, 1981).

The importance of soil as a factor in determination of range site (Dyksterhuis, 1958), concept of range conditions (Humphrey, 1947) and in interpretation of the ecological stage of plants (Renner, 1948), is well established. Kinsinger (1978), a range staff leader for BLM in Colorado stated that a good soil inventory is first and foremost in the data requirements for management of rangelands. Kinsinger (1978) added that "probably of equal importance to good soil inventory is a good vegetation inventory". He therefore, recommended a detailed inventory of the existing plant community as well as the potential plant community which the soil is capable of supporting in that particular climate. This information, he said, gives us a means of establishing carrying capacities for domestic livestock, wild horses and burrows, and wildlife such as deer, elk and antelope. This study is part of a detailed soil-vegetation correlation study of the Upper Rio Puerco Watershed, undertaken in response to the above research needs of BLM for effective management, conservation and rehabilitation of the highly erodible and damaged rangelands of the area.

Vegetation studies have been done for New Mexico (Francis, 1986). The Bureau of Land Management identified seven vegetation sub-types for the Rio Puerco Watershed (USDI BLM, 1977) and Folks and Stone (1968) determined 13 range sites; soil-vegetation complexes (Dyksterhuis, 1958), for the study area. Francis (1986), the Range Scientist/ Ecologist for the Albuquerque, New Mexico Research Work Unit of the Rocky Mountain Forest and Range Experiment Station, stated that very few specific shrub and grassland communities have been classified in New Mexico in general, and that the BLM designated vegetation sub-types within the study area offer only general classification information. Francis (1986), therefore, through the Rocky Mountain Forest and Range Experiment Station, with partial financial support from the BLM undertook a detailed vegetation-soil study of the Upper Rio Puerco

Watershed. The study was designed to define, describe and quantify ecological plant-soil communities of the study area. The study culminated in the USDA Forest Service Research Paper (Rm 272) - *Phyto-Edaphic Communities of the Upper Rio Puerco Watershed, New Mexico.* Francis (1986) stated that the phyto-edaphic communities study serves as "compatible ecological basis", to develop and evaluate management schemes, including changes in vegetation, soil surface factors, ecological state and soil stability, allow for extrapolation of quantitative research results and potential subsequent management prescriptions to similar and broader semi-arid environments, and also provide a base for interpreting ecological succession.

The soil data for Francis' (1986) soil-vegetation study was compiled from a soil survey of Cabezon Area (Folks and Stone, 1968) and a soil survey of BLM lands: Sandoval and McKinley counties (USDA SCS, 1977). Since the wind and water erosion in the area is current and ongoing, (Sheridan, 1981), significant changes in the surface characteristics of soils are expected to have occurred since the survey of Cabezon Area (Folks and Stone, 1968) was done. Also both surveys are considered too small scaled and/or too low in intensity for the specificity of soil information required for a study like that. Their mapping units contain large inclusions - soil or miscellaneous land area within map unit delineation that is not identified by the map unit name. It was not certain, therefore, whether the soils were correctly described and classified, and/or that soil data might have been collected from inclusions rather than the described soil mapping units (Francis, 1992). There was need, therefore, for a new or updated soil-vegetation correlation study for the area that is based on more reliable soil resource information, organized according to Keys to Soil Taxonomy (Soil Survey Staff, 1990).

Soil Taxonomy - Basic System of Soil Classification

Soil Taxonomy (Soil Survey Staff, 1975) is a hierachycal or multi-categorical, and basic system of soil classification developed in the United States in the early 1960's by the Soil Survey Staff of the USDA, with the help of many soil scientists from the country and abroad (Flach and Smith, 1969). Though relatively new, Soil Taxonomy (Soil Survey Staff, 1975) is the only system currently being used in the United States, and has been and is being used as a basis for classifying very significant portion of the earth (Buol et al., 1989). This system overcame some of the inadequacies or limitations of the older systems (Buol et al., 1989; Flach and Smith, 1969; Smith, 1963; 1968), from which it differs significantly in the definition of the taxa (Buol et al., 1989). The differentiating characteristics selected for *Soil Taxonomy* are properties of soil themselves, including soil temperature and soil moisture (moisture status throughout the year); genesis is not employed except as a guide to relevance and weighing of soil properties. Also, definitions are precise and quantitative rather than comparative, and one written in operational terms (Smith, 1968).

Driscoll (1978) wrote that classification [systems] are contrivances made by people to suit their purpose; they are not in themselves truths that can be discovered. He asserted that there is no true classification - a perfect one that would have no drawbacks for the included purpose. Therefore, it is advised that any classification of natural resources must be viewed as a dynamic system that can be modified as basic knowledge of these resources and their characteristics increases. Driscoll's (1978) statements are true to *Soil Taxonomy* - a classification system inbuilt with capability for modification to accommodate new knowledge (Soil Survey Staff, 1975; Flach and Smith, 1969). Apparently, the continual revisions of the system that preceded the publication of Soil Taxonomy (Soil Survey Staff, 1975) were due to new knowledge and better understanding about soils. Although about 1,000 man/years went into the development of *Soil Taxonomy* (Eswaran, 1985), classification was still not equally developed in all parts, (Soil Survey Staff, 1975). Soil information and/or data were lacking in many areas. *Soil Taxonomy* was designed as a tool to help soil scientists predict the behavior of one kind of soil, for which experimental data are lacking, by its relationship to the other kinds of soils for which knowledge or experiences exist (Wambeke, 1982). Soils of semiarid and especially arid regions are examples of where vital information was scanty or limited (McGinnies, 1969). Dregne (1968) stated that information on soils of the arid zone was not sufficient enough to provide basis for their classification. McGinnies (1969) concluded that the information on properties of these soils was inadequate to permit a comprehensive understanding of the processes involved in their development and reaction to natural and man-made forces. More recently, Allen (1985) stated that much less is known about the micromorphology of Aridisols and of intergrades to Aridisols, than about most soils of the more humid regions. This is because of some peculiarities of these soils that make the identifications and estimation of their micromorphology in the field and laboratory, difficult. Repeated annual drying cycles which occur in dry regions, tend to obscure morphological features such as illuviation argillans. Also, many of these soils show influence of paleoclimates which confounds the interpretation of pedogenic process (Allen, 1985). Nettleton et al., (1969) stated that although argillic horizons are common in soils of dry regions, their detection may often be difficult; horizons with marked clay increases may not exhibit illuviation argillans on ped surfaces.

Osman (1990), the Chairman of International Committee on Aridisols (ICOMID) admitted that there are difficulties in using Soil Taxonomy (Soil Survey Staff, 1975) to classify soil from dry areas. He stated that "... this problem was raised since the early sixties before the publishing of the *Soil Taxonomy* when we started in Lebanon to apply the Seventh Approximation to classify soils under arid and semi arid conditions". He added that further studies of soils under dry conditions in north African countries, the Middle East, North and South America, Australia and China have confirmed the need to refine and improve *Soil Taxonomy*. Richardson and Lewis (1985) identified some problems with the application of *Soil Taxonomy* mineralogy classes (Soil Survey Staff, 1975) in subhumid and semiarid regions. Among other problems, they believe that the influence and importance of calcite and gypsum on soil genesis and soil behavior are not well served in the present classification. They therefore, suggested a new multi categorical breakdown and/or more subdivisions for the calcareous and gypsum-rich groups. Similar study of the problems associated with *Soil Taxonomy* mineralogy classes in arid regions was done by Hendricks et al. (1985). They stated that "several problems arise in applying mineralogy criteria in the placement of aridic soils in the U.S. System of *Soil*

Taxonomy". They also believe that the classification of gypsifereous and some calcareous soils may need to be reorganized because some criteria in classifying these soils do not provide for recognition of all the information needed to manage the soils.

During the 1985 Fourth International Soil Classification Workshop held in Syria and Lebanon, many of the attending soil scientists who studied soils in the dry areas of Europe, Asia, Africa and the United States, expressed that classification of these soils in the U.S. *Soil Taxonomy* presented some difficulties. They recognized that the Aridisols Order needed to be reviewed and refined. Following the workshop, the International Committee on Aridisols (ICOMID) started exchanging ideas, examples and soil classification problems in dry areas of different parts of the world (Osman, 1990). Proceedings of the Fourth International Soil Correlation Meeting (ISCOM) Characterization, Classification and Utilization of Aridisols. Part A: Papers, (USDA SCS, 1990), contains about 24 papers that present much of the current thinking regarding the present classification of arid soils, and the detailed proposals by ICOMID to modify the definition of the Aridisol Order, and make changes at its Great Groups and Subgroups levels.

Problems with the application of Soil Taxonomy (Soil Survey Staff, 1975) are not limited to arid soils. Cline (1980) studied the experiences of leading soil scientists in both the United States and many other countries, with this system. He requested them to respond to specific questions about the use, problems and prospects of Soil Taxonomy (Soil Survey Staff, 1975) in the areas they represent. Seventy-three people; fifty-three of them representing 31 foreign countries and four others for multi-country areas, and sixteen individuals representing five agencies of the United States, responded. Cline (1980) stated that well over 100 "problems" were reported by these respondents. Many of these problems were local for which solutions proposed would adversely affect classifications of soils of other areas, while some are clearly deficiencies of the system and affect classifications of soils in the world scene. Like ICOMID, many of Cline's (1980) respondents frequently made proposals for additional taxa. Although the system was constructed to permit additions (Flach, 1963) so that incomplete classification can be corrected, Cline (1980) thinks that uninhibited addition of taxa [and/or changes] however, result in a chaotic medley replete with contradictions. Cline (1980) stated that some device, therefore, is needed to weigh the merits of proposed new taxa [and/or changes] in terms of the need for them, impacts on other parts of the system, and appropriate criteria to define them. There is no doubt that the system is still in a process of evolution as data about soils of the world accumulate and expose taxonomic problems (Cline, 1980). The enormity of soil data collected for this study, therefore, provides a suitable basis for some testings that would contribute to the existing information on the use of this system for classifying soils of arid and semi arid regions.

The quantitative and precise definition of taxa in *Soil Taxonomy* is considered an advantage over systems where soil descriptions and classifications are qualitative and subjective because it enhances communication of soil research results among soil scientists and aids soil-based agro-technology transfer among places with similar soils (Buol and Denton, 1984; Eswaran, 1985). However, the unavailability of some data (for example to establish soil temperature and soil moisture regimes) and the cost of obtaining the many other laboratory data required for soil classification, are considered limiting to the use of the system by most developing nations (Cline 1980). Where the acquisition of these data does not take a long time, they will require massive laboratory programs for which resources are lacking by these countries (Beinroth, 1975; Cook, 1975; Antoine, 1977). Cline (1980) reported that there does appear to be some misconception concerning the amount and sophistication of laboratory data that are essential for soil classification. Even in the United States, not every pedon examined is sampled and analyzed. Enough data are needed to establish norms and identify field clues that will permit reasonable estimates. After that "reasonable approximation" of many criteria can be made [in the field] without resorting to sophisticated [laboratory] procedures, Murthy et al., (1977). Therefore, soil horizons (the basis of soil classification) are commonly differentiated on the basis of characteristics that can be seen and/or felt in the field, laboratory data are [only] sometimes required for the identification, and designation of horizons as well as for more detailed characterization, (Soil Survey Staff, 1975).

However, using accessory tactile or visible properties leads to error in estimation of invisible properties, such as the nature and amount of clay, content of organic matter, base saturation etc. (Soil Survey Staff, 1975). Also, field estimation of properties such as texture and colors are subjective, varying with kind of soil, field condition and the skill or experience of the mapper. Therefore, it is very common for soil classification based only on field estimation of morphological properties, to differ from classification where complementary laboratory data are employed. Information, however, is scanty on how much errors should be expected, what soils are most prone to these errors and how critical these classification errors could be in use and management of the soil. In this study therefore, the field classification and classification based also on laboratory data are compared to determine how these affect soil resource information for the arid and semi arid regions.

CHAPTER III

MATERIALS AND METHODS

Sites Selection and Vegetation Data

Landforms, soils, and vegetation were used to identify phyto-edaphic sites for sampling, and as a basis for classification in the study *Phyto-Edaphic Communities of the Upper Rio Puerco Watershed, New Mexico* (Francis, 1986). The sampling procedure and site selection were based on homogeneous vegetation stands. The objective selection of sample sites minimized ecotones and site confounding, and maximized homogeneity (Francis, 1986). A total of 114 sample sites were selected (Figure 2) where apparent changes in plant aspect or composition, landform, and/or soils suggested a possible change in ecological sites. Transects were randomly established within each sample site. The number of transects per site varied from two to five, depending upon apparent diversity and size of the site.

From each transect, vegetational data were collected for a 10 year period. These include plant species foliar cover (the area of the ground surface covered by above-ground plant parts); production (kilogram per hectare); density (number of plants per unit area); and frequency (the number of plots in which a species occurred, expressed as a percentage of the total). In addition, plant litter (loose plant debris, or standing dead material for grasses not of the current year's growth), bare soil, and rock fragments larger than 2.5 cm (1-inch) diameter were estimated (Francis, 1986). A site specific soil inventory was conducted for each site from which vegetation data were collected (Francis, 1992).

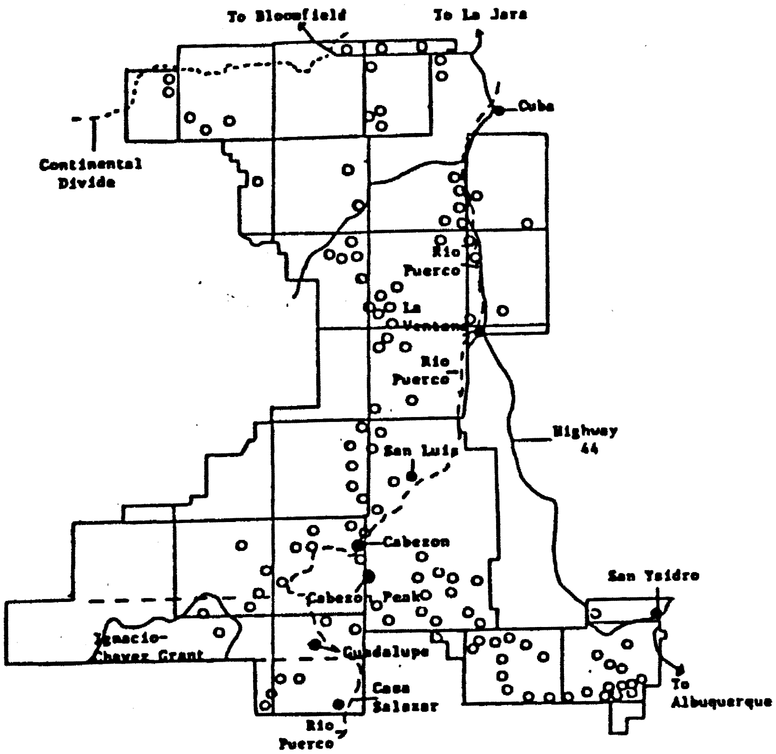

Figure 4. Sample Site Locations (0) in the Study Area.
(Adapted from Francis, 1986)

Soil Data

The sites were characterized for vegetation type (plant communities), soil parent material, erosion, landforms, slope, drainage, and surface coarse materials (gravels, stones, etc.). Soil profiles were dug in places representative of sites. A total of 253 pedons were described in the field for master and diagnostic horizons, depth, texture, % clay, color, structure, consistence, curtans (clay skins), roots, effervescence, and pH. From these field descriptions, the pedons were classified for Order, Suborder and Great Groups. Sometimes Sub-Groups and more rarely, series were named. The pedons were sampled according to the master horizons for laboratory characterizations as follows:

- Particle-Size Distribution-Hydrometer (Gee and Bauder, 1986),
- Aggregation of Particles or Water Soluble Aggregates - dispersion by sodium metaphosphate/sodium carbonate solution (U.S. Salinity Laboratory, 1969),
- pH - standard electrode measurements on saturated pastes,
- Electrical Conductivity (EC) - Standard electrode measurements on saturated pastes, mmhos/cm or ds/m),
- % Organic Matter - Rapid dichromate oxidation of organic carbon (Walkley-Black, 1934) procedure,
- Total Kjeldahl Nitrogen (TKN) - Micro-Kjeldahl digestion and Technicon Auto analyzer (Bremner and Mulvaney, 1986),
- Nitrate Nitrogen (NO_3-) - Cadmium reduction column and calorimetric determination by Technicon Autoanalyzer, (Keeney and Nelson, 1986),
- Ammonium Nitrogen (NH_4^+) - Calorimetric determination of NH_4^+ in KCL extract (Keeney and Nelson, 1986),
- Phosphorus (Available P) - Calorimetric determination of P in $NaHCO_3$ extracts - Mo Blue (Olsen and Sommers, 1986),
- Soluble Cations (Na, K, Ca, Mg) - ICP analysis of cations in saturated extracts (distilled water) (Rhoades, 1986),

- Extractable Cations (Na, K, Ca, Mg) - ICP analysis of cations in ammonium acetate (NH_4OAC) extracts,
- Cation Exchange Capacity (CEC) - NaOAc - NaCl equilibration of soil at pH 8.2 (Rhoades, 1986),
- % Calcium carbonate ($CaCO_3$-equiv.) - Neutralization/back filtration method (U.S. Salinity Laboratory Staff, 1969),
- % Gypsum ($CaSO_4$) - increase in soluble calcium plus magnesium content upon dilution (U.S. Salinity Laboratory Staff, 1969).

Soil Classification

Introduction

Paradox - Relational Database (Version 3.5), by Borland International (1990) was used to classify the soil database of the Upper Rio Puerco Watershed, according to Key to Soil Taxonomy (Soil Survey Staff, 1990). Based on location and climate, the expected soil orders for the study area were Alfisols, Aridisols, Entisols, Inceptisols, Mollisols and Vertisols.

Diagnostic Horizons

Mollic epipedons were first established by color, and then by % organic matter. Percent base saturation was never a limitation (always >50%). There was, therefore, no umbric epipedons. Histic epipedons were not expected and anthropic was neither indicated in the field nor revealed by laboratory data. Most epipedons were therefore, either mollic or ochric.

Diagnostic subsurface horizons were established next in this order: argillic → natric (based on Na/CEC X 100% $\geq$ 15%) → calcic →

gypsic. There were no field indications for cementations, therefore, no Duripans, Fragipans Petrocalcic nor Petrogypsic were established.

Soil Moisture Regimes

The moisture regimes of the study area are either ustic or aridic (Folks and Stone, 1968; Soil Survey Staff, 1975). These moisture regimes are separated on the basis of vegetation, landform and elevation. According to the USDA SCS guidelines for distinguishing between aridic and ustic moisture regimes within the Upper Rio Puerco Watershed (Hacker, 1992), aridic intergrades of ustic moisture regimes occur in upland areas with good stands of juniper/pinion or pinion; plant communities designated 01 to 08 (Francis, 1986), and/or in elevations above 1976 meters (6500 feet), while ustic intergrades of aridic moisture regime occur in upland areas with scattered juniper or no juniper; having dominance of plant communities numbered 09 and above (Francis, 1986), or on floodplains, draws or valley bottoms that are below 1976 meters (6500 feet) in elevation. Landforms designated valley fills, drainage basin, drainage bottom, valley bottom, valley bottom terrace, terraces, alluvial basin, alluvial fans, fans and alluvial plains, were all grouped as floodplains, draws or valley bottoms. These were verified for elevation using topographical/vegetation maps (7½ minute Quadrant), and without regard for vegetation. The uplands vegetation types were determined from the mapped plant communities (Francis, 1986). Whether or not these plant communities are "good stands" according to USDA, SCS guidelines (Hacker, 1992), could not be verified from the available generalized topographical/vegetation maps.

Figure 5. Juniper/Pinion Species - Desert Woodland Vegetation and Representative of Plant Communities 01-08

Soil Orders

The following sequence or order of priority (Soil Survey Staff, 1990) was followed in determining soil orders:

(I) Entisols:

These are pedons with A over C or CR horizonation, and/or buried soils where the B_t occurs at depths below 50 cm from surface.

(II) Vertisols:

These were based on clay content and evidence of cracks as reported in the field. Emphasis was not applied on evidence of slickensides and there were no data on clay type and/or coefficient of linear expansion (COLE). Entisols and Vertisols are determined without regard for moisture regimes.

(III) Aridisol:

These include all soils with aridic moisture regime, except if it is Entisols or Vertisols.

(IV) Mollisols:

Pedons that have mollic epipedons, and ustic moisture regime.

(V) Alfisols:

All soils with argillic diagnostic horizon and ustic moisture regime, if they are not Mollisols.

(VI) Inceptisols:

Have either a Bw horizon or an ochric - cambic diagnostic horizons and ustic moisture regime.

Suborders

Suborders for Vertisols, Mollisols and Alfisols were based on moisture regimes. Torrerts are Vertisols in aridic moisture regime Usterts, Ustolls and Ustalfs are Vertisols, Mollisols and Alfisols respectively, of the ustic moisture regime. Argids are Aridisols with argillic horizons and Orthids are others.

Entisol had Psamment (Sandy texture until 1m or deeper from surface), Fluvent (based on organic matter (carbon) distribution), and Orthents (others). Inceptisols had only one suborder; Ochrept (based on the presence of ochric epipedon).

Great Groups

Ustalfs and Argids had the following groups each: Natr (If natric horizon is present) for example Natrustalf, Pale (depending on depth to lithic/paralithic contact, and clay distribution) for example Paleargid, and Hapl (others) for example Haplustalf, Haplargid.

Ustolls have the following groups: Natr and Pale Groups (as defined above), Calciustolls (those with calcic horizon), Argiustolls (those with argillic horizon), and Haplustoll, (others - usually without argillic horizon)

Groups for Entisols and Inceptisols are based on moisture regime. Ustochrepts (only) for Inceptisols, and Ustipsamments, Ustifluvent and Ustorthents are Entisols in the ustic moisture regimes. Torripsamments, Torrifluvents and Torriorthents are the respective groups in the aridic moisture regime.

The suborder Torrert has no group, while Ustert has Chromustert (Usterts with readily visible color or high chroma).

Subgroups

The following subgroups were common to many of the soils:

- Lithic - those with Lithic depths $\leq$ 50 cm.
- Ustertic/Vertic - those with vertic properties but not vertisols.
- Arenic - those with surface texture that is loamy sand or coarser and are not psamments.
- Ustollic/Mollic - those with greater than 1.2% organic matter content in the upper 40 cm or mollic color but not Mollisols.

Other Subgroups like Ustic, Aridic, Ustalfic and Ustochreptic were chosen over Typic subgroup because they better express the marginal nature of the moisture regime of the study area, between ustic and aridic. The soil climate of the area is less dry than typical ustic and more moist than typical aridic and therefore, does not in many occasion fit the typic subgroup. Under these conditions, other subgroups are given precedence over typic subgroup according to Keys to Soil Taxonomy (Soil Survey Staff, 1990).

However, typic was the only appropriate subgroups in a few places, for example Typic Natrustalf. Also cambic subgroup was appropriate for the Gypsiorthids, and Paleustollic (prismatic or block structure and clay skin with lower color value) subgroups for the Chromusterts.

Family Classes, and Series Names

The soil temperature regime for most of the pedons was mesic (8° to 15°C or 47° to 59°F). Family classes were determined based on particle size classes, calcareous and reaction classes, and soil depth classes.

The different series in a family class were determined by examining the horizonation, degree of horizon expression (for example thickness, contrasts, boundaries), and the nature of horizons (for example mineralogy, structure, texture, consistence of the subhorizons), and comparing these with established series names. Soil series descriptions of the area are compiled and available through the USDA Soil Conservation Service, New Mexico. Table I contains the list of subgroup classes of soil identified for the study area:

TABLE I

SUBGROUP CLASSES IDENTIFIED FOR THE STUDY AREA

Soil Orders	Great Groups	Subgroups
Aridisol	Camborthid	Fluventic Camborthid
		Lithic Camborthid
		Ustochreptic Camborthid
		Ustollic Camborthid
	Calciorthid	Ustochreptic Calciorthid
		Ustollic Calciorthid
	Gypsiorthid	Cambic Gypsiorthid
	Haplargid	Lithic Haplargid
		Lithic Ustollic Haplargid
		Ustollic Haplargid
		Arenic Ustalfic Haplargid
		Ustalfic Haplargid
	Natrargid	Glossic Natrargid
		Lithic Natrargid
		Typic Natrargid
	Paleargid	Ustalfic Paleargid
		Ustollic Paleargid
Alfisol	Haplustalf	Aridic Haplustalf
	Natrustalf	Typic Natrustalf
	Paleustalf	Aridic Paleustalf
Inceptisol	Ustochrept	Aridic Ustochrept
		Fluventic Ustochrept
Entisol	Torrifluvent	Ustic Torrifluvent
	Ustifluvent	Mollic Ustifluvent
		Typic Ustifluvent
	Torriorthent	Lithic Torriorthent
		Lithic Ustic Torriorthent
		Ustic Torriorthent
	Ustorthent	Lithic Ustorthent
		Typic Ustorthent
	Torripsamment	Ustic Torripsamment
	Ustipsamment	Lithic Ustipsamment
Mollisol	Argiustoll	Aridic Argiustoll
		Torrentic Arguistoll
	Argiboroll	Typic Argiboroll
Vertisol	Chromustert	Paleustollic Chromustert
	Torrert	Typic Torrert

CHAPTER IV

RESULTS AND DISCUSSION

Soil Subgroups and Higher Levels Classification

Two hundred and twenty six pedons were classified according to Keys to Soil Taxonomy (Soil Survey Staff, 1992) using field and laboratory data into 6 orders; Alfisol, Aridisol, Entisol, Inceptisol, Mollisol and Vertisol. Table II below shows the distribution of soil pedons among these orders.

TABLE II

SOIL ORDERS OF STUDY AREA AND THEIR FREQUENCE OF OCCURRENCE

Soil Order	Number of Pedons	Percent of Total Pedons
Aridisol	114	50
Entisol	46	20
Alfisol	40	18
Inceptisol	14	6
Vertisol	7	3
Mollisol	5	<3

Also 37 subgroups (See Table I), 60 families and 71 soil series were identified for the study area. Table III shows 11 subgroups which account for almost 70 percent of the pedons in this study.

TABLE III

ELEVEN MOST EXTENSIVE SOIL SUBGROUPS IN THE STUDY AREA

Subgroup	Number of Pedon	Appox. %
Aridic Haplustalf	35	15.5
Ustollic Haplargid	31	13.7
Ustalfic Haplargid	27	9.7
Aridic Ustochrept	12	5.3
Ustic Torrifluvent	10	4.4
Ustic Torripsamment	9	4.0
Ustollic Camborthid	9	4.0
Lithic Ustic Torriorthent	8	3.5
Ustochreptic Camborthid	8	3.5
Paleustollic Chromustert	7	3.1
Ustollic Calciorthid	6	2.7
Total	157	69.5

Soil Families and Soil Series Classification

Eleven of the soil families identified for the study area are currently not established in the United States. These soil families therefore, could not be classified further into currently established soil series for the United States, Puerto Rico and the U.S. Virgin Islands (USDA SCS 1990; 1992). These soil families fall into one of 3 major categories of soil subgroups:

(a) Subgroups without families established for the mesic temperature regimes. Examples are Paleustollic Chromustert, and Ustalfic Paleargid.

(b) Subgroups (in the mesic temperature class) that do not have families established for a particular particle-size family class. Examples are Sandy Aridic Ustochrept, Coarse-loamy Fluventic Camborthid, Coarse-loamy Typic Natrustalf and Sandy Lithic Camborthid. Also Sandy-skeletal is the only particle-size family class currently established for Ustochreptic Calciorthid.

(c) Subgroups which have not been identified. Currently Glossic Natrargids have not been identified in the United States (USDA SCS 1990; 1992). In the study area, because of lack of data on soil organic carbon content, most of the Natrargids had always been lumped together as Ustollic intergrades. However, laboratory data show that some of these Natrargids do not have the soil organic carbon content necessary to qualify as Ustollic Natrargids.

Table IV contains the list of proposed soil families (soil families that are currently not established in the United States) and their relative occurrence. Consultations with Leroy Hacker , the soil correlator for USDA-SCS in New Mexico reveal that these classifications are plausible and in fact anticipated. Hacker (1992) also indicated that occasionally Glossic Natrargids have been encountered in the study area but their extent or distribution is not yet known. The extent and distribution of these proposed soil families need to be investigated, and where appropriate, series should be established for them.

TABLE IV

PROPOSED SOIL FAMILIES AND THEIR RELATIVE OCCURRENCE IN THE STUDY AREA

Series	Family Classification	Number
**Albers	Fine, Mixed, Mesic Paleustollic Chromustert	6
**Venadito	Very Fine, Mixed, Mesic Paleustollic Chromustert	1
**Adena	Fine-loamy, Mixed, Mesic Ustalfic Palearigid	2
**Telescope	Sandy, Mixed, Mesic Aridic Ustochrept	1
**Epikon	Sandy, Mixed, Mesic Lithic Camborthid	1
**Swisshelm	Coarse-loamy, Mixed, Mesic Fluventic Camborthid	2
**Chupadera	Coarse-loamy, Mixed, Mesic Ustochreptic Calciorthid	2
**Hernandez	Fine-loamy, Mixed, Mesic Ustochreptic Calciorthid	1
**Tyende	Coarse-loamy, Mixed, Mesic Glossic Natrargid	6
**Hoskay	Fine, Mixed, Mesic Glossic Natrargid	1
**Leland	Coarse-loamy, Mixed, Mesic Typic Natrustalf	2

** Names are those of the most closely related soil series.

Comparing Field and Laboratory Classification with Field Classification

Overview

Discrepancies exit between the classification results using field and laboratory data (this study) and classification based only on field estimates of soil properties and criteria. These differences are attributed to the following factors;

(a) determination of ustic versus aridic moisture regimes,

(b) field estimation of percentage clay among horizons, and

(c) inferred criteria especially "mollic" and "natric".

Determination of Ustic Versus Aridic Moisture Regimes

The correlation between precipitation and elevation in the study area is distorted by latitude. A given elevation in the northern part of the study area usually has more precipitation than the same elevation further south. Dominant natural vegetation usually reflects the soil

TABLE V

USTIC MOISTURE REGIME MISCLASSIFIED ARIDIC

Transect	Moist Regime	Landform	Plant Comm[†]
E103	USTIC	RIDGE OF MESA EDGE	01-08
E106	USTIC	SANDSTONE BREAKS	01-08
E40	USTIC	VALLEY BOTTOM	01-08
E96T2	USTIC	SIDESLOPE	01-08
I163	USTIC	RIDGE SIDESLOPE	01-08
I164	USTIC	RIDGE CREST	01-08
I165	USTIC	RIDGE SIDESLOPE	01-08
I167	USTIC	RIDGE SIDESLOPE	01-08
I168	USTIC	RIDGE SIDESLOPE	01-08
I197	USTIC	RIDGE SHOULDER	01-08
I198	USTIC	RIDGE SIDESLOPE	01-08
I213	USTIC	RIDGE SIDESLOPE	01-08
I214	USTIC	RIDGE SIDESLOPE	01-08
I216	USTIC	RIDGE SIDESLOPE	01-08
I230	USTIC	HILL SHOULDER	01-08
I237	USTIC	RIDGE SHOULDER	01-08
I238	USTIC	RIDGE SIDESLOPE	01-08
I240	USTIC	RIDGE SIDESLOPE	01-08
I94	USTIC	TOESLOPE	09 or above

[†] See Material and Method.

TABLE VI

ARIDIC MOISTURE REGIME MISCLASSIFIED USTIC

Transect	Moist Regime	Landform	Plant Comm[†]
E19T3	ARIDIC	SIDESLOPE	09 or above
E1T3	ARIDIC	SIDESLOPE	09 or above
E22T2	ARIDIC	SIDESLOPE	09 or above
E23T2	ARIDIC	UPLAND DRAINAGE	09 or above
E27	ARIDIC	SIDESLOPE	09 or above
E2T2	ARIDIC	SIDESLOPE	09 or above
E37	ARIDIC	VALLEY SIDESLOPE	09 or above
E3T5	ARIDIC	ALLUVIAL FAN/SHOULD	09 or above
E5T1	ARIDIC	SIDESLOPE	09 or above
E77T3	ARIDIC	TERRACE SIDESLOPE	09 or above
E81	ARIDIC	SIDESLOPE	09 or above
E92T3	ARIDIC	SIDESLOPE	09 or above
E94T5	ARIDIC	RIDGE SIDESLOPE	09 or above
E9T3	ARIDIC	SIDESLOPE SHOULDER	09 or above
I1	ARIDIC	FAN SIDESLOPE	09 or above
I10	ARIDIC	RIDGE SIDESLOPE	09 or above
I29	ARIDIC	SIDESLOPE	09 or above
I30	ARIDIC	TERRACE SIDESLOPE	09 or above
I31	ARIDIC	FAN SIDESLOPE	09 or above
I32	ARIDIC	FAN SIDESLOPE	09 or above
I33	ARIDIC	TERRACE SIDESLOPE	09 or above
I34	ARIDIC	TERRACE SIDESLOPE	09 or above
I38	ARIDIC	BEDROCK RIDGE	09 or above
I4	ARIDIC	FAN SIDESLOPE	09 or above
I45	ARIDIC	MESA TOP	09 or above
I46	ARIDIC	RIDGE SIDESLOPE	09 or above
I47	ARIDIC	MESA TOP	09 or above
I48	ARIDIC	MESA TOP	09 or above
I49	ARIDIC	MESA TOP	09 or above
I50	ARIDIC	MESA TOP	09 or above
I504	ARIDIC	RIDGE SIDESLOPE	09 or above
I54	ARIDIC	SIDESLOPE	09 or above
I6	ARIDIC	RIDGE SIDESLOPE	09 or above
I66	ARIDIC	RIDGE SIDESLOPE	09 or above
I67	ARIDIC	RIDGE SIDESLOPE	09 or above
I83	ARIDIC	TERRACE SIDESLOPE	09 or above
I84	ARIDIC	TERRACE SIDESLOPE	09 or above
I9	ARIDIC	RIDGE SIDESLOPE	09 or above
I91	ARIDIC	BEDROCK SIDESLOPE	09 or above
I95	ARIDIC	UPLAND DRAINAGE FLAT	09 or above

[†] See Material and Method.

moisture regime. Dominance of trees increases with increasing soil moisture. However, the soil moisture regime of an area may be due to the soils position on the landscape and not necessarily because of precipitation. The lower the soils position on the landscape, the closer to the water table and more moist the soil. Therefore, for the study area, the USDA Soil Conservation Service uses these multiple criteria of elevation, landforms and vegetation types (plant communities) as local guidelines for distinguishing between aridic and ustic moisture regimes. The soil scientists (of Intermountain Soils Inc., Denver, Colorado) who studied and classified the soils of this study in the field did so without these criteria. They distinguished between aridic and ustic moisture regimes on the basis of elevation alone. Therefore about 19 pedons that have ustic moisture regime given their landscape position and/or dominant plant community were misclassified aridic because they have elevations less than 1980 meters (6500 feet). Similarly about 40 pedons with aridic moisture regime (as indicated by their dominant plant communities) were misclassified ustic because they are in elevations above 1980 meters (6500 feet). Tables V and VI contain transects that had mistaken soil moisture regimes and their moisture regime criteria.

Soil moisture regime is the basis for separating Aridisols from Alfisols, Mollisols, and Inceptisols; for separating Vertisols into Usterts and Torrerts; and for separating Entisols - Fluvents, Psamments and Orthents into their great groups. Therefore these pedons with mistaken moisture regimes (Tables V and VI) were misclassified at various levels.

Field Estimation of Percentage Clay Among Horizons

For this study, field estimates of percent clay frequently differ from values reported for laboratory particle size analysis. Table VII below compares percent clay by field estimation and laboratory analysis for the surface horizons of 20 consecutive transects (pedons) selected randomly. Clay differences of up to 10% were commonly reported, with field estimates usually higher than laboratory analysis. The group

TABLE VII

EXAMPLES OF DISCREPANCY BETWEEN LABORATORY AND FIELD MEASUREMENT OF PERCENT CLAY

Transect	Text. (Lab)	Text. (Fld)	Clay % (Lab)	Clay % (Fld)	% Diff (Lab-Fld)
E27	Clay Loam	CL	38.6	32	6.60
E28	Loam	SiC	20.6	42	-21.40
E29	Clay Loam	CL	27.2	32	-4.80
E30	Sandy Loam	FSL	13.6	15	-1.40
E31	Sandy Loam	FSL	14.0	17	-3.00
E32	Sandy Clay Loam	FSL	21.2	15	6.20
E33	Clay Loam	SiCL	39.6	39	0.60
E40	Sand	LFS	4.0	10	-6.00
E41	Loam	L	19.8	17	2.80
E42	Loamy Sand	LFS	5.6	9	-3.40
E43	Loam	L	17.0	23	-6.00
I29	Sandy Loam	LS	4.4	7	-3.60
I30	Sandy Loam	SL	13.6	17	-3.40
I31	Sand	LS	5.8	7	-1.20
I32	Sand	S	2.8	4	-1.20
I33	Sandy Loam	CL	15.6	28	-12.40
I34	Loam	CL	17.0	28	-11.00
I35	Sandy Loam	SL	11.6	11	0.60
I38	Sandy Loam	LS	1.6	7	-5.40
I39	Loam	LS	16.6	9	7.60

TABLE VIII

EXAMPLES OF PEDONS WITH WRONG HORIZON DESIGNATION DUE TO ERROR IN FIELD ESTIMATION OF CLAY AMOUNT AND RELATIVE DISTRIBUTION

Transect	Horizon Depth (cm)	% Clay	Horizon Designation Field		Laboratory	
			Master	Diagnostic	Master	Diagnostic
I53	0-6	21.4	A	Argillic	A	
	6-14	20.4	BA	Argillic	BA	
	14-31	19.4	Bt1		Bw1	Cambic
	31-65	20.4	Bt2		Bw2	
	665-108	14.4	Bk1		Bk1	
		14.4	Bk2		Bk2	
E94T5	0-6	8.8	A		A	
	6-36	9.8	Bt	Argillic	Bk1	Calcic
	36-66	7.8	Bt1		Bk2	
E62	0-5	3.6	A		A	
	5-28	1.6	Bt		Bk	
	28-68	3.6	2Btk	Argillic	2Bk	Calcic
	68-96	1.6	2C		2C	
	96-120	11.6	2Cr		2Cr	
I91	0-5	6	A		A	
	5-20	8	AB		AB	
	20-45	14	Bw	Cambic	Bt	Argillic
	45-64	12	2C		2C	
	64-100+	13	2Cr		2Cr	
E64	0-9	12.8	A		A	
	9-26	20.8	Bw1		Bt1	
	26-81	19.20	Bw2	Cambic	Bt2	Argillic
	81-116	11.20	By1		By1	
	116-180	12.40	By2		By2	
E46T2	0-6	11.20	A		A	
	6-20	19.20	Bw1		Bt1	
	20-41	31.20	Bw2	Cambic	Bt2	Argillic
	41-75	7.20	Bky		Bky	
	75-95	9.20	Cr		Cr	

means of estimated and laboratory determined clay values for the surface (A) horizons of the 226 pedons of this study were tested statistically for significant difference using the student t test. At .05 alpha level the test shows that for this study, the difference between field estimated and laboratory determined clay percents is very significant, and that for 95 percent confidence interval, field techniques over-estimate clay by between 3.95 to 7.86 percent. When a similar statistical test was run for 198 "B" or the Control Section (depth 25-100 cm) horizons, this difference in clay increased to between 10.30 and 13.61 percent for a 95 percent confidence interval. A correlation test between the differences in clay and the clay contents of these 198 "B" horizons confirm that for this study, the difference between laboratory determined and field estimated clay increases slightly with increase in clay content; showing a coefficient of determination (r^2) of approximately .25, and much less correlation ($r^2 = .04$) with soil carbonate contents. The error in field estimation of percent clay resulted in misclassification of the affected soils because the amount and relative percentage of clay in soil horizons are used for (i) establishing argillic diagnostic horizons, and (ii) particle size class determination for control sections.

The Argillic diagnostic horizon is established essentially based on the relative proportion of clay in the illuvial versus eluvial soil layers. The argillic diagnostic horizon is the basis for separating the orders Aridisols, Alfisols and Mollisols into their various subgroups. Some pedons thought in the field to have argillic horizon were found not to meet the clay distribution criterion for argillic after laboratory particle-size analysis. Also, some pedons designated in the field to have master horizons "A" over "C" or "Bw" were revealed by laboratory analysis to have clay distribution and\or clay plus sodium (Na) enrichment at subhorizons indicative of clay movement. Table VIII shows pedons with the clay distributions that qualify for argillic horizons but were designated otherwise or the other way around because of errors in field estimation of clays. These pedons therefore, were misclassified in the field.

Particle-size class determined for the control section is used as a criterion for the soil family classification, and surface texture is less commonly used to separate a family into competitive series. Therefore, errors in field estimation of clay in soil horizons within the control section (commonly referring to 25-100 cm depth from surface) would result in the wrong choice of taxa at both family and series levels in the field. The percent clay was commonly over-estimated by field method (Table VII), therefore particle-size classes and/or surface textures were frequently classified in the field as being finer than laboratory analysis revealed.

Inferred Criteria Especially "Mollic" and "Natric"

Mollic. The mollic epipedon for Mollisols and the mollic intergrades (Ustollic subgroups) for many other orders are used to express relatively high organic matter content in soils. For Aridisols, the mollic criterion is based on percent organic carbon while for Natrustalf and several groups of Entisol and Vertisols, color is used as an accessory property of organic matter. Based on this study, field estimation of percentage organic matter and determination of mollic criterion deviate from those of laboratory analysis. Field techniques for estimating or making inferences about soil organic matter (for instance color) result in either over or under estimates and therefore misclassification of soil. Frequently pedons classified in the field as "mollic" or "ustollic" intergrades may not have the organic carbon content to support this when laboratory data were employed. Table IX contains pedons that support this observation. Transect

TABLE IX

PEDONS SHOWING INACCURATE FIELD ESTIMATES OF SOIL ORGANIC MATTER

Transect	Horizon Depth	% Organic Matter	Color (Moist)	Field Classification
I24	0-6	0.40	10YR3/3	Aridic Argiustoll
	6-15	0.30	10YR3/3	
	15-30	0.40	10YR3/2	
	30-46	0.30	10YR4/4	
	46-70	0.30	10YR4/4	
	70-120	0.10	10YR5/4	
E45T1	0-6	0.53	2.5YR4/4	
	6-29	0.30	2.5YR4/4	Ustollic Camborthid
	29-90	0.86	2.5YR4/4	
	90-151	0.83	2.5YR4/4	
E48T1	0-7	0.75	2.5YR4/4	Ustollic Haplargid
	7-15	0.81	2.5YR4/4	
	15-58	0.50	2.5YR4/4	
	58-120	0.69	2.5YR4/4	
	120-150+	0.79	2.5YR4/4	
I80	0-7	3.30	10YR4/2	
	7-30	2.70	10YR4/3	
	30-45	1.50	10YR4/3	Typic Ustifluvent
	45-66	2.90	10YR4/3	
	66-126	1.90	10YR4/3	
	126-150	2.30	10YR4/3	

I24 was thought to be a Mollisol because it has mollic color (moist color value of 3) while transects E45T1 and E48T1 were both classified as mollic subgroup because of their low hue of 2.5 (dark red color), but laboratory analysis reveals their soil organic matter to be much lower than the requirement according to Keys to Soil Taxonomy (Soil Survey Staff, 1992). In contrast, transect I80 which has much higher soil organic matter than transects I24, E45T1 and E48T1, and an amount greater than the minimum requirement for a mollic subgroup, could not be classified Mollic Ustifluvent because it does not meet the color requirement of mollic.

Natric. Using laboratory data on soil percent sodium saturation, about 16 pedons were identified as being in the natric great group (of Aridisols or Alfisols); having 15 cm or more of their horizon containing greater than 15% saturation by sodium. Although sometimes the sodium saturation is as high as 50% or more, none of these pedons were identified in the field as being natric. It seems therefore that the identification of natric horizons in the field and/or in the absence of laboratory data is unreliable, especially for semiarid environment where the presence of calcium and/or gypsum may mask the content of sodium.

Expressing Presence of Carbonate and Gypsum in Soil Taxonomy

For many arid and semiarid soils carbonate and/or gypsum are commonly present in some amount (Hallmark, 1985;). In many pedons of this study, these minerals occur in amounts considered significant for recognition and expression in Soil Taxonomy (Soil Survey Staff, 1975). However, the recognition and expression of presence of carbonate and/or gypsum in Soil Taxonomy (Soil Survey Staff, 1990; 1992) for the suborders Arigids and Ustalfs, and for the great group Camborthids is shown in this study to be ineffective. Expressing the presence of carbonate at the great group level for Aridisol is possible only if the soil has a calcic horizon and no argillic horizon (as in Calciorthids). For gypsum, recognition is only at one great group - Gypsiorthid. When an Aridisol has a calcic horizon (≥ 15% carbonate content in the form of $CaCO_3$ equivalent in ≥ 15 cm depth that is at least 5% $CaCO_3$ equivalent greater than the C horizon) or a gypsic horizon (≥ 15 cm depth that contains at least 5% more gypsum ($CaSO_4$) than the C horizon or the underlying stratum) and also an argillic horizon, the argillic is expressed (as in argids) while carbonates and gypsum are not expressed at any taxonomic level higher than series. Therefore, there are no calcic or gypsic subgroups for Haplustalf, Haplargid or Natrargids. Presence of carbonates are expressed in Natrustalf and Paleargid only if petrocalcic horizons (cemented or indurated calcic horizon that is continuous) are present. Presence of carbonate and gypsum can be expressed at the family level only if the soil is carbonatic; having more than 40% by weight of carbonate expressed as $CaCO_3$ plus gypsum..., (Soil Survey Staff, 1992). Where appropriate calcareous subclasses are used to indicate that the fine earth fraction of the soil effervesces with cold dilute acid (Soil Survey Staff, 1990; 1992) due to the presence of carbonate. Calcareous subclass is therefore, more of a qualitative soil reaction class.

The inconsistency in the recognition and expression of carbonate in Soil Taxonomy (Soil Survey Staff, 1992) can be observed in Table X. Transect I119 - Haplargid, though having as much as 30% by weight carbonate (CaCO3 equivalent), could not be expressed even at the family level because of the presence of an argillic horizon. In contrast, transect E62 contains about one half as much carbonate as transect I119 (Table X) but is classified as a calcic great group - Calciorthid, because transect E62 contains no argillic horizon. The poor recognition and expression of carbonate and\or gypsum in Argids and Ustalfs (soils with argillic horizons) results in the inability to separate transect I119 with 30% or more CaCo3 equivalent from transect I122 which contains 5% or less, before the series level. Small amounts of carbonate have been shown to have important effects on the physical and chemical

TABLE X

INCONSISTENCY IS CARBONATE EXPRESSION IN SOIL TAXONOMY

Transect #	Horizon Depth.	%$CaCO_3$ Eq.	Classification
E62	0-5	1.8	
	5-28	13.5	Coarse-loamy, Mixed, Mesic
	28-68	15.0	Ustochreptic Calciorthid
	68-96	14.0	
	96-120	17.2	
I119	0-5	30.7	
	5-35	29.0	Coarse-loamy, Mixed, Mesic,
	35-68	30.0	Ustollic Haplargid
	68-94	31.7	
I122	0-5	<.1	
	5-17	6.1	Fine-loamy, Mixed, Mesic,
	17-34	5.6	Ustollic Haplargid
	34-73	5.8	
	73-107	9.8	
	105-150+	8.2	

properties of soils (such as soil pH and reaction, phosphorus availability, activity of trace metal etc.) and in turn, their management (Halmark, 1985). Small amounts of gypsum could cause failure in irrigation canals and earthen dams, and provide sufficient sulfate to place soils in a high corrosion class for concrete (Nettleton et al., 1982). There is need therefore to separate transects I119 from I122 (Table X) before the series level to reflect the difference in carbonate content.

There is poor recognition and expression of carbonate and gypsum in the current editions of Soil Taxonomy (Soil Survey Staff, 1990; 1992). Richardson and Lewis (1985) pointed out that the range between calcium in calcareous soils and calcium in carbonatic or gypsic soil is excessively large. Richardson and Lewis (1985) therefore suggested that modification be made to either lower the 40% value to levels where the abundance is large enough to control soil properties, such as 15 or 25%, or to insert an intermediate class between limits for the calcareous class, and carbonatic and gypsic classes. The important effects of carbonate, and gypsum on the use and management are reasons why the presence of these minerals should be expressed before or at the family level. Families in the U.S. System of Soil Taxonomy (Soil Survey Staff, 1975) are intended to provide information for broad agricultural and engineering interpretation (Hallmarks, 1985), or enhance interpretive value for applied purposes (Cline, 1980). Soil families are therefore considered the appropriate level in Soil Taxonomy for use in communicating soil research results among soil scientists across countries and/or transferring soil-based agrotechnology among places with similar soils (Boul and Denton, 1984; Eswaran, 1985). When important soil properties such as carbonate and gypsum are expressed after the family level as done currently for many soils in Soil Taxonomy (Soil Survey Staff 1990; 1992), the communicable information about such soils is reduced and their soil-based agrotechnology transfer limited or less effective.

Absence of Mollic Haplustalf

The important effect of soil organic matter on soil property is the reason why soil organic matter content is used as a criterion for classifying soils (Soil Survey Staff, 1975). Mollic (or Ustollic)

TABLE XI

HAPLUSTALFS WITH WIDE RANGE OF ORGANIC MATTER BUT CLASSIFIED TOGETHER

Transect	Horizon	Depth	% Org. Matter	Classification
I76	A	0-10	2.0	
	BA	10-24	2.8	Aridic Haplustalf
	2Btb	24-41	2.0	
	2Byb	41-71	1.7	
	3C	71-84	1.6	
I19	A	0-4	3.8	
	Bt1	4-8	1.4	Aridic Haplustalf
	Bt2	8-25	1.5	
	Btk	25-75	.8	
	Bk	47-93	.5	
I24	A	0-6	.4	
	BA	6-15	.3	
	2Bt1	15-30	.4	Aridic Haplustalf
	2Bt2	30-45	.3	
	2C1	46-70	.4	
	2C2	70-121	.4	

intergrades are used in all great groups of Aridisol, and in Natrustalfs, to separate subgroups with relatively high soil organic carbon. Where applicable these "organic matter rich" subgroups are separated when the weighted average percentage of their organic carbon in the upper 40 cm is 0.6 (or 1/7 depending on the sand to clay ratio) and above (Soil Survey Staff, 1990). However, mollic subgroup is not used for Haplustalf, and no reason is given in references for this apparent omission. The absence of a "Mollic" Haplustalf causes soils with a wide range of soil organic matter to be grouped together in Haplustalfs. Table XI shows the soil organic matter contents of three Haplustalfs classified together as aridic subgroup. In other great groups such as Haplargids, Natrargids and even Natrustalfs, the soil organic matter content of transects I19 and I76 would be considered high enough to warrant separation from transect I24 and into a mollic subgroup. Haplustalfs could exist with higher organic matter contents than transects I19 and I76 (Table XI). There is therefore, the need to separate such organic matter rich Haplustalfs into a class (mollic subgroup) that would reflect and express this important soil property.

Expressing the Presence of Lithogenic Sodium in Soil Taxonomy

In Soil Taxonomy, natric horizon is used to recognize the presence of 15 percent or more saturation with exchangeable sodium in some horizon within 40 cm of the soil surface (Soil Survey Staff, 1990; 1992) if the soil shows significant illuvial accumulation of clay (presence of argillic horizon). The presence or absence of natric horizon is important for separating the suborders; Ustolls, Ustalfs and Argids into their great groups.

Except for Camborthids, high presence of sodium is not expressed for other soils that do not have an argillic horizon. Even for Camborthids, to qualify as a natric subgroup, the soil must contain 40 percent or more saturation with sodium throughout the cambic horizon and have low or very low saturated hydraulic conductivity (Soil Survey Staff, 1992). The discriminatory use of "natric" horizon in only soils with argillic horizon, the restricted application of natric subgroup to Camborthid, and the high limit of percent sodium required for Natric Camborthid result in no recognition and expression of high sodium contents in the classification of many soils using Soil Taxonomy (Soil

TABLE XII

PEDONS WITH HIGH SODIUM CONTENTS THAT ARE UNEXPRESSED IN THEIR CLASSIFICATION

Transect	Horizon Depth	% Clay	% Na Saturation	Classification
I91	0-9	28.8	3.14	
	9-28	31.6	13.6	Ustollic Camborthid
	28-46	30.8	20.47	
	46-94	22.20	28.67	
E12T2	0-7	51.20	16.9	
	7-25	69.20	25.42	
	25-46	64.20	14.13	Paleustollic Chromustert
	46-112	39.20	12.81	
	112-150	15.20	13.8	
E20T2	0-6	20.4	0.07	
	6-20	18.4	4.19	Lithic Ustorthent
	20-38	16.4	31.03	

Survey Staff, 1975). In Table XII, the high sodium content (greater than 15% saturation in some horizons) in transects E12T2 and E20T2 was not expressed because transect E12T2 is a Vertisol, and E20T2 lacks the clay distribution for an argillic horizon which is a supposed accompaniment of pedogenic sodium. Although transect I91 (Table XII) contains greater than 20% sodium saturation in some horizons, its sodium content is less than the requirement for establishing a natric subgroup for Camborthid. While lithogenic sodium may be less exchangeable by plants for example, there is no proof that all sodium in "non-argillic" soils for example, Vertisols (see also transects E12T2 and E20T2; Table XII) is lithogenic.

Distinguishing between pedogenic and lithogenic sodium might be important from soil a genesis view point but there is doubt that many of the land-use and management limitations caused by high sodium in soil discriminate on genesis of sodium. There is the need to lower the percent sodium saturation required for establishing Natric Camborthid, and also create "natric" subgroups in other arid/semiarid soil groups which though rich in sodium, do not have argillic horizons.

CHAPTER V

CONCLUSION

General Considerations

Problems or deficiencies in applying Soil Taxonomy (Soil Survey Staff, 1975) to classifying especially arid and semiarid soils have been identified and discussed in this study. Suggestions have been made on how Soil Taxonomy as a system for classifying these soils could be improved. Modifications to the system need not to be made hurriedly. More data about different soils are needed to expose new taxonomic problems and/or confirm the already identified ones. From this study, the following abstractions are made about the efficiency of Keys to Soil Taxonomy (Soil Survey Staff, 1992) for classifying soils of dry regions.

Choice of Some Taxonomic Criteria and Number of Taxa

Studies are needed to test the differences in landuse potential and response to management of the soils separated according to Soil Taxonomy. Close observation of the study area and soil data, and the mechanism for classifying these soils indicate that the number of taxa separated in this study is perhaps more than the possible soil groups that would show differences in landuse potential and/or response to management in the study area. For instance, the difference among Haplic, Ustollic or Typic Natragids may be less than 1% saturation in sodium or organic matter. Mollic Natrustalfs are separated from Typic Natrustalfs based on color of an Ap horizon (top 18 cm). Description of color is not only subjective but frequently does not reflect soil organic matter. Similar "trivial" differences are used to separate Ustollic versus Fluventic Camborthid; Ustollic versus Ustochreptic Calciorthid. Also the choice of some criteria seems to enhance the misclassification of related taxa in the absence of laboratory data. In New Mexico, lack of data on soil organic matter has led to classification of more Ustollic Calciorthids, Ustollic Camborthids and Ustollic Natrargids at the exclusion of Ustochreptic Calciorthids, Fluventic Camborthids and Glossic Natrargids respectively. Like soil organic matter, this study indicates that the presence and amount of soil sodium saturation cannot be observed or inferred with reasonable assurance in the field (without laboratory data). There is therefore, the probability that the choice of some criteria, and the relatively large number of taxa in Keys to Soil Taxonomy (Soil Survey Staff, 1992) result in separation of soils with less variations in their range of significant properties than that which could be attributed to them due to errors in field observation or estimation of classification criteria. The emphasis on pedogenesis (such as insisting that natric horizon must be argillic), the apparent inconsistencies in definition of some criteria or the poor expression of some important soil properties (such as carbonates, sodium and gypsum), and the choice of and emphasis on some less management related criteria (such as using argillic horizon for separation at the suborder level) are probable factors that reduce the correlation between taxonomic classes and landuse.

The Limitations of Unavailability of Laboratory Data on Soil Taxonomy

The prospect and correct use of soil taxonomic quantitative criteria and precisely defined taxa boundaries, rest heavily on the availability of laboratory data. The unavailability of adequate laboratory data and the resort to using field estimates of criteria for classifying soils have resulted in errors and imprecise soil classification. These errors are attributed to the difficulties in field identification and especially quantification of some criteria (such as percent illuvial clay, percent organic matter, amount of sodium, and gypsum). These errors are enhanced by the precision with which some of these criteria are defined and the narrow limits allowed for many taxa boundaries.

The problem of lack of adequate data for precise classification in Keys to Soil Taxonomy (Soil Survey Staff, 1992) and the limitations this imposes on the use and international adoption, and also on the accelerated and orderly improvement of Soil Taxonomy (Soil Survey Staff, 1975) from present state have been highlighted. While the problem of lack of data persists, and may never be totally solved, the limitations it imposes could be reduced in the following ways:

(1) Redefine some classification criteria and/or taxa limits to reflect the probable error in field estimation of these properties. The use of 3% increase in clay in the eluvial versus illuvial horizon for establishing argillic horizon and the emphasis on ratio of fine clay to total clay, and the use of 5% more gypsum in "By" than the "C" horizon for establishing gypsic horizon are examples of definitions that are unrealistic or inconsistent with the observable errors in field

measurements of properties. Broadening taxa boundaries would result in fewer but more accurately classified taxa and greater correlation between these taxa and landuse. The number of taxa in Keys to Soil Taxonomy (Soil Survey Staff, 1992) could be reduced without critical loss in landuse and/or management information.

(2) Conduct research and gather data to investigate the probability of errors in field estimation of some soil properties and classification criteria, determine the factors of error involved and model these over varying conditions. By knowing the probable error rate in classification, expectations of such soil become real and decisions made about them more correct.

(3) Finally, there is need for both national and international agencies to help in the provision of supportive laboratory facilities especially in countries too poor to afford these. Availability of data for precise classification is a prerequisite for the effective use of Keys to Soil Taxonomy (Soil Survey Staff, 1992) as a tool for communicating soil research results and for transferring soil-based agrotechnology across countries with similar soils.

REFERENCES

Allen, B. L. 1985. Microphology of Aridols. *In:* Lowell A. Douglas and Michael L. Thompson (eds). Soil Micromorphology and Soil Classification. SSSA Special Publication Number 15 Soil Sci. Soc. of Am., Madison, WI.

Antoine, P. 1977. Soil Resource Inventories, p. 189-197. Agron. Mimeo 77-23. Cornell Univ., Ithaca, NY.

Beinroth, F. H. 1975. Soil management in Tropical America. E. Bornemisza and A. Alvarado (eds). p. 92-108. North Carolina State Univ. Raleigh.

Bohrer, V. 1987. Interview with Sheridan. *In:* Desertification of the United States 142 p. Council on Environmental Quality, 1987.

Borland International. 1990. Paradox Relational Database, Version 3-5. Borland International, CA.

Branson, F. A., and A. Janicki. 1986. Botanic and Hydrologic changes on Rangelands of the Rio Puerco Basin, New Mexico. 23 p. U.S. Geological Survey, Water-Resources Investigations Report 86-4021. Lakewood, CO.

Bremner & Mulvaney. 1986. Nitrogen-total pp. 595-622. *In:* A. L. Page (ed.), Methods of Soil Analysis, Part 2, 2nd ed. Amer. Soc. of Agronomy, Madison, WI.

Bryan, K. 1928. Historic evidence on changes in the channels of the Rio Puerco, a tributary of the Rio Grande in New Mexico. Journal of Geology 36:265-282.

Buol, S. W. and H. P. Denton. 1984. The Role of Soil Classification in Technology Transfer. *In:* David M. Kral, Sherri L. Hawkins, R. B. Grossman, R. H. Rust and H. Eswaran (eds). Soil Taxonomy - Achievements and challenges. SSSA Special Publication 14. Soil Science Society of America, Madison, WI.

Buol, S. W., F. D. Hole, and R. J. McCracken. 1989. Soil genesis and classification. 360 p. The Iowa State University Press, Ames.

Burkham, D. E. 1966. Hydrology of cornfield wash area and effects of land-treatment practices, Sandoval County, New Mexico, 1951-60. USDI Geological Survey, Water Supply Paper No. 1831. Washington, D.C.

Calkins, H. G. 1937. A report on the Cuba Valley. USDA Soil Conservation Service, Region 8, Regional Bulletin No. 36. Albuquerque, NM.

Cline, M. G. 1980. Experience with Soil Taxonomy of the United States. Adv. Agron 33:193-226.

Cook, T. D. 1975. Final report on the American System of Soil Classification as applied to the soils of Sudan. FAO project SUD/71/553 - Rome.

Dortignac, E. J. 1961. The Rio Puerco - past, present and future. New Mexico Water Conference Proc. 5:45-57.

Dortignac, E. J. 1963. Rio Puerco: Abused Basin. *In:* Carle Hodge and Peter Duisberg, eds., Aridity and Man. Washington, D.C.: American Association for the Advancement of Science 1963, pp. 512-14.

Dregne, H. E. 1968. Inventory of research on surface materials of desert environments. p. 287-377. *In:* W. G. McGinnies, B. J. Goldman, P. Paylore (eds). Deserts of the World: An appraisal of research into their physical and biological environments. University of Arizona Press, Tucson. 788 pp.

Driscoll, R. S. 1978. Land classification systems: Moderator's comment. Integrated inventories of renewable natural resource: Proceedings of the workshop January 8-13, 1978. Tucson, Arizona. U.S. Forest Service General Technical Report RM 55 p. 155-156.

Dyksterhuis, E. J. 1958. Range Conservation based on sites and condition classes. Journal of Soil and Water Conservation. 13:151-155.

Eswaran, H. 1985. A Decade of Soil Taxonomy. *In:* Soil Taxonomy, Review and use in the Asian and Pacific Regions. FFTC Book Series No. 29. Food and Fertilizer Technology Center for the Asian and Pacific Region, Taipei, Taiwan.

Flach, W. 1963. Soil investigations and the Seventh Approximation. Soil Sci. Soc. Am. Proc. 27, 226-228.

Flach, K. W., and G. D. Smith. 1969. The new system of soil classification as applied to arid-land soils, p. 61-73. *In:* W. G. McGinnies and B. J. Goldman, (eds.), Arid Lands in perspective. Tucson: Am. Assoc. Adv. Sci. and Univ. of Arizona Press.

Folks, J. J. and W. B. Stone. 1968. Soil Survey: Cabezon area, New Mexico. 44 p. USDA Soil Conservation Service, Washington, D.C.

Francis, R. E. 1986. Phyto-Edaphic Communities of the Upper Rio Puerco Watershed, New Mexico. 73 p. USDA Forrest Service Research Paper RM-272. Rocky Mountain Forest and Range Experiment Station. Fort Collins, CO.

Francis, R. E. 1992. Oral communication to author.

Gee, G. W. and J. W. Bauder. 1986. Particle size analysis. pp. 383-409. *In:* A. Klute (ed.), Methods of Soil Analysis, Part 1, 2nd ed. Amer. Soc. of Agronomy, Madison, WI.

Hacker, L. 1992 . Personal communications.

Hallmark, C. T. 1985. Family Mineralogy of Soils with Free Carbonates and Gypsum. *In:* J. A. Kittrick (ed.), Mineral Classification of Soils SSSA Special Publication No. 16. Soil Sci. Soc. Am. Madison, WI.

Hanson, H. C. 1962. Dictionary of ecology. Philophical library, NY.

Hendricks, D. M., W. D. Nettleton, and R. B. Grossman. 1985. Problems Associated with the U.S. System of Soil Taxonomy Mineralogy classes in Arid Regions. *In:* Mineral classification of soils, pp. 41-52. J. A. Kittrick, (ed.) SSSA Special Publication Number 16 Soil Science Society of America, Inc., American Society of Agronomy; Inc., Publishers. Madison, WI.

Humphrey, R. R. 1947. Range Forage evaluation by the Range Condition method. Journal of Forestry 45:10-16.

Keeney, D. R. and D. W. Nelson. 1986. Nitrogen-inorganic forms. pp. 643-693. *In:* A. L. Page (ed.), Methods of Soil Analysis, Part 2, 2nd ed. Amer. Soc. of Agronomy, Madison, WI.

Kinsinger, F. E. 1978. Data Requirement for Management of Rangelands. Integrated inventories of Renewable Natural Resources: Proceedings of the Workshop January 8-12, 1978 - Tucson, Arizona. In U.S. Forest General Technical Report RM-55, pp. 32-36.

Leopold, L. B. 1943. Characteristics of heavy rainfall in New Mexico and Arizona: American Society of Civil Engineers Proceedings V. 69, p. 205-234.

Leopold, L. B. 1951. Vegetation of Southwestern Watersheds in the Nineteenth Century: Geog. Rev. 41, No. 2, p. 295-316.

McGinnies, W. G. 1969. Arid-Lands Knowledge Gaps and Research needs. p. 278-287. *In:* W. G. McGinnies and B. J. Goldman, (eds), Arid Lands in Perspective. Tucson: Am. Assoc. Adv. Sci. and Univ. of Arizona Press.

Murthy, R. S., H. S. Shankaranarayana, and L. R. Hire Kerur. 1977. J. Indian Soc. Soil Sci. 25, 284-287.

National Oceanic and Atmospheric Administration (NOAA). 1984. Climatological data: New Mexico - Special summary. 25 p. U.S. Department of Commerce, NOAA, National Data Center, Asheville, N.C.

Nettleton, W. D., W. Flach, and B. R. Brasher. 1969. Argillic horizons without clay skins. Soil Sci. Soc. Am. Proc. 33:121-125.

Nettleton, W. D., R. E. Nelson, B. R. Brasher, and P. S. Derr. 1982. Gypsiterous soils in the western United States. p. 147-168. *In:* J. A. Kittrick et al. (ed.) Acid Sulfate Weathering. Spec. Pub. 10. Soil Sci. Soc. Am., Madison, WI.

Olsen, S. R. and L. E. Sommers. 1986. Phosphorus. pp. 403-427. *In:* A. L. Page (ed.), Methods of Soil Analysis, Part 2, 2nd ed. Amer. Soc. of Agronomy, Madison, WI.

Osman, A. 1990. ICOMID Progress Report. *In:* Proceedings of the Fourth International Soil Correlation Meeting (ISCOM) Characterization Classification and Utilization of Aridisols. Part A: papers USDA, Soil Conservation Service, Lincoln, NE.

Renner, F. G. 1948. Range condition: A new approach to the Management of natural grazing lands. Proceedings of the Inter-American conference on Conservation of Renewable Natural Resources. U.S. State Department Publication 3382:527-535. Washington, D.C.

Rhoades, J. D. 1986. Cation exchange capacity. pp. 149-157. *In:* A. L. Page (ed.), Methods of Soil Analysis, Part 2, 2nd ed. Amer. Soc. of Agronomy, Madison, WI.

Richardson, J. L. and D. T. Lewis. 1985. Problems Associated with the U.S. System of Soil Taxonomy Mineralogy classes in subhumid and Semiarid Regions. *In:* Mineral classification Soils, pp. 61-74. J.A. Kittrick, (ed.) SSSA Special Publication Number 16. Soil Science Society of American, Inc. American Society of Agronomy, Inc; Publishers. Madison, WI.

Sheridan, D. 1981. The Rio Puerco Basin, p. 14-23. *In:* Desertification of the United States. Council on Environmental Quality.

Smith, G. O. 1963. Objectives and basic assumptions of the new soil classification system Soil Sci. 96:6-16.

Smith, G. D. 1968. Soil classification in the United States, 6-24. In World Resource Rep. 32. FAO, Rome, Italy.

Soil Survey Staff. 1975. Soil Taxonomy: A basic system of soil classification for making and interpreting soil surveys. U.S. Department of Agriculture Handbook No. 436, Washington, D.C.

Soil Survey Staff. 1990. Keys to Soil Taxonomy. SMSS Technical Monograph No. 19, Fourth Edition, 1990.

Soil Survey Staff. 1992. Keys to Soil Taxonomy. SMSS Technical Monograph No. 19, Fifth Edition, 1992.

Stone, R. O. 1967. A desert glossary. Earth Science Review 3:211-268.

U.S. Salinity Laboratory Staff. 1969. Diagnosis & improvement of saline soils. Agric. Handbook #60. U.S. Government Printing Press, Washington, D.C.

United States Department of Agriculture, Soil Conservation service (USDA, SCS). 1977. Soil Survey of BLM Lands: Sandoval and McKinley counties USDA Soil Conservation Service, preliminary report. Albuquerque, NM (Nimeo).

United States Department of Agriculture, Soil Conservation Service (USDA, SCS). 1990. Proceedings of the Fourth International Soil Correlation Meeting (ISCOM) Characterization Classification and Utilization of Aridisols. Part A: papers USDA, Soil Conservation Service, Lincoln, NE.

United States Department of Interior, Bureau of Land Management (USDI, BLM) 1977. Final environmental statement: The proposed Rio Puerco Livestock grazing management program. USDI Bureau of Land Management, Albuquerque, NM.

United States Department of Interior, Bureau of Land Management (USDI, BLM), 1985. Proposed Rio Puerco Resource Management Plan. 3-(1-3) U.S. Department of the Interior Bureau of Land Management, Albuquerque District Rio Puerco Resource Area.

Walkley, A., and I. A. Black. 1934. An examination of the Degtjarett method for determining soil organic matter and a proposed modification of the chromic acid titration method. Soil Sci. 37:29-39.

Wambeke, A. V. 1982. Soil Taxonomy: A Technical Language of Soil Science. Agronomy Mineo #82-13. Agronomy Dept., Cornell University, NY.

Widdison, J. G. 1959. Historical geography of the middle Rio Puerco Valley, New Mexico, in New Mexico Historical Review, Albuquerque, University of New Mexico, V. 34, p. 248-284.

APPENDIXES

APPENDIX A

NAMES AND DESCRIPTIONS OF SOIL SERIES OF THE UPPER RIO PUERCO WATERSHED

SERIES NAME	FAMILY	CLASSIFICATION
** hoskay	Fine,Mixed,Mesic	Glossic Natrargid
**Adena	Fine-loamy,Mixed,Mesic	Ustalfic Paleargid
**Albers	Fine,Mixed,Mesic	Paleustollic Chromustert
**Chupadera	Coarse-Loamy,Mixed,Mesic	Ustochreptic Calciorthid
**Epikon	Sandy,Mixed,Mesic	Lithic Camborthid
**Hernandez	Fine-Loamy,Mixed,Mesic	Ustochreptic Calciorthid
**Leland	Coarse-loamy,Mixed,Mesic	Typic Natrustalf
**Swisshelm	Coarse-loamy,Mixed,Mesic	Fluventic Camborthid
**Telescope	Sandy,Mixed,Mesic	Aridic Ustochrept
**Tyende	Coarse-loamy,Mixed,Mesic	Glossic Natrargid
**Venadito	Very fine,Mixed,Mesic	Paleustollic Chromustert
Adena	Fine-Loamy,Mixed,Mesic	Ustollic Paleargid
Arntz	Fine-Loamy,Mixed,Mesic	Cambic Gypsiorthid
Atarque	Fine-loamy,Mixed,Mesic	Lithic Haplustalf
Atrac	Fine-loamy,Mixed,Mesic	Ustollic Camborthid
Augustine	Fine-loamy,Mixed,Mesic	Aridic Haplustalf
Baxendale	Coarse-loamy,Mixed,	Typic Argiboroll
Berto	loamy,Mixed,Mesic	Lithic Ustollic Haplargid
Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid
Blancot	Fine-Loamy,Mixed,Mesic	Ustalfic Haplargid
Calendar	Fine,Mixed,Mesic	Aridic Ustochrept
Chupadera	Coarse-loamy,Mixed,Mesic	Ustollic Calciorthid
Clovis	Fine-loamy,Mixed,Mesic	Ustollic Haplargid
Creel	Fine-loamy,Mixed,Mesic	Ustollic Calciorthid
Dalupe	Coarse-loamy,Mixed,Mesic	Fluventic Ustochrept
Doakum	Fine-loamy,Mixed,Mesic	Ustalfic Haplargid
Escavada	Sandy,Mixed,Mesic	Ustic Torrifluvent
Espiritu	Loamy-skeletal,Mixed,Mesic	Aridic Haplustalf
Fernando	Fine-loamy,Mixed,Mesic	Ustollic Haplargid
Florita var	Coarse-loamy,Mixed,Mesic	Ustic Torriorthent
Flugle	Fine-loamy,Mixed,Mesic	Aridic Hapustalf
Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf
Galestina	Fine,Mixed,Mesic	Aridic Paleustalf
Glenberg	Coarse-loamy,Mixed(Calca.),Mesic	Ustic Torrifluvent
Hichman	Fine-loamy,Mixed(calca.),Mesic	Typic Ustifluvent
Ildefonso	Loamy-skeletal,Mixed,Mesic	Ustollic Calciorthid
Kimnoli	Loamy,Mixed,Mesic	Lithic Haplargid
Kitsili	Coarse-loamy,Mixed,Mesic	Ustochreptic Camborthid
Kydestea	Loamy-Skeletal,Mixed(Calca.),Mesic	Lithic Ustorthent
La Brier	Fine,Mixed,Mesic	Torrertic Argustoll
Lama	Fine,Mixed,Mesic	Aridic Haplustalf
Majada	Loamy-Skeletal,Mixed,Mesic	Aridic Argiustoll
Motto	loamy,Mixed,Mesic	Lithic Natrargid
Muff	Fine-loamy,Mixed,Mesic	Typic Natrargid
Nimbro	Fine-Loamy,Mixed,Mesic	Mollic Ustifluvent
Orlie	Fine-loamy,Mixed,Mesic	Aridic Haplustalf
Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid
Pariato	Mixed,Mesic	Lithic Ustipsamment
Parida	Coarse-loamy,Mixed,Mesic	Ustollic Camborthid
Payson	Fine,Mixed,Mesic	Typic Natrustalf
Penistaja	Fine-Loamy,Mixed,Mesic	Ustollic Haplargid

SERIES NANE	FAMILY	CLASSIFICATION
Penrose	Loamy,Carbonatic,Mesic	Lithic Ustic Torriorthent
Pherson	Loamy-Skeletal,Mixed(Calca.),Mesic	Ustic Torrifluvent
Pietown	Coarse-loamy,Mixed(Calca.),Mesic	Typic Ustifluvent
Pinavetes	Mixed,Mesic	Ustic Torripsamment
Pinitos	Fine-Loamy,Mixed,Mesic	Aridic Haplustalf
Puerco	Fine,Mixed,Mesic	Typic Torrert
Robroost	Coarse-loamy,Mixed,Mesic	Cambic Gypsiorthid
San Mateo	Fine-loamy,Mixed(Calcareous)Mesic	Ustic Torrifluvent
Scholle	Fine-loamy,Mixed,Mesic	Ustollic Haplargid
Sedillo	Loamy-skeletal,Mixed,Mesic	Ustollic Haplargid
Skyvillage	Loamy,Mixed(Calcereous),Mesic	Lithic Ustic Torriorthent
Stromal	Loamy,Mixed,Mesic	Arenic Ustalfic Haplargid
Suwanee	Fine-loamy,Mixed(calcareous),Mesic	Ustic Torrifluvent
Telescope	Coarse-loamy,Mixed,Mesic	Aridic Ustochrept
Teromote	Fine-Loamy,Mixed,Mesic	Aridic Ustochrept
Tschicoma	Fine-loamy,Mixed,	Typic Argiboroll
Uffens	Fine-loamy,Mixed,Mesic	Typic Natrustalf
Vessilla	Loamy,Mixed(calcareous),Mesic	Lithic Ustorthent
Veteado	Fine,Mixed,Mesic	Ustollic Paleargid
Waumac	Coarse-loamy,Mixed(Calca.),Mesic	Typic Ustorthent
Zia	Coarse-Loamy,Mixed(calca.),Mesic	Ustic Torriorthent

APPENDIX B

TRANSECTS AND THEIR CLASSIFICATION

TRANS•	SERIES NAME	FAMILY	CLASSIFICATION	FIELD (CLASSIF.)
E101T3	Baxendale	Coarse-loamy,Mixed,	Typic Argiboroll	F Typic/Mollic Eutroboralf
E102	Tschicoma	Fine-loamy,Mixed,	Typic Argiboroll	F Typic Argiboroll
E103	Vessilla	Loamy,Mixed(calcareous),Mesic	Lithic Ustorthent	L Typic Ustorthent
E104	Vessilla	Loamy-Skeletal,Mixed,Mesic	Lithic Ustorthent	L Lithic Ustorthent
E105	Ildefonso	Loamy-skeletal,Mixed,Mesic	Ustollic Calciorthid	L SK Ustollic Camb/Calciorthid
E106	Pariato	Mixed,Mesic	Lithic Ustipsamment	Lithic Torripsamment
E107	San Mateo	Fine-loamy,Mixed(Calcareous)Mesic	Ustic Torrifluvent	FL Ustic Torrifluvent
E108T2	Espiritu	Loamy-skeletal,Mixed,Mesic	Aridic Haplustalf	L SK Aridic Haplustalf
E12T2	**Albers	Fine,Mixed,Mesic	Paleustollic Chromustert	F Mont. Vertic Ustifluvent
E16T2	Telescope	Coarse-Loamy,Mixed,Mesic	Aridic Ustochrept	F Aridic Haplustalf
E19T3	Palma	Coarse-Loamy,Mixed,Mesic	Ustollic Haplargid	FL Aridic Haplustalf
E1T3	Escavada	Sandy,Mixed,Mesic	Ustic Torrifluvent	FL Typic Ustifluvent
E20T2	Kydestea	Loamy-Skeletal,Mixed(Calcareous),Mes	Lithic Ustorthent	Loamy Mixed Shallow Typic Ustorthent
E22T2	Atrac	Fine-Loamy,Mixed,Mesic	Ustollic Camborthid	FL Aridic Haplustalf
E23T2	Penistaja	Fine-Loamy,Mixed,Mesic	Ustollic Haplargid	FL Aridic Haplustalf
E24T2	La Brier	Fine,Mixed,Mesic	Torrertic Argustoll	F Aridic Haplustalf
E27	Pherson	Loamy-Skeletal,Mixed(Calcareous),Mes	Ustic Torrifluvent	Clayey (calc) Typic Ustorthent
E28	Nimbro	Fine-Loamy,Mixed,Mesic	Mollic Ustifluvent	
E29	Teromote	Fine-Loamy,Mixed,Mesic	Aridic Ustochrept	F Aridic Haplustalf
E2T2	Kitsili	Coarse-loamy,Mixed,Mesic	Ustochreptic Camborthid	FL Typic Haplustalf
E30	Pinitos	Fine-Loamy,Mixed,Mesic	Aridic Haplustalf	FL Aridic Haplustalf
E31	Betonnie	Coarse-Loamy,Mixed,Mesic	Ustalfic Haplargid	FL Ustollic Camborthid
E32	Zia	Coarse-Loamy,Mixed(calcareous),Mesic	Ustic Torriorthent	FL Ustic Torriorthent
E33	Suwanee	Fine-Loamy,Mixed(calcareous),Mesic	Ustic Torrifluvent	FL Ustic Torriorthent
E34	Suwanee	Fine-Loamy,Mixed(calcareous),Mesic	Ustic Torrifluvent	FL Ustic Torriorthent
E36	Pariato	Mixed,Mesic	Lithic Ustipsamment	
E37	Kimmoli	Loamy,Mixed,Mesic	Lithic Haplargid	F Aridic Eutroboralf
E38	Kimmoli	Loamy,Mixed,Mesic	Lithic Haplargid	
E39	Arntz	Fine-Loamy,Mixed,Mesic	Cambic Gypsiorthid	Typic Gypsiorthid
E3T5	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Aridic Haplustalf
E40	Pariato	Mixed,Mesic	Lithic Ustipsamment	Mixed Ustic Torripsamment
E41	**Hernandez	Fine-Loamy,Mixed,Mesic	Ustochreptic Calciorthid	FS Ustollic Camborthid
E42	Pinavetes	Mixed,Mesic	Ustic Torripsamment	Mixed Ustic Torripsamment
E43	Adena	Fine-Loamy,Mixed,Mesic	Ustollic Paleargid	FS Ustollic Camborthid
E45T1	Kitsili	Coarse-loamy,Mixed,Mesic	Ustochreptic Camborthid	Fine Ustollic Camborthid
E46T2	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	Fine Ustollic Camborthid
E47T2	Atrac	Fine-loamy,Mixed,Mesic	Ustollic Camborthid	Fine Ustertic Camborthid
E48T1	Kitsili	Coarse-loamy,Mixed,Mesic	Ustochreptic Camborthid	FL Ustollic Haplargid
E4T3	Flugle	Fine-loamy,Mixed,Mesic	Aridic Hapustalf	Fine Aridic Paleustalf
E50T1	Chupadera	Coarse-loamy,Mixed,Mesic	Ustollic Calciorthid	FL Ustollic Haplargid
E51	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	F Aridic Haplustalf
E52T2	Berto	loamy,Mixed,Mesic	Lithic Ustollic Haplargid	FL Ustollic Camborthids
E53T2	Parida	Coarse-loamy,Mixed,Mesic	Ustollic Camborthid	FL/FS Ustollic Camborthid
E54	Parida	Coarse-loamy,Mixed,Mesic	Ustollic Camborthid	FL Ustollic Camborthid
E55	Chupadera	Coarse-loamy,Mixed,Mesic	Ustollic Calciorthid	FL Ustollic Camborthid
E56T2	Skyvillage	Loamy,Mixed(calcareous),Mesic	Lithic Ustic Torriorthent	
E57	Kimmoli	loamy,Mixed,Mesic	Lithic Haplargid	Fine Ustollic Haplargid
E58T3	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Ustollic Haplargid
E59	San Mateo	Fine-Loamy,Mixed(calcareous),Mesic	Ustic Torrifluvent	CL Ustic Torriorthent
E5T1	Stromal	Loamy,Mixed,Mesic	Arenic Ustalfic Haplargid	FL Aridic Haplustalf
E60T2	Berto	loamy,Mixed,Mesic	Lithic Ustollic Haplargid	Loamy Shallow Ustollic Camborthid

TRANS.	SERIES NAME	FAMILY	CLASSIFICATION	FIELD (CLASSIF.)
E61T3	Skyvillage	Loamy,Mixed(Calcereous),Mesic	Lithic Ustic Torriorthent	Loamy Shallow Ustic Torriorthent
E62	**Chupadera	Coarse-Loamy,Mixed,Mesic	Ustochreptic Calciorthid	FL Ustollic Haplargid
E63	Blancot	Fine-Loamy,Mixed,Mesic	Ustalfic Haplargid	FL or FS Ustollic Camborthid
E64	Blancot	Fine-Loamy,Mixed,Mesic	Ustalfic Haplargid	FL Ustollic Camborthid
E65	Parida	Coarse-Loamy,Mixed,Mesic	Ustollic Camborthid	Fine Ustollic Camborthid
E67	Suwanee	Fine-loamy,Mixed(calcareous),Mesic	Ustic Torrifluvent	Fine Ustic Torrifluvent
E69	Sedillo	Loamy-skeletal,Mixed,Mesic	Ustollic Haplargid	Fine/FS Ustollic Haplargid
E70T1	Parida	Coarse-loamy,Mixed,Mesic	Ustollic Camborthid	FS/FL Ustollic Camborthid
E73T1	Doakum	Fine-loamy,Mixed,Mesic	Ustalfic Haplargid	FS/FL Ustollic Haplargids
E75T1	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Ustollic Haplargid
E76T2	Pietown	Coarse-loamy,Mixed(Calcareous),Mesic	Typic Ustifluvent	FL Typic Ustifluvent
E77T3	Parida	Coarse-loamy,Mixed(Calcareous),Mesic	Ustollic Camborthid	FL Aridic Haplustalf
E78T2	**Albers	Fine,Mixed,Mesic	Paleustollic Chromustert	F. Mont. Vertic Ustifluvent
E7T2	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	CL/FL Aridic Haplustalf
E80	Pariato	Mixed,Mesic	Lithic Ustipsamment	
E81	Veteado	Fine,Mixed,Mesic	Ustollic Paleargid	Fine Mixed Mesic Aridic Ustochrept
E84	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	F Ustollic Haplargid
E85	Majada	Loamy-Skeletal,Mixed,Mesic	Aridic Argiustoll	FL Aridic Ustochrept
E87T2	Waumac	Coarse-loamy,Mixed(Calcareous),Mesic	Typic Ustorthent	CL Ustifluvent
E88T1	Skyvillage	Loamy,Mixed(calcareous),Mesic	Lithic Ustic Torriorthent	L. Typic Gypsiorthid
E90	Pariato	Mixed,Mesic	Lithic Ustipsamment	
E92T3	**Epikon	Sandy,Mixed,Mesic	Lithic Camborthid	FL Typic Ustorthent
E93T1	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	F Aridic Haplustalf
E94T5	Chupadera	Coarse-loamy,Mixed,Mesic	Ustollic Calciorhtid	F Aridic Haplustalf
E95T2	Escavada	Sandy,Mixed,Mesic	Ustic Torrifluvent	Sandy Ustic Torrifluvent
E96T2	Telescope	Coarse-loamy,Mixed,Mesic	Aridic Ustochrept	F.Typic Gypsiorthid
E9T3	Stromal	Loamy,Mixed,Mesic	Arenic Ustalfic Haplargid	FL Aridic Haplustalf
I1	Zia	Coarse-loamy,Mixed(Calcareous),Mesic	Ustic Torriorthent	CL Deep Ustorthent
I10	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Aridic Haplustalf
I100	Lama	Fine,Mixed,Mesic	Aridic Haplustalf	
I115	Kimnoli	loamy,Mixed,Mesic	Lithic Haplargid	F Shallow Ustollic Camborthid
I116	Fernando	Fine-loamy,Mixed,Mesic	Ustollic Haplargid	Fine Ustollic Haplargid
I117	Penrose	Loamy,Carbonatic,Mesic	Lithic Ustic Torriorthent	Loamy Ustic Torriorthent
I118	Skyvillage	Loamy,Mixed(calcareous),Mesic	Lithic Ustic Torriorthent	Clayey Shallow Ustic Torriorthent
I119	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	Fine Ustollic Camborthid
I120	Penrose	Loamy,Carbonatic,Mesic	Lithic Ustic Torriorthent	Loamy Ustic Torriorthent
I121	Penrose	Loamy,Carbonatic,Mesic	Lithic Ustic Torriorthent	Loamy Ustic Torriorthent
I122	Penistaja	Fine-loamy,Mixed,Mesic	Ustollic Haplargid	Fine Ustollic Haplargids
I125	Pinavetes	Mixed,Mesic	Ustic Torripsamment	Ustic Torripsament/Fluvent
I126	Pinavetes	Mixed,Mesic	Ustic Torripsamment	Mixed Ustic Torripsament
I127	** hoskay	Fine,Mixed,Mesic	Glossic Natrargid	F Ustic Camborthid
I128	Pinavetes	Mixed,Mesic	Ustic Torripsamment	CL Ustic Torrifluvent
I132	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL Ustollic Camborthid
I134	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	Fine Ustollic Haplargid
I136	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL Ustollic Haplargid
I143	Florita var	Coarse-loamy,Mixed,Mesic	Ustic Torriorthent	CL Ustic Torriorthent
I144	Glenberg	Coarse-loamy,Mixed(Calcareous),Mesic	Ustic Torrifluvent	CL Ustic Torrifluvent
I145	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	
I147	Pinavetes	Mixed,Mesic	Ustic Torripsamment	S Mixed Calc Torrifluvent
I15	Telescope	Coarse-loamy,Mixed,Mesic	Aridic Ustochrept	CL Typic Ustochrept
I152	Robroost	Coarse-loamy,Mixed,Mesic	Cambic Gypsiorthid	CS/CL Typic Gypsiorthid
I154	Robroost	Coarse-loamy,Mixed,Mesic	Cambic Gypsiorthid	Typic Gypsiorthid

TRANS.	SERIES NAME	FAMILY	CLASSIFICATION	FIELD (CLASSIF.)
1155	Robroost	Coarse-loamy,Mixed,Mesic	Cambic Gypsiorthid	FS Typic Gypsiorthid
1156	Parida	Coarse-loamy,Mixed,Mesic	Ustollic Camborthid	Fine/FS Typic Gypsiorthid
1157	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL Ustollic Haplargid
1161	**Tyende	Coarse-loamy,Mixed,Mesic	Glossic Natrargid	Fine Ustollic Paleargid
1162	**Adena	Fine-loamy,Mixed,Mesic	Ustalfic Paleargid	FL Ustollic Haplargid
1163	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplsutalf	FL Ustollic Haplargid
1164	**Leland	Coarse-loamy,Mixed,Mesic	Typic Natrsutalf	Fine Ustollic Paleargid
1164	**Leland	Coarse-loamy,Mixed,Mesic	Typic Natrustalf	Fine Ustollic Paleargid
1165	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	FL Ustollic Haplargid
1167	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	CL Ustollic Haplargid
1168	**Leland	Coarse-loamy,Mixed,Mesic	Typic Natrsutalf	Fine Ustollic Paleargid
1169	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Ustollic Haplargid
1170	**Tyende	Coarse-loamy,Mixed,Mesic	Glossic Natrargid	FL Ustollic Paleargid
118	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	CL Aridic Haplustalf
1180	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL Ustollic Haplargid
1181	Chupadera	Coarse-loamy,Mixed,Mesic	Ustollic Calciorthid	CL Ustollic Camborthid
1183	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	Fine Ustollic Haplargid
1184	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	Fine Ustollic Haplargid
1185	Doakum	Fine-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Ustollic Haplargid
1187	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL/FS Ustollic Camborthid
1188	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL Ustollic Camborthid
1189	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL Ustollic Camborthid
119	Augustine	Fine-loamy,Mixed,Mesic	Aridic Haplustalf	FL Aridic Haplustalfs
1190	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	Fine Ustollic Haplargid
1191	Stromal	Loamy,Mixed,Mesic	Arenic Ustalfic Haplargid	CL Ustollic Camborthid
1192	**Tyende	Coarse-loamy,Mixed,Mesic	Glossic Natrargid	Fine Ustollic Paleargid
1193	**Tyende	Coarse-loamy,Mixed,Mesic	Glossic Natrargid	F or FL Ustollic Paleargid
1194	Muff	Fine-loamy,Mixed,Mesic	Typic Natrargid	Fine/FL Ustollic Paleargid
1195	**Tyende	Coarse-loamy,Mixed,Mesic	Glossic Natrargid	Fine Ustollic Paleargid
1196	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Ustollic Haplargid
1197	Pinitos	Fine-loamy,Mixed,Mesic	Aridic Haplustalf	FL Ustollic Haplargid
1198	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	FL Ustollic Haplargid
12	Penistaja	Fine-loamy,Mixed,Mesic	Ustollic Haplargid	F Aridic Haplustalf
1200	**Tyende	Coarse-loamy,Mixed,Mesic	Glossic Natrargid	FL Ustollic Paleargid
1202	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL/FS Ustollic Haplargid
1213	Atarque	Fine-loamy,Mixed,Mesic	Lithic Haplustalf	L Shallow Ustic Torriorthent
1214	Augustine	Fine-loamy,Mixed,Mesic	Aridic Haplustalf	FL/FS Ustollic Haplargid
1215	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL/FS Ustollic Haplargid
1216	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	FL/FS Ustollic Haplargid
122	Telescope	Coarse-loamy,Mixed,Mesic	Aridic Ustochrept	CL Aridic Haplustalf
123	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	CL Aridic Ustochrept
1230	Vessilla	Loamy,Mixed(Calcareous),Mesic	Lithic Ustorthent	L Shallow Ustic Torriorthent
1237	Augustine	Fine-loamy,Mixed,Mesic	Aridic Haplustalf	FL/FS Ustollic Haplargid Mod Deep
1238	Augustine	Fine-loamy,Mixed,Mesic	Aridic Haplustalf	FL/FS Ustollic Haplargid
124	Flugle	Fine-loamy,Mixed,Mesic	Aridic Haplustalf	FL Aridic Argiustoll
1240	Augustine	Fine-loamy,Mixed,Mesic	Aridic Haplustalf	FL/FS Ustollic Haplargid
126	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	CL Aridic Haplustalf
1266	Kitsili	Coarse-loamy,Mixed,Mesic	Ustochreptic Camborthid	FL Ustollic Haplargid
1267	Robroost	Coarse-loamy,Mixed,Mesic	Cambic Gypsiorthid	Gypsiorthid
1268	Kitsili	Coarse-loamy,Mixed,Mesic	Ustochreptic Camborthid	Gypsiorthid
1269	Kitsili	Coarse-loamy,Mixed,Mesic	Ustochreptic Camborthid	Fine Ustollic Haplargid
1270	**Chupadera	Coarse-loamy,Mixed,Mesic	Ustochreptic Calciorthid	FL Ustollic Haplargid

TRANS.	SERIES NAME	FAMILY	CLASSIFICATION	FIELD (CLASSIF)
1271	Clovis	Fine-loamy,Mixed,Mesic	Ustollic Haplargid	FL/FS Ustollic Haplargid
1272	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL/FS Ustollic Haplargid
1273	Skyvillage	Loamy,Mixed(Calcareous),Mesic	Lithic Ustic Torriorthent	Loamy Shallow Ustic Torriorthent
1274	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL/FS Ustollic Camborthid
1275	Clovis	Fine-loamy,Mixed,Mesic	Ustollic Haplargid	FL/FS Ustollic Haplargid
1276	Doakum	Fine-loamy,Mixed,Mesic	Ustalfic Haplargid	FL/FS Ustollic Camborthid
1277	Creel	Fine-loamy,Mixed,Mesic	Ustollic Calciorthid	FS Ustollic Camborthid
1278	Doakum	Fine-loamy,Mixed,Mesic	Ustalfic Haplargid	Fine Ustic Torriorthent
129	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Aridic Haplustalf
130	Glenberg	Coarse-loamy,Mixed(calcareous),Mesic	Ustic Torrifluvent	FL Typic Ustifluvents
131	Pinavetes	Mixed,Mesic	Ustic Torripsamment	Sandy Typic Ustipsamment
132	Pinavetes	Mixed,Mesic	Ustic Torripsamment	Sandy Typic Ustifluvent
133	**Swissshelm	Coarse-loamy,Mixed,Mesic	Fluventic Camborthid	FL/FS Aridic Haplustalf
134	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL Aridic Haplustalf
135	Telescope	Coarse-loamy,Mixed,Mesic	Aridic Ustochrept	F Aridic Haplustalf
138	Kitsili	Coarse-loamy,Mixed,Mesic	Ustochreptic Camborthid	CL Aridic Ustochrept
139	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	CL Aridic Haplustalf
14	Kitsili	Coarse-loamy,Mixed,Mesic	Ustochreptic Camborthid	CL Deep Ustorthent
140	Telescope	Coarse-loamy,Mixed,Mesic	Aridic Ustochrept	CL Aridic Ustochrept
141	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	Fine Aridic Haplustalf
143	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	FL Aridic Haplustalf
144	**Telescope	Sandy,Mixed,Mesic	Aridic Ustochrept	CL Aridic Ustochrept
145	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL/FS Aridic Haplustalf
146	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Aridic Haplustalf
147	Palma	Coarse-loamy,Mixed,Mesic	Ustollic Haplargid	FL/FS Aridic Haplustalfs
148	Muff	Fine-loamy,Mixed,Mesic	Typic Natrargid	FL/FS Aridic Haplustalfs
149	Motto	loamy,Mixed,Mesic	Lithic Natrargid	Lithic Haplustalf
15	Galestina	Fine,Mixed,Mesic	Aridic Paleustalf	F Deep Aridic Haplustalf
150	Uffens	Fine-loamy,Mixed,Mesic	Typic Natrargid	FL/FS Aridic Haplustalf
1501	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Aridic Haplustalf
1503	Parida	Coarse-loamy,Mixed,Mesic	Ustollic Camborthid	F Aridic Haplustalf
1504	**Swissshelm	Coarse-loamy,Mixed,Mesic	Fluventic Camborthid	CL Aridic Haplustalf
1505	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	CL Aridic Haplustalf
151	Telescope	Coarse-loamy,Mixed,Mesic	Aridic Ustochrept	FL Aridic Ustochrept
153	Teromote	Fine-loamy,Mixed,Mesic	Aridic Ustochrept	FL Aridic Haplustalf
154	Pinavetes	Mixed,Mesic	Ustic Torripsamment	Typic Ustipsamment
155	Telescope	Coarse-loamy,Mixed,Mesic	Aridic Ustochrept	FL/CL Aridic Haplustalf
156	Flugle	Fine(Fine-loamy),Mixed,Mesic	Aridic Haplustalf	F Aridic Haplustalf
158	Uffens	Fine-loamy,Mixed,Mesic	Typic Natrustalf	Fine Aridic Ustochrept
159	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	Paleustalf or Paleargid
16	Blancot	Fine-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Aridic Haplustalf
160	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	CL Aridic Haplustalf
161	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	F Aridic Haplustalf
162	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	F Aridic Haplustalf
163	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	F Aridic Haplustalf
165	Fragua	Coarse-loamy,Mixed(Calcareous),Mesic	Aridic Haplustalf	Fine Aridic Ustochrept
166	Uffens	Fine-loamy,Mixed,Mesic	Typic Natrargid	FL Aridic Haplustalf
167	Doakum	Fine-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Aridic Haplustalf
169	Teromote	Fine-loamy,Mixed,Mesic	Aridic Ustochrept	Coarse Aridic Ustochrept
17	Betonnie	Coarse-loamy,Mixed,Mesic	Ustalfic Haplargid	FL Aridic Haplustalf
176	Lama	Fine,Mixed,Mesic	Aridic Haplustalf	Fine Aridic Haplustalf
177	Vessilla	Loamy,Mixed(Calcareous),Mesic	Lithic Ustorthent	C Shallow Ustorthent

TRANS.	SERIES NAME	FAMILY	CLASSIFICATION	FIELD (CLASSIF.)
180	Hichman	Fine-loamy,Mixed(calcareous),Mesic	Typic Ustifluvent	FL Ustifluvent
181	Fragua	Coarse-loamy,Mixed,Mesic	Aridic Haplustalf	Coarse-Loamy Ustochrept
183	Veteado	Fine,Mixed,Mesic	Ustollic Paleargid	FL Aridic Haplustalf
184	Pinavetes	Mixed,Mesic	Ustic Torripsamment	CL Ustifluvent
185	Payson	Fine,Mixed,Mesic	Typic Natrustalf	Fine Vertic Haplustalf
186	Orlie	Fine-loamy,Mixed,Mesic	Aridic Haplustalf	F. Paleustalf
187	**Venadito	Very fine,Mixed,Mesic	Paleustollic Chromustert	
188	**Albers	Fine,Mixed,Mesic	Paleustollic Chromustert	
19	Scholle	Fine-loamy,Mixed,Mesic	Ustollic Haplargid	FL Aridic Haplustalf
190	**Albers	Fine,Mixed,Mesic	Paleustollic Chromustert	
191	Atrac	Fine-loamy,Mixed,Mesic	Ustollic Camborthid	
192	**Albers	Fine,Mixed,Mesic	Paleustollic Chromustert	Vertisol
193	Calendar	Fine,Mixed,Mesic	Aridic Ustochrept	
194	**Albers	Fine,Mixed,Mesic	Paleustollic Chromustert	Vertisol
195	Puerco	Fine,Mixed,Mesic	Typic Torrert	
196	Dalupe	Coarse-loamy,Mixed,Mesic	Fluventic Ustochrept	
197	**Adena	Fine-loamy,Mixed,Mesic	Ustalfic Paleargid	
199	La Brier	Fine,Mixed,Mesic	Torrertic Argiustoll	

APPENDIX C

COMPARING FIELD CLASSIFICATIONS WITH FIELD AND LABORATORY CLASSIFICATIONS OF PEDONS

TRANS#	FAMILY	CLASSIFICATION	CLASSIF. (FIELD)
I1	Coarse-loamy	Ustic Torriorthent	CL Deep Ustorthent
I10	Coarse-loamy	Ustalfic Haplargid	FL Aridic Haplustalf
I100	Fine	Aridic Haplustalf	
I115	loamy	Lithic Haplargid	F Shallow Ustollic Camborthid
I116	Fine-loamy	Ustollic Haplargid	Fine Ustollic Haplargid
I117	Loamy	Lithic Ustic Torriorthent	Loamy Ustic Torriorthent
I118	Loamy	Lithic Ustic Torriorthent	Clayey Shallow Ustic Torriorthent
I119	Coarse-loamy	Ustollic Haplargid	Fine Ustollic Camborthid
I120	Loamy	Lithic Ustic Torriorthent	Loamy Ustic Torriorthent
I121	Loamy	Lithic Ustic Torriorthent	Loamy Ustic Torriorthent
I122	Fine-loamy	Ustollic Haplargid	Fine Ustollic Haplargids
I125	Mixed,Mesic	Ustic Torripsamment	Ustic Torripsament/Fluvent
I126	Mixed,Mesic	Ustic Torripsamment	Mixed Ustic Torripsament
I127	Fine	Glossic Natrargid	F Ustic Camborthid
I128	Mixed,Mesic	Ustic Torripsamment	CL Ustic Torrifluvent
I132	Coarse-loamy	Ustollic Haplargid	FL Ustollic Camborthid
I134	Coarse-loamy	Ustollic Haplargid	Fine Ustollic Haplargid
I136	Coarse-loamy	Ustollic Haplargid	FL Ustollic Haplargid
I143	Coarse-loamy	Ustic Torriorthent	CL Ustic Torriorthent
I144	Coarse-loamy	Ustic Torrifluvent	CL Ustic Torrifluvent
I145	Coarse-loamy	Ustalfic Haplargid	
I147	Mixed	Ustic Torripsamment	S Mixed Calc Torrifluvent
I15	Coarse-loamy	Aridic Ustochrept	CL Typic Ustochrept
I152	Coarse-loamy	Cambic Gypsiorthid	CS/CL Typic Gypsiorthid
I154	Coarse-loamy	Cambic Gypsiorthid	Typic Gypsiorthid
I155	Coarse-loamy	Cambic Gypsiorthid	FS Typic Gypsiorthid
I156	Coarse-loamy	Ustollic Camborthid	Fine/FS Typic Gypsiorthid
I157	Coarse-loamy	Ustollic Haplargid	FL Ustollic Haplargid
I161	Coarse-loamy	Glossic Natrargid	Fine Ustollic Paleargid
I162	Fine-loamy	Ustalfic Paleargid	FL Ustollic Haplargid
I163	Coarse-loamy	Aridic Haplsutalf	FL Ustollic Haplargid
I164	Coarse-loamy	Typic Natrsutalf	Fine Ustollic Paleargid
I164	Coarse-loamy	Typic Natrustalf	Fine Ustollic Paleargid
I165	Coarse-loamy	Aridic Haplustalf	FL Ustollic Haplargid
I167	Coarse-loamy	Aridic Haplustalf	CL Ustollic Haplargid
I168	Coarse-loamy	Typic Natrsutalf	Fine Ustollic Paleargid
I169	Coarse-loamy	Ustalfic Haplargid	FL Ustollic Haplargid
I170	Coarse-loamy	Glossic Natrargid	FL Ustollic Paleargid
I18	Coarse-loamy	Aridic Haplustalf	CL Aridic Haplustalf
I180	Coarse-loamy	Ustollic Haplargid	FL Ustollic Haplargid
I181	Coarse-loamy	Ustollic Calciorthid	CL Ustollic Camborthid
I183	Coarse-loamy	Ustollic Haplargid	Fine Ustollic Haplargid
I184	Coarse-loamy	Ustollic Haplargid	Fine Ustollic Haplargid
I185	Fine-loamy	Ustalfic Haplargid	FL Ustollic Haplargid
I187	Coarse-loamy	Ustollic Haplargid	FL/FS Ustollic Camborthid
I188	Coarse-loamy	Ustollic Haplargid	FL Ustollic Camborthid
I189	Coarse-loamy	Ustollic Haplargid	FL Ustollic Camborthid
I19	Fine-loamy	Aridic Haplustalf	FL Aridic Haplustalfs
I190	Coarse-loamy	Ustollic Haplargid	Fine Ustollic Haplargid
I191	Loamy	Arenic Ustalfic Haplargid	CL Ustollic Camborthid
I192	Coarse	Glossic Natrargid	Fine Ustollic Paleargid
I193	Coarse-loamy	Glossic Natrargid	F or FL Ustollic Paleargid
I194	Fine-loamy	Typic Natrargid	Fine/FL Ustollic Paleargid
I195	Coarse-loamy	Glossic Natrargid	Fine Ustollic Paleargid
I196	Coarse-loamy	Ustalfic Haplargid	FL Ustollic Haplargid
I197	Fine-loamy	Aridic Haplustalf	FL Ustollic Haplargid
I198	Coarse-loamy	Aridic Haplustalf	FL Ustollic Haplargid
I2	Fine-loamy	Ustollic Haplargid	F Aridic Haplustalf
I200	Coarse-loamy	Glossic Natrargid	FL Ustollic Paleargid
I202	Coarse-loamy	Ustalfic Haplargid	FL/FS Ustollic Haplargid
I213	Fine-loamy	Lithic Haplustalf	L Shallow Ustic Torriorthent
I214	Fine-loamy	Aridic Haplustalf	FL/FS Ustollic Haplargid
I215	Coarse-loamy	Ustollic Haplargid	FL/FS Ustollic Haplargid
I216	Coarse-loamy	Aridic Haplustalf	FL/FS Ustollic Haplargid
I22	Coarse-loamy	Aridic Ustochrept	CL Aridic Haplustalf
I23	Coarse-loamy	Aridic Haplustalf	CL Aridic Ustochrept
I230	Loamy	Lithic Ustorthent	L Shallow Ustic Torriorthent
I237	Fine-loamy	Aridic Haplustalf	FL/FS Ustollic Haplargid Mod Deep
I238	Fine-loamy	Aridic Haplustalf	FL/FS Ustollic Haplargid
I24	Fine-loamy	Aridic Haplustalf	FL Aridic Argiustoll
I240	Fine-loamy	Aridic Haplustalf	FL/FS Ustollic Haplargid
I26	Coarse-loamy	Aridic Haplustalf	CL Aridic Haplustalf
I266	Coarse-loamy	Ustochreptic Camborthid	FL Ustollic Haplargid
I267	Coarse-loamy	Cambic Gypsiorthid	Gypsiorthid
I268	Coarse-loamy	Ustochreptic Camborthid	Gypsiorthid
I269	Coarse-loamy	Ustochreptic Camborthid	Fine Ustollic Haplargid
I270	Coarse-loamy	Ustochreptic Calciorthid	FL Ustollic Haplargid
I271	Fine-loamy	Ustollic Haplargid	FL/FS Ustollic Haplargid
I272	Coarse-loamy	Ustollic Haplargid	FL/FS Ustollic Haplargid

TRANS.	FAMILY	CLASSIFICATION	CLASSIF. (FIELD)
I273	Loamy	Lithic Ustic Torriorthent	Loamy Shallow Ustic Torriorthent
I274	Coarse-loamy	Ustollic Haplargid	FL/FS Ustollic Camborthid
I275	Fine-loamy	Ustollic Haplargid	FL/FS Ustollic Haplargid
I276	Fine-loamy	Ustalfic Haplargid	FL/FS Ustollic Camborthid
I277	Fine-loamy	Ustollic Calciorthid	FS Ustollic Camborthid
I278	Fine-loamy	Ustalfic Haplargid	Fine Ustic Torriorthent
I29	Coarse-loamy	Ustalfic Haplargid	FL Aridic Haplustalf
I30	Coarse-loamy	Ustic Torrifluvent	FL Typic Ustifluvents
I31	Mixed,Mesic	Ustic Torripsamment	Sandy Typic Ustipsamment
I32	Mixed,Mesic	Ustic Torripsamment	Sandy Typic Ustifluvent
I33	Coarse-loamy	Fluventic Camborthid	FL/FS Aridic Haplustalf
I34	Coarse-loamy	Ustollic Haplargid	FL Aridic Haplustalf
I35	Coarse-loamy	Aridic Ustochrept	F Aridic Haplustalf
I38	Coarse-loamy	Ustochreptic Camborthid	CL Aridic Ustochrept
I39	Coarse-loamy	Aridic Haplustalf	CL Aridic Haplustalf
I4	Coarse-loamy	Ustochreptic Camborthid	CL Deep Ustorthent
I40	Coarse-loamy	Aridic Ustochrept	CL Aridic Ustochrept
I41	Coarse-loamy	Aridic Haplustalf	Fine Aridic Haplustalf
I43	Coarse-loamy	Aridic Haplustalf	FL Aridic Haplustalf
I44	Sandy	Aridic Ustochrept	CL Aridic Ustochrept
I45	Coarse-loamy	Ustollic Haplargid	FL/FS Aridic Haplustalf
I46	Coarse-loamy	Ustalfic Haplargid	FL Aridic Haplustalf
I47	Coarse-loamy	Ustollic Haplargid	FL/FS Aridic Haplustalfs
I48	Fine-loamy	Typic Natrargid	FL/FS Aridic Haplustalfs
I49	loamy	Lithic Natrargid	Lithic Haplustalf
I5	Fine	Aridic Paleustalf	F Deep Aridic Haplustalf
I50	Fine-loamy	Typic Natrargid	FL/FS Aridic Haplustalf
I501	Coarse-loamy	Ustalfic Haplargid	FL Aridic Haplustalf
I503	Coarse-loamy	Ustollic Camborthid	F Aridic Haplustalf
I504	Coarse-loamy	Fluventic Camborthid	CL Aridic Haplustalf
I505	Coarse-loamy	Aridic Haplustalf	CL Aridic Haplustalf
I51	Coarse-loamy	Aridic Ustochrept	FL Aridic Ustochrept
I53	Fine-loamy	Aridic Ustochrept	FL Aridic Haplustalf
I54	Mixed,Mesic	Ustic Torripsamment	Typic Ustipsamment
I55	Coarse-loamy	Aridic Ustochrept	FL/CL Aridic Haplustalf
I56	Fine(Fine-loamy	Aridic Haplustalf	F Aridic Haplustalf
I58	Fine-loamy	Typic Natrustalf	Fine Aridic Ustochrept
I59	Coarse-loamy	Ustalfic Haplargid	Paleustalf or Paleargid
I6	Fine-loamy	Ustalfic Haplargid	FL Aridic Haplustalf
I60	Coarse-loamy	Aridic Haplustalf	CL Aridic Haplustalf
I61	Coarse-loamy	Aridic Haplustalf	F Aridic Haplustalf
I62	Coarse-loamy	Aridic Haplustalf	F Aridic Haplustalf
I63	Coarse-loamy	Aridic Haplustalf	F Aridic Haplustalf
I65	Coarse-loamy	Aridic Haplustalf	Fine Aridic Ustochrept
I66	Fine-loamy	Typic Natrargid	FL Aridic Haplustalf
I67	Fine-loamy	Ustalfic Haplargid	FL Aridic Haplustalf
I69	Fine-loamy	Aridic Ustochrept	Coarse Aridic Ustochrept
I7	Coarse-loamy	Ustalfic Haplargid	FL Aridic Haplustalf
I76	Fine	Aridic Haplustalf	Fine Aridic Haplustalf
I77	Loamy	Lithic Ustorthent	C Shallow Ustorthent
I80	Fine-loamy	Typic Ustifluvent	FL Ustifluvent
I81	Coarse-loamy	Aridic Haplustalf	Coarse-Loamy Ustochrept
I83	Fine	Ustollic Paleargid	FL Aridic Haplustalf
I84	Mixed	Ustic Torripsamment	CL Ustifluvent
I85	Fine	Typic Natrustalf	Fine Vertic Haplustalf
I86	Fine-loamy	Aridic Haplustalf	F. Paleustalf
I87	Very fine	Paleustollic Chromustert	
I88	Fine	Paleustollic Chromustert	
I9	Fine-loamy	Ustollic Haplargid	FL Aridic Haplustalf
I90	Fine	Paleustollic Chromustert	
I91	Fine-loamy	Ustollic Camborthid	
I92	Fine	Paleustollic Chromustert	Vertisol
I93	Fine	Aridic Ustochrept	
I94	Fine	Paleustollic Chromustert	Vertisol
I95	Fine	Typic Torrert	
I96	Coarse-loamy	Fluventic Ustochrept	
I97	Fine-loamy	Ustalfic Paleargid	
I99	Fine	Torrertic Argiustoll	
E101T3	Coarse-loamy	Typic Argiboroll	F Typic/Mollic Eutroboralf
E102	Fine-loamy	Typic Argiboroll	F Typic Argiboroll
E103	Loamy	Lithic Ustorthent	L Typic Ustorthent
E104	Loamy-Skeletal	Lithic Ustorthent	L Lithic Ustorthent
E105	Loamy-skeletal	Ustollic Calciorthid	L SK Ustollic Camb/Calciorthid
E106		Lithic Ustipsamment	Lithic Torripsamment
E107	Fine-loamy	Ustic Torrifluvent	FL Ustic Torrifluvent
E108T2	Loamy	Aridic Haplustalf	L SK Aridic Haplustalf

TRANS.	FAMILY	CLASSIFICATION	CLASSIF. (FIELD)
E12T2	Fine	Paleustollic Chromustert	F Mont. Vertic Ustifluvent
E16T2	Coarse-Loamy	Aridic Ustochrept	F Aridic Haplustalf
E19T3	Coarse-Loamy	Ustollic Haplargid	FL Aridic Haplustalf
E1T3	Sandy	Ustic Torrifluvent	FL Typic Ustifluvent
E20T2	Loamy-Skeletal	Lithic Ustorthent	Loamy Mixed Shallow Typic Ustorthent
E22T2	Fine-Loamy	Ustollic Camborthid	FL Aridic Haplustalf
E23T2	Fine-Loamy	Ustollic Haplargid	FL Aridic Haplustalf
E24T2	Fine	Torrertic Argustoll	F Aridic Haplustalf
E27	Loamy-Skeletal	Ustic Torrifluvent	Clayey (calc) Typic Ustorthent
E28	Fine-Loamy	Mollic Ustifluvent	
E29	Fine-Loamy	Aridic Ustochrept	F Aridic Haplustalf
E2T2	Coarse-loamy	Ustochreptic Camborthid	FL Typic Haplustalf
E30	Fine-Loamy	Aridic Haplustalf	FL Aridic Haplustalf
E31	Coarse-Loamy	Ustalfic Haplargid	FL Ustollic Camborthid
E32	Coarse-Loamy	Ustic Torriorthent	FL Ustic Torriorthent
E33	Fine-Loamy	Ustic Torrifluvent	FL Ustic Torriorthent
E34	Fine-Loamy	Ustic Torrifluvent	FL Ustic Torriorthent
E36		Lithic Ustipsamment	
E37	Loamy	Lithic Haplargid	F Aridic Eutroboralf
E38	Loamy	Lithic Haplargid	
E39	Fine-Loamy	Cambic Gypsiorthid	Typic Gypsiorthid
E3T5	Coarse-loamy	Ustalfic Haplargid	FL Aridic Haplustalf
E40		Lithic Ustipsamment	Mixed Ustic Torripsamment
E41	Fine-Loamy	Ustochreptic Calciorthid	FS Ustollic Camborthid
E42	Mixed,Mesic	Ustic Torripsamment	Mixed Ustic Torripsamment
E43	Fine-Loamy	Ustollic Paleargid	FS Ustollic Camborthid
E45T1	Coarse-loamy	Ustochreptic Camborthid	Fine Ustollic Camborthid
E46T2	Coarse-loamy	Ustollic Haplargid	Fine Ustollic Camborthid
E47T2	Fine-loamy	Ustollic Camborthid	Fine Ustertic Camborthid
E48T1	Coarse-loamy	Ustochreptic Camborthid	FL Ustollic Haplargid
E4T3	Fine-loamy	Aridic Hapustalf	Fine Aridic Paleustalf
E50T1	Coarse-loamy	Ustollic Calciorthid	FL Ustollic Haplargid
E51	Coarse-loamy	Aridic Haplustalf	F Aridic Haplustalf
E52T2	loamy,Mixed	Lithic Ustollic Haplargid	FL Ustollic Camborthids
E53T2	Coarse-loamy	Ustollic Camborthid	FL/FS Ustollic Camborthid
E54	Coarse-loamy	Ustollic Camborthid	FL Ustollic Camborthid
E55	Coarse-loamy	Ustollic Calciorthid	FL Ustollic Camborthid
E56T2	Loamy	Lithic Ustic Torriorthent	
E57	loamy	Lithic Haplargid	Fine Ustollic Haplargid
E58T3	Coarse-loamy	Ustalfic Haplargid	FL Ustollic Haplargid
E59	Fine-Loamy	Ustic Torrifluvent	CL Ustic Torriorthent
E5T1	Loamy	Arenic Ustalfic Haplargid	FL Aridic Haplustalf
E60T2	loamy	Lithic Ustollic Haplargid	Loamy Shallow Ustollic Camborthid
E61T3	Loamy	Lithic Ustic Torriorthent	Loamy Shallow Ustic Torriorthent
E62	Coarse-Loamy	Ustochreptic Calciorthid	FL Ustollic Haplargid
E63	Fine-Loamy	Ustalfic Haplargid	FL or FS Ustollic Camborthid
E64	Fine-Loamy	Ustalfic Haplargid	FL Ustollic Camborthid
E65	Coarse-Loamy	Ustollic Camborthid	Fine Ustollic Camborthid
E67	Fine-loamy	Ustic Torrifluvent	Fine Ustic Torrifluvent
E69	Loamy-skeletal	Ustollic Haplargid	Fine/FS Ustollic Haplargid
E70T1	Coarse-loamy	Ustollic Camborthid	FS/FL Ustollic Camborthid
E73T1	Fine-loamy	Ustalfic Haplargid	FS/FL Ustollic Haplargids
E75T1	Coarse-loamy	Ustalfic Haplargid	FL Ustollic Haplargid
E76T2	Coarse-loamy	Typic Ustifluvent	FL Typic Ustifluvent
E77T3	Coarse-loamy	Ustollic Camborthid	FL Aridic Haplustalf
E78T2	Fine	Paleustollic Chromustert	F. Mont. Vertic Ustifluvent
E7T2	Coarse-loamy	Aridic Haplustalf	CL/FL Aridic Haplustalf
E80	Mixed,Mesic	Lithic Ustipsamment	
E81	Fine	Ustollic Paleargid	Fine Mixed Mesic Aridic Ustochrept
E84	Coarse-loamy	Ustollic Haplargid	F Ustollic Haplargid
E85	Loamy-Skeletal	Aridic Argiustoll	FL Aridic Ustochrept
E87T2	Coarse-loamy	Typic Ustorthent	CL Ustifluvent
E88T1	Loamy	Lithic Ustic Torriorthent	L. Typic Gypsiorthid
E90	Mixed	Lithic Ustipsamment	
E92T3	Sandy	Lithic Camborthid	FL Typic Ustorthent
E93T1	Coarse-loamy	Aridic Haplustalf	F Aridic Haplustalf
E94T5	Coarse-loamy	Ustollic Calciorhtid	F Aridic Haplustalf
E95T2	Sandy	Ustic Torrifluvent	Sandy Ustic Torrifluvent
E96T2	Coarse-loamy	Aridic Ustochrept	F.Typic Gypsiorthid
E9T3	Loamy	Arenic Ustalfic Haplargid	FL Aridic Haplustalf

APPENDIX D

PEDONS, THEIR FIELD AND LABORATORY DATA USED FOR CLASSIFICATION

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM	CEC
I1	0793	A	ARIDIC	2.5YR5/4	2.5YR4/4	10	0 -6	cs	Sandy Loam	>150	FAN SIDESLOPE	10
I1	0794	AC	ARIDIC	10YR6/4	10YR5/4	9	6 -38	gs	Sandy Loam	>150	FAN SIDESLOPE	10
I1	0795	C1	ARIDIC	10YR6/4	10YR5/4	10	38 -90	gw	Sandy Loam	>150	FAN SIDESLOPE	11
I1	0796	C2	ARIDIC	10YR6/4	10YR5/4	9	90 -150		Sandy Loam	>150	FAN SIDESLOPE	12
I10	0545	A	ARIDIC	2.5YR6/4	2.5YR4/4	2	0 -7	cs	Loamy Sand	>150	RIDGE SIDESLOPE	8
I10	0546	Bt	ARIDIC	2.5YR5/4	2.5YR4/4	11	7 -29	cw	Sandy Loam	>150	RIDGE SIDESLOPE	9
I10	0547	Btk	ARIDIC	2.5YR5/4	2.5YR4/4	13	29 -67	gs	Sandy Loam	>150	RIDGE SIDESLOPE	11
I10	0548	Bk1	ARIDIC	2.5YR5/4	2.5YR4/4	14	67 -98	cw	Sandy Loam	>150	RIDGE SIDESLOPE	10
I10	0549	Bk2	ARIDIC	2.5YR6/4	2.5YR5/4	15	98 -150		Sandy Loam	>150	RIDGE SIDESLOPE	12
I100	0100	A1	UST	10YR5/3	10YR4/3	12	0 -5	as	Sandy Loam		VALLEY BOTTOM	9
I100	0101	Bt1	UST	7.5YR5/4	7.5YR4/4	18	5 -20	cs	Sandy Loam		VALLEY BOTTOM	14
I100	0102	Bt2	UST	10YR6/3	10YR5/4	16	20 -43	aw	Sandy Loam		VALLEY BOTTOM	12
I100	0103	2Btkb	UST	7.5YR5/4	7.5YR4/4	46	43 -61	gw	Clay		VALLEY BOTTOM	31
I100	0104	2Btkyb	UST	7.5YR5/4	7.5YR4/4	45	61 -97	gw	Clay		VALLEY BOTTOM	28
I100	0105	2Bkyb	UST	10YR6/3	10YR4/4	27	97 -165		Sandy Clay Loam		VALLEY BOTTOM	21
I115	0588	A	ARID	2.5YR4/4	2.5YR6/4	11	0 -6	cs	Silt Loam	>42	RIDGE SIDESLOPE	12
I115	0589	Bw\Bt1	ARID	2.5YR4/4	2.5YR6/4	22	6 -24	cs	Loam	>42	RIDGE SIDESLOPE	18
I115	0590	2Bk\Btk	ARID	2.5YR4/2	2.5YR6/2	20	24 -42	cw	Loam	>42	RIDGE SIDESLOPE	16
I116	0582	A	ARID	2.5YR4/4	5YR5/3	12	0 -4	cs	Silt Loam	>150	RIDGE SIDESLOPE	15
I116	0583	BA	ARID	2.5YR4/4	5YR5/3	16	4 -13	cs	Loam	>150	RIDGE SIDESLOPE	15
I116	0584	Bt	ARID	2.5YR4/4	5YR5/3	12	13 -35	as	Silt Loam	>150	RIDGE SIDESLOPE	9
I116	0585	Btk1	ARID	2.5YR4/4	5YR5/3	20	35 -77	gs	Loam	>150	RIDGE SIDESLOPE	25
I116	0586	Btk2	ARID	2.5YR4/4	5YR5/3	28	77 -122	cw	Clay Loam	>150	RIDGE SIDESLOPE	22
I116	0587	Bk	ARID	2.5YR4/4	5YR5/3	20	122-144	cw	Loam	>150	RIDGE SIDESLOPE	23
I117	0579	A	ARID	2.5YR4/4	5YR5/3	5	0 -5	cs	Sandy Loam	>31	RIDGE SIDESLOPE	17
I117	0580	C	ARID	2.5YR5/4	5YR6/4	5	5 -31	gw	Sandy Loam	>31	RIDGE SIDESLOPE	19
I118	1212	A	ARID	2.5YR4/4	2.5YR5/4	26	0 -8	cs	Loam	>28	RIDGE SIDESLOPE	19
I118	1213	C	ARID	2.5YR4/2	2.5YR5/4	33	8 -28	gs	Clay Loam	>28	RIDGE SIDESLOPE	26
I119	0569	A	ARID	2.5YR4/4	2.5YR6/4	5	0 -5	cs	Sandy Loam	>94	RIDGE SIDESLOPE	12
I119	0570	Bky1\B	ARID	2.5YR4/4	2.5YR6/4	16	5 -35	aw	Sandy Loam	>94	RIDGE SIDESLOPE	23
I119	0571	2Bky2	ARID	2.5YR5/4	2.5YR7/2	6	35 -68	cw	Sandy Loam	>94	RIDGE SIDESLOPE	16
I119	0572	2Bky3	ARID	2.5YR5/4	2.5YR6/2	5	68 -94	cw	Sandy Loam	>94	RIDGE SIDESLOPE	20
I119	0573	A'	ARID	2.5YR4/4	2.5YR6/4	12	0 -9	cs	Sandy Loam	>94	RIDGE SIDESLOPE	11
I120	0574	A	ARID	2.5YR4/4	2.5YR6/4	6	0 -5	cs	Sandy Loam	>41	RIDGE SIDESLOPE	14
I120	0575	C	ARID	2.5YR5/4	2.5YR6/4	8	5 -41	gs	Sandy Loam	>41	RIDGE SIDESLOPE	18
I120	0576	Cr	ARID			7	41 -60		Sandy Loam	>41	RIDGE SIDESLOPE	19
I121	0577	A	ARID	2.5YR4/4	2.5YR6/4	8	0 -5	cs	Sandy Loam	>29	RIDGE SIDESLOPE	15
I121	0578	C	ARID	2.5YR5/4	2.5YR6/4	3	5 -29	gw	Loamy Sand	>29	RIDGE SIDESLOPE	17
I122	0563	A	ARID	2.5YR4/4	2.5YR6/4	18	0 -5	cs	Loam	>150	RIDGE SIDESLOPE	20
I122	0564	Bt	ARID	2.5YR4/4	2.5YR6/4	11	5 -17	aw	Sandy Loam	>150	RIDGE SIDESLOPE	20
I122	0565	Btky1	ARID	2.5YR5/4	2.5YR6/4	29	17 -34	cw	Sandy Clay Loam	>150	RIDGE SIDESLOPE	21
I122	0566	Btky2	ARID	2.5YR5/4	2.5YR6/4	6	34 -73	gw	Sandy Loam	>150	RIDGE SIDESLOPE	25
I122	0567	Bky1	ARID	2.5YR5/4	2.5YR6/4	20	73 -107	cw	Sandy Loam	>150	RIDGE SIDESLOPE	23
I122	0568	Bky2	ARID	2.5YR5/4	2.5YR6/4	12	107-150		Sandy Loam	>150	RIDGE SIDESLOPE	24
I125	0984	A	ARID	10YR5/3	10YR6/4	3	0 -4	cs	Sand	>150	VALLEY BOTTOM	3
I125	0985	C1	ARID	10YR5/4	10YR6/4	4	4 -28	cs	Sand	>150	VALLEY BOTTOM	3
I125	0986	C2	ARID	10YR5/4	10YR7/4	3	28 -40	as	Sand	>150	VALLEY BOTTOM	1
I125	0987	C3	ARID	10YR5/4	10YR7/4	4	40 -65	cw	Sand	>150	VALLEY BOTTOM	3
I125	0988	C4	ARID	10YR6/4	10YR7/4	3	65 -91	aw	Sand	>150	VALLEY BOTTOM	1
I125	0989	C5	ARID	7.5YR4/4	7.5YR6/4	10	91 -153	aw	Sandy Loam	>150	VALLEY BOTTOM	7
I126	1288	A	ARID	10YR4/4	10YR4/4	5	0 -5	cs	Sand	>150	DRAINAGE BOTTOM	4
I126	1289	C1	ARID	7.5YR5/4	7.5YR6/4	5	5 -17	as	Sand	>150	DRAINAGE BOTTOM	3
I126	1290	C2	ARID	7.5YR5/4	7.5YR7/4	5	17 -75	as	Loamy Sand	>150	DRAINAGE BOTTOM	4
I126	1291	C3	ARID	10YR6/4	10YR7/4	4	75 -105	as	Sand	>150	DRAINAGE BOTTOM	3
I126	1292	C4	ARID	10YR5/4	10YR7/4	5	105-144	as	Sand	>150	DRAINAGE BOTTOM	4
I126	1293	C5	ARID	7.5YR5/4	7.5YR7/2	30	144-150		Clay Loam	>150	DRAINAGE BOTTOM	26
I127	0977	A	ARID	10YR4/3	10YR5/3	30	0 -5	cs	Sandy Clay Loam	>150	VALLEY BOTTOM	23
I127	0978	B2	ARID	10YR4/3	10YR5/3	42	5 -25	cs	Clay	>150	VALLEY BOTTOM	28
I127	0979	Bky1	ARID	10YR4/2	10YR5/3	53	25 -60	gs	Clay	>150	VALLEY BOTTOM	38
I127	0980	Bky2	ARID	10YR4/4	10YR5/3	52	60 -100	gs	Clay	>150	VALLEY BOTTOM	34
I127	0981	2Bk1	ARID	7.5YR4/4	10YR5/3	30	100-125	cs	Clay Loam	>150	VALLEY BOTTOM	22
I127	0982	2Bk2	ARID	7.5YR4/4	10YR5/4	20	125-160		Sandy Loam	>150	VALLEY BOTTOM	15
I128	0969	A	ARID	7.5YR5/4	7.5YR6/4	4	0 -5	cs	Sand	>150	FAN SIDESLOPE	4
I128	0970	C1	ARID	7.5YR5/4	7.5YR7/4	3	5 -35	aw	Sand	>150	FAN SIDESLOPE	3
I128	0971	C2	ARID	7.5YR4/4	7.5YR6/4	8	35 -73	aw	Loamy Sand	>150	FAN SIDESLOPE	6
I128	0972	2Btb	ARID	7.5YR3/4	7.5YR5/4	12	73 -88	cs	Sandy Loam	>150	FAN SIDESLOPE	9
I128	0973	2BCb	ARID	5YR3/4	7.5YR5/4	12	88 -115	as	Sandy Loam	>150	FAN SIDESLOPE	9
I128	0974	2Btb'	ARID	5YR4/3	5YR5/3	12	115-130	cs	Sandy Loam	>150	FAN SIDESLOPE	10
I128	0975	2C	ARID	5YR4/4	7.5YR6/4	12	130-155		Sandy Loam	>150	FAN SIDESLOPE	8
I132	0491	A	ARID	2.5YR4/4	2.5YR6/4	1	0 -6	cs	Sandy Loam	>55	RIDGE SHOULDER	13
I132	0492	Bw\Bt	ARID	2.5YR4/4	2.5YR6/4	8	6 -23	cw	Sandy Loam	>55	RIDGE SHOULDER	24
I132	0493	Bk\Btk	ARID	2.5YR4/4	2.5YR6/4	16	23 -55	gw	Loam	>55	RIDGE SHOULDER	8
I134	0494	A	ARID	2.5YR4/4	2.5YR6/4	2	0 -6	cs	Sandy Loam	>91	RIDGE SHOULDER	8
I134	0495	Bt	ARID	2.5YR4/4	2.5YR6/4	11	6 -31	cw	Sandy Loam	>91	RIDGE SHOULDER	14
I134	0496	Btk1	ARID	2.5YR4/4	2.5YR6/4	16	31 -70	gw	Loam	>91	RIDGE SHOULDER	16
I134	0497	Btk2	ARID	2.5YR4/4	2.5YR6/4	16	70 -91	cw	Loam	>91	RIDGE SHOULDER	12
I136	0503	A	ARID	2.5YR4/4	2.5YR6/4	2	0 -5	cs	Sandy Loam	>104	RIDGE SIDESLOPE	7
I136	0504	Bt	ARID	2.5YR4/4	2.5YR6/4	5	5 -35	cw	Sandy Loam	>104	RIDGE SIDESLOPE	8
I136	0505	Btk	ARID	2.5YR5/6	2.5YR6/6	8	35 -66	aw	Sandy Loam	>104	RIDGE SIDESLOPE	7
I136	0506	Bk	ARID	2.5YR5/6	2.5YR6/6	8	66 -104	aw	Sandy Loam	>104	RIDGE SIDESLOPE	5
I143	0738	A	ARID	10YR4/3	10YR5/3	14	0 -6	gs	Sandy Loam	>150	DRAINAGE BASIN SIDE	19
I143	0739	AC	ARID	10YR4/4	10YR5/4	13	6 -20	gw	Sandy Loam	>150	DRAINAGE BASIN SIDE	8
I143	0740	C	ARID	10YR4/4	10YR5/4	10	20 -51	cw	Loamy Sand	>150	DRAINAGE BASIN SIDE	5
I143	0741	Bkb	ARID	10YR5/4	10YR5/3	12	51 -75	gw	Sandy Loam	>150	DRAINAGE BASIN SIDE	9
I143	0742	Bkb	ARID	10YR4/4	10YR6/4	10	75 -117	cw	Loamy Sand	>150	DRAINAGE BASIN SIDE	6
I143	0743	Bkb	ARID	10YR4/4	10YR5/4	10	117-152		Loamy Sand	>150	DRAINAGE BASIN SIDE	6
I144	0731	A	ARID	10YR4/3	10YR5/3	17	0 -7	gs	Loam	>150	DRAINAGE AREA	29
I144	0732	C1	ARID	10YR5/4	10YR6/4	7	7 -58	as	Loamy Sand	>150	DRAINAGE AREA	7
I144	0733	C2	ARID	10YR4/3	10YR5/3	12	58 -82	cs	Sandy Loam	>150	DRAINAGE AREA	36
I144	0734	2Btkyb	ARID	10YR4/3	10YR5/2	24	82 -99	gs	Loam	>150	DRAINAGE AREA	45
I144	0735	2Bkyb1	ARID	2.5YR4/2	10YR5/3	26	99 -128	gs	Loam	>150	DRAINAGE AREA	32
I144	0736	2Bkyb2	ARID	10YR3/3	10YR5/2	10	128-150		Sandy Loam	>150	DRAINAGE AREA	34
I145	1031	A	ARID	10YR4/3	10YR5/4	6	0 -6	cs	Loamy Sand	>150	VALLEY BOTTOM	9
I145	1032	BA	ARID	7.5YR3/4	7.5YR5/4	8	6 -17	cs	Sandy Loam	>150	VALLEY BOTTOM	11
I145	1033	Bt	ARID	7.5YR4/4	7.5YR6/3	8	17 -41	gs	Sandy Loam	>150	VALLEY BOTTOM	10
I145	1034	Btk	ARID	7.5YR4/4	10YR6/3	12	41 -63	gs	Sandy Loam	>150	VALLEY BOTTOM	12
I145	1035	Bk	ARID	7.5YR4/4	10YR6/3	10	63 -95	as	Sandy Loam	>150	VALLEY BOTTOM	10
I145	1036	Bky	ARID	7.5YR5/4	10YR6/4	3	95 -150		Sandy Loam	>150	VALLEY BOTTOM	11
I147	0745	A	ARID	10YR4/3	10YR5/4	7	0 -5	cs	Loamy Sand	>150	DRAINAGE BASIN	4
I147	0746	AC	ARID	10YR5/4	10YR6/4	7	5 -15	cs	Loamy Sand	>150	DRAINAGE BASIN	6
I147	0747	C1	ARID	10YR5/4	10YR6/4	4	15 -36	cs	Sand	>150	DRAINAGE BASIN	3
I147	0748	C2	ARID	10YR5/4	10YR6/4	4	36 -72		Sand	>150	DRAINAGE BASIN	2
I147	0749	C2	ARID	10YR5/4	10YR6/4	3	72 -120	cw	Sand	>150	DRAINAGE BASIN	2

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	PH
I1	69	21	0	109	so	vfr	---	e	1mgr	.9	3.8	<.1	36	7.4900
I1	75	16	0	108	sh	vfr	---	e	1msbk	.3	4.2	<.1	36	7.7400
I1	71	19	0	109	sh	fr	---	es	m	.1	5.0	<.1	36	7.6800
I1	70	21	0	115	sh	fr	---	es	m	.1	5.2	<.1	36	7.5100
I10	73	25	0	102	sh	vfr	---	eo	1cpl	.9	4.4	<.1	18	7.6000
I10	65	24	0	126	h	vfr	2npf	esd	2m&csbk	1.0	7.6	<.1	18	7.7800
I10	63	24	0	108	vh	fr	3npf	es2sf	1vcpr2mc	.6	7.2	<.1	18	7.9000
I10	62	24	2	89	h	vfr	---	es3sf	1csbk	.5	7.6	<.1	18	7.8600
I10	61	24	5	91	h	vfr	---	es3sf	m	.6	7.4	<.1	18	7.8700
I100	63	25	0	80	so	vfr	---	e	m	1.7	<.1	<.1	13	5.9000
I100	59	24	0	100	sh	fr	3npf/po	eo	1msbk	.9	<.1	<.1	13	6.9200
I100	69	15	4	114	h	fr	2npf/po	eo	m	.4	1.1	<.1	13	7.5600
I100	25	30	15	97	eh	efi	4mtpf	es3st,f	3vco,cop	.6	2.2	<.1	13	7.9800
I100	28	28	21	113	eh	efi	3tpf	2emstfes	m	.7	1.5	<.1	13	7.7900
I100	52	22	20	112	vh	vfi	---	2emstfes	m	.3	2.3	<.1	13	7.8500
I115	34	55	0	101	sh	vfr	---	esd	1cpl2fgr	.8	17.1	<.1	23	7.5700
I115	34	44	0	82	h	fr	---	esd	2msbk	1.2	18.0	<.1	23	7.5700
I115	36	44	0	95	vh	fr	---	es3sf	3msbk	.9	18.6	<.1	23	7.5200
I116	35	53	0	114	sh	fr	---	esd	2fgr	1.4	16.0	<.1	40	7.0600
I116	36	48	0	119	h	fr	---	esd	2fsbk	1.2	18.6	<.1	40	7.2500
I116	36	52	0	163	h	fr	2npf	esd	2msbk	1.0	17.5	<.1	40	7.5200
I116	34	46	0	71	vh	fi	3mkpfpo	esd3sf	3m&csbk	.9	18.7	<.1	40	7.5100
I116	33	39	3	79	vh	fi	3mkpfpo	esd3sf	3m&csbk	.8	22.8	<.1	40	7.5400
I116	33	47	4	75	vh	fr	---	esd1sf	1msbk	1.1	20.9	<.1	40	7.5800
I117	56	39	0	617	sh	vfr	---	esd	1cpl2fgr	.8	13.7	7.2	23	7.1200
I117	66	29	0	597	h	fr	---	esd	m	.9	11.0	15.0	23	7.3000
I118	35	39	0	86	so	vfr	---	esd	3fgr	1.3	24.2	<.1	42	7.3900
I118	32	35	0	111	h	fi	---	evd1sf	m	1.4	20.0	.2	42	7.2200
I119	68	27	0	115	so	vfr	---	esd	2fgr	.8	30.7	<.1	26	7.5300
I119	60	24	0	85	sh	fr	---	es2sf	2f&msbk	1.0	29.0	<.1	26	7.3500
I119	68	26	4	541	sh	fr	---	ev3sfss	2msbk	.6	30.0	<.1	26	7.3100
I119	68	27	16	490	sh	fr	---	ev3sfss	m	.6	31.7	.9	26	7.4400
I119	57	31	29	143	so	vfr	---	esd	2fgr	1.8	31.3	<.1	26	7.4800
I120	56	38	0	251	so	vfr	---	esd	2fgr	.9	22.0	.6	37	7.1300
I120	73	19	2	543	sh	vfr	---	esf	1msbk	.9	24.3	15.9	37	7.2900
I120	72	21	7	482						.6	33.3	3.4	37	7.4600
I121	74	18	0	298	so	vfr	---	esd	1fgr	.4	5.9	1.2	37	7.2600
I121	73	24	0	614	sh	fr	---	es	1msbk	.9	6.4	16.0	37	7.2600
I122	40	32	0	115	sh	fr	---	esd	2fgr	1.8	<.1	<.1	41	6.8100
I122	58	30	6	213	h	fi	3mkpfpo	esd	2msbk	1.0	6.1	1.6	41	7.4300
I122	46	25	0	110	vh	fi	3mkpfpo	esd3ss&s	3mcsbk	1.4	5.6	<.1	41	7.3500
I122	54	39	12	279	eh	vfi	3mkpfpo	esd3ss&s	3vcpr	.9	5.8	3.7	41	7.2700
I122	57	23	12	244	vh	fi	---	esd3ss&s	2msbk	.5	9.8	2.1	41	7.5800
I122	56	32	12	272	vh	fi	---	esd3ss&s	1msbk	.5	8.2	3.0	41	7.5300
I125	94	4	2	150	so	vfr	---	ed	1npl	.9	1.9	<.1	29	7.5300
I125	87	9	0	175	so	vfr	---	ed	m	.3	2.0	<.1	29	7.9100
I125	95	2	1	402	sh	vfr	---	ed	m	.1	1.7	<.1	29	8.0800
I125	87	10	0	182	sh	vfr	---	ed	m	.3	3.2	<.1	29	8.0400
I125	96	2	3	392	sh	vfr	---	ed	m	<.0	1.6	<.1	29	8.2600
I125	75	15	11	132	h	fr	---	ed	m	.4	3.6	<.1	29	7.9200
I126	89	7	1	149	so	vfr	---	ed	1fgr	.5	2.0	<.1	29	7.5900
I126	93	3	0	173	so	vfr	---	ed	m	.5	2.5	<.1	29	7.6800
I126	87	8	4	175	sh	vfr	---	esd	m	.2	3.0	<.1	29	7.8700
I126	93	4	11	165	sh	vfr	---	ed	m	.3	2.3	<.1	29	8.2100
I126	93	3	22	141	sh	vfr	---	ed	m	.1	1.9	<.1	29	8.3900
I126	39	31	40	109	eh	vfi	3npf	esd1sf	m	.7	6.8	<.1	29	7.9800
I127	45	25	10	94	sh	fi	---	esd	2mpr2fgr	.5	5.8	<.1	27	7.9700
I127	34	24	32	103	vh	vfi	---	esd	2mcabk	.6	5.9	<.1	27	7.8100
I127	20	27	34	117	vh	vfi	---	es3fiss	2fmsbk	.7	4.9	<.1	27	7.6800
I127	24	24	35	109	vh	vfi	---	es2fi	m	.7	5.3	<.1	27	7.6400
I127	39	31	36	121	vh	fi	---	es3fi	m	.3	7.5	<.1	27	7.6900
I127	58	2	33	187	h	fr	---	es2fi	m	.3	5.5	<.1	27	7.7000
I128	90	6	0	121	so	vfr	---	ed	1cpl	.2	2.9	<.1	29	7.4200
I128	92	5	0	171	so	vfr	---	ed	m	.2	2.8	<.1	29	7.8700
I128	82	10	5	116	sh	vfr	---	ed	m	.1	5.5	<.1	29	8.2500
I128	77	11	12	104	h	fr	3npfpo	esd	2mpr	.0	4.5	<.1	29	8.0600
I128	74	14	13	114	h	fr	1npf	esd	1mpr	.1	4.7	<.1	29	8.1900
I128	72	16	12	95	h	fr	3npf	esd	2cpr	.0	4.4	<.1	29	8.1200
I128	73	15	12	94	sh	vfr	---	esd	m	.1	5.5	<.1	29	8.1600
I132	65	34	0	78	so	vfr	---	esd	2fgr	1.2	10.8	.1	31	7.8600
I132	58	34	0	53	sh	vfr	---	esd	2msbk	2.0	17.1	<.1	31	7.8000
I132	44	40	0	128	vh	fr	---	es2sf	1csbk	.8	23.0	<.1	31	7.9700
I134	58	40	0	132	so	vfr	---	esd	2fgr	1.0	9.0	<.1	32	7.7600
I134	53	36	0	109	h	fi	2npf	esd	2msbk	1.5	12.5	<.1	32	7.8300
I134	42	42	0	102	vh	fi	3mkpfpo	es3sf	3f&msbk	1.0	16.0	<.1	32	7.9800
I134	44	40	1	115	vh	fr	2mkpfpo	es2sf	2msbk	.7	17.0	<.1	32	8.1400
I136	62	36	0	160	so	vfr	---	e	1cpl	1.1	9.2	<.1	32	7.7900
I136	58	37	0	123	sh	vfr	2npf	esd	1cpr2msb	1.0	13.3	<.1	32	7.8900
I136	56	36	1	145	h	vfr	2npf	es3sf	1m&csbk	.8	17.8	<.1	32	8.1700
I136	62	30	12	247	sh	vfr	---	es1sf	m	.4	21.7	.1	32	7.9700
I143	54	32	1	126	so	vfr	---	esd	1mpl	2.3	8.1	<.1	29	7.5900
I143	77	10	1	148	so	vfr	---	esd	1mgr	.3	5.2	<.1	29	7.7000
I143	86	4	2	176	so	vfr	---	esd	m	.2	4.1	<.1	29	7.5800
I143	73	15	2	146	sh	vfr	--	see note	Bkb=msbk	.2	5.0	<.1	29	7.5100
I143	81	9	2	199	sh	vfr	---	see note	Bkb=2msb	.2	4.7	.2	29	7.4600
I143	81	9	2	219	sh	vfr	---	es2sm	2msbk	.0	8.2	.2	29	7.4500
I144	46	37	1	84	so	vfr	-	es d	2mpl	2.5	6.5	<.1	29	7.7200
I144	84	9	0	91	so	vfr	-	e dsilte	sg siltm	.2	2.4	<.1	29	7.8900
I144	53	35	3	127	sh	fr	-	es d	m strat	1.1	6.7	.6	29	7.5600
I144	41	34	1	105	vh	vfi	3mk pt	est2ffis	3cpr	1.5	7.1	<.1	29	7.5600
I144	31	43	1	101	vh	vfi	-	es d	m	1.2	6.0	<.1	29	7.6300
I144	60	30	5	161	vh	vfi	-	es 2ffis	m	3.8	6.2	0.5	29	7.4800
I145	81	13	0	109	sh	vfr	---	esd	1cpl	.7	2.8	<.1	29	7.5700
I145	74	17	0	113	sh	vfr	---	esd	1csbk	.6	5.3	<.1	29	7.5000
I145	76	16	0	122	h	fr	2npf	esd	1cpr	.4	7.3	<.1	29	7.5100
I145	72	16	2	124	h	fr	3npfpo	esd2sf	1cpr	.3	8.0	<.1	29	7.5600
I145	76	14	1	129	sh	vfr	---	esd2sf	m	.1	7.8	<.1	29	7.6200
I145	82	15	8	443	sh	vfr	---	esd3sf	m	.1	7.2	<.1	29	7.5500
I147	83	10	1	137	so	vfr	---	es	1mgr/sg	.9	2.1	<.1	29	7.7500
I147	87	7	2	112	lo	lo	---	es	wmgr/sg	.3	2.0	<.1	29	7.2900
I147	93	4	1	127	lo	lo	---	se	sg	.0	1.7	<.1	29	7.7500
I147	95	2	2	120	lo	lo	---	se	sg	.0	1.4	<.1	29	7.9300
I147	95	2	1	199	lo	lo	---	se	sg	.1	.9	<.1	29	8.1000

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM	CEC
1147	0750	2Btkb	ARID	10YR3/3	10YR4/3	28	120-145	cw	Clay Loam	>150	DRAINAGE BASIN	30
1147	0751	3C3	ARID	10YR4/3	10YR6/4	8	145-150		Sandy Loam	>150	DRAINAGE BASIN	11
115	0831	A	UST	10YR5/3	10YR4/2	23	0 -7	cs	Loam	>150	ALLUVIAL BASIN	14
115	0832	BA	UST	10YR5/4	10YR4/4	21	7 -32	cs	Sandy Clay Loam	>150	ALLUVIAL BASIN	11
115	0833	Bw	UST	10YR5/4	10YR4/4	15	32 -60	gw	Sandy Loam	>150	ALLUVIAL BASIN	10
115	0834	C1	UST	10YR6/4	10YR4/3	19	60 -89	gw	Loam	>150	ALLUVIAL BASIN	14
115	0835	C2	UST	10YR6/4	10YR5/4	11	89 -120	gw	Sandy Loam	>150	ALLUVIAL BASIN	7
115	0836	C3	UST	10YR6/4	10YR5/4	11	120-150		Sandy Loam	>150	ALLUVIAL BASIN	9
1152	1190	A	ARID	5YR4/4	5YR5/4	13	0 -5	cs	Sandy Loam	>150	VALLEY BOTTOM	17
1152	1191	By1	ARID	5YR4/6	5YR6/4	15	5 -32	cs	Sandy Loam	>150	VALLEY BOTTOM	12
1152	1192	By2	ARID	5YR4/6	5YR6/4	15	32 -103	as	Sandy Loam	>150	VALLEY BOTTOM	12
1152	1193	By3	ARID	5YR4/6	5YR6/4	14	104-116	as	Sandy Loam	>150	VALLEY BOTTOM	13
1152	1194	By4	ARID	5YR4/6	5YR6/4	15	117-150		Sandy Loam	>150	VALLEY BOTTOM	13
1154	1186	A	ARID	7.5YR5/4	10YR6/3	15	0 -6	as	Loam	>150	VALLEY BOTTOM	27
1154	1187	By1	ARID	2.5YR3/6	5YR5/4	17	6 -54	cs	Sandy Loam	>150	VALLEY BOTTOM	23
1154	1188	By2	ARID	7.5YR4/4	7.5YR5/4	19	54 -97	gs	Sandy Loam	>150	VALLEY BOTTOM	11
1154	1189	By3	ARID	7.5YR5/4	10YR6/3	9	97 -175		Loamy Sand	>150	VALLEY BOTTOM	8
1155	1175	A	ARID	5YR4/6	5YR5/6	6	0 -4	cs	Sandy Loam	>150	VALLEY BOTTOM	18
1155	1176	By1	ARID	5YR46 5	YR6/6	9	4 -30	as	Sandy Loam	>150	VALLEY BOTTOM	13
1155	1177	By2	ARID	7.5YR5/6	7.5YR6/6	7	30 -54	aw	Sandy Loam	>150	VALLEY BOTTOM	18
1155	1178	By3	ARID	5YR4/6	5YR5/6	8	54 -66	as	Loam	>150	VALLEY BOTTOM	25
1155	1179	By4	ARID	7.5YR5/6	7.5YR6/6	7	66 -125	as	Sandy Loam	>150	VALLEY BOTTOM	20
1155	1180	By5	ARID	7.5YR5/6	7.5YR6/6	4	125-160		Loamy Sand	>150	VALLEY BOTTOM	7
1156	1181	A	ARID	2.5YR3/6	2.5YR5/6	15	0 -7	cs	Silt Loam	>150	VALLEY BOTTOM	34
1156	1182	By1	ARID	7.5YR4/4	2.5YR5/4	9	7 -44	as	Sandy Loam	>150	VALLEY BOTTOM	29
1156	1183	By2	ARID	2.5YR4/6	2.5YR5/6	7	44 -83	gs	Silt Loam	>150	VALLEY BOTTOM	28
1156	1184	By3	ARID	2.5YR4/6	2.5YR5/6	8	83 -123	cs	Silt Loam	>150	VALLEY BOTTOM	27
1156	1185	By4	ARID	2.5YR4/6	2.5YR5/6	8	123-160		Silt Loam	>150	VALLEY BOTTOM	26
1157	0507	A	ARID	2.5YR4/4	2.5YR6/4	2	0 -6	cs	Sandy Loam	>150	VALLEY FILL SIDESLOP	6
1157	0508	Bt	ARID	2.5YR4/4	2.5YR6/4	6	6 -27	cw	Sandy Loam	>150	VALLEY FILL SIDESLOP	7
1157	0509	Btk	ARID	2.5YR5/4	2.5YR6/4	10	27 -69	aw	Sandy Loam	>150	VALLEY FILL SIDESLOP	6
1157	0510	Bk1	ARID	2.5YR5/4	2.5YR6/4	12	69 -103	cw	Sandy Loam	>150	VALLEY FILL SIDESLOP	5
1157	0511	Bk2	ARID	2.5YR5/4	2.5YR6/4	2	103-150		Sandy Loam	>150	VALLEY FILL SIDESLOP	5
1161	0644	A	ARID	7.5YR4/4	7.5YR5/4	5	0 -6	cs	Loamy Sand	120	RIDGE SIDESLOPE	5
1161	0645	BA	ARID	7.5YR4/4	7.5YR5/4	4	6 -20	as	Loamy Sand	120	RIDGE SIDESLOPE	4
1161	0646	Bt	ARID	5YR4/4	5YR4/4	22	20 -28	as	Loam	120	RIDGE SIDESLOPE	18
1161	0647	Btk	ARID	7.5YR4/6	7.5YR5/4	6	28 -52	cs	Sandy Loam	120	RIDGE SIDESLOPE	15
1161	0648	Bky	ARID	10YR6/4	10YR7/4	9	52 -85	ci	Sandy Loam	120	RIDGE SIDESLOPE	11
1161	0649	2Bk	ARID	10YR6/6	10YR7/6	9	85 -120	aw	Loamy Sand	120	RIDGE SIDESLOPE	6
1162	0639	A	ARID	7.5YR4/4	7.5YR5/4	2	0 -6	cs	Loamy Sand	85	RIDGE SIDESLOPE	3
1162	0640	BA	ARID	7.5YR4/4	7.5YR5/4	8	6 -13	cs	Sandy Loam	85	RIDGE SIDESLOPE	7
1162	0641	Bt	ARID	7.5YR4/6	7.5YR5/6	24	13 -32	aw	Sandy Clay Loam	85	RIDGE SIDESLOPE	19
1162	0642	Btk1	ARID	7.5YR4/6	7.5YR6/6	22	32 -55	cw	Sandy Clay Loam	85	RIDGE SIDESLOPE	24
1162	0643	Btk2	ARID	7.5YR5/4	7.5YR6/4	22	55 -85	aw	Sandy Clay Loam	85	RIDGE SIDESLOPE	16
1163	0633	A	UST	10YR4/3	10YR6/4	4	0 -6	cs	Loamy Sand	>150	RIDGE SIDESLOPE	3
1163	0634	BA	UST	7.5YR4/4	7.5YR6/4	6	6 -14	cs	Sandy Loam	>150	RIDGE SIDESLOPE	5
1163	0635	Bt	UST	7.5YR4/6	7.5YR5/6	14	14 -30	c	Sandy Loam	>150	RIDGE SIDESLOPE	16
1163	0636	Btk1	UST	7.5YR4/6	7.5YR5/6	8	30 -47	cw	Sandy Loam	>150	RIDGE SIDESLOPE	19
1163	0637	Btk2	UST	7.5YR5/4	7.5YR6/6	11	47 -97	cs	Sandy Loam	>150	RIDGE SIDESLOPE	12
1163	0638	Btkb	UST	10YR5/3	10YR6/3	11	97 -150		Sandy Loam	>150	RIDGE SIDESLOPE	8
1164	0670	A1	UST	7.5YR4/4	7.5YR5/4	7	0 -7	cs	Sandy Loam	>150	RIDGE CREST	5
1164	0671	A2	UST	7.5YR4/4	7.5YR6/4	8	7 -17	cs	Sandy Loam	>150	RIDGE CREST	4
1164	0672	E	UST	7.5YR4/4	7.5YR6/4	5	17 -27	aw	Sandy Loam	>150	RIDGE CREST	3
1164	0673	Bt	UST	5YR4/4	5YR4/6	18	27 -36	aw	Loam	>150	RIDGE CREST	28
1164	0674	Btk1	UST	7.5YR5/6	7.5YR5/4	23	36 -60	cw	Loam	>150	RIDGE CREST	14
1164	0675	Btk2	UST	7.5YR5/6	7.5YR5/4	15	60 -86	aw	Sandy Loam	>150	RIDGE CREST	10
1164	0676	Btk3	UST	7.5YR5/4	7.5YR6/4	19	86 -112	aw	Sandy Loam	>150	RIDGE CREST	8
1164	0677	2Btkb	UST	10YR5/6	10YR7/4	21	112-150		Sandy Clay Loam	>150	RIDGE CREST	8
1165	0664	A	UST	7.5YR3/4	7.5YR5/4	4	0 -6	cs	Loamy Sand	>150	RIDGE SIDESLOPE	5
1165	0665	AB	UST	7.5YR4/4	7.5YR5/4	6	6 -14	cs	Sandy Loam	>150	RIDGE SIDESLOPE	5
1165	0666	Bt	UST	7.5YR4/6	7.5YR5/6	10	14 -54	aw	Sandy Loam	>150	RIDGE SIDESLOPE	9
1165	0667	Btk1	UST	7.5YR4/6	7.5YR6/6	14	54 -78	cw	Sandy Loam	>150	RIDGE SIDESLOPE	11
1165	0668	Btk2	UST	7.5YR5/6	7.5YR6/4	16	78 -130	cw	Sandy Loam	>150	RIDGE SIDESLOPE	10
1165	0669	Bk	UST	7.5YR5/6	7.5YR6/4	12	130-150		Sandy Loam	>150	RIDGE SIDESLOPE	7
1167	0684	A	UST	10YR4/4	10YR6/4	3	0 -7	cs	Loamy Sand	>150	RIDGE SIDESLOPE	6
1167	0685	Bt	UST	10YR5/4	10YR6/4	8	7 -50	cw	Sandy Loam	>150	RIDGE SIDESLOPE	8
1167	0686	Btk	UST	10YR5/4	10YR6/4	11	50 -105	gw	Sandy Loam	>150	RIDGE SIDESLOPE	8
1167	0687	Bk	UST	10YR5/4	10YR6/4	8	105-150		Sandy Loam	>150	RIDGE SIDESLOPE	6
1168	0678	A	UST	7.5YR4/4	10YR6/4	5	0 -7	cs	Loamy Sand	>150	RIDGE SIDESLOPE	2
1168	0679	E	UST	10YR4/3	10YR6/3	9	7 -13	as	Sandy Loam	>150	RIDGE SIDESLOPE	3
1168	0680	Bt	UST	5YR3/4	5YR4/4	21	13 -24	as	Loam	>150	RIDGE SIDESLOPE	20
1168	0681	Btk	UST	7.5YR5/4	7.5YR6/4	25	24 -57	gs	Sandy Clay Loam	>150	RIDGE SIDESLOPE	13
1168	0682	Btky	UST	10YR5/4	10YR6/4	11	57 -88	cw	Sandy Loam	>150	RIDGE SIDESLOPE	10
1168	0683	Bky	UST	10YR5/4	10YR6/4	13	88 -150		Sandy Loam	>150	RIDGE SIDESLOPE	8
1169	0658	A	ARID	7.5YR3/4	7.5YR5/4	5	0 -6	cs	Sandy Loam	>150	RIDGE SIDESLOPE	6
1169	0659	Bt	ARID	7.5YR3/4	7.5YR5/4	6	6 -15	aw	Sandy Loam	>150	RIDGE SIDESLOPE	11
1169	0660	Btk1	ARID	7.5YR5/4	7.5YR6/4	13	15 -35	cw	Sandy Loam	>150	RIDGE SIDESLOPE	9
1169	0661	Btk2	ARID	7.5YR5/4	7.5YR6/4	14	35 -74	cw	Sandy Loam	>150	RIDGE SIDESLOPE	7
1169	0662	Btk3	ARID	7.5YR5/4	7.5YR6/4	12	74 -105	cw	Sandy Loam	>150	RIDGE SIDESLOPE	12
1169	0663	Bk	ARID	7.5YR5/6	7.5YR7/6	8	105-150		Sandy Loam	>150	RIDGE SIDESLOPE	9
1170	0650	A1	ARID	10YR4/4	10YR5/4	4	0 -6	cs	Loamy Sand	>150	RIDGE SIDESLOPE	4
1170	0651	A2	ARID	7.5YR4/4	7.5YR5/4	4	6 -17	cs	Loamy Sand	>150	RIDGE SIDESLOPE	4
1170	0652	E	ARID	7.5YR4/4	7.5YR5/4	3	17 -23	as	Loamy Sand	>150	RIDGE SIDESLOPE	4
1170	0653	Bt	ARID	7.5YR4/6	7.5YR5/6	13	23 -29	aw	Sandy Loam	>150	RIDGE SIDESLOPE	7
1170	0654	Btk1	ARID	7.5YR5/6	7.5YR5/6	14	29 -44	cw	Sandy Loam	>150	RIDGE SIDESLOPE	12
1170	0655	Btk2	ARID	7.5YR5/6	7.5YR6/6	4	44 -58	aw	Loamy Sand	>150	RIDGE SIDESLOPE	6
1170	0656	2Btkyb1	ARID	7.5YR4/6	7.5YR5/4	17	58 -90	cw	Sandy Loam	>150	RIDGE SIDESLOPE	12
1170	0657	2Btkyb2	ARID	7.5YR5/6	7.5YR6/4	13	90 -142		Sandy Loam	>150	RIDGE SIDESLOPE	10
118	0779	A	UST	10YR5/4	10YR3/3	13	0 -8	cs	Sandy Loam	>150	DRAINAGE BASIN	10
118	0780	Bt	UST	10YR5/4	10YR4/3	17	8 -32	gw	Sandy Loam	>150	DRAINAGE BASIN	13
118	0781	Bk1	UST	10YR5/4	10YR5/3	15	32 -65	gw	Sandy Loam	>150	DRAINAGE BASIN	10
118	0782	Bk2	UST	10YR6/4	10YR5/3	11	65 -98	cw	Sandy Loam	>150	DRAINAGE BASIN	9
118	0783	By1	UST	10YR6/4	10YR5/3	9	98 -125	gw	Loam	>150	DRAINAGE BASIN	23
118	0784	By2	UST	10YR5/4	10YR4/4	13	125-150		Sandy Loam	>150	DRAINAGE BASIN	14
1180	0481	A	ARID	2.5YR4/4	10YR6/4	2	0 -6	cs	Sandy Loam	>150	FAN TOESLOPE	11
1180	0482	Bt	ARID	2.5YR4/4	10YR6/4	6	6 -25	cw	Sandy Loam	>150	FAN TOESLOPE	15
1180	0483	Btk	ARID	2.5YR4/4	10YR6/4	7	25 -64	gw	Sandy Loam	>150	FAN TOESLOPE	8
1180	0484	Bk1	ARID	2.5YR4/4	10YR6/4	11	64 -108	gw	Sandy Loam	>150	FAN TOESLOPE	9
1180	0485	Bk2	ARID	2.5YR4/4	10YR6/4	10	108-145		Loam	>150	FAN TOESLOPE	9
1181	1207	A	ARID	10YR4/4	10YR5/4	4	0 -5	cs	Sandy Loam	>150	FAN SIDESLOPE	8
1181	1208	Bw\Bt	ARID	10YR5/4	10YR6/4	8	5 -20	cs	Sandy Loam	>150	FAN SIDESLOPE	9
1181	1209	Bk1\Bt	ARID	2.5YR5/4	2.5YR6/4	12	20 -65	gs	Sandy Loam	>150	FAN SIDESLOPE	8
1181	1210	Bk2\Bt	ARID	2.5YR5/4	2.5YR6/4	12	65 -110	gs	Sandy Loam	>150	FAN SIDESLOPE	7
1181	1211	C1	ARID	2.5YR5/4	2.5YR6/4	12	110-155		Sandy Loam	>150	FAN SIDESLOPE	6

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	PH
1147	44	28	2	113	vh	fi	---	es	3copr	1.3	2.8	<.1	29	7.2400
1147	69	23	3	119	so	vfr	---	es	sg	1.6	2.9	<.1	29	7.6100
115	45	32	0	106	sh	fr	---	eo	2mgr	3.3	<.1	<.1	40	6.8600
115	57	22	0	114	sh	fr	---	eo	2mpl2msb	1.8	.8	<.1	40	7.1200
115	62	23	0	130	sh	fr	---	ed	2cmsbk	.5	.7	<.1	40	7.3400
115	48	33	0	131	sh	fr	---	ed	m	2.0	1.5	.1	40	7.4600
115	68	21	0	146	sh	fr	---	ed	m	.6	1.0	<.1	40	7.5700
115	65	24	0	180	sh	fr	---	ed	m	1.6	1.0	.1	40	7.3000
1152	60	27	0	629	sh	vfr	---	evd	1mpl	.61	9.9	10.0	44	7.0400
1152	61	24	0	1025	sh	vfr	---	evd	1msbk	.4	8.6	10.9	44	7.5400
1152	60	25	1	968	sh	vfr	---	evd	m	.2	7.9	11.2	44	7.4600
1152	53	33	7	1191	sh	vfr	---	evd	m	.8	8.5	10.1	44	7.5200
1152	59	26	5	874	sh	vfr	---	evd	m	.5	8.1	14.3	44	7.5800
1154	50	35	1	97	sh	vfr	---	esd	1fgr	.5	9.0	<.1	44	7.0600
1154	61	22	3	486	sh	fr	---	evd	1fsbk	1.0	9.0	8.2	44	7.4200
1154	79	2	13	742	sh	vfr	---	esd	m	.1	6.3	4.2	44	7.3900
1154	85	6	12	763	sh	vfr	---	esd	m	.0	6.4	3.3	44	7.6400
1155	48	46	1	264	sh	vfr	---	evd	1mpl	.7	12.0	2.2	44	7.3600
1155	55	37	0	685	sh	vfr	---	evd	2m,csbk	.1	9.4	11.5	44	7.5500
1155	63	30	8	402	sh	fr	---	evd	1msbk	.5	8.5	4.7	44	7.6000
1155	43	49	15	327	sh	fr	---	evd	m	.6	11.7	7.8	44	7.4200
1155	70	23	18	477	sh	vfr	---	evd	m	.4	8.5	6.2	44	7.5600
1155	85	12	33	695	sh	vfr	---	esd	m	.7	5.2	3.1	44	7.7000
1156	27	58	2	100	sh	vfr	---	ev	1npl2fgr	3.7	9.3	<.1	44	7.0900
1156	56	35	2	235	sh	fr	---	ev	2msbk	3.6	11.3	2.5	44	7.2100
1156	35	58	14	277	sh	fr	---	ev	2fsbk	.7	8.6	2.7	44	7.4800
1156	30	62	38	251	sh	fr	---	ev	1msbk	1.3	8.6	3.1	44	7.6600
1156	37	55	42	332	sh	fr	---	ev	m	5.2	8.7	3.4	44	7.4800
1157	62	36	0	151	so	vfr	---	esd	1cp1	.8	8.7	<.1	31	7.8400
1157	58	36	0	145	sh	vfr	2npf	esd	2msbk	1.3	18.8	<.1	31	7.8000
1157	54	36	0	154	h	vfr	3npf	es3sf	2csbk	1.2	19.6	<.1	31	8.2500
1157	56	32	8	174	sh	vfr	---	es2sf	1msbk	.3	20.3	<.1	31	8.6000
1157	55	42	14	392	sh	vfr	---	es3sf	m	.3	17.0	.7	31	7.9700
1161	80	14	12	149	sh	vfr	---	eo	1cpl	.5	.2	<.1	36	7.3100
1161	82	13	0	94	sh	vfr	---	eo	1msbk	.4	.2	<.1	36	7.4100
1161	49	28	25	120	h	fi	4mkpfpo	eo	3mpr3fab	1.5	1.4	<.1	36	7.6800
1161	60	33	35	108	h	fr	3mkpfpo	es3sfss	1mpr3fms	.7	2.8	<.1	36	7.8500
1161	73	18	45	612	h	fr	---	es3sfss	1csbk	.2	5.3	.6	36	8.1100
1161	87	4	53	672	sh	fr	---		m	.1	6.9	.1	36	8.1800
1162	78	20	0	126	so	vfr	---	eo	1cpl	.4	.2	<.1	36	7.0400
1162	72	20	0	116	so	vfr	---	eo	1msbk	.8	.4	<.1	36	6.9000
1162	60	16	0	91	h	fr	4mkpfpo	eo	2msbk	.9	.7	,.1	36	7.3400
1162	57	21	3	79	vh	fi	4mkpfpo	es3sssf	2cpr3fms	.8	5.9	<.1	36	7.6800
1162	63	14	4	94	h	fi	3mkpf	es3sssf	2msbk	.6	3.4	<.1	36	7.7200
1163	76	20	0	91	so	vfr	---	eo	1cpl1fgr	.5	.2	<.1	06	7.0200
1163	76	18	0	67	so	vfr	---	eo	1msbk	.5	.2	<.1	06	7.2900
1163	64	22	2	69	h	fr	3mkpfpo	eo	2msbk	.6	.5	<.1	06	7.3700
1163	56	36	5	82	vh	fr	3mkpfpo	es2sfss	2msbk	.9	2.1	<.1	06	7.8400
1163	64	25	13	110	vh	fr	3mkpfpo	es3sssf	3msbk	.3	7.7	<.1	06	7.9300
1163	72	17	21	133	h	vfr	4mkpf	es3sfss	2msbk	.2	6.8	<.1	06	7.8900
1164	74	19	0	90	sh	vfr	---	eo	2fp1	.8	.2	<.1	06	7.5900
1164	71	21	0	73	sh	vfr	---	eo	1msbk	.6	.2	<.1	06	7.6400
1164	72	22	11	84	sh	vfr	---	eo	1msbk	.3	.2	<.1	06	8.1600
1164	47	34	19	92	vh	fi	4mkpfpo	eo	3mpr3fab	1.0	1.5	<.1	06	8.1500
1164	46	30	41	179	vh	vfi	4mkpfpo	es3ss,sf	3mpr3mab	.3	4.4	<.1	06	8.5400
1164	53	31	47	194	vh	fr	3npf	es2ss,sf	2csbk	.2	2.0	<.1	06	8.0800
1164	62	18	57	287	vh	fr	2npf	es3ss,sf	1msbk	.6	9.0	<.1	06	8.2800
1164	62	16	47	193	vh	fr	3mkpfpo	es3sf,ss	2m&csbk	.4	10.0	<.1	06	8.2800
1165	77	19	0	114	so	vfr	---	eo	1fgr	.9	.3	<.1	06	7.3100
1165	75	19	0	150	sh	vfr	---	eo	1fpl	.6	.3	<.1	06	7.6100
1165	70	20	4	96	sh	fr	3mkpfpo	eo	2msbk	.2	.4	<.1	06	7.6400
1165	67	19	0	148	h	fr	4mkpfpo	e2sf	1mpr2msb	.3	.8	<.1	06	7.7100
1165	62	22	1	198	vh	fr	3mkpfpo	es3ss&sf	1mpr2msb	.6	3.6	<.1	06	8.1400
1165	65	23	8	275	h	fr	---	es2sf	1msbk	.1	2.8	<.1	06	8.2700
1167	82	15	0	446	so	vfr	---	eo	1fpl	.8	1.8	<.1	06	8.0400
1167	74	17	0	548	sh	vfr	2npfpo	esd	1msbk	.8	4.2	.1	06	8.1200
1167	70	18	0	432	h	vfr	3npfpo	es3sf,ss	2msbk	.4	7.3	<.1	06	8.1400
1167	78	14	1	278	h	vfr	---	es2sf	m	.1	4.4	<.1	06	8.2900
1168	80	15	0	142	sh	vfr	---	eo	1cpl1fgr	.8	.2	<.1	06	7.3200
1168	71	20	6	92	sh	vfr	---	eo	1fpl	.7	.2	<.1	06	7.8500
1168	45	34	24	112	vh	vfi	4mkpfpo	eo	3mpr3fab	1.3	1.2	<.1	06	8.0600
1168	56	19	31	162	vh	fi	4mkpfpo	ev3ss,sf	3mpr3mca	.9	19.8	<.1	06	8.4700
1168	63	25	36	629	h	fr	2npf	es3sssms	1msbk	1.0	8.5	1.2	06	8.1100
1168	74	12	37	693	h	vfr	---	es2sf&sm	m	.0	3.6	<.1	06	8.1400
1169	70	25	0	121	so	vfr	---	eo	1fpl	.9	.3	<.1	38	7.0800
1169	64	30	0	247	sh	fr	2npf	eo	2msbk	.8	1.3	<.1	38	7.4600
1169	62	24	0	587	sh	fr	3mkpfpo	es2sf&ss	2msbk	.8	11.6	<.1	38	7.8000
1169	68	18	0	771	sh	fr	3mkpfpo	es3sf&ss	2msbk	.7	6.0	<.1	38	7.9200
1169	54	34	1	448	h	fr	2npf	ev3ss&sm	1msbk	.2	11.5	<.1	38	7.9800
1169	67	25	4	378	sh	vfr	---	es2sf	m	.3	1.5	.4	38	8.1200
1170	79	17	0	125	so	vfr	---	eo	1fpl	.7	.3	<.1	38	7.4700
1170	77	19	3	120	sh	vfr	---	eo	1fsbk	.5	.3	<.1	38	7.9200
1170	78	19	21	112	sh	vfr	---	eo	1msbk	.6	.2	<.1	38	7.9200
1170	67	20	84	200	vh	vfi	4mkpfpo	eo	3mpr3mab	.3	.5	<.1	38	8.0600
1170	61	25	70	433	vh	fi	3mkpfpo	es3ss&sf	3mpr3mab	.4	2.4	<.1	38	8.3200
1170	79	14	77	462	vh	fr	2mkpf	es3sf	2cpr	.4	1.4	<.1	38	8.1500
1170	54	29	111	466	h	fr	3mkpfpo	e3sfss3s	2msbk	.4	2.2	.1	38	8.1200
1170	59	28	98	729	h	fr	3mkpfpo	e3sfss3s	2msbk	.3	5.5	<.1	38	8.1400
118	68	19	0	93	so	vfr	---	eo	2mgr	2.4	2.1	<.1	19	7.2800
118	63	20	0	97	sh	fr	1npfpo	esd	2cmsbk	.8	4.2	<.1	19	7.6600
118	69	16	0	105	sh	fr		es1smfi	2msbk	.5	4.4	<.1	19	7.7700
118	71	17	0	106	h	fr		es1smfi	m	.4	4.3	<.1	19	7.8700
118	42	49	0	241	h	fr		ed	m	1.7	5.2	1.0	19	7.5200
118	56	30	0	168	sh	fr	2fvf	ed	m	1.4	4.1	.5	19	7.4900
1180	54	44	0	124	so	vfr	---	esd	1fpl2fgr	1.3	11.1	.4	32	7.8600
1180	54	40	0	106	sh	vfr	2npf	esd	2msbk	1.8	15.8	<.1	32	7.7300
1180	56	38	0	133	vh	fr	3npf	es2sf	2m&csbk	.6	20.3	<.1	32	8.0200
1180	56	34	1	112	h	vfr	---	es3sf	1m&csbk	1.2	20.0	.9	32	8.2400
1180	48	43	4	120	h	vfr	---	e1sf	m	.6	19.5	<.1	32	8.0400
1181	66	30	0	112	so	vfr	---	ed	1mpl	1.0	8.3	<.1	36	7.6700
1181	63	29	1	113	so	vfr	---	ed	1msbk	1.2	16.0	<.1	36	7.7400
1181	58	30	0	112	sh	vfr	---	es1sf	1msbk	2.6	21.0	<.1	36	7.8100
1181	59	30	0	129	sh	vfr	---	es1sf	1msbk	.5	19.1	<.1	36	8.3100
1181	62	26	3	140	so	vfr	---	ed	m	.3	21.3	<.1	36	8.5800

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM	CEC
I183	0516	A	ARID	2.5YR4/4	10YR6/4	6	0 -7	cs	Sandy Loam	>150	FAN SIDESLOPE	10
I183	0517	Bt	ARID	10YR3/3	10YR6/3	14	7 -30	as	Loam	>150	FAN SIDESLOPE	15
I183	0518	Btk1	ARID	10YR4/3	10YR6/3	17	30 -44	cw	Loam	>150	FAN SIDESLOPE	14
I183	0519	2Btk2	ARID	10YR5/4	10YR6/4	12	44 -74	gs	Loam	>150	FAN SIDESLOPE	11
I183	0520	2Btk3	ARID	2.5YR5/4	10YR6/4	7	74 -113	gw	Loam	>150	FAN SIDESLOPE	6
I183	0521	2Bk	ARID	2.5YR5/4	10YR6/4	10	133-150		Silt Loam	>150	FAN SIDESLOPE	8
I184	0522	A	ARID	2.5YR4/2	2.5YR5/2	7	0 -6	cs	Loam	>150	FAN SIDESLOPE	15
I184	0523	Bt	ARID	2.5YR4/4	2.5YR5/4	13	6 -32	cs	Loam	>150	FAN SIDESLOPE	14
I184	0524	2Btk1	ARID	2.5YR5/4	2.5YR7/4	13	32 -76	gw	Loam	>150	FAN SIDESLOPE	7
I184	0525	2Btk2	ARID	2.5YR5/4	2.5YR7/4	12	76 -116	cs	Loam	>150	FAN SIDESLOPE	6
I184	0526	3Bk	ARID	2.5YR4/4	2.5YR6/4	19	116-150		Loam	>150	FAN SIDESLOPE	11
I185	0527	A	ARID	2.5YR4/4	2.5YR6/4	5	0 -7	cs	Sandy Loam	>150	FAN SIDESLOPE	6
I185	0528	BA	ARID	2.5YR4/4	2.5YR6/4	10	7 -15	cs	Loam	>150	FAN SIDESLOPE	7
I185	0529	Bt	ARID	2.5YR4/4	2.5YR6/4	9	15 -46	cs	Sandy Loam	>150	FAN SIDESLOPE	6
I185	0530	Btk1	ARID	2.5YR5/4	2.5YR6/4	13	46 -79	cw	Loam	>150	FAN SIDESLOPE	8
I185	0531	Btk2	ARID	2.5YR4/4	2.5YR6/4	21	79 -106	gw	Loam	>150	FAN SIDESLOPE	8
I185	0532	Bk	ARID	2.5YR4/4	2.5YR6/4	23	106-150	cw	Loam	>150	FAN SIDESLOPE	9
I187	0475	A	ARID	2.5YR4/4	2.5YR6/4	2	0 -6	cs	Sandy Loam	>150	ALLUVIAL FAN/TOE	8
I187	0476	Bw\BA	ARID	2.5YR4/4	2.5YR6/4	6	6 -35	cw	Sandy Loam	>150	ALLUVIAL FAN/TOE	9
I187	0477	Bk1\Bt	ARID	2.5YR4/4	2.5YR6/4	15	35 -76	gw	Loam	>150	ALLUVIAL FAN/TOE	11
I187	0478	Bk2\Bt	ARID	2.5YR4/4	2.5YR6/4	12	76 -106	ai	Silt Loam	>150	ALLUVIAL FAN/TOE	12
I187	C479	Bk3	ARID	2.5YR4/4	2.5YR6/4	2	106-128	gw	Silt Loam	>150	ALLUVIAL FAN/TOE	9
I187	0480	Bk4	ARID	2.5YR4/4	2.5YR6/4	2	128-150		Sandy Loam	>150	ALLUVIAL FAN/TOE	6
I188	0470	A	ARID	10YR4/3	10YR6/3	4	0 -6	cs	Loam	>150	TOE	13
I188	0471	Bw\BA	ARID	10YR4/4	10YR6/4	6	6 -43	cw	Sandy Loam	>150	TOE	10
I188	0472	Bk1\Bt	AID	2.5YR4/4	2.5YR6/4	12	43 -96	gw	Sandy Loam	>150	TOE	10
I188	0473	Bk2\Bt	ARID	2.5YR4/4	2.5YR6/4	14	96 -133	cw	Sandy Loam	>150	TOE	10
I188	0474	Bk3\	ARID	2.5YR4/4	2.5YR6/4	12	133-150		Sandy Loam	>150	TOE	10
I189	0465	A	ARID	2.5YR4/4	2.5YR6/4	4	0 -6	cs	Sandy Loam	>150	FAN TOESLOPE	7
I189	0466	Bw\Bt	ARID	2.5YR4/4	2.5YR6/4	10	6 -41	cw	Sandy Loam	>150	FAN TOESLOPE	9
I189	0467	Bk1	ARID	2.5YR4/4	2.5YR6/4	2	41 -71	cw	Sandy Loam	>150	FAN TOESLOPE	8
I189	0468	Bk2	ARID	2.5YR4/4	2.5YR6/4	2	71 -129	cw	Sandy Loam	>150	FAN TOESLOPE	7
I189	0469	Bk3	ARID	2.5YR4/4	2.5YR6/4	2	129-150		Sandy Loam	>150	FAN TOESLOPE	9
I19	1138	A	UST	10YR5/3	10YR4/3	15	0 -4	cs	Sandy Loam	>150	VALLEY BOTTOM	24
I19	1139	Bt1	UST	10YR5/4	10YR3/4	18	4 -8	aw	Sandy Loam	>150	VALLEY BOTTOM	15
I19	1140	Bt2	UST	10YR5/4	10YR3/4	24	8 -25	cw	Sandy Loam	>150	VALLEY BOTTOM	22
I19	1141	Btk	UST	10YR5/4	10YR4/4	16	25 -47	cw	Sandy Loam	>150	VALLEY BOTTOM	15
I19	1142	Bk	UST	10YR4/6	10YR5/6	8	47 -93	gs	Sandy Loam	>150	VALLEY BOTTOM	8
I19	1143	C	UST	10YR5/6	10YR6/6	6	93 -165		Loamy Sand	>150	VALLEY BOTTOM	7
I190	0461	Bt	ARID	10YR4/4	10YR6/4	8	5 -23	cw	Loam	>150	ALLUVIAL FAN	16
I190	0462	Btk1	ARID	2.5YR4/4	2.5YR6/4	8	23 -52	gs	Loam	>150	ALLUVIAL FAN	18
I190	0463	Btk2	ARID			12	52 -102	cw	Silt Loam	>150	ALLUVIAL FAN	17
I190	0464	Btk3	ARID	2.5YR4/4	2.5YR6/4	6	102-130		Sandy Loam	>150	ALLUVIAL FAN	21
I191	0597	A	ARID	10YR3/3	10YR5/4	6	0 -5	cs	Loamy Sand	64	RIDGE SIDESLOPE	6
I191	0598	AB	ARID	7.5YR3/4	10YR5/3	8	5 -20	cw	Loamy Sand	64	RIDGE SIDESLOPE	8
I191	0599	Bw\Bt	ARID	7.5YR4/6	10YR5/4	14	20 -45	cw	Loamy Sand	64	RIDGE SIDESLOPE	10
I191	0600	2C	ARID	2.5YR6/4	5YR7/3	12	45 -64	cw	Sandy Loam	64	RIDGE SIDESLOPE	8
I191	0601	2Cr	ARID			13	64 -100		Sandy Loam	64	RIDGE SIDESLOPE	11
I192	0592	A	ARID	7.5YR4/4	7.5YR5/4	4	0 -5	cs	Loamy Sand	>120	RIDGE SIDESLOPE	4
I192	0593	E	ARID	7.5YR4/4	7.5YR5/4	4	5 -20	as	Loamy Sand	>120	RIDGE SIDESLOPE	4
I192	0594	Bt	ARID	5YR4/4	5YR5/4	17	20 -45	cw	Sandy Loam	>120	RIDGE SIDESLOPE	4
I192	0595	Bt2Bky	ARID	5YR4/4	5YR5/4	10	45 -65	gw	Sandy Loam	>120	RIDGE SIDESLOPE	16
I192	0596	2Bky	ARID	5YR7/3	5YR7/2	8	65 -120		Sandy Loam	>120	RIDGE SIDESLOPE	23
I193	0629	A	ARID	7.5YR4/4	7.5YR6/4	4	0 -6	cs	Loamy Sand	58	TOPSLOPE INTO DRAIN	7
I193	0630	E	ARID	7.5YR4/4	7.5YR6/4	7	6 -14	aw	Loamy Sand	58	TOPSLOPE INTO DRAIN	8
I193	0631	Bt	ARID	7.5YR5/4	7.5YR6/4	12	14 -39	cw	Sandy Loam	58	TOPSLOPE INTO DRAIN	16
I193	0632	Btky	ARID	10YR4/4	10YR6/3	8	39 -58	gi	Sandy Loam	58	TOPSLOPE INTO DRAIN	10
I194	0625	A	ARID	7.5YR4/4	10YR6/4	3	0 -8	aw	Loamy Sand	63	RIDGE SIDESLOPE	4
I194	0626	Bt	ARID	5YR4/6	5YR5/6	20	8 -14	aw	Sandy Loam	63	RIDGE SIDESLOPE	24
I194	0627	Btk1	ARID	7.5YR5/4	7.5YR6/4	20	14 -34	cw	Sandy Loam	63	RIDGE SIDESLOPE	18
I194	0628	Btk2	ARID	7.5YR5/4	7.5YR7/4	24	34 -63	aw	Sandy Clay Loam	63	RIDGE SIDESLOPE	18
I195	0607	A	ARID	10YR4/3	10YR6/3	4	0 -5	cs	Loamy Sand	>150	FAN SIDESLOPE	5
I195	0608	E	ARID	10YR4/3	10YR6/3	4	5 -11	as	Loamy Sand	>150	FAN SIDESLOPE	4
I195	0609	Bt	ARID	7.5YR4/4	10YR5/4	12	11 -28	as	Sandy Loam	>150	FAN SIDESLOPE	23
I195	0610	Btk	ARID	10YR5/3	10YR6/3	17	28 -69	cs	Sandy Loam	>150	FAN SIDESLOPE	17
I195	0611	2Bky	ARID	10YR5/3	10YR6/3	28	69 -115	gw	Sandy Clay Loam	>150	FAN SIDESLOPE	25
I195	0612	3Bk	ARID	10YR5/4	10YR6/4	18	115-150		Sandy Loam	>150	FAN SIDESLOPE	15
I196	0602	A	ARID	7.5YR4/4	7.5YR5/6	4	0 -6	cs	Loamy Sand	78	HILL SIDESLOPE	6
I196	0603	Bt1	ARID	5YR4/6	7.5YR5/6	8	6 -26	aw	Loamy Sand	78	HILL SIDESLOPE	11
I196	0604	Bt2	ARID	5YR4/6	7.5YR5/6	12	26 -41	cs	Sandy Loam	78	HILL SIDESLOPE	17
I196	0605	Bt3	ARID	7.5YR4/6	7.5YR5/6	13	41 -59	cw	Sandy Loam	78	HILL SIDESLOPE	14
I196	0606	2C	ARID	7.5YR5/4	7.5YR6/4	12	59 -78	aw	Sandy Loam	78	HILL SIDESLOPE	10
I197	0620	A	UST	7.5YR4/4	7.5YR5/4	5	0 -6	cs	Loamy Sand	110	RIDGE SHOULDER	4
I197	0621	AB	UST	7.5YR4/4	7.5YR5/4	6	6 -16	cs	Sandy Loam	110	RIDGE SHOULDER	5
I197	0622	Bt	UST	7.5YR4/4	7.5YR5/4	20	16 -35	cw	Sandy Loam	110	RIDGE SHOULDER	23
I197	0623	2Btk	UST	5YR6/3	5YR6/2	30	35 -60	gw	Clay Loam	110	RIDGE SHOULDER	26
I197	0624	2Btky	UST	5YR5/1	5YR6/1	24	60 -110	cw	Loam	110	RIDGE SHOULDER	37
I198	0706	A	UST	7.5YR4/4	7.5YR5/4	6	0 -6	cs	Loamy Sand	159	RIDGE SIDESLOPE	3
I198	0707	Bt1	UST	5YR4/6	5YR5/6	15	6 -18	cs	Sandy Loam	159	RIDGE SIDESLOPE	11
I198	0708	Bt2	UST	7.5YR4/6	7.5YR5/4	13	18 -55	cw	Sandy Loam	159	RIDGE SIDESLOPE	7
I198	0709	Btk	UST	7.5YR5/4	7.5YR6/4	13	55 -108	gw	Sandy Loam	159	RIDGE SIDESLOPE	6
I198	0710	Bk	UST	7.5YR5/4	7.5YR6/4	9	108-159		Loamy Sand	159	RIDGE SIDESLOPE	6
I2	0805	A	ARIDIC	10YR5/4	10YR4/3	11	0 -6	cs	Sandy Loam	>150	FAN SIDESLOPE	15
I2	0806	Bw	ARIDIC	10YR5/4	10YR4/3	17	6 -40	cw	Sandy Loam	>150	FAN SIDESLOPE	10
I2	0807	2Bt	ARIDIC	2.5YR5/2	2.5YR4/2	24	40 -70	gw	Loam	>150	FAN SIDESLOPE	22
I2	0808	2Bk	ARIDIC	10YR5/3	10YR4/3	25	70 -100	gw	Sandy Clay Loam	>150	FAN SIDESLOPE	14
I2	0809	3C1	ARIDIC	10YR5/4	10YR5/3	17	100-130	gw	Sandy Loam	>150	FAN SIDESLOPE	7
I2	0810	3C2	ARIDIC	10YR5/4	10YR4/3	12	130-150		Sandy Loam	>150	FAN SIDESLOPE	6
I200	0613	A	ARID	7.5YR4/4	10YR6/4	5	0 -5	cs	Loamy Sand	>150	FAN SIDESLOPE	5
I200	0614	E	ARID	7.5YR4/4	10YR6/4	7	5 -14	aw	Loamy Sand	>150	FAN SIDESLOPE	3
I200	0615	Btk1	ARID	7.5YR4/4	7.5YR5/4	14	14 -25	cw	Sandy Loam	>150	FAN SIDESLOPE	11
I200	0616	Btk2	ARID	10YR5/4	7.5YR6/4	16	25 -48	gw	Sandy Loam	>150	FAN SIDESLOPE	10
I200	0617	Bty	ARID	10YR6/4	10YR7/4	12	48 -74	as	Loamy Sand	>150	FAN SIDESLOPE	7
I200	0618	2Btkyb1	ARID	7.5YR4/4	7.5YR6/4	18	74 -113	gw	Sandy Loam	>150	FAN SIDESLOPE	14
I200	0619	2Btkyb2	ARID	7.5YR4/4	7.5YR6/4	22	113-150		Sandy Clay Loam	>150	FAN SIDESLOPE	12
I202	0888	A	ARID	7.5YR3/4	7.5YR5/4	7	0 -6	cs	Sandy Loam	>150	RIDGE SIDESLOPE	9
I202	0889	Bt	ARID	7.5YR4/4	7.5YR5/4	9	6 -21	cw	Sandy Loam	>150	RIDGE SIDESLOPE	12
I202	0890	Btk	ARID	7.5YR5/6	7.5YR6/6	13	21 -52	cw	Sandy Loam	>150	RIDGE SIDESLOPE	10
I202	0891	Bk1	ARID	7.5YR7/4	7.5YR8/4	19	52 -102	aw	Loam	>150	RIDGE SIDESLOPE	7
I202	0892	Bk2	ARID	10YR5/6	10YR7/4	23	102-131	aw	Sandy Clay Loam	>150	RIDGE SIDESLOPE	14
I202	0893	Btkb	ARID	10YR5/4	10YR6/4	15	131-175		Sandy Loam	>150	RIDGE SIDESLOPE	7
I213	1011	A	UST	2.5YR4/4	2.5YR5/4	7	0 -5	cs	Sandy Loam	48	RIDGE SIDESLOPE	11
I213	1012	Bk	UST	2.5YR5/4	2.5YR6/4	26	5 -24	gs	Loam	48	RIDGE SIDESLOPE	16
I213	1013	C	UST	2.5YR5/4	2.5YR6/4	25	24 -48	cs	Loam	48	RIDGE SIDESLOPE	11

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	PH
1183	47	47	0	135	so	vfr	---	esd	2cpr3fgr	1.8	11.3	<.1	42	7.8200
1183	44	42	0	115	vh	fi	3npf	esd	3fsbk	1.4	12.8	<.1	42	7.7800
1183	41	42	0	92	vh	fr	4mkpfpo	es3sf	3fmsbk	1.2	15.7	<.1	42	7.8000
1183	42	46	0	136	vh	fr	4mkpfpo	es3sf	3fmsbk	1.4	19.2	<.1	42	7.7300
1183	49	44	1	182	h	vfr	3npf	es3ssf	1vcpr	.5	19.9	<.1	42	7.7600
1183	40	50	1	166	h	vfr	---	es3fi	m	.4	19.8	<.1	42	7.8400
1184	47	46	0	114	sh	vfr	---	esd	2fgr	3.2	12.1	<.1	40	7.5100
1184	45	42	0	108	vh	fi	3mkpf	esd	2m&csbk	1.4	13.3	<.1	40	7.6600
1184	44	43	0	125	h	vfr	3mkpf	es2sf	3fmsbk	.5	18.8	<.1	40	7.8000
1184	46	42	0	142	vh	vfr	4npf	es3sf	1vcpr	.5	18.9	<.1	40	7.9300
1184	37	45	0	121	vh	fr	---	es2sf	m2csbk	.6	14.7	<.1	40	7.9100
1185	48	47	0	143	so	vfr	---	esd	1cpl2fgr	.8	13.3	<.1	34	7.8100
1185	46	44	0	154	sh	vfr	---	esd	1f&msbk	1.0	13.1	<.1	34	7.8200
1185	52	39	0	157	sh	fr	2npf	esd	1msbk	.7	14.2	<.1	34	7.9400
1185	42	45	4	149	vh	vfr	3mkpf/p	es3sf	2f&msbk	.6	16.6	<.1	34	7.7300
1185	36	43	20	145	vh	fi	2mkpf	es3sf	1vcpr2mc	.5	16.3	<.1	34	7.9000
1185	33	44	42	129	vh	fr	---	es2sf	m	.6	17.3	<.1	34	7.8900
1187	60	38	0	121	so	vfr	---	esd	1fpl2fgr	1.1	9.2	<.1	31	7.6100
1187	56	38	0	123	sh	vfr	---	esd	1msbk	1.6	18.5	<.1	31	7.8800
1187	38	47	3	117	vh	vfr	---	es2sf	2mcsbk	1.2	22.5	<.1	31	8.3100
1187	36	52	9	135	h	vfr	---	es1sf	1cpr	1.0	20.2	<.1	31	8.2000
1187	42	56	10	862	h	vfr	---	es3sf	m	.8	19.1	3.8	31	7.9700
1187	64	34	9	350	sh	vfr	---	es1sf	m	.4	18.9	6.0	31	7.9100
1188	52	34	0	108	so	vfr	---	esd	1cpl2fgr	1.9	15.7	.1	32	7.3300
1188	54	40	0	115	so	vfr	---	esd	1msbk	1.3	16.9	<.1	32	7.5500
1188	58	30	0	105	h	fr	---	es2sf	1msbk	1.2	16.3	<.1	32	7.8200
1188	54	32	0	115	h	fr	---	es3sf	1csbk	1.0	15.1	<.1	32	7.9700
1188	52	36	0	109	h	fr	---	es1sf	m	1.1	11.0	<.1	32	7.8700
1189	66	30	0	126	so	vfr	---	esd	1fpl	1.0	20.6	.1	32	7.4200
1189	56	34	0	111	so	vfr	---	esd	1m&csbk	1.2	18.7	.1	32	7.5200
1189	66	32	0	183	sh	vfr	---	es1sf	m	.9	17.4	3.0	32	7.7600
1189	68	30	2	815	sh	vfr	---	es3sf	m	.6	19.7	3.3	32	7.6500
1189	62	36	9	859	sh	vfr	---	es3sf	m	.4	18.5	4.4	32	7.8600
119	60	25	0	91	sh	vfr	---	eo	1fpl2fgr	3.8	2.6	<.1	09	7.4200
119	59	23	0	104	h	fr	3npfpo	eo	3m&csbk	1.4	2.3	<.1	09	7.4000
119	53	23	0	91	h	fr	4mkpfpo	eo	2cpr3mca	1.5	1.7	<.1	09	7.5200
119	63	21	0	104	h	fr	3npfpo	e1sfsm	2msbk	.8	3.2	<.1	09	7.5000
119	78	14	0	120	sh	vfr	---	e1sfsm	1msbk	.5	2.9	<.1	09	7.6200
119	83	10	0	127	sh	vfr	---	eo	m	.6	2.2	<.1	09	7.6800
1190	42	50	0	99	sh	fr	3npfpo	esd	1cpr2msb	1.9	16.4	.1	34	7.8600
1190	44	48	0	92	sh	fr	2mkpf	ev2sf	1cpr2fms	1.9	17.7	.1	34	7.9500
1190	36	52	0	97				ev2sf		1.4	18.2	<.1	34	7.9400
1190	48	46	1	114	vh	fr	3mkpf	ev3sf	3f,msbk	1.3	17.8	3.3	34	7.6100
1191	82	12	0	95	so	vfr	---	eo	1fgr	1.0	.3	<.1	42	6.8600
1191	79	13	0	101	so	vfr	---	eo	1msbk	.6	.4	<.1	42	7.7100
1191	80	6	0	99	sh	vfr	---	eo	1msbk	.5	.4	<.1	42	7.5900
1191	81	7	0	113	sh	vfr	---	e	rock	.4	2.8	<.1	42	7.4600
1191	82	5	4	98						.1	3.5	<.1	42	7.8900
1192	85	11	0	148	so	vfr	---	ed	1cpl	.3	.8	<.1	42	7.3300
1192	82	14	0	136	so	vfr	---	eo	1msbk	.3	.4	<.1	42	8.0500
1192	66	17	209	536	vh	fi	4mkpfpo	ed	3f&msbk	.7	7.6	<.1	42	7.9500
1192	68	22	34	104	vh	fi	4mkpfpo	esdes3sf	2cpr3msb	.7	3.2	<.1	42	8.0100
1192	64	28	46	370	vh	fi	---	es3sf/sm	2cpl	.1	1.9	3.7	42	7.6700
1193	83	13	5	85	so	vfr	---	eo	1cpl	.7	1.0	<.1	42	7.8400
1193	83	10	7	71	sh	vfr	---	eo	1msbk	.9	1.2	<.1	42	7.9900
1193	74	14	23	80	vh	vfi	4mkpfpo	esd	1mpr2msb	.4	4.2	<.1	42	7.9200
1193	65	27	80	106	vh	fi	4mkpfpo	e3ss&sf	1mcsbk	.4	2.7	<.1	42	7.5000
1194	81	17	5	79	so	vfr	---	eo	1mpl	.5	.3	<.1	42	7.5400
1194	58	22	31	88	vh	vfi	4mkpfpo	eo	3mpr3fab	.9	1.4	<.1	42	7.9000
1194	64	16	38	95	vh	fi	4mkpfpo	es3sf&ss	2cpr3msb	1.2	10.4	<.1	42	7.8100
1194	61	15	40	92	vh	fr	3mkpf	es3ss&sf	2cpr	.7	11.3	<.1	42	7.6300
1195	85	11	0	92	so	vfr	---	eo	1cpl	.5	.4	<.1	42	8.0700
1195	84	12	2	69	so	vfr	---	eo	1msbk	.3	.2	<.1	42	8.1200
1195	66	22	21	80	vh	fi	4mkpfpo	ed	3mpr3msb	.7	4.7	<.1	42	7.8700
1195	69	14	31	90	eh	fi	4mkpfpo	es1sf	3vcpr3ca	.4	4.0	<.1	42	7.9200
1195	47	25	33	163	vh	fi	4n	e3sf	2vcpr	.5	4.2	<.1	42	7.7100
1195	72	10	30	85	eh	fr	---	e1sf	m	.6	1.4	<.1	42	8.0000
1196	85	11	0	67	so	vfr	---	eo	1cpl2fgr	.6	.2	<.1	36	7.3900
1196	78	14	0	84	sh	vfr	3npf	eo	2m&csbk	.6	.5	<.1	36	7.6300
1196	68	20	0	87	h	fr	4mkpfpo	esd	2cpr3cab	.9	1.6	<.1	36	7.6000
1196	74	13	0	87	h	fr	4mkpfpo	esd	2cpr3cab	.6	1.9	<.1	36	7.7600
1196	77	11	0	89	h	fr	2mkpf	es3ss	2m&csbk	.4	11.2	<.1	36	7.7700
1197	77	18	0	118	so	vfr	---	eo	1fpl	.5	.3	<.1	06	7.2800
1197	75	19	0	109	so	vfr	--	eo	1mpl	1.2	.2	<.1	06	7.1700
1197	62	19	3	95	h	fr	3npf	ed	2msbk	1.2	2.0	<.1	06	7.3700
1197	44	26	6	91	h	fr	4mkpf	ev2sf	3cpr	.9	11.0	<.1	06	7.5400
1197	46	30	15	171	vh	fr	4mkpf4n	es3sf	3cpr	.2	3.2	<.1	06	7.6600
1198	83	12	3	154	so	vfr	---	eo	1fgr	.4	.2	<.1	06	7.2100
1198	68	17	0	108	sh	fr	3mkpfpo	eo	2msbk	1.0	.3	<.1	06	7.1700
1198	74	13	0	133	sh	fr	3mkpfpo	eo	2msbk	.6	.2	<.1	06	7.7400
1198	72	15	3	134	sh	fr	3mkpfpo	es3sf	2msbk	.4	2.9	<.1	06	8.0200
1198	83	8	10	139	sh	fr	---	ed	m	.1	.9	<.1	06	8.2600
12	66	23	0	97	so	vfr	---	eo	1mpl1fgr	4.3	1.7	<.1	40	7.1600
12	66	17	0	99	sh	fr	---	ed	2mpl2fpl	.9	2.5	<.1	40	7.3400
12	40	36	0	97	vh	vfi	---	ed	2vcpr	1.4	2.0	<.1	40	7.2600
12	53	22	0	98	h	fi	---	es1smfi	m	1.2	2.3	<.1	40	7.5800
12	71	13	0	118	sh	fr	---	ed	m	.4	2.5	<.1	40	7.6100
12	75	13	0	134	sh	fr	---	ed	m	.4	2.6	<.1	40	7.6100
1200	84	11	4	144	sh	vfr	---	eo	1mpl	.5	2.1	<.1	36	7.8200
1200	84	9	20	174	sh	vfr	---	eo	1msbk	.5	.5	<.1	36	8.0700
1200	70	16	39	123	vh	fi	4mkpfpo	es2sf&ss	3cpr3cab	.6	4.2	<.1	36	7.9200
1200	69	15	55	133	vh	fi	4mkpfpo	es3sf&ss	3cpr3cab	.5	5.5	<.1	36	7.8300
1200	83	6	62	207	vh	fr	4npf	esd3sm	3vcpr	.2	2.6	<.1	36	7.6600
1200	61	22	57	173	vh	fr	3mkpf3n	es3sm&sf	2msbk	.5	2.8	<.1	36	7.7400
1200	59	20	60	130	vh	fr	3mkpf3n	es2sm&sf	2msbk	.4	3.2	<.1	36	7.9800
1202	61	31	0	130	so	vfr	---	eo	1npl	.8	1.7	<.1	38	7.5100
1202	54	36	0	139	sh	fr	2npfpo	ed	2msbk	1.1	1.5	<.1	38	7.6100
1202	58	28	1	122	h	fr	2npfpo	es2sfss	2msbk	1.0	13.4	<.1	38	7.9600
1202	50	30	7	143	h	fr	---	ev4ss/sm	m	.4	44.1	<.1	38	8.5300
1202	50	26	7	74	h	fr	---	es3ssf	m	.3	22.9	<.1	38	8.5000
1202	59	25	13	147	vh	fr	3mkpfpo	es2ssfi	3csbk	.2	13.1	<.1	38	8.3500
1213	56	37	0	110	so	vfr	---	esd	1fgr	.9	13.2	<.1	06	7.1900
1213	36	38	0	95	sh	fr	---	ev2sf	1fsbk	1.4	21.8	<.1	06	7.4100
1213	38	37	2	118	sh	fr	---	evd	rock	.9	26.8	<.1	06	7.7200

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM	CEC
1214	1015	A	UST	10YR4/4	10YR5/4	9	0 -5	cs	Loam	110	RIDGE SIDESLOPE	13
1214	1016	Bt	UST	10YR4/4	10YR6/4	13	5 -18	cw	Loam	110	RIDGE SIDESLOPE	18
1214	1017	Btk1	UST	10YR5/6	10YR6/4	19	18 -64	gw	Loam	110	RIDGE SIDESLOPE	13
1214	1018	Btk2	UST	10YR5/6	2.5YR6/4	20	64 -98	cw	Loam	110	RIDGE SIDESLOPE	13
1214	1019	Btk3	UST	2.5YR5/6	2.5YR6/4	20	98 -110	cw	Loam	110	RIDGE SIDESLOPE	10
1215	1020	A	ARID	2.5YR4/4	2.5YR5/4	9	0 -6	cs	Loam	>150	RIDGE SIDESLOPE	11
1215	1021	Bt1	ARID	10YR4/4	10YR5/4	13	6 -26	cs	Loam	>150	RIDGE SIDESLOPE	12
1215	1022	Bt2	ARID	10YR3/4	10YR5/4	13	26 -48	cw	Loam	>150	RIDGE SIDESLOPE	18
1215	1023	Btk1	ARID	2.5YR5/4	2.5YR6/4	19	48 -80	gs	Loam	>150	RIDGE SIDESLOPE	16
1215	1024	Btk2	ARID	2.5YR5/4	2.5YR6/4	19	80 -126	cw	Loam	>150	RIDGE SIDESLOPE	17
1215	1025	Btk3	ARID	2.5YR5/4	2.5YR6/4	23	126-150		Loam	>150	RIDGE SIDESLOPE	15
1216	1060	A	UST	10YR3/3	10YR5/4	6	0 -5	cs	Sandy Loam	107	RIDGE SIDESLOPE	10
1216	1061	Bt	UST	10YR4/4	10YR5/4	11	5 -19	cs	Loam	107	RIDGE SIDESLOPE	12
1216	1062	Btk1	UST	2.5YR5/4	2.5YR6/4	15	19 -89	cw	Loam	107	RIDGE SIDESLOPE	10
1216	1063	Btk2	UST	2.5YR5/4	2.5YR6/4	21	89 -107	cw	Loam	107	RIDGE SIDESLOPE	12
122	0298	A	UST	10YR5/3	10YR4/3	18	0 -7	cs	Sandy Loam	>150	ALLUVIAL FAN	14
122	0299	BA	UST	10YR5/3	10YR4/3	15	7 -18	gw	Sandy Loam	>150	ALLUVIAL FAN	12
122	0300	Bt	UST	10YR5/3	10YR4/3	12	18 -56	gw	Sandy Loam	>150	ALLUVIAL FAN	9
122	0301	C1	UST	10YR6/4	10YR5/6	8	56 -104	gw	Sandy Loam	>150	ALLUVIAL FAN	6
122	0302	C2	UST	10YR6/4	10YR5/4	12	104-150		Sandy Loam	>150	ALLUVIAL FAN	9
123	0292	A	UST	10YR6/4	10YR4/4	8	0 -7	cs	Loamy Sand	>150	ALLUVIAL FAN	4
123	0293	Bw1\Bt	UST	10YR5/4	10YR4/4	14	7 -24	gs	Sandy Loam	>150	ALLUVIAL FAN	10
123	0294	Bw2\Bt	UST	10YR5/4	10YR4/4	15	24 -63	gw	Sandy Loam	>150	ALLUVIAL FAN	9
123	0295	Bk\Btk	UST	10YR6/4	10YR5/4	17	63 -116	gw	Sandy Loam	>150	ALLUVIAL FAN	11
123	0296	C	UST	10YR6/4	10YR5/4	11	116-150		Sandy Loam	>150	ALLUVIAL FAN	6
1230	0991	A	UST	10YR4/4	10YR5/4	5	0 -5	cs	Sandy Loam	40	HILL SHOULDER	10
1230	0992	AC	UST	10YR5/4	10YR6/4	10	5 -23	aw	Sandy Loam	40	HILL SHOULDER	13
1230	0993	C	UST	10YR5/6	10YR6/4	12	23 -40	gw	Sandy Loam	40	HILL SHOULDER	8
1230	0994	Cr	UST			20	40 -75		Loam	40	HILL SHOULDER	12
1237	1006	A	UST	2.5YR4/4	2.5YR5/4	6	0 -6	cs	Sandy Loam	84	RIDGE SHOULDER	11
1237	1007	Bt	UST	2.5YR5/4	2.5YR6/4	14	6 -18	cw	Loam	84	RIDGE SHOULDER	14
1237	1008	Btk1	UST	2.5YR5/6	2.5YR6/4	24	18 -43	cw	Loam	84	RIDGE SHOULDER	15
1237	1009	Btk2	UST	2.5YR5/4	2.5YR6/4	24	43 -84	cw	Loam	84	RIDGE SHOULDER	13
1238	0996	A	UST	10YR4/4	10YR5/4	6	0 -7	cs	Sandy Loam	>150	RIDGE SIDESLOPE	12
1238	0997	Bt	UST	10YR4/4	10YR5/4	14	7 -28	cw	Loam	>150	RIDGE SIDESLOPE	15
1238	0998	Btk1	UST	10YR5/6	10YR6/4	24	28 -58	gw	Loam	>150	RIDGE SIDESLOPE	15
1238	0999	Btk2	UST	10YR5/6	10YR6/4	28	58 -97	cw	Clay Loam	>150	RIDGE SIDESLOPE	14
1238	1000	2Btk3	UST	2.5YR5/6	2.5YR6/4	24	97 -160		Loam	>150	RIDGE SIDESLOPE	12
124	0950	A	UST	10YR5/3	10YR3/3	29	0 -6	cs	Clay Loam	>150	VALLEY BOTTOM	45
124	0951	Bw	UST	10YR4/3	10YR3/3	43	6 -15	as	Clay	>150	VALLEY BOTTOM	44
124	0952	2Bt1	UST	10YR5/3	10YR3/2	23	15 -30	cs	Sandy Clay Loam	>150	VALLEY BOTTOM	18
124	0953	2Bt2	UST	10YR5/4	10YR4/4	13	30 -46	cs	Sandy Loam	>150	VALLEY BOTTOM	13
124	0954	2C1	UST	10YR6/4	10YR4/4	11	46 -70	as	Sandy Loam	>150	VALLEY BOTTOM	9
124	0955	3C2	UST	10YR6/4	10YR5/4	15	70 -121	as	Loam	>150	VALLEY BOTTOM	15
124	0956	3C3	UST	10YR6/4	10YR5/4	17	121-160		Loam	>150	VALLEY BOTTOM	17
1240	1001	A	UST	7.5YR4/4	7.5YR5/4	8	0 -7	cs	Sandy Loam		RIDGE SIDESLOPE	12
1240	1002	Bt	UST	7.5YR4/6	7.5YR5/6	18	7 -30	cw	Loam		RIDGE SIDESLOPE	23
1240	1003	Btk1	UST	10YR5/6	10YR6/4	24	30 -72	cs	Loam		RIDGE SIDESLOPE	15
1240	1004	Btk2	UST	10YR4/6	10YR5/4	18	72 -118	cs	Loam		RIDGE SIDESLOPE	16
1240	1005	Btk3	UST	7.5YR4/4	7.5YR5/4	16	118-150		Loam		RIDGE SIDESLOPE	21
126	0286	A	UST	10YR6/3	10YR4/3	14	0 -7	cs	Sandy Loam	>150	FAN	12
126	0287	BA	UST	10YR5/3	10YR4/3	17	7 -20	gs	Sandy Loam	>150	FAN	13
126	0288	Bt	UST	10YR5/4	10YR4/4	14	20 -60	gw	Sandy Loam	>150	FAN	10
126	0289	Btk	UST	10YR6/4	10YR5/4	20	60 -100	gw	Sandy Loam	>150	FAN	12
126	0290	C	UST	10YR6/4	10YR5/4	14	100-150		Sandy Loam	>150	FAN	9
1266	1165	A	ARID	7.5YR5/4	10YR6/3	14	0 -5	cs	Sandy Loam	>150	VALLEY BOTTOM	18
1266	1166	Bt	ARID	7.5YR5/4	10YR6/3	14	5 -38	gs	Sandy Loam	>150	VALLEY BOTTOM	16
1266	1167	Bky1	ARID	7.5YR5/4	10YR6/3	14	38 -85	cs	Sandy Loam	>150	VALLEY BOTTOM	15
1266	1168	Bky2	ARID	7.5YR5/4	10YR6/3	16	85 -150		Sandy Loam	>150	VALLEY BOTTOM	19
1267	1152	A	ARID	5YR3/4	5YR5/4	8	0 -5	cs	Sandy Loam	>150	VALLEY BOTTOM	6
1267	1153	By1	ARID	5YR4/4	5YR5/4	10	5 -15	as	Sandy Loam	>150	VALLEY BOTTOM	7
1267	1154	By2	ARID	7.5YR4/6	7.5YR5/4	3	15 -44	aw	Loamy Sand	>150	VALLEY BOTTOM	5
1267	1155	2By3	ARID	7.5YR4/4	7.5YR5/4	8	44 -64	cs	Sandy Loam	>150	VALLEY BOTTOM	7
1267	1156	2By4	ARID	7.5YR3/4	7.5YR5/4	8	64 -95	gs	Sandy Loam	>150	VALLEY BOTTOM	9
1267	1157	2By5	ARID	7.5YR4/4	7.5YR5/4	10	95 -135	cw	Sandy Loam	>150	VALLEY BOTTOM	5
1268	1283	A	ARID	7.5YR5/4	7.5YR6/4	10	0 -6	cs	Sandy Loam	>150	VALLEY BOTTOM	12
1268	1284	Bw\BA	ARID	7.5YR4/4	7.5YR6/4	12	6 -48	as	Sandy Loam	>150	VALLEY BOTTOM	13
1268	1285	Bk\Bt	ARID	7.5YR4/4	7.5YR5/4	17	48 -97	as	Sandy Loam	>150	VALLEY BOTTOM	19
1268	1286	Bky\Bt	ARID	5YR4/4	5YR5/4	21	97 -128	cw	Loam	>150	VALLEY BOTTOM	28
1268	1287	By\Bty	ARID	5YR4/4	5YR5/4	24	128-150		Sandy Clay Loam	>150	VALLEY BOTTOM	32
1269	1169	A	ARID	7.5YR5/4	7.5YR6/4	8	0 -6	cs	Loamy Sand	>150	VALLEY BOTTOM	6
1269	1170	Bw	ARID	7.5YR4/4	7.5YR5/4	9	6 -21	aw	Sandy Loam	>150	VALLEY BOTTOM	9
1269	1171	2Btkyb	ARID	5YR4/3	5YR5/3	9	21 -55	cs	Sandy Loam	>150	VALLEY BOTTOM	29
1269	1172	2Bkyb1	ARID	7.5YR5/4	7.5YR6/4	22	55 -84	as	Sandy Clay Loam	>150	VALLEY BOTTOM	25
1269	1173	2Bkyb2	ARID	7.5YR5/4	7.5YR6/4	13	84 -120	as	Sandy Loam	>150	VALLEY BOTTOM	13
1269	1174	2Bkyb3	ARID	5YR5/3	5YR6/3	29	120-145		Clay Loam	>150	VALLEY BOTTOM	34
1270	1159	A	ARID	2.5YR3/4	2.5YR5/4	16	0 -5	cs	Loam	>150	VALLEY BOTTOM	15
1270	1160	By	ARID	5YR4/4	5YR5/4	10	5 -22	cs	Sandy Loam	>150	VALLEY BOTTOM	14
1270	1161	Bty1	ARID	5YR4/4	5YR5/4	8	22 -35	cs	Sandy Loam	>150	VALLEY BOTTOM	15
1270	1162	2Bty2	ARID	5YR4/4	5YR5/4	10	36 -71	cs	Sandy Loam	>150	VALLEY BOTTOM	26
1270	1163	2By	ARID	7.5YR4/4	7.5YR6/4	6	71 -112	cw	Sandy Loam	>150	VALLEY BOTTOM	14
1270	1164	3C*	ARID	7.5YR5/4	7.5YR7/4	3	112-150		Sand	>150	VALLEY BOTTOM	2
1271	1064	A	ARID	2.5YR4/4	2.5YR6/4	4	0 -6	cs	Sandy Loam		RIDGE SIDESLOPE	8
1271	1065	Bt	ARID	2.5YR4/4	2.5YR6/4	7	6 -18	cs	Sandy Loam		RIDGE SIDESLOPE	12
1271	1066	Btk1	ARID	2.5YR5/4	2.5YR6/4	18	18 -53	gs	Loam		RIDGE SIDESLOPE	15
1271	1067	Btk2	ARID	2.5YR5/4	2.5YR6/4	24	53 -79	cw	Loam		RIDGE SIDESLOPE	19
1271	1068	Btk3	ARID	10YR4/4	10YR5/4	17	79 -125	cw	Loam		RIDGE SIDESLOPE	20
1271	1069	Btky	ARID	10YR5/4	10YR6/4	19	125-160		Loam		RIDGE SIDESLOPE	19
1272	0894	A	ARID	10YR4/4	10YR6/4	7	0 -6	cs	Sandy Loam	>150	RIDGE SIDESLOPE	10
1272	0895	Bt	ARID	10YR5/4	10YR6/4	11	6 -23	cs	Sandy Loam	>150	RIDGE SIDESLOPE	13
1272	0896	Btk1	ARID	10YR5/4	10YR6/4	17	23 -49	cw	Loam	>150	RIDGE SIDESLOPE	13
1272	0897	Btk2	ARID	10YR5/4	10YR7/4	21	49 -99	cw	Loam	>150	RIDGE SIDESLOPE	15
1272	0898	Btk3	ARID	7.5YR5/4	7.5YR7/4	15	99 -130	gw	Loam	>150	RIDGE SIDESLOPE	14
1272	0899	Bk	ARID	7.5YR7/4	7.5YR8/4	7	130-150		Sandy Loam	>150	RIDGE SIDESLOPE	10
1273	1090	A	ARID	2.5YR5/4	2.5YR6/4	7	0 -4	aw	Sandy Loam	25	RIDGE SIDESLOPE	14
1273	1091	C	ARID	2.5YR4/4	2.5YR6/4	7	4 -25	gs	Sandy Loam	25	RIDGE SIDESLOPE	12
1274	1084	A	ARID	2.5YR4/4	2.5YR6/4	8	0 -5	cs	Loam	>150	FAN SIDESLOPE	11
1274	1085	Bw\Bt	ARID	2.5YR4/4	2.5YR6/4	17	5 -31	as	Loam	>150	FAN SIDESLOPE	11
1274	1086	Bk1	ARID	2.5YR4/4	2.5YR6/4	13	31 -68	cs	Loam	>150	FAN SIDESLOPE	14
1274	1087	Bk2	ARID	2.5YR5/4	2.5YR6/4	15	68 -85	gw	Sandy Loam	>150	FAN SIDESLOPE	9
1274	1088	C1	ARID	2.5YR4/4	2.5YR6/4	21	85 -119	cs	Loam	>150	FAN SIDESLOPE	16
1274	1089	C2	ARID	2.5YR5/4	2.5YR6/4	19	119-150		Loam	>150	FAN SIDESLOPE	12
1275	0900	A	ARID	10YR4/4	10YR6/4	4	0 -8	cs	Sandy Loam	>150	RIDGE SIDESLOPE	9
1275	0901	Bt	ARID	10YR5/4	10YR6/4	11	8 -29	cs	Sandy Loam	>150	RIDGE SIDESLOPE	11

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	PH
1214	51	40	0	92	sh	vfr	---	esd	1npl	1.4	9.2	<.1	06	7.1000
1214	47	40	0	99	sh	fr	2npf	esd	2msbk	1.2	12.5	<.1	06	7.3700
1214	45	36	0	98	h	fr	3mkpfpo	esd&3sfs	2msbk	.9	16.2	<.1	06	7.6600
1214	43	37	1	94	h	fr	3mkpfpo	evd&2sfs	2msbk	.5	16.5	<.1	06	8.0600
1214	48	32	2	109	h	fi	2npf	evd&1sfs	1msbk	.4	21.1	<.1	06	7.9900
1215	47	42	0	102	sh	vfr	---	esd	2fgr	1.5	16.9	<.1	38	7.3100
1215	46	41	0	94	h	fr	3npfpo	esd	2mcsbk	1.1	15.4	<.1	38	7.4700
1215	40	47	0	93	h	fr	3mkpfpo	esd	1cpr2mcs	1.4	13.0	<.1	38	7.4400
1215	42	39	0	80	h	fr	3mkpfpo	es2sf	1cpr2mcs	1.0	16.1	<.1	38	7.6500
1215	40	41	2	69	h	fr	3mkpfpo	es2sf	2mcsbk	.9	16.0	<.1	38	7.8500
1215	37	40	3	103	h	fr	3mkpfpo	es2sf	2msbk	.9	15.7	<.1	38	7.7900
1216	56	38	0	103	so	vfr	---	ed	1fgr	1.4	4.2	<.1	06	7.5500
1216	49	40	0	96	sh	vfr	2npfpo	esd	1msbk	1.1	10.5	<.1	06	7.7700
1216	50	35	0	101	h	fr	3npfpo	esd1sf	1mpr2msb	.0	18.6	<.1	06	8.1500
1216	46	33	2	86	h	fr	2npf	esd2sf	1csbk	.2	15.9	<.1	06	8.0600
122	57	24	0	86	so	vfr	---	e	1cpl/1m,	2.0	<.1	<.1	13	6.7100
122	70	14	0	92	sh	fr	---	eo	1msbk	1.0	.4	<.1	13	7.2700
122	74	14	0	119	sh	fr	1npf	esd	1mpr	.6	4.5	<.1	13	7.7300
122	85	7	1	145	sh	vfr	---	esd	m	.1	2.8	<.1	13	8.1800
122	78	10	0	119	h	fr	---	esd	m	.8	1.9	<.1	13	8.1000
123	80	13	0	97	so	vfr	---	eo	1fgr	.8	<.1	<.1	13	6.8700
123	77	10	0	91	so	vfr	---	eo	1msbk	1.0	.5	<.1	13	7.5300
123	76	10	0	106	sh	fr	---	esd	1msbk	.6	4.6	<.1	13	7.9600
123	66	18	0	100	h	fr	---	es1sf	m	.5	4.1	<.1	13	8.1600
123	80	10	2	156	h	vfr	---	esd	m	.2	2.9	<.1	13	8.6300
1230	65	30	0	114	sh	vfr	---	esd	1fgr	1.0	7.5	<.1	06	7.2100
1230	55	35	0	99	sh	fr	---	esd	1msbk	1.8	19.2	<.1	06	7.3600
1230	54	34	0	109	sh	fr	---	esd	m	.6	22.6	<.1	06	7.7300
1230	39	41	2	107						.5	18.1	<.1	06	8.2800
1237	51	43	0	113	sh	vfr	---	esd	1npl2fgr	1.4	14.9	<.1	06	7.0500
1237	46	40	0	88	sh	vfr	2npf	esd	1msbk	1.5	22.0	<.1	06	7.3200
1237	39	37	0	101	h	fr	3npfpo	evd3sfss	2msbk	3.9	25.4	<.1	06	7.6200
1237	42	34	0	99	h	fr	3npfpo	evd3sfss	2mcsbk	.5	25.6	<.1	06	8.0100
1238	58	36	0	118	so	vfr	---	esd	2fgr	1.7	6.1	<.1	06	7.2600
1238	51	35	0	82	sh	fr	2npf	esd	2msbk	1.4	14.6	<.1	06	7.4800
1238	42	34	0	96	sh	fr	3npfpo	evd3sfss	2msbk	1.2	22.3	<.1	06	7.6300
1238	39	33	2	103	h	fr	3mkpfpo	evd3sfss	1cpr2msb	.6	19.5	<.1	06	8.0400
1238	44	32	3	77	h	fr	3mkpfpo	evd2sfss	1cpr2msb	.0	21.2	<.1	06	8.1800
124	35	36	1	111	sh	vfr	---	eo	2fgr	.4	.7	<.1	22	7.0300
124	27	30	0	111	vh	fi	---	eo	3fsbk	.3	<.1	<.1	22	6.6200
124	55	21	0	88	vh	fr	4mkpf	eo	2cpr	.4	<.1	<.1	22	5.8400
124	63	24	0	90	sh	vfr	3mkpf	eo	2cpr	.3	<.1	<.1	22	5.8700
124	67	21	0	107	sh	vfr	---	eo	m	.4	.4	<.1	22	7.1800
124	47	38	0	101	sh	vfr	---	eo	m	.3	2.5	<.1	22	7.6500
124	36	47	1	87	sh	vfr	---	eo	m	.1	2.6	<.1	22	7.5700
1240	57	35	0	83	so	vfr	---	eo	2fgr	1.3	<.1	<.1	06	6.9100
1240	47	35	0	86	sh	fr	3npfpo	eo	3fsbk	1.2	2.8	<.1	06	7.3800
1240	44	32	1	86	h	fr	4mkpfpo	esd3ss,s	3msbk	.7	19.7	<.1	06	7.8800
1240	43	39	3	97	h	fr	4mkpfpo	esd3ss,s	1cpr2mcs	1.7	9.4	<.1	06	8.1000
1240	38	46	5	90	h	fr	3npfpo	esd3sf,s	1msbk	3.3	4.1	<.1	06	8.0900
126	64	23	0	75	so	vfr	---	eo	wcogrwmd	2.1	.6	<.1	10	7.2200
126	65	19	0	88	sh	vfr	---	eo	1msbk	1.2	.4	<.1	10	7.4200
126	74	13	0	97	sh	fr	2npf	esd	1mpr	.6	2.8	<.1	10	8.0300
126	64	17	1	98	vh	fr	3npf	esd2sdf	2mcfr	.7	4.1	<.1	10	8.1400
126	76	11	2	111	h	fr	---	esd	m	.4	3.0	<.1	10	8.2500
1266	63	23	0	96	so	vfr	---	esd	1cpl	.6	5.6	<.1	42	7.5100
1266	67	18	1	100	sh	fr	3npfpo	esd	2msbk	.5	5.3	<.1	42	7.6100
1266	68	18	2	114	sh	fr	---	esd&1sf	m	.4	5.6	<.1	42	7.6000
1266	62	22	8	144	sh	fr	---	esd&3sf	m	.2	5.8	.3	42	7.6800
1267	77	15	0	837	sh	vfr	---	esd	1fpl	.9	4.6	3.1	30	7.6600
1267	56	34	0	225	sh	vfr	---	esd	1msbk	.2	5.1	.6	30	7.5900
1267	79	18	0	1417	sh	vfr	---	esd	1msbk	.4	2.0	6.4	30	7.5700
1267	68	24	0	403	sh	fr	---	esd	m	.5	1.9	1.1	30	7.8600
1267	62	30	0	425	sh	fr	---	esd	m	.7	2.1	1.9	30	7.4800
1267	77	13	0	271	sh	fr	---	esd	m	.5	2.9	.6	30	7.9700
1268	79	11	0	116	so	vfr	---	ed	1fgr	.3	4.4	<.1	40	7.4700
1268	69	19	2	114	sh	fr	---	ed	2m&csbk	.3	4.8	<.1	40	7.3400
1268	58	25	13	150	sh	fr	---	esd3sssf	2m,csbk	1.2	5.5	.5	40	7.4900
1268	47	32	50	194	h	fi	---	esd2sf	2m,csbk	2.1	5.9	<.1	40	7.3300
1268	57	19	54	338	h	fi	---	esd	2fsbk	2.1	6.0	<.1	40	7.4700
1269	85	8	0	115	so	vfr	---	esd	1fgr	.2	2.6	<.1	42	7.0100
1269	78	13	0	122	sh	vfr	---	esd	1msbk	.5	4.1	<.1	42	7.4100
1269	62	30	12	182	h	fi	3mkpfpo	esd3sfss	2msbk	1.4	6.0	1.6	42	7.2200
1269	52	27	25	164	vh	vfi	---	esd3sfss	1msbk	.5	6.7	.7	42	7.4100
1269	65	22	25	119	hf	r s	---	esd2sf	m	.4	6.3	<.1	42	7.4400
1269	42	30	46	239	vh	vfi	---	esd2sf	m	.5	5.2	.6	42	7.3700
1270	49	35	0	115	sh	vfr	---	esd	1fpl	.7	8.3	<.1	45	7.3300
1270	59	31	0	195	sh	vfr	---	esd3sf	1msbk	.8	20.2	.9	45	7.6600
1270	57	35	0	257	sh	frs	2npf	esd3sfss	1cpr	.7	6.2	1.6	45	7.3800
1270	59	31	2	234	h	fr	3mkpfpo	esd	3msbk	1.1	7.2	<1.0	45	7.4900
1270	68	25	3	582	sh	fr	---	esd	2csbk	.4	7.1	6.0	45	7.7300
1270	94	3	5	2223	sh	vfr	---	ed	m	.1	5.3	3.3	45	7.5400
1271	62	34	0	102	so	vfr	---	esd	1fgr	.9	8.2	<.1	31	7.4300
1271	57	36	0	85	sh	vfr	2npfpo	esd	2msbk	1.1	10.6	<.1	31	7.6100
1271	43	39	0	89	h	fr	3mkpfpo	esd2sf	2msbk	1.2	20.1	<.1	31	7.6400
1271	39	37	1	75	h	fr	3mkpfpo	esd2sf	2msbk	.9	24.6	.1	31	8.0000
1271	43	40	3	79	h	fr	3mkpfpo	esd2sf	2msbk	.8	13.1	<.1	31	8.2500
1271	38	43	4	92	sh	fr	2npf	esd3sf	2msbk	.7	14.3	<.1	31	8.1000
1272	58	35	0	86	so	vfr	---	esd	1fpl	1.7	10.2	<.1	31	7.3400
1272	56	33	0	99	sh	fr	1npf	esd	1msbk	1.2	13.4	<.1	31	7.7700
1272	46	37	0	97	sh	fr	2npfpo	esd2ss	2msbk	1.2	16.8	<.1	31	7.7400
1272	36	43	1	90	h	fr	3mkpfpo	esd3ss	2msbk	.7	19.7	<.1	31	7.8400
1272	44	41	4	85	sh	fr	2npfpo	es3ss	1mcsbk	.2	25.5	<.1	31	8.1400
1272	64	29	6	97	sh	fr	---	ev4sssm	m	.4	36.2	<.1	31	8.1200
1273	55	38	0	591	so	vfr	---	esd	1mpl	.9	14.2	2.5	36	7.4700
1273	64	29	0	813	sh	fr	---	esd	m	.7	13.0	4.2	36	7.2900
1274	50	42	1	97	sh	vfr	---	esd	1npl	1.3	16.8	<.1	34	7.0500
1274	44	39	0	87	sh	vfr	---	esd	2msbk	.8	17.4	<.1	34	7.2900
1274	46	41	0	126	h	fr	---	es3sf	1cpr2msb	1.0	17.3	.4	34	7.3000
1274	55	30	0	109	sh	vfr	---	es2sf	1msbk	.5	18.4	<.1	34	7.4600
1274	38	79	0	81	h	fr	---	esd	m	1.0	18.2	<.1	34	7.4700
1274	43	38	0	91	sh	fr	---	esd	m	.4	18.8	<.1	34	7.5700
1275	65	31	0	113	sh	vfr	---	ed	1fpl	.9	5.2	<.1	32	7.6200
1275	55	34	0	85	sh	fr	2npfpo	esd	1msbk	1.7	10.9	<.1	32	7.8100

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM		CEC
1275	0902	Btk1	ARID	10YR5/3	10YR6/3	21	29 -51	gs	Loam	>150	RIDGE SIDESLOPE		16
1275	0903	Btk2	ARID	10YR5/3	10YR6/3	23	51 -87	cw	Loam	>150	RIDGE SIDESLOPE		15
1275	0904	Btk3	ARID	10YR5/6	10YR6/6	18	87 -122	cw	Loam	>150	RIDGE SIDESLOPE		11
1275	0905	Bk	ARID	10YR5/6	10YR6/6	17	122-150		Loam	>150	RIDGE SIDESLOPE		9
1276	1075	A	ARID	2.5YR4/4	10YR6/4	11	0 -7	cs	Loam	>150	FAN SIDESLOPE		9
1276	1076	Bw\Bt1	ARID	2.5YR4/4	10YR6/4	17	7 -28	cw	Loam	>150	FAN SIDESLOPE		10
1276	1077	Bk1\Bt	ARID	2.5YR4/4	10YR6/4	19	28 -80	aw	Loam	>150	FAN SIDESLOPE		13
1276	1078	Bk2\Bt	ARID	2.5YR4/4	10YR6/4	19	80 -130	gw	Loam	>150	FAN SIDESLOPE		13
1276	1079	Bk3	ARID	2.5YR4/4	10YR6/4	17	130-160		Loam	>150	FAN SIDESLOPE		15
1277	1070	A	ARID	2.5YR4/4	2.5YR6/4	19	0 -7	as	Loam	>150	FAN SIDESLOPE		14
1277	1071	Bk1	ARID	2.5YR4/4	2.5YR6/4	19	7 -38	as	Loam	>150	FAN SIDESLOPE		13
1277	1072	Bk2	ARID	2.5YR4/4	2.5YR6/4	9	38 -80	cs	Loam	>150	FAN SIDESLOPE		20
1277	1073	Bk3	ARID	2.5YR4/4	2.5YR6/4	19	80 -123	cs	Loam	>150	FAN SIDESLOPE		17
1277	1074	Bk4	ARID	2.5YR4/4	2.5YR6/4	7	123-160		Loam	>150	FAN SIDESLOPE		18
1278	1080	A	ARID	2.5YR5/4	2.5YR6/4	7	0 -6	cs	Loam	>150	RIDGE SIDESLOPE	1	15
1278	1081	C1\B	ARID	2.5YR5/6	variable	3	6 -33	gs	Silt Loam	>150	RIDGE SIDESLOPE	1	23
1278	1082	C2\Bt	ARID	2.5YR5/6	variable	27	33 -132	gs	Clay Loam	>150	RIDGE SIDESLOPE	1	18
1278	1083	Cr\C	ARID			13	132-140		Sandy Loam	>150	RIDGE SIDESLOPE	1	11
129	0304	A	ARIDIC	10YR5/4	10YR4/3	4	0 -5	cs	Sandy Loam	>150	SIDESLOPE		6
129	0305	BA	ARIDIC	7.5YR5/4	7.5YR4/4	8	5 -13	cs	Loamy Sand	>150	SIDESLOPE		8
129	0306	Bt1	ARIDIC	7.5YR5/6	7.5YR4/4	14	13 -40	cw	Sandy Loam	>150	SIDESLOPE		13
129	0307	Bt2	ARIDIC	7.5YR5/6	7.5YR4/6	14	40 -64	cw	Sandy Loam	>150	SIDESLOPE		12
129	0308	Btk	ARIDIC	7.5YR6/6	7.5YR4/6	19	64 -91	gw	Sandy Loam	>150	SIDESLOPE		12
129	0309	Bk1	ARIDIC	7.5YR7/6	7.5YR4/6	18	91 -129	cw	Sandy Loam	>150	SIDESLOPE		11
129	0310	Bk2	ARIDIC	7.5YR6/6	7.5YR4/6	21	129-170		Sandy Clay Loam	>150	SIDESLOPE		14
130	0906	A	ARID	10YR5/3	10YR4/3	14	0 -8	cs	Sandy Loam	>150	TERRACE SIDESLOPE		16
130	0907	C1	ARID	10YR6/3	10YR5/3	11	8 -33	as	Sandy Loam	>150	TERRACE SIDESLOPE		15
130	0908	C2	ARID	10YR6/3	10YR5/3	14	33 -57	cs	Sandy Loam	>150	TERRACE SIDESLOPE		19
130	0909	C3	ARID	10YR6/3	10YR5/3	15	57 -135	as	Loam	>150	TERRACE SIDESLOPE		18
130	0910	C4	ARID	10YR5/4	10YR4/4	26	135-150		Loam	>150	TERRACE SIDESLOPE		23
131	0918	A	ARID	10YR6/4	10YR4/4	6	0 -7	cs	Sand	>150	FAN SIDESLOPE		5
131	0919	AC	ARID	10YR6/4	10YR5/4	6	7 -65	cs	Sand	>150	FAN SIDESLOPE		6
131	0920	Ab	ARID	10YR4/2	10YR3/2	8	65 -91	gs	Loamy Sand	>150	FAN SIDESLOPE		8
131	0921	C1	ARID	10YR5/4	10YR4/4	8	91 -112	cs	Loamy Sand	>150	FAN SIDESLOPE		8
131	0922	C2	ARID	10YR5/4	10YR4/3	10	112-150		Loamy Sand	>150	FAN SIDESLOPE		7
132	0912	A	ARID	10YR6/4	10YR4/3	3	0 -5	cs	Sand	>150	FAN SIDESLOPE		4
132	0913	AC	ARID	10YR5/4	10YR4/3	4	5 -37	cs	Sand	>150	FAN SIDESLOPE		4
132	0914	Ab	ARID	10YR5/3	10YR3/3	6	37 -52	ds	Sand	>150	FAN SIDESLOPE		5
132	0915	AC'	ARID	10YR5/3	10YR3/3	5	52 -121	ds	Sand	>150	FAN SIDESLOPE		5
132	0916	C	ARID	10YR5/4	10YR4/4	6	121-150		Sand	>150	FAN SIDESLOPE		5
133	0924	A	ARID	10YR5/3	10YR4/3	16	0 -6	cs	Sandy Loam	>150	TERRACE SIDESLOPE		19
133	0925	Bt	ARID	10YR5/4	10YR4/4	13	6 -44	cw	Sandy Loam	>150	TERRACE SIDESLOPE		20
133	0926	Btk	ARID	10YR5/4	10YR4/4	16	44 -69	cw	Sandy Loam	>150	TERRACE SIDESLOPE		23
133	0927	C	ARID	10YR6/4	10YR5/4	14	69 -113	cw	Sandy Loam	>150	TERRACE SIDESLOPE		20
133	0928	Bkt	ARID	10YR5/3	10YR4/3	22	113-150		Loam	>150	TERRACE SIDESLOPE		23
134	0930	A	ARID	10YR5/3	10YR3/3	17	0 -8	cs	Loam	>150	TERRACE SIDESLOPE		24
134	0931	Bt1	ARID	10YR5/4	10YR4/4	17	8 -17	aw	Sandy Loam	>150	TERRACE SIDESLOPE		15
134	0932	Bt2	ARID	10YR5/3	10YR4/3	22	17 -26	cw	Sandy Clay Loam	>150	TERRACE SIDESLOPE		22
134	0933	C	ARID	10YR5/4	10YR4/4	9	26 -35	aw	Loamy Sand	>150	TERRACE SIDESLOPE		17
134	0934	2Btb1	ARID	10YR5/3	10YR4/3	24	35 -63	cs	Sandy Clay Loam	>150	TERRACE SIDESLOPE		22
134	0935	2Btb2	ARID	10YR5/4	10YR4/4	17	63 -85	cw	Sandy Loam	>150	TERRACE SIDESLOPE		25
134	0936	2Btkb	ARID	10YR6/4	10YR4/4	14	85 -116	gw	Sandy Loam	>150	TERRACE SIDESLOPE		20
134	0937	2Bkb	ARID	10YR5/3	10YR4/4	15	116-150		Sandy Loam	>150	TERRACE SIDESLOPE		21
135	0344	A	UST	10YR6/3	10YR4/3	12	0 -7	cs	Sandy Loam	>150	ALLUVIAL FAN		9
135	0345	BA	UST	10YR5/4	10YR5/4	4	7 -21	cw	Loamy Sand	>150	ALLUVIAL FAN		12
135	0346	Bt1\Bt	UST	10YR5/4	10YR4/4	8	21 -35	cw	Sandy Loam	>150	ALLUVIAL FAN		27
135	0347	Bt2	UST	10YR5/4	2.5YR4/4	4	35 -50	cw	Sandy Loam	>150	ALLUVIAL FAN		22
135	0348	Btk	UST	10YR6/4	10YR5/4	6	50 -75	gw	Sandy Loam	>150	ALLUVIAL FAN		14
135	0349	Bk1	UST	10YR6/4	10YR5/4	11	75 -116	cs	Sandy Loam	>150	ALLUVIAL FAN		12
135	0350	Bk2	UST	10YR6/4	10YR5/4	14	116-150	cs	Sandy Loam	>150	ALLUVIAL FAN		12
138	0352	A	ARIDIC	10YR5/4	10YR4/3	2	0 -5	cs	Sandy Loam		BEDROCK RIDGE		9
138	0353	Bw1	ARIDIC	10YR5/4	10YR4/4	4	5 -23	gs	Sandy Loam		BEDROCK RIDGE		11
138	0354	Bw2	ARIDIC	10YR5/3	10YR4/3	4	23 -43	gw	Sandy Loam		BEDROCK RIDGE		10
138	0355	Bk	ARIDIC	10YR7/3	10YR6/3	12	43 -59	cw	Loam		BEDROCK RIDGE		14
138	0356	Cr	ARIDIC			18	59 -76	gw	Loam		BEDROCK RIDGE		15
139	0338	A	UST	10YR6/3	10YR4/3	17	0 -6	cs	Loam	>150	ALLUVIAL FAN		7
139	0339	BA	UST	10YR5/4	10YR4/4	11	6 -15	cs	Sandy Loam	>150	ALLUVIAL FAN		10
139	0340	Bt	UST	10YR5/4	10YR4/4	20	15 -28	cw	Sandy Loam	>150	ALLUVIAL FAN		10
139	0341	Btk	UST	10YR6/4	10YR5/4	20	28 -84	gw	Sandy Loam	>150	ALLUVIAL FAN		10
139	0342	Bk	UST	10YR6/4	10YR5/4	7	84 -180		Sandy Loam	>150	ALLUVIAL FAN		11
14	0798	A	ARIDIC	10YR5/4	10YR4/3	8	0 -6	cs	Sandy Loam	>150	FAN SIDESLOPE		7
14	0799	BA	ARIDIC	10YR5/4	10YR4/4	14	6 -16	cs	Sandy Loam	>150	FAN SIDESLOPE		10
14	0800	Bw	ARIDIC	10YR5/4	10YR4/3	10	16 -48	gw	Sandy Loam	>150	FAN SIDESLOPE		8
14	0801	C1	ARIDIC	10YR6/4	10YR4/4	7	48 -88	cw	Loamy Sand	>150	FAN SIDESLOPE		5
14	0802	C2	ARIDIC	2.5YR6/4	10YR4/4	6	88 -147	cw	Loamy Sand	>150	FAN SIDESLOPE		6
14	0803	C3	ARIDIC	10YR5/6	10YR4/6	6	147-150		Loamy Sand	>150	FAN SIDESLOPE		4
140	0312	A	UST	10YR5/4	10YR4/3	8	0 -6	cs	Loamy Sand	>150	ALLUVIAL BASIN		6
140	0313	Bw	UST	10YR6/4	10YR4/4	11	6 -48	cw	Loamy Sand	>150	ALLUVIAL BASIN		9
140	0314	C	UST	10YR6/4	10YR5/4	9	48 -101	aw	Loamy Sand	>150	ALLUVIAL BASIN		7
140	0315	2C1	UST	10YR6/4	10YR5/4	7	101-135	cw	Sand	>150	ALLUVIAL BASIN		7
140	0316	2C2	UST	10YR6/4	10YR5/4	7	135-150		Loamy Sand	>150	ALLUVIAL BASIN		6
141	0537	A	UST	2.5YR5/4	2.5YR4/4	5	0 -7	cs	Sandy Loam	>150	VALLEY SIDESLOPE		10
141	0538	Bt1	UST	10YR5/4	10YR4/4	11	7 -21	cs	Sandy Loam	>150	VALLEY SIDESLOPE		13
141	0539	Bt2	UST	10YR5/4	10YR4/4	17	21 -35	aw	Sandy Loam	>150	VALLEY SIDESLOPE		15
141	0540	Btk1	UST	10YR6/4	2.5YR4/4	19	35 -75	gw	Loam	>150	VALLEY SIDESLOPE		16
141	0541	Btk2	UST	10YR6/4	2.5YR4/4	17	75 -100	gw	Sandy Loam	>150	VALLEY SIDESLOPE		13
141	0542	Bk	UST	2.5YR6/4	2.5YR5/4	8	100-148	gw	Loamy Sand	>150	VALLEY SIDESLOPE		7
141	0543	C	UST	2.5YR6/4	2.5YR5/4	9	148-180		Sandy Loam	>150	VALLEY SIDESLOPE		8
143	0318	A	UST	10YR5/4	10YR4/4	16	0 -5	cs	Sandy Loam	>150	ALLUVIAL PLAIN		17
143	0319	BA	UST	10YR5/4	10YR4/4	10	5 -12	cs	Sandy Loam	>150	ALLUVIAL PLAIN		13
143	0320	Bt	UST	10YR5/3	10YR4/3	27	12 -24	gw	Sandy Clay Loam	>150	ALLUVIAL PLAIN		16
143	0321	C1	UST	10YR5/4	10YR4/4	16	24 -52	aw	Sandy Loam	>150	ALLUVIAL PLAIN		10
143	0322	C2	UST	10YR5/4	10YR4/4	11	52 -76	cw	Loamy Sand	>150	ALLUVIAL PLAIN		7
143	0323	Ab	UST	10YR5/4	10YR4/3	14	76 -82	cd	Sandy Loam	>150	ALLUVIAL PLAIN		9
143	0324	Btkb1	UST	10YR5/4	10YR4/4	18	82 -99	gw	Sandy Loam	>150	ALLUVIAL PLAIN		12
143	0325	Btkb2	UST	10YR5/4	10YR4/4	24	99 -122	gw	Sandy Clay Loam	>150	ALLUVIAL PLAIN		15
143	0326	Btkb3	UST	10YR6/4	10YR5/4	26	122-150	gw	Sandy Clay	>150	ALLUVIAL PLAIN		22
144	0328	A	UST	10YR6/4	10YR5/4	11	0 -6	cs	Sandy Loam	>150	ALLUVIAL PLAIN		9
144	0329	Bw	UST	10YR5/4	10YR4/4	10	6 -34	gs	Loamy Sand	>150	ALLUVIAL PLAIN		8
144	0330	C1	UST	10YR6/4	10YR5/4	8	34 -86	cw	Loamy Sand	>150	ALLUVIAL PLAIN		5
144	0331	C2	UST	10YR6/4	10YR5/4	10	86 -117	gw	Sandy Loam	>150	ALLUVIAL PLAIN		7
144	0332	Btkb	UST	10YR5/4	10YR4/4	28	117-152		Clay Loam	>150	ALLUVIAL PLAIN		14
145	1038	A	ARID	7.5YR5/4	7.5YR4/4	6	0 -5	cs	Sandy Loam	>150	MESA TOP		10
145	1039	Bt	ARID	5YR5/6	5YR4/6	18	5 -29	as	Sandy Loam	>150	MESA TOP		20

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	PH
1275	43	37	1	59	h	fr	3mpfpo	ev2fi	2msbk	1.2	16.7	<.1	32	7.9200
1275	43	34	3	79	h	fr	4mkpfpo	es3fi	3fmsbk	1.3	8.5	<.1	32	8.3300
1275	51	32	6	88	h	fr	3mkpfpo	es3fi	2msbk	.5	13.2	<.1	32	8.4300
1275	50	33	7	109	h	fr	---	ev3fi	1cpr	.5	24.1	<.1	32	8.3300
1276	50	39	0	108	sh	vfr	---	esd	1fgr	.7	19.5	<.1	32	7.3700
1276	47	36	0	103	sh	vfr	---	esd	2msbk	.8	18.6	<.1	32	7.4400
1276	45	36	0	112	sh	fr	---	esd2sf	2msbk	.7	18.1	.1	32	7.6000
1276	47	34	1	130	h	fr	---	esd2sf	m	.6	17.6	.3	32	7.7000
1276	47	36	1	190	h	fr	---	esd3sf	m	.5	18.3	1.0	32	7.6300
1277	34	47	0	95	sh	vfr	---	esd	1fpl	1.2	17.5	<.1	32	7.1600
1277	37	44	0	101	h	fr	---	esd2sf	2msbk	.9	18.4	<.1	32	7.4700
1277	47	44	0	188	h	fr	---	esd3sf	2msbk	2.0	17.9	.8	32	7.5300
1277	31	50	1	109	h	fr	---	esd2sf	1mcsbk	1.1	18.3	.2	32	7.6100
1277	47	46	1	290	h	fr	---	evd3sfss	1csbk	.7	17.8	3.1	32	7.7400
1278	52	41	0	625	sh	fr	---	esd	1fgr	.6	15.9	3.0	40	7.4000
1278	47	50	14	323	h	fi	---	esd	m	.3	14.1	12.8	40	8.0400
1278	41	32	114	409				esd	m	.4	14.4	1.2	40	8.7800
1278	55	32	98	658				esd		.3	17.4	1.3	40	8.5900
129	84	12	0	92	so	vfr	---	eo	2cpl	.9	.2	<.1	13	6.9600
129	79	13	0	94	sh	vfr	---	eo	1msbk	.8	.2	<.1	13	6.9900
129	73	13	0	91	sh	vfr	3npf	eo	2msbk	.8	.3	<.1	13	7.2100
129	72	14	0	97	h	fr	4nkpfpo	eo	1cmpr3mm	.3	.3	<.1	13	7.7500
129	64	17	1	99	vh	fr	3nkpfpo	esd3sf	1csbk	.2	3.6	<.1	13	7.8000
129	62	20	3	102	vh	fr	--	esd3sf	m	.2	6.9	<.1	13	7.7900
129	58	22	6	101	h	fr	---	esd2sfss	m	.1	1.5	<.1	13	7.7400
130	66	21	1	98	so	vfr	---	eo	2fgr	.8	.2	<.1	13	6.6100
130	65	24	1	107	sh	vfr	---	eo	m	.4	.5	<.1	13	7.1000
130	61	26	3	107	sh	vfr	---	eo	m	.4	.6	<.1	13	7.6200
130	43	42	3	102	h	fr	---	eo	m	.8	.7	<.1	13	7.7000
130	45	30	16	78	vh	fi	sand	e/d	2cpr	.5	1.2	<.1	13	7.9100
131	89	5	0	121	so	vfr	---	eo	1npl	.6	<.1	<.1	13	6.7900
131	91	4	0	92	so	vfr	---	eo	1msbk	.6	.3	<.1	13	7.5800
131	84	8	0	82	so	vfr	---	eo	m	.7	.2	<.1	13	7.3800
131	88	5	0	70	so	vfr	---	eo	m	.4	.2	<.1	13	7.6300
131	84	6	0	93	sh	vfr	---	eo	m	.4	.2	<.1	13	7.4400
132	93	4	0	98	so	vfr	-	eo	1fpl	.5	.2	<.1	13	7.7000
132	92	4	0	116	so	vfr		eo	1msbk	.9	.4	<.1	13	7.7500
132	88	6	0	100	so	vfr		eo	m	.4	.3	<.1	13	7.8100
132	90	5	0	98	so	vfr		eo	m	.2	.3	<.1	13	7.6100
132	88	6	0	103	so	vfr		eo	m	.3	.2	<.1	13	7.5400
133	53	32	0	63	sh	vfr	---	eo	2fgr	2.5	.4	<.1	09	5.8700
133	57	31	4	101	h	fr	2npfpo	eo	2mcsbk	.6	.7	<.1	09	7.4900
133	55	30	10	93	h	fr	2npfpo	es2fi	2mcsbk	1.7	.7	<.1	09	7.6600
133	59	28	14	102	h	fr	---	es	m	.6	.7	<.1	09	7.8100
133	49	30	13	87	vh	fi	---	es2fi	2msbk	.9	1.0	<.1	09	7.3300
134	46	37	0	64	so	vfr	-	eo	1npl2fgr	4.2	<.1	<.1	09	5.4900
134	64	20	0	87	sh	fr	3mkpfpo	eo	2csbk	1.4	<.1	<.1	09	6.0200
134	55	23	0	92	h	fr	4mkpfpo	eo	2csbk	1.0	<.1	<.1	09	6.7500
134	80	12	2	91	sh	vfr		eo	1m	.5	.5	<.1	09	7.1900
134	51	25	3	89	h	fr	4mkpfpo	eo	2cpr3csb	.7	.7	<.1	09	7.1400
134	56	28	6	89	h	fr	3mkpfpo	eo	1cpr2msb	.7	.5	<.1	09	7.5900
134	63	23	10	90	h	fr	2npfpo	e 2 fi	1cpr	.6	1.3	<.1	09	7.9700
134	59	26	17	94	h	fr	-	e 2 fi	2csbk	.5	1.2	<.1	09	8.0700
135	64	24	0	83	sh	vfr	---	eo	1fpl	1.0	0.3	<.1	13	7.0000
135	76	20	0	88	sh	vfr	---	eo	1msbk	.9	0.1	18.0	13	7.1300
135	66	26	1	77	vh	fr	4mkpfpo	eo	3fmsbk	1.0	0.4	<.1	13	7.2700
135	58	38	1	87	vh	fr	4mkpfpo	eo	2mpr3msb	1.0	0.4	<.1	13	7.5200
135	63	31	1	97	h	fr	2mkpfpo	es2f	1cpr2csb	.5	1.5	<.1	13	8.0300
135	57	32	2	113	sh	vfr	---	es1sf	m	.4	2.6	<.1	13	7.9600
135	51	35	3	109	h	vfr	---	es1sf	m	.4	2.5	<.1	13	7.8500
138	60	38	0	105	so	vfr	---	eo	1copl1md	1.0	<.1	0.5	13	7.4200
138	68	28	0	97	sh	fr	---	ed	1msbk	.9	1.0	<.1	13	7.9600
138	48	48	0	101	sh	fr	---	esd	2msbk	.6	1.8	<.1	13	8.0300
138	48	40	0	97	h	fr	---	evd2sm	m	.8	4.8	<.1	13	8.0200
138	40	42	2	94				eveo		.4	3.8	<.1	13	8.1500
139	41	42	0	109	so	vfr	---	eo	1mgr	1.2	0.8	<.1	09	7.5600
139	65	24	0	101	sh	vfr	---	eo	1m&csbk	1.3	0.9	<.1	09	7.8900
139	54	26	0	107	sh	vfr	2npfpo	ed	1msbk	.9	1.2	<.1	09	8.1500
139	57	23	0	111	h	fr	3mkpfpo	es2sf	1cpr	.6	4.2	<.1	09	8.1100
139	69	24	0	113	h	fr	---	es3sf	m	.5	4.8	<.1	09	8.1700
14	77	15	0	102	so	vfr	---	eo	1mgr	1.1	1.9	<.1	22	7.3800
14	67	19	0	97	h	fr	---	ed	2mpl2msb	1.5	2.1	<.1	22	7.5800
14	74	16	0	118	sh	fr	---	ed	2cpr2msb	.5	2.3	<.1	22	7.6900
14	84	9	0	139	fo	fo	---	ed	m	.2	2.5	<.1	22	7.9700
14	85	9	0	114	fo	fo	---	eo	m	.0	2.4	<.1	22	7.6000
14	85	9	0	158	fo	fo	---	eod	m	.3	2.4	<.1	22	7.7800
140	85	7	0	111	so	vfr	---	eo	1cpl	.6	<.1	<.1	13	7.5200
140	85	5	0	98	sh	vfr	---	eo	1f&msbk	.3	.9	<.1	13	7.7500
140	86	5	0	124	h	vfr	---	esd	m	.2	3.4	<.1	13	7.9400
140	90	3	0	115	so	vfr	---	esd	m	.1	3.6	<.1	13	8.1300
140	87	6	1	137	so	vfr	---	ed	m	.1	3.2	<.1	13	8.2500
141	60	35	11	755	sh	vfr	---	eo	1fpl2fgr	.9	11.6	4.9	09	7.9900
141	69	20	0	90	h	fr	3npf	eo	2msbk	1.0	.5	<.1	09	7.2100
141	61	22	0	95	vh	fr	4npfpo	eo	3msbk	.9	.8	<.1	09	7.5800
141	48	33	1	106	vh	fi	4mkpfpo	es2ss3sf	2mpr	.8	2.8	<.1	09	7.6700
141	63	20	1	101	vh	vfr	3npf	es3sf	2csbk	.7	4.6	<.1	09	7.7200
141	81	11	0	112	sh	vfr	---	e2sf	m	.4	3.1	<.1	09	8.0900
141	77	14	0	103	sh	vfr	---	ed	m	.2	2.9	<.1	09	7.9900
143	58	26	0	94	so	vfr	---	ed	1cpl1m&f	2.6	1.7	<.1	13	7.3000
143	74	16	0	104	so	vfr	---	eo	1msbk	1.5	1.6	<.1	13	7.9200
143	54	19	0	99	sh	fr	1npf&po	esd1ffi	2mpr	1.5	2.4	<.1	13	7.8000
143	72	12	0	113	sh	fr	---	esd	m	.9	2.2	<.1	13	8.0200
143	82	7	0	134	sh	fr	---	esd	m	.5	1.6	<.1	13	7.9000
143	72	14	0	98	sh	fr	---	ed	m2mgr	.5	1.0	<.1	13	7.9700
143	67	15	0	108	sh	fr	3mkpfpo	esd1ffi	2msbk	.9	1.1	<.1	13	7.8800
143	54	22	0	94	vh	fi	3mkpfpo	esd2f	2mcpt	1.3	1.5	<.1	13	7.8600
143	46	18	0	98	vh	fi	3mkpfpo	esd3f&m	3cpr	2.5	2.7	<.1	13	7.7900
144	80	9	0	89	so	vfr	---	eo	1cpl	.9	.8	<.1	13	7.4500
144	80	10	0	116	sh	vfr	---	esd	1msbk	.8	1.7	<.1	13	7.9900
144	89	3	0	154	sh	vfr	---	esd	m	.0	2.4	<.1	13	8.0300
144	69	21	0	127	h	fr	---	ed	m	.5	1.7	.5	13	7.8700
144	26	46	0	109	h	fr	1npf	esd3fi	2cpr	1.0	2.4	<.1	13	7.8600
145	70	24	0	99	so	vfr	---	eo	1fpl	1.3	<.1	<.1	34	6.9600
145	58	24	1	107	h	fi	3mkpfpo	eo	2msbk	1.4	<.1	<.1	34	6.8300

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM	CEC
145	1040	Btk	ARID	7.5YR6/4	7.5YR5/6	17	29 -73	gs	Sandy Loam	>150	MESA TOP	14
145	1041	Bk	ARID	7.5YR6/4	7.5YR5/6	16	73 -109	cs	Sandy Loam	>150	MESA TOP	13
145	1042	Btkb	ARID	7.5YR6/4	7.5YR4/6	13	109-150		Loam	>150	MESA TOP	14
146	1132	A	ARID	10YR5/3	10YR3/3	10	0 -7	cs	Sandy Loam	>150	RIDGE SIDESLOPE	11
146	1133	Bt1	ARID	10YR5/4	10YR3/4	14	7 -37	as	Sandy Loam	>150	RIDGE SIDESLOPE	19
146	1134	Bt2	ARID	2.5YR6/4	2.5YR5/4	14	37 -67	cw	Sandy Loam	>150	RIDGE SIDESLOPE	15
146	1135	Btk	ARID	2.5YR6/4	2.5YR5/4	14	67 -127	gw	Sandy Loam	>150	RIDGE SIDESLOPE	14
146	1136	Bk	ARID	2.5YR6/4	2.5YR5/4	14	127-157		Sandy Loam	>150	RIDGE SIDESLOPE	14
147	1043	A	ARID	7.5YR5/4	7.5YR3/4	5	0 -6	cs	Sandy Loam	>66	MESA TOP	14
147	1044	AB	ARID	7.5YR5/6	7.5YR4/6	10	6 -16	cs	Sandy Loam	>66	MESA TOP	12
147	1045	Bt	ARID	7.5YR5/6	7.5YR4/6	12	16 -36	cs	Sandy Loam	>66	MESA TOP	15
147	1046	Btk	ARID	7.5YR5/6	7.5YR4/6	6	36 -66	aw	Sandy Loam	>66	MESA TOP	17
148	1047	A	ARID	10YR5/3	10YR3/3	13	0 -5	cw	Sandy Loam	>73	MESA TOP	15
148	1048	Btk1	ARID	7.5YR6/4	7.5YR5/6	17	5 -30	gw	Sandy Loam	>73	MESA TOP	17
148	1049	Btk2	ARID	7.5YR6/6	7.5YR5/6	20	30 -45	ci	Sandy Clay Loam	>73	MESA TOP	18
148	1050	Bk	ARID	7.5YR7/4	7.5YR6/6	23	45 -73	ai	Sandy Clay Loam	>73	MESA TOP	14
149	1051	A	ARID	7.5YR5/4	7.5YR3/4	8	0 -5	cs	Sandy Loam	>150	MESA TOP	14
149	1052	Bt	ARID	7.5YR5/6	7.5YR4/6	17	5 -22	aw	Sandy Loam	>150	MESA TOP	21
149	1053	Btk	ARID	7.5YR6/4	7.5YR5/4	13	22 -43		Sandy Loam	>150	MESA TOP	18
15	0786	A	UST	10YR5/4	10YR4/3	16	0 -6	cs	Sandy Loam	>150	TERRACE	11
15	0787	B	UST	10YR5/4	10YR4/3	14	6 -36	cs	Sandy Loam	>150	TERRACE	8
15	0788	2Bt	UST	10YR5/2	10YR4/2	41	36 -56	cs	Clay	>150	TERRACE	27
15	0789	3C	UST	10YR5/3	10YR4/3	27	56 -76	gc	Clay Loam	>150	TERRACE	20
15	0790	4By1	UST	10YR5/2	10YR4/2	41	76 -102	gw	Clay	>150	TERRACE	26
15	0791	4By2	UST	10YR5/3	10YR4/2	36	102-150		Clay	>150	TERRACE	24
150	1054	A	ARID	7.5YR4/4	7.5YR3/4	7	0 -6	cs	Sandy Loam	>150	MESA TOP	16
150	1055	Bt	ARID	7.5YR5/6	7.5YR4/4	9	6 -31	cw	Sandy Loam	>150	MESA TOP	22
150	1056	Btk1	ARID	7.5YR5/6	7.5YR4/6	17	31 -55	cw	Loam	>150	MESA TOP	21
150	1057	Btk2	ARID	7.5YR5/6	7.5YR4/6	19	55 -87	aw	Loam	>150	MESA TOP	22
150	1058	Btk3	ARID	7.5YR6/4	7.5YR4/4	21	87 -128	gs	Loam	>150	MESA TOP	15
150	1059	Bk	ARID	7.5YR5/4	7.5YR4/4	15	128-165		Sandy Loam	>150	MESA TOP	11
1501	1251	A	ARID	.5Y6/4	2.5Y4/42	11	0 -10	cs	Sandy Loam	>150	FANSIDESLOPE	14
1501	1252	BA	ARID	.5Y6/4	2.5Y4/42	14	10 -22	cs	Sandy Loam	>150	FANSIDESLOPE	17
1501	1253	Bt1	ARID	.5Y6/4	2.5Y4/42	16	22 -61	cw	Sandy Loam	>150	FANSIDESLOPE	23
1501	1254	Bt2	ARID	.5Y6/4	2.5Y5/42	13	61 -92	cw	Sandy Loam	>150	FANSIDESLOPE	17
1501	1255	Bk	ARID	.5Y6/4L/	2.5Y5/42	15	92 -155	cw	Sandy Loam	>150	FANSIDESLOPE	18
1503	1243	A	ARID	.5Y5/4	2.5Y4/42	16	0 -8	cs	Sandy Loam	>150	FANSIDESLOPE	21
1503	1244	BA	ARID	.5Y5/4	2.5Y4/42	17	8 -24	cs	Sandy Loam	>150	FANSIDESLOPE	21
1503	1245	Bt	ARID	.5Y5/4	2.5Y4/42	20	24 -48	aw	Loam	>150	FANSIDESLOPE	28
1503	1246	Bty	ARID	.5Y5/4	2.5Y4/42	14	48 -80	cw	Loam	>150	FANSIDESLOPE	34
1503	1247	Btk	ARID	.5Y5/4	2.5Y4/42	16	80 -107	gw	Loam	>150	FANSIDESLOPE	33
1503	1248	Btk	ARID	.5Y5/4	2.5Y4/42	14	107-128	gs	Loam	>150	FANSIDESLOPE	24
1503	1249	C	ARID	.5Y5/4	2.5Y4/42	15	128-150		Sandy Loam	>150	FANSIDESLOPE	20
1504	0759	A	ARIDIC	10YR6/4	10YR5/4	10	0 -7	cs	Sandy Loam	>150	RIDGESIDESLOPE	8
1504	0760	AB	ARIDIC	10YR5/4	2.5Y4/4	7	7 -35	gs	Loamy Sand	>150	RIDGESIDESLOPE	8
1504	0761	BA	ARIDIC	10YR5/4	10YR4/3	8	35 -52	gw	Loamy Sand	>150	RIDGESIDESLOPE	13
1504	0762	Btk1	ARIDIC	10YR4/3	10YR3/3	10	52 -90	gw	Sandy Loam	>150	RIDGESIDESLOPE	10
1504	0763	Btk2	ARIDIC	10YR5/4	10YR4/3	10	90 -120	gw	Sandy Loam	>150	RIDGESIDESLOPE	9
1504	0764	Bk	ARIDIC	10YR6/4	10YR5/3	8	120-150		Sandy Loam	>150	RIDGESIDESLOPE	8
1505	0753	A	UST	0YR5/4	10YR4/31	7	0 -6	cs	Loamy Sand	>150	FANSANDSTONE	10
1505	0754	BA	UST	0YR5/4	10YR4/31	9	6 -38	gs	Sandy Loam	>150	FANSANDSTONE	12
1505	0755	Btk1	UST	0YR5/4	10YR4/31	10	38 -63	gs	Sandy Loam	>150	FANSANDSTONE	13
1505	0756	Btk2	UST	0YR5/3	10YR4/31	12	63 -94	gw	Sandy Loam	>150	FANSANDSTONE	12
1505	0757	Bk	UST	0YR5/3	10YR5/41	14	94 -150		Sandy Loam	>150	FANSANDSTONE	12
151	0265	A	UST	10YR5/3	10YR3/3	10	0 -7	cs	Sandy Loam	>150	ALLUVIAL FAN	7
151	0266	AB	UST	10YR5/4	10YR4/4	12	7 -18	gs	Sandy Loam	>150	ALLUVIAL FAN	11
151	0267	Bw1	UST	10YR6/4	10YR4/4	12	18 -42	gs	Sandy Loam	>150	ALLUVIAL FAN	8
151	0268	Bw2	UST	10YR6/4	10YR4/4	11	42 -62	cw	Sandy Loam	>150	ALLUVIAL FAN	7
151	0269	Btkb	UST	2.5YR5/4	2.5YR4/4	24	62 -95	gw	Sandy Clay Loam	>150	ALLUVIAL FAN	14
151	0270	Bkb1	UST	10YR6/4	10YR4/4	14	95 -120	gw	Sandy Loam	>150	ALLUVIAL FAN	8
151	0271	Bkb2	UST	2.5YR6/4	2.5YR4/4	10	120-150		Sandy Loam	>150	ALLUVIAL FAN	6
153	0257	A	UST	10YR6/4	10YR3/4	21	0 -6	cs	Sandy Clay Loam	>150	FAN	16
153	0258	BA	UST	10YR5/4	10YR4/3	20	6 -14	cw	Sandy Clay Loam	>150	FAN	12
153	0259	Bt1	UST	10YR5/4	10YR4/4	19	14 -31	cw	Sandy Loam	>150	FAN	11
153	0260	Bt2	UST	10YR5/4	10YR4/4	20	31 -65	gw	Sandy Clay Loam	>150	FAN	11
153	0261	Bk1	UST	10YR6/4	10YR5/4	14	65 -108	gs	Sandy Loam	>150	FAN	7
153	0262	Bk2	UST	10YR6/4	10YR5/4	14	108-150		Sandy Loam	>150	FAN	8
154	0250	A	ARIDIC	10YR6/4	10YR5/4	10	0 -5	cs	Loamy Sand	>150	SIDESLOPE	6
154	0251	C1	ARIDIC	10YR5/4	10YR6/4	12	5 -26	gs	Sandy Loam	>150	SIDESLOPE	6
154	0252	C2	ARIDIC	10YR6/4	10YR5/4	8	26 -60	cs	Loamy Sand	>150	SIDESLOPE	5
154	0253	Ab	ARIDIC	10YR5/3	10YR4/3	7	60 -68	as	Loamy Sand	>150	SIDESLOPE	5
154	0254	Bwb	ARIDIC	10YR5/4	10YR4/4	14	68 -125	cs	Sandy Loam	>150	SIDESLOPE	8
154	0255	Bkb	ARIDIC	10YR6/4	10YR5/4	12	125-150		Sandy Loam	>150	SIDESLOPE	7
155	0358	A	UST	10YR6/3	10YR4/3	18	0 -5	cs	Loam	>150	ALLUVIAL PLAIN	7
155	0359	Bt1	UST	10YR5/4	10YR3/4	18	5 -16	cs	Loam	>150	ALLUVIAL PLAIN	16
155	0360	Bt2	UST	10YR5/4	10YR4/4	15	16 -38	cs	Loam	>150	ALLUVIAL PLAIN	13
155	0361	Bk1	UST	10YR6/4	10YR5/4	8	38 -100	gw	Sandy Loam	>150	ALLUVIAL PLAIN	7
155	0362	Bk2	UST	10YR6/4	10YR5/4	4	100-128	gw	Sandy Loam	>150	ALLUVIAL PLAIN	7
155	0363	C	UST	10YR6/4	10YR5/4	2	128-150		Loamy Sand	>150	ALLUVIAL PLAIN	6
156	0273	A	UST	2.5YR5/2	2.5YR4/2	22	0 -5	cs	Loam	>150	DRAINAGE BOTTOM	24
156	0274	BA	UST	2.5YR5/2	2.5YR4/2	49	5 -13	cs	Clay	>150	DRAINAGE BOTTOM	37
156	0275	Bt1	UST	2.5YR5/2	2.5YR4/2	48	13 -24	cw	Clay	>150	DRAINAGE BOTTOM	40
156	0276	2Bt2	UST	2.5YR6/4	2.5YR4/4	27	24 -38	gw	Sandy Clay Loam	>150	DRAINAGE BOTTOM	20
156	0277	2C1	UST	2.5YR5/4	2.5YR4/4	12	38 -53	cs	Sandy Loam	>150	DRAINAGE BOTTOM	10
156	0278	2C2	UST	10YR5/4	10YR4/4	19	53 -76	cw	Sandy Loam	>150	DRAINAGE BOTTOM	13
156	0279	3Bkyb	UST	2.5YR4/2	2.5YR3/2	32	76 -140		Sandy Clay Loam	>150	DRAINAGE BOTTOM	24
158	1270	A	UST	10YR6/3	10YR4/4	16	0 -5	cs	Sandy Loam	>150	DRAINAGE BOTTOM	13
158	1271	Bw1\Bt	UST	10YR6/4	10YR5/4	37	5 -23	cs	Clay Loam	>150	DRAINAGE BOTTOM	31
158	1272	Bw2\Bt	UST	10YR6/4	10YR5/4	37	23 -45	as	Clay Loam	>150	DRAINAGE BOTTOM	29
158	1273	By	UST	10YR6/4	10YR5/4	24	45 -91	aw	Loam	>150	DRAINAGE BOTTOM	37
158	1274	2Bk	UST	10YR6/4	10YR5/4	20	91 -132	aw	Sandy Loam	>150	DRAINAGE BOTTOM	16
158	1275	2C	UST	2.5YR6/4	2.5YR5/4	11	132-150		Loamy Sand	>150	DRAINAGE BOTTOM	9
159	1263	A	ARID	10YR5/3	10YR3/3	11	0 -7	cs	Sandy Loam	>150	FAN SIDESLOPE	9
159	1264	Bt1	ARID	10YR5/4	10YR3/4	15	7 -17	aw	Sandy Loam	>150	FAN SIDESLOPE	13
159	1265	Bt2	ARID	2.5YR5/4	2.5YR4/4	16	17 -36	aw	Sandy Loam	>150	FAN SIDESLOPE	11
159	1266	Btk1	ARID	2.5YR6/4	2.5YR5/4	18	36 -81	gw	Sandy Loam	>150	FAN SIDESLOPE	12
159	1267	Btk2	ARID	2.5YR6/4	2.5YR5/4	16	81 -142	aw	Sandy Loam	>150	FAN SIDESLOPE	11
159	1268	2Btkb	ARID	2.5YR6/2	2.5YR4/4	41	142-150		Clay	>150	FAN SIDESLOPE	33
16	0772	A	ARIDIC	10YR5/4	10YR4/4	8	0 -6	cs	Sandy Loam	>86	RIDGE SIDESLOPE	8
16	0773	BA	ARIDIC	10YR5/4	10YR5/3	19	6 -21	gw	Sandy Loam	>86	RIDGE SIDESLOPE	12
16	0774	Btk1	ARIDIC	10YR5/4	10YR5/3	21	21 -41	gw	Sandy Clay Loam	>86	RIDGE SIDESLOPE	12
16	0775	Btk2	ARIDIC	10YR5/3	10YR5/4	24	41 -63	gw	Sandy Clay Loam	>86	RIDGE SIDESLOPE	13
16	0776	Bk	ARIDIC	10YR5/2	10YR5/3	25	63 -86	gw	Loam	>86	RIDGE SIDESLOPE	16
16	0777	Cr	ARIDIC			19	86 -120		Loam	>86	RIDGE SIDESLOPE	21

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	Ph
145	59	24	4	101	h	fr	3npfpo	es2ssfi	2mcsbk	.7	3.4	<.1	34	7.2300
145	59	25	28	116	h	fr	---	esd2fi	1msbk	.4	5.6	<.1	34	8.0300
145	47	41	52	137	sh	fr	3npf	esd3ss	1cpr	.4	4.7	<.1	34	8.1500
146	68	22	0	102	so	vfr	---	eo	1fgr	1.1	<.1	<.1	18	6.7800
146	64	22	0	111	sh	fr	3mkpfpo	eo	1cpr2msb	1.0	1.5	<.1	18	7.2300
146	67	19	1	109	sh	fr	2hpfpo	esd	2msbk	.6	4.6	<.1	18	7.3400
146	68	18	2	123	h	fr	2npfpo	es2sf	2msbk	.2	4.2	<.1	18	7.5400
146	66	20	2	125	sh	vfr	---	es1sf	m	.1	.5	<.1	18	7.6300
147	62	34	0	103	so	vfr	---	eo	1npl	1.7	.7	<.1	34	7.3200
147	64	27	0	111	so	vfr	---	eo	1fvsbkm	2.1	.7	<.1	34	7.5900
147	65	24	0	101	sh	vfr	2npf	eo	1msbk	1.2	.6	<.1	34	7.4600
147	70	24	1	103	h	fr	3mkpfpo	es3ssfi	2msbk	1.4	8.4	<.1	34	7.5100
148	54	33	0	111	h	fr	---	esd	1cpl	2.3	6.2	<.1	43	7.4900
148	61	22	12	98	h	fr	3mkpfpo	es3sfss	2fsbk	1.0	7.6	<.1	43	7.9900
148	54	26	92	175	h	fr	3mkpfpo	es2sfss	2fmsbk	.2	4.2	<.1	43	8.1900
148	54	24	128	227	h	fi	---	ev3sfss	1msbk	.3	23.7	<.1	43	8.2300
149	72	20	0	99	sh	vfr	---	eo	1fpl	2.0	.5	<.1	34	7.0400
149	65	19	0	92	h	fr	3mkpfpo	eo	2msbk	1.9	.4	<.1	34	6.7500
149	64	24	0	88	h	fr	3mkpfpo	es3sfss	2msbk	1.7	15.2	<.1	34	7.6400
15	54	29	1	105	sh	fr	---	eo	1mpl1mgr	1.7	.6	<.1	22	7.1900
15	65	20	0	106	sh	fr	---	eo	2msbk	.7	.7	<.1	22	7.6100
15	3	26	2	82	vh	vfi	---	eo	3cpr2msb	1.8	.7	<.1	22	7.1400
15	42	30	2	82	h	fi	---	eod	m	1.2	.8	<.1	22	7.3500
15	25	34	4	89	vh	vfi	---	e	m	1.4	.9	<.1	22	7.4700
15	38	25	5	88	vh	vfi	---	eo	m	1.3	.6	<.1	22	7.3900
150	61	33	0	96	sh	vfr	---	eo	1fpl	1.8	1.0	<.1	34	7.3500
150	58	34	3	96	h	fr	3mkpfpo	esd	2msbk	2.3	2.5	<.1	34	7.4100
150	51	32	16	102	h	fr	4mkpfpo	es1sfss	3msbk	.5	2.0	<.1	34	7.7900
150	47	34	30	108	h	fr	4mkpfpo	es2sfss	3msbk	.2	.6	<.1	34	7.8400
150	46	33	49	141	h	fr	3mpf	es3sf	1cpr	.4	5.9	<.1	34	7.9000
150	54	31	54	132	h	fr	---	es3sf	m	.4	4.2	<.1	34	7.8800
1501	68	21	0	117	so	vfr	---	e/d	2mgr	.8	3.9	<.1	13	7.6200
1501	60	26	0	119	so	vfr	---	ed	1msbk	.9	3.8	<.1	13	7.5900
1501	56	28	0	91	sh	fr	3npf,p	ed	2m,csbk	1.1	4.5	<.1	13	7.4800
1501	60	27	1	106	sh	vfr	2npf,p	ed	2csbk	1.4	5.4	<.1	13	7.5100
1501	67	17	1	110	sh	vfr	---	e/d 1sfs	m	.9	5.0	<.1	13	7.4800
1503	54	30	0	101	so	vfr	---	ed	2fgr	1.2	3.7	<.1	09	7.7100
1503	59	23	0	104	sh	vfr	---	ed	2fsbk	1.0	4.8	<.1	09	7.6100
1503	39	41	0	103	hf	rs/	3mcpf/	ed	2msbk	2.2	3.9	<.1	09	7.4900
1503	48	38	1	145	hf	rs/	f/po	ed3sf,sm	1mpr	2.2	3.9	.5	09	7.4000
1503	42	42	0	113	hf	rs/	f/po	e/d2sf,s	1mpr	2.3	4.8	.2	09	7.4100
1503	51	35	C	105	sh	frs	npf/po	e/d1sf,s	1m&csbk	1.1	4.5	<.1	09	7.4700
1503	62	23	0	106	sh	vfr	---	ed	m	.7	4.9	<.1	09	7.5100
1504	79	11	0	120	so	vfr	---	esd	1fgr&sg	.3	5.0	<.1	14	7.3200
1504	82	11	0	122	sh	vfr	---	esd	1mgr	.4	5.2	<.1	14	7.6500
1504	80	12	0	80	sh	fr	---	esd	1msbk	.5	4.9	<.1	14	7.6200
1504	74	16	0	124	sh	fr	2npfpf	esd	2msbk	1.0	4.3	<.1	14	7.5700
1504	76	14	0	130	sh	fr	1npfpo	evd	1msbk	.7	6.1	<.1	14	7.5900
1504	77	14	0	128	hf	r	---	ev2msm,f	m	.3	6.6	<.1	14	7.7200
1505	78	15	0	128	so	vfr	---	ed	1fgr	1.5	3.3	<.1	14	7.0300
1505	72	19	0	99	sh	vfr	---	ed	1msbk	.9	3.8	<.1	14	7.5300
1505	70	20	0	117	sh	fr	1npf,p	esd	1msbk	1.2	4.1	<.1	14	7.5000
1505	71	17	0	117	h	fr	1npf,p	evd	2msbk	.8	4.4	<.1	14	7.5100
1505	66	20	0	126	hf	i	---	evd	m	.7	5.2	<.1	14	7.5700
151	72	18	0	93	sh	vfr	---	eo	2fpl	1.3	<.1	<.1	13	6.8100
151	73	15	0	107	sh	fr	---	eo	1msbk	1.4	2.3	<.1	13	7.8200
151	76	12	0	120	sh	fr	---	esd	2fmsbk	.5	4.0	<.1	13	8.0300
151	76	13	0	121	sh	fr	---	esd	1msbk	.3	3.5	<.1	13	8.1600
151	58	18	0	103	vh	fi	3mkpf	esd2sf	2m&cpr	.6	2.1	<.1	13	8.0600
151	75	11	1	120	sh	fr	---	esd1sf	m	.4	3.9	<.1	13	8.2200
151	78	12	2	130	sh	fr	---	esd1sf	m	.2	3.0	<.1	13	8.3200
153	54	25	0	86	sh	vfr	---	eo	2Cpl2fgr	2.5	.7	<.1	09	7.1500
153	60	20	0	96	sh	vfr	---	eo	2f&mgr	1.4	.4	<.1	09	7.4300
153	64	17	0	99	h	fr	2npf	eo	2msbk	.6	.5	<.1	09	7.7300
153	65	15	0	106	h	fr	4mkpf/p	eo	2c&vcpr2	.7	1.0	<.1	09	7.7900
153	75	11	0	127	sh	vfr	---	esd2sf	m	.4	3.7	<.1	09	8.0000
153	72	14	1	120	sh	vfr	---	esd2sf	m	.2	3.6	<.1	09	8.2100
154	82	8	0	99	so	vfr	---	eo	1cpl1mgr	.8	<.1	<.1	13	6.6200
154	80	8	0	108	so	vfr	---	eo	m	.6	.6	<.1	13	7.0600
154	86	6	1	119	so	vfr	---	eo	m	.2	.4	<.1	13	7.0600
154	86	8	0	116	so	vfr	---	eo	m	.4	.4	<.1	13	7.9400
154	76	10	0	110	so	vfr	---	eo	m2c&msbk	.5	.6	<.1	13	7.7200
154	78	10	0	129	so	vfr	---	e1sf	m	.4	1.2	<.1	13	7.9700
155	38	34	0	80	so	vfr	---	eo	1cpl	1.1	0.2	<.1	13	6.5600
155	50	32	0	78	sh	vfr	3npfpo	eo	2f&msbk	1.0	<.1	<.1	13	6.9400
155	42	43	0	85	sh	vfr	3npfpo	eo	2cvcpr	.6	0.4	<.1	13	7.2900
155	54	38	0	118	sh	vfr	---	esd2sf	m1csbk	.3	2.2	<.1	13	8.1800
155	72	24	1	126	sh	vfr	---	ed1sf	m	.2	1.8	<.1	13	8.2900
155	78	20	1	134	sh	vfr	---	ed	m	.3	1.3	0.4	13	8.3400
156	32	45	1	105	so	vfr	---	eo	1mgr1fvf	2.3	.8	<.1	37	7.1500
156	30	20	1	94	h	fr	---	eo	3fsbk	1.9	.9	<.1	37	7.5100
156	41	11	1	92	h	fr	4mkpf	eo	3fmsbk	1.3	.9	<.1	37	7.5900
156	57	17	5	103	h	fr	3mkpf	eo	2cpr3cab	.9	1.6	<.1	37	7.5900
156	80	7	2	101	sh	vfr	---	eo	m	.3	1.2	<.1	37	8.0100
156	71	10	7	94	h	fr	---	eo	m	.4	1.0	<.1	37	7.8700
156	68	0	15	108	eh	efi	---	ed	m	.9	1.8	<.1	37	7.8700
158	60	24	7	100	h	fr	---	eo		1.4	<.1	<.1	13	7.1900
158	40	23	14	89	vh	vfi	---	ed	2msbk	.8	2.8	<.1	13	8.0400
158	41	22	24	108	vh	vfi	---	ed	2msbk	.9	2.7	<.1	13	7.4200
158	42	34	26	220	vh	vfi	---	ed		.7	2.1	1.7	13	7.5500
158	67	13	20	112	sh	fr	---	e2sssf	m	.1	1.9	.1	13	7.6900
158	82	8	22	115	so	vfr	---	eo	m	.2	1.5	<.1	13	7.9000
159	76	13	0	98	so	vfr	---	eo	1cpl	.6	.5	<.1	11	7.1400
159	71	14	0	101	h	vfr	2npf	eo	2mcsbk	.8	.9	<.1	11	7.3100
159	72	12	0	106	h	vfr	3npfpo	ed	1cpr	.5	2.5	<.1	11	7.7000
159	67	15	0	100	h	fr	3npfpo	es2sf	1mcsbk	.5	4.0	<.1	11	7.6500
159	72	12	2	112	sh	fr	3npfpo	es2sf	1cpr	.2	3.8	<.1	11	7.7600
159	31	28	5	98	vh	fi	3mkpfpo	es2sf	2mcpr	1.1	3.7	<.1	11	7.7600
16	65	27	0	118	so	vfr	---	es	1mgr	.6	5.7	<.1	13	7.8400
16	55	26	0	97	sh	fr	---	evd	1msbk	.8	9.8	<.1	13	7.7400
16	54	25	0	95	sh	fr	1npfpo	evd	2msbk	.6	9.0	<.1	13	8.0200
16	49	27	2	95	vh	vfi	2mkpfpo	es1mfi	3mprmmeb	.1	9.4	<.1	13	8.2300
16	46	29	5	81	vh	vfi	---	es2mfi	m	.2	9.7	<.1	13	8.2200
16	45	36	5	109				e	m	.6	6.5	.3	13	7.6300

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM	CEC
160	0280	A	UST	10YR5/3	10YR4/3	6	0 -7	cs	Loamy Sand	>150	SIDESLOPE	5
160	0281	Bt	UST	10YR5/4	10YR4/4	14	7 -30	aw	Sandy Loam	>150	SIDESLOPE	10
160	0282	Btk1	UST	10YR6/4	10YR5/4	19	30 -60	gw	Sandy Loam	>150	SIDESLOPE	12
160	0283	Btk2	UST	10YR6/4	10YR5/4	19	60 -100	gw	Sandy Loam	>150	SIDESLOPE	12
160	0284	Bk	UST	10YR6/4	10YR5/4	19	100-150		Sandy Loam	>150	SIDESLOPE	12
161	0392	A	UST	10YR5/4	10YR4/3	4	0 -6	cs	Sandy Loam	>150	ALLUVIAL BASIN	16
161	0393	BA	UST	10YR5/4	10YR4/3	12	6 -15	cw	Loam	>150	ALLUVIAL BASIN	15
161	0394	Bt	UST	10YR5/4	10YR4/4	18	15 -44	gw	Loam	>150	ALLUVIAL BASIN	18
161	0395	Btk	UST	10YR6/4	10YR5/4	15	44 -82	cw	Loam	>150	ALLUVIAL BASIN	16
161	0396	Btkb1	UST	10YR5/4	10YR4/3	18	82 -104	gw	Loam	>150	ALLUVIAL BASIN	17
161	0397	Bkb	UST	10YR6/4	10YR5/3	18	104-124	gw	Loam	>150	ALLUVIAL BASIN	14
161	0398	Btkb2	UST	10YR5/4	10YR4/3	15	124-150		Loam	>150	ALLUVIAL BASIN	20
162	0385	A	UST	10YR5/4	10YR5/3	4	0 -5	cs	Sandy Loam	>74	ALLUVIAL FAN	20
162	0386	BA	UST	10YR5/4	10YR4/3	6	5 -16	cw	Sandy Loam	>74	ALLUVIAL FAN	22
162	0387	Btk	UST	10YR5/3	10YR4/3	11	16 -37	gw	Sandy Loam	>74	ALLUVIAL FAN	22
162	0388	Btky	UST	10YR6/3	10YR5/4	14	37 -57	gw	Sandy Loam	>74	ALLUVIAL FAN	22
162	0389	Bky	UST	10YR5/4	10YR4/4	11	57 -74	gw	Sandy Loam	>74	ALLUVIAL FAN	17
162	0390	Cr	UST			2	74		Sandy Loam	>74	ALLUVIAL FAN	19
163	0377	A	UST	10YR5/4	10YR4/4	14	0 -6	cs	Sandy Loam	>92	BEDROCK RIDGE	16
163	0378	BA	UST	7.5YR6/4	7.5YR5/4	13	6 -22	gs	Sandy Loam	>92	BEDROCK RIDGE	20
163	0379	Bt	UST	7.5YR5/4	7.5YR4/4	20	22 -35	gw	Sandy Loam	>92	BEDROCK RIDGE	25
163	0380	Btk	UST	7.5YR6/4	7.5YR5/4	7	35 -50	gw	Sandy Loam	>92	BEDROCK RIDGE	22
163	0381	2Btky	UST	10YR6/4	10YR5/4	8	50 -65	gw	Sandy Loam	>92	BEDROCK RIDGE	17
163	0382	2Bky	UST	2.5YR6/4	2.5YR5/4	12	65 -92	gw	Sandy Loam	>92	BEDROCK RIDGE	20
163	0383	2Cr	UST			4	92 -135		Loamy Sand	>92	BEDROCK RIDGE	18
165	0414	A	UST	10YR5/4	10YR5/3	8	0 -6	cs	Sandy Loam	>79	TOESLOPE	11
165	0415	Bw1\Bt	UST	10YR5/4	2.5YR4/2	14	6 -17	gs	Sandy Loam	>79	TOESLOPE	13
165	0416	Bw2\Bt	UST	10YR5/4	2.5YR4/2	13	17 -45	aw	Sandy Loam	>79	TOESLOPE	15
165	0417	2Cr	UST			19	45 -79	gw	Sandy Loam	>79	TOESLOPE	11
166	1119	A	ARID	10YR5/3	10YR4/3	9	0 -9	cs	Sandy Loam	>150	RIDGE SIDESLOPE	10
166	1120	Bt	ARID	10YR5/4	10YR4/4	9	9 -35	cw	Loam	>150	RIDGE SIDESLOPE	25
166	1121	Btk1	ARID	10YR6/4	10YR4/4	24	35 -64	cs	Sandy Clay Loam	>150	RIDGE SIDESLOPE	21
166	1122	Btk2	ARID	10YR6/4	10YR5/4	22	64 -85	gw	Sandy Clay Loam	>150	RIDGE SIDESLOPE	20
166	1123	Bk1	ARID	10YR6/4	10YR5/4	20	85 -122	cw	Sandy Loam	>150	RIDGE SIDESLOPE	19
166	1124	Bk2	ARID	10YR6/4	10YR5/4	18	122-155		Sandy Loam	>150	RIDGE SIDESLOPE	17
167	1126	A	ARID	10YR5/3	10YR3/3	11	0 -8	cs	Sandy Loam	>150	RIDGE SIDESLOPE	18
167	1127	Bt	ARID	10YR5/3	10YR4/3	19	8 -34	aw	Sandy Loam	>150	RIDGE SIDESLOPE	21
167	1128	Btk	ARID	2.5YR6/4	2.5YR4/4	16	34 -73	as	Sandy Loam	>150	RIDGE SIDESLOPE	16
167	1129	Btkb1	ARID	2.5YR6/4	2.5YR4/4	24	73 -103	gw	Sandy Clay Loam	>150	RIDGE SIDESLOPE	24
167	1130	Btkb2	ARID	2.5YR6/4	2.5YR5/4	26	103-150		Sandy Clay Loam	>150	RIDGE SIDESLOPE	23
169	0958	A	UST	10YR5/3	10YR3/3	21	0 -5	cw	Loam	>150	VALLEY BOTTOM	22
169	0959	Bw	UST	2.5YR6/4	2.5YR4/4	18	5 -35	cw	Loam	>150	VALLEY BOTTOM	29
169	0960	Bk	UST	2.5YR6/4	2.5YR4/4	19	35 -86	aw	Loam	>150	VALLEY BOTTOM	25
169	0961	C1	UST	10YR6/4	10YR5/4	14	86 -103	aw	Sandy Loam	>150	VALLEY BOTTOM	14
169	0962	C2	UST	2.5YR5/4	2.5YR4/4	13	103-150		Sandy Loam	>150	VALLEY BOTTOM	17
17	1145	A	ARID	10YR5/4	10YR4/4	6	0 -5	cs	Sandy Loam	>135	RIDGE SIDESLOPE	8
17	1146	BA	ARID	2.5YR5/4	2.5YR4/4	8	5 -12	cs	Sandy Loam	>135	RIDGE SIDESLOPE	8
17	1147	Bt	ARID	2.5YR5/4	2.5YR4/4	12	12 -34	cs	Sandy Loam	>135	RIDGE SIDESLOPE	9
17	1148	Btk1	ARID	2.5YR6/4	2.5YR5/4	16	34 -50	cw	Sandy Loam	>135	RIDGE SIDESLOPE	10
17	1149	Btk2	ARID	2.5YR6/4	2.5YR5/4	20	50 -82	gw	Sandy Clay Loam	>135	RIDGE SIDESLOPE	13
17	1150	Btk3	ARID	2.5YR6/4	2.5YR5/4	24	82 -135	cs	Sandy Clay Loam	>135	RIDGE SIDESLOPE	15
176	0812	A	UST	2.5YR5/2	2.5YR4/2	21	0 -10	cw	Loam	>150	DRAINAGE BASIN	15
176	0813	BA	UST	2.5YR5/2	2.5YR4/2	27	10 -24	cw	Loam	>150	DRAINAGE BASIN	20
176	0814	2Btb	UST	2.5YR5/2	2.5YR4/2	40	24 -41	gw	Clay Loam	>150	DRAINAGE BASIN	25
176	0815	2Byb	UST	2.5YR6/2	2.5YR5/2	37	41 -71	cw	Clay Loam	>150	DRAINAGE BASIN	25
176	0816	3C	UST	2.5YR5/4	2.5YR4/4	28	71 -84	cw	Clay Loam	>150	DRAINAGE BASIN	21
176	0817	4Btyb	UST	2.5YR5/2	2.5YR4/2	41	84 -104	gw	Caly	>150	DRAINAGE BASIN	27
176	0818	4Byb	UST	2.5YR5/2	2.5YR4/2	33	104-150		Clay Loam	>150	DRAINAGE BASIN	28
177	0820	A	UST	10YR5/2	10YR4/2	25	0 -6	cs	Sandy Clay Loam	>20	DRAINAGE BASIN	20
177	0821	AC	UST	10YR5/3	10YR4/3	33	6 -20	gw	Clay Loam	>20	DRAINAGE BASIN	18
177	0822	Cr	UST			24	20 -34	cw	Loam	>20	DRAINAGE BASIN	16
180	0824	A	UST	10YR5/2	10YR4/2	14	0 -7	cs	Sandy Loam	>150	ALLUVIUM BASIN	8
180	0825	AC	UST	10YR5/3	10YR4/3	19	7 -30	cs	Sandy Loam	>150	ALLUVIUM BASIN	12
180	0826	C1	UST	10YR5/3	10YR4/3	19	30 -45	cw	Sandy Loam	>150	ALLUVIUM BASIN	10
180	0827	C2	UST	10YR5/3	10YR4/3	30	45 -66	cw	Clay Loam	>150	ALLUVIUM BASIN	15
180	0828	C3	UST	10YR5/3	10YR4/3	15	66 -126	gw	Sandy Loam	>150	ALLUVIUM BASIN	11
180	0829	C4	UST	10YR6/3	10YR4/4	15	126-150		Sandy Loam	>150	ALLUVIUM BASIN	13
181	0873	A	UST	10YR5/4	10YR4/4	12	0 -8	cs	Sandy Loam	>150	ALLUVIAL FAN	12
181	0874	AB	UST	10YR6/4	10YR5/4	15	8 -23	cw	Sandy Loam	>150	ALLUVIAL FAN	18
181	0875	Bw	UST	10YR5/4	10YR4/4	9	23 -46	gw	Loamy Sand	>150	ALLUVIAL FAN	10
181	0876	C1	UST	10YR6/4	10YR5/4	10	46 -101	gw	Sandy Loam	>150	ALLUVIAL FAN	11
181	0877	C2	UST	10YR6/4	10YR5/3	7	101-121	cw	Loamy Sand	>150	ALLUVIAL FAN	10
181	0878	Btkyb	UST	10YR5/4	10YR4/4	23	121-138	cw	Loam	>150	ALLUVIAL FAN	32
181	0879	C3	UST	2.5YR6/4	2.5YR5/4	7	138-150		Loamy Sand	>150	ALLUVIAL FAN	10
183	0865	A	ARIDIC	10YR5/4	10YR5/3	20	0 -6	cs	Loam	>150	TERRACE SIDESLOPE	27
183	0866	AB	ARIDIC	10YR6/4	10YR5/3	14	6 -16	cw	Sandy Loam	>150	TERRACE SIDESLOPE	13
183	0867	Btk	ARIDIC	10YR5/4	10YR5/3	24	16 -33	cw	Sandy Clay Loam	>150	TERRACE SIDESLOPE	22
183	0868	2btk	ARIDIC	10YR6/2	10YR5/2	41	33 -64	gw	Clay	>150	TERRACE SIDESLOPE	44
183	0869	2Bky	ARIDIC	10YR5/2	10YR4/2	41	64 -98	gw	Clay	>150	TERRACE SIDESLOPE	47
183	0870	3Bky	ARIDIC	10YR6/4	10YR5/4	23	98 -131	gw	Sandy Clay Loam	>150	TERRACE SIDESLOPE	21
183	0871	3C	ARIDIC	10YR6/4	10YR5/3	20	131-150		Sandy Clay Loam	>150	TERRACE SIDESLOPE	16
184	0881	A	ARID	10YR5/4	10YR4/4	11	0 -6	cs	Sandy Loam	>150	TERRACE SIDESLOPE	12
184	0882	AC	ARID	10YR6/4	10YR5/4	10	6 -29	cw	Loamy Sand	>150	TERRACE SIDESLOPE	11
184	0883	C1	ARID	10YR6/4	10YR5/3	9	29 -57	gw	Loamy Sand	>150	TERRACE SIDESLOPE	12
184	0884	C2	ARID	10YR6/4	10YR5/3	12	57 -92	gw	Sandy Loam	>150	TERRACE SIDESLOPE	12
184	0885	C3	ARID	10YR6/4	10YR5/4	13	92 -122	gw	Sandy Loam	>150	TERRACE SIDESLOPE	9
184	0886	C4	ARID	10YR6/4	10YR5/3	11	122-150		Sandy Loam	>150	TERRACE SIDESLOPE	8
185	0944	A	UST	10YR5/4	10YR3/3	11	0 -7	cw	Silty Loam	>150	VALLEY BOTTOM	23
185	0945	Bt1	UST	10YR4/3	10YR3/3	37	7 -36	cw	Clay Loam	>150	VALLEY BOTTOM	29
185	0946	Bt2	UST	7.5YR4/4	7.5YR3/4	46	36 -56	cw	Clay	>150	VALLEY BOTTOM	30
185	0947	Btk	UST	7.5YR4/4	7.5YR3/4	43	56 -80	gw	Clay	>150	VALLEY BOTTOM	32
185	0948	Bkyl	UST	7.5YR4/4	7.5YR3/4	51	80 -111	as	Clay	>150	VALLEY BOTTOM	35
185	0949	Bky2	UST	10YR5/4	10YR4/4	31	111-140		Clay Loam	>150	VALLEY BOTTOM	31
186	0054	A1	UST	10YR6/3	10YR5/3	16	0 -6		Loam		VALLEY BOTTOM	8
186	0055	A2	UST	10YR5/3	10YR4/3	18	6 -15	as	Loam		VALLEY BOTTOM	10
186	0056	Bt1	UST	7.5YR5/4	7.5YR4/4	37	15 -26	cs	Clay Loam		VALLEY BOTTOM	24
186	0057	Bt2	UST	7.5YR5/4	7.5YR4/4	25	26 -40	aw	Sandy Clay Loam		VALLEY BOTTOM	16
186	0058	Bt3	UST	7.5YR6/4	7.5YR5/4	45	40 -75	cw	Clay		VALLEY BOTTOM	27
186	0059	Btkl	UST	7.5YR5/4	7.5YR4/4	55	75 -107	gw	Clay		VALLEY BOTTOM	32
186	0060	Btk2	UST	7.5YR5/4	7.5YR4/4	63	107-132	cw	Clay		VALLEY BOTTOM	35
186	0061	Bk	UST	7.5YR6/4	7.5YR5/4	40	132-147		Clay		VALLEY BOTTOM	24
187	0107	A'	UST	7.5YR5/4	7.5YR4/4	59	0 -5	cs	Clay		VALLEY BOTTOM TERRAC	34
187	0108	AB	UST	7.5YR4/4	7.5YR3/4	58	5 -15	cs	Clay		VALLEY BOTTOM TERRAC	34
187	0109	Bt1	UST	7.5YR4/4	7.5YR3/4	62	15 -26	gw	Clay		VALLEY BOTTOM TERRAC	34

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	PH
160	82	11	0	70	so	vfr	---	eo	1mdfgr	1.1	<.1	<.1	13	6.5500
160	79	8	0	94	so	vfr	2npf	eo	1copr/1m	1.0	.7	<.1	13	7.6300
160	68	14	0	100	h	fr	3npf	es	m2mcsbk	.7	4.9	<.1	13	7.9600
160	67	15	0	102	h	fr	2npf	es	m2mcsbk	.5	4.8	<.1	13	7.9700
160	68	14	1	104	h	fr	---	es	m	.3	4.6	<.1	13	8.2000
161	48	48	0	106	sh	vfr	---	e	1cpl1fgr	1.8	6.2	<.1	10	7.7700
161	48	40	0	103	h	fr	---	esd	1msbk	1.4	5.0	<.1	10	7.9000
161	40	42	0	105	vh	fi	2mkpfpo	esd	3mpr	1.4	4.8	<.1	10	7.9100
161	48	37	0	105	vh	vfi	2mkpfpo	evd1smfi	3cpr	1.0	9.8	<.1	10	8.0700
161	38	34	2	109	vh	vfi	2mkpfpo	esd1fi	3mabk	1.0	7.2	<.1	10	8.0100
161	50	32	3	114	h	fi	---	evd2fi	m	.8	8.1	<.1	10	8.0000
161	42	43	4	99	eh	efi	1mkpfpo	evd2fi	m3mabk	.9	6.9	<.1	10	8.0200
162	58	38	0	104	so	vfr	---	e	1cp11fgr	1.3	4.0	<.1	10	7.7600
162	63	31	0	105	sh	fr	---	esd	1msbk	1.9	7.5	<.1	10	7.9700
162	57	32	3	104	h	fi	3mkpfpo	evd2fi	3mpr	1.2	10.0	<.1	10	8.0700
162	51	35	5	99	vh	fi	2mkpfpo	evd2fism	2msbk	1.0	9.8	<.1	10	8.0600
162	50	39	9	117	h	fr	---	esd2fism	m	1.2	8.1	<.1	10	7.9600
162	60	38	10	187						.7	5.8	0.5	10	7.9000
163	57	29	1	85	so	vfr	---	eo	1mgr	.9	0.2	<.1	10	6.1500
163	57	30	0	89	sh	fr	---	eo	2msbk	1.4	0.5	<.1	10	7.2200
163	57	23	1	94	h	fi	3mkpkpo	eo	3mprk	1.6	0.9	<.1	10	7.3400
163	69	24	1	114	vh	fi	3mkpkpo	esd1fi	3mpr	1.6	7.7	<.1	10	7.8300
163	67	25	2	117	h	fi	2mkpkpo	evd3fism	m	1.1	12.7	<.1	10	7.8500
163	64	24	4	122	h	fi	--	esd3smfi	m	1.0	10.5	<.1	10	7.7600
163	76	20	2	146						.4	1.7	18.0	10	7.5800
165	61	32	0	129	sh	vfr	---	ed	2cpl	.7	9.8	<.1	10	7.7800
165	57	29	0	117	sh	fr	---	esd	2cpl	.9	11.3	<.1	10	7.7600
165	57	30	0	107	sh	fr	---	esd	2msbk	1.0	12.8	<.1	10	7.0600
165	61	20	4	1069				eseo	m	.8	8.7	18.1	10	7.6000
166	68	23	1	114	sh	vfr	---	ed	1fpl	.5	1.2	<.1	18	7.8400
166	68	23	11	86	sh	fr	3mkpfpo	ed	2msbk	1.4	6.1	<.1	18	7.6200
166	51	25	20	100	vl	fi	3mkpfpo	es2sssf	2msbk	2.0	6.6	<.1	18	7.9100
166	55	23	24	102	vh	fi	3mkpfpo	es3sssf	2mcsbk	.6	4.7	<.1	18	8.0000
166	58	22	26	103	h	fr	---	es3sssf	1mcsbk	.4	3.4	<.1	18	8.0700
166	58	24	30	123	sh	vfr	---	e1sssf	1msbk	.5	3.4	<.1	18	7.8800
167	55	34	0	118	sh	vfr	---	ed	2fgr	.8	1.6	<.1	18	7.7400
167	55	26	1	102	sh	fr	3mkpfpo	ed	2cpr2msb	1.6	5.6	<.1	18	7.3700
167	60	24	5	99	sh	fr	3npfpo	es2sf	2cpr2msb	.3	4.8	<.1	18	7.7000
167	52	24	8	98	h	fr	4kpfpo	es2sfss	2cpr3csb	.7	4.7	<.1	18	7.6600
167	50	24	11	104	h	fr	3mkpfpo	es2sfss	1m&csbk	.6	5.4	<.1	18	7.6400
169	50	29	1	90	sh	vfr	---	eo	2fgr	1.3	.4	<.1	37	6.3100
169	42	40	4	100	sh	fr	---	eo	2msbk	.9	.7	<.1	37	7.1900
169	48	33	9	100	sh	fr	---	e1sf	2msbk	.2	.9	<.1	37	7.5700
169	75	12	10	90	sh	vfr	---	eo	m	.0	.7	<.1	37	7.8700
169	71	16	9	91	h	fr		eo	m	.4	.6	<.1	37	7.5800
17	74	20	0	125	sh	vfr	---	ed	1fgr	.7	3.8	<.1	18	7.3500
17	71	21	0	122	sh	vfr	---	esd	1msbk	.8	4.4	<.1	18	7.5700
17	72	16	0	124	sh	vfr	2npfpo	esd	1msbk	.8	5.6	<.1	18	7.5400
17	64	20	0	132	sh	fr	3npfpo	es1sf	1msbk	1.0	6.5	<.1	18	7.7300
17	60	20	1	105	sh	fr	3mkpfpo	es2sf	2msbk	.8	8.4	<.1	18	7.7600
17	50	26	3	114	h	fr	3mkpfpo	es2sf	2msbk	.8	6.6	<.1	18	7.7200
176	49	30	0	99	sh	fr	---	eo	1mfgr	2.0	.9	<.1	41	7.3500
176	43	30	0	95	sh	fr	---	ed	1mpl1msb	2.8	1.4	<.1	41	7.3000
176	25	35	1	85	vh	vfi	---	eo	2cpr2msb	2.0	1.2	<.1	41	7.3600
176	33	30	2	96	vh	vfi	---	eo	m2msbk	1.7	.9	<.1	41	7.3300
176	45	27	2	98	sh	vfr	---	e	m	1.6	1.1	<.1	41	7.4200
176	23	36	3	108	vh	vfi	---	eo	m	1.3	1.1	.4	41	7.3700
176	26	41	2	103	vh	vfi	---	eo	m	1.2	1.2	.5	41	7.3600
177	51	24	2	93	sh	fr	---	cd	2mgr	3.4	6.2	<.1	22	7.5300
177	43	24	5	123	h	fr	---	esd	m	3.4	5.3	<.1	22	7.7000
177	38	38	4	157				ed	m	1.7	1.6	.9	22	7.0700
180	63	23	0	124	so	vfr	---	eo	1mgr	3.3	<.1	<.1	22	6.4100
180	53	29	0	134	sh	fr	---	e	1mpl1mgr	2.7	1.0	<.1	22	7.4200
180	55	26	0	158	sh	fr	---	eo	1msbk	1.5	.7	<.1	22	7.3100
180	44	27	0	138	sh	fr	---	eo	m	2.9	1.0	<.1	22	7.4900
180	59	26	0	127	sh	fr	---	eo	m	1.9	1.0	<.1	22	7.2300
180	57	28	0	126	so	fr	---	eo	m	2.3	1.0	<.1	22	7.3400
181	73	15	0	100	so	vfr	---	ed	1mgr	1.1	1.0	<.1	18	7.1100
181	60	25	0	104	sh	fr	---	esd	1mpl1mfg	1.7	2.0	<.1	18	7.4500
181	83	8	0	114	sh	fr	---	eo	1msbk	.7	.7	<.1	18	7.7300
181	78	12	0	103	sh	vfr	---	ed	m	.4	1.2	<.1	18	7.9000
181	88	5	0	97	sh	vfr	---	ed	m	.4	1.1	<.1	18	7.6200
181	35	42	5	112	h	fr	1mpfpo	esd	2cmpr	1.2	1.5	<.1	18	7.6300
181	84	10	6	116	sh	vfr		ed	m	.4	1.0	<.1	18	7.8200
183	41	39	0	144	so	vfr	---	ed	1mgr	1.9	1.2	<.1	18	7.1700
183	64	22	2	124	sh	vfr	---	ed	1mpl1mfg	.8	1.5	<.1	18	7.5400
183	52	24	4	114	h	fr	1npf,po	esd	1msbk	1.3	1.0	<.1	18	7.4600
183	30	29	9	102	eh	efi	3mkpfpo	es1fism	3cpr3msb	1.6	2.0	<.1	18	7.4500
183	30	29	10	100	eh	efi	---	es2smfi	m	1.1	1.4	<.1	18	7.5100
183	52	25	12	136	h	fi	---	es2tism	m	.2	3.3	.3	18	7.7800
183	65	15	12	105	h	fr	---	ed	m	.2	2.0	<.1	18	7.8400
184	72	17	0	101	sh	fr	---	ed	1mgr	1.3	.9	<.1	11	7.2800
184	82	9	0	104	sh	vfr	---	ed	1msbk	1.3	1.0	<.1	11	7.6300
184	81	10	0	76	sh	fr	---	ed	m	.5	.9	<.1	11	7.7500
184	72	12	7	118	sh	fr	---	ed	m	1.3	1.1	<.1	11	7.5000
184	82	4	11	130	sh	fr	---	esd	m	.2	1.1	<.1	11	7.4400
184	75	13	13	130	sh	vfr	---	ed	m	.1	.9	<.1	11	7.8000
185	35	54	6	90	sh	fr	---	ed	2fgr	1.3	3.6	<.1	26	7.5100
185	26	37	20	99	eh	vfi	4mkpfpo	ed	3fabk	1.0	5.7	<.1	26	7.5900
185	22	32	28	108	eh	vfi	4mkpfpo	ed	2fmsbk	1.3	5.7	<.1	26	7.8400
185	24	33	26	102	eh	vfi	3mkpfpo	ed&2sf	2fsbk	.8	5.9	<.1	26	7.6200
185	18	30	27	110	eh	vfi	---	ed&2sf	m	.8	5.7	<.1	26	7.6300
185	30	39	26	150	vh	vfi	---	ed&2sf	m	.8	6.5	<.1	26	7.5500
186	47	37	1	68	sh	vfr		eo	1vcpl	.7	<.1	<.1	13	6.4000
186	48	34	4	85	sh	vfr		eo	1msbk	1.0	<.1	<.1	13	6.5300
186	42	21	8	88	eh	vfi	4mkpf	eo	3m&cpr	.8	<.1	<.1	13	6.8600
186	53	22	10	105	eh	fi	4mkpf	eo	3m&c abk	.6	1.1	<.1	13	7.6400
186	18	36	13	103	vh	fi	4npf	eld	3f&m abk	1.4	4.0	<.1	13	7.8200
186	20	25	15	102	eh	vh	4mkpf	e 1fsm&f	2m&c pr	1.5	2.7	<.1	13	7.8400
186	10	27	15	98	eh	vfi	3mk pf	e 1fsm&f	m	.4	1.9	<.1	13	7.8600
186	27	33	15	102	eh	vfi		e 1fsm&f	m	.1	2.2	<.1	13	7.8200
187	18	23	2	108	vh	fr	---	e/d	1fgr	1.4	1.3	<.1	13	7.6100
187	20	22	3	110	vh	fi	---	e/d	2codmgr	1.0	1.3	<.1	13	7.6800
187	16	22	6	111	eh	fi	2mtpf	e/d	2codmabk	.9	1.5	<.1	13	7.7200

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM	CEC
187	0110	Bt2	UST	7.5YR4/4	7.5YR3/4	63	26 -60	gw	Clay		VALLEY BOTTOM TERRAC	34
187	0111	Btky	UST	10YR5/3	10YR3/3	57	60 -114	gw	Clay		VALLEY BOTTOM TERRAC	39
187	0112	2C	UST	10YR6/4	10YR5/6	7	114-165		Sand		VALLEY BOTTOM TERRAC	5
188	0063	A	UST	7.5YR5/4	7.5YR4/4	41	0 -6	cs	Clay		VALLEY BOTTOM	25
188	0064	BA	UST	7.5YR5/4	7.5YR4/4	49	6 -16	cw	Clay		VALLEY BOTTOM	31
188	0065	Bt1	UST	7.5YR5/4	7.5YR4/4	49	16 -53	gw	Clay		VALLEY BOTTOM	29
188	0066	Bt2	UST	7.5YR5/4	7.5YR4/4	63	53 -90	gw	Clay		VALLEY BOTTOM	37
188	0067	Bt3	UST	7.5YR5/4	7.5YR4/4	63	90 -124	cw	Clay		VALLEY BOTTOM	40
188	0068	C	UST	10YR6/3	10YR4/4	51	124-163		Clay		VALLEY BOTTOM	30
19	0766	A	ARIDIC	10YR5/4	10YR4/3	5	0 -6	cs	Sandy Loam	>56	RIDGE SIDESLOPE	8
19	0767	BA	ARIDIC	10YR5/4	10YR4/3	12	6 -24	gw	Sandy Loam	>56	RIDGE SIDESLOPE	11
19	0768	Btk	ARIDIC	10YR6/4	10YR5/3	21	24 -40	gw	Loam	>56	RIDGE SIDESLOPE	14
19	0769	2C	ARIDIC	10YR5/2	10YR4/2	29	40 -56	gw	Clay Loam	>56	RIDGE SIDESLOPE	19
19	0770	2Cr	ARIDIC			29	56 -86		Clay Loam	>56	RIDGE SIDESLOPE	20
190	0070	A	UST	7.5YR4/4	7.5YR3/4	53	0 -7	cs	Clay		VALLEY BOTTOM	37
190	0071	Bt1	UST	7.5YR5/4	7.5YR4/4	56	7 -30	gw	Clay		VALLEY BOTTOM	38
190	0072	Bt2	UST	7.5YR5/4	7.5YR4/4	60	30 -83	cw	Clay		VALLEY BOTTOM	40
190	0073	Bk	UST	7.5YR5/4	7.5YR4/4	52	83 -98	cw	Clay		VALLEY BOTTOM	32
190	0074	C	UST	7.5YR5/4	7.5YR4/4	50	98 -131	ci	Clay		VALLEY BOTTOM	30
190	0075	2Bk	UST	7.5YR6/4	10YR5/4	20	131-155		Sandy Loam		VALLEY BOTTOM	13
191	0001	A	ARIDIC	7.5YR5/4	7.5YR4/4	29	0 -9	cs	Sandy Clay Loam		BEDROCK SIDESLOPE	18
191	0002	Bt	ARIDIC	7.5YR4/4	7.5YR3/4	32	9 -28	gs	Sandy Clay Loam		BEDROCK SIDESLOPE	22
191	0003	2Btk	ARIDIC	7.5YR7/3	7.5YR4/4	31	28 -46	gw	Sandy Clay Loam		BEDROCK SIDESLOPE	17
191	0004	2Cr	ARIDIC	10YR7/3		22	46 -94		Sandy Clay Loam		BEDROCK SIDESLOPE	13
192	0006	A1	UST	10YR5/4	7.5YR4/4	32	0 -10	cs	Sandy Clay Loam		DRAINAGE BOTTOM	19
192	0007	A2	UST	7.5YR5/4	7.5YR4/4	37	10-23	cs	Sandy Clay Loam		DRAINAGE BOTTOM	22
192	0008	Bt	UST	5YR5/3	5YR4/4	48	23 -61	gw	Clay		DRAINAGE BOTTOM	27
192	0009	Btky	UST	5YR5/3	5YR4/3	49	61 -94	gs	Clay		DRAINAGE BOTTOM	26
192	0010	Bkyl	UST	5YR5/3	5YR4/3	44	94 -137	cw	Clay		DRAINAGE BOTTOM	22
192	0011	Bky2	UST	5YR5/3	5YR4/3	39	137-152		Clay Loam		DRAINAGE BOTTOM	21
193	0013	A	UST	7.5YR5/4	7.5YR4/4	41	0 -15	cs	Clay		TOESLOPE	31
193	0014	Bt	UST	7.5YR5/4	7.5YR4/4	45	15 -48	gw	Clay		TOESLOPE	29
193	0015	Bty	UST	7.5YR4/4	7.5YR3/4	38	48 -76	cw	Sandy Clay		TOESLOPE	27
193	0016	By1	UST	7.5YR6/4	7.5YR4/4	25	76 -100	cw	Sandy Clay Loam		TOESLOPE	19
193	0017	By2	UST	7.5YR6/4	7.5YR4/4	18	100-152		Sandy Loam		TOESLOPE	13
194	0026	A	UST	10YR5/3	10YR4/3	46	0 -8	cs	Clay		TOESLOPE	34
194	0027	Bt1	UST	10YR4/3	10YR3/3	48	8 -20	gw	Clay		TOESLOPE	36
194	0028	Bt2	UST	10YR4/3	10YR3/3	49	20 -53	gw	Clay		TOESLOPE	40
194	0029	Bt3	UST	10YR5/4	10YR4/3	40	53 -72	gw	Clay		TOESLOPE	32
194	0030	By1	UST	10YR6/3	10YR45/4	29	72 -114	dw	Sandy Clay Loam		TOESLOPE	25
194	0031	By2	UST	10YR5/4	10YR4/4	20	114-152		Sandy Clay Loam		TOESLOPE	20
195	0019	A	ARIDIC	10YR5/3	10YR4/3	57	0 -5	cs	Clay		UPLAND DRAINAGE FLAT	38
195	0020	Bt1	ARIDIC	10YR4/3	10YR3/3	59	5 -20	cw	Clay		UPLAND DRAINAGE FLAT	42
195	0021	Bt2	ARIDIC	10YR4/3	10YR3/3	60	20 -59	gw	Clay		UPLAND DRAINAGE FLAT	44
195	0022	Bt3	ARIDIC	10YR5/3	10YR4/3	61	59 -97	gs	Clay		UPLAND DRAINAGE FLAT	47
195	0023	By1	ARIDIC	10YR6/34	10YR45/3	35	97 -127	cw	Clay Loam		UPLAND DRAINAGE FLAT	29
195	0024	By2	ARIDIC	10YR6/34	10YR45/3	26	127-152		Sandy Clay Loam		UPLAND DRAINAGE FLAT	23
196	0033	A	UST	10YR5/3	10YR4/3	15	0 -10	cs	Sandy Loam		VALLEY BOTTOM	12
196	0034	Bw	UST	10YR5/4	10YR4/4	13	10 -28	cs	Sandy Loam		VALLEY BOTTOM	14
196	0035	C	UST	10YR5/4	10YR4/4	12	28 -52	cw	Sandy Loam		VALLEY BOTTOM	11
196	0036	2Btb	UST	7.5YR5/4	7.5YR4/4	23	52 -62	gw	Loam		VALLEY BOTTOM	21
196	0037	Btkb	UST	7.5YR5/4	7.5YR4/4	21	62 -93	gw	Sandy Clay Loam		VALLEY BOTTOM	18
196	0038	Bkb	UST	10YR6/3	10YR4/3	35	93 -152		Clay Loam		VALLEY BOTTOM	25
197	0040	A	ARIDIC	10YR5/3	10YR4/3	20	0 -13	cs	Loam		VALLEY SIDESLOPE	14
197	0041	Bt1	ARIDIC	7.5YR5/4	7.5YR4/4	39	13 -33	aw	Clay Loam		VALLEY SIDESLOPE	30
197	0042	Bt2	ARIDIC	10YR5/3	10YR4/3	29	33 -51	cw	Sandy Clay Loam		VALLEY SIDESLOPE	20
197	0043	Btk	ARIDIC	10YR5/4	10YR4/3	24	57 -81	gw	Loam		VALLEY SIDESLOPE	18
197	0044	Bk1	ARIDIC	10YR6/4	10YR4/3	22	81 -132	cw	Sandy Clay Loam		VALLEY SIDESLOPE	15
197	0045	Bk2	ARIDIC	10YR6/4	10YR4/3	15	132-152		Sandy Loam		VALLEY SIDESLOPE	11
199	0047	A	UST	10YR5/3	10YR3/3	20	0 -10	cs	Loam		DRAINAGE BOTTOM	17
199	0048	Bt1	UST	7.5YR4/2	7.5YR3/2	35	10 -20	cw	Clay Loam		DRAINAGE BOTTOM	19
199	0049	Bt2	UST	7.5YR4/2	7.5YR3/2	37	20 -65	cw	Clay Loam		DRAINAGE BOTTOM	30
199	0050	Btk1	UST	5YR4/3	5YR3/3	42	65 -104	gw	Clay		DRAINAGE BOTTOM	30
199	0051	Btk2	UST	5YR4/4	5YR3/3	34	104-124	cw	Clay Loam		DRAINAGE BOTTOM	31
199	0052	Btk3	UST	10YR5/3	10YR3/3	25	124-152		Sandy Clay Loam		DRAINAGE BOTTOM	19
E101T3	1097	A	UST	10YR4/3	10YR3/2	8	0-5	cs	Loam	>150	MESA TOP	21
E101T3	1098	BA	UST	10YR4/3	10YR3/2	13	5-11	cs	Loam	>150	MESA TOP	23
E101T3	1099	Bt1	UST	7.5YR4/4	7.5YR3/4	16	11-32	cw	Loam	>150	MESA TOP	32
E101T3	1100	Bt2	UST	7.5YR5/6	7.5YR4/6	18	32-55	aw	Loam	>150	MESA TOP	33
E101T3	1101	Btk	UST	7.5YR6/4	7.5YR5/4	8	55-79	gw	Loam	>150	MESA TOP	30
E101T3	1102	Bk	UST	7.5YR8/4	7.5YR7/4	9	79-130+	--	Sandy Loam	>150	MESA TOP	20
E101T3	1103	A'	UST	10YR4/3	10YR2/2	8	0-10		Sandy Loam	>150	MESA TOP	27
E102	1092	A	UST	7.5YR4/2	7.5YR3/2	7	0-8	cs	Loam	86	MESA TOP	19
E102	1093	Bt1	UST	7.5YR4/2	7.5YR3/2	17	8-27	cs	Loam	86	MESA TOP	26
E102	1094	Bt2	UST	7.5YR4/4	7.5YR3/4	25	27-55	aw	Loam	86	MESA TOP	36
E102	1095	Btk	UST	7.5YR5/4	7.5YR4/4	8	55-86	aw	Sandy Loam	86	MESA TOP	32
E102	1096	A'	UST	7.5YR4/2	7.5YR3/2	4	0-11		Sandy Loam	86	MESA TOP	23
E103	0180	A	UST	10YR6/4	10YR5/4	17	0-6	cs	Sandy Loam	20	RIDGE OF MESA EDGE	5
E103	0181	C	UST	10YR6/4	10YR5/6	10	6-20	cw	Sandy Loam	20	RIDGE OF MESA EDGE	10
E104	0188	A	UST	10YR6/4	10YR5/4	22	0-4	cs	Sandy Clay Loam	20	MESA EDGE/BREAKS	4
E104	0189	C	UST	7.5YR5/6	7.5YR4/6	5	4-20	aw	Loamy Sand	20	MESA EDGE/BREAKS	10
E104	0190	A'	UST	10YR5/3	10YR3/4	16	0-11		Sandy Loam	20	MESA EDGE/BREAKS	10
E105	1111	A	ARIDIC	10YR5/3	10YR3/2	3	0-5	cs	Loamy Sand	>150	CERRO SIDESLOPE	13
E105	1112	Bk1	ARIDIC	10YR5/3	10YR4/3	7	5-30	gs	Sandy Loam	>150	CERRO SIDESLOPE	19
E105	1113	Bk2	ARIDIC	10YR6/3	10YR5/3	5	30-92	gs	Sandy Loam	>150	CERRO SIDESLOPE	16
E105	1114	Bk3	ARIDIC	10YR5/4	10YR4/4	5	92-150	--	Sandy Loam	>150	CERRO SIDESLOPE	16
E106	0214	A	UST	10YR5/6	10YR5/6	5	0-5	as	Sand	15	SANDSTONE BREAKS	3
E106	0215	C	UST	10YR6/6	10YR4/6	4	5-15	aw	Sand	15	SANDSTONE BREAKS	5
E106	0216	A'	UST	10YR5/4	10YR4/3	4	0-8		Sand	15	SANDSTONE BREAKS	4
E107	1104	A	ARIDIC	2.5YR5/2	2.5YR4/2	21	0-6	cs	Loam	>150	DRAINAGE BOTTOM/TERR	21
E107	1105	C1	ARIDIC	10YR5/3	10YR3/3	32	6-50	as	Clay Loam	>150	DRAINAGE BOTTOM/TERR	26
E107	1106	C2	ARIDIC	10YR6/4	10YR5/4	16	50-74	as	Loam	>150	DRAINAGE BOTTOM/TERR	14
E107	1107	C3	ARIDIC	10YR5/4	10YR4/4	15	74-99	as	Sandy Loam	>150	DRAINAGE BOTTOM/TERR	13
E107	1108	C4	ARIDIC	10YR6/4	10YR4/4	21	99-128	as	Loam	>150	DRAINAGE BOTTOM/TERR	18
E107	1109	Byb	ARIDIC	2.5YR6/2	2.5YR4/2	34	128-150	--	Clay Loam	>150	DRAINAGE BOTTOM/TERR	21
E107	1110	A'	ARIDIC	10YR5/3	10YR3/3	20	0-10	cs	Loam	>150	DRAINAGE BOTTOM/TERR	20
E108T2	1232	A	UST	10YR5/4	10YR4/3	7	0-8	cs	Sandy Loam	>123	RIDGE SIDESLOPE	10
E108T2	1233	Bt	UST	7.5YR5/4	7.5YR4/6	14	8-34	cw	Sandy Loam	>123	RIDGE SIDESLOPE	12
E108T2	1234	Btk	UST	7.5YR6/4	7.5YR5/4	13	34-53	cw	Sandy Loam	>123	RIDGE SIDESLOPE	16
E108T2	1235	Bk	UST	7.5YR7/4	7.5YR7/4	16	53-123+	--	Sandy Loam	>123	RIDGE SIDESLOPE	13
E12T2	0837	A	UST	10YR5/2	10YR4/2	51	0-7	cs	Clay	>150	DRAINAGE BOTTOM	34
E12T2	0838	AC\B	UST	10YR5/2	10YR4/2	69	7-25	gw	Clay	>150	DRA:NAGE BOTTOM	37
E12T2	0839	C1\CB	UST	10YR5/2	10YR4/2	64	25-46	gw	Clay	>150	DRAINAGE BOTTOM	37
E12T2	0840	C2\C1	UST	10YR5/2	10YR4/2	39	46-112	dw	CLay Loam	>150	DRAINAGE BOTTOM	39

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	PH
187	18	19	10	109	eh	efi	4tpf	e/d	3vcopr3v	1.0	1.4	<.1	13	7.7600
187	25	18	13	121	eh	fi	2mtpf	esf2sm	m	1.3	1.4	<.1	13	7.6500
187	89	5	10	116	fo	co	---	e/d	m	.0	2.0	<.1	13	8.3500
188	25	34	2	97	sh	vfr	---	eo	2fgr	2.0	.9	<.1	13	7.0800
188	21	30	4	113	h	fi	---	eo	2fdmsbk	.9	1.5	<.1	13	7.4300
188	20	31	9	104	eh	vfi	4mkpf	e/d	2cp&vcpr	.9	1.4	<.1	13	7.4400
188	16	21	14	125	eh	fi	4npf	e/d	m	.5	1.8	<.1	13	7.7300
188	15	22	14	118	eh	fi	4npf	e/d	m	.3	1.9	<.1	13	7.6500
188	12	37	14	108	h	fr	---	es/d	m	.4	2.8	<.1	13	7.8500
19	64	31	0	136	so	vfr	---	e	1mgr	3.2	1.8	<.1	18	7.1300
19	58	30	0	122	sh	fr	---	evd	1msbk	1.6	5.8	<.1	18	7.3100
19	45	34	0	105	h	fr	1npfpo	evd	2msbk	1.3	15.2	.1	18	7.8300
19	32	39	1	84	h	fi		ev	m	1.0	13.2	<.1	18	8.0600
19	35	36	4	88				es	m	.4	8.1	<.1	18	8.0900
190	22	25	2	99	h	fr	---	eo	2fgr	1.8	1.2	<.1	13	7.2600
190	19	25	7	101	eh	efi	4mkpf	e/d	3covcopr	.8	1.6	<.1	13	7.4700
190	16	24	10	94	eh	efi	4mkpf	e/d	3vcopr	.9	1.8	<.1	13	7.5300
190	30	18	12	88	eh	efi	---	es2m	m	.7	1.2	<.1	13	7.7700
190	33	17	12	93	eh	vfi	---	e/d	m	.7	1.5	<.1	13	7.7400
190	70	10	11	99	sh	fr	---	e/1sm	m	.3	2.8	<.1	13	7.8600
191	52	19	3	117	sh	vfr	---	ed	2mgr	1.4	.9	<.1	16	7.2500
191	48	20	14	114	vh	vfi	3mkpf	ed		1.6	3.2	<.1	16	7.7300
191	52	17	20	125	eh	fi	1npf	es	m	.5	3.0	<.1	16	7.9100
191	56	21	29	136	eh			es		.1	2.2	<.1	16	8.1600
192	48	20	1	106	sh	fr	---	eo	1fpl2mgr	1.2	<.1	<.1	16	6.3100
192	48	15	4	119	sh	fr	---	eo	1sbk	.6	.8	<.1	16	7.4100
192	30	22	16	141	vh	vfi	3mkpf	eo	m	.6	1.4	<.1	16	7.6100
192	36	15	22	148	vh	vfi	1npf	2smdfe	1mcosbk	.3	1.2	<.1	16	7.6200
192	38	18	24	139	vh	fr	---	3smdfe	m	.1	1.0	.1	16	7.6300
192	44	17	25	133	vh	fr	---	1smdfe	m	.1	1.1	<.1	16	7.6900
193	34	26	0	98	sh	vfr	---	eo	2mgr	1.8	<.1	<.1	13	6.5500
193	38	17	3	103	vh	vfi	2mtpf	eo	2copr2co	.9	1.0	<.1	13	7.4300
193	48	14	4	104	eh	vfi	1mtpf	e1sm	m	.8	.8	<.1	13	7.5000
193	62	12	5	108	eh	fr	---	esm2sf	m	.4	2.5	<.1	13	7.5800
193	67	15	5	117	h	vfr	---	eslac1sf	m	.1	2.0	<.1	13	7.8200
194	38	16	0	111	sh	vfr	---	e/d	1mgr	.8	1.0	<.1	13	7.5000
194	34	18	1	109	vh	vfi	3mkpf	e/d	2m&csbk	.6	1.2	<.1	13	7.6800
194	32	19	2	101	eh	vfi	4mkpf	e/d	2cvcpr3m	.8	1.5	<.1	13	7.7300
194	42	18	4	112	vh	fi	2mkpf&r	es/d	m	1.5	2.2	<.1	13	7.7600
194	52	19	4	134	h	fr	---	es/d2sm&	m	.2	2.4	.5	13	7.7300
194	65	15	4	105	sh	fr	---	e/d1sm&f	m	.2	1.6	<.1	13	7.6200
195	23	20	1	116	sh	fr	--	eo	2fgr	1.5	1.1	<.1	16	7.2000
195	22	19	3	109	vh	f	1npf	e/d	2fdmsbk	.9	1.1	<.1	16	7.6000
195	21	19	7	110	eh	vfi	4mkpf	e/d	3codvcop	.7	1.5	<.1	16	7.6900
195	18	21	10	109	eh	vfi	4mkpf	e/d	1codvcoa	.8	1.6	<.1	16	7.7600
195	43	22	11	172	h	vfr	--	e/d2sm&f	m	.2	2.0	1.3	16	7.7000
195	58	16	11	142	sh	vfr	---	e/d1sm&f	m	.0	1.9	.5	16	7.6800
196	70	15	0	81	sh	vfr		eo	1mgr	1.6	<.1	<.1	13	6.3700
196	70	17	0	90	sh	fr		eo	1cosbk1m	.5	<.1	<.1	13	6.7400
196	75	13	0	99	h	fr		eo	m	.1	.9	<.1	13	7.7300
196	44	33	2	101	vh	fi		e	2co,msbk	.4	1.1	<.1	13	7.5300
196	58	21	7	111	eh	vfi		es2ss	m3comsbk	.2	1.9	<.1	13	7.8800
196	26	39	21	111	h	fr		es3ss	m	.2	3.8	<.1	13	8.2300
197	36	44	2	93	sh	vfr	---	eo	1npl2fmg	2.0	<.1	<.1	13	6.6000
197	22	39	4	100	vh	fi	4mkpf	eo	2mkcpr3f	.8	1.0	<.1	13	7.4400
197	46	25	7	113	h	fr	3mkpf	e/d	2mpr2fma	.5	2.5	<.1	13	7.7700
197	46	30	11	119	vh	fr	2npf	es/2fssm	2fmsbk	.5	2.4	<.1	13	7.9100
197	54	24	15	121	h	fr	---	es/2fssm	m	.2	2.6	<.1	13	8.0400
197	68	17	17	115	h	vfr	---	es/d	m	.1	1.9	<.1	13	7.9900
199	44	36	0	71	sh	vfr	---	eo	1npl2fgr	2.5	<.1	<.1	13	6.0100
199	40	25	4	116	vh	fi	3npf	eo	2fsbk	1.4	<.1	<.1	13	6.0800
199	38	25	5	90	eh	vfi	4mkpf	eo	3mfcpr3m	1.1	<.1	<.1	13	6.8300
199	37	21	8	101	eh	vfi	3mkpf	es3smd	3m&csbk	.8	1.2	<.1	13	7.7000
199	42	23	8	98	eh	vfi	4npf	es2f	2m&csbk	.8	1.1	<.1	13	7.6800
199	61	14	9	105	eh	fi	3npf	eseo	1e&vsbk	.3	1.0	<.1	13	7.7100
E101T3	43	50	0	75	sh	vfr	---	eo	2fgr	2.9	<.1	0.10000	01	6.6800
E101T3	43	44	0	67	sh	fr	---	eo	1fpl2fgr	2.0	<.1	0.10000	01	6.7100
E101T3	43	42	0	68	h	fi	3mkpf/p	eo	3fsbk	1.1	<.1	0.10000	01	6.7300
E101T3	43	39	0	72	h	fi	4kpf/po	eo	3fsbk	.8	1.0	0.10000	01	7.1600
E101T3	48	45	0	77	h	fi	3mkpf/p	e2ss	2fsbk	3.4	18.1	0.10000	01	7.5600
E101T3	57	34	0	87	vh	fr	---	es3ss	m	.8	34.6	0.10000	01	7.7500
E101T3	53	40	0	76	so	vfr	---		2fgr	9.0	<.1	0.10000	01	6.5900
E102	51	42	0	83	so	vfr	---	eo	2fgr	5.1	<.1	0.10000	01	6.9400
E102	43	40	0	75	h	fi	3mkpfpo	eo	2fsbk	1.7	<.1	0.10000	01	6.5600
E102	41	34	0	68	vh	fi	4kpfpo	eo	3fsbk	.9	<.1	0.10000	01	6.4700
E102	53	40	0	75	h	fi	2npf	e1ss	2fsbk	1.1	15.4	0.10000	01	7.4000
E102	53	43	0	58	so	vfr	---	eo	2fgr	19.7	<.1	0.10000	01	6.8400
E103	67	16	0	127	so	vfr	---		1mpl1fgr	.4	1.7	0.10000	06	7.8200
E103	73	18	0	115	sh	vfr	---	es/d	m	1.5	7.0	0.20000	06	7.7200
E104	72	6	0	78	so	vfr	---	eo	1fpl	1.8	.3	0.10000	06	6.5500
E104	82	13	0	89	so	vfr	---	eo	m	1.1	.6	0.10000	06	7.4300
E104	62	22	0	110	so	vfr	---	eo	1mgr	2.6	1.2	0.10000	06	7.8000
E105	75	22	0	97	so	vfr	---	esd	2fgr	1.5	2.0	0.10000	35	7.5500
E105	64	29	0	86	sh	fr	---	es1sf	2msbk	1.1	13.6	0.10000	35	7.7400
E105	65	30	7	96	sh	fr	---	ev2ss&sf	1msbk	.7	18.2	0.10000	35	8.2900
E105	63	32	16	103	so	vfr	---	es	m	.1	9.3	0.10000	35	8.2700
E106	92	3	1	116	so	vfr	---	eo	1fgrsg	.4	.4	0.10000	06	7.5500
E106	94	3	0	120	so	vfr	---	eo	m	.4	.4	0.10000	06	7.9700
E106	94	3	0	161	so	vfr	---	eo	1fgr	2.2	1.0	0.10000	06	8.1100
E107	39	41	0	68	sh	fr	---	ed	1cpl2fgr	2.7	5.2	0.10000	29	7.0300
E107	25	44	1	60	vh	fi	---	esd	2fsbk	1.2	5.3	0.10000	29	7.3400
E107	41	44	2	99	h	fr	---	ed	m	.4	4.6	0.10000	29	7.5100
E107	60	25	4	110	sh	vfr	---	ed	m	.3	3.7	0.10000	29	7.5400
E107	38	41	6	94	h	fr	---	ed	m	.5	4.3	0.10000	29	7.5200
E107	24	42	7	93	vh	fi	---	e/d2sfsm	2mpr	1.6	5.8	0.10000	29	7.3900
E107	43	37	0	89	so	fr	---	ed	2fgr	2.8	5.3	0.10000	29	7.8600
E108T2	57	36	0	118	so	vfr	---	eo	1fgr	1.4	1.8	0.10000	06	7.3800
E108T2	57	28	0	140	h	fr	3mkpfpo	ed	2msbk	2.1	1.0	0.10000	06	7.6600
E108T2	57	30	0	99	sh	fr	2mkpfpo	es2ss	2msbk	1.3	7.7	0.10000	06	7.7700
E108T2	53	31	1	93	sh	vfr	---	ev4ss,sm	m	1.3	23.2	0.10000	06	7.9600
E12T2	25	24	17	152	h	fi	---	eo	2mfgr	1.1	.9	0.10000	21	7.1800
E12T2	18	13	25	128	vh	fi	---	eo	2msbk	1.1	.9	0.10000	21	7.4600
E12T2	18	18	14	139	vh	vfi	---	eo	m3cmsbk	1.1	<.1	0.10000	21	6.5000
E12T2	35	26	13	133	vh	vfi	---	eo	m	.7	.7	0.10000	21	7.0300

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM	CEC
E12T2	0841	C3\C2	UST	10YR6/2	10YR5/2	15	112-150	--	Clay	>150	DRAINAGE BOTTOM	45
E12T2	0842	A'	UST	10YR5/2	10YR4/2	45	0-9	cs	Clay	>150	DRAINAGE BOTTOM	42
E16T2	0243	A	UST	2.5YR5/2	2.5YR4/2	31	0-6	cs	Sandy Clay Loam	>150	FAN	20
E16T2	0244	Bt\Bw	UST	10YR5/3	10YR2/3	28	6-21	gw	Sandy Clay Loam	>150	FAN	19
E16T2	0245	2C1	UST	2.5YR5/2	2.5YR4/2	15	21-37	gs	Sandy Loam	>150	FAN	13
E16T2	0246	2C2	UST	2.5YR6/4	2.5YR4/4	13	37-60	cw	Sandy Loam	>150	FAN	9
E16T2	0247	3C3	UST	2.5YR5/4	2.5YR4/4	19	60-117	aw	Sandy Loam	>150	FAN	13
E16T2	0248	4Byb	UST	2.5YR4/2	2.5YR4/4	45	117-140	--	Clay	>150	FAN	22
E16T2	0249	A'	UST	10YR5/3	10YR3/3	24	0-8		Sandy Clay Loam	>150	FAN	20
E19T3	0230	A	ARIDIC	10YR5/4	10YR3/4	8	0-5	cs	Sandy Loam	>150	SIDESLOPE	11
E19T3	0231	BA	ARIDIC	10YR5/4	10YR4/4	13	5-18	gs	Sandy Loam	>150	SIDESLOPE	17
E19T3	0232	Bt	ARIDIC	10YR6/4	10YR5/4	13	18-55	cw	Sandy Loam	>150	SIDESLOPE	11
E19T3	0233	Btk	ARIDIC	10YR6/4	10YR5/4	24	55-104	gw	Sandy Clay Loam	>150	SIDESLOPE	13
E19T3	0234	Bk	ARIDIC	2.5YR6/4	2.5YR4/4	20	104-160	--	Sandy Clay Loam	>150	SIDESLOPE	13
E1T3	0447	A	ARIDIC	10YR6/3	10YR4/3	5	0-5	cs	Loamy Sand	>150	SIDESLOPE	9
E1T3	0448	C	ARIDIC	10YR6/3	10YR5/4	5	5-70	as	Loamy Sand	>150	SIDESLOPE	11
E1T3	0449	Ab	ARIDIC	10YR5/3	10YR4/3	4	70-79	cs	Sandy Loam	>150	SIDESLOPE	16
E1T3	0450	C'	ARIDIC	10YR5/4	10YR4/4	5	79-92	as	Loamy Sand	>150	SIDESLOPE	11
E1T3	0451	Ab'	ARIDIC	10YR5/3	2.5Y4/2	7	92-103	cs	Sandy Loam	>150	SIDESLOPE	19
E1T3	0452	Btb	ARIDIC	10YR5/4	10YR4/4	10	103-150	--	Sandy Loam	>150	SIDESLOPE	21
E1T3	0453	A'	ARIDIC	10YR6/3	10YR4/3	1	0-6	--	Sand	>150	SIDESLOPE	8
E20T2	0235	A	UST	2.5YR6/4	2.5YR5/4	20	0-6	cs	Sandy Clay Loam	20	STEEP RIDGE SIDESLOP	14
E20T2	0236	Cy	UST	2.5YR5/4	2.5YR4/4	18	6-20	gw	Sandy Loam	20	STEEP RIDGE SIDESLOP	15
E20T2	0237	Cr	UST			17	20-38		Sandy Loam	20	STEEP RIDGE SIDESLOP	20
E22T2	0217	A	ARIDIC	10YR5/4	10YR4/4	16	0-5	cs	Sandy Loam	>150	SIDESLOPE	16
E22T2	0218	AB	ARIDIC	10YR5/4	10YR4/4	18	5-21	gs	Sandy Loam	>150	SIDESLOPE	17
E22T2	0219	Bt	ARIDIC	10YR5/4	10YR4/4	18	21-50	gw	Sandy Loam	>150	SIDESLOPE	16
E22T2	0220	Btk1	ARIDIC	10YR5/4	10YR4/4	22	50-98	gw	Sandy Clay Loam	>150	SIDESLOPE	17
E22T2	0221	Btk2	ARIDIC	10YR5/4	10YR4/4	22	98-150	gw	Sandy Clay Loam	>150	SIDESLOPE	18
E23T2	0223	AB	ARIDIC	10YR5/3	10YR3/3	18	5-20	cw	Sandy Loam	>150	UPLAND DRAINAGE	18
E23T2	0224	Bt1	ARIDIC	10YR5/3	10YR3/3	22	20-47	g	Sandy Clay Loam	>150	UPLAND DRAINAGE	16
E23T2	0225	Bt2	ARIDIC	10YR5/3	10YR4/3	18	47-72	g	Sandy Loam	>150	UPLAND DRAINAGE	15
E23T2	0226	Bt3	ARIDIC	10YR4/3	10YR3/3	22	72-95	cw	Sandy Clay Loam	>150	UPLAND DRAINAGE	17
E23T2	0227	Btk1	ARIDIC	2.5YR5/4	2.5YR4/4	26	95-119	cw	Sandy Clay Loam	>150	UPLAND DRAINAGE	19
E23T2	0228	Btk2	ARIDIC	10YR6/4	2.5YR5/4	22	119-150	--	Sandy Clay Loam	>150	UPLAND DRAINAGE	17
E23T2	0229	A'	ARIDIC	10YR5/3	10YR3/3	14	0-8		Sandy Loam	>150	UPLAND DRAINAGE	18
E24T2	0238	A	UST	10YR5/3	10YR5/2	30	0-8	cs	Clay Loam	>150	TOE SLOPE	15
E24T2	0239	BA	UST	2.5YR5/2	2.5YR4/2	46	8-18	gw	Clay	>150	TOE SLOPE	18
E24T2	0240	Bt	UST	2.5YR5/2	2.5YR4/2	51	18-65	cw	Clay	>150	TOE SLOPE	19
E24T2	0241	Btky	UST	2.5YR5/2	2.5YR4/2	47	65-110	gw	Clay	>150	TOE SLOPE	19
E24T2	0242	Bky	UST	2.5YR5/2	2.5YR4/2	43	110-130	--	Clay	>150	TOE SLOPE	18
E27	0334	A	ARIDI	10YR5/3	10YR4/3	39	0-5	cw	Clay Loam	49	SIDESLOPE	21
E27	0335	AC	ARIDIC	10YR5/4	10YR5/6	12	5-25	gw	Silty Loam	49	SIDESLOPE	19
E27	0336	C	ARIDIC	10YR5/3	10YR4/3	9	25-49	cw	Sandy Loam	49	SIDESLOPE	15
E27	0337	Cr	ARIDIC			7	49-53+	--	Silty Loam	49	SIDESLOPE	24
E28	0209	A	UST	10YR5/2	10YR3/2	21	0-9	cs	Loam	60	VALLEY BOTTOM	18
E28	0210	C1	UST	10YR5/3	10YR3/3	19	9-24	gw	Sandy Loam	60	VALLEY BOTTOM	18
E28	0211	C2	UST	10YR5/3	10YR4/3	26	24-60	aw	Sandy Clay Loam	60	VALLEY BOTTOM	11
E28	0212	2Bk	UST	10YR5/3	2.5YR4/2	28	60-103	cw	Sandy Clay Loam	60	VALLEY BOTTOM	10
E28	0213	2By	UST	10YR5/3	2.5YR4/2	5	103-145	--	Sand	60	VALLEY BOTTOM	12
E29	0203	A1	UST	10YR5/2	10YR4/2	27	0-6	cs	Clay Loam	89	VALLEY BOTTOM	10
E29	0204	A2\Bt1	UST	10YR5/2	10YR4/2	33	6-18	cs	Clay Loam	89	VALLEY BOTTOM	14
E29	0205	Bt\Bt2	UST	10YR5/2	10YR4/2	34	18-32	cw	Clay Loam	89	VALLEY BOTTOM	16
E29	0206	Btk	UST	10YR5/2	10YR4/2	16	32-89	cw	Sandy Loam	89	VALLEY BOTTOM	16
E29	0207	2C	UST	10YR5/3	10YR4/3	38	89-123	aw	Clay Loam	89	VALLEY BOTTOM	7
E29	0208	2Bkb	UST	2.5YR5/2	2.5YR4/2	22	123-155	--	Loam	89	VALLEY BOTTOM	16
E2T2	0454	A	ARIDIC	10YR6/3	10YR4/3	8	0-6	cs	Sandy Loam	>150	SIDESLOPE	10
E2T2	0455	Bt1	ARIDIC	10YR5/4	10YR4/4	6	6-25	aw	Sandy Loam	>150	SIDESLOPE	18
E2T2	0456	Bt2	ARIDIC	10YR5/3	10YR4/3	4	25-69	cw	Sandy Loam	>150	SIDESLOPE	19
E2T2	0457	Bt3	ARIDIC	10YR6/3	10YR5/3	6	69-86	cw	Sandy Loam	>150	SIDESLOPE	16
E2T2	0458	Btk	ARIDIC	10YR6/3	10YR5/3	6	86-150	--	Sandy Loam	>150	SIDESLOPE	14
E2T2	0459	A'	ARIDIC	10YR5/3	10YR3/3	6	0-9	cs	Sandy Loam	>150	SIDESLOPE	11
E30	0182	A	UST	10YR6/4	10YR4/4	14	0-7	cs	Sandy Loam		BENCH	4
E30	0183	BA\Bt1	UST	7.5YR5/4	7.5YR4/6	25	7-13	cs	Sandy Clay Loam		BENCH	7
E30	0184	Bt\Bt2	UST	7.5YR5/6	7.5YR4/6	23	13-41	aw	Sandy Clay Loam		BENCH	13
E30	0185	Bk\Btk	UST	7.5YR6/6	10YR5/6	26	41-82	cw	Sandy Clay Loam		BENCH	10
E30	0186	2C&2Cr	UST	7.5YR8/4	7.5YR7/4	4	82-110	aw	Loamy Sand		BENCH	8
E30	0187	A'	UST	10YR6/4	10YR4/4	6	0-13		Loamy Sand		BENCH	4
E31	0168	A	ARIDIC	2.5YR6/4	2.5YR4/4	14	0-7	cw	Sandy Loam	66	VALLEY SIDESLOPE/FAN	9
E31	0169	Bw1\Bt	ARIDIC	2.5YR5/4	2.5YR4/4	20	7-22	cw	Sandy Loam	66	VALLEY SIDESLOPE/FAN	11
E31	0170	Bw2\Bt	ARIDIC	2.5YR6/4	2.5YR5/4	27	22-66	cw	Sandy Clay Loam	66	VALLEY SIDESLOPE/FAN	14
E31	0171	C1	ARIDIC	2.5YR5/4	2.5YR4/4	32	66-89	cw	Clay Loam	66	VALLEY SIDESLOPE/FAN	16
E31	0172	C2	ARIDIC	2.5YR6/4	2.5YR5/4	31	89-130	cw	Clay Loam	66	VALLEY SIDESLOPE/FAN	12
E31	0173	Bkb	ARIDIC	2.5YR6/4	2.5YR5/4	17	130-155	cw	Sandy Loam	66	VALLEY SIDESLOPE/FAN	9
E32	0174	A	ARIDIC	2.5YR6/4	2.5YR5/4	21	0-7	cs	Sandy Clay Loam	58	VALLEY SIDESLOPE	11
E32	0175	AC	ARIDIC	2.5YR5/4	2.5YR4/4	21	7-28	cw	Sandy Clay Loam	58	VALLEY SIDESLOPE	10
E32	0176	C	ARIDIC	2.5YR6/4	2.5YR5/4	9	28-58	ai	Sandy Loam	58	VALLEY SIDESLOPE	8
E33	0163	A	ARIDIC	2.5YR5/2	2.5YR4/2	40	0-7	cs	Clay Loam	20	VALLEY BOTTOM/FAN	18
E33	0164	C1	ARIDIC	2.5YR6/4	2.5YR4/4	24	7-28	aw	Loam	20	VALLEY BOTTOM/FAN	12
E33	0165	C2	ARIDIC	2.5YR6/4	2.5YR4/4	16	28-77	cw	Sandy Loam	20	VALLEY BOTTOM/FAN	16
E33	0166	C3	ARIDIC	2.5YR6/4	2.5YR4/4	20	77-99	aw	Sandy Loam	20	VALLEY BOTTOM/FAN	9
E33	0167	Btb	ARIDIC	2.5YR5/4	2.5YR4/4	34	99-155	--	Clay Loam	20	VALLEY BOTTOM/FAN	16
E34	0159	A	ARIDIC	2.5YR5/2	2.5YR4/2	47	0-15	cw	Clay		VALLEY BOTTOM	22
E34	0160	C1	ARIDIC	2.5YR5/2	2.5YR4/2	29	15-28	aw	Clay Loam		VALLEY BOTTOM	18
E34	0161	C2	ARIDIC	10YR6/4	10YR5/4	13	28-107	gw	Sandy Loam		VALLEY BOTTOM	7
E34	0162	C3	ARIDIC			18	107-152	--	Sandy Loam		VALLEY BOTTOM	10
E36	0129	AC	UST	10YR5/3	10YR4/3	8	0-17	gs	Loamy Sand	34	RIDGE SHOULDER	8
E36	0130	C	UST	10YR5/4	10YR4/4	10	17-34	cw	Loamy Sand	34	RIDGE SHOULDER	10
E37	0122	A	ARIDIC	10YR5/3	10YR3/3	16	0-5	cs	Loam	55	VALLEY SIDESLOPE	13
E37	0123	BA	ARIDIC	10YR5/3	10YR4/3	27	5-15	cs	Sandy Clay Loam	55	VALLEY SIDESLOPE	25
E37	0124	Bt1	ARIDIC	10YR5/4	10YR4/4	18	15-40	aw	Sandy Loam	55	VALLEY SIDESLOPE	22
E37	0125	Bt2	ARIDIC	10YR5/3	10YR3/3	33	40-55	cw	Clay Loam	55	VALLEY SIDESLOPE	31
E37	0126	Btk	ARIDIC	10YR6/3	10YR3/3	35	55-82	gw	Sandy Clay	55	VALLEY SIDESLOPE	27
E37	0127	Bk	ARIDIC	10YR6/3	10YR4/4	21	82-152	--	Sandy Clay Loam	55	VALLEY SIDESLOPE	20
E37	0128	A'	ARIDIC		10YR3/3	12	0-9		Sandy Loam	55	VALLEY SIDESLOPE	14
E38	0131	A	ARIDIC	10YR6/4	10YR5/4	19	0-3	cw	Loam	33	RIDGE SHOULDER	8
E38	0132	C1\Bt	ARIDIC	10YR5/3	10YR4/2	26	3-9	cw	Loam	33	RIDGE SHOULDER	12
E38	0133	C2	ARIDIC	2.5YR6/2	2.5YR5/2	41	9-33	aw	Clay	33	RIDGE SHOULDER	26
E39	0134	A	ARIDIC	10YR6/3	10YR5/3	0	0-5	cw		70	RIDGE SIDESLOPE	5
E39	0135	By1	ARIDIC	7.5YR8/4	7.5YR8/4	0	5-42	gw		70	RIDGE SIDESLOPE	4
E39	0136	By2	ARIDIC	7.5YR8/4	7.5YR8/4	0	42-70	cw		70	RIDGE SIDESLOPE	5
E39	0137	By3	ARIDIC	7.5YR7/4	7.5YR6/4	0	70-92	aw		70	RIDGE SIDESLOPE	7
E39	0138	A'	ARIDIC	7.5YR6/4	7.5YR5/4	0	0-6			70	RIDGE SIDESLOPE	6
E3T5	0441	A	ARIDIC	10YR6/3	10YR4/3	3	0-6	cs	Loamy Sand	>150	ALLUVIAL FAN/SHOULDE	6

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM	CEC
E3T5	0442	Bt1	ARIDIC	10YR5/3	10YR4/3	6	6-14	cw	Sandy Loam	>150	ALLUVIAL FAN/SHOULDE	10
E3T5	0443	Bt2	ARIDIC	2.5YR6/4	2.5YR4/4	11	14-50	gw	Loam	>150	ALLUVIAL FAN/SHOULDE	23
E3T5	0444	Bt3	ARIDIC	10YR6/4	10YR4/4	7	50-93	cw	Sandy Loam	>150	ALLUVIAL FAN/SHOULDE	12
E3T5	0445	Bk	ARIDIC	10YR6/4	10YR5/4	7	93-150	--	Loamy Sand	>150	ALLUVIAL FAN/SHOULDE	10
E3T5	0446	A'	ARIDIC	10YR5/3	10YR3/3	1	0-8	cs	Loamy Sand	>150	ALLUVIAL FAN/SHOULDE	8
E40	0084	A	UST	10YR5/3	10YR4/3	4	0-7	cs	Sand	65	VALLEY BOTTOM	6
E40	0085	AC	UST	7.5YR5/4	7.5YR4/4	6	7-21	gs	Sand	65	VALLEY BOTTOM	7
E40	0086	C1	UST	7.5YR6/4	7.5YR5/4	4	21-65	cw	Sand	65	VALLEY BOTTOM	5
E40	0087	C2	UST	7.5YR6/4	7.5YR5/4	4	65-86	cs	Sand	65	VALLEY BOTTOM	5
E40	0088	C3	UST	7.5YR6/4	7.5YR5/4	3	86-155	--	Sand	65	VALLEY BOTTOM	4
E40	0089	A'	UST	10YR5/3	10YR4/3	4	0-8		Sand	65	VALLEY BOTTOM	8
E41	0139	A	ARIDIC	2.5YR6/4	2.5YR5/4	20	0-7	cs	Loam	92	VALLEY SIDESLOPE	11
E41	0140	Bw	ARIDIC	2.5YR6/4	2.5YR5/4	21	7-69	cw	Loam	92	VALLEY SIDESLOPE	11
E41	0141	Bk1	ARIDIC	2.5YR6/4	2.5YR5/4	23	69-92	gw	Loam	92	VALLEY SIDESLOPE	11
E41	0142	Bk2	ARIDIC	2.5YR6/4	2.5YR5/4	18	92-155+	--	Loam	92	VALLEY SIDESLOPE	9
E42	0090	A	ARIDIC	10YR5/3	10YR4/3	6	0-6	cs	Loamy Sand	73	VALLEY BOTTOM	8
E42	0091	AC	ARIDIC	10YR5/3	10YR4/3	6	6-30	gs	Sand	73	VALLEY BOTTOM	8
E42	0092	C1	ARIDIC	7.5YR6/4	7.5YR5/4	6	30-73	gs	Sand	73	VALLEY BOTTOM	6
E42	0093	C2	ARIDIC	7.5YR6/4	7.5YR5/4	3	73-109	cw	Sand	73	VALLEY BOTTOM	4
E42	0094	C3	ARIDIC	7.5YR6/4	7.5YR5/4	4	109-155	--	Sand	73	VALLEY BOTTOM	5
E42	0095	A'	ARIDIC	10YR5/3	10YR4/3	10	0-8		Sandy Loam	73	VALLEY BOTTOM	7
E43	0079	A	ARIDIC	2.5YR6/4	2.5YR5/4	17	0-6	cs	Loam	116	VALLEY SIDESLOPE	12
E43	0080	AB	ARIDIC	2.5YR6/4	2.5YR5/4	16	6-19	aw	Sandy Loam	116	VALLEY SIDESLOPE	11
E43	0081	Bk1\Bt	ARIDIC	2.5YR6/4	2.5YR5/4	32	19-75	gw	Clay Loam	116	VALLEY SIDESLOPE	15
E43	0082	Bk2\Bt	ARIDIC	2.5YR6/4	2.5YR5/4	36	75-116	gw	Clay Loam	116	VALLEY SIDESLOPE	16
E43	0083	Bk3\Bt	ARIDIC	2.5YR6/4	2.5YR5/4	34	116-155	--	Clay Loam	116	VALLEY SIDESLOPE	15
E45T1	0724	A	ARIDIC	2.5YR5/4	2.5YR4/4	17	0-6	cs	Loam	>150	ALLUVIAL FAN	27
E45T1	0725	Bky1	ARIDIC	2.5YR5/4	2.5YR4/4	13	6-29	as	Sandy Loam	>150	ALLUVIAL FAN	34
E45T1	0726	Bky2	ARIDIC	2.5YR6/4	2.5YR4/4	8	29-90	gs	Loam	>150	ALLUVIAL FAN	41
E45T1	0727	Bky3	ARIDIC	2.5YR6/4	2.5YR5/4	10	90-150+		Loam	>150	ALLUVIAL FAN	46
E46T2	0963	A	ARIDIC	2.5YR6/4	2.5YR4/4	11	0-6	cs	Sandy Loam	75	RIDGE SIDESLOPE	14
E46T2	0964	Bw1\Bt	ARIDIC	2.5YR6/4	2.5YR4/4	19	6-20	cw	Sandy Loam	75	RIDGE SIDESLOPE	22
E46T2	0965	Bw2\Bt	ARIDIC	2.5YR6/4	2.5YR4/4	31	20-41	aw	Sandy Clay Loam	75	RIDGE SIDESLOPE	29
E46T2	0966	Bky	ARIDIC	2.5YR6/4	2.5YR5/4	7	41-75	cw	Sandy Loam	75	RIDGE SIDESLOPE	22
E46T2	0967	Cr	ARIDIC			9	75-95	--	Sandy Loam	75	RIDGE SIDESLOPE	16
E46T2	0968	A'	ARIDIC	2.5YR6/4	2.5YR4/4	12	0-8		Sandy Loam	75	RIDGE SIDESLOPE	12
E47T2	1214	A	ARIDIC	2.5YR5/4	2.5YR4/4	20	0-7	cs	Loam	>150	FAN SIDESLOPE	28
E47T2	1215	Bw	ARIDIC	2.5YR6/4	2.5YR5/4	32	7-19	cw	Clay Loam	>150	FAN SIDESLOPE	29
E47T2	1216	Bkyl	ARIDIC	2.5YR6/4	2.5YR5/4	22	19-63	gs	Loam	>150	FAN SIDESLOPE	30
E47T2	1217	Bky2	ARIDIC	2.5YR6/4	2.5YR5/4	10	63-100	gs	Sandy Loam	>150	FAN SIDESLOPE	33
E47T2	1218	Bky3	ARIDIC	2.5YR6/4	2.5YR5/4	28	100-150	--	Clay Loam	>150	FAN SIDESLOPE	28
E47T2	1219	A'	ARIDIC	2.5YR6/4	2.5YR4/4	25	0-8	cs	Loam	>150	FAN SIDESLOPE	21
E48T1	0711	A	ARIDIC	2.5YR6/4	2.5YR4/4	11	0-7	cs	Sandy Loam	>150	MESA SIDESLOPE	6
E48T1	0712	BA	ARIDIC	.5YR6/4S	2.5YR442	11	7-15	cs	Sandy Loam	>150	MESA SIDESLOPE	10
E48T1	0713	Bt	ARIDIC	2.5YR6/4	2.5YR4/4	13	15-58	cw	Sandy Loam	>150	MESA SIDESLOPE	9
E48T1	0714	Btk1	ARIDIC	2.5YR6/4	2.5YR4/4	16	58-120	cw	Sandy Loam	>150	MESA SIDESLOPE	10
E48T1	0715	Btk2	ARIDIC	2.5YR6/4	2.5YR4/4	21	120-150	--	Sandy Clay Loam	>150	MESA SIDESLOPE	14
E48T1	0716	A'	ARIDIC	2.5YR6/4	2.5YR4/4	9	0-9	cs	Sandy Loam	>150	MESA SIDESLOPE	6
E4T3	0434	E	UST	10YR7/2	10YR4/3	5	0-9	aw	Sandy Loam	>150	ALLUVIAL BOTTOM	8
E4T3	0435	Bt1	UST	10YR5/4	10YR4/4	21	9-28	gw	Loam	>150	ALLUVIAL BOTTOM	30
E4T3	0436	Bt2	UST	10YR6/3	10YR5/3	17	28-69	cw	Loam	>150	ALLUVIAL BOTTOM	38
E4T3	0437	Bty1	UST	10YR6/3	10YR5/3	25	69-89	cw	Loam	>150	ALLUVIAL BOTTOM	31
E4T3	0438	2Bty2	UST	10YR6/3	10YR4/4	13	89-108	cw	Sandy Loam	>150	ALLUVIAL BOTTOM	18
E4T3	0439	2C	UST	10YR5/3	10YR4/3	7	108-150	--	Sandy Loam	>150	ALLUVIAL BOTTOM	10
E4T3	0440	E'orA'	UST	10YR6/3	10YR4/3	3	0-11	as	Sandy Loam	>150	ALLUVIAL BOTTOM	6
E50T1	1220	A	ARIDIC	2.5YR6/4	2.5YR4/4	12	0-7	cs	Sandy Loam	>150	FAN SIDESLOPE	12
E50T1	1221	Bt	ARIDIC	10YR5/4	10YR4/6	14	7-21	as	Sandy Loam	>150	FAN SIDESLOPE	12
E50T1	1222	Btk1	ARIDIC	2.5YR6/4	2.5YR4/4	15	21-46	gs	Sandy Loam	>150	FAN SIDESLOPE	9
E50T1	1223	Btk2	ARIDIC	2.5YR6/4	2.5YR5/4	14	46-91	cw	Sandy Loam	>150	FAN SIDESLOPE	8
E50T1	1224	Bk1	ARIDIC	2.5YR6/4	2.5YR5/4	12	91-117	aw	Sandy Loam	>150	FAN SIDESLOPE	6
E50T1	1225	Bk2	ARIDIC	2.5YR6/4	2.5YR5/4	10	117-142	--	Sandy Loam	>150	FAN SIDESLOPE	6
E50T1	1226	A'	ARIDIC		2.5YR4/4	7	0-8	cs	Sandy Loam	>150	FAN SIDESLOPE	10
E51	1236	A	UST	.5YR5/4S	7.5YR347	7	0-9	cs	Sandy Loam	>150	RIDGE SIDESLOPE	14
E51	1237	Bt1	UST	7.5YR5/4	7.5YR4/4	13	9-32	cs	Loam	>150	RIDGE SIDESLOPE	26
E51	1238	Bt2	UST	10YR5/3	10YR4/3	17	32-68	cs	Loam	>150	RIDGE SIDESLOPE	24
E51	1239	Btk1	UST	10YR5/3	10YR3/3	19	68-95	gs	Loam	>150	RIDGE SIDESLOPE	14
E51	1240	Btk2	UST	7.5YR5/4	7.5YR4/6	17	95-135	as	Loam	>150	RIDGE SIDESLOPE	22
E51	1241	Btk3	UST	7.5YR5/4	7.5YR4/6	18	135-150	--	Loam	>150	RIDGE SIDESLOPE	19
E51	1242	A'	UST	10YR4/3	10YR3/3	9	0-10	cs	Sandy Loam	>150	RIDGE SIDESLOPE	21
E52T2	0721	A	ARIDIC	2.5YR6/4	2.5YR4/4	10	0-5	cs	Loam	51	RIDGE SIDESLOPE	12
E52T2	0722	Bw\Bt	ARIDIC	2.5YR6/4	2.5YR4/4	16	5-35	aw	Loam	51	RIDGE SIDESLOPE	15
E52T2	0723	C	ARIDIC	2.5YR7/2	2.5YR5/4	8	35-51	gw	Sandy Loam	51	RIDGE SIDESLOPE	13
E53T2	1227	A	ARIDIC	2.5YR6/4	2.5YR4/4	14	0-6	cs	Loam	>150	VALLEY BOTTOM	13
E53T2	1228	Bw	ARIDIC	2.5YR6/4	2.5YR5/4	12	6-55	cs	Sandy Loam	>150	VALLEY BOTTOM	9
E53T2	1229	Ab	ARIDIC	2.5YR6/4	2.5YR4/4	11	55-70	gs	Loam	>150	VALLEY BOTTOM	15
E53T2	1230	AC	ARIDIC	2.5YR6/4	2.5YR5/4	19	70-122	gw	Loam	>150	VALLEY BOTTOM	15
E53T2	1231	C	ARIDIC	2.5YR6/4	2.5YR5/4	19	122-160		Loam	>150	VALLEY BOTTOM	14
E54	1277	A	ARIDIC	2.5YR6/4	2.5YR4/4	20	0-6	cs	Loam	>150	VALLEY BOTTOM	15
E54	1278	Bw	ARIDIC	2.5YR6/4	2.5YR4/4	18	6-36	as	Loam	>150	VALLEY BOTTOM	13
E54	1279	Bky1	ARIDIC	2.5YR6/4	2.5YR4/4	16	36-65	gs	Loam	>150	VALLEY BOTTOM	12
E54	1280	Bky2	ARIDIC	2.5YR6/4	2.5YR5/4	15	65-103	gs	Loam	>150	VALLEY BOTTOM	11
E54	1281	Bk1	ARIDIC	2.5YR6/4	2.5YR5/4	14	103-126	cs	Sandy Loam	>150	VALLEY BOTTOM	11
E54	1282	Bk2	ARIDIC	2.5YR6/4	2.5YR4/4	16	126-150		Sandy Loam	>150	VALLEY BOTTOM	10
E55	0512	A	ARIDIC	10YR6/4	10YR4/4	4	0-5	cs	Sandy Loam	63	MESA TOP	7
E55	0513	Bw	ARIDIC	10YR6/4	10YR4/4	4	5-21	cw	Sandy Loam	63	MESA TOP	9
E55	0514	Bk	ARIDIC	10YR7/4	10YR6/4	7	21-50	gw	Sandy Loam	63	MESA TOP	7
E55	0515	C	ARIDIC	10YR7/4	10YR6/4	9	50-63	cw	Sandy Loam	63	MESA TOP	3
E56T2	0717	A	ARIDIC	2.5YR6/4	2.5YR4/4	17	0-7	cs	Loam	40	RIDGE SHOULDER	18
E56T2	0718	AC	ARIDIC	2.5YR6/4	2.5YR4/4	30	7-25	cw	Clay Loam	40	RIDGE SHOULDER	26
E56T2	0719	C	ARIDIC	2.5YR6/4	2.5YR5/4	11	25-40	cw	Sandy Loam	40	RIDGE SHOULDER	24
E56T2	0720	A'	ARIDIC	2.5YR6/4	2.5YR4/4	14	0-9	cs	Loam	40	RIDGE SHOULDER	15
E57	0498	A	ARIDIC	10YR6/4	10YR4/4	4	0-4	cs	Sandy Loam	58	MESA TOP	6
E57	0499	BA	ARIDIC	10YR6/4	7.5YR4/4	9	4-9	cw	Sandy Loam	58	MESA TOP	8
E57	0500	Bt	ARIDIC	7.5YR5/6	7.5YR4/6	12	9-30	cw	Sandy Loam	58	MESA TOP	16
E57	0501	2Btk	ARIDIC	2.5YR6/6	2.5YR4/6	10	30-58	aw	Sandy Loam	58	MESA TOP	15
E57	0502	2Cr	ARIDIC			11	58-88	--	Sandy Loam	58	MESA TOP	9
E58T3	1195	A	ARIDIC	2.5YR5/4	2.5YR4/4	11	0-6	cs	Sandy Loam	>150	FAN SIDESLOPE	9
E58T3	1196	Bt	ARIDIC	2.5YR5/4	2.5YR4/4	20	6-28	aw	Sandy Clay Loam	>150	FAN SIDESLOPE	13
E58T3	1197	Btk	ARIDIC	2.5YR6/4	2.5YR4/4	13	28-46	as	Sandy Loam	>150	FAN SIDESLOPE	9
E58T3	1198	Bk1	ARIDIC	2.5YR6/4	2.5YR5/4	9	46-86	cs	Sandy Loam	>150	FAN SIDESLOPE	8
E58T3	1199	2Bk2	ARIDIC	2.5YR6/4	2.5YR4/4	26	86-125	cs	Loam	>150	FAN SIDESLOPE	15
E58T3	1200	2Bk3	ARIDIC	2.5YR6/4	2.5YR4/4	14	125-150	--	Sandy Loam	>150	FAN SIDESLOPE	11
E59	0154	A	ARIDIC	10YR5/3	10YR4/3	20	0-8	cs	Sandy Loam	90	RIO PUERCO TERRACE	11
E59	0155	AC	ARIDIC	10YR5/4	10YR4/3	23	8-21	cs	Sandy Clay Loam	90	RIO PUERCO TERRACE	12

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	PH
E3T5	67	27	0	98	sh	vfr	1npf	eo	2msbk	1.0	<.1	0.10000	12	6.4500
E3T5	51	38	0	111	h	fr	3npfpo	eo	2mpr3m&c	.7	.9	0.10000	12	7.1000
E3T5	76	17	1	100	sh	fr	1npf	eo	1cpr	.3	.5	0.10000	12	7.5600
E3T5	81	12	2	110	sh	vfr	---	e1sf	m	.1	.7	0.10000	12	7.7800
E3T5	77	22	0	89	so	vfr	---	eo	1mgr	2.6	<.1	0.10000	12	6.8900
E40	89	7	0	119	l	l	---	e/d	sg	.9	1.1	0.10000	07	7.7500
E40	90	4	0	134	sh	vfr	---	e/d	1f,msbk	.4	1.5	0.10000	07	7.7400
E40	94	3	0	145	sh	vfr	---	es/d	sg	.1	1.9	0.10000	07	7.8000
E40	93	3	0	140	sh	vfr	---	eo	m	.1	1.6	0.10000	07	8.0600
E40	94	3	0	129	l	l	---	eo	sg	.1	1.5	0.10000	07	7.9800
E40	91	6	0	95	l	l	---	e/d	sg	1.3	1.0	0.10000	07	7.8300
E41	43	37	0	114	sh	vfr	---	es/d	1cpl1fgr	.7	17.2	0.10000	45	7.5400
E41	39	40	0	123	sh	vfr	---	es/d	2mcsbk	.5	18.3	0.10000	45	7.5300
E41	39	38	1	231	h	fr	---	ev/3ff	m	.7	18.6	0.40000	45	7.6500
E41	46	36	1	114	sh	fr	---	es/2fsm&	m	.5	16.7	0.30000	45	7.8200
E42	88	7	0	89	sh	vfr	---	eo	1vcpl	.8	.7	0.10000	30	7.3700
E42	90	4	0	105	sh	vfr	---	eo	1fmsbk	.6	1.0	0.10000	30	8.0100
E42	92	2	0	118	so	vfr	---	e/d	m	.2	1.5	0.10000	30	7.9900
E42	95	2	0	126	sh	vfr	---	e/d	m	.2	2.0	0.10000	30	8.1800
E42	92	4	0	127	so	vfr	---	e/d	m	.1	2.5	0.10000	30	8.1500
E42	76	14	0	93	sh	vfr	---		1vcpl	1.1	.6	0.10000	30	7.9400
E43	52	31	0	103	so	vfr	---	es/d	1vfgr	1.1	18.6	0.10000	37	7.6200
E43	57	27	0	101	sh	vfr	---	es/d	2fsbk	.8	15.6	0.10000	37	7.7700
E43	33	35	7	235	h	fr	---	ev/3fsmf	2f,msbk	1.1	19.3	1.20000	37	7.7800
E43	34	30	8	151	h	fr	---	ev2ff	1f,msbk	1.0	20.7	0.30000	37	7.6700
E43	34	32	9	140	vh	fi	---	ev2ff	1mcsbk	.8	19.2	0.20000	37	7.7200
E45T1	47	36	0	73	sh	fr	---	es/d	2fgr	.5	11.3	0.10000	37	7.4900
E45T1	64	23	2	174	h	fr	---	es/d2sf	2m&csbk	.3	10.2	1.30000	37	7.5400
E45T1	51	41	17	182	eh	vfi	---	esd3sf&s	m 3vcpr	.8	12.3	3.50000	37	7.7400
E45T1	44	46	11	197	vh	fi	---	esd3sf&s	m	.8	1.6	3.30000	37	7.5900
E46T2	67	22	0	104	so	vfr	---	esd	2fgr	1.0	7.8	0.10000	27	7.7400
E46T2	56	24	0	93	sh	fr	---	esd	2msbk	1.0	12.6	0.10000	27	7.4800
E46T2	47	22	1	91	h	fi	---	esd	2msbk	14.9	14.3	0.10000	27	7.4000
E46T2	68	24	2	552	h	fi	2npf	esd3ss&s	1cpr2msb	.4	9.6	14.6000	27	7.4200
E46T2	68	23	13	321						.4	9.6	0.10000	27	7.4600
E46T2	68	20	5	98	so	vfr		esd		.3	7.9	0.10000	27	7.7600
E47T2	36	44	0	90	so	fr	-	e d	2fgr	.9	2.3	0.10000	27	7.4800
E47T2	32	36	2	95	h	fr	-	e d	2m,csbk	1.3	2.5	0.10000	27	7.4800
E47T2	39	39	8	141	vh	vfi	-	es 2sm,s	1m,csbk	1.1	2.8	0.60000	27	7.3300
E47T2	52	38	14	267	vh	vfi	-	es 3sm,s	m	.9	2.3	5.30000	27	7.5200
E47T2	34	38	18	161	vh	vfi	-	es 3sm,s	m	.7	2.0	0.50000	27	7.5800
E47T2	34	41	17	126	sh	fr	-	e d	2mgr	2.0	2.6	0.10000	27	7.2100
E48T1	71	18	0	141	so	vfr	---	esd	2fgr	.7	3.1	0.10000	23	7.6100
E48T1	68	21	0	98	sh	vfr	---	esd	msbk	.8	4.7	0.10000	23	7.7100
E48T1	71	16	0	102	sh	fr	3mkpfpo	esd	1cpr2msb	.5	4.3	0.10000	23	7.8500
E48T1	65	19	2	106	h	fr	3mkpfpo	esd2sf	2mcsbk	.6	6.0	0.10000	23	7.9900
E48T1	52	27	5	101	vh	fr	3mkpfpo	esd3sfsm	2mcsbk	.8	6.6	0.10000	23	7.6800
E48T1	77	14	0	111	so	vfr		ed	2fgr	.7	2.3	0.10000	23	7.4700
E4T3	53	42	2	75	sh	vfr	---	eo	2cpl	.9	<.1	0.10000	10	6.6600
E4T3	37	42	8	93	h	fi	3mkpfpo	eo	3msbk	.9	.7	0.10000	10	7.2200
E4T3	43	39	10	93	vh	fi	4mkpfpo	eo	2vcpr3fm	.6	1.2	0.10000	10	7.6400
E4T3	33	42	13	105	vh	fi	3mkpfpo	eo	1msbk	.5	.7	0.10000	10	7.3100
E4T3	55	32	13	107	h	fri	2mkpfpo	eo2sf	1msbk	.3	.6	0.10000	10	7.2000
E4T3	73	20	11	104	sh	fr	---	eo	1msbk	.1	.4	0.10000	10	7.7800
E4T3	59	38	1	82	sh	vfr	---	eo	1fgr	1.8	<.1	0.10000	10	6.4700
E50T1	54	34	0	97	so	vfr	---	esd	2fgr	1.3	11.3	0.10000	24	7.6300
E50T1	52	34	0	93	sh	vfr	3npfpo	esd	2msbk	1.5	14.7	0.10000	24	7.5900
E50T1	52	33	0	103	h	fr	3npfpo	esd&1sf	2msbk	1.2	16.2	0.10000	24	7.7400
E50T1	54	32	0	137	vh	fr	2npfpo	esd&2sf	2msbk	.7	15.0	0.10000	24	7.7000
E50T1	64	24	2	498	h	vfr	---	esd&2sf	1msbk	.3	12.7	0.90000	24	7.7200
E50T1	60	30	6	1045	sh	vfr	---	esd&3sf	m	.4	11.2	4.40000	24	7.8600
E50T1	62	31	0	105	so	vfr	---	esd	2fgr	1.7	5.5	0.10000	24	7.2300
E51	54	39	0	87	sh	vfr	---	eo	cpl2fgr	1.6	.5	0.10000	07	7.2200
E51	51	36	0	91	h	fr	3npfpo	eo	2msbk	1.7	.8	0.10000	07	7.2600
E51	44	39	2	93	h	fi	4mkpfpo	esd	3f&msbk	1.7	6.0	0.10000	07	7.8200
E51	42	39	7	142	vh	fi	4mkpfpo	esd3ss&s	3f&msbk	1.1	3.5	0.10000	07	7.8500
E51	38	44	7	98	h	fr	3mkpfpo	esd3ss&s	2msbk	.8	1.7	0.10000	07	7.7700
E51	42	40	7	101	h	fr	3mkpfpo	esd3ss&s	1cpr	.7	5.5	0.10000	07	7.7700
E51	68	22	0	116	sh	vfr	---	eo	2fgr	3.7	1.6	0.10000	07	7.7500
E52T2	49	42	0	81	sh	vfr	---	ed	1cpl	1.0	10.6	0.10000	32	7.4200
E52T2	44	41	0	71	sh	vfr	---	esd	2fmsbk	1.3	23.9	0.10000	32	7.6000
E52T2	63	30	0	795	sh	fr	---	evd2sf	rock	1.0	20.8	7.70000	32	7.5600
E53T2	44	42	0	102	so	vfr	---	esd	1mpl	1.0	14.2	0.10000	40	7.1300
E53T2	60	28	0	113	sh	vfr	---	esd	2msbk	1.1	14.0	0.10000	40	7.4300
E53T2	42	47	0	149	sh	fr	---	esd	2mgr	2.0	13.7	0.20000	40	7.4300
E53T2	36	45	0	142	sh	fr	---	esd	1msbk	1.9	14.7	0.20000	40	7.3900
E53T2	43	38	0	128	h	vfr	---	esd	m	1.0	12.7	0.10000	40	7.6200
E54	36	44	0	107	so	vfr	---	esd	1fpl	1.0	11.1	0.10000	39	7.4000
E54	38	44	0	121	sh	vfr	---	ed	2fsbk	1.0	12.5	0.30000	39	7.3800
E54	45	39	1	217	sh	fr	---	es3sf	2mcsbk	1.1	10.4	0.60000	39	7.3000
E54	50	35	2	202	sh	fr	---	es3sf	2mcsbk	.8	9.8	0.50000	39	7.5000
E54	54	32	3	193	sh	fr	---	es2sfsm	1msbk	.8	9.9	0.40000	39	7.3300
E54	56	28	3	142	sh	fr	---	es1sfsm	m	.7	10.2	0.30000	39	7.3600
E55	55	42	0	147	sh	fr	---	esd	1cpl2fgr	1.6	10.3	0.10000	24	7.8500
E55	59	38	0	126	sh	fr	---	esd	1msbk	1.9	19.8	0.10000	24	7.7800
E55	56	37	0	90	sh	fr	---	es2sf/ss	1msbk	1.4	34.1	0.10000	24	7.9600
E55	58	33	0	182	sh	fr	---	es	rock	.6	42.1	0.10000	24	8.2200
E56T2	41	42	0	98	so	vfr	---	esd	2fgr	1.0	17.2	0.10000	23	7.5600
E56T2	33	37	0	86	h	fi	---	evd1sf	1msbk	1.2	17.7	0.10000	23	7.5800
E56T2	68	21	1	413	h	fi	---	ev3sf	rock	.7	14.8	6.10000	23	7.3900
E56T2	46	40	0	114	so	vfr	---	esd	2fgr	1.7	3.8	0.10000	23	7.4100
E57	68	28	0	86	so	vfr	---	eo	1cpl2fgr	.9	<.1	0.10000	32	6.8100
E57	59	32	0	105	so	vfr	---	eo	1msbk	.9	.5	0.10000	32	7.2200
E57	60	28	1	104	h	fi	3mkpfpo	eo	2f&msbk	1.2	.6	0.10000	32	7.3400
E57	54	36	2	118	vh	fi	2mkpf	esd/2sf	3f&msbk	1.1	15.1	0.10000	32	8.0400
E57	62	27	8	141				es	yf&msbk	.2	11.4	0.10000	32	7.9300
E58T3	65	24	0	96	sh	vfr	---	eo	1fpl	.9	1.9	0.10000	38	7.6800
E58T3	56	24	0	95	sh	fr	2npfpo	ed	2msbk	1.0	3.6	0.10000	38	7.6900
E58T3	70	17	0	101	h	fr	2npfpo	es1sf	2msbk	.9	6.3	0.10000	38	7.7700
E58T3	70	21	1	115	sh	vfr	---	e1sf	1msbk	.3	3.8	0.10000	38	7.8800
E58T3	40	34	1	130	h	fr	---	es3sfss	2msbk	.8	4.6	0.10000	38	7.7300
E58T3	60	26	1	187	h	fr	---	e2sf	m	.4	4.9	0.40000	38	7.6200
E59	56	24	0	103	so	vfr	---	eo	2fgr	1.1	1.5	0.10000	29	7.6900
E59	58	19	0	101	sh	vfr	---	eo	1fmsbk	.7	1.3	0.10000	29	7.9400

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BOARY	TEXTURE	LTC.OPT	LANDFORM	CEC
E59	0156	C1	ARIDIC	10YR5/4	10YR4/3	17	21-36	cw	Sandy Loam	90	RIO PUERCO TERRACE	9
E59	0157	C2	ARIDIC	10YR5/4	10YR4/4	15	36-90	gs	Sandy Loam	90	RIO PUERCO TERRACE	7
E59	0158	C3	ARIDIC	10YR5/4	10YR4/4	13	90-160	--	Sandy Loam	90	RIO PUERCO TERRACE	7
E5T1	0427	A	ARIDIC	10YR6/4	10YR4/4	2	0-4	cs	Sandy Loam	>150	SIDESLOPE	7
E5T1	0428	BA	ARIDIC	10YR5/3	10YR4/3	4	4-11	gs	Sandy Loam	>150	SIDESLOPE	8
E5T1	0429	Bt1	ARIDIC	10YR5/3	7.5YR4/4	10	11-40	cw	Sandy Loam	>150	SIDESLOPE	10
E5T1	0430	Bt2	ARIDIC	10YR5/3	10YR4/3	9	40-82	cw	Loamy Sand	>150	SIDESLOPE	10
E5T1	0431	Btk	ARIDIC	10YR6/3	10YR5/3	7	82-116	gw	Loamy Sand	>150	SIDESLOPE	9
E5T1	0432	Bk	ARIDIC	10YR6/3	10YR5/3	9	116-150	--	Loamy Sand	>150	SIDESLOPE	10
E5T1	0433	A'	ARIDIC	10YR6/3	10YR4/3	3	0-6	cs	Sandy Loam	>150	SIDESLOPE	10
E60T2	1204	A	ARIDIC	2.5YR5/4	2.5YR4/4	7	0-5	cs	Sandy Loam	43	RIDGE SIDESLOPE	8
E60T2	1205	Bw\Bt	ARIDIC	2.5YR6/4	2.5YR4/4	13	5-22	cs	Sandy Loam	43	RIDGE SIDESLOPE	11
E60T2	1206	Bk\Btk	ARIDIC	2.5YR6/4	2.5YR5/4	15	22-43	gs	Sandy Loam	43	RIDGE SIDESLOPE	8
E61T3	1201	A	ARIDIC	2.5YR5/4	2.5YR4/4	10	0-5	cs	Sandy Loam	35	RIDGE SIDESLOPE	9
E61T3	1202	2C	ARIDIC	2.5YR5/2	2.5YR4/2	26	5-35	gw	Loam	35	RIDGE SIDESLOPE	20
E61T3	1203	2Cr	ARIDIC			9	35-75	--	Sandy Loam	35	RIDGE SIDESLOPE	12
E62	0365	A	ARIDIC	10YR6/6	10YR5/4	4	0-5	cs	Loamy Sand	96	SIDESLOPE	9
E62	0366	Bt	ARIDIC	10YR6/4	10YR5/4	2	5-28	gw	Sand	96	SIDESLOPE	11
E62	0367	2Btk	ARIDIC	2.5YR6/4	2.5YR5/4	4	28-68	gw	Sandy Loam	96	SIDESLOPE	11
E62	0368	2C	ARIDIC	2.5YR6/4	2.5YR5/4	2	68-96	gw	Sandy Loam	96	SIDESLOPE	13
E62	0369	2Cr	ARIDIC			12	96-120+	--	Loam	96	SIDESLOPE	10
E63	0148	A	ARIDIC	2.5YR5/4	2.5YR4/4	14	0-6	cs	Sandy Loam		RIDGE SIDESLOPE/SHOU	8
E63	0149	Bw\Bt	ARIDIC	2.5YR5/4	2.5YR4/4	27	6-20	cs	Sandy Clay Loam		RIDGE SIDESLOPE/SHOU	10
E63	0150	Bk\Btk	ARIDIC	2.5YR6/2	2.5YR4/2	27	20-60	aw	Clay Loam		RIDGE SIDESLOPE/SHOU	9
E63	0151	By1\Bt	ARIDIC	2.5YR6/2	2.5YR4/2	26	60-75	gw	Loam		RIDGE SIDESLOPE/SHOU	9
E63	0152	By2\Bt	ARIDIC	2.5YR6/4	2.5YR5/4	25	75-110	cs	Loam		RIDGE SIDESLOPE/SHOU	8
E63	0153	2By3\Bt	ARIDIC	2.5YR6/2	2.5YR4/2	33	110-145	gw	Clay Loam		RIDGE SIDESLOPE/SHOU	9
E64	0143	A	ARIDIC	2.5YR5/4	2.5YR4/4	13	0-9	cs	Sandy Loam	110	ALLUVIAL FAN	6
E64	0144	Bw1\Bt	ARIDIC	2.5YR6/4	2.5YR4/4	21	9-26	cw	Sandy Clay Loam	110	ALLUVIAL FAN	9
E64	0145	Bw2\Bt	ARIDIC	2.5YR6/4	2.5YR5/4	19	26-81	aw	Sandy Loam	110	ALLUVIAL FAN	9
E64	0146	By1	ARIDIC	2.5YR6/4	2.5YR5/4	11	81-116	cw	Loam	110	ALLUVIAL FAN	6
E64	0147	By2	ARIDIC	2.5YR6/4	2.5YR5/4	12	116-180	--	Loam	110	ALLUVIAL FAN	8
E65	0370	A	ARIDIC	2.5YR6/2	2.5YR5/4	14	0-8	cs	Loam	>150	ALLUVIAL VALLEY BOTT	21
E65	0371	Bw	ARIDIC	2.5YR5/3	2.5YR4/2	17	8-24	cw	Loam	>150	ALLUVIAL VALLEY BOTT	22
E65	0372	Bky1	ARIDIC	10YR6/4	10YR5/3	14	24-48	cw	Loam	>150	ALLUVIAL VALLEY BOTT	22
E65	0373	Bky2	ARIDIC	10YR6/4	10YR4/4	19	48-100	aw	Loam	>150	ALLUVIAL VALLEY BOTT	15
E65	0374	By1	ARIDIC	10YR6/4	10YR5/3	17	100-129	cw	Loam	>150	ALLUVIAL VALLEY BOTT	16
E65	0375	By2	ARIDIC	10YR6/4	10YR5/4	3	129-152	--	Sandy Loam	>150	ALLUVIAL VALLEY BOTT	19
E65	0376	A'	ARIDIC	10YR6/4	10YR5/4	17	0-12	cs	Loam	>150	ALLUVIAL VALLEY BOTT	17
E67	0096	A	ARIDIC	2.5YR5/4	2.5YR4/4	22	0-15	as	Sandy Clay Loam	15	FAN	11
E67	0097	C1	ARIDIC	2.5YR5/4	2.5YR4/4	27	15-64	gw	Sandy Clay Loam	15	FAN	12
E67	0098	C2	ARIDIC	2.5YR5/4	2.5YR4/4	27	64-120	ai	Sandy Clay Loam	15	FAN	13
E67	0099	Btkb	ARIDIC	10YR6/4	10YR5/4	28	120-155	--	Clay Loam	15	FAN	13
E69	1115	A	ARIDIC	10YR5/3	10YR3/3	8	0-7	cs	Sandy Loam	>150	CERRO SIDESLOPE	20
E69	1116	Bt	ARIDIC	10YR5/4	10YR4/4	12	7-50	gs	Sandy Loam	>150	CERRO SIDESLOPE	35
E69	1117	Bk1	ARIDIC	10YR6/4	10YR5/4	16	50-80	cw	Loam	>150	CERRO SIDESLOPE	25
E69	1118	Bk2	ARIDIC	10YR5/2	10YR7/2	10	80-150+	--	Sandy Loam	>150	CERRO SIDESLOPE	24
E70T1	1026	A	ARIDIC	2.5YR6/4	2.5YR4/4	20	0-12	cs	Loam	>150	VALLEY BOTTOM	23
E70T1	1027	Bw	ARIDIC	2.5YR6/4	2.5YR4/4	13	12-35	as	Loam	>150	VALLEY BOTTOM	15
E70T1	1028	Bk1	ARIDIC	2.5YR6/4	2.5YR4/4	16	35-68	cw	Sandy Clay Loam	>150	VALLEY BOTTOM	21
E70T1	1029	Bk2	ARIDIC	2.5YR6/4	2.5YR4/4	20	68-100	cw	Loam	>150	VALLEY BOTTOM	22
E70T1	1030	Bk3	ARIDIC	2.5YR6/4	2.5YR4/4	17	100-145	--	Sandy Loam	>150	VALLEY BOTTOM	17
E73T1	0688	A	ARIDIC	10YR5/4	10YR4/4	7	0-7	cs	Sandy Loam	>150	RIDGE SIDESLOPE	10
E73T1	0689	Bt	ARIDIC	10YR6/4	10YR5/4	14	7-28	cw	Sandy Loam	>150	RIDGE SIDESLOPE	14
E73T1	0690	Btk1	ARIDIC	10YR6/4	10YR5/4	20	28-50	cw	Sandy Loam	>150	RIDGE SIDESLOPE	14
E73T1	0691	Btk2	ARIDIC	10YR7/3	10YR6/4	22	50-93	cw	Sandy Clay Loam	>150	RIDGE SIDESLOPE	10
E75T1	0700	A	ARIDIC	7.5YR5/4	7.5YR4/4	9	0-7	cs	Sandy Loam	>150	FAN SIDESLOPE	6
E75T1	0701	Bt	ARIDIC	10YR5/4	10YR4/4	13	7-30	cs	Sandy Loam	>150	FAN SIDESLOPE	8
E75T1	0702	Btk	ARIDIC	10YR6/4	10YR5/4	15	30-90	cs	Sandy Loam	>150	FAN SIDESLOPE	7
E75T1	0703	2Btkb1	ARIDIC	7.5YR5/4	7.5YR4/4	17	90-124	cs	Loam	>150	FAN SIDESLOPE	13
E75T1	0704	2Btkb2	ARIDIC	10YR6/4	10YR5/6	17	124-150	--	Sandy Loam	>150	FAN SIDESLOPE	7
E76T2	0850	A	UST	2.5YR5/4	2.5YR4/2	16	0-5	cs	Sandy Loam	>150	TERRACE	15
E76T2	0851	AC	UST	2.5YR5/2	2.5YR4/2	18	5-10	cs	Sandy Loam	>150	TERRACE	12
E76T2	0852	C1	UST	2.5YR6/4	2.5YR4/4	8	10-19	cs	Loamy Sand	>150	TERRACE	7
E76T2	0853	C2	UST	2.5YR6/4	2.5YR5/2	16	19-49	gs	Sandy Loam	>150	TERRACE	12
E76T2	0854	C3	UST	2.5YR6/4	2.5YR4/2	16	49-72	gs	Sandy Loam	>150	TERRACE	13
E76T2	0855	C4	UST	2.5YR6/2	2.5YR4/4	26	72-102	gw	Loam	>150	TERRACE	21
E76T2	0856	2C5	UST	2.5Y5/2	2.5Y4/2	43	102-150	--	Clay	>150	TERRACE	35
E77T3	0857	A	ARIDIC	10YR5/3	10YR4/3	34	0-5	cs	Sandy Clay Loam	>150	TERRACE SIDESLOPE	14
E77T3	0858	Bt\Bw	ARIDIC	10YR5/3	10YR4/3	22	5-19	gs	Sandy Clay Loam	>150	TERRACE SIDESLOPE	19
E77T3	0859	2Btk	ARIDIC	10YR6/4	10YR5/4	16	19-38	gw	Sandy Loam	>150	TERRACE SIDESLOPE	13
E77T3	0860	2C1	ARIDIC	10YR6/4	10YR5/4	14	38-64	cw	Loamy Sand	>150	TERRACE SIDESLOPE	7
E77T3	0861	2C2	ARIDIC	10YR6/4	10YR5/4	8	64-92	cw	Loamy Sand	>150	TERRACE SIDESLOPE	9
E77T3	0862	2C3	ARIDIC	10YR6/4	10YR5/4	9	92-125	cw	Sandy Loam	>150	TERRACE SIDESLOPE	12
E77T3	0863	2C4	ARIDIC	10YR6/3	10YR5/3	22	125-150	--	Loam	>150	TERRACE SIDESLOPE	23
E77T3	0864	A'	ARIDIC	10YR5/4	10YR4/3	6	0-8	cs	Sandy Loam	>150	TERRACE SIDESLOPE	13
E78T2	0939	A	UST	10YR5/2	10YR4/2	47	0-7	cs	Clay	>150	DRAINAGE BOTTOM	51
E78T2	0940	AC\B	UST	10YR5/2	10YR4/2	50	7-60	aw	Clay	>150	DRAINAGE BOTTOM	50
E78T2	0941	C1\BC	UST	10YR6/4	10YR4/4	37	60-86	cs	Clay Loam	>150	DRAINAGE BOTTOM	35
E78T2	0942	C2\C	UST	2.5YR5/3	2.5YR4/3	39	86-150+	--	Clay Loam	>150	DRAINAGE BOTTOM	29
E78T2	0943	A'	UST	10YR5/2	10YR4/2	65	0-7	cs	Clay	>150	DRAINAGE BOTTOM	42
E7T2	1257	A	UST	10YR6/3	10YR3/3	8	0-8	cs	Sandy Loam	>150	DRAINAGE BOTTOM	5
E7T2	1258	Bt1	UST	7.5YR5/4	7.5YR3/4	13	8-18	cs	Sandy Loam	>150	DRAINAGE BOTTOM	11
E7T2	1259	Bt2	UST	10YR6/4	10YR5/4	12	18-62	cs	Sandy Loam	>150	DRAINAGE BOTTOM	14
E7T2	1260	C	UST	10YR6/4	10YR5/4	6	62-118	as	Loamy Sand	>150	DRAINAGE BOTTOM	7
E7T2	1261	2Bkb	UST	10YR6/3	10YR5/3	17	118-147	as	Silt Loam	>150	DRAINAGE BOTTOM	26
E7T2	1262	A'	UST	10YR5/3	10YR3/3	8	0-12		Sandy Loam	>150	DRAINAGE BOTTOM	7
E80	0120	A	UST	10YR5/4	7.5YR4/4	11	0-4	cw	Sandy Loam	24	SHOULDER	10
E80	0121	C	UST	7.5YR5/6	7.5YR5/6	16	4-24	aw	Sandy Loam	24	SHOULDER	18
E81	0114	A	ARIDIC	10YR5/4	10YR4/4	22	0-7	cs	Sandy Clay loam	78	SIDESLOPE	19
E81	0115	BA\Bt1	ARIDIC	10YR5/4	10YR4/4	31	7-17	cs	Clay Loam	78	SIDESLOPE	26
E81	0116	Bw\Bt2	ARIDIC	10YR6/4	10YR5/4	37	17-32	cw	Clay Loam	78	SIDESLOPE	30
E81	0117	C	ARIDIC	2.5YR6/2	2.5YR5/2	36	32-78	gw	Clay Loam	78	SIDESLOPE	33
E81	0118	Cr	ARIDIC			32	78-105+	--	Clay Loam	78	SIDESLOPE	36
E81	0119	A'	ARIDIC		10YR3/3	14	0-10	cs	Sandy Loam	78	SIDESLOPE	20
E84	0486	A	ARIDIC	2.5YR6/4	2.5YR4/4	7	0-8	cs	Sandy Loam	>150	FAN/SIDESLOPE	12
E84	0487	Bt	ARIDIC	2.5YR5/4	2.5YR4/2	11	8-29	cw	Sandy Loam	>150	FAN/SIDESLOPE	11
E84	0488	Btk1	ARIDIC	2.5YR5/4	2.5YR4/4	15	29-57	gw	Loam	>150	FAN/SIDESLOPE	11
E84	0489	Btk2	ARIDIC	2.5YR5/4	2.5YR4/4	12	57-103	cw	Sandy Loam	>150	FAN/SIDESLOPE	10
E84	0490	Bk	ARIDIC	2.5YR5/4	2.5YR4/4	1	103-150	--	Sandy Loam	>150	FAN/SIDESLOPE	9
E85	0196	A	UST	7.5YR5/4	7.5YR3/4	17	0-5	cs	Sandy Loam	135	RIDGE SIDESLOPE	13
E85	0197	Bw\Bt	UST	7.5YR5/4	7.5YR3/4	28	5-19	cs	Sandy Clay Loam	135	RIDGE SIDESLOPE	18
E85	0198	Bk1\Bt	UST	10YR8/4	10YR6/4	26	19-50	gw	Sandy Clay Loam	135	RIDGE SIDESLOPE	12
E85	0199	Bk2\Bt	UST	10YR6/4	10YR5/4	23	50-87	gw	Sandy Clay Loam	135	RIDGE SIDESLOPE	9

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	PH
E59	62	21	0	103	h	vfr	---	eo	1fmsbk	.6	1.8	0.10000	29	7.8500
E59	62	23	0	109	h	vfr	---	ed	1fmsbk	.5	3.2	0.10000	29	7.9400
E59	64	23	4	106	sh	vfr	---	e/d	m	.4	3.5	0.10000	29	8.2700
E5T1	70	28	0	72	so	vfr	---	eo	1fpl	1.4	<.1	0.10000	09	6.1700
E5T1	70	27	0	90	so	vfr	---	eo	1f&msbk	.8	<.1	0.10000	09	6.7800
E5T1	72	18	0	96	sh	fr	4npfpo	eo	2msbk	.5	<.1	0.10000	09	6.6000
E5T1	79	12	1	87	h	fr	3npfpo	eo	2cpr3mca	.2	.3	0.10000	09	7.4600
E5T1	83	10	1	108	vh	fr	2npfpo	e1sf	3m,cabk	.2	.4	0.10000	09	7.6900
E5T1	81	10	2	103	vh	fr	---	es2sf	2msbk	.1	.9	0.10000	09	7.8500
E5T1	69	28	0	68	so	vfr	---	eo	1mgr	4.0	<.1	0.10000	09	5.7400
E60T2	70	23	0	104	so	vfr	---	esd	1mpl	1.2	8.3	0.10000	32	7.8100
E60T2	63	24	0	102	sh	fr	---	esd	1msbk	1.2	14.4	0.10000	32	7.5500
E60T2	63	22	0	113	h	fr	---	ev3sf	2msbk	1.2	21.8	0.10000	32	7.6700
E61T3	60	30	0	105	so	vfr	---	ed	1cpl1fgr	.8	9.0	0.10000	36	7.8300
E61T3	30	40	0	97	h	fr	---	esd	m	1.5	11.5	0.10000	36	7.4800
E61T3	70	21	2	875					m	.7	5.5	18.1000	36	7.6200
E62	78	18	0	105	so	vfr	---	ed	1mgr1fgr	.8	1.8	17.4000	32	7.7800
E62	88	10	0	107	sh	fr	1npf	evd	2msbk	1.4	13.5	10.0000	32	8.1100
E62	74	22	3	116	vh	fr	2mkpfpo	evd2sf	3msbk	.8	15.0	0.10000	32	8.4400
E62	54	44	10	116	h	fr	---	es3ss,sf	m	.6	14.0	0.10000	32	8.6600
E62	48	40	16	212				es		.6	17.2	0.10000	32	7.9400
E63	59	27	0	106	so	vfr	---	es/d	1fgr	.7	7.5	0.10000	32	7.8000
E63	49	24	0	97	h	fr	---	es/d	2mcsbk	1.3	15.3	0.10000	32	7.9000
E63	43	30	2	110	vh	fr	---	es2fss	1msbk	.8	9.9	0.10000	32	7.8800
E63	39	35	9	1027	h	fr	---	eo3ff	m	.5	10.5	6.80000	32	7.9300
E63	37	38	20	798	h	fr	---	eo3ff	m	.3	12.9	3.90000	32	8.0300
E63	38	29	38	839	vh	fi	---	eo3ff	m	.4	10.0	1.10000	32	8.0000
E64	68	19	0	110	so	vfr	---	eo	1fg	.5	3.9	0.10000	32	7.8300
E64	60	19	0	105	sh	vfr	---	es/d	2msbk	1.1	5.3	0.10000	32	7.9600
E64	59	22	0	113	vh	fr	---	es/d	1csbk	.9	6.1	0.10000	32	7.7000
E64	43	46	26	1430	so	vfr	---	e/d2ff	m	.3	8.2	7.60000	32	7.9200
E64	39	48	78	1256	sh	fr	---	e/d3ff	m	.2	5.9	5.60000	32	8.3800
E65	48	38	4	97	sh	vfr	---	eo	See note	1.8	2.5	0.10000	26	7.9200
E65	44	39	13	96	h	fi	---	ed	3f&msbk	2.8	2.3	0.10000	26	7.9700
E65	46	40	34	137	h	fi	---	esd2sf	2f&msbk	1.7	2.1	0.10000	26	7.7500
E65	41	40	16	287	h	fr	---	esd3sf	2f&msbk	2.0	2.3	0.10000	26	7.7300
E65	51	32	20	100	sh	fr	---	ed	m	.9	1.9	0.10000	26	7.7800
E65	59	38	20	142	h	fi	---	ed	m	1.2	2.2	0.10000	26	7.7200
E65	41	42	9	100	sh	vfr	---	eo	2mpl	3.5	3.5	0.10000	26	8.1500
E67	60	18	0	89	sh	vfr	---	eo	1fpl	1.1	2.7	0.10000	41	7.8100
E67	46	27	0	103	vh	fr	---	e/d	1csbk	1.2	2.7	0.10000	41	7.7700
E67	47	25	0	103	vh	fr	---	e/d	1csbk	.9	2.4	0.10000	41	7.7000
E67	41	30	9	111	vh	fi	3mkpf	es2ff	2mpr3msb	1.1	3.2	0.10000	41	7.8900
E69	66	26	0	95	so	vfr	---	esd	1fgr	1.3	4.8	0.10000	33	7.2100
E69	55	33	2	74	h	fr	3mkpfpo	esd	1mpr2msb	1.0	3.5	0.10000	33	7.6800
E69	51	33	7	91	sh	fr	---	es2ss	m	.8	22.6	0.10000	33	8.0800
E69	65	25	11	104	sh	fr	---	ev	m	.6	32.3	0.10000	33	8.0900
E70T1	40	40	0	90	sh	vfr	---	es	2fmgr	2.5	9.3	0.10000	29	7.2900
E70T1	51	36	3	99	sh	vfr	---	es	2msbk	.4	10.2	0.10000	29	7.5100
E70T1	45	39	10	117	h	fr	---	es3sf	2fmsbk	1.1	9.1	0.20000	29	7.2900
E70T1	36	44	16	135	h	fr	---	es2sf	1mcsbk	1.3	10.1	0.10000	29	7.4200
E70T1	76	7	19	125	h	fr	---	es1sf	1msbk	.5	9.6	0.10000	29	7.4900
E73T1	74	19	0	97	so	vfr	---	esd	1mpl	.7	3.4	0.10000	23	7.7600
E73T1	62	24	0	98	sh	fr	2npf	esd	2msbk	1.2	11.5	0.10000	23	7.7400
E73T1	58	22	1	92	sh	fr	3mkpfpo	es2sf&ss	2msbk	1.0	11.6	0.10000	23	7.7800
E73T1	57	21	4	95	h	fr	2mkpfpo	ev3ss&ss	1cpr2mcs	.4	18.5	0.10000	23	8.1100
E75T1	71	21	0	130	sh	vfr	---	ed	1fgr	.9	.6	0.10000	23	7.5400
E75T1	59	28	0	125	h	fr	2npfpo	esd	2msbk	.6	8.1	0.10000	23	7.8500
E75T1	53	32	1	134	h	fr	3mkpfpo	esd2ss&s	2msbk	.6	10.3	0.10000	23	8.1500
E75T1	49	34	5	110	vh	fr	3mkpfpo	es3sf&ss	2msbk	.5	3.0	0.10000	23	8.1500
E75T1	53	30	10	148	h	fr	2mkpf	esd2ss&s	2msbk	.4	6.8	0.10000	23	8.6500
E76T2	56	28	0	121	sh	fr		eo	wmgr	1.3	1.1	0.10000	43	7.1100
E76T2	66	16	0	129	sh	fr		ed	mmpl	.9	.9	0.10000	43	7.6200
E76T2	87	5	0	121	lo	lo		eo	m	.0	.4	0.10000	43	7.7300
E76T2	68	16	0	120	sh	fr		ed	m	.7	1.0	0.10000	43	7.6500
E76T2	72	12	0	114	sh	fr		ed	m	.5	.8	0.10000	43	7.6900
E76T2	44	30	8	122	vh	vfi		esd	m	1.1	1.7	0.10000	43	7.5900
E76T2	32	25	11	122	vh	vfi	---	e d	+m	1.0	1.2	0.10000	43	7.0700
E77T3	56	10	0	97	sh	fr	---	eo	2mgr	3.6	.5	0.10000	19	6.8100
E77T3	56	22	0	119	h	fr	2pf&po	eo	2mpr/2ms	1.7	.6	0.10000	19	7.3500
E77T3	69	15	0	139	h	fr	1mpf&po	eo	2mpr/2ms	1.3	.8	0.10000	19	7.7900
E77T3	86	6	0	173	sh	fr		ed	m	.5	1.2	0.10000	19	7.7100
E77T3	83	9	0	142	h	fr		ed	m	.5	1.1	0.10000	19	7.7800
E77T3	76	15	0	135	h	fr			m	.6	1.5	0.10000	19	7.7300
E77T3	44	34	10	123	h	fr		esd	m	1.0	2.0	0.10000	19	7.7100
E77T3	66	28	0	104	sh	fr		eod	2mgr	4.1	<.1	0.10000	19	6.3600
E78T2	23	30	4	95	h	fi	---	eo	1mpr2fgr	1.4	.5	0.10000	21	7.0200
E78T2	26	24	6	100	vh	vfi	---	eo	2msbk	1.1	<.1	0.10000	21	6.9700
E78T2	26	37	10	86	h	fi	---	eo	m	.9	2.0	0.10000	21	7.4600
E78T2	29	32	16	97	h	fi	---	eo	m	7.6	1.1	0.10000	21	7.7000
E78T2	21	14	45	96	h	fi	---	eo	1mpr2fsb	2.9	2.8	0.10000	21	7.6300
E7T2	70	21	0	104				eo	1cpl	.9	<.1	0.10000	09	6.3000
E7T2	38	18	0	107	h	fr	3npfpo	eo	2msbk	.7	<.1	0.10000	09	6.2500
E7T2	67	20	0	104	sh	vfr	2npfpo	eo	1csbk	.3	<.1	0.10000	09	6.9000
E7T2	86	9	1	117	sh	vfr	---	eo	m	.0	.2	0.10000	09	7.6300
E7T2	31	52	5	99	sh	fr	---	e2sf	m	.6	.8	0.10000	09	7.6700
E7T2	73	18	0	91					1fgr	3.1	<.1	0.10000	09	6.2400
E80	77	12	0	61	so	vfr	---	eo	1fmgr	1.1	<.1	0.10000	01	5.9100
E80	75	9	0	66	sh	vfr	---	eo	m	.3	<.1	0.10000	01	6.0600
E81	56	22	0	101	so	vfr	---	eo	1codmgr	1.9	.7	0.10000	16	7.1600
E81	44	25	1	105	sh	fr	---	eo	1fdmsbk	1.5	.9	0.10000	16	7.4000
E81	33	30	2	114	vh	fi	---	eo	2codmsbk	.8	.9	0.10000	16	7.6900
E81	34	30	4	99	vh	fi	---	eo	m	.7	1.4	0.10000	16	7.9100
E81	32	36	5	91			---	es	m	1.1	1.4	0.10000	16	7.8800
E81	63	23	0	71	so	vfr	---	eo	1codmgr	2.2	<.1	0.10000	16	6.8900
E84	58	35	0	105	so	vfr	---	esd	2fgr	1.1	7.6	0.20000	36	7.8000
E84	54	36	0	101	h	fi	3mkpfpo	esd	3fsbk	1.2	10.0	0.10000	36	7.8300
E84	51	34	0	106	vh	fr	2mkpfpo	es2sf	2csbk	1.0	10.4	0.10000	36	7.9000
E84	54	35	1	112	vh	fr	2npf	es2sf	2csbk	.2	10.4	0.20000	36	7.9300
E84	61	38	5	454	h	fr	2npf	es3sf	m	.8	9.7	1.80000	36	7.6400
E85	57	26	0	109	so	vfr	---	es/d	1mpl	1.3	4.4	0.10000	07	7.6000
E85	49	23	0	97	sh	fr	---	es/d	2msbk	2.4	12.5	0.10000	07	7.5500
E85	49	25	0	99	vh	vfi	---	ev4fs&m	2msbk	1.0	18.7	0.10000	07	7.8200
E85	50	26	2	112	vh	fi	---	ev3fs&m	m	.3	12.1	0.10000	07	8.1600

TRANS	SMPL#	HORIZ	MST RGM	CLR-DRY	CLR.MST	CLAY%	DEPTH	BDARY	TEXTURE	LTC.DPT	LANDFORM	CEC
E85	0200	Bk3	UST	10YR6/4	10YR5/4	20	87-102	gw	Sandy Clay Loam	135	RIDGE SIDESLOPE	9
E85	0201	Bk4	UST	10YR6/4	10YR4/6	9	102-135	--	Sandy Loam	135	RIDGE SIDESLOPE	7
E85	0202	A'	UST	10YR4/3	10YR3/3	19	0-6		Loam	135	RIDGE SIDESLOPE	21
E87T2	0843	A	UST	10YR5/4	10YR4/4	11	0-5	cs	Sandy Loam	>150	DRAINAGE BOTTOM	8
E87T2	0844	Bw	UST	10YR5/4	10YR4/4	10	5-15	cw	Sandy Loam	>150	DRAINAGE BOTTOM	8
E87T2	0845	C1	UST	10YR6/4	10YR5/4	9	15-33	cs	Sandy Loam	>150	DRAINAGE BOTTOM	10
E87T2	0846	C2	UST	10YR6/4	10YR5/4	11	33-99	cs	Sandy Loam	>150	DRAINAGE BOTTOM	9
E87T2	0847	C3	UST	10YR7/3	10YR5/3	35	99-139	cs	Clay Loam	>150	DRAINAGE BOTTOM	25
E87T2	0848	C4	UST	0YR6/4 S	0YR5/4 1	13	139-150	--	Sandy Loam	>150	DRAINAGE BOTTOM	10
E88T1	0728	A	ARIDIC	2.5YR7/4	2.5YR5/4	7	0-3	cs	Sandy Loam		RIDGE SIDESLOPE	14
E88T1	0729	C1	ARIDIC	10YR6/4	10YR4/4	11	3-25	cs	Loam		RIDGE SIDESLOPE	27
E88T1	0730	C2	ARIDIC	10YR6/4	10YR4/4	22	25-45	cs	Loam		RIDGE SIDESLOPE	33
E90	0177	A	UST	10YR5/4	10YR4/4	19	0-15	as	Sandy Loam	20	MESA EDGE/SANDSTONE	17
E90	0178	C	UST	10YR6/3	10YR5/3	5	15-27	cw	Loamy Sand	20	MESA EDGE/SANDSTONE	6
E90	0179	A'	UST	10YR5/3	10YR4/3	7	0-15		Loamy Sand	20	MESA EDGE/SANDSTONE	6
E92T3	0400	A	ARIDIC	10YR5/4	10YR4/3	4	0-5	cs	Sandy Loam	46	SIDESLOPE	13
E92T3	0401	Bw	ARIDIC	10YR5/4	10YR4/4	2	5-12	aw	Loamy Sand	46	SIDESLOPE	16
E92T3	0402	2C1	ARIDIC	10YR6/4	10YR5/6	6	12-26	cw	Sandy Loam	46	SIDESLOPE	10
E92T3	0403	2C2	ARIDIC	2.5YR6/4	10YR5/6	4	26-46	cw	Loamy Sand	46	SIDESLOPE	9
E92T3	0404	2Cr	ARIDIC			2	46-72	gw	Sand	46	SIDESLOPE	9
E92T3	0405	A'	ARIDIC	10YR5/4	10YR4/3	4	0-6		Sandy Loam	46	SIDESLOPE	12
E93T1	0406	A	UST	10YR5/4	10YR4/3	2	0-7	cs	Sandy Loam	>150	TRIBUTARY DRAINAGE	17
E93T1	0407	BA\Bt1	UST	10YR5/4	10YR4/3	12	7-18	gs	Loam	>150	TRIBUTARY DRAINAGE	18
E93T1	0408	Bt\Bt2	UST	10YR5/4	10YR4/3	14	18-33	gw	Loam	>150	TRIBUTARY DRAINAGE	21
E93T1	0409	Btk1\B	UST	10YR5/3	10YR3/3	17	33-53	gw	Loam	>150	TRIBUTARY DRAINAGE	26
E93T1	0410	Btk2	UST	10YR5/4	10YR4/3	14	53-75	gw	Loam	>150	TRIBUTARY DRAINAGE	19
E93T1	0411	Btk3	UST	10YR5/4	10YR4/3	19	75-102	gw	Loam	>150	TRIBUTARY DRAINAGE	20
E93T1	0412	Btk4	UST	10YR5/4	10YR4/3	17	102-150	--	Loam	>150	TRIBUTARY DRAINAGE	22
E93T1	0413	A'	UST	10YR5/4	10YR4/3	3	0-9	cs	Sandy Loam	>150	TRIBUTARY DRAINAGE	17
E94T5	0533	A	ARIDIC	2.5YR6/4	2.5YR4/4	9	0-6	cs	Sandy Loam	139	RIDGE SIDESLOPE	11
E94T5	0534	Bt	ARIDIC	2.5YR6/4	2.5YR4/4	10	6-36	aw	Sandy Loam	139	RIDGE SIDESLOPE	13
E94T5	0535	Btk	ARIDIC	2.5YR6/4	2.5YR4/4	8	36-66	cw	Sandy Loam	139	RIDGE SIDESLOPE	12
E95T2	0551	A	ARIDIC	10YR6/3	10YR4/3	3	0-7	cs	Sand	7150		5
E95T2	0552	C	ARIDIC	10YR6/4	10YR4/4	6	7-55	as	Loamy Sand	7150		6
E95T2	0553	Ab	ARIDIC	10YR6/3	10YR4/3	7	55-64	cs	Loamy Sand	7150		6
E95T2	0554	C'	ARIDIC	10YR6/4	10YR4/4	7	64-91	as	Loamy Sand	7150		7
E95T2	0555	2Cl	ARIDIC	2.5YR6/4	2.5YR4/4	14	91-110	as	Loam	7150		15
E95T2	0556	2C2	ARIDIC	10YR6/4	10YR4/4	5	110-120	as	Sand	7150		5
E95T2	0557	3Bkb	ARIDIC	10YR6/3	10YR3/3	26	120-142	as	Loam	7150		34
E95T2	0558	A'	ARIDIC	10YR6/3	10YR4/3	2	0-10	cs	Sand	7150		4
E96T2	0559	A	UST	7.5YR5/4	7.5YR4/4	8	0-7	cw	Sandy Loam	>150	SIDESLOPE	9
E96T2	0560	Byl	UST	7.5YR6/4	7.5YR5/4	6	7-64	gw	Sandy Loam	>150	SIDESLOPE	8
E96T2	0561	By2	UST	7.5YR7/4	7.5YR5/6	7	64-120	gs	Sandy Loam	>150	SIDESLOPE	8
E96T2	0562	By3	UST	7.5YR7/2	7.5YR5/4	8	120-160	--	Loam	>150	SIDESLOPE	8
E9T3	0418	A	ARIDIC	7.5YR5/4	7.5YR3/4	3	0-5	cs	Loamy Sand	>150	SIDESLOPE SHOULDER	5
E9T3	0419	BA	ARIDIC	7.5YR4/4	7.5YR3/4	7	5-12	cs	Sandy Loam	>150	SIDESLOPE SHOULDER	14
E9T3	0420	Bt	ARIDIC	7.5YR6/6	7.5YR4/6	1	12-25	aw	Loamy Sand	>150	SIDESLOPE SHOULDER	15
E9T3	0421	Btk1	ARIDIC	7.5YR6/4	7.5YR4/6	5	25-42	cw	Loamy Sand	>150	SIDESLOPE SHOULDER	12
E9T3	0422	Btk2	ARIDIC	7.5YR6/4	7.5YR5/6	7	42-71	cw	Loamy Sand	>150	SIDESLOPE SHOULDER	10
E9T3	0423	Btkb1	ARIDIC	7.5YR6/4	7.5YR5/4	9	71-108	gw	Sandy Loam	>150	SIDESLOPE SHOULDER	16
E9T3	0424	Btkb2	ARIDIC	7.5YR6/4	7.5YR4/6	8	108-138	cw	Sandy Loam	>150	SIDESLOPE SHOULDER	11
E9T3	0425	2Bkb	ARIDIC	2.5YR7/4	2.5YR5/4	4	138-150	--	Sandy Loam	>150	SIDESLOPE SHOULDER	33
E9T3	0426	A'	ARIDIC	10YR5/3	10YR4/3	1	0-7	cs	Loamy Sand	>150	SIDESLOPE SHOULDER	7

TRANS	SAND%	SILT%	NaSAT%	B.SAT%	CONST	C.MST	CUTANS	EFFERV CLASS	STRUCT	ORG MATTER	CaCO3 EQU	CaSO4 SOL	P.C	PH
E85	60	19	5	119	h	fr	---	ev3fs&m	m	.1	14.6	0.10000	07	8.3100
E85	54	36	10	139	sh	fr	---	es2fs&m	m	.2	16.8	0.10000	07	8.5800
E85	48	32	0	191	so	vfr	---			9.4	3.5	0.10000	07	8.1100
E87T2	61	28	0	114	so	vfr	---	eo	wmpl wmdf	.5	<.1	0.10000	11	7.0500
E87T2	72	18	0	120	sh	vfr	---	ed	wmsbk	.1	1.6	0.10000	11	7.4700
E87T2	69	22	0	118	sh	vfr	---	ed	m	.0	1.9	0.10000	11	7.6800
E87T2	68	21	3	117	sh	vfr	---	ed	m	.1	1.9	0.10000	11	7.8700
E87T2	21	44	17	118	h	fi	---	esd	m	.5	1.9	0.10000	11	7.7200
E87T2	71	16	18	129	h	fr	---	ed		.7	1.4	0.10000	11	7.9100
E88T1	56	37	0	392	sh	vfr	---	e/esd	1cpl	.3	13.3	1.80000	25	7.8000
E88T1	44	45	5	297	sh	vfr	---	e/es3ss	rock	.3	9.7	1.80000	25	7.9000
E88T1	32	46	71	218	sh	vfr	---	e/es3ss	rock	.3	15.6	0.50000	25	8.8600
E90	64	17	0	45	so	vfr	--	esd	1fgr	1.6	2.2	0.10000	07	8.0200
E90	80	15	0	216	sh	fr	---	esd	m	2.2	4.0	0.10000	07	7.6200
E90	82	11	0	131	so	vfr	---	eo	1fgr	2.1	.9	0.10000	07	7.8600
E92T3	72	24	0	111	so	vfr	---	eo	2mpl	1.7	0.9	0.10000	11	7.4000
E92T3	78	20	0	176	sh	fr	---	esd	2msbk	1.9	4.1	0.40000	11	7.7000
E92T3	66	28	0	1087	h	fr	---	ed	m	1.4	1.7	22.5000	11	7.8300
E92T3	78	18	0	1358	sh	fi	---	ed	m	.9	1.3	17.4000	11	7.7700
E92T3	88	10	0	1115			---	ed	m	.4	0.7	10.0000	11	7.8200
E92T3	74	22	0	121	so	vfr	---			2.4	0.7	0.10000	11	7.2700
E93T1	54	44	0	102	so	vfr	---	ed	1mpl	2.0	3.0	0.10000	37	7.6700
E93T1	48	40	0	99	sh	fr	---	ed	1msbk	1.4	2.0	0.10000	37	7.9200
E93T1	48	38	0	90	sh	fr	1npfpo	esd	2msbk	1.6	3.8	0.10000	37	7.9000
E93T1	44	39	0	85	vh	vfi	4mkpfpo	esd/1fis	3mpr3mfa	1.7	5.0	0.10000	37	7.8500
E93T1	46	40	0	98	vh	vfi	4mkpfpo	esd/2fis	3cpr3cma	1.4	6.3	0.10000	37	7.9400
E93T1	41	40	1	94	eh	efi	3mkpfpo	esd/1fi	m3cmsbk	.7	5.2	0.10000	37	7.9700
E93T1	51	32	2	97	eh	efi	2npfpo	esd/1fi	m	.7	4.7	0.10000	37	7.8500
E93T1	59	38	0	107	so	fr		ed	1cpl	2.6	3.1	0.10000	37	7.1800
E94T5	53	38	0	91	so	vfr	---	ed	1fpl	1.1	7.6	0.10000	11	7.5100
E94T5	55	35	0	99	h	fr	3npf	esd	1cpr2msb	1.3	10.0	0.10000	11	7.7700
E94T5	56	36	0	111	h	fr	3npf	es2sf	1cpr2msb	1.1	11.7	0.60000	11	7.5000
E95T2	89	8	0	83	so	vfr	---	e d	1mpl	.5	1.3	0.10000	30	7.3900
E95T2	86	8	0	113	sh	vfr	---	e d	m	.3	2.5	0.10000	30	7.8400
E95T2	81	12	0	101	sh	vfr	---	eo	m	.3	.6	0.10000	30	7.7900
E95T2	78	14	0	109	sh	vfr	---	es d	m	.3	4.2	0.10000	30	7.7100
E95T2	47	39	0	101	vh	fr	---	es d	m	.9	8.5	0.10000	30	7.6500
E95T2	89	6	0	116				e d	m	.0	2.0	0.10000	30	8.0600
E95T2	44	30	1	90	eh	vfi	---	e 2sf,ss	3cpr	.7	5.1	0.10000	30	7.7000
E95T2	89	9	0	125	so	vfr	---	e d	1m gr	.8	1.6	0.10000	30	7.7600
E96T2	70	22	0	117	so	vfr	---	evd	2npl	.7	6.0	0.10000	05	7.3900
E96T2	66	27	0	1383	sh	vfr	---	esd	1csbk	.6	6.0	27.2000	05	7.5700
E96T2	64	28	0	1580	sh	vfr	---	evd	m	.4	7.2	9.80000	05	7.4000
E96T2	46	46	7	1182	sh	vfr	---	evd	m	.7	7.4	25.9000	05	7.6400
E9T3	81	16	0	84	s	ovf	---	eo	1cpl	.8	<.1	0.10000	09	6.2900
E9T3	75	18	0	85	sh	vfr	---	eo	1fsbk	1.2	<.1	0.10000	09	6.8000
E9T3	79	20	0	110	h	fr	3npfpo	eo	2f&msbk	1.0	1.4	0.10000	09	7.5800
E9T3	77	18	0	122	h	fr	3npfpo	ed/2sf	2f&msbk	.5	1.3	0.10000	09	7.8500
E9T3	83	10	3	109	h	fr	2npfpo	2vf,f1m	2m&csbk	.1	.6	0.10000	09	8.2900
E9T3	53	38	7	104	vh	fr	2npfpo	es3sfss	2m&csbk	.3	1.7	0.10000	09	7.9700
E9T3	77	15	10	112	h	fr	1npfpo	es3sfss	m	.0	2.0	0.10000	09	8.0400
E9T3	59	37	10	106	h	fr	---	sfss	m	.3	16.6	0.10000	09	7.8000
E9T3	82	17	0	84	so	vfr	---	eo	1fgr	2.7	<.1	0.10000	09	6.6100

VITA

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